Davis-Monthan Air Force Base

Stormwater Management Program

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Revised September 2018

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1.0 Introduction

This document was prepared by Davis-Monthan Air Force Base (DMAFB) to comply with the Arizona Department of Environmental Quality, Water Quality Division's Arizona Pollutant Discharge Elimination System (AZPDES) 2016 General Permit for Discharge from Small Municipal Separate Storm Sewer Systems (MS4s) to Waters of the United States (hereinafter referred to as the Small MS4 Permit) (see Appendix A). This document constitutes DMAFB's Stormwater Management Plan (SWMP) and meets the requirements of the Notice of Intent (NOI) and Small MS4 General Permit. It also fulfills the requirements of Air Force Instruction (AFI) 32-1067, Chapter 5, "Storm Water Systems Located In The U.S.**".**

This SWMP addresses the six (6) minimum control measures as required by the Small MS4 General Permit. These six minimum control measures are:

- Public Education and Outreach
- Public Participation/Involvement
- Illicit Discharge Detection and Elimination
- Construction Site Runoff Control
- Post-Construction Runoff Control
- Pollution Prevention/Good Housekeeping

This SWMP is organized in accordance with Section 5.1 of the draft Small MS4 Permit and is available to the public for review on the DMAFB website at: https://www.dm.af.mil/About-DM/Environmental-Stewardship/

Section 5.4 addresses the methods and best management practices (BMPs) that will be implemented to achieve the purpose of each of the six (6) minimum control measures under the Small MS4 General Permit. The United States Environmental Protection Agency (EPA) has two web sites that provide additional methods and BMPs that can be used in the future to update this SWMP, when necessary: http://www2.epa.gov/national-pollutant-discharge-elimination-system-npdes/national-menu-best-management-practices-bmps and http://www2.epa.gov/national-pollutant-discharge-elimination-system-npdes/stormwater-discharges-municipal-sources#developing.

General fact sheets and stormwater publications concerning the Phase II regulations have been prepared by the EPA and can be found at http://www2.epa.gov/national-pollutant-discharge-elimination-system-npdes/stormwater-phase-ii-final-rule-fact-sheet.

In addition, the Arizona Department of Environmental Quality (ADEQ) has their own website, which contains information for Arizona's specific stormwater program and permit requirements: http://www.azdeq.gov/environ/water/permits/stormwater.html.

2.0 Receiving Waters

Several culverts and channels convey stormwater associated with industrial activities from the DMAFB outfalls to various water bodies in the City of Tucson. Outfalls 001, 002A, 002B, and 002C discharge stormwater into culverts that flow into the Tucson Diversion Channel, which flows in a westerly direction along the south side of Golf Links Road. Outfalls 004, 005A, 005B, and 006A discharge stormwater into unnamed channels that eventually empty into the pond at Lakeside Park, approximately one and one-half miles north of the DMAFB boundary. Drainage from Outfall 006B discharges to Atterbury Wash, which flows north and eventually discharges into Pantano Wash. Drainage from Outfall 007A is conducted through a culvert under a roadway on Base, across soil into a ditch. Stormwater from Outfalls 007B and 007C also discharge into the ditch. The ditch re-enters the Base and then leaves again as Outfall 008. Stormwater from Outfall 008 flows to the Ajo Detention Basin near the intersection of Ajo Way and County Club Way, approximately one and one-half miles from the DMAFB boundary. Based on the topography of the area, stormwater drainage bypassing Outfall 009A to discharge at Outfall 009B appears to flow to the detention basin near the intersection of Ajo Way and Country Club Way. Stormwater drainage from Outfall 010 also appears to be directed toward the detention basin. Table 2-1 lists the longitudinal and latitudinal coordinates and provides a summary of the receiving waters for each outfall.

