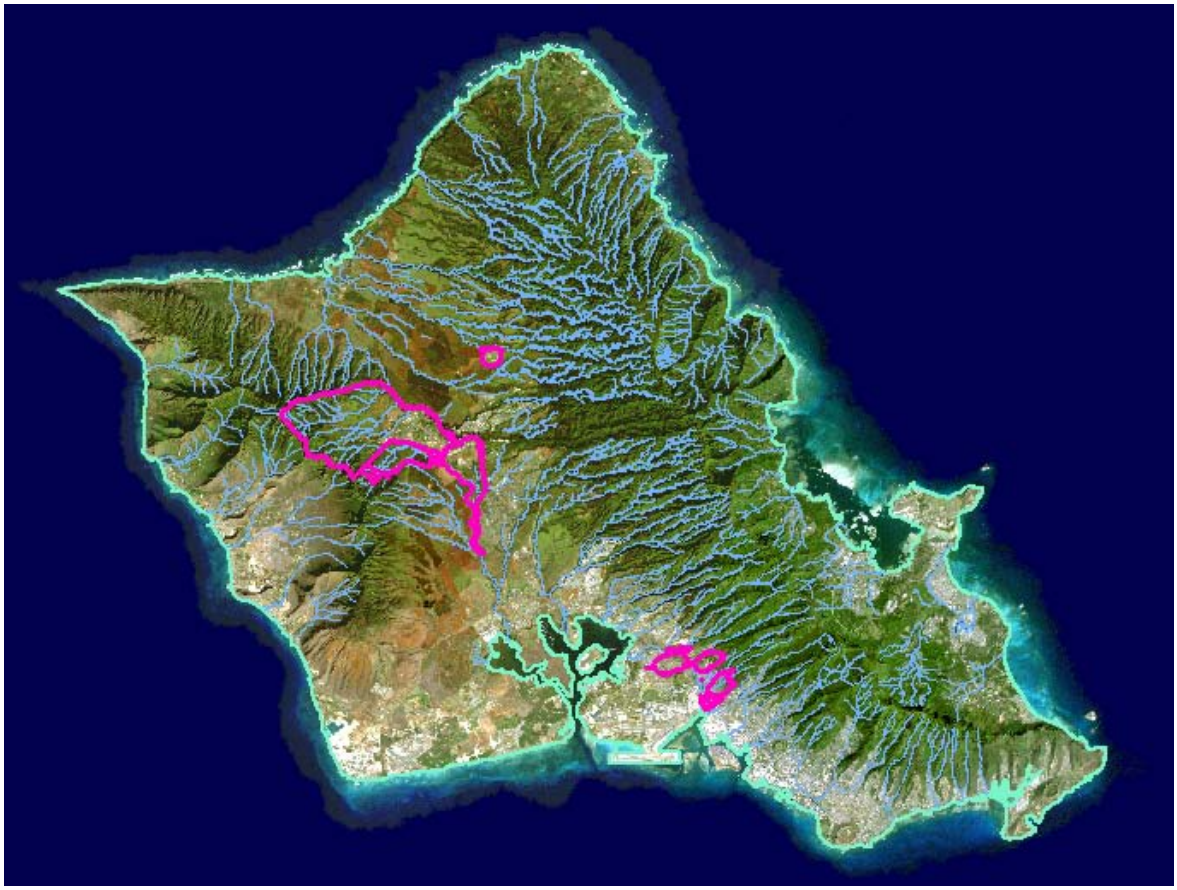
CALENDAR YEAR 2011 ANNUAL REPORT
FOR U.S. ARMY GARRISON-HAWAII
STORM WATER MANAGEMENT PLAN
NPDES PERMIT NO. HI S000090

Schofield Barracks, Wheeler Army Airfield, Fort Shafter, Helemano Military Reservation, Aliamanu Military Reservation, Tripler Army Medical Center



Prepared By:

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List of Acronyms

AHFH.....Army Hawaii Family Housing
AMR .....Aliamanu Military Reservation
BMP .....Best Management Practice
CS.....Construction Site Runoff Control
CY ..... Calendar Year
DMR ..... Discharge Monitoring Report
DoD..... Department of Defense
DPW..... Directorate of Public Works
ECATTS .....Environmental Compliance Assessment Training and Tracking System
ECO.....Environmental Compliance Officer
EPA .....Environmental Protection Agency
EQCC.....Environmental Quality Control Committee
FS ..... Fort Shafter
GIS .....Geographic Information System
HMR .....Helemano Military Reservation
HMMS ..... Hazardous Material Management System
ID…… ..... ……Illicit Discharge Detection and Elimination
IPC ..... Island Palm Communities LLC
LID.....Low Impact Development
MS4.....Municipal Separate Storm Sewer System
MTV2.....Military Channel TV2
NEPA .....National Environmental Policy Act
NOI ..... Notice of Intent
NPDES..... National Pollution Discharge Elimination System
PC.....Post-Construction Runoff Control
PE.....Public Education and Outreach
PI .....Public Involvement
PP .....Pollution Prevention
PSA .....Public Service Announcement
QA/QC .....Quality Assurance/Quality Control
R-1.....Disinfected Tertiary Treated Effluent
SB.....Schofield Barracks
SDOH.....State Department of Health
SPCC..... Spill Prevention Control and Countermeasure
SWMP.....Storm Water Management Plan
SWPCP .....Storm Water Pollution Control Plan
TAMC..... Tripler Army Medical Center
TMDL ..... Total Maximum Daily Load
USAG-HI……U.S. Army Garrison-Hawaii
WAAF.....Wheeler Army Airfield

Summary

The following "Calendar Year 2011 Annual Report for U.S. Army Garrison-Hawaii Storm Water Management Plan," Permit Number: HI S000090, fulfills the annual reporting requirements of the National Pollutant Discharge Elimination System permit, issued by the Hawaii State Department of Health. The Annual Report includes the status of compliance with permit conditions; an assessment of the program goals and accomplishments that includes responsibility, schedule, reporting and record keeping requirements for program activities to meet minimum control measures; modifications to the program's goals; a summary of storm water related activities planned for the following calendar year; major modifications made to the storm sewer system; and storm water monitoring results. For the purposes of this report, U.S. Army Garrison-Hawaii refers to the locations that comprise the permitted municipal separate storm sewer system: Schofield Barracks, Wheeler Army Airfield, Fort Shafter, Helemano Military Reservation, Aliamanu Military Reservation, and Tripler Army Medical Center. The Storm Water Management Plan was available for review and public comment from January 6, 2012 through January 27, 2012 to include Army personnel and dependants and civilian employees in developing, implementing, and reviewing the U.S. Army Garrison-Hawaii's Storm Water Management Plan that outlines permit compliance activities and goals towards improving water quality.

1. Status of Compliance with Conditions of Permit

U.S. Army Garrison-Hawaii (USAG-HI) is in compliance with its National Pollution Discharge Elimination System (NPDES) Permit Number: HI S000090. This Annual Report meets the requirement of the NPDES permit. The five-year plan for 2007-2011 was submitted in February 2007 and every effort is being made to follow the requirements in that document. Discharge monitoring reports for calendar year (CY) 2011 are included as part of this submission in Tab 7.

2. Installation Information

NPDES Permit Number: HI 1121431 was issued on January 18, 2002 and expired August 31, 2006. A renewal application was submitted at that time and a NPDES Permit to discharge storm water associated with industrial activities and certain non-storm water discharges from USAG-HI's small Municipal Storm Sewer System (MS4) was granted February 7, 2007 (NPDES Permit Number: HI S000090). The permit expired August 31, 2011 and has since been extended until a new permit is issued by the Hawaii State Department of Health (SDOH).

The USAG-HI NPDES Permit covers six locations. They are Schofield Barracks, Wheeler Army Airfield, Fort Shafter, Helemano Military Reservation, Aliamanu Military Reservation and Tripler Army Medical Center. The permit requires USAG-HI to annually submit a Storm Water Management Plan (SWMP), also known as the Annual Report.

Geography

The total acreage within the six-installation boundaries is approximately 13,635 acres.

Schofield Barracks (SB) consists of 10,133 acres. See Figure 1. The cantonment area for SB is considerably less at 1,849 acres. All figures show the installation boundary in pink with the storm drain system (red) and streams (blue). The stream layer was obtained from the Hawaii State Geographic Information System (GIS) Program web site (http://www.hawaii.gov/dbedt/GIS/).

The majority of SB drains into Kaukonahua Stream. Kaukonahua Stream flows northward through the towns of Waialua and Haleiwa and eventually merges with Poamoho Stream. The streams turn into Kiikii Stream and drain into Waialua Bay. The southwest corner of SB and its southern property line drains into tributaries of Waikele Stream. Waikele Stream flows southward through the towns of Mililani and Waipahu and eventually drains into the West Lock of Pearl Harbor.

In 2005, approximately 1,292 acres were purchased on the southern boundary of SB. The additional land is being used for both training lands and military facilities. The Stryker Brigade Combat Team motor pool was constructed on a portion of the purchased land. The current size of land acquired on the southern boundary of SB is 1,402 acres.

Wheeler Army Airfield (WAAF) consists of 1,764 acres. See Figure 2. The majority of this installation drains into Waikele stream.

Fort Shafter (FS) consists of 577 acres. All of FS and FS Flats drain into the two tributaries of Moanalua stream, which pass through the installation. The tributaries within the FS installation are normally dry. See Figure 3.

Helemano Military Reservation (HMR) consists of approximately 282 acres. See Figure 4. The northern portion of HMR drains into tributaries of Paukauila Stream. However, the majority of the HMR area drains into a large sedimentation basin located on the southwest corner of the installation.

Aliamanu Military Reservation (AMR) consists of approximately 520 acres. See Figure 5. The majority of family housing within the crater drains into a Y-shaped storm drain channel, which connects to a tunnel through the south of the military reservation. Storm water flows through the tunnel down the slopes of Aliamanu Crater and into Salt Lake. The northeast portion of AMR is outside the crater and the area drains north towards Halawa Stream.

In 2003, approximately 69 acres under the ownership of the Coast Guard was acquired by U.S. Army. Island Palm Communities LLC (IPC), formerly Army Hawaii Family Housing (AHFH), is a public private venture between Lend Lease LLC and the U.S. Army. The U.S. Army is the minority partner in this venture. IPC is responsible to construct new family housing within the Coast Guard property. The Coast Guard is responsible to maintain the utilities and respond to spills until each utility is privatized.

Tripler Army Medical Center (TAMC) consists of approximately 359 acres. See Figure 6. The TAMC storm drains are located to the north, south and west of the installation boundaries. The western portion of TAMC eventually connects to the City and County of Honolulu storm drain system. The northern and southern portions of TAMC drain to tributaries of Moanalua Stream.

