UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION IX
75 Hawthorne Street
San Francisco, CA 94105-3901

23 March 2009

Mr. Brennon Morioka
Director
Hawaii Department of Transportation
Aliiaimoku Building
869 Punchbowl Street
Honolulu, HI 96813

Subject: Program Audit of the Hawaii Department of Transportation, Harbors Division, Stormwater Management Program, Transmittal of Audit Report

Dear Mr. Morioka:

As you may be aware, during the week of December 8, 2008 staff from EPA, the Hawaii Department of Health, Clean Water Branch, and PG Environmental LLC, an EPA contractor, conducted an audit of the Hawaii Department of Transportation ("HDOT"), Harbors Division's stormwater management program. The purpose of this letter is to transmit the report coming out of the audit.

The purpose of the audit was to determine the Harbors Division's compliance with the Hawaii NPDES General Permit Authorizing Discharges of Storm Water and Certain Non-Storm Water Discharges From Small Municipal Separate Storm Sewer Systems ("MS4s" and "the permit") as it applies to HDOT's Honolulu and Kalaeloa Barbers Point Harbors and Kewalo Basin (Notice of General Permit Coverage Nos. 03KB482, 03KB488, and 03KB487, respectively). HDOT staff participating in the audit were all very helpful and cooperative, and we appreciate their time and effort in assisting with the audit.

In summary, the audit report notes that certain Minimum Control Measures required under the permit were judged to be significantly deficient (Illicit Discharge Detection and Elimination, Construction Site Runoff Control) while the Post-Construction Storm Water Management Program was determined to be non-existent altogether. The audit report additionally notes other deficiencies with each of the remaining Minimum Control Measures (Public Education and Outreach, Public Involvement/Participation, and Pollution Prevention/Good Housekeeping).

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It is apparent to EPA that, despite Harbors Division having been subject to the permit since 2003, it has done little to develop a comprehensive MS4 program for implementation at its harbors on Oahu. This is especially troubling in light of our history of engagement with HDOT regarding its compliance with NPDES permits. We have taken numerous enforcement actions against both the Highways and Airports Divisions, culminating in the Consent Decree entered by the U.S. District Court in 2005. A recent (August 2008) audit of the Highways Division's stormwater management program found implementation there to be at a very high level. It is discouraging that there has apparently been little if any transfer of the excellent programmatic information developed by the Highways Division to the Harbors Division.

EPA is transmitting the audit report for informational purposes only and we are not, at this time, requesting any substantive response to the report's findings from HDOT. However, your staff may wish to review the case studies that EPA has developed to help Phase II MS4s improve their stormwater management programs. Case studies have been developed for each of the minimum control measures, and may be seen at http://cfpub1.epa.gov/npdes/stormwater/casestudies.cfm.

It is our intent to follow-up separately, but soon, to the apparent violations of permit conditions. In the meantime we also plan to post the audit report on our website. You may look for it at www.epa.gov/region09/water/ports/index.html.

If you have any questions, please contact Mr. Jeremy Johnstone of my staff at (415) 972-3499 or via email at johnstone.jeremy@epa.gov. Thank you in advance for your continuing cooperation.

Sincerely,

Amy C. Miller, Team Leader
Stormwater and Wetlands Enforcement Team
Clean Water Act Compliance Office
Water Division

Enclosure

cc (w/ enclosure):
Michael D. Formby, HDOT Deputy Director
Davis Yogi, Administrator, HDOT Harbors Div.
Barry Kim, Oahu District Manager, HDOT Harbors Div.
Chris Takeno, HDOT
Alec Wong, DOH

MUNICIPAL SEPARATE STORM SEWER SYSTEM (MS4) COMPLIANCE AUDIT

REPORT DATE: March 9, 2009
EVALUATION CONDUCTED: December 8—11, 2008

HAWAII DEPARTMENT OF TRANSPORTATION
HARBORS DIVISION

United States Environmental Protection Agency
Region 9
75 Hawthorne Street
San Francisco, CA 94105-3901

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CONTENTS

Page

SECTION 1.0 BACKGROUND 1

SECTION 1.1 OVERVIEW OF RECEIVING WATER QUALITY 1
SECTION 1.2 OVERVIEW OF OPERATIONS 3
SECTION 1.3 PURPOSE AND BACKGROUND 5

SECTION 2.0 PERMIT COMPLIANCE REVIEW 8

SECTION 2.1 PUBLIC EDUCATION AND OUTREACH 9
SECTION 2.2 PUBLIC INVOLVEMENT/PARTICIPATION 9
SECTION 2.3 ILLICIT DISCHARGE DETECTION AND ELIMINATION 10
SECTION 2.4 CONSTRUCTION SITE RUNOFF CONTROL 12
SECTION 2.5 POST-CONSTRUCTION STORM WATER MANAGEMENT 15
SECTION 2.6 POLLUTION PREVENTION/GOOD HOUSEKEEPING 18
SECTION 2.7 MEASURABLE GOALS AND PROGRAM EFFECTIVENESS 18

SECTION 3.0 SUMMARY EVALUATION OF THE AUDIT AND ENVIRONMENTAL MANAGEMENT SYSTEM SUPPLEMENTAL ENVIRONMENTAL PROJECT 20

SECTION 4.0 SUMMARY OF THE HARBORS DIVISION TENANT INSPECTIONS 22

SECTION 5.0 SUMMARY EVALUATION OF THE HARBORS DIVISION'S STORM WATER MONITORING ACTIVITIES 22

SECTION 6.0 RECOMMENDATIONS FOR IMPROVED STORM WATER MANAGEMENT BY THE HARBORS DIVISION 25

SECTION 6.1 PUBLIC EDUCATION AND OUTREACH 25
SECTION 6.2 PUBLIC INVOLVEMENT/PARTICIPATION 26
SECTION 6.3 POLLUTION PREVENTION/ GOOD HOUSEKEEPING 27
SECTION 6.4 POST-CONSTRUCTION STORM WATER MANAGEMENT 28

SECTION 7.0 RECOMMENDATIONS FOR POSSIBLE FUTURE NPDES PERMIT MODIFICATIONS 29

APPENDIX A: AUDIT SCHEDULE
APPENDIX B: EXHIBIT LOG
APPENDIX C: PHOTOGRAPH LOG

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Section 1.0 Background

The U.S. Environmental Protection Agency (EPA) Region 9, with assistance from the Hawaii Department of Health (DOH) and PG Environmental, LLC, an EPA Region 9 contractor (hereafter, collectively the EPA Audit Team), conducted an audit of the Municipal Separate Storm Sewer System (MS4) program of the State of Hawaii Department of Transportation, Harbors Division (hereafter, Harbors Division) on December 8—11, 2008. Discharges from the Harbors Division's MS4s are regulated under the National Pollutant Discharge Elimination System (NPDES) General Permit for Small MS4s found at Chapter 11-55, Appendix K, of the *Hawaii Administrative Rules* (HAR). The Harbors Division obtained Notice of General Permit Coverage (NGPC) to discharge storm water runoff and certain non-storm water discharges to marine waters from its three Small MS4s—Honolulu Harbor (File No. HI 03KB482), Kalaeloa Barbers Point Harbor (File No. HI 03KB488), and Kewalo Basin (File No. HI 03KB487) on May 19, 2003. Although ownership of the Kewalo lands has been transferred to the Hawaii Community Development Authority (HCDA) pursuant to Act 86, SLH 1990, the Harbors Division has continued to manage and operate the harbor at Kewalo Basin and will do so until HCDA is able to complete the transition and assume full ownership responsibilities under the NGPC.

Section 1.1 Overview of Receiving Water Quality

The mission of the Harbors Division is to effectively manage and operate a statewide commercial harbors system that facilitates the efficient movement of people and goods to, from, and between the Hawaiian Islands. The statewide harbors system consists of ten commercial harbors located at Honolulu, Kalaeloa Barbers Point, Kewalo Basin, Hilo, Kawaihae, Kahului, Kaunakakai, Kaumalapau, Nawiliwili, and Port Allen. Only the Harbors Division's storm drainage facilities at Honolulu Harbor, Kalaeloa Barbers Point Harbor, and Kewalo Basin are classified as Small MS4s and are therefore included within the scope of this audit. All three of the Small MS4s are located within the City and County of Honolulu. Discharges from these Harbors Division MS4s consist of storm water runoff and certain non-storm water discharges, which discharge directly or indirectly to the marine waters of each respective harbor. A number of the receiving water bodies are identified as impaired waters under Section 303(d) of the Clean Water Act.

The Honolulu Harbor and shore area from Honolulu Waterfront to Aloha Tower is identified as a Low Priority, Category 5, water in the Clean Water Act, Section 303(d) list of impaired water bodies in Chapter IV of the *2006 State of Hawaii Water Quality Monitoring and Assessment Report* (hereafter, Clean Water Act, Section 303(d) list of impaired water bodies) and a Total Maximum Daily Load (TMDL) is needed. The Honolulu Harbor and shore area from Honolulu Waterfront to Aloha Tower is presently identified as not attaining the applicable water quality criteria for trash and turbidity.

The Honolulu Harbor nearshore waters from approximately Sand Island channel to Waikiki Beach are identified as a Low Priority, Category 5, water in the Clean Water Act, Section 303(d) list of impaired water bodies and a TMDL is needed. The Honolulu Harbor nearshore waters from approximately Sand Island channel to Waikiki Beach are presently identified as not attaining the applicable water quality criteria for enterococci, total nitrogen, nitrite+nitrate nitrogen, total phosphorus, turbidity, nutrients, pathogens, metals, and suspended solids.

Mamala Bay, offshore of Sand Island, is identified as a Low Priority, Category 5, water in the Clean Water Act, Section 303(d) list of impaired water bodies and a TMDL is needed. Mamala Bay, offshore of Sand Island is presently identified as not attaining the applicable water quality criteria for enterococci, total nitrogen, and chlorophyll-a.

The Honolulu Harbor and shore area at Kewalo Basin is identified as a Low Priority, Category 5, water in the Clean Water Act, Section 303(d) list of impaired water bodies and a TMDL is needed. The Honolulu Harbor and shore area at Kewalo Basin is presently identified as not attaining the applicable water quality criteria for total nitrogen, nitrite+nitrate nitrogen, total phosphorus, turbidity, nutrients, suspended solids, and trash.

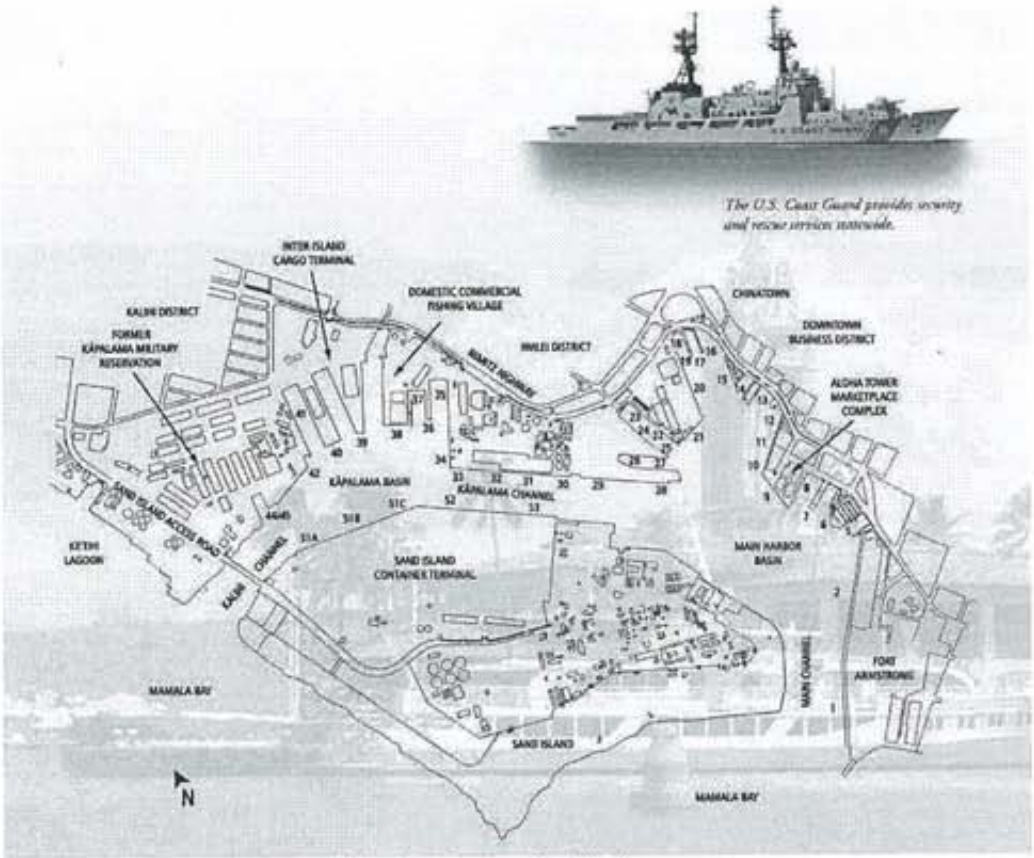
The Kewalo Basin is identified as a Low Priority, Category 5, water in the Clean Water Act, Section 303(d) list of impaired water bodies and a TMDL is needed. The Kewalo Basin is presently identified as not attaining the applicable water quality criteria for total nitrogen, total phosphorus, turbidity, and chlorophyll-a.