2.1 List of Receiving Waters

TABLE 2.1
STORMWATER OUTFALL COORDINATES AND RECEIVING WATERS

OUTFALL #	COORDINATES*		Designation	Impaired	RECEIVING WATER
	Latitude	Longitude			
001	32 11’ 41” N	110 53’ 54” W	NA	No	Unnamed culvert, Tucson Diversion Channel
002A	32 11’ 33” N	110 52’ 39” W	NA	No	Unnamed culvert, Tucson Diversion Channel
002B	32 11’ 32” N	110 52’ 29” W	NA	No	Unnamed culvert, Tucson Diversion Channel
002C	32 11’ 32” N	110 52’ 19” W	NA	No	Unnamed culvert, Tucson Diversion Channel
004	32 09’ 46” N	110 50’ 24” W	A&Ww, PBC, FC	No	Unnamed channel, Pond at Lakeside Park
005A	32 09’ 46” N	110 49’ 51” W	A&Ww, PBC, FC	No	Unnamed channel, Pond at Lakeside Park
005B	32 09’ 47” N	110 49’ 22” W	A&Ww, PBC, FC	No	Unnamed channel, Pond at Lakeside Park

OUTFALL #	COORDINATES*		Designation	Impaired	RECEIVING WATER
	Latitude	Longitude			
006A	32 09' 46" N	110 48' 50" W	A&Ww, PBC, FC	No	Unnamed channel, Pond at Lakeside Park
006B	32 09' 46" N	110 48' 31" W	A&We, PBC, AgL A&We, PBC	No	Atterbury Wash, Pantano Wash
007A	32 09' 44" N	110 53' 17" W	NA	No	Unnamed ditch, Detention basin
007B	32 09' 48" N	110 53' 22" W	NA	No	Unnamed ditch, Detention basin
007C	32 11' 51" N	110 53' 24" W	NA	No	Unnamed ditch, Detention basin
008	32 10' 04" N	110 53' 46" W	NA	No	Unnamed ditch, Detention basin
009A	32 10' 35" N	110 54' 18" W	NA	No	Unnamed ditch, Possibly the detention basin
009B	32 10' 41" N	110 54' 26" W	NA	No	Unnamed ditch, Possibly the detention basin
010	32 11' 16" N	110 54' 26" W	NA	No	Unnamed ditch, Possibly the detention basin

* Coordinates are approximations.
AgL – Agricultural Livestock Watering
A&We – Aquatic and Wildlife, Ephemeral
A&Ww – Aquatic and Wildlife, Warm Water
FC – Fish Consumption
PBC – Partial Body Contact

2.2 Impairments and Pollutants of Concern

None of the receiving waters accepting stormwater flow from DMAFB are included on Arizona's 2012/2014 Impaired Waters (303D) list. Lakeside Lake is included on Arizona's 2012/2014 Not Attaining Waters list. The causes of impairment include ammonia, low dissolved oxygen, high pH, chlorophyll-A, nitrogen and phosphorus. Lakeside Lake is categorized as a 4a waterbody, as a Total Maximum Daily Load (TMDL) was completed in 2005.

2.3 Total Maximum Daily Loads

Lakeside Lake is categorized as a 4a waterbody, as a TMDL was completed in 2005. Outfalls 004, 005A, 005B, and 006A discharge to an unnamed channel and then to Lakeside Lake.

2.4 Wasteload Allocations

No wasteload allocations have been assigned to DMAFB.

2.5 Outfalls

DMAFB drainage areas were re-delineated in 2004. Drainage areas previously identified were re-examined to verify the accuracy of previous delineations. The most recent Comprehensive Facility Inspection (CFI), performed during the week of March 21, 2016, indicates the Outfalls are substantially unchanged from the 2004 delineation. The outfalls and their respective drainage areas are depicted on Figure 4-2, "Stormwater Pollution Prevention Plan Site Map".

Drainage Area 001

Drainage Area 001 drains the central portion of DMAFB. This area is relatively flat with a gentle northwesterly–descending slope. This drainage area includes some of the most industrialized portions of the Base, including portions of the flightline, the taxiways, and aprons and their associated maintenance and storage hangars. A majority of the administrative buildings are also found in this drainage area.