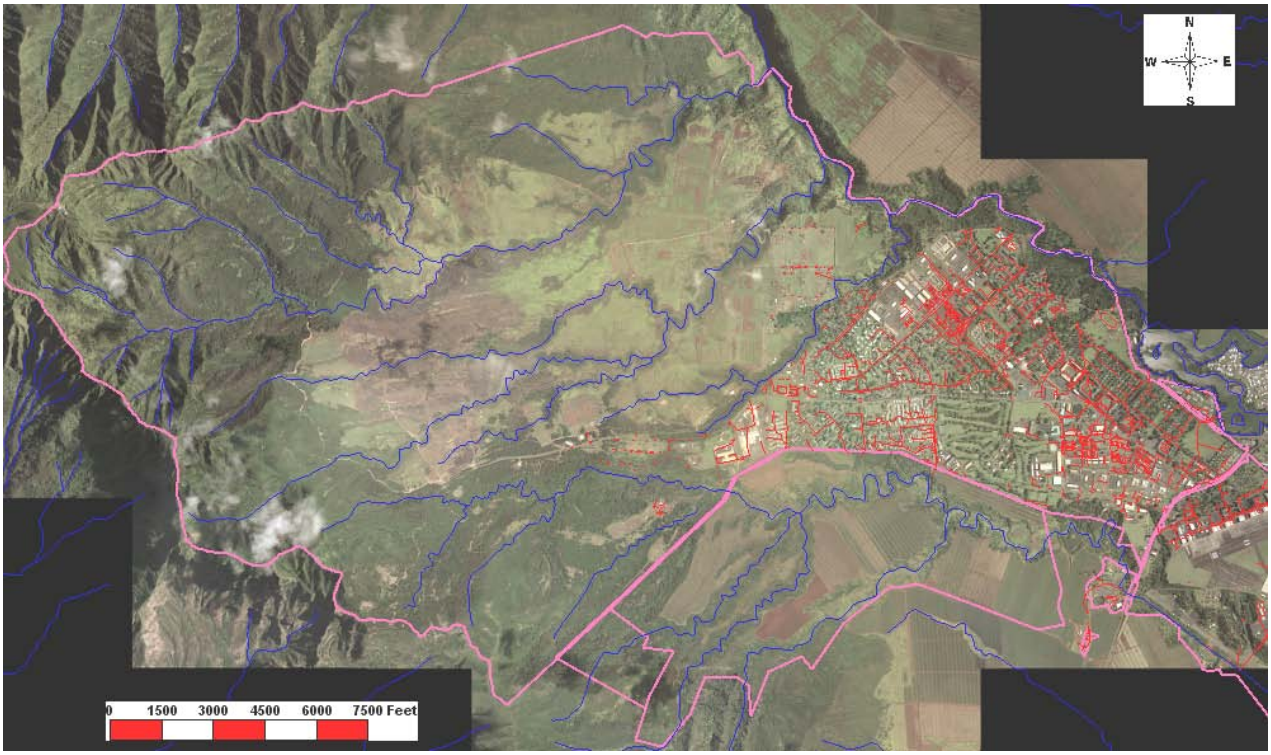

Figure 1: Schofield Barracks Vicinity Map. Installation boundary (pink) with the State of Hawaii stream system (blue) and USAG-HI storm drain system (red) shown.

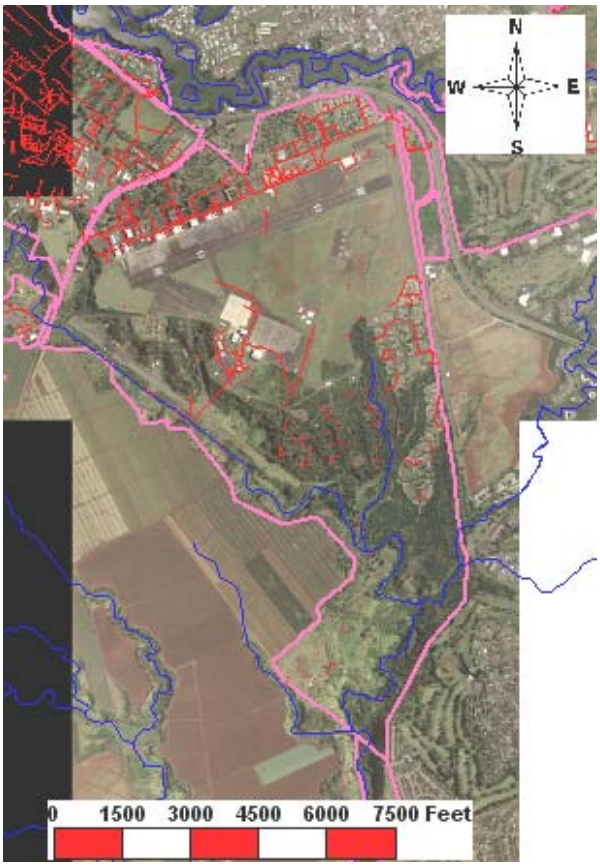

Figure 2: Wheeler Army Airfield Vicinity Map. Installation boundary (pink) with the State of Hawaii stream system (blue) and USAG-HI storm drain system (red) shown.

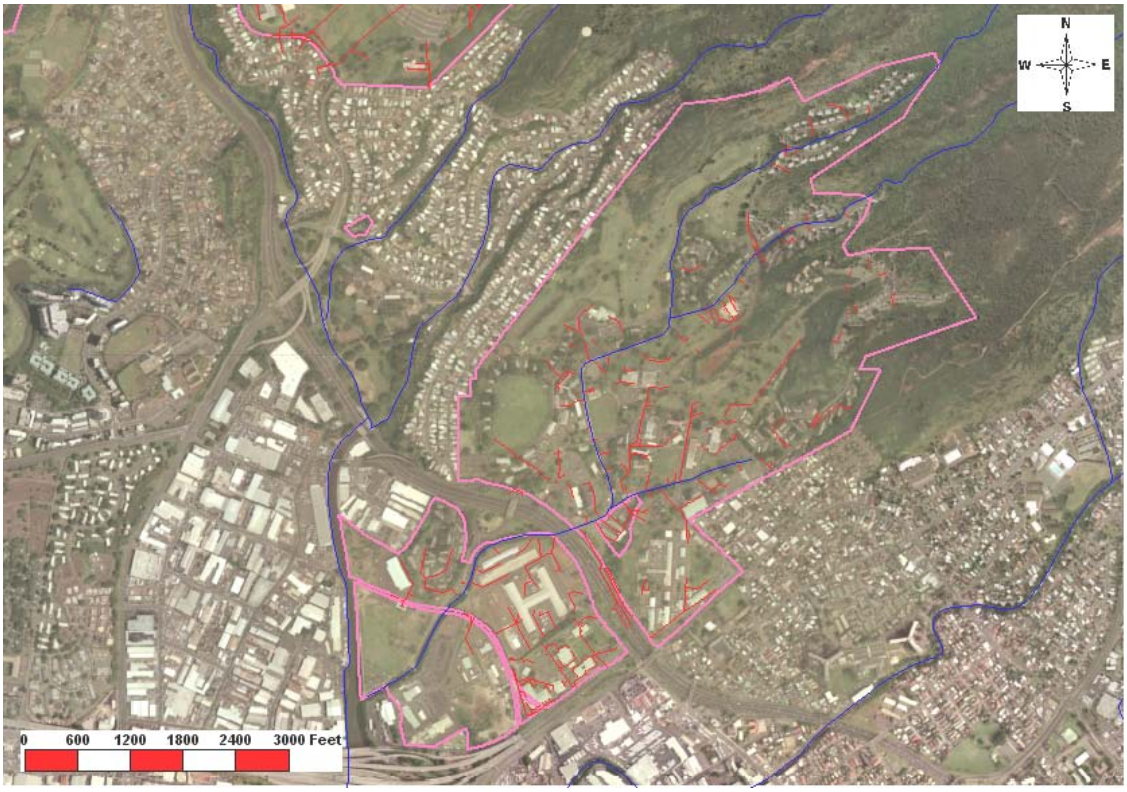

Figure 3: Fort Shafter Vicinity Map. Installation boundary (pink) with the State of Hawaii stream system (blue) and USAG-HI storm drain system (red) shown.

Figure 4: Helemano Military Reservation Vicinity Map. Installation boundary (pink) with the State of Hawaii stream system (blue) and USAG-HI storm drain system (red) shown.

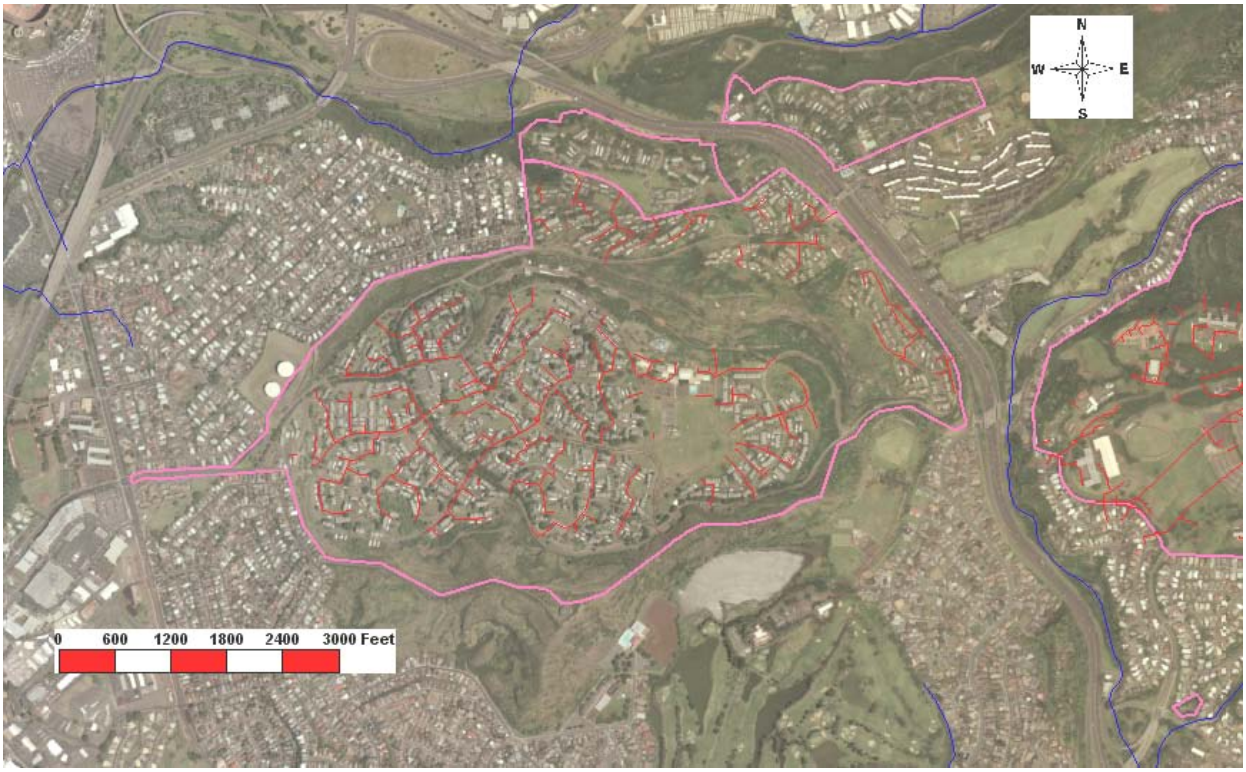

Figure 5: Aliamanu Military Reservation Vicinity Map. Installation boundary (pink) with the State of Hawaii stream system (blue) and USAG-HI storm drain system (red) shown.

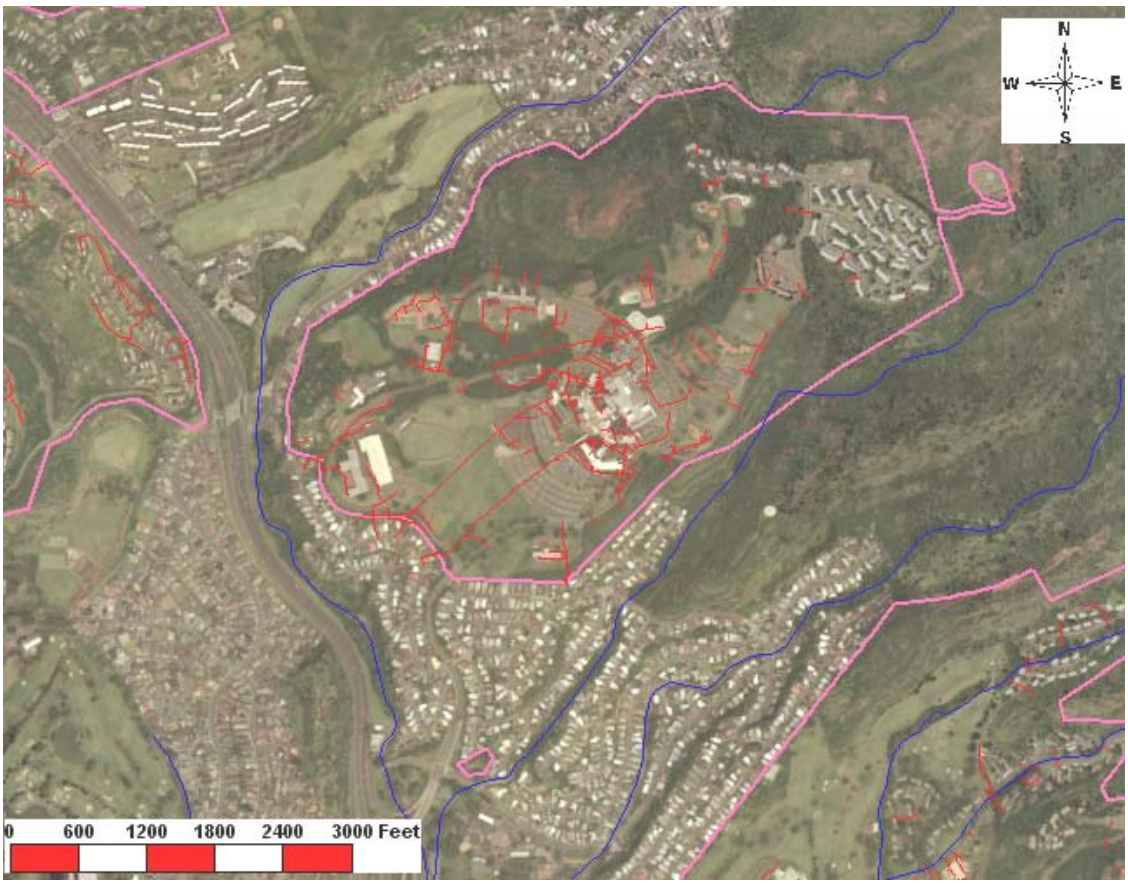

Figure 6: Tripler Army Medical Center Vicinity Map. Installation boundary (pink) with the State of Hawaii stream system (blue) and USAG-HI storm drain system (red) shown.