The Kalaeloa Barbers Point Harbor is identified as a Category 3, water in the Clean Water Act, Section 303(d) list of impaired water bodies and has not been prioritized.

Section 1.2 Overview of Operations

Honolulu Harbor is among the largest container-handling ports in the United States, with more than 8 million short tons of cargo handled annually. It consists of over 200 acres of container yard and over 30 major berth facilities with more than 5 linear miles of mooring space. Honolulu Harbor serves as Hawaii's primary shipping connection to the Mainland United States, the Far East, and the entire Pacific Rim. Most of the state's containerized cargo is received at the Honolulu Harbor Sand Island container facilities. The harbor itself comprises five areas as depicted in Figure 1: the Main Channel (a.k.a., Fort Armstrong Channel), the Main Harbor Basin, the Kapalama Channel, the Kapalama Basin, and the Kalihi Channel.

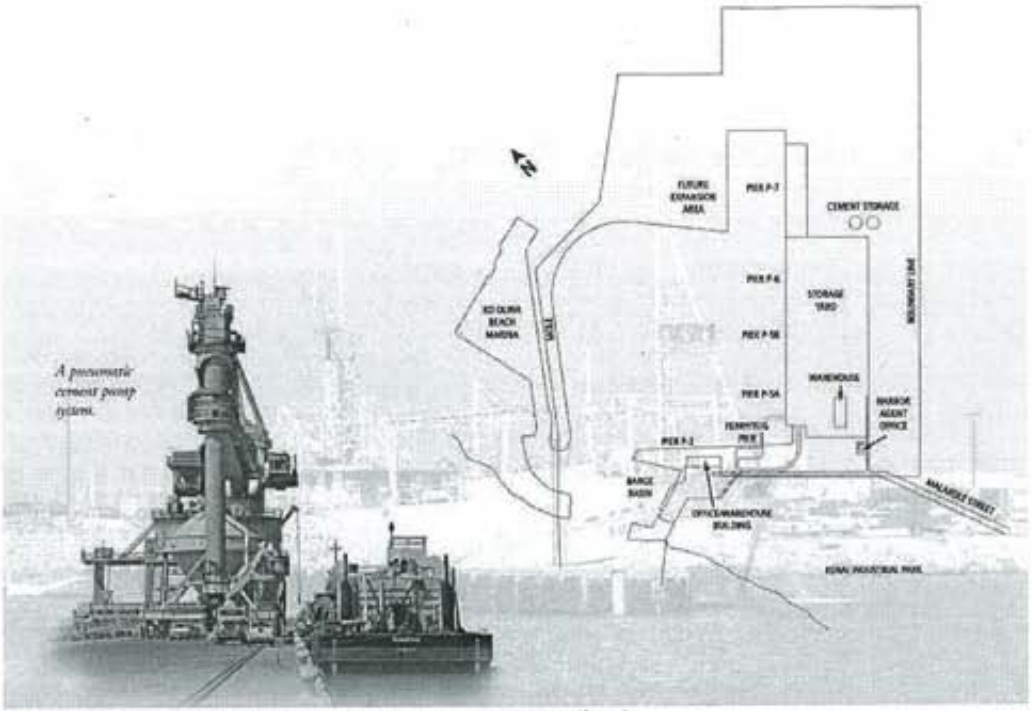
Figure 1. Honolulu Harbor Site Map



Source: Port Hawaii Commercial Harbors System Handbook.

Kalaeloa Barbers Point Harbor, completed in 1990, is the most recently constructed harbor. It is located approximately 19 nautical miles west of Honolulu Harbor near the southwestern tip of Oahu. It contains a number of specialized cargo-handling facilities not found in Honolulu Harbor, such as a coal bulk unloader system and a pneumatic cement pump system. The harbor itself has three areas as depicted in Figure 2: the Barge Basin, an entrance channel, and a main harbor basin.

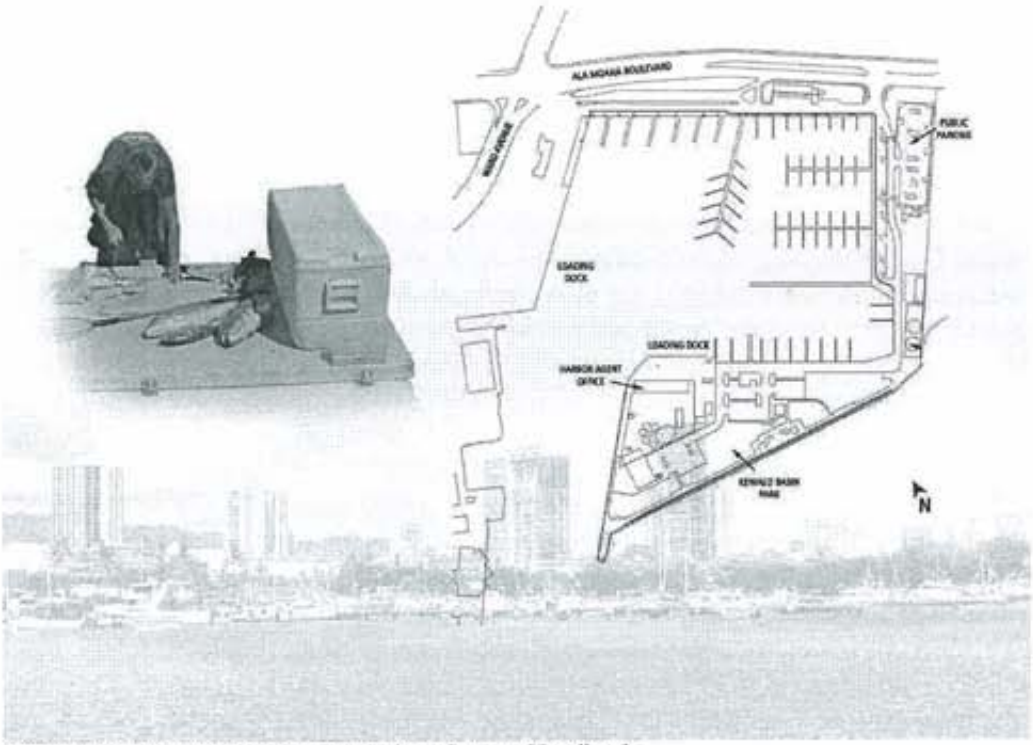
Figure 2. Kalaeloa Barbers Point Harbor Site Map



Source: Port Hawaii Commercial Harbors System Handbook.

Kewalo Basin is located 1 mile east of Honolulu Harbor along Ala Moana Boulevard. It is used primarily for mooring of charter, excursion, and commercial fishing boats and other small boats such as catamarans and research vessels. The harbor itself is an artificial cove that consists of an entrance channel and main harbor basin as depicted in Figure 3.

Figure 3. Kewalo Basin Site Map



Source: Port Hawaii Commercial Harbors System Handbook.

Section 1.3 Purpose and Background

The purpose of the audit was to assess the Harbors Division's compliance with the requirements of NPDES General Permit for Small MS4s found at HAR Chapter 11-55, Appendix K (hereafter, the Permit). The EPA Audit Team also assessed the Harbors Division's current implementation status with respect to each of its Storm Water Management Plans (SWMPs) for the three Small MS4s. The audit schedule is presented in Appendix A. It should be noted that this audit report refers primarily to the Storm Water Management Plan for Honolulu Harbor dated October 2007 (hereafter, Honolulu Harbor SWMP), but all three SWMPs are similar in content.

Specifically, the audit included an evaluation of the Harbors Division's compliance with Parts 6.(a)(1) through 6.(a)(6) of the Permit, which include requirements for the following Minimum Control Measures or program elements:

Part 6.(a)(1)	Public Education and Outreach
Part 6.(a)(2)	Public Involvement/Participation
Part 6.(a)(3)	Illicit Discharge Detection and Elimination
Part 6.(a)(4)	Construction Site Runoff Control
Part 6.(a)(5)	Post-Construction Storm Water Management
Part 6.(a)(6)	Pollution Prevention/Good Housekeeping

The Harbors Division is one of three divisions of the State of Hawaii Department of Transportation (HDOT). The other divisions are the Highways Division and Airports Division, neither of which was included within the scope of the audit. HDOT, EPA, and DOH entered into a Consent Decree (Civil Action No. CV05-00636-HG-KSC) on March 31, 2006 in response to a previous Clean Water Act enforcement matter. As part of the Consent Decree, HDOT is required to implement a number of Supplemental Environmental Projects (SEPs), one of which applies to the Harbors Division. The project is referred to as the Audit and Environmental Management System (EMS) SEP. The audit included a partial evaluation of the Harbors Division's compliance with the EMS SEP requirements, as specified in Appendix E to the Consent Decree.

In addition, the EPA Audit Team conducted 35 individual inspections of tenants located on the Harbors Division's property and/or served by the Harbors Division's Small MS4s. Thirteen of these tenants had filed a Notice of Intent (NOI) for coverage under the NPDES Industrial Storm Water General Permit found at HAR Chapter 11-55, Appendix B (hereafter, Industrial General Permit). One tenant was regulated by an individual NPDES permit issued by DOH, and 21 tenants are, at present, regulated solely under provisions contained in their lease agreements with the Harbors Division. The purposes of the tenant inspections were (1) to assess the adequacy, appropriateness, and maintenance of best management practices (BMPs) employed by tenants to prevent and reduce storm water pollution, and (2) to gauge the overall effectiveness of the Harbors Division's tenant oversight activities. The inspections were conducted by three teams of inspectors with the participation of Harbors Division personnel. One Harbors Division-owned and -operated facility was also inspected for MS4 program evaluation purposes.

The primary Harbors Division representatives present during the course of the audit were Mr. Randall Leong, Harbors Division Environmental Engineer; Mr. Chris Takeno, Department of Transportation Environmental Health Specialist; and Mr. Charles Schuster, Engineer, EKNA Services, Inc. Numerous additional Harbors Division staff participated throughout the audit. These persons are hereafter collectively referred to as Harbors Division personnel.

The weather during the first three days of the audit was sunny to partly cloudy. On December 11, 2008, a heavy rainstorm caused significant flooding on Oahu and brought heavy rains to areas of the Harbors Division facilities including Honolulu Harbor, Kalaeloa Barbers Point Harbor, and Kewalo Basin. Although precipitation events are

temporally and spatially sporadic on Oahu, the storm was reported to have produced 14 inches of rain in a 12-hour time period on Oahu.

The remainder of this audit report is organized as follows:

Section 2.0 **Permit Compliance Review,** including findings from the audit that could be determined to constitute noncompliance

Section 3.0 **Summary Evaluation of the Audit and Environmental Management System Supplemental Environmental Project**

Section 4.0 **Summary of the Harbors Division Tenant Inspections,** including observations regarding the Harbors Division's oversight of tenant activities

Section 5.0 **Summary Evaluation of the Harbors Division's Storm Water Monitoring Activities,** and recommendations for possible improvement

Section 6.0 **Recommendations for Improved Storm Water Management by the Harbors Division,** including program deficiencies that represent areas of concern for successful program implementation

Section 7.0 **Recommendations for Possible Future NPDES Permit Modifications** that DOH may wish to consider for improved regulation and oversight of the Harbors Division's storm water management programs

Section 2.0 Permit Compliance Review

The presentation of audit findings in this section of the report does not constitute a formal compliance determination or violation. Documentation used as supporting evidence is provided in Appendix B and photo-documentation is provided in Appendix C. For clarity, items that require the Harbors Division's response are underlined while recommendations are presented in *italic*.