Stormwater flows to Outfall 001 via open drainage channels and an underground storm drain system. The effluent from the storm drain system in Drainage Area 001 emerges from three 36-inch diameter reinforced concrete pipes into a 30-feet-long by 15-feet-deep concrete channel. The downstream end of the concrete channel connects to a 96-inch reinforced concrete culvert that runs for approximately 200 feet prior to exiting the Base near the northwest corner.

Drainage Area 002A

Drainage Area 002 has been re-delineated and divided into two distinct drainage areas: Drainage Area 002A and Drainage Area 002B/C. Drainage Area 002A drains the majority of the northeastern portion of the Base and some of the most industrialized areas of the Base via Outfall 002A. Industrialized areas of the base draining to Drainage Area 002A include the entire AMARG industrial area and preserved aircraft storage area, the bulk fuel storage depot, POLAP, the golf course, DRMS, and the 612 ACOMS facilities, as well as a large portion of the Base residential area. This area is relatively flat with little slope.

Drainage Area 002B/C

Drainage Area 002B/C drains the northeastern-most portion of the Base via Outfalls 002B and 002C. The only industrial area located in this drainage area is Bldg. 7000, Navy/Marine Corps Reserve Center. Approximately half of the Base residential area drains to Drainage Area 002B/C. This area is relatively flat with little slope.

Stormwater flows through open drainage ditches and short segments of underground pipe. Outfall 002B is comprised of two corrugated steel pipes three feet in diameter, which discharge Stormwater into the Tucson Diversion Channel just east of Craycroft Road, south of Golf Links Road. Outfall 002C is comprised of four reinforced concrete pipes, each 3 feet in diameter, which carry Stormwater flow under the Base boundary fenceline, east of Craycroft Road and east of Outfall 002B.

Drainage Area 004

Drainage Area 004 drains a portion of the AMARG storage area abutting Irvington Road. This drainage area includes the ammunition storage area, which contains vehicle and equipment maintenance activities

at Buildings 183 and 237. This is Kinison Wash which also accept pumped Stormwater from Kolb Road. Stormwater runoff is conducted through open drainage ditches and channels, which emerge into an outlet channel approximately 100 feet wide. This outfall is located southeast of the intersection of Kolb and Irvington Roads.

Drainage Area 005A

Drainage Area 005A has been largely cleared for airplane storage purposes and descends toward the northwest. Stormwater runoff in this drainage area is channeled into a wide drainage ditch and exits through a concrete conveyance, approximately 33 feet wide, through the chain link fence onto the shoulder of Irvington Road. Outfall 005A exits the Base west of the intersection of Pantano Road and Irvington Road. However, water is prevented from exiting the Base at Outfall 005A until water backs up to a point where it can flow over an earthen wall that has been created outside the fence and that effectively blocks transport of water directly off Base. As the aircraft stored here do not belong to AMARG or DMAFB, there are not industrial activities connected with DMAFB located in this drainage area.

Drainage Area 005B

Drainage Area 005B has been largely cleared for airplane storage purposes and descends toward the northwest. Stormwater runoff in this drainage area is channeled into a small drainage ditch and exits through a concrete conveyance, approximately 33 feet wide, under the chain link fence onto the shoulder of Irvington Road. Outfall 005B exits just east of the intersection of Pantano Road and Irvington Road. There is a depression just outside the fence at Outfall 005B that may pool with Stormwater before it drains across the area toward the shoulder of Irvington Road. As the aircraft stored here do not belong to AMARG or DMAFB, there are no industrial activities connected with DMAFB located in this drainage area.

Drainage Area 006A

Drainage Area 006A drains portions of the small arms range and the detonation range. Stormwater flows through open drainage ditches and short culverts. Outfall 006A is comprised of one concrete pipe that is approximately three feet in diameter, which discharges water to the ground and eventually to a small wash that discharges under Irvington Road. No industrial activities are located in this drainage area.