3. Assessment of the Storm Water Management Program

Table 1 summarizes USAG-HI's proposed Best Management Practice (BMP) activities to comply with the minimum control measures outlined in the NPDES Permit. Supporting BMP information, including BMP descriptions, measurable goals, responsible party, and implementation schedule are included in Section 3. If the BMP is highlighted in red, Directorate of Public Works (DPW) was not able to implement the BMP. If the BMP is highlighted in yellow, DPW chose not to implement the BMP and instead modified the BMP. If the BMP is highlighted in green, DPW was able to successfully implement the BMP.

Table 1. Summary of Minimum Control Measures

	CY 07	CY 08	CY 09	CY 10	CY 11
Public Education and Outreach					
PE-1: Army Personnel Storm Water Pollution Prevention Education					
PE-2: Public Service Announcements/Slides					
PE-3: DPW Staff and Other Agency Storm Water Pollution Prevention Education					
PE-4: Web-based Training for Service Contractors and Construction Contractors					
Public Involvement					
PI-1: Storm Drain Stenciling or Marker					
PI-2: Education of Installation School Students				Modified	
PI-3: Public Involvement Project				Modified	
PI-4: Public Review of the SWMP				Added	
Illicit Discharge Detection and Elimination					
ID-1: Detect and Investigate Illicit Discharges					
ID-2: List of Non-Storm Water Discharges					
Construction Site Runoff Control					
CS-1: Adoption and Phase-in of City's BMP Manual for Construction Sites					
CS-2: Review of Storm Water BMP Construction Drawing and Specifications					
CS-3: Construction Site Inspections					
Post-Construction Runoff Control					
PC-1: Adoption and Phase-in of Post-Construction Storm Water Management Requirements				Modified	
PC-2: Review of Civil Design, Plans, and Specifications					
PC-3: Provide Funding for the Design & Construction of a Post-Construction Storm Water Management Demonstration Project		Removed	Removed	Modified	

Pollution Prevention					
PP-1: Develop Storm Water Database/GIS					
PP-2: Develop Street Sweeping Program					
PP-3: Develop a List of Potential Storm Water Pollutants for each Facility					
PP-4: Develop Spill Prevention and Response Procedures					
PP-5: Develop Policy for Reduction in Pesticide and Herbicide Application.					
PP-6: Develop Policy for Reduction in Fertilizer Application on Golf Courses.					
PP-7: Perform Facility Inspections					
PP-8: Develop Storm Water Monitoring Plan					
PP-9: Develop and Implement a Maintenance Program		Added			

The following BMP activities will be continued by DPW to comply with the NPDES permit requirements. As part of the annual reporting process, the BMPs will be evaluated to ensure appropriateness and effectiveness of each BMP and to seek funding within USAG-HI.

3.1. Public Education and Outreach (PE)

The NPDES permit requires USAG-HI to develop and implement a public education program to distribute materials to Army personnel and dependents emphasizing the following:

- Impact of storm water discharges on water bodies.
- Hazards associated with illicit discharges.
- Measures Army personnel and dependents can take to reduce pollutants in storm water runoff, including, but not limited to, minimizing fertilizer application and practicing proper storage and disposal of chemicals and wastes.

In order to achieve the above objectives, the following BMPs are proposed:

- PE-1: Army Personnel Storm Water Pollution Prevention Education
- PE-2: Public Service Announcements/Slides
- PE-3: DPW Staff and Other Agency Storm Water Pollution Prevention Education
- PE-4: Web-based Training for Service Contractors and Construction Contractors

3.1.1. PE-1: Army Personnel Storm Water Pollution Prevention Education

3.1.1.1. BMP Description: DPW conducts regular "Environmental Compliance Officer" (ECO) training for military, civilian, and contract personnel that work on USAG-HI facilities. The ECO course trains selected personnel for ECO duties that include management requirements to ensure environmental protection and includes the following topics: storm water BMPs, illicit discharge prevention and proper storage and disposal of hazardous materials. The existing program conceptually is to "train the trainer," and ECO responsibilities include providing quarterly training to their co-workers on environmental compliance topics.

ECO training is required when there is a change in personnel. The ECO is required to complete a 24-hour certification course and subsequent 8-hour refresher certification course once annually. ECO training is provided from battalion level to company level personnel.

During CY 2011, 12 courses were conducted for the 24-hour ECO course with 281 graduates, 10 courses were conducted for the 8-hour ECO refresher course with 140 graduates, and 7 courses were provided to Senior Leaders with 95 graduates. The ECO course description is provided as Tab 1-1, CY 2011 course schedule and numbers of graduates are provided as Tab 1-2, a selection of training material is provided as Tab 1-3, and the ECO inspection checklist section related to storm water pollution prevention BMPs is provided as Tab 1-4.

3.1.1.2. 2011 Goals. For CY 2011, DPW proposed no change to the existing ECO training practice. As regulations change and/or final rules issued, the curriculum will be revised accordingly. In addition, ECO training course materials will be updated based on CY 2011 ECO inspection results. Success of this BMP goal will be measured by subsequent ECO inspection results. DPW proposed to maintain a Clean Water Program webpage on the sustainability website that will be updated when regulations change and/or new permits, plans, and resources are available. DPW proposed to disseminate pollution prevention brochures and educational material at USAG-HI's 2011 Earth Day Celebration and similar events. DPW proposed to create additional education materials detailing pollution prevention BMPs related to installation activities. DPW proposed to continue to participate in Environmental Quality Control Committee (EQCC) meetings that include Army and civilian personnel, major tenants, and the Garrison Commander and the quarterly fuel handler certification course to educate on spill prevention and response.

3.1.1.3. 2011 Accomplishments. ECO training course materials were updated and additional slides related to storm water management BMPs and pollution prevention along with a DVD entitled, "Stormwater Pollution Prevention: A Drop in the Bucket," produced by Excal Visual LLP, were included in training courses.

DPW maintained and updated the Clean Water Program webpage on the sustainability website (http://www.garrison.hawaii.army.mil/sustainability/CleanWater.aspx) that included pollution prevention training information, permit required policy documents, and public education resources.

The USAG-HI Clean Water Program brochure was disseminated at USAG-HI's Army families event, "Learn and Live," held on February 17 at a community center on SB, USAG-HI's 2011 Earth Day Celebration, held on April 20 at a large, central field on SB, USAG-HI's "Family Funfest," held on April 23 at a large, central field on SB and at various meetings with Army and civilian personnel throughout the year. Additionally, a coloring activity to educate on pollution prevention, a screen-printed T-shirt, and a rainwater harvesting brochure were produced for the various events, photographs provided as Tab 1-5. DPW contacted the SDOH Clean Water Branch Public Participation Coordinator for support with additional public education material, including "The Journey Home," that was provided and disseminated at the various events.

USAG-HI published various articles related to storm water management and post-construction BMPs in installation publications available to Army personnel and dependents and civilian personnel. Articles detailed the construction of an outdoor classroom at Hale Kula Elementary

School, located on SB that included a rainwater harvesting and drip irrigation system, rain garden with native plants, planter benches, and a shade structure. Through the project, Army personnel and tenants could learn about the importance of post-construction storm water management BMPs for preventing pollution and conserving water and energy. Copies of published articles are provided as Tab 1-6. Additionally, a project report was prepared and made available for download on the sustainability website, provided as Tab 1-7.

DPW created a fuel operations slide presentation to describe installation fueling requirements and spill prevention and response BMPs, provided as Tab 1-8, and presented the slides at the quarterly fuel handler course on February 24, April 25, September 19, and November 21.

Lastly, DPW continued to participate in the quarterly EQCC that included Army and civilian personnel, major tenants, and the Garrison Commander to update Army personnel on storm water management related topics.

3.1.1.4. 2012 Goals. DPW proposes no change to the existing ECO training practice. As regulations change and/or final rules issued, the curriculum will be revised accordingly. Success of this BMP goal will be measured by subsequent ECO inspection results. DPW proposes to maintain the Clean Water Program webpage on the sustainability website that will be updated when regulations change and/or new permits, plans, and resources are available. DPW proposes to disseminate pollution prevention brochures and educational material at USAG-HI's 2012 Earth Day Celebration and similar events. DPW proposes to create additional education materials detailing pollution prevention BMPs related to installation activities. DPW proposes to continue to participate in EQCC meetings and the quarterly fuel handler course.

3.1.1.5. Responsibility. DPW is responsible for providing ECO training with input from subject matter experts on storm water and spill prevention, control, and countermeasures. DPW shall maintain the USAG-HI sustainability website. DPW shall create and disseminate public education material related to pollution prevention BMPs. DPW shall continue to participate in EQCC meetings and the quarterly fuel handler course.

3.1.1.6. Schedule. DPW will conduct monthly ECO training and shall update the curriculum as needed. DPW shall update the Clean Water Program webpage as needed. DPW shall participate in quarterly EQCC meetings and fuel handler courses.

3.1.1.7. Reporting and Record Keeping. DPW ECO Chief Inspector maintains the ECO course offering, course roster and dates of attendance. DPW Clean Water Program maintains records of public education related activities and resources.

3.1.2 PE-2: Public Service Announcements/Slides

3.1.2.1. BMP Description. DPW provides public **s**ervice announcements (PSAs) for storm water management related topics and pollution prevention on the military channel (MTV2). MTV2 reaches all USAG-HI installations. The target audience is military personnel and dependents that live and/or work on post.

3.1.2.2. 2011 Goals. DPW proposed no change in the timing to air the video "After the Storm." DPW proposed to conduct a survey to measure whether Army personnel and dependents have

viewed the video. DPW proposed to continue to participate in upcoming technical conferences on storm water related topics offered by Society of American Military Engineers, American Society of Civil Engineers, Army Corps of Engineers, International Erosion Control Association, and StormCon and to communicate lessons learned.

3.1.2.3. 2011 Accomplishments. MTV2 continued to air the video "After the Storm," co-produced by EPA and the Weather Channel daily at 0808, 1230 and 1611. The video provides an overview of storm water management pollution prevention. DPW finalized a public survey, provided as Tab 1-9, and began preparing to conduct the survey using the online resource "SurveyMonkey."

DPW staff attended various technical sessions and conferences including StormCon held on August 22-25, the American Society of Civil Low Impact Development (LID) training held on September 12-14, the Urban Land Institute and American Planning Association Hawaii Chapter Luncheon on LID to present on USAG-HI's post-construction storm water management program and related LID topics, as well as the State Department of Transportation Highway Division's Permanent BMP Training on November 15-16 to present on federal LID requirements, slides are provided as Tab 1-10.