Summary Finding Regarding Development and Implementation of the Harbors Division's Storm Water Management Program. Part 6 of the Permit requires the Harbors Division to "develop, implement, and enforce a storm water management plan designed to reduce the discharge of pollutants from the permittee's small municipal separate storm sewer system[s] to the maximum extent practicable in order to protect water quality and satisfy the appropriate water quality requirements of the Clean Water Act." The storm water management plan must include the Minimum Control Measures and corresponding items specified in the Permit.

As discussed during the Closing Conference held December 11, 2008, the Harbors Division had difficulty in readily demonstrating compliance with the requirements specified in the Permit. The difficulty, at least in part, appeared to be due to a lack of programmatic documentation, record keeping, data management, and overall program unification. The deficiencies discussed in this section of the report were considered collectively in making this determination. One reason for inadequate compliance demonstration is that the SWMPs developed for each of the Small MS4s do not articulate a comprehensive MS4 program. The SWMPs also do not articulate overarching outcomes that the Harbors Division is attempting to achieve in its storm water management program. Furthermore, the Harbors Division personnel did not appear knowledgeable of the storm water management practices described in the SWMPs and did not provide concrete examples of their implementation.

As a result, certain Minimum Control Measures were judged to be significantly deficient (Illicit Discharge Detection and Elimination, Construction Site Runoff Control) while the Post-Construction Storm Water Management Program was determined to be non-existent altogether. These statements are based on the audit findings presented in Section 2 of the report, and which are summarized below:

1. The Harbors Division did not establish adequate enforcement procedures for its Illicit Discharge Detection and Elimination Program.
2. The Harbors Division did not compile a list of non-storm water discharges or flows that are considered to be significant contributors of pollutants to the system and measures to be taken to prevent these discharges. The Harbors Division also did not effectively prohibit all illicit non-storm water discharges.
3. The Harbors Division did not develop procedures to effectively detect and eliminate illicit discharges into the permittee's Small MS4s.

4. The Harbors Division did not develop a program to regulate private construction activities.
5. The Harbors Division did not implement a mechanism to adequately regulate and track public and private construction activities occurring in areas served by its Small MS4s.
6. The Harbors Division did not develop requirements for public and private construction site operators to implement appropriate erosion and sediment control BMPs, and BMPs appropriate for the control of waste and other potential pollutant sources.
7. The Harbors Division did not develop inspection procedures for public and private construction sites, or for adequate enforcement of control measures.
8. The Harbors Division did not develop a structured Post-Construction Storm Water Management Program. Construction at the Harbors Division's Small MS4s had been occurring during the current NGPC term and following the NGPC effective date (May 19, 2003) without a structured Post-Construction Storm Water Management Program in place.
9. The Harbors Division did not implement structural and/or nonstructural BMPs to minimize water quality impacts and attempt to maintain pre-development runoff conditions at new development and redevelopment projects.
10. The Harbors Division did not establish adequate regulatory mechanisms and enforcement procedures for new development and redevelopment projects.
11. The Harbors Division did not develop measureable goals that can be effectively used to quantify and track progress in achieving program outcomes and requirements.

As such, the Harbors Division had not adequately developed, implemented, and enforced a storm water management plan designed to reduce the discharge of pollutants from the Harbors Division's Small MS4s in accordance with Part 6 of the Permit. See Section 2.3, Section 2.4, Section 2.5, Section 2.6, and Section 2.7 of this report for required corrective actions identified in <u>underlined</u> text. *In addition, it is recommended that the Harbors Division develop documentation that articulates a comprehensive MS4 program, and design an effective and traceable recordkeeping system that readily enables the Harbors Division to demonstrate compliance with the requirements specified in the Permit.* The reader is referred to Sections 2.3.2, 2.4.2, 2.5.2, 4.3.1, 4.4.1, and 6.3.1 of this report for specific deficiencies pertaining to programmatic documentation and compliance demonstration.

Section 2.1 Public Education and Outreach

Refer to Section 6.1 of this report for a recommendation pertaining to this program element.

Section 2.2 Public Involvement/Participation

Refer to Section 6.2 of this report for a recommendation pertaining to this program element.

Section 2.3 Illicit Discharge Detection and Elimination

Part 6.(a)(3) of the Permit requires the Harbors Division to develop, implement, and enforce a program to detect and eliminate illicit discharges that includes the minimum elements specified in the Permit. Deficiencies with all three minimum elements are detailed below.

2.3.1. Failure to Establish Enforcement Procedures. Part 6.(a)(3)(A) of the Permit requires the Harbors Division to establish rules, ordinances, or other regulatory mechanisms, including *enforcement procedures* and actions, that prohibit non-storm water discharges into the permittee's Small MS4s. As a regulatory mechanism, the Harbors Division has incorporated language into its Tenant Revocable Permits (RPs) and lease agreements which requires compliance with all environmental laws. However, the Harbors Division could not demonstrate that it had established procedures for enforcement of the terms and conditions of the RPs and lease agreements. Specifically, Harbors Division personnel stated that formal enforcement procedures have not been documented, nor were any examples of past formal enforcement action provided. *One means of documenting enforcement procedures is to develop a written enforcement response plan (ERP). An ERP typically provides a range of enforcement tools and explains how and when to use each tool with regard to the seriousness of the illicit discharge. With repeat violations of a permittee's chosen regulatory mechanisms, an ERP specifies taking progressively stricter responses as needed to achieve compliance. Enforcement tools commonly range from verbal warnings, written notices, citations with monetary fines, stop work orders (for construction, etc.), abatement by the permittee with re-imbursement by the responsible party, referral to the regulatory agency, or other measures.* <u>The Harbors Division must establish adequate enforcement procedures as required by Part 6.(a)(3)(A) of the Permit.</u> It should be noted that there are similar permit requirements to develop enforcement procedures in association with the Construction Site Runoff Control and Post-Construction Storm Water Management program elements. These program elements are addressed in Section 2.4.2 and 2.5.2, respectively.

2.3.2. Failure to Develop Procedures to Detect and Eliminate Illicit Discharges. Part 6.(a)(3)(B) of the Permit requires the Harbors Division to develop procedures to detect and eliminate illicit discharges into the permittee's Small MS4s. The Harbors Division uses preventive measures consisting of dry weather and wet weather field observations. As explained by Harbors Division personnel, at a frequency of two times per year a small boat is used to conduct dry weather visual inspection of outfalls under low tide conditions. However, Harbors Division personnel stated that the only records of the inspections are notes made on a copy of the outfall location plan map. As stated, these maps are only maintained until annual reporting is complete and are then discarded. As a result, no records are maintained to document that visual inspections are conducted at the specified frequency. In addition, the Harbors Division had not developed an effective method of actively identifying and eliminating illicit discharges. Harbors Division personnel stated that to date they have not identified any illicit discharges during the dry weather visual inspections. *In part, many of the outfalls might not be visible because of their location under the piers, even during low tide conditions. In these*

instances, up-gradient access points in the MS4 should be used for dry weather screening.

Furthermore, if dry weather flows are observed, the Harbors Division does not have an effective means of identifying the source of the discharge. Specifically, outfall location plan maps have been developed, but many of the contributing inlets, connections, and drainage areas have not been delineated on the maps. Ideally, dry weather screening of outfalls or targeted locations within the MS4 would utilize a drainage infrastructure map as a base-level tool for identifying and investigating the source of illicit pollutant sources. Harbors Division personnel explained that they are planning a project to inventory the Harbors Division assets with the use of geographic information system (GIS) mapping. *It is recommended that the Harbors Division take advantage of this mapping process to begin developing a drainage infrastructure map that includes outfalls, contributing inlets, connections, and drainage areas. Ultimately, visual inspection and field verification activities are needed to ensure that the drainage infrastructure map is correct. The Harbors Division should also formalize and document a more systematic method of detecting and eliminating illicit discharges. The written procedures or methods could utilize up-gradient dry weather screening access points where appropriate and tools such as drainage infrastructure maps.* The Harbors Division must develop procedures to detect and eliminate illicit discharges into the permittee's Small MS4s as required by Part 6.(a)(3)(B) of the Permit.

2.3.3. Failure to Compile a List of Non-Storm Water Discharges. Part 6.(a)(3)(C) of the Permit requires the "compilation of a list of non-storm water discharges or flows that are considered to be significant contributors of pollutants to the system and measures to be taken to prevent these discharges…." Part 6.(a)(3)(A) of the Permit requires the Harbors Division to prohibit all non-storm water discharges that are not from allowable sources. The Honolulu Harbor SWMP, Section 3, states that the Harbors Division's list of non-storm water discharges is compiled by the Environmental Section, which, "annually collects reports of reported apparent storm water quality violations from the Marine Traffic Control Center, and includes the list in the annual reports." The EPA Audit Team reviewed a number of the Harbors Division annual reports and determined that the reported Marine Traffic Control Center Activity Logs include many issues which do not pertain to storm water because the incidents occurred in offshore locations. Moreover, the reported list is primarily a spill and incident log rather than a list of non-storm water discharges that are potential pollutant sources.

Site conditions observed during the audit suggest that Harbors Division personnel have not properly identified certain non-storm water flows as potential pollutant sources. At the Honolulu Harbor - Kapalama Military Reservation, for example, the EPA Audit Team observed a number of tenants actively pressure-washing equipment in outdoor locations, and Harbors Division personnel did not demonstrate any response to these activities while on-site. At Honolulu Harbor – Pier 34, a Harbors Division maintenance crew was observed washing out a street sweeper bin adjacent to a storm drain inlet near the Oahu Lumber and Hardware Company (refer to Photographs 1 and 2). This location was also visited earlier the same day (December 10, 2008) with Harbors Division personnel,

during which time there was no mention or acknowledgement that the site was used for equipment washing. During the previous site visit, evidence of sweeper washout activity had been observed, including standing water and sweeper tailings near the storm drain inlet (refer to Photographs 3 and 4). Although a form of inlet protection had been installed (refer to Photograph 4), any wash water and associated pollutants passing through or around the inlet protection fabric and subsequently entering the inlet would be considered an illicit discharge. This is not an adequate location for equipment washing because BMPs were not implemented for proper disposal of sweeper wash water and debris. As a result, there was an imminent potential to discharge wash water and sweeper tailings to the storm drain inlet. The Harbors Division must implement BMPs for proper disposal of sweeper wash water and debris to eliminate the illicit discharge as required by Part 6.(a)(3) of the Permit. Furthermore, the Harbors Division must compile a list of non-storm water discharges or flows that are considered significant contributors of pollutants to the system and measures to be taken to prevent these discharges. *As part of the list development, the Harbors Division should assess all non-storm water discharges or flows, assess their significance as a pollutant source, and implement adequate BMPs to prevent illicit non-storm water discharges and the contribution of pollutants to the Harbors Division's Small MS4s. The list should also be used to educate and leverage Harbors Division field staff, particularly those who have direct contact with the MS4s, in detecting and eliminating illicit discharges. Finally, the equipment washing observed near the Oahu Lumber and Hardware Company was not identified in the Honolulu Harbor SWMP and is the type of area and activity that should be controlled as part of the Harbors Division's Pollution Prevention/Good Housekeeping Program. It is recommended that the Harbors Division confer with DOH on the how to appropriately address Harbors Division operation and maintenance areas such as this.*

Section 2.4 Construction Site Runoff Control

Part 6.(a)(4) of the Permit requires the Harbors Division to develop, implement, and enforce a program for construction site runoff control that includes the minimum elements specified in the Permit. A deficiency pertaining to the overall scope of the program is provided in Section 2.4.1. Specific deficiencies with four of the six minimum elements are detailed in Sections 2.4.2 through 2.4.4.

2.4.1. Failure to Develop a Program to Regulate Private Construction Activities.

Part 6.(a)(4) of the Permit requires the Harbors Division to develop, implement, and enforce a program to reduce pollutants in storm water runoff entering the permittee's Small MS4s from construction activities disturbing one acre or more, including those activities which are part of a larger common plan of development or sale. The Harbors Division does not provide oversight of projects undertaken by its tenants, and therefore it had not developed or implemented a construction site runoff control program to oversee private (e.g., tenant) construction activities. Harbors Division personnel explained that the City and County of Honolulu (hereafter, CCH or City) maintains building permitting authority on Harbors Division property, including the permittee's Small MS4s, and therefore provides construction oversight functions for all private construction. However, the Harbors Division does not have an analogous program and does not appear to have

any involvement in the CCH construction oversight functions. Consequently, the Harbors Division does not regulate or oversee private construction activities as required by Part 6.(a)(4) of the Permit. The Harbors Division must develop, implement, and enforce a construction site runoff control program that applies to all construction activities regardless of who owns or operates the construction site.