Drainage Area 006B

Drainage Area 006B drains portions of the small arms range, the detonation range, and the riding stables. Stormwater runoff in this area is channeled into Atterbury Wash, which is approximately 30 feet wide. Atterbury Wash exits the Base just west of the intersection of Irvington Road and Camino Seco. No industrial activities are located in this drainage area.

Drainage Area 007

Drainage Area 007 includes the southern portion of the area southwest of the flightline. Industrial activities such as aircraft and equipment maintenance occur at Buildings 125, 128, 129, and 136, located off of the southeast end of the runway. Runoff from this drainage area is discharged under the fence bordering the Base in three different locations (Outfalls 007A, 007B, and 007C).

Drainage Area 008

Drainage Area 008 drains an area southwest of the flightline. The shallow ditch from Outfall 007 re-enters the Base after flowing through an off-Base area for approximately 500 feet. The ditch then flows through the Base and exits Base property near the off-Base intersection of Irvington Road and Swan Road. Stormwater in this drainage area flows through a sandy swale, across a dirt roadway, and then into the ditch, which flows off Base. No industrial activities occur in Drainage Area 008.

Drainage Area 009

Drainage Area 009 should drain a segment of the west-northwestern portion of the Base via Outfall 009A. However, an outfall inspection performed as part of the 2004 (Comprehensive Site Compliance Evaluation (CSCE) found that an earthen berm was constructed at the inner facility fenceline when the Base fitness trail was constructed. This berm prevents water from exiting the Base at Outfall 009A and thus conveys water northwest along the berm to a new outfall, Outfall 009B (see Figure 4-2). Outfall 009B is a ditch that was formed by flowing Stormwater, is located in the northwest corner of the Base, and is approximately two feet wide. The ditch conveys water under the fenceline and off DMAFB property. The terrain found in this area is relatively flat. The former sanitary landfill is located in this area. Because the landfill is closed, covered, and vegetated, it is not considered an industrial activity.

Drainage Area 010

Drainage Area 010 drains the central portion of DMAFB. This area is relatively flat with a gentle northwesterly-descending slope. This drainage area includes some of the most industrialized portions of the Base, including much of the flightline, taxiways, and aprons. Although a large number of industrial activities/buildings exist in the 010 drainage area (as determined by the topographic relief in the area), these industrial areas drain to storm drains that discharge to an underground storm drainage system that ultimately discharges to Outfall 001 as opposed to Outfall 010. Therefore, the drainage area for Outfall 010, as depicted on Figure 4-2, reflects this drainage area as is, as opposed to being based on topographic relief only.

Stormwater flows to the northwest to Outfall 010 via surface drainage channels that discharge under the perimeter road, across the new fitness track, into three approximately 5-foot wide rectangular reinforced concrete culverts. The culverts carry Stormwater beneath Golf Links Road off Base.

3.0 Storm Sewer System Mapping

A storm sewer system map showing the location of all outfalls and the names and locations of all waters of the United States that receive discharges from those outfalls has been developed for DMAFB. The storm sewer system map provides: 1) the ability to identify locations of illicit discharges; 2) required information on each outfall; 3) locations of drainage areas; and 4) approximate directional flow of surface runoff. The map includes the following:

- MS4 boundaries
- Receiving waters and other nearby waters of the United States
- Locations of stormwater collection and conveyance system
- Floodplain information
- Outline of all impervious (i.e., paved) areas
- Locations of historic major spills and leaks
- Locations of existing structural BMPs (detention/retention ponds, swales, erosion control structures, etc.)
- Areas of industrial activities and industrial buildings

3.1 Schedule of Mapping

All mapping is complete

4.0 Discharges in Exceedance

DMAFB has not identified any discharges associated with Base activities that cause or contribute to an exceedance of an applicable surface water quality standard. The Base outfalls do not discharge to any impaired or Outstanding Arizona Waters. Outfalls 004, 005A, 005B, and 006A discharge to Lakeside Lake which is listed on Arizona's 2012/2014 Not Attaining Waters List. No analytical monitoring is required at DMAFB under the MS4 Permit.