3.1.2.4. 2012 Goals. There is no proposed change in the timing to air the video "After the Storm." DPW proposes to conduct the public survey to measure whether Army personnel and dependents are aware of storm water runoff and pollution prevention related issues and how best to communicate pollution prevention awareness messages. DPW proposes to continue to participate in upcoming technical conferences on storm water related topics offered by Society of American Military Engineers, American Society of Civil Engineers, Army Corps of Engineers, International Erosion Control Association, and StormCon and to communicate lessons learned.

3.1.2.5. Responsibility. It will be the responsibility of the DPW Clean Water Program Manager to conduct the public survey, determine the approximate timing and content to be aired as part of the PSAs and to prioritize staff attendance at technical conferences.

3.1.2.6. Schedule. There are no proposed schedule changes to airing of the PSA "After the Storm." Revisions to the schedule and the need for additional PSAs will be assessed after a survey is conducted during CY 2012. DPW staff will attend technical conferences as funding is available and will report lessons learned to Army personnel and dependents and civilian personnel in a timely manner thereafter.

3.1.2.7. Reporting and Record Keeping. The request to air new videos will be maintained by the DPW Clean Water Program Manager. Public survey results data will be maintained by the DPW Clean Water Program Manager as well as documentation of lessons learned from technical conferences.

3.1.3. PE-3: DPW Staff and Other Agency Storm Water Pollution Prevention Education

3.1.3.1. BMP Description: DPW Clean Water Program determined that DPW staff and construction contractors working on USAG-HI installations need to be familiar with NPDES permit requirements for storm water management and pollution prevention.

3.1.3.2. 2011 Goals. DPW proposed to continue to provide training through ECATTS, the ECO program, meetings, and conferences and to track training conducted by IPC for its construction contractors and operations and maintenance staff. DPW proposed to target additional educational resources based on CY 2011 construction inspection results and to measure success through subsequent inspections.

3.1.3.3. 2011 Accomplishments. The following training was accomplished:

- Online training was conducted with Environmental Compliance Assessment Training and Tracking System (ECATTS) for Army Corps of Engineers construction contractors.
- ECO training that included pollution prevention education was attended by various DPW Divisions, including DPW Operations and Maintenance Division personnel.
- DPW Clean Water Program Manager conducted storm water and illicit discharge detection and elimination training to major tenants and commands at the EQCC meeting.
- DPW Clean Water Program attended various pre-construction and project development meetings to educate on sediment and erosion control BMPs and NPDES permit compliance.
- IPC contractor training included the provision of information on construction BMPs (e.g. scheduling, dust control, stabilized entrance, inlet protection, hydromulch/seeding, concrete washout, material storage, etc.), to contractors during the Actus Lend Lease LLC monthly Owners' Meeting 2010 during the first six months of 2010.
- IPC Operations and Maintenance personnel training included environmental management and pollution prevention BMPs, pest management practices, spill response, yard care practices, fleet vehicle washing practices, and good housekeeping practices.
- DPW Clean Water Program communicated CY 2010 construction inspection results and prepared to communicate CY 2011 construction inspection results.
- DPW Clean Water Program prepared a slide presentation on erosion and sediment control BMPs to be used for troop construction projects and to supplement contractor training as needed, slides are provided in Tab 1-11.
- DPW Clean Water Program coordinated site visits to locally constructed projects that incorporated post-construction storm water management permanent BMPs and LID technologies to learn about locally appropriate designs that could be applied in future federal new development and redevelopment projects. A site visit to the Arizona Memorial Pervious Concrete Parking Lot was conducted on June 23; a site visit to the Center for Microbial Oceanography: Research and Education at University of Hawaii at Manoa to learn about the project's green roof and underground storm water runoff storage system and to the Sustainable Marketplace of the Pacific was conducted on June 24; and a site visit to Omidyar Kindergarten – First Grade Neighborhood at Punahou School was conducted on August 4 to learn about the grass-paved fire lane, vegetated swales, and rainwater harvesting systems. Subsequent to the site visits, reports were generated and made available on the Clean Water Program webpage on the sustainability website, provided as Tab 1-12.

3.1.3.4. 2012 Goals. DPW proposes to continue to provide training through ECATTS, the ECO program, meetings, and conferences and to track training conducted by IPC for its construction contractors and operations and maintenance staff. DPW proposes to target additional educational resources based on CY 2011 construction inspection results and to measure success through subsequent inspections.

3.1.3.5. Responsibility. It will be the responsibility of the DPW Clean Water Program Manager to assess the type and frequency of training provided to the various DPW Divisions and contractors working on USAG-HI installations.

3.1.3.6. Schedule. DPW proposes to participate in meetings, conferences, and training events and to assess the type and frequency of training provided to various DPW Divisions and contractors working on USAG-HI installations throughout CY 2012.

3.1.3.7. Reporting and Record Keeping. Records will be maintained as training is conducted.

3.1.4. PE-4: Web-based Training for Service Contractors and Construction Contractors

3.1.4.1. BMP Description: DPW proposes to implement web-based training for environmental compliance. The initial target audiences are service contractors and construction contractors performing work on USAG-HI installations. The goal is to provide cost-free environmental compliance training to any field manager doing work on USAG-HI installations.

3.1.4.2. 2011 Goals. DPW proposed to continue to fund the ECATTS contract and provide updates as needed to the software vendor. Construction inspection results from CY 2010 would inform the development of additional training resources and success would be measured in subsequent inspections. DPW proposed to evaluate whether additional contractors, such as troop contractor personnel and support staff, should complete ECATTS training and if so, DPW would communicate the requirement.

3.1.4.3. 2011 Accomplishments. Funding was provided for the ECATTS contract for CY 2011. Army Corps of Engineers contractors and subcontractors, working on USAG-HI construction projects, have completed environmental training online. Online training completion was verified during DPW Clean Water Program staff's quarterly construction site inspections by requesting to view training certificates for construction contractors. Additional erosion and sediment control BMP slides were prepared (Tab 1-11) for future use to educate on construction site pollution prevention and permit requirements.

3.1.4.4. 2012 Goals. USAG-HI will not continue to fund the ECATTS contract but will provide a similar training resource through in-house Environmental Management Systems staff support required for contractors working on USAG-HI. Construction inspection results from CY 2011 will inform the development of additional training resources and success will be measured in subsequent inspections. DPW will evaluate whether additional contractors, such as troop contractor personnel and support staff, should complete training and if so, DPW will communicate the requirement.

3.1.4.5. Responsibility. It will be the responsibility of the DPW Clean Water Program Manager to provide updated information for training and to evaluate which personnel should complete training prior to commencing work on USAG-HI installations.

3.1.4.6. Schedule. DPW proposes to continue to provide and require training and to provide updates as needed. Additionally, DPW will evaluate whether additional personnel should complete training.

3.1.4.7. Reporting and Record Keeping. ECATTS and in-house training have the ability to track the number of persons completing the training. The DPW Clean Water Program Manager has administrative rights to ECATTS and training records can be reviewed.

3.2. Public Involvement (PI)

The NPDES permit requires USAG-HI to include Army personnel and dependents in developing, implementing, and reviewing the Storm Water Management Program.

In order to achieve the above objectives, the following BMPs are proposed:

- PI-1: Storm Drain Stenciling
- PI-2: Education of Elementary and Middle School Students
- PI-3: Public Involvement Project
- PI-4: Public Review of the SWMP

3.2.1. PI-1: Storm Drain Stenciling/Marker

3.2.1.1 BMP Description. Stencil storm drain inlets or install semi-permanent storm drain markers at curb inlets on USAG-HI installations to educate on pollution prevention.

3.2.1.2. 2011 Goals. DPW proposed to continue to utilize quarterly ECO inspections to identify the need for additional storm drain markers. DPW proposed to develop a storm drain marker event that could be used to educate Army personnel and dependents on pollution prevention.

3.2.1.3. 2011 Accomplishments. In CY 2011, DPW staff identified the need for storm drain markers in its industrial facilities during quarterly ECO inspections and site visits and emplaced markers. Additionally, DPW Clean Water staff provided comments on new construction projects requiring storm drain stencils.

Figure 7. Semi-permanent storm drain marker located at Building 105, Wheeler Army Airfield.
Figure 8. Permanent storm drain marker located at the Kalakaua Neighborhood, Schofield Barracks.

3.2.1.4. 2012 Goals. DPW proposes to continue to conduct site visits and utilize quarterly ECO inspections to identify the need for additional storm drain markers. DPW proposes to develop a storm drain marker event that could be used to educate Army personnel and dependents on pollution prevention.

3.2.1.5. Responsibility. It will be the responsibility of the DPW Clean Water Program Manager to provide supplies and assist in the installation of the storm drain marker. The DPW Clean Water Program Manager will keep records of the dates and location where the markers are installed.

3.2.1.6. Schedule. In CY 2012, as new storm drains are constructed, new curb inlets will be imprinted with the "Dump No Waste" drain markers as required in the standard construction specifications. Additionally, quarterly ECO inspections shall identify storm drains that require a marker, and the DPW Clean Water Program Manager will maintain a record of storm drains needing markers. DPW proposes to develop a brochure and/or storm drain marker event to educate Army personnel and dependents on pollution prevention.

3.2.1.7. Reporting and Record Keeping. DPW Clean Water Program Manager shall maintain a record of storm drain markers required and emplaced as identified through site visits and quarterly ECO inspections.

3.2.2. PI-2: Education of Installation School Students

3.2.2.1. BMP Description. Develop an annual storm water education program with the elementary and middle schools located on FS, WAAF, and SB.

3.2.2.2. 2011 Goals. DPW proposed to present the lesson plan and rainwater harvesting worksheet to additional elementary and middle school classes. DPW proposed to develop a water quality monitoring event targeted at middle school students to educate on pollution prevention and watershed management.

3.2.2.3. 2011 Accomplishments. DPW Clean Water Program staff presented the lesson plan, provided as Tab 2-1, on the topic of water and energy with a focus on sustainable storm water management and pollution prevention, and the rainwater harvesting system calculation worksheet to fifth grade classes at Hale Kula Elementary School on SB on April 5, April 7, April 11, and April 12. DPW, IPC, and Lend Lease staff coordinated an opening ceremony for the outdoor classroom project on October 25, photographs of the event are provided as Tab 2-2. The opening ceremony was attended by Department of Education and Army personnel, as well as Hale Kula Elementary School students, parents, and staff, and all in attendance learned about how the project prevents pollution and sustainably manages and reuses storm water runoff. DPW Clean Water Program and Lend Lease staff participated in the Hale Kula Elementary School fifth grade garden club meetings on November 9 and December 14 to educate on the outdoor classroom project.

3.2.2.4. 2012 Goals. DPW proposes to present the lesson plan and rainwater harvesting worksheet to additional elementary and middle school classes. DPW proposes to develop a water quality improvement event targeted at middle school students to educate on pollution prevention and watershed management.

3.2.2.5. Responsibility. It will be the responsibility of the DPW Clean Water Program Manager to provide any needed project funding and to continue to oversee classroom presentations and public involvement events for students.

3.2.2.6. Schedule. DPW proposes to contact schools in the late winter/early spring to schedule classroom presentations. DPW proposes to develop a water quality improvement event for middle school students in CY 2012.

3.2.2.7. Reporting and Record Keeping. DPW Clean Water Program Manager shall maintain records of classroom presentations and outreach events.

3.2.3. PI-3: Public Involvement Project

3.2.3.1. BMP Description. Develop an annual public involvement project to involve Army personnel and dependents in storm water management and pollution prevention activities.

3.2.3.2. 2011 Goals. DPW proposed to develop and assist with funding a public involvement project in CY 2011 and worked with IPC and Lend Lease staff to collaborate on an outdoor classroom project to demonstrate storm water management and pollution prevention techniques through rainwater harvesting systems, LID techniques, and native plant gardens at USAG-HI elementary schools.

3.2.3.3. 2011 Accomplishments. In CY 2011, DPW funded a rainwater harvesting project to be located at the Oahu Army Natural Resource Program facility located on SB, project diagram provided as Tab 2-3. The project enlisted the support of a local Boy Scout troop to help fund and construct the first phase of the project completed in CY 2010: installing the irrigation system to ultimately be supplied by harvested rainwater. Through project meetings DPW staff had the opportunity to educate on storm water management: post-construction BMPs and pollution prevention and involve Army personnel and dependents in the USAG-HI storm water management program. In October, DPW, IPC, and Lend Lease staff completed the outdoor classroom project at Hale Kula Elementary School (Tab 1-7). DPW developed a plan for an outdoor classroom project at Shafter Elementary School, located at FS, to be completed in CY 2012.