2.4.2. Failure to Establish Adequate Regulatory Mechanisms and Enforcement Procedures. Part 6.(a)(4)(A) of the Permit requires the Harbors Division to establish "rules, ordinances, or other regulatory mechanisms, including enforcement procedures and actions, *that require erosion and sediment controls* [emphasis added]." Part 6 of the Permit requires the Harbors Division to develop, implement, and enforce a storm water management plan. Pursuant to these requirements, the Honolulu Harbor SWMP, Section 4, Construction Site Storm Water Runoff Control Minimum Control Measure, states that the Harbors Division "requires that prior to new connections or discharge to the regulated drainage system, an application for a permit to connect and/or discharge must be made. Harbors also routinely notifies new *tenants* of the requirement to apply for a permit [emphasis added]." In contrast to Section 2.4.1, these statements appear to acknowledge the need for tenant oversight. However, the connection and discharge permitting system is not being actively used. Harbors Division personnel stated that only three connection and/or discharge permits have been issued in the history of the permittee's storm water management program. As a result, the Harbors Division had not implemented the mechanism specified in the Honolulu Harbor SWMP to adequately regulate and track construction activities occurring in areas served by its Small MS4s. An example connection and/or discharge permit application form is provided as Exhibit 1.

As another regulatory mechanism, the Harbors Division has incorporated into its Tenant RPs and lease agreements language that requires compliance with all environmental laws. However, Harbors Division personnel stated that they do not require the use of a construction BMP specifications manual or the inclusion of standard BMP notes on construction project plans. Although the use of erosion and sediment controls is required by Part 6.(a)(4)(A) of the Permit, the Harbors Division provided no documentation that explicitly requires the use of such controls.

In addition, the Harbors Division could not demonstrate that it had established procedures for enforcement of the terms and conditions of the RPs and lease agreements. Specifically, Harbors Division personnel stated that formal enforcement procedures have not been documented. As a result, the Harbors Division had not implemented a mechanism to adequately regulate and track construction activities occurring in areas served by its Small MS4s. Refer to Section 2.3.1 of this report for recommendations pertaining to the development of enforcement procedures. The Harbors Division must establish rules, ordinances, or other regulatory mechanisms, including enforcement procedures and actions, that require erosion and sediment controls in accordance with Part 6.(a)(4)(A) of the Permit.

2.4.3. Failure to Develop Requirements for BMP Implementation. Part 6.(a)(4)(B) of the Permit requires the Harbors Division to develop "requirements for construction site

operators to implement appropriate erosion and sediment control best management practices." Part 6.(a)(4)(C) of the Permit requires the Harbors Division to develop "requirements for construction site operators to control waste such as discarded building materials, concrete truck washout, chemicals, litter, and sanitary waste at the construction site that may cause adverse impacts to water quality." As discussed in Section 2.4.2 of this report, the Harbors Division had not implemented a mechanism that explicitly requires the use of erosion and sediment controls, or a mechanism which adequately regulates construction activities occurring in areas served by its Small MS4s. Likewise, the Harbors Division provided no documentation that explicitly requires the use of BMPs to control waste and other potential pollutant sources. The Harbors Division must develop requirements for construction site operators to implement appropriate erosion and sediment control BMPs, and BMPs appropriate for the control of waste and other potential pollutant sources in accordance with Part 6.(a)(4)(B) and Part 6.(a)(4)(C) of the Permit.

2.4.4. Failure to Establish Procedures for Site Inspection and Enforcement of Control Measures. Part 6.(a)(4)(F) of the Permit requires the Harbors Division to develop "procedures for site inspection and enforcement of control measures." The Honolulu Harbor SWMP, Section 4, Construction Site Storm Water Runoff Control Minimum Control Measure, states that Harbors Division "personnel including Marine Cargo Specialists and Construction Inspectors *may note* implementation of BMPs and contractor waste management practices, and have authority to take action in the event of non-compliance [emphasis added]." The Honolulu Harbor SWMP does not provide additional details on the permittee's construction site inspection and enforcement procedures. Although the Harbor's Division does not regulate or oversee *private* construction activities as described in Section 2.4.1 of this report, Harbors Division personnel explained that a total of four *public* construction inspectors are staffed, each having inspection responsibilities confined to one of the four islands where the Harbors Division operates. In other words, a single public project inspector is responsible for Oahu and the permittee's three Small MS4s. Harbors Division personnel further explained that the scope of the inspection is not specific to storm water issues. Instead, the public project inspections also pertain to general construction, infrastructure, and building with documentation using a checklist that covers all of these items. Although Harbors Division personnel provided this information to describe an informal public construction site inspection method, no formal construction site inspection and enforcement procedures have been documented. *One means of documenting site inspection and enforcement procedures is to develop a written procedure. CCH, for example, has developed a document entitled* Inspection and Enforcement Program for Construction Sites *(dated January 2000), which describes the City's program, including details such as inspection scope, frequency, documents, procedures, and enforcement actions.* The Harbors Division must develop procedures for public and private site inspection and enforcement of control measures as required by Part 6.(a)(4)(F) of the Permit.

Section 2.5 Post-Construction Storm Water Management

Part 6.(a)(5) of the Permit requires the Harbors Division to develop, implement, and enforce a program for post-construction storm water management that includes the minimum elements specified in the Permit. At the time of the audit, the Harbors Division did not have a Post-Construction Storm Water Management Program. A corresponding audit finding pertaining to the overall program and two of the three minimum elements is provided in Section 2.5.1; a deficiency with the third minimum element is detailed in Section 2.5.2. Refer to Section 6.4 of this report for a recommendation pertaining to the development of a Post-Construction Storm Water Management Program.

2.5.1. Failure to Develop a Post-Construction Storm Water Management Program. Part 6.(a)(5) of the Permit requires the Harbors Division to develop, implement, and enforce a program to reduce pollutants in storm water runoff entering the permittee's Small MS4s from new development and redevelopment projects that disturb greater than or equal to one acre, including projects that are part of a larger common plan of development or sale. Part 6.(a)(5)(B) of the Permit requires the Harbors Division Post-Construction Storm Water Management Program to include structural and/or nonstructural BMPs to minimize water quality impacts and attempt to maintain pre-development runoff conditions. During questioning concerning the permittee's post-construction efforts, Harbors Division personnel stated that structural BMPs/treatment controls have not been considered or installed in any of the areas served by its Small MS4s. Likewise, the Harbors Division had not developed procedures for long-term operation and maintenance of BMPs as required by Part 6.(a)(5)(C) of the Permit. Harbors Division personnel stated that the Division's Post-Construction Storm Water Management Program mainly consists of implementing good housekeeping practices upon completion of a construction project. Good housekeeping practices do not qualify as a post-construction BMP because such practices are specifically required as part of the Pollution Prevention/Good Housekeeping Minimum Control Measure. It should be noted that Section 5 of the Honolulu Harbor SWMP claims the use of additional post-construction measures, including preservation of undeveloped areas, consideration of porous surface treatments, preservation of naturally occurring flat to low slopes, and providing durable drainage systems sized to convey peak flows. Harbors Division personnel, however, did not explain or appear knowledgeable of these practices and did not provide any examples of their use in practical application. Moreover, site conditions indicated that the good housekeeping measures were not effective.

The EPA Audit Team visited two completed or nearly completed construction projects where housekeeping was poor or visibly inadequate to minimize water quality impacts and maintain pre-development runoff conditions as required by the Permit. Because the Harbors Division had not implemented structural BMPs/treatment controls or other post-construction measures at completed projects in any of the areas served by its Small MS4s, the EPA Audit Team visited two project sites with greater than once acre of disturbed area, where the construction had occurred after the NGPC effective date (May 19, 2003) and where the post-construction requirements in Part 6.(a)(5) of the Permit would therefore apply. The visited sites were the following:

Public Site: Project No. 10017 located at Kalaeloa Barbers Point Harbor, Pier P-7 in Kapolei, Oahu, HI

Project No. 10017 is a completed Harbors Division improvement project consisting of the construction of a new pier and storage yard. Harbors Division personnel provided conflicting information regarding when the construction activities had occurred. The Harbors Division Harbor Agent stated that the project had been constructed in the 2003 to 2004 time frame, whereas other Harbors Division personnel estimated that the project had been completed in late 2005 or early 2006. As noted, the project includes the addition of a new pier (Pier P-7) and a new storage yard (Storage Yard S-6), an area that extends approximately 800 feet along the harbor to the northeast of Pier 6 and approximately 250 feet inland. Approximately 3 acres of the site consisted of the addition of impervious surface area (refer to Photograph 5), and approximately 1.5 acres of the site consisted of a disturbed area associated with lighting improvements (refer to Photograph 6). Final stabilization had not been achieved at the area associated with the lighting improvements and sediment had been tracked onto the adjacent impervious pier surface (refer to Photographs 7 and 8). Sediment and/or miscellaneous tenant product and debris was observed along the cement pump railway, immediately adjacent to the trench drain that serves the pier (refer to Photographs 9 and 10), and inside the trench drain itself (refer to Photographs 11 and 12). In addition, pavement discoloration and/or spill residues were present near the crane site (refer to Photographs 13 and 14). The trench drain leads to an outlet at the northeast corner of Pier P-7 that discharges to Kalaeloa Barbers Point Harbor and where scouring and pavement discoloration were observed (refer to Photographs 15 and 16). Based on these site conditions, the project would have benefitted from the inclusion of structural and/or nonstructural post-construction BMPs to minimize water quality impacts and attempt to maintain pre-development runoff conditions.

Public Site: Project No. HC 10185 located at Honolulu Harbor, Pier 51B, in Honolulu, Oahu, HI

Project No. HC 10185 is an active Harbors Division project consisting of reconstruction of the Pier 51B Container Yard with utility (e.g., fire protection water, electrical service) and impervious pavement improvements. Harbors Division personnel explained that the project includes 21 phases and that much of the work has already been completed. The current site work involves electrical and lighting upgrades. Prior to the audit, the Harbors Division provided the audit team with a construction site inventory, which lists the site acreage as 13 acres (refer to Exhibit 2). As part of the project, a number of trench drains had been installed for storm drainage purposes (refer to Photographs 17 and 18). At one location in particular, filter fabric had been installed under the inlet grate but did not extend across the entire length of the trench drain. Therefore, the fabric was not protective of the inlet. Black-colored debris was observed being carried by the wind along the impervious surfaces of the pier. Several inches of debris and/or miscellaneous tenant product had accumulated on the filter fabric and inside the trench drain itself (refer to Photographs 18, 19, and 20). Harbors Division personnel stated that the debris was

likely rubber tire material resulting from the heavy equipment and tractor trailer traffic at the Container Yard.

Due to the high level of vehicle and equipment traffic, the land use at the Container Yard is similar to a roadway or parking lot land use type. Common pollutants typically associated with the roadway or parking lot land use include heavy metals, oil and grease, and trash and debris (refer to Exhibit 3, an excerpt from the *County of San Diego Standard Urban Storm Water Mitigation Plan for Land Development and Public Improvement Projects*, dated May 18, 2007). Because of these potential pollutants and the observed site conditions, the Pier 51B Container Yard project would have benefitted from the implementation of structural and/or nonstructural post-construction BMPs to minimize water quality impacts and attempt to maintain pre-development runoff conditions. Although the project qualifies as a new development or redevelopment project disturbing greater than or equal to one acre, the Harbors Division had not selected or implemented post-construction BMPs that are effective at controlling or treating the pollutants associated with the project.

Moreover, construction at the Harbors Division's Small MS4s had been occurring during the current NGPC term and following the NGPC effective date (May 19, 2003) without a structured Post-Construction Storm Water Management Program in place, and it is likely that the post-construction requirements in Part 6.(a)(5) of the Permit would apply to additional projects. The Harbors Division must ensure that all current and future land development projects are reviewed for inclusion of post-construction BMPs and that subsequent project plans are adequately conditioned and implemented. This measure will become increasingly imperative because of the anticipated redevelopment of the Kapalama Military Reservation. Furthermore, the Harbors Division must develop, implement, and enforce a program to reduce pollutants in storm water runoff entering the permittee's Small MS4s from new development and redevelopment projects that disturb greater than or equal to one acre including projects that are part of a larger common plan of development or sale as required by Part 6.(a)(5) of the Permit.