The Base performs benchmark monitoring in accordance with the AZPDES Multi-Sector General Permit at Outfalls 001 and 002A for Sector N activities occurring in those drainage areas.

5.0 Compliance Practices

5.1 Water Quality Based Effluent Limitations

DMAFB has implemented control measures to ensure that stormwater discharges from the Base do not cause or contribute to an exceedance of surface water quality standards. This SWMP includes provisions that aim to reduce pollutants in stormwater to the maximum extent practicable.

The Base has taken steps to limit exposure of fueling and maintenance operations, along with material storage areas (including loading and unloading, storage, disposal, and cleaning) to rain, snow, snowmelt, and runoff by locating materials and activities inside or performing them under roof where possible. Secondary containment practices are in place; spills and leaks are cleaned up promptly using dry methods (e.g., absorbents); drip pans and absorbents are used under or around leaky vehicles and equipment not stored indoors; and wash water drains to a proper collection system (i.e., trench drain or oil water separator).

Good housekeeping practices have been implemented at the Base. Details on this program are provided in Section 5.46 of this SWMP.

At DMAFB, the responsibility to perform routine maintenance is shared between the Civil Engineering Squadron (CES) and each individual shop. CES is responsible for maintaining and inspecting its real property, which includes the buildings that house Base activities and the cooling towers, boilers, fire suppression and aqueous film forming foam storage systems, and certain storage tanks. The shops and other organizations are responsible for their equipment and systems, which may be indoors or outdoors. The Unit Commanders and CES are responsible for ensuring that preventative maintenance inspections are performed and that any problems uncovered during the inspections are promptly corrected. A Fact Sheet and inspection forms have been developed to ensure thoroughness and accuracy during these inspections.

The DMAFB spill response procedures are included in Appendix 6 of the Hazardous Material Emergency Response Plan (HMERP). The procedures include what to do when the spill is discovered, how to classify the spill, who to notify when discovering the spill, and how to prevent the spread of the spill. For each industrial activity, Table 5-2 of the Stormwater Pollution Prevention Plan (SWPPP) lists the existing material handling procedures, the approximate existing storage capacity, and the existing BMPs (secondary containment, diversion valves, etc.) at the shop. This information may assist personnel to know what equipment might be in place and how much material is stored at a location that has had a spill.

5.2 Surface Water Quality Standards

Arizona has defined Surface Water Quality Standards to protect rivers, lakes, streams, and other surface water bodies from pollutants. These standards are found in the Arizona Administrative Code (A.A.C.) R18-11 Article 1 (http://apps.azsos.gov/public_services/Title_18/18-11.pdf)).

Within the standards, surface waters are assigned designated uses (A.A.C. R18-11-104 and Appendix B). The applicable numeric water quality standards applicable to specific surface waters are based upon the designated use with the lowest standard for each pollutant.

For receiving waters receiving runoff from outfalls at DMAFB, the following designated uses apply:

Outfall	Receiving Water	Designated Uses
001, 002A, 002B, 002C	Unnamed culvert, Tucson Diversion Channel	None Listed
004, 005A, 005B, 006A	Unnamed channel, Lakeside Lake	A&Ww, PBC, FC
006B	Atterbury Wash, Pantano Wash	A&We, PBC, AgL
007A, 007B, 007C, 008, 009A, 009B, 010	Unnamed ditch, Detention Basin (or likely the Detention Basin)	None Listed

In accordance with Section 7.1 of the MS4 Permit, no analytical monitoring is currently required at DMAFB.