3.2.3.4. 2012 Goals. DPW proposes to develop and assist with funding a public involvement project in CY 2012 and has begun work with IPC and Lend Lease staff to collaborate on an outdoor classroom project to demonstrate storm water management and pollution prevention techniques through rainwater harvesting systems, LID techniques, and native plant gardens at Shafter Elementary School.

3.2.3.5. Responsibility. It will be the responsibility of the DPW Clean Water Program Manager to oversee and fund the public involvement project.

3.2.3.6. Schedule. The public involvement project for CY 2012 will likely occur in the late summer/early fall, to coincide with the IPC annual community service work day. Project planning meetings will be conducted regularly throughout the year leading up to the project event day and will include DPW staff, IPC staff, and elementary school staff.

3.2.3.7. Reporting and Record Keeping. DPW Clean Water Program staff will maintain a record of public involvement project meetings and activities.

PI-4: Public Review of the SWMP

3.2.4.1. BMP Description. Include Army personnel and dependents in reviewing the SWMP.

3.2.4.2. 2011 Goals. DPW proposed to assess the success of utilizing the DPW Clean Water Program website for posting a draft Annual Report and comment form in including Army personnel and dependents and civilian personnel in reviewing the SWMP. DPW proposed to continue to include Army personnel and dependents and civilian personnel in reviewing the SWMP.

3.2.4.3. 2011 Accomplishments. In CY 2011, DPW Clean Water Program staff made a draft of the Annual Report available for public review and comment by posting a link to the report and providing an electronic comment form on the DPW Clean Water Program webpage from January 6, 2012 through January 27, 2012. In addition, outreach for the comment period was made through the USAG-HI Weekly Bulletin that is delivered to major commands, tenant and service organizations, and other federal offices for further distribution and posting within their organizations, MTV2, IPC website, and various advisory committee email announcements, as provided in Tab 2-4. Comments were collected and incorporated into this report.

3.2.4.4. 2012 Goals. DPW proposes to continue to assess the success of utilizing the DPW Clean Water Program website for posting a draft Annual Report and comment form in including Army personnel and dependents and civilian personnel in reviewing the SWMP. DPW proposes to continue to include Army personnel and dependents and civilian personnel in reviewing the SWMP.

3.2.4.5. Responsibility. It will be the responsibility of the DPW Clean Water Program Manager to include Army personnel and dependents in reviewing the SWMP.

3.2.4.6. Schedule. DPW shall publish a draft Annual Report available for comment for three weeks of comment period, at a minimum. DPW shall communicate the need for Army personnel and dependents and civilian personnel to provide feedback on the SWMP throughout the year as needed.

3.2.4.7. Reporting and Record Keeping. DPW Clean Water Program Manager will maintain a record of public comments.

3.3. Illicit Discharge Detection and Elimination (ID)

The NPDES permit requires USAG-HI to develop, implement, and enforce a program to detect and eliminate illicit discharges that, at a minimum, includes the following:

- Establishment of installation-wide instructions, directive, or other regulatory mechanism, including enforcement procedures and actions, that prohibit non-storm water discharges into the USAG-HI MS4.
- Procedures to detect and eliminate illicit discharges.
- Compilation of a list of non-storm water discharges or flows specified in part A.3 of the NPDES permit that are considered to be significant contributors of pollutants to the MS4

and measures to be taken to prevent these discharges, or reduce the amount of pollutants in these discharges.

The following BMPs are proposed to meet the objectives of the illicit discharge detection and elimination control measure:

- ID-1: Detect and investigate illicit discharges
- ID-2: Develop a list of non-storm water discharges

3.3.1. ID-1: Detect and Investigate Illicit Discharges

3.3.1.1. BMP Description. Perform dry weather outlet inspections as a method to detect illicit discharges. USAG-HI has used its existing GIS to identify the number of storm water outlets that discharge to streams. At this time, we have identified a total of 270 outlets, including both industrial and residential areas.

3.3.1.2. 2011 Goals. DPW proposed to conduct additional dry weather outfall inspections to identify illicit discharges and will fund any needed corrections.

3.3.1.3. 2011 Accomplishments. DPW funded an illicit discharge survey that was conducted between the periods 25 July – 24 August 2011 by a contractor. During the survey 155 outfalls were inspected as follows: AMR (31), FS (49), HMR (7), SB (34), SBER (8), TAMC (20), and WAAF (6). The survey was conducted in accordance with established references from EPA and SDOH. The purpose of the survey was to identify non-storm water discharges at high priority areas.

DPW updated its "Enforcement Procedures and Actions for the Illicit Discharge Detection Elimination Program," as provided in Tab 3-1, which included an overview of NPDES permit requirements and outlined the enforcement procedure, and record keeping practices related to the program.

Figure 9. Dry weather flow inspection.

3.3.1.4. 2012 Goals. DPW will complete the mitigation measures identified in the illicit discharge survey. 10 actions have been completed and nine are ongoing. Additional outlet inspections will be performed as part of the IDDE program.

3.3.1.5. Responsibility. The DPW Clean Water Program Manager is responsible to continue to fund contractor support of this activity. It is the responsibility of the tenant to remove the illicit discharges with assistance from DPW as needed.

3.3.1.6. Schedule. Dry weather outfall inspections will be regularly conducted and documented throughout CY 2012. DPW shall correct any issues of non-compliance per the "Enforcement Procedures and Actions for the Illicit Discharge Detection Elimination Program" in a timely manner.

3.3.1.7. Reporting and Record Keeping. Dry weather outfall inspection records are maintained by the DPW Clean Water Program Manager.

3.3.2. ID-2: List of Non-Storm Water Discharges

3.3.2.1. BMP Description. The USAG-HI NPDES permit requires the permittee to develop a list of potential sources of non-storm water discharges.

3.3.2.2. 2011 Goals. DPW proposed to continue to perform dry weather outfall inspections and to identify needed storm sewer infrastructure improvements to be included in the USAG-HI annual work plan. DPW proposed to fund an illicit discharge detection survey that would include a review of installation maps and as-built plans to identify potential illicit discharges and to verify with field visits and dye tests whether illicit discharges exist. A report was to be prepared summarizing the survey and recommended corrective actions, identifying future survey locations, and proposing a schedule for future surveys. DPW proposed to correct all potential sources of non-storm water discharges and to communicate the need for notification of potential issues by Army personnel and dependents and civilian personnel.

3.3.2.3. 2011 Accomplishments. DPW performed dry weather outfall inspections, funded an illicit discharge detection survey, and is in the process of correcting identified issues. Additionally, DPW prepared a list of non-storm water discharges and mitigation BMPs, provided as Tab 3-2.

3.3.2.4. 2012 Goals. DPW proposes to continue to maintain a list of potential sources of non-storm water discharges and mitigation BMPs and to develop public education materials and events to communicate required BMPs.

3.3.2.5. Responsibility. The DPW Clean Water Program Manager will be responsible for maintaining a list of potential sources of non-storm water discharges and mitigation BMPs and for public education materials and events.

3.3.2.6. Schedule. The annual work plan will be updated if any potential sources of non-storm water discharges due to infrastructure design and failure issues risk a violation of the permit.

3.3.2.7. Reporting and Record Keeping. The list of non-storm water discharge sources will be maintained by the DPW Clean Water Program Manager, as well as a list of annual work plan projects required to correct issues as needed and public education materials and events.

3.4. Construction Site Runoff Control (CS)

The NPDES permit requires USAG-HI to develop, implement, and enforce a program to reduce pollutants in storm water runoff from construction activities disturbing one (1) acre or more, including construction activities less than one (1) acre that are part of a larger common plan of development or sale that would disturb one (1) acre or more, that, at a minimum, includes the following:

- Establishment of installation-wide instructions, directive, or other regulatory mechanism, including enforcement procedures and actions, that require erosion and sediment controls.
- Requirements for construction site operators to implement appropriate erosion and sediment control BMPs.
- 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.
- Procedures for site plan review, which incorporate consideration of potential water quality impacts.
- Procedures for receipt and consideration of information submitted by the public.
- Procedures for site inspection and enforcement of control measures.

To meet the objective of the construction site runoff control program, the following BMPs are proposed:

- CS-1: Adoption and Phase-in of City's Storm Water Design Guidance
- CS-2: Review of Storm Water BMP Construction Drawings
- CS-3: Construction Site Inspections

3.4.1. CS-1: Adoption and Phase-in of City's BMP Manual for Construction Sites

3.4.1.1. BMP Description. The U.S. Army has a variety of design and construction standards and guidelines, however USAG-HI uses existing design and construction standards issued by the City and County of Honolulu for projects in Hawaii.

3.4.1.2. 2011 Goals. DPW proposed to adopt updated City and County of Honolulu standards and specifications once available. DPW proposed to continue contractor training through ECATTS, participate in planning charrettes and pre-construction meetings, conduct quarterly construction site visits, and perform project review to verify compliance.

3.4.1.3. 2011 Accomplishments. In CY 2011, DPW requested that construction contractors use the following City and County of Honolulu manuals in their design and construction and grading plans, erosion and sediment control plans and specifications:

- *Best Management Practices Manual for Construction Sites in Honolulu*, prepared by the Department of Environmental Services City and County of Honolulu, May 1999.
- *Rules Relating to Soil Erosion Standards and Guidelines*, prepared by the Department of Planning and Permitting City and County of Honolulu, April 1999.

- *Rules Relating to Storm Drainage Standards*, prepared by the Department of Planning and Permitting City and County of Honolulu, January 2000.

DPW verified compliance through project review and quarterly construction site inspections and tracked ECATTS training.

DPW updated "Enforcement Procedures and Actions for Construction Sites," as provided in Tab 4-1, which included an overview of NPDES permit requirements and outlined site inspection responsibility and schedule, enforcement procedures, and record keeping practices related to the program.

3.4.1.4. 2012 Goals. DPW proposes to adopt updated City and County of Honolulu standards and specifications once available. DPW proposes to continue contractor training through ECATTS, participate in planning charrettes and pre-construction meetings, conduct quarterly construction site visits, and perform project review to verify compliance.

3.4.1.5. Responsibility. It will be the responsibility of the DPW Clean Water Program Manager to ensure the latest design standards are being incorporated in the approved site plans and to conduct construction site inspections and retain inspection records and documentation of any corrective measures as well as to perform project review.

3.4.1.6. Schedule. Review updated City and County of Honolulu standards and specifications once completed and communicate updates to DPW, Army Corps of Engineers, IPC engineers and contractors and privatized utility owners. Attend planning charrettes and pre-construction meetings, conduct quarterly construction site inspections, and perform project review as needed.

3.4.1.7. Reporting and Record Keeping. Copies of the latest standards and specifications will be retained and provided on the Clean Water Program webpage and records of inspections and project review comments shall be retained by the DPW Clean Water Program Manager.

3.4.2. CS-2: Review of Storm Water BMP Construction Drawings and Specifications

3.4.2.1. BMP Description. Participate in the review process for Civil Design, Plans, and Specifications related to site drainage, storm water infrastructure, and BMPs. Modify specifications as needed.

3.4.2.2. 2011 Goals. DPW proposed to track the number of projects reviewed along with the review comments made.

3.4.2.3. 2011 Accomplishments. A total of 108 projects were reviewed that included the following: environmental assessments, record of environmental considerations, annual work projects, and construction plans and specifications. The focus of these reviews was on NPDES permit compliance, erosion and sediment control BMPs, and post-construction storm water management. A spreadsheet of the review comments are provided in Tab 4-2 as well as a project review checklist. Site visits were conducted of proposed sites as needed and DPW Clean Water Program staff attended various project charrettes and pre-construction meetings to provide comments on NPDES compliance and requirements.

3.4.2.4. 2012 Goals. DPW proposes to continue to review and track project comments, conduct site visits, and attend project charrettes and pre-construction meetings as needed.

3.4.2.5. Responsibility. It is the responsibility of the DPW Clean Water Program Manager to review the design, plans, and specifications of each project and to maintain records of project review comments.