2.5.2. Failure to Establish Adequate Regulatory Mechanisms and Enforcement Procedures. Part 6.(a)(5)(A) of the Permit requires the Harbors Division to establish "rules, ordinances, or other regulatory mechanism[s], including enforcement procedures and actions, that address post-construction runoff from new development and redevelopment projects." The Honolulu Harbor SWMP, Section 5, Post-Construction Storm Water Management in New Development and Redevelopment Minimum Control Measure, does not provide a description of how the Harbors Division is attempting to meet the requirements specified in Part 6.(a)(5)(A) of the Permit. Furthermore, Harbors Division personnel did not provide any documentation that explicitly addressed post-construction runoff from new development and redevelopment projects, or that pertained to the Harbors Division's Post-Construction Storm Water Management Program in general. As a result, the Harbors Division did not demonstrate compliance with Part 6.(a)(5)(A) of the Permit. The Harbors Division must establish rules, ordinances, or other regulatory mechanisms, including enforcement procedures and actions, that address post-

construction runoff from new development and redevelopment projects as required by Part 6.(a)(5)(A) of the Permit.

Section 2.6 Pollution Prevention/Good Housekeeping

Refer to Section 6.3 of this report for a recommendation pertaining to this program element.

Section 2.7 Measurable Goals and Program Effectiveness

Part 6.(b) of the Permit requires the Harbors Division to develop measureable goals to gauge permit compliance and program effectiveness for each Minimum Control Measure identified in the Permit. The Harbors Division must select measureable goals using an integrated approach that fully addresses the requirements and intent of the Minimum Control Measure. Pursuant to this requirement, the Honolulu Harbor SWMP states that "goals by which program effectiveness and compliance with the conditions of the Notice of General Permit will be assessed and are established herein for each minimum control measure. An annual report summarizing actions taken and progress toward the yearly goals of each minimum control measure shall be provided to the Department of Health…" However, the Honolulu Harbor SWMP does not clearly define the Harbors Division's goals.

The Year 2007 Annual Storm Water Progress Report for the Honolulu Harbor Small Municipal Separate Storm Sewer System, dated January 2008 (hereafter, Honolulu Harbor 2007 Annual Report), Section 3, Assessment of the SWMP and progress towards implementing each minimum control measure, provides "executable requirements of the Storm Water Management Plan" that are presumably intended to be used as goals or standards to assess program effectiveness. However, the Harbors Division's executable requirements lack substance and often contain very similar language for each of the Minimum Control Measures. For example, the executable requirements for each Minimum Control Measure state that annual SWMP effectiveness reports will be reviewed, but does not define what the effectiveness reports are. It should also be noted that the executable requirement for the Construction Site Storm Water Runoff Control Minimum Control Measure discusses a review of storm drain applications and permits. Section 3.d of the SWMP goes on to explain that "storm drain applications have been reviewed by consultants or by Harbors Division, comments [have been] made and revisions incorporated into applicant Storm Water Pollution Control Plans." As discussed in Section 2.4.2. of this report, however, the connection and discharge permitting system is not being actively used. Harbors Division personnel stated that only three connection and/or discharge permits have been issued in the history of the permittee's storm water management program.

In summary, the Harbors Division had not articulated overarching outcomes that it is attempting to achieve in its storm water management program. Furthermore, the Harbors Division had not developed measureable goals that can be effectively used to quantify and track progress in achieving program outcomes and requirements. The Harbors

Division must develop adequate measureable goals to gauge permit compliance and program effectiveness for each Minimum Control Measure, and must select measureable goals using an integrated approach that fully addresses the requirements and intent of the Minimum Control Measure as required in Part 6.(b) of the Permit.

Section 3.0 Summary Evaluation of the Audit and Environmental Management System Supplemental Environmental Project

In order to settle a prior Clean Water Act enforcement matter, EPA and DOH negotiated a Consent Decree (Civil Action No. CV05-00636-HG-KSC) with HDOT, which was entered by the U.S. District Court on March 31, 2006. As part of the Consent Decree, HDOT is required to implement a number of Supplemental Environmental Projects (SEPs), one of which applies to the Harbors Division. The project is referred to as the Audit and Environmental Management System (EMS) project. This audit included a partial evaluation of HDOT's compliance with the EMS requirements at its Harbors Division, as set out in Appendix E to the Consent Decree.

Appendix E of the Consent Decree describes the SEP and obligates HDOT to develop and implement a *Compliance-Focused Environmental Management System* (EMS) that conforms to identified standards for the operations and facilities of the HDOT Airports, Harbors, and Highways Divisions including, at a minimum, 38 individual HDOT facilities located throughout the Hawaiian Islands. The SEP obligates a total expenditure of not less than $1,062,500. Mr. Chris Takeno, HDOT's Environmental Manager, serves as the EMS project manager and participated in an interview during the audit.

The EMS process is comprised of the following elements: (1) an initial audit of applicable facilities, (2) staff training, (3) submission of an EMS manual, (4) a final audit and submission of a final audit report, and (5) corrective actions, as needed. The EMS process is intended to ensure, among other things, the implementation of best management practices at HDOT baseyards and maintenance facilities; however, the requirements at Appendix E to the Consent Decree also specify that the Compliance and Best Management Practices Checklists developed as part of the EMS manual must also be applied to tenants and other users at Honolulu Harbor.

At the time of the audit, Mr. Takeno stated that HDOT had completed items 1 through 3 above and were in the process of securing a contract with a vendor to initiate item 4, Final Audit. EMS manuals had been developed for each HDOT Division. The Harbors Division EMS Manual addresses a total of seven facilities; two of which are located on Oahu. Mr. Takeno stated that training had been provided to the Harbors Division site supervisors and these supervisors had since been completing quarterly inspections of their applicable facilities. As evidenced by the site conditions at the Honolulu Harbor baseyard and Kalaeloa Barbers Point Harbor, the EMS Manual and the quarterly inspections appeared to be effective at reducing the potential for storm water pollution at this specific facility. However, based upon both the discussion of EMS SEP implementation as well as other audit activities, it is apparent that the Harbors Division has thus far not complied with the program's requirements to apply the Compliance and Best Management Practices Checklists to tenants and other users at Honolulu Harbor.

It should be noted that the audit team did not attempt to assess the adequacy or completeness of the completed EMS Manuals or training activities or adherence to required deadlines.

Section 4.0 Summary of the Harbors Division Tenant Inspections

The EPA Audit Team conducted 35 individual inspections of tenants located on the Harbors Division's property and/or served by the Harbors Division's Small MS4s. Thirteen of these tenants had filed a Notice of Intent (NOI) for coverage under the Industrial General Permit. One tenant was regulated by an individual NPDES permit issued by DOH, and 21 tenants are, at present, regulated solely under provisions contained in their lease agreements with the Harbors Division. The purposes of the tenant inspections were (1) to assess the adequacy, appropriateness, and maintenance of best management practices (BMPs) employed by tenants to prevent and reduce storm water pollution, and (2) to gauge the overall effectiveness of the Harbors Division's tenant oversight activities. The inspections were conducted by three teams of inspectors with the participation of Harbors Division personnel. One Harbors Division-owned and -operated facility was also inspected for MS4 program evaluation purposes.

Reports for the tenant inspections will be separately forwarded to the respective facilities with a copy provided to the Harbors Division.

Section 5.0 Summary Evaluation of the Harbors Division's Storm Water Monitoring Activities

The Permit regulates Phase II MS4s by requiring implementation of the six minimum control measures. As such, the Permit does not contain *immediate* monitoring requirements and the Harbors Division does not conduct water quality monitoring activities. Some MS4 permits contain storm water monitoring provisions that require water quality monitoring to establish baseline water quality conditions; determine the quality of discharges from different tenant activities, land use categories, or sub-watersheds; measure the effectiveness of structural BMPs; or to participate in regional watershed monitoring efforts to track water quality trends.

Discharges from the Harbors Division MS4s consist of storm water runoff and certain non-storm water discharges, which discharge directly or indirectly to the marine waters of each respective harbor. As previously discussed in Section 1.1 of this report, a number of the receiving water bodies are identified as impaired waters under Section 303(d) of the Clean Water Act as follows:

1. The Honolulu Harbor and shore area from Honolulu Waterfront to Aloha Tower is identified as a Low Priority, Category 5, water in the Clean Water Act, Section 303(d) list of impaired water bodies and a Total Daily Maximum Load (TMDL) is needed. The Honolulu Harbor and shore area from Honolulu Waterfront to Aloha Tower is presently identified as not attaining the applicable water quality criteria for trash and turbidity.

2. The Honolulu Harbor nearshore waters from approximately Sand Island channel to Waikiki Beach are identified as a Low Priority, Category 5, water in the Clean Water Act, Section 303(d) list of impaired water bodies and a TMDL is needed. The Honolulu Harbor nearshore waters from approximately Sand Island channel to Waikiki Beach are presently identified as not attaining the applicable water quality criteria for enterococci, total nitrogen, nitrite+nitrate nitrogen, total phosphorus, turbidity, nutrients, pathogens, metals, and suspended solids.

3. Mamala Bay, offshore of Sand Island, is identified as a Low Priority, Category 5, water in the Clean Water Act, Section 303(d) list of impaired water bodies and a TMDL is needed. Mamala Bay, offshore of Sand Island is presently identified as not attaining the applicable water quality criteria for enterococci, total nitrogen, and chlorophyll-a.

4. The Honolulu Harbor and shore area at Kewalo Basin is identified as a Low Priority, Category 5, water in the Clean Water Act, Section 303(d) list of impaired water bodies and a TMDL is needed. The Honolulu Harbor and shore area at Kewalo Basin is presently identified as not attaining the applicable water quality criteria for total nitrogen, nitrite+nitrate nitrogen, total phosphorus, turbidity, nutrients, suspended solids, and trash.

5. The Kewalo Basin is identified as a Low Priority, Category 5, water in the Clean Water Act, Section 303(d) list of impaired water bodies and a TMDL is needed. The Kewalo Basin is presently identified as not attaining the applicable water quality criteria for total nitrogen, total phosphorus, turbidity, and chlorophyll-a.

6. The Barbers Point Harbor is identified as a Category 3, water in the Clean Water Act, Section 303(d) list of impaired water bodies and has not been prioritized.

Part 4.(b)(6) of the Permit states "if the small municipal separate storm sewer system discharges storm water and other allowable non-storm water to a state water for which a total maximum daily load has been approved by the EPA, the permittee shall develop and submit an implementation and *monitoring* plan....The permittee shall incorporate the total maximum daily load into the small municipal separate storm sewer system's storm water management plan...[emphasis added]." *Because the development of TMDLs is imminent, the Harbors Division should strongly consider becoming actively engaged in TMDL preparedness and planning efforts, or other activities beyond what is presently required of it under the current Permit. The Harbors Division should actively follow and participate in the TMDL process and engage the HDOT Highways Division, the City of Honolulu, DOH, and other stakeholders when determining expectations, implementation routes and the need for and type of targeted BMPs which are effective for the pollutants of concern. Because of the potential ramifications of future TMDL requirements and Waste Load Allocations (WLAs), the Harbors Division may benefit from the development of a monitoring program to position itself with an assessment of pollutant contributions and potential impacts from the Harbors Division's discharge, and receiving water quality. See Section 7 of this report for a recommendation pertaining to the inclusion of storm water monitoring provisions in future permitting actions.*

Section 6.0 Recommendations for Improved Storm Water Management by the Harbors Division

This section of the report provides recommendations for how the Harbors Division might improve the design and implementation of its current Storm Water Management Program elements. This section also includes identified program deficiencies that represent areas of concern for successful program implementation. For emphasis, key recommendation statements are presented in *italic*.

Summary Recommendation Regarding Development and Implementation of the Harbors Division's Storm Water Management Program. MS4 programs, by necessity, involve numerous divisions and personnel within an organization. Therefore, successful implementation of a comprehensive MS4 program relies upon strong inter-departmental coordination and cooperation by its personnel. The Harbors Division does not currently staff a SWMP Administrator/Coordinator position, or someone that is specifically tasked with coordinating the various components of its Storm Water Management Program and ensuring regulatory compliance. Currently, the Storm Water Management Program elements are managed by the Harbors Division's Environmental Section. The Environmental Section consists of two staff members whose duties involve all facets of the Harbors Division's environmental compliance activities. As a result, the Harbors Division appeared to lack the staffing resources needed for successful implementation of a comprehensive MS4 program. *It is recommended that the Harbors Division re-evaluate the resources that are currently allocated to the MS4 program and its ability to: (1) develop and implement a comprehensive MS4 program, and (2) unify the MS4 program through organizational control. Dedicated storm water staff possessing specialized water quality skills may be needed to ensure the MS4 program is fully effective.*

Section 6.1 Public Education and Outreach

6.1.1. Need for Improved Methods to Require Appropriate Action by Tenants. Because the Permit authorizes the discharge of storm water runoff and certain non-storm water discharges to marine waters from the Harbors Division's three Small MS4s, the Harbors Division is ultimately responsible for tenant activities that may contribute pollutants to the Small MS4s and receiving waters, and thus proper oversight of tenants is necessary.