5.3 Reductions of Pollutants to Maximum Extent Practicable

Industrial activities are the most likely source of stormwater pollutants at DMAFB. Industrial activities at DMAFB consist of hazardous waste storage, recyclables accumulation, land transportation and warehousing, and air transportation facilities. As a result, DMAFB is required to obtain coverage under and comply with the EPA National Pollutant Discharge Elimination System (NPDES) Stormwater Multi-Sector General Permit (MSGP) for Industrial Activities. The MSGP-2010 was adopted on 1 February 2011 by ADEQ. The MSGP requires the development of a SWPPP that identifies potential pollutants associated with the industrial activities at the base and associated BMPs that must be implemented to prevent stormwater pollution that could occur as a result of these activities. Therefore, industrial activities are not addressed in this SWMP.

Non-industrial stormwater pollutant concerns at DMAFB include pesticide, herbicide, and fertilizer usage; fats, oils, and greases; and collection and disposal of trash, hazardous waste, landscaping waste, construction debris, and used automotive lubricants. These non-industrial activities are discussed in more detail in Section 5.4.6 of this SWMP. As base housing has been privatized, discussion of other sources of pollutants, such as pet waste, are not discussed in this SWMP as pet waste is more commonly associated with housing areas and other urban landscapes.

Section 6.3 of the MS4 Permit requires that pollutant discharges be reduced to the maximum extent practicable (MEP). DMAFB complies with this requirement by periodically assessing the appropriateness and effectiveness of control measures, revising implementation practices where appropriate, and providing information on the stormwater program's effectiveness in annual reports.

5.3.1 Responsible Personnel

DMAFB personnel primarily responsible for reducing pollutants in stormwater discharges include the Base Civil Engineer, Stormwater Program Manager and the Base Commanders. UEC's and facility managers are

provided with location specific training on their secondary containments or grease storage. This is part of the MSGP required training.

5.3.2 Best Management Practices

Base personnel responsible for managing the stormwater program have a greater understanding of the population and tenants on the base and a higher degree of control over activities that occur at the base when compared to a traditional MS4. Based upon this knowledge, the Base has created a presumed list of pollutants upon which stormwater pollution prevention activities are focused. The list includes pesticides, herbicides and fertilizers; fats, oils, and greases; yard debris; pet waste; petroleum spills; and construction trash, debris, and sediment. Inspections to monitor the handling and storage of these pollutants are performed routinely and the Air Force has a well-managed internal audit program. In addition, Base personnel are well-trained and have a strong commitment to compliance with EH&S program requirements.

5.3.3 Goals

Table 5-1 includes a summary of the goals for Reducing Pollutants to the MEP.

TABLE 5.1: GOALS FOR REDUCING POLLUTANTS TO THE MEP

Control Measure	Measureable Goal	Start Date	Implementation Status / Effectiveness Determination
Obtain and distribute brochures on pesticide, herbicide and fertilizer usage, collection and disposal of trash, hazardous waste, landscaping waste and used automotive lubricants	1. Distribute brochures by publishing them in the base newspaper.	June 2006	On-going: annually at the start of Monsoon Season Weekly pick-ups/drop-offs of lubricants. Daily drop-offs of unused pesticide, herbicide, and fertilizer for DM "free for all" issue.
Identify any new pollutant reduction requirements applicable to Base operations	1. Document review of MEP requirements. 2. Develop list of new actions to be implemented, if any. 3. Include implementation due dates and assign responsibilities to Base personnel.	Summer 2016	September 2016

5.4 Minimum Control Measures

5.4.1 Public Education and Outreach

The principal requirement of this measure is distribution of educational materials and performance of outreach activities to inform and raise awareness levels of base employees about the negative impacts of polluted stormwater runoff on surface water quality, and the activities within their control that can pollute stormwater. The intent of this educational program is that not only will personnel apply these BMPs on-Base, but that they will apply these practices at home as well.

DMAFB participates in the Pima Association of Governments (PAG) Stormwater Management Working Group (SWMWG) which produces outreach materials for the construction industry and the general public.