3.4.2.6. Schedule. DPW will perform reviews of construction drawings and specifications as projects are developed.

3.4.2.7. Reporting and Record Keeping. Project review comments are maintained by the DPW Clean Water Program Manager, and the date that comments are submitted to the project designers is maintained by the DPW NEPA Coordinator.

3.4.3. CS-3: Construction Site Inspections

3.4.3.1. BMP Description. Establish procedures for construction site inspections and correction of issues of non-compliance and conduct quarterly inspections.

3.4.3.2. 2011 Goals. DPW proposed to continue quarterly construction site inspections to ensure compliance with NPDES permit requirements, preventing sediment-laden runoff from leaving construction sites. DPW proposed to communicate and educate on the most frequent findings of deficiency and to measure success through subsequent inspections.

3.4.3.3. 2011 Accomplishments. During CY 2011, 36 construction site inspections were conducted in total and were scheduled per construction site on a quarterly basis and tracked through a spreadsheet, provided as Tab 4-3. Deficiencies were recorded in the DPW construction inspection report checklist as well as communicated to the contractor on-site upon completion of the inspection. Following the inspection, the inspection report was emailed to the contractors and contractors were allowed two weeks to provide documentation of corrective action for any findings of non-compliance. DPW analyzed the CY 2010 construction inspection reports in order to communicate and educate on the most frequent findings of deficiency.

3.4.3.4. 2012 Goals. DPW proposes to continue quarterly construction site inspections to ensure compliance with NPDES permit requirements, preventing sediment-laden runoff from leaving construction sites. DPW proposes to communicate and educate on the most frequent findings of deficiency and to measure success through subsequent inspections.

3.4.3.5. Responsibility. DPW Clean Water Program Manager is responsible for conducting construction site inspections and following up on any issues of non-compliance.

3.4.3.6. Schedule. Quarterly construction site inspections will be conducted by DPW Clean Water Program staff.

3.4.3.7. Reporting and Record Keeping. DPW Clean Water Program Manager will maintain records of inspection dates, reports, and corrective actions.

3.5. Post-Construction Runoff Control (PC)

Develop, implement, and enforce a program to reduce pollutants in storm water runoff from new development and redevelopment projects that disturb one (1) acre or more, including construction activities less than one (1) acre that are part of a larger common plan of development or sale that would disturb one (1) acre or more, that, at a minimum, includes the following:

- Establishment of installation-wide instructions, directive, or other regulatory mechanism, including enforcement procedures and actions that address post-construction runoff from new development and redevelopment projects.
- Structural and/or non-structural BMPs appropriate for each installation to minimize water quality impacts and attempt to maintain pre-development runoff conditions.
- Procedures for long-term operations and maintenance of BMPs.

To meet the objective for the post-construction runoff control measure, the following BMPs are proposed:

- PC-1: Adoption and Phase-in of Post-Construction Storm Water Management Requirements
- PC-2: Review of Civil Design Plans and Specifications
- PC-3: Provide Funding for the Design & Construction of a Post-Construction Storm Water Management Demonstration Project

3.5.1. PC-1: Adoption and Phase-in of Post-Construction Storm Water Management Requirements

3.5.1.1. BMP Description. USAG-HI will adopt federal, state, and local post-construction storm water management requirements (whichever is most stringent) in order to minimize water quality impacts and attempt to maintain pre-development runoff conditions for new construction and redevelopment projects.

3.5.1.2. 2011 Goals. DPW proposed to continue to work with in-house DPW Engineering, Construction, Operations and Maintenance, and Master Planning Divisions, Army Corps of Engineers, IPC, and privatized utility owners on incorporating federal post-construction storm water management requirements into project request for proposals and specifications.

DPW proposed to oversee the finalization of the LID Retrofit Analysis Study and to fund additional studies and post-construction storm water management planning tools to assist with complying with federal requirements.

DPW proposed to maintain records of all post-construction BMPs installed and maintained and perform inspections during installation.

3.5.1.3. 2011 Accomplishments. DPW held a LID seminar on April 19 to educate on USAG-HI post-construction storm water management requirements and local LID resources. The audience included staff from DPW Engineering, Construction, Operations and Maintenance, and Master Planning Divisions, Army Corps of Engineers, IPC, lend lease, and private consultants. Slides are provided as Tab 5-1. DPW Clean Water Program staff participated in regular, semiannual

meetings with the Army Corps of Engineers to discuss post-construction storm water management requirements as well as various project-specific meetings to discuss requirements. DPW Clean Water Program staff attended planning charrettes and provided guidance on implementing federal post-construction storm water management requirements.

DPW maintained the "Enforcement Procedures and Actions for Post-Construction Storm Water Management in New Development and Redevelopment," as provided in Tab 5-2, which included an overview of NPDES permit and federal storm water management requirements and outlined implementation procedures, responsibility, reporting, inspections, enforcement procedures, and record keeping practices related to the program.

DPW completed the LID Retrofit Analysis Study for SB and WAAF to identify retrofit opportunities for future annual work plan projects and submitted projects to be considered for funding in the current fiscal year.

DPW maintained a library of resources on post-construction storm water management and LID techniques that are available to project designers and engineers.

3.5.1.4. 2012 Goals. DPW proposes to continue to work with in-house DPW Engineering, Construction, Operations and Maintenance, and Master Planning Divisions, Army Corps of Engineers, IPC and privatized utility owners on incorporating federal post-construction storm water management requirements into project request for proposals and specifications.

DPW shall maintain records of all post-construction BMPs installed and maintained and perform inspections during installation.

3.5.1.5. Responsibility. DPW Clean Water Program Manager is responsible to provide guidance to the various agencies on implementing NPDES permit and federal post-construction storm water management requirements. DPW Clean Water Program Manager is responsible for developing and funding any post-construction storm water management studies and demonstration projects. DPW Clean Water Program staff is responsible for inspecting the installation of post-construction BMPs, maintaining a database of all post-construction storm water BMPs, and assisting to ensure that operations and maintenance plans and specifications are followed.

3.5.1.6. Schedule. DPW will participate in regular meetings with the various agencies, inspect the installation of post-construction BMPs, and maintain a database of BMPs and operations and maintenance records as needed.

3.5.1.7. Reporting and Record Keeping. DPW Clean Water Program Manager is responsible for maintaining records related to post-construction storm water management. This information will be included in the annual report.

3.5.2. PC-2: Review of Civil Design Plans and Specifications

3.5.2.1. BMP Description. Participate in the review process for Civil Design, Plans, and Specifications to provide comments on post-construction storm water management requirements, BMP design, and operations and maintenance specifications.

3.5.2.2. 2011 Goals. DPW proposed to review site plans for compliance with applicable post-construction storm water management requirements and to communicate NPDES permit requirements for post-construction storm water management.

3.5.2.3. 2011 Accomplishments. DPW reviewed 25 civil design plans and specifications and provided comments related to post-construction storm water management requirements, as provided in Tab 4-2.

3.5.2.4. 2011 Goals. DPW proposes to continue to review civil design plans and specifications to ensure compliance with post-construction storm water management requirements.

3.5.2.5. Responsibility. DPW Clean Water Program Manager is responsible for reviewing civil design plans and specifications and providing comments on post-construction storm water management requirements.

3.5.2.6. Schedule. Civil design plans and specifications shall be reviewed in a timely manner.

3.5.2.7. Reporting and Record Keeping. Project review comments are maintained by the DPW Clean Water Program Manager, and the date that comments are submitted to the project designers is maintained by the DPW NEPA Coordinator.

3.5.3. PC-3: Provide Funding for the Design & Construction of a Post-Construction Storm Water Management Demonstration Project

3.5.3.1. BMP Description. Develop a project to demonstrate post-construction storm water management techniques to achieve water quality benefits and to provide an opportunity for public education.

3.5.3.2. 2011 Goals. DPW proposed to develop and assist with funding a post-construction demonstration and public involvement project in CY 2011 and worked with IPC and Lend Lease to collaborate on an outdoor classroom project to demonstrate storm water management and pollution prevention techniques through a rainwater harvesting system and native plant garden at USAG-HI elementary schools.

3.5.3.3. 2011 Accomplishments. DPW, IPC, and Lend Lease completed an outdoor classroom project at Hale Kula Elementary School, located on SB, (Tab 1-6, Tab 1-7, and Tab 2-2) and worked on developing a similar outdoor classroom project at Shafter Elementary School, located on FS.

3.5.3.4. 2012 Goals. DPW proposes to develop and assist with funding a post-construction demonstration and public involvement project in CY 2012 and has begun work with IPC and lend lease to collaborate on an outdoor classroom project to demonstrate storm water management and pollution prevention techniques through a rainwater harvesting system and native plant garden at USAG-HI elementary schools.

DPW proposes to fund additional public display signage for new construction projects that include innovative post-construction storm water management techniques.

3.5.3.5. Responsibility. It will be the responsibility of the DPW Clean Water Program Manager to oversee and fund the post-construction storm water management demonstration project.

3.5.3.6. Schedule. The public involvement project for CY 2012 will likely occur in the fall, to coincide with IPC annual community service work day. Project planning meetings will be conducted regularly throughout the year leading up to the project event day and will include DPW staff, IPC staff, elementary school staff, and Department of Education staff.

3.5.3.7. Reporting and Record Keeping. DPW Clean Water Program Manager will retain records of funded projects and associated project meetings.

3.6. Pollution Prevention (PP)

The NPDES permit requires USAG-HI to develop, implement, and enforce a Storm Water Pollution Control Plan (SWPCP) that has the ultimate goal of preventing or reducing pollutant runoff and, at a minimum, includes the following:

- Establishment of installation-wide instructions, directive, or other regulatory mechanism, including enforcement procedures and actions, that require activities to comply with the SWPCP and prevent the discharge of pollutants into the Permittee's small MS4.
- Storm water system map, showing the location of all outfalls and names and location of all State waters that receive discharges from those outfalls.
- List of all industrial activities, as defined in 40 CFR Sections 122.26(b)(14)(i) through 122.26(b)(14)(ix) and 122.26(b)(14)(i) including their Standard Industrial Classification (SIC) Codes.
- Potential storm water pollutants and their sources for each type of facility/activity.
- Site-specific BMPs, good housekeeping procedures, and pollutant control procedures for the operations and maintenance of each type of facility/activity whose storm water discharges into the Permittee's separate storm sewer system and/or directly enters receiving State waters.
- Spill prevention and response procedures.
- Pesticide, herbicide, and fertilizer application procedures.
- Procedures to conduct inspections of industrial facilities at least once per calendar year.
- Training for military personnel, civilian workers, contractors, and other individuals associated with the facility to ensure familiarity with the operations and maintenance program.

The permit also requires the development and implementation of a storm water monitoring plan that, at a minimum, includes the following:

- Description of sampling locations, including justification for site selection
- Sampling location map
- Monitoring parameters
- Preservation techniques
- Sample holding time
- Testing method and method detection limit for each parameter

- Quality Assurance/Quality Control (QA/QC) measures
- Procedures for measuring rainfall depth, duration, location, and storm event return time
- Format for reporting monitoring results

Lastly, the permit requires the development and implementation of a storm sewer infrastructure maintenance program that, at a minimum, includes the following:

- Annual inspections of debris basins performed October 1st of each year
- Annual inspections of storm drainage lines, inlets, catch basins, and flood control structures at least once per calendar year
- Maintenance and clearing of debris basins, storm drainage lines, inlets, catch basins, and flood control structures as necessary
- Documentation of inspections and maintenance

To meet the objective for the pollution prevention and good housekeeping measures the following BMPs are proposed:

- PP-1: Develop Storm Water Database/GIS
- PP-2: Develop Street Sweeping Program
- PP-3: Develop a List of Potential Storm Water Pollutants for Each Facility
- PP-4: Develop a Spill Prevention and Response Procedures
- PP-5: Develop Policy for Reduction in Pesticide and Herbicide Application
- PP-6: Develop Policy for Reduction in Fertilizer Application
- PP-7: Perform Facility Inspections
- PP-8: Develop Storm Water Monitoring Plan
- PP-9: Develop and Implement a Maintenance Program

3.6.1. PP-1: Develop Storm Water Database/GIS

3.6.1.1. BMP Description. Develop storm water database/GIS to keep track of the BMPs described in the Annual Report.

3.6.1.2. 2011 Goals. DPW proposed to continue to provide as-built plans to the DPW GIS office to ensure updated storm sewer infrastructure information is available and to utilize the Enviance compliance tool for tracking BMP completion status.