The Honolulu Harbor SWMP, Section 1, states that the Harbors Division's "main action of the public education and outreach minimum control measure during the previous NGPC term has been to annually mail the Tenant Self-Inspection (TSI) form to all tenants.... effectiveness of the TSI mailing will be assessed by the responses provided by the tenant public, and comments received by Harbors Division." Harbors Division personnel further explained that they continue to rely on TSI mailings but have not

performed detailed analysis of the collected data to help guide their public education and outreach activities. *The Harbors Division should reevaluate the effectiveness of the TSI mailing as a means to engage and educate its tenant stakeholders about pollutant sources that may be addressed through outreach activities.* For example, educational materials that accompany the TSI list a number of suggested pollution prevention and good housekeeping practices and state "do not use water to wash down areas." However, at the Honolulu Harbor - Kapalama Military Reservation, the EPA Audit Team observed a number of tenants actively pressure washing equipment in outdoor locations. This observation suggests that the TSI and distribution of educational materials may not achieve the desired results. *It is recommended that the Harbors Division pursue more aggressive education and outreach activities as a starting point in taking corrective action for potential pollutant sources such as equipment washing. Ultimately, the Harbors Division's Public Education and Outreach Program should result in behavioral change that leads to tangible water quality benefits. Because the Harbors Division is responsible for tenant activities that may contribute pollutants to the Small MS4s and receiving waters, a tenant oversight program that expands beyond education and outreach is warranted.*

Section 6.2 Public Involvement/Participation

6.2.1. Need for Improved Methods of Obtaining Public Involvement/Participation. Part 6.(a)(2) of the Permit requires the Harbors Division to include users of the permittee's Small MS4s in developing, implementing, and reviewing the storm water management plan. The Honolulu Harbor SWMP, Section 2, Public Involvement/Participation Minimum Control Measure, states that the Harbors Division has invited public involvement/participation by posting the SWMP on the Harbors Division Web site. However, the Honolulu Harbor 2007 Annual Report, Section 3.a, states that no comments were received in response to the Web site posting of the SWMP. Harbors Division personnel further explained that they have had difficulty obtaining any sort of public involvement/participation. *As a result, the Harbors Division should reevaluate the effectiveness of the Web site as the only outlet for soliciting public comments regarding the SWMP. It is recommended that the Harbors Division pursue options to leverage the participation of the tenants that are served by the Small MS4s and therefore are affected by the Harbors Division Storm Water Management Programs. Many of the larger tenants likely staff corporate environmental programs personnel that could provide knowledgeable and insightful guidance in developing, implementing, and reviewing the SWMP. Options to leverage the participation of tenants could include routing the SWMP for review by user groups and stakeholders (such as tenant environmental programs personnel) and holding workshops or meetings with such groups.*

Section 6.3 Pollution Prevention/ Good Housekeeping

6.3.1. Need for an Improved Record-Keeping System to Schedule and Document Storm Drainage System Maintenance Activities. Two organizational divisions within the Harbors Division are tasked with maintenance of the storm drainage system. Sanitation and Groundskeeping Unit personnel are responsible for storm drainage system maintenance at Kalaeloa Barbers Point Harbor. Wharf Maintenance Unit personnel are responsible for storm drainage system maintenance at Honolulu Harbor and Kewalo Basin. As explained by Harbors Division maintenance personnel, they do not conduct scheduled inspections or preventive debris removal activities. Instead, the Harbors Division Harbor Agent/Master notifies the applicable maintenance personnel when poor drainage or other issues are observed. Therefore, the maintenance program does not utilize drainage system cleaning to prevent waste discharges during precipitation events.

As evidenced by site conditions observed during the audit, there is a need for improved storm drainage system maintenance. At Piers 5 and 6 in Kalaeloa Barbers Point Harbor, for example, tenant product had been spilled adjacent to a trench drain (refer to Photographs 21 and 22) and Harbors Division personnel stated that the product was likely a sand material. Moreover, debris and/or tenant product had accumulated in the trench drain to nearly the top of the inlet grate in some areas (refer to Photograph 23). Refer to Section 2.5.1 of this report for additional details regarding debris accumulation in trench drains at Kalaeloa Barbers Point Harbor and at Pier 51B of Honolulu Harbor.

Based on the observed site conditions, storm drainage system maintenance had not been conducted to prevent the discharge of pollutants from these locations. As a result, there was a potential for pollutant discharge with the next storm event. The next storm occurred December 11, 2008, when a heavy rainstorm caused significant flooding on Oahu and brought heavy rains to areas of the Harbors Division facilities, including Honolulu Harbor, Kalaeloa Barbers Point Harbor, and Kewalo Basin. Although precipitation events are temporally and spatially sporadic on Oahu, the storm was reported to have produced 14 inches of rain in a 12-hour time period on Oahu. Due to the magnitude of this storm event, much of the observed material was likely conveyed through the storm drainage system. *It is strongly recommended that the Harbors Division attempt to correct other similar site conditions, prior to the onset of a storm event, through frequent routine storm drainage system inspection and maintenance activities. The Harbors Division should also maintain an internal record-keeping system to schedule and document the maintenance activities performed on the storm drainage system (e.g., catch basins, storm drain inlets, open channels, and any structural controls). The resulting record-keeping process should be designed to readily enable the Harbors Division to demonstrate that it has performed scheduled inspection and maintenance in accordance with its self-developed maintenance schedule and with industry standard maintenance requirements.* It should be noted that Part 6.(a)(6) of the Permit requires the Harbors Division to develop, implement, and enforce an operation and maintenance program to prevent and reduce storm water pollution from Harbors Division activities including storm water system maintenance. *Therefore, where tenant*

operations deny or restrict storm drainage system maintenance by Harbors Division personnel, the Harbors Division should develop, implement, and enforce a program to require the tenants to conduct the scheduled maintenance.

Section 6.4 Post-Construction Storm Water Management

6.4.1. Need for Post-Construction Storm Water Management Program Development. Pursuant to Part 6.(a)(5) of the Permit, the Harbors Division will need to undergo significant program development for this Minimum Control Measure. The Center for Watershed Protection recently developed a manual, *Managing Stormwater in Your Community: A Guide for Building an Effective Post-Construction Program* (EPA Publication No. 833-R-08-001), that could be a valuable resource to the Harbors Division. The manual was developed specifically to assist communities in developing and building effective post-construction storm water programs. It outlines the major elements of a post-construction program, including the relationship between local land-use decisions and storm water management. It also covers critical elements like developing an ordinance and design criteria, implementing a plan review process, establishing a maintenance program, and tracking and evaluating the program. The Center has also developed eight related tools, including a self-assessment, a model ordinance, and a manual builder. The manual and tools can be downloaded at www.cwp.org/postconstruction.

Section 7.0 Recommendations for Possible Future NPDES Permit Modifications

Part 2 of the Permit states that the "director may require any permittee authorized by this general permit to apply for and obtain an individual permit." The Harbors Division's MS4s contain a variety of facilities, including container terminals, boat repair shops, and industries related to the transportation of goods. Many of these industries are potential pollutant sources and are independently subject to storm water requirements. Furthermore, the MS4s discharge directly or indirectly to the marine waters of each respective harbor, the potential pollutant sources are situated in close proximity to these receiving waters, and a number of the receiving water bodies are identified as impaired waters under Section 303(d) of the Clean Water Act. Based on these qualities and the nature of the Harbors Division's facilities as a port, the DOH may find that the Harbors Division is more appropriately regulated under an individual permit. If the DOH makes that determination, it may also wish to consider the following recommendations for possible future NPDES permit modifications that may aid in improved regulation and oversight of the Harbors Division's storm water management programs.

7.1. Need for Storm Water Monitoring Programs that will Aid Current and Future TMDL Efforts. Because a number of the receiving water bodies are identified as impaired waters under Section 303(d) of the Clean Water Act, the inclusion of storm water monitoring provisions in future permitting actions may be warranted. The NPDES General Permit for Small MS4s regulates Phase II MS4s by requiring implementation of the six minimum control measures. As such, the Permit does not contain *immediate* monitoring requirements and the Harbors Division does not conduct water quality monitoring activities. Some MS4 permits contain storm water monitoring provisions that require water quality monitoring to establish baseline water quality conditions; determine the quality of discharges from different tenant activities, land use categories, or sub-watersheds; measure the effectiveness of structural BMPs; or to participate in regional watershed monitoring efforts to track water quality trends. See Section 6 of this report for a recommendation pertaining to the ability of the Harbors Division to benefit from the development of a monitoring program to position itself with an assessment of pollutant contributions and potential impacts from the Harbors Division's discharge, and receiving water quality.

7.2. Need for Strengthened Industrial and Commercial Tenant Oversight. Because of the industrial and commercial nature of the Harbors Division's Small MS4s, the inclusion of more specific industrial and commercial tenant oversight requirements in future permitting actions may be warranted. The Harbors Division is ultimately responsible for tenant activities that may contribute pollutants to the Small MS4s and receiving waters. Therefore, the Harbors Division may benefit from a tenant oversight program that more aggressively regulates its industrial and commercial pollutant sources.

7.3. Need for more Prescriptive Permit Requirements. In addition to the recommendations presented in Sections 7.1 and 7.2 which call for additional or expanded program elements, the current Permit could be strengthened by including more prescriptive requirements in some areas. Specifically, the recommendations made in Section 6 of this report relate to identified program deficiencies where the Harbors Division might improve the design and implementation of its current Storm Water Management Programs. The deficiencies discussed in Section 6 of this report can also be viewed as areas where the Permit could be strengthened.

Appendix A
Audit Schedule

Agenda for MS4 Audit of Harbors Division (December 8–11, 2008)

Day	Time	Team 1 (MS4)	Teams 2 – 4 (Tenants)
Monday December 8, 2008	9:00 am - 10:30 am	Kick-off Meeting and Program Management Overview	
	10:30 am - 12:00 pm	Discussion of Illicit Discharge Detection and Elimination and Tenant Oversight programs (Office)	
	1:00 pm – 4:00 pm	Illicit Discharge Detection and Elimination (Field)	Tenant Inspections (Field)
Tuesday December 9, 2008	8:30 am - 4:30 pm	Construction Site Runoff Control and Post-Construction Development Control in New Development and Redevelopment (Office and Field)	Tenant Inspections (Field)
Wednesday December 10, 2008	8:30 am - 4:30 pm	Public Education, Public Participation, and Pollution Prevention/ Good Housekeeping	Tenant Inspections (Field)
Thursday December 11, 2008	8:30 am - 10:00 AM	EMS SEP, Measurable Goals, Significant Modifications, Annual Reports (Office)	Field Observations Related to the Storm Event
	10:30 am - 12:00 pm	Closing Conference	

Appendix B
Exhibit Log

Harbors I.D. No.: _____ (for office use) Harbor: _____ (NPDES) NPDES File No. _____ (DOH)

APPLICATION FOR A PRIVATE STORM DRAIN CONNECTION AND/OR DISCHARGE PERMIT TO THE STATE OF HAWAII HARBORS DIVISION STORM DRAIN SYSTEM

Application Date _____

Pursuant to Hawaii Revised Statutes, Chapter 264, as amended, applicant hereby requests a permit for a private storm drain connection(s) and/or discharge(s) to the State of Hawaii Harbors Division Storm Drainage System. The pertinent information on the storm drain system located on this property is as follows:

1. Name of Harbor: _____
2. Tax Map Key: _____
3. Location: _____
4. Check the type of permit being applied for: [ ] Connection [ ] Discharge
5. Brief description of connection(s) and/or discharge serving this property. (For each connection, provide size, type of discharge, flow rate and Drainage Report.)
6. Does your facility or property generate storm water associated with "industrial activity"? If so, submit analysis of a storm water sample performed by a laboratory acceptable to the State within one (1) year after the date of the connection. Note that failure to submit the sample will automatically result in termination of the connection permit.
7. Does your property/facility associated with the drain connection require National Pollutant Discharge Elimination System (NPDES) permit/permit coverage? If so, attach an approved copy of the NPDES permit/permit coverage.