5.4.1.1 Responsible Personnel

DMAFB personnel who may contribute to the Base's Public Education and Outreach Program include the Base Civil Engineer, Stormwater Program Manager – Environmental Flight, Environmental Monitors, members of the Community Initiatives Team, Facility Manager responsible for Base Newcomers, and participants in the PAG SWMWG.

5.4.1.2 Best Management Practices

DMAFB is comprised of approximately 10,633 acres, 418 acres of which comprise the base housing area, which has been privatized and is no longer considered part of DMAFB. Therefore, the housing population at DMAFB is not addressed in this SWMP. Diverse audiences at the Base include every organization or work force on-base from Civil Engineering (CE) to Security Forces. DMAFB supports a work force of approximately 6,500 active duty military personnel, 1,000 Reserve and Air National Guard personnel, and 3,000 civilians. The host unit at the base is the 355th Wing, which provides administrative, medical, and logistical support to all units on Base. The 355th Wing consists of four groups: the Operations Group, Maintenance Group, Mission Support Group, and Medical Group.

Other organizations located at the base include the 12th Air Force Headquarters; the 924th Fighter Group; the 309th Aerospace Maintenance and Regeneration Group (AMARG); the Navy and Marine Corps Reserve Training Center; the 563rd and 943rd Rescue Groups; the 55th Electronic Combat Group; 162nd Air National Guard ("Snowbirds"); Army and Air Force Exchange Services; Federal Aviation Administration, and United States Immigration and Customs Enforcement.

To reach all audiences at DMAFB, information (brochures, pamphlets, posters) must be placed in a wide variety of locations such as the base library, credit union/bank, Base Exchange (BX), and self-help stores. Other options for disseminating information include publishing notices, brochures and articles in the base newspaper and communicating through mass emails.

5.4.1.3 Goals

Current public education and outreach goals are included in the Table 5-2 below.

MCM 1: Public Education and Outreach

Typical audiences for outreach events include:

- Facility Managers
- Designated Unit Environmental Coordinators (UECs)
- Environmental Management System Leadership Team
- Installation specific operational personnel with specific BMPs (Fuels, WWTP, Vehicle Operations, Aircraft Maintenance Units)
- Landscape & golf course workers
- Commercial food establishments workers
- Residents within privatized housing areas
- Visitors
- General Public

Educational focus topics include:

- Litter control
- Hazardous Material Management
- Used oil disposal
- Waste minimization and disposal
- Pet waste disposal
- Certified pesticides, herbicides & fertilizers application
- Vehicle & power equipment maintenance
- Swimming pool water disposal
- Fats, oils, grease and starch maintenance and disposal programs
- Landscape waste management and disposal
- Spill Prevention and Control Measures
- Recognizing and reporting illicit discharges

Structural and Non-Structural BMPs; A comprehensive evaluation of all industrial and commercial facilities have been inventoried in relation to the industrial/commercial activity and the associated potential major pollutant and the associated outfall. As new facilities are demolished and reconstructed, a thorough evaluation is done to update and address the structural and non-structural BMPs

TABLE 5.2: PUBLIC EDUCATION AND OUTREACH GOALS
G-1. MCM 1: Public Education and Outreach