3.6.1.3. 2011 Accomplishments. DPW provided as-built plans to the DPW GIS office. DPW utilized a storm water management database on a program-shared drive to track BMP completion status.

3.6.1.4. 2012 Goals. DPW proposes to continue to provide as-built plans to the DPW GIS office to ensure updated storm sewer infrastructure information is available and to maintain a database to track BMP completion status.

3.6.1.5. Responsibility. It is the responsibility of the DPW Clean Water Program Manager to input BMP data into the storm water database.

3.6.1.6. Schedule. Updates to the storm sewer mapping and GIS system are being supported by the DPW Systems Engineering Branch as needed. BMP status data shall be recorded throughout the year.

3.6.1.7. Reporting and Record Keeping. Data will be stored with the DPW Systems Engineering Branch and in the storm water database, which is accessible by the DPW Clean Water Program staff.

3.6.2. PP-2: Develop a Street Sweeping Program

3.6.2.1. BMP Description. The existing street sweeping program is accomplished by DPW Operations and Maintenance Division staff. The street sweeping personnel includes one full-time employee stationed at SB and one part-time employee stationed at FS.

3.6.2.2. 2011 Goals. DPW proposed no change to the previous goal for the BMP, recommending to continue the existing frequency and location of street sweeping activities. See Figures 10 and 11 for a diagram of the street sweeping program at SB, WAAF, and FS.

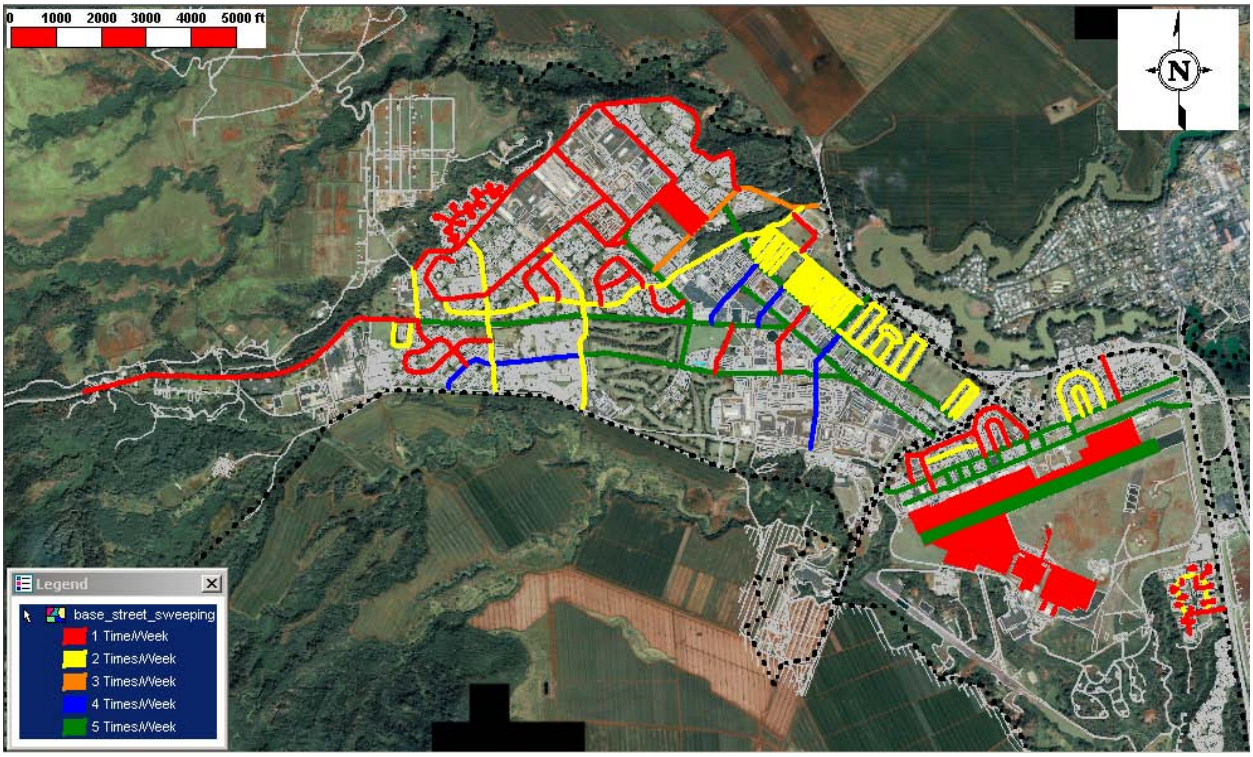

Figure 10. Map of street cleaning frequency per week for Schofield Barracks and Wheeler Army Airfield.

Figure 11. Map of street cleaning frequency per week for Fort Shafter.

3.6.2.3. 2011 Accomplishments. Street sweeping was performed by DPW Operations and Maintenance Division staff.

3.6.2.4. 2012 Goals. There are no proposed changes for this BMP.

3.6.2.5. Responsibility. It will be the responsibility of the DPW Clean Water Program Manager to keep track of the street cleaning information and any program changes. The information concerning street sweeping is located in the DPW Operations and Maintenance Division.

3.6.2.6. Schedule. Weekly cleaning frequency varies from once per week to five times per week. The frequency is primarily due to the amount of trees, the maturity of trees, and the amount of debris generated. The airfield is cleaned five times per week. The intent is to remove foreign objects from the airfield.

3.6.2.7. Reporting and Record Keeping. Currently, the DPW Operations and Maintenance Division keeps track of what streets are cleaned and at what frequency.

3.6.3. PP-3: Develop a List of Potential Storm Water Pollutants for Each Facility

3.6.3.1. BMP Description. Develop a material list, per facility, that could potentially harm the environment if introduced into the storm sewer system. USAG-HI previously received a Notice of Violation regarding its storage of hazardous materials. In 1996, USAG-HI implemented the Hazardous Substance Management System for the purpose of tracking hazardous material usage from cradle to grave.

USAG-HI has prepared a SWPCP that includes site-specific facility plans with a description of potential storm water pollutants, site-specific BMPs, good housekeeping procedures, and pollutant control procedures for operations and maintenance.

3.6.3.2. 2011 Goals. DPW proposed no changes for CY 2011. DPW proposed to continue performing quarterly inspections of its industrial facilities to determine those products which are stored in each facility and to update the material inventory list.

3.6.3.3. 2011 Accomplishments. DPW performed quarterly inspections of industrial facilities. DPW utilized the Hazardous Material Management System (HMMS), a web-based hazardous material tracking tool, to track hazardous material storage, use, and disposal. The products are tracked using a bar code system, which improves accountability. DPW prepared additional SWPCP facility plans for dining facilities.

3.6.3.4. 2012 Goals. DPW proposes to conduct quarterly inspections of industrial facilities to track potential storm water pollutants for each facility.

3.6.3.5. Responsibility. It is the responsibility of the DPW Environmental Hazardous Waste Program Manager and DPW Clean Water Program Manager to oversee quarterly inspections of industrial facilities to determine what products are being stored, updating HMMS as needed.

3.6.3.6. Schedule. DPW Environmental Hazardous Waste and Clean Water Program staff will perform quarterly inspections of industrial facilities and update HMMS as needed. DPW Clean Water Program shall update the SWPCP as needed.

3.6.3.7. Reporting and Record Keeping. The information stored in HMMS is used for the annual Emergency Planning and Community Right-to-Know Act reporting. Records are retained by the DPW Environmental Office and USAG-HI, Directorate of Logistics. DPW Clean Water Program Manager has access to facility inspection reports. DPW Clean Water Program Manager retains a record of updates to the SWPCP.

3.6.4. PP-4: Develop Spill Prevention and Response Procedures

3.6.4.1. BMP Description. USAG-HI shall implement its Spill Prevention, Control, and Countermeasure (SPCC) Plan and comply with federal SPCC regulations and update the SPCC Plan as needed.

USAG-HI has prepared a SPCC Plan. The plan describes responsibilities, spill prevention procedures, spill control and response procedures, and notification and training requirements. Currently, contract personnel are available to assist with spill response on USAG-HI installations. Additionally, USAG-HI's goal is to significantly reduce (to zero) the number of reportable spills.

3.6.4.2. 2011 Goals. DPW proposed to conduct a spill training exercise in CY 2011 to continue to train and prepare key personnel in SPCC Plan requirements and spill response. DPW proposed to continue to implement the SPCC Plan and update the SPCC Plan as needed. DPW proposed to continue to track and fund corrective actions as needed.

3.6.4.3. 2011 Accomplishments. DPW conducted a spill training exercise in August 2011. A report of the spill training exercise was prepared and provided as Tab 6.

The SPCC Plan was implemented and several projects were identified. The projects have been entered into the facility engineering work request system and corrections were tracked.

3.6.4.4. 2012 Goals. DPW proposes to conduct a spill training exercise in CY 2012 to continue to train and prepare key personnel in SPCC Plan requirements and spill response. DPW proposes to continue to implement the SPCC Plan and update the SPCC Plan as needed. DPW proposes to continue to track and fund corrective actions as needed.

3.6.4.5. Responsibility. It will be the responsibility of the DPW SPCC Program Manager to implement and update the SPCC Plan.

3.6.4.6. Schedule. The SPCC Plan shall be implemented and updated as necessary.

3.6.4.7. Reporting and Record Keeping. The DPW SPCC Program Manager maintains a record of SPCC Plan documents, updates, and corrective actions. The DPW Clean Water Program Manager will retain a record of SPCC Plan documents, updates, and corrective actions.

3.6.5. PP-5: Develop Policy for Reduction in Pesticide and Herbicide Application

3.6.5.1. BMP Description. The Department of Defense (DoD) defines pesticides to include insecticides, fungicides, and herbicides. The DoD Measures of Merit is to decrease use of pesticides from fiscal year 1993 levels by 50%. USAG-HI accomplished this reduction by fiscal year 2000.

From September 2005, the DoD Measures of Merit were revised to achieve usage based upon the average of fiscal year 2002 and fiscal year 2003 pesticide usage (45 percent of the original 1993 baseline – a 55 percent reduction).

3.6.5.2. 2011 Goals. DPW proposed to continue to monitor pesticide and herbicide usage on USAG-HI installations.

3.6.5.3. 2011 Accomplishments. USAG-HI measured and reduced pesticide and herbicide usage in 2011. DPW employed an entomologist to track the use of pesticide and to achieve the DoD Measures of Merit. Table 2 shows the total pounds of active ingredients of pesticides applied each fiscal year.

Table 2. Pesticide Use by Fiscal Year

FISCAL YEAR	TOTAL PESTICIDE USE [total lb - active ingredient]	PERCENTAGE REDUCTION [%]
1993	11,687	0%
1994	8,156	30%
1995	8,927	24%
1996	6,625	43%
1997	6,003	49%
1998	4,001	66%
1999	3,984	66%
2000	4,417	62%
2001	4,253	64%
2002	5,225	55%
2003	8,078	31%
2004	11,480	2%
2005	10,596	9%
2006	9,756	17%
2007	8626	26%
2008	7619	35%
2009	6247	47%
2010	5922	49%
2011		

The high use of pesticide in fiscal year's 2003, 2004, and 2005 was primarily due to the herbicide application for unexploded ordnance clearance. Herbicide application was required to dry out the vegetation in order to clear the training area by burning the vegetation. Clearing of the existing vegetation was required to provide a visible and open area for ordinance clearing.

3.6.5.4. 2012 Goals. DPW will continue to monitor pesticide and herbicide usage on USAG-HI installations.

3.6.5.5. Responsibility. The DPW staff entomologist tracks pesticide application and achievement towards DoD Measures of Merit.

3.6.5.6. Schedule. The DPW staff entomologist tracks pesticide application throughout the year and supplies annual reporting data for the Annual Report.