CONTACT PERSON:

Name: _____
Title: _____
Company Name: _____
Company Address: _____
City, State, Zip Code: _____
Telephone Number: _____
Fax Number: _____

v09/25/03

Exhibit 1 – An example connection and/or discharge permit application form acknowledging the need for private construction oversight

PROJECTS UNDER CONSTRUCTION

Project No.	Project Title	Scope of Work	Acreage
Honolulu Harbor			
HC 1971	Reconstruction of Piers 52 & 53 Sand Island Container Yard, Honolulu Harbor, Oahu	Utility and pavement improvements and upgrades throughout Piers 52 and 53.	3
HC 10185	Reconstruction of Pier 51B Container Yard, Honolulu Harbor, Oahu	Utility and pavement improvements and upgrades at Piers 51B.	13
HC 10248	Upgrade Fire Protection System at Aloha Tower	Improving the fire protection system at Aloha Tower.	<1
HC 10254	Construction of Miscellaneous Improvements for Pier 2 Cruise Terminal, Honolulu Harbor, Oahu	Provide miscellaneous improvements to the Pier 2 cruise terminal including CCTV security system, generator and fuel tank, security room improvements, additional facility lighting, transferring of electrical loads from the Foreign Trade Zone to the new transformer installed under Phase 1, ADA accessibility improvements, roof coating, and repairing the gutters and downspouts.	<1
HC 10269	Repair Pipe Mast at Aloha Tower, Honolulu Harbor, Oahu	Replace the horizontal steel pipe mast and repaint the existing pipe mast.	<1
HC 10275	Replacement of Pier 11 Roadway Security Barriers, Honolulu Harbor, Oahu	Replace the security barrier fronting Pier 11 on Fort Street and modify the barriers on Nimitz Highway fronting the Harbors Administration building to reflect a more aesthetic and nautical theme.	<1
HC 10290	Air Conditioning Repairs at Harbors Administration Building	Replace main chiller unit and eighteen (18) air handling units at Harbors Admin. Building	<1
HC 10293	Pile Repairs at Pier 52, Honolulu Harbor	Repair damaged piles at Pier 52	<1
HC 10300	FY06 -Maintenance Contract for Pavement Repairs at Horizon Lines Container Yard Area	Pavement repairs done at various locations throughout the fiscal year.	>1
HC 10336	Sewage Pump Lift Station Repairs at Pier 21, Honolulu Harbor	Repair lift [illegible] n at Pier 21	<1
HC 10347	Roof Repairs at Pier 10	Repair leaking roof over the Pier 10 gallery	<1
HC 10348	Substructure Repairs at Pier 9, Phase 2, Honolulu Harbor	Repair spalled and delaminated concrete structural members under the Pier 9 apron.	<1
HC 10363	Pier and Fender Repairs at Pier 51, Honolulu Harbor, Oahu (Phase II)	Repair spalls and cracks in concrete slab soffits, girders, beams, and piles, recoat the repair areas, and replace damaged fenders and hardware.	<1
Kalaeloa Barbers Point Harbor			
HC 10331	Embankment Repairs at Kalaeloa Barbers Point Deep Draft Harbor	Repair un-protected embankment at Kalaeloa Deep Draft Harbor.	<1
HC 10353	Repair Fencing	Extension of the existing fencing, Kalaeloa Barbers Point Harbor, Oahu, Hawaii.	<1

Exhibit 2 – HDOT construction site inventory which lists the site acreage at thirteen acres

Table 3.1. Anticipated and Potential Pollutants Generated by Land Use Type

	General Pollutant Categories								
Priority Project Categories	Sediments	Nutrients	Heavy Metals	Organic Compounds	Trash & Debris	Oxygen Demanding Substances	Oil & Grease	Bacteria & Viruses	Pesticides
Detached Residential Development	X	X			X	X	X	X	X
Attached Residential Development	X	X			X	P(1)	P(2)	P	X
Commercial Development >100,000 ft²	P(1)	P(1)		P(3)	X	P(5)	X	P(3)	P(5)
Automotive Repair Shops			X	X(4)(5)	X		X		
Restaurants					X	X	X	X	
Hillside Development >5,000 ft²	X	X			X	X	X		X
Parking Lots	P(1)	P(1)	X		X	P(1)	X		P(1)
Streets, Highways & Freeways	X	P(1)	X	X(4)	X	P(3)	X		

X = anticipated
P = potential
(1) A potential pollutant if landscaping exists on-site.
(2) A potential pollutant if the project includes uncovered parking areas.
(3) A potential pollutant if land use involves food or animal waste products.
(4) Including petroleum hydrocarbons.
(5) Including solvents.

3.1.2 Identify Pollutants of Concern

Pollutants generated by the proposed priority project that exhibits one or more of the following characteristics are considered pollutants of concern:

- Current loadings or historical deposits of the pollutant are impairing the beneficial uses of a receiving water;
- Elevated levels of the pollutant are found in water or sediments of a receiving water and/or have the potential to be toxic to or bioaccumulate in organisms therein; and
- Inputs of the pollutant are at a level high enough to be considered potentially toxic.

To identify primary pollutants of concern in receiving waters, each priority project shall, at a minimum, do the following:

Exhibit 3 – The County of San Diego Standard Urban Storm Water Mitigation Plan For Land Development and Public Improvement Projects dated May 18, 2007, identifies pollutants that are anticipated to be generated by land use type

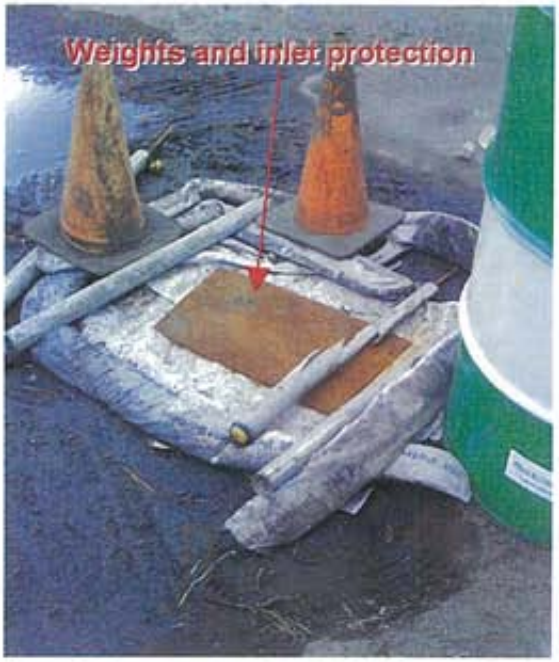
Appendix C
Photograph Log

Hawaii Department of Transportation, Harbors Division - Municipal Separate Storm Sewer Systems (MS4s) (File Nos. HI 03KB482, HI 03KB488, & HI 03KB487) Photograph Log

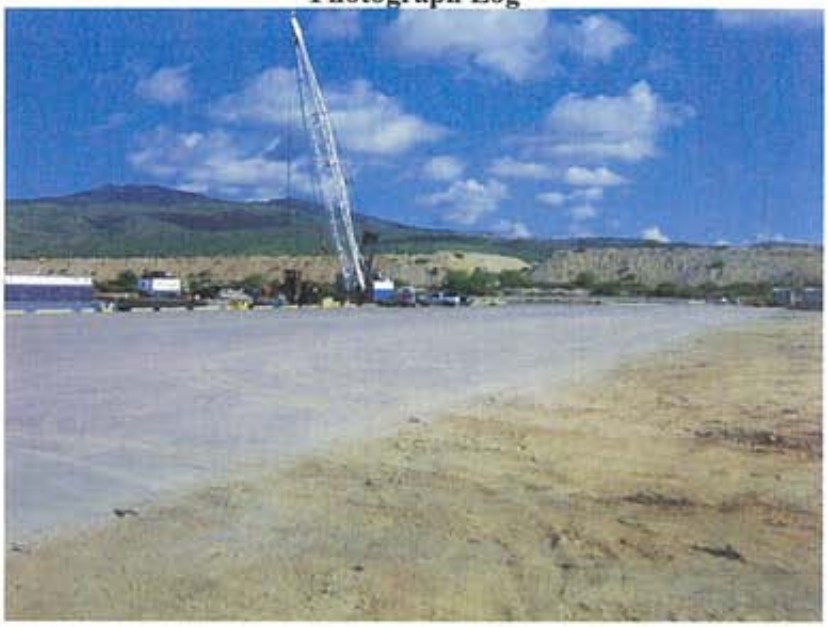
Photograph 1: At Honolulu Harbor – Pier 34, a HDOT maintenance crew was observed washing out a street sweeper bin adjacent to a storm drain inlet

Photograph 2: View of HDOT maintenance crew washing out a street sweeper bin

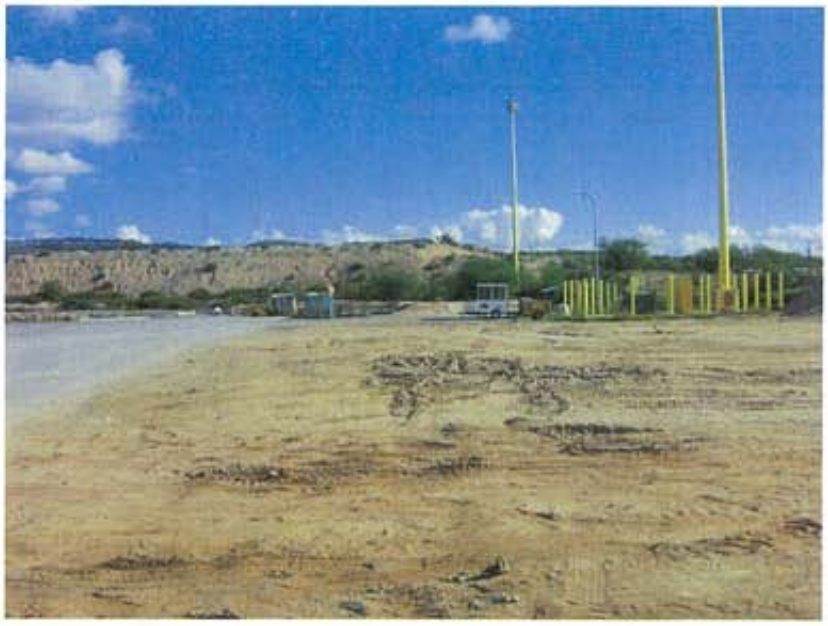
Photograph 3: Evidence of previous sweeper washout activity, including standing water and sweeper tailings near the storm drain inlet



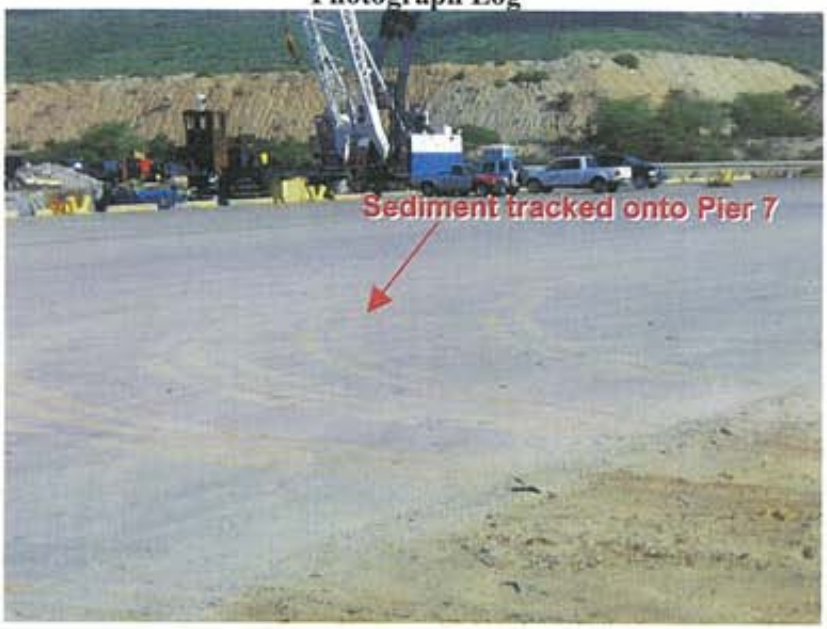
Photograph 4: View of storm drain inlet that was not adequately protected



Photograph 5: View of Pier 7 showing the addition of a portion of the impervious area along the harbor (looking northeast)

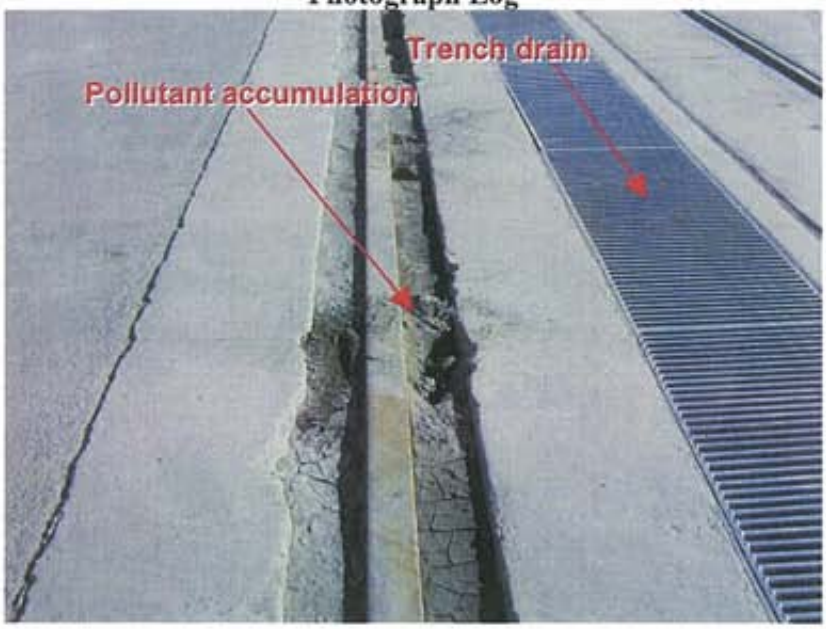


Photograph 6: View of Pier 7 showing a portion of the disturbed area associated with lighting improvements (looking northeast)



Photograph 7: Close-up view of area shown in Photograph 5 where sediment had been tracked onto the impervious pier surface

Photograph 8: Sediment had been tracked from area of lighting improvement disturbance onto the adjacent impervious pier surface



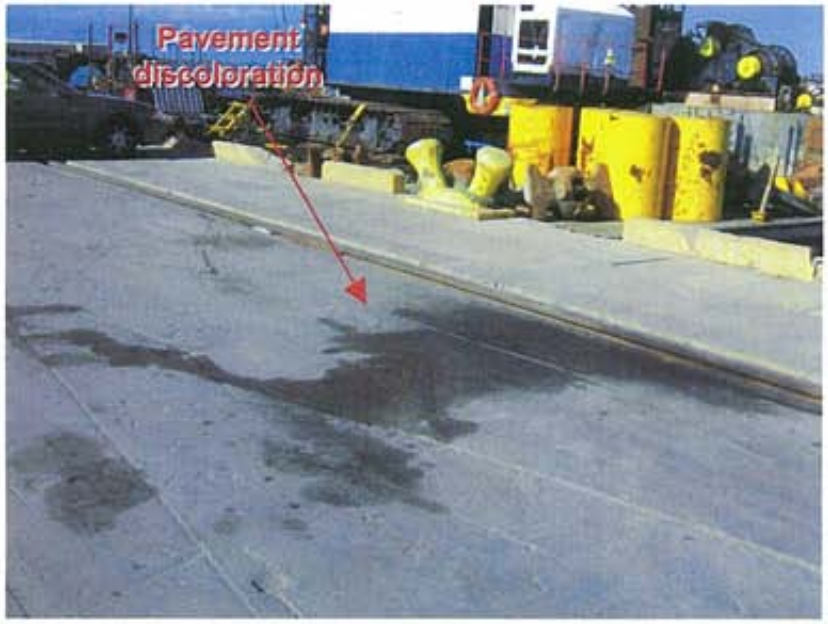
Photograph 9: Sediment and/or miscellaneous tenant product and debris had accumulated along the railway

Photograph 10: Close-up view of accumulated pollutants showing potential for mobilization

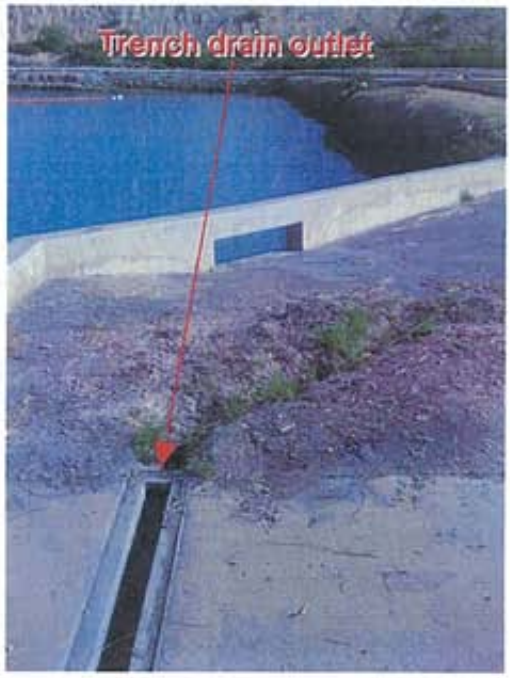
Photograph 11: Close-up view of pollutant accumulation inside the trench drain

Photograph 12: View of location shown in Photograph 11

Photograph 13: Pavement discoloration and/or spill residues near the crane site



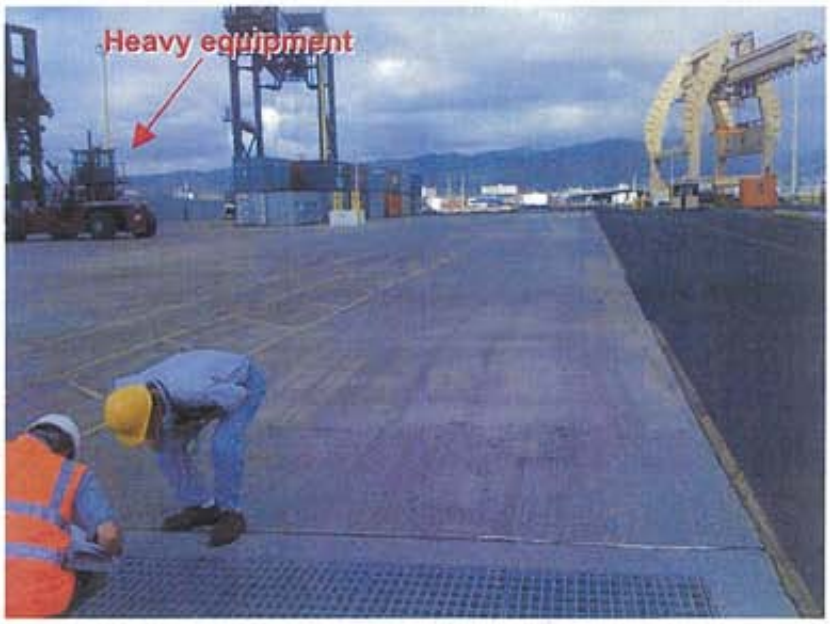
Photograph 14: View of Pavement discoloration and/or spill residues extending to the north of Photograph 13



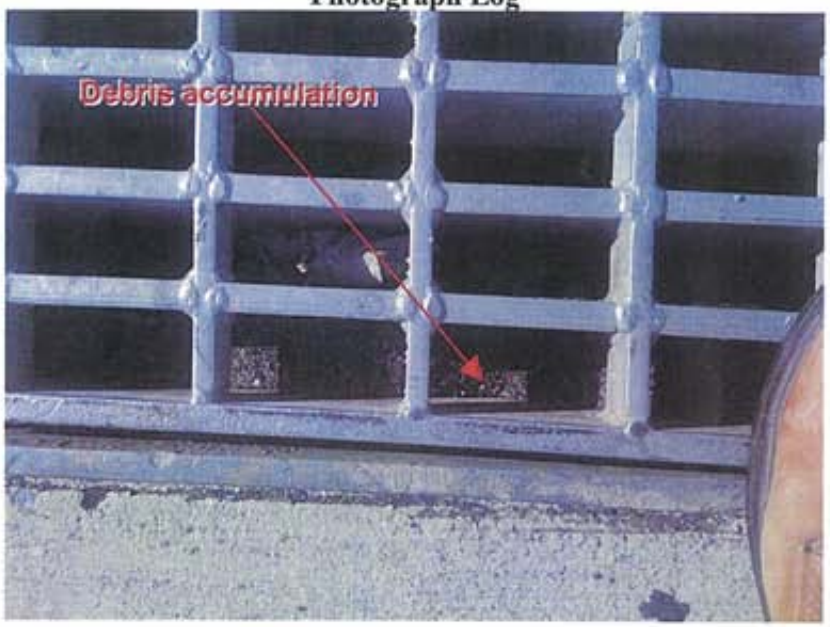
Photograph 15: Trench drain outlet and scouring at the northeast corner of Pier P-7

Photograph 16: Close-up view of pavement discoloration at the trench drain outlet

Photograph 17: Example of trench drain installed for storm drainage purposes



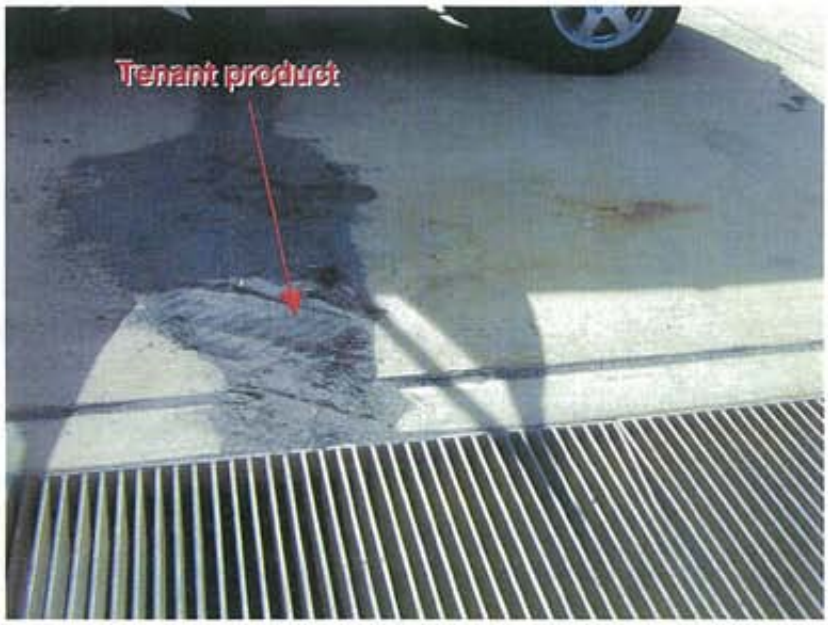
Photograph 18: View of trench drain where rubber material was observed



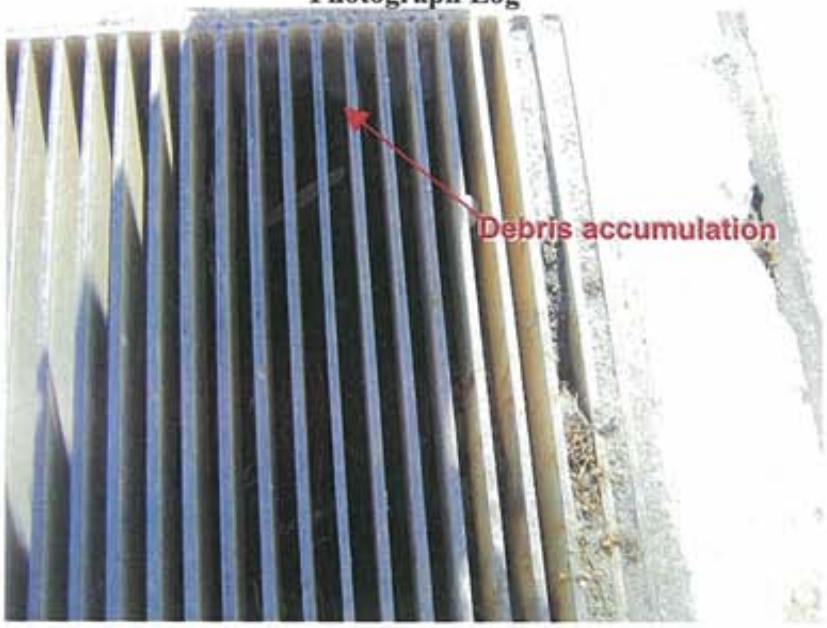
Photograph 19: View inside trench drain shown in Photograph 18

Photograph 20: View inside trench drain shown in Photograph 18

Photograph 21: At Piers 5 and 6 in Kalaeloa Barbers Point Harbor, tenant product had been spilled adjacent to a trench drain



Photograph 22: View of spilled tenant product to the southeast of Photograph 21



Photograph 23: At the location shown in Photographs 21 and 22, debris and/or tenant product had accumulated in the trench drain to nearly the top of the inlet grate