3.6.5.7. Reporting and Record Keeping. The DPW Clean Water Program Manager will record pesticide use data provided by the DPW staff entomologist in a spreadsheet.

3.6.6. PP-6: Develop Policy for Reduction in Fertilizer Application

3.6.6.1. BMP Description. Develop a policy for the tracking and application of fertilizers. The majority of fertilizer usage occurs on USAG-HI golf courses.

3.6.6.2. 2011 Goals. DPW proposed no change to the BMP and no additional plans to further reduce fertilizer use since we are below published norms.

3.6.6.3. 2011 Accomplishments. DPW tracked fertilizer usage, as provided in Table 3. Total fertilizer use was down from previous levels. Kalakaua Golf Course was converted to family housing, and only Leilehua and Nagorski (FS) Golf Courses remain.

Table 3. Fertilizer Use by Calendar Year

Calendar Year	Total Acreage (acres)	Total N Applied (lbs)	Application Rate (lbs N per 1000 sf)
2003	310	49260	3.7
2004	310	20052	1.5
2005	200	18625	2.2
2006	200	17746	2.1
2007	200	11420	1.3
2008	200	10472	1.2
2009	200	12330	1.4
2010	200	8601	1.0
2011			

3.6.6.4. 2012 Goals. DPW proposes no change to the BMP and no additional plans to further reduce fertilizer use since we are below published norms.

USAG-HI has submitted the necessary documents to the SDOH Wastewater Branch to use R-1 treated effluent at SB, scheduled to be constructed in CY 2012.

3.6.6.5. Responsibility. The DPW staff entomologist tracks fertilizer application on USAG-HI installations.

3.6.6.6. Schedule. The DPW staff entomologist tracks fertilizer application throughout the year and supplies annual reporting data for the Annual Report.

3.6.6.7. Reporting and Record Keeping. The DPW Clean Water Program Manager will record fertilizer use data provided by the DPW staff entomologist in a spreadsheet.

3.6.7. PP-7: Perform Facility Inspections

3.6.7.1. BMP Description. Facilities are inspected once per quarter by DPW Hazardous Waste Program staff inspectors. The inspection evaluates the facility on its industrial activities: hazardous material handling and storage, pollution prevention, good housekeeping practices, and storm water-specific pollution prevention BMPs. The inspection checklist section related to storm water pollution prevention BMPs is provided as Tab 1-4.

Each facility inspection is scored and evaluated for deficiencies. Inspection results are presented at the quarterly EQCC meeting, which includes the Garrison Commander and his staff. Because of this visibility, the facility operators are encouraged to pass inspections. There are several "starred" checklist items that must be passed or the facility operators fail the entire inspection.

3.6.7.2. 2011 Goals. DPW proposed to continue to reduce the number of deficiencies identified during industrial facility inspections. This will be accomplished through tracking inspection results and modifying the ECO training course material as needed.

3.6.7.3. 2011 Accomplishments. DPW Hazardous Waste Program staff inspectors uploaded inspection reports to a database for tracking inspections and corrective actions. DPW Hazardous Waste Program staff inspectors presented inspection results to the Garrison Commander at the quarterly EQCC meeting.

Inspections were conducted quarterly on the fiscal year calendar and results for all USAG-HI industrial facilities by quarter were as follows: 100% Satisfactory; 100% Satisfactory; 100% Satisfactory; 100% Satisfactory. The results for the military unit industrial facilities by quarter were as follows: 85% Satisfactory; 66% Satisfactory; 73% Satisfactory; 83% Satisfactory.

USAG-HI industrial facilities demonstrated outstanding compliance by implementing required BMPs as shown in the inspection results. This is likely due to the constantly updated and improved ECO training curriculum, and the fact that facility operators and assigned facility ECOs have a low turnover rate. Military unit industrial facilities had less consistent performance rates likely due to the high turnover rate of ECOs and unit tenants.

DPW analyzed the results of the inspections in order to provide additional educational materials for the ECO training course.

DPW prepared additional facility plans with BMPs for dining facilities and is developing an inspection checklist and schedule to conduct regular inspections of those facilities.

3.6.7.4. 2012 Goals. The intent is to continue to reduce the number of deficiencies identified during industrial facility inspections. This will be accomplished through tracking inspection results and modifying the ECO training course material as needed. DPW proposes to finalize the inspection checklist for facilities not currently inspected by the DPW Hazardous Waste Program staff and to schedule and conduct routine inspections of those facilities.

3.6.7.5. Responsibility. DPW Hazardous Waste Program staff inspectors perform facility inspections and report their results to the Garrison Commander on a quarterly basis. DPW Hazardous Waste Program staff provides regular ECO training. DPW Clean Water Program Manager shall analyze inspection reports and ECO training material and provide BMP and pollution prevention educational material as needed and inspect facilities not currently inspected by the DPW Hazardous Waste Program staff.

3.6.7.6. Schedule. Inspections are performed on a quarterly basis by DPW Hazardous Waste Program staff. Review of inspection reports shall be conducted on a quarterly basis and any additional ECO training material shall be provided as needed.

3.6.7.7. Reporting and Record Keeping. DPW Clean Water Program Manager has access to records of inspections in the inspection database.

3.6.8. PP-8: Develop Storm Water Monitoring Plan

3.6.8.1. BMP Description. If required, modify the existing storm water monitoring plan to account for current conditions. DPW believes the existing storm water monitoring plan meets the requirements of the permit. Modify the test type, if necessary, to account for pollutants associated with industrial activities.

3.6.8.2. 2011 Goals. DPW proposed to continue to implement the storm water monitoring plan and to continue to fund the collection of water quality sampling data to establish a baseline for building a watershed model. The monitoring data will be evaluated to determine if the permit requirements are being met.

3.6.8.3. 2011 Accomplishments. Storm water monitoring was performed by Element Environmental, LLC under a service contract. Water quality samples for CY 2011 were obtained from five sites as shown in the "Storm Water Monitoring Plan." The Discharge Monitoring Reports (DMR) are provided in Tab 7. There was no discharge from the Rock Quarry and a zero discharge DMR for the quarry will be submitted with the Annual Report.

3.6.8.4. 2012 Goals. DPW proposes to continue to implement the storm water monitoring plan and to continue to fund the collection of water quality sampling data as required.

3.6.8.5. Responsibility. It is the responsibility of the DPW Clean Water Program Manager to determine if water quality limits are exceeded, to locate possible sources, and to make corrections as needed.

3.6.8.6. Schedule. Storm water monitoring shall be accomplished according to the storm water monitoring plan.

3.6.8.7. Reporting and Record Keeping. DMRs are submitted to SDOH in the Annual Report.

3.6.9. PP-9: Develop and Implement a Maintenance Program

3.6.9.1. BMP Description. Develop and implement a maintenance program that includes annual inspections of debris basins, annual inspections of storm sewer system, maintenance and clearing of debris, and documentation of inspections and maintenance.

3.6.9.2. 2011 Goals. DPW proposed to conduct inspections prior to October 1st of each year. Perform maintenance and clearing of the storm sewer debris basins, storm drainage lines, inlets, catch basins, and flood control structures as necessary.

3.6.9.3. 2011 Accomplishments. Standard operating orders were issued to in-house DPW Operations and Maintenance Division personnel to inspect and maintain the storm drainage system in an operational status and in accordance with the NPDES permit. Annual inspections were performed prior to the rainy season in October. All damages and disrepairs were identified and work requests were submitted.

3.6.9.4. 2012 Goals. DPW proposes to continue to fund this important task.

3.6.9.5. Responsibility. It is the responsibility of the DPW Clean Water Program Manager to ensure inspections and maintenance are performed in accordance with the maintenance program document and performance work statement.

3.6.9.6. Schedule. Perform inspections, cleaning, and maintenance of the storm drainage system by October 1st of each year.

3.6.9.7. Reporting and Record Keeping. Annual inspection reports and maintenance records are maintained by DPW Operations and Maintenance Division.

4. Modifications Made to the SWMP in CY 2011

4.1. In CY 2011 there were no modifications made to the BMPs.

5. Storm Water Monitoring Results

5.1. See Tab 7 for DMRs.

6. Summary of Storm Water Activities Planned for CY 2012

6.1. Table 4 describes the various DPW Clean Water Program planned activities to be undertaken in CY 2011.

Table 4. Planned Activities for CY 12

Activity	Date/Location	Cost/ Funding Programmed
Earth Day 2012	April/SB	Low cost/Yes
Survey to Measure Success of PSA	March/ All USAG-HI installations	Low cost/Yes
Presentation to Installation Schools	Variable/SB, WAAF and FS	Low cost/Yes
Public Involvement/Post-Construction Storm Water Management Demonstration Project	August/SB and FS	Low cost/Yes
CY 2011-CY 2012 Rainwater Harvesting Demonstration Project	Ongoing/FS	Low cost/Yes
Public Review of SWMP	January/All USAG-HI installations	Low cost/Yes
Dry Weather Outfall Inspections	Variable/All USAG-HI installations	Low cost/Yes
Illicit Discharge Detection Survey	Variable /All USAG-HI installations	Low cost/Yes
Implement SPCC recommendations	Variable/All USAG-HI installations	As needed/Yes
Update/Implement SWPCP recommendations	Variable/All USAG-HI installations	As needed/Yes
Update ECO Training	Variable/DPW Env	As needed/Yes
Update Storm Water Database	Variable/All USAG-HI	Low cost/Yes

7. Major Modifications Made to the Storm Sewer System

7.1 The major modifications that were made to the storm sewer system were primarily from new construction of housing units and projects associated with training facilities as shown in Table 5. The U.S. Army is improving quality of life for its soldiers by privatizing housing units under its Residential Communities Initiative.

As part of the construction site runoff control program, USAG-HI has authorized the following contractors to discharge storm water through USAG-HI's small MS4.

Table 5. Major New Construction and Redevelopment Projects

Installation	Site/Project	Start Date	End Date	# Units	Modifications to Storm Drainage System	Contractor
AMR	Makai View Neighborhood	Apr-08	Jun-10	108	Pipes and Inlets	ACTUS
AMR	Sky View Neighborhood	Jan-07	Feb-11	229	Pipes and Inlets	ACTUS
AMR	Rim Loop Neighborhood	2008	Aug-11	163	Pipes and Inlets	ACTUS
FS	Simpson-Wisser Neighborhood	Jun-08	Jun-10	77	Pipes and Inlets	ACTUS
FS	Radar Hill Neighborhood	Jun-07	Mar-11	103	Pipes and Inlets	ACTUS
FS	Haoli Heights Neighborhood	2008	Mar-11	54	Pipes and Inlets	ACTUS
FS	New Barracks	Sep-08	Sep-10	NA	Pipes and Inlets	NAN
FS	Army Reserve Center	May-09	Feb-11	NA	Pipes and Inlets	SAN JUAN
SB	Aloalo Neighborhood	2008	May-10	74	Pipes and Inlets	ACTUS
SB	Child Development Center	May-08	Feb-10	NA	Pipes and Inlets	NAN
SB	New Barracks	May-09	Oct-11	NA	Pipes and Inlets	ARMY CORPS
SB	SBCT	May-09	Oct-11	NA	Pipes and Inlets	ARMY CORPS
WAAF	Wili Wili Neighborhood	2008	Dec-10	241	Pipes and Inlets	ACTUS

8. Summary

USAG-HI is committed to being a good steward of the environment. USAG-HI will continue to balance its core functions while prioritizing environmental protection and sustainable land management practices.

During CY 2011, USAG-HI focused on improving water quality through achieving SWMP BMP goals and implementing additional public education, public involvement, and post-construction storm water management BMPs.

USAG-HI remains committed to public education and public involvement to increase storm water pollution prevention awareness. As military units deploy and reset, ECO training is provided and is paramount.

Quarterly construction site inspections will continue to ensure compliance with approved site plans and erosion and sediment controls. The intent is to reduce sediment-laden runoff from leaving USAG-HI construction sites.

Recommendations from the illicit discharge survey have been implemented and associated projects are either completed or planned.

USAG-HI will continue to collaborate with SDOH and the City and County of Honolulu Department of Environmental Services as well as all other stakeholders on TMDL discussions, prioritizing compliance with water quality standards.