BMP Category	BMP Description (include personnel position or department responsible)	Measurable Goals (include milestones, timeframes and frequencies) and include the Targeted Audience	Start Date (MM/YY)
Brochures	Distribution of broad-scope flyers by the Water Program Manager and Unit Environmental Coordinators for distribution to base offices. Target audience can be specific to one industrial shop or the general base populace. Owner: Stormwater Program Manager	1. Provide public education/outreach to at least (1) target group on one (1) or more topics each year. 2. Document in the annual report the outreach approach selected, the topic, the target group, and an estimated number of personnel reached, including the number of brochures distributed	**11/17**
Article	Stormwater Manager will publish a unique article that: 1. Informs base personnel that there is a problem. 2. Outlines initiatives personnel/residents can implement that will mitigate the problem. 3. Motivates a change in perspective from a reactionary culture to a proactive.	1. At least once annually, provide the base paper (Desert Lightning News) with an article to publish online and in print. 2. Document in the annual report (include topic and publish date).	**11/17**
Display/ Posters	Stormwater Manager will develop and maintain posters and outreach display toolkit that: 1. Informs base personnel of problems/concerns that may impact water quality. 2. Outlines initiatives personnel/residents can implement that will mitigate the problem. 3. Motivates a change in perspective from a reactionary culture to a proactive.	1. Obtain and/ or develop posters for stormwater controls relative to facility stormwater potential impacts. --Topics include vehicle maintenance, bulk fuel loading/unloading, OWS management, spill cleanup and parking lot maintenance. 2. Annually document new established locations and number of posters distributed/posted.	**12/17**
Webpage	Maintain/Update active internal SharePoint communication tool.	The base SharePoint website will contain a water quality media specific webpage and	**09/17**

	Owner: Stormwater Program Manager	will serve as the primary documentation tool for news articles, public outreach events, meetings, and web-links (i.e. AZSTORM).	
Special Event	Publicize base stormwater program at base events (Earth Day, air shows, Junior Enlisted Appreciation Day).	DMAFB will host at least one outreach event annually for base population (retired and military). Stormwater information will be provided at the outreach activities and documented to describe the efforts, audience and impacts to the base SharePoint site.	**01/16**
Meeting	Stormwater manager will provide awareness of base stormwater program and initiatives at newcomer's briefing and EMS cross-functional teams (CFT) meetings.	Training media will include PowerPoint slides and handouts of relevant stormwater issues. Meeting events and audience participation will be documented on base SharePoint site. The Water Quality Manager or his/her representative will attend 100% of the EMS CFT meetings and at least 80% of the newcomer's briefings.	**10/17**

5.4.2 Public Involvement and Participation

Public involvement in a DMAFB's stormwater management program allows Base personnel to play an active role in both the development and implementation of the program. DMAFB's "public" is non-traditional when compared to a city for example, as most of the Base's "public" works here and receives training here. Base personnel have extensive training in environmental program areas such as hazardous waste, hazardous materials, and spill response.

5.4.2.1 Responsible Personnel

The requirement for public participation is met at DMAFB through the installation's Environmental, Safety and Occupational Health Leadership Council (ESOHLC), which represents all personnel on-base. The water working group briefs the ESOHLC on topics of concern regarding industrial and municipal stormwater issues. The ESOHLC considers all environmental requirements and dictates implementation measures that must be followed by the installation public.

5.4.2.2 Best Management Practices

The DMAFB Water Manager will notify base personnel of opportunities to participate in base events relating to the SWMP through distribution of brochures at common areas and during base events, publishing articles and brochures in the base newspaper on a regular basis, through mass emails, and through use of the DMAFB website.

The SWMP is open to all public comments. Comments need to be submitted to the Water Manager at John.Maisch@us.af.mil for initial review. Changes approved by the Water Manager will be approved through the ESOHLC prior to incorporation into the SWMP.

Base personnel can access the SWMP through the eDash -the Base local intranet site. Please note that access to this site is limited for security reasons to personnel with valid access to the DMAFB military domain. In addition, the SWMP may be reviewed by interested parties during normal business hours by contacting the Water Manager at 520-228-4774 or at John.Maisch@us.af.mil, or by the DMAFB public link: https://www.dm.af.mil/About-DM/Fact-Sheets/Display/Article/312993/355-civil-engineer-squadron/

Public comments regarding concerns or suspect activity that may impact stormwater quality, such as runoff concerns from construction sites or observations of *illegal* dumping, will be solicited from base personnel through use of the Stormwater web site (BMP #2, Table 3.0), the Stormwater Hotline (BMP #3, Table 4.0), and through brochures distributed during base events (BMP#3, Table 3.0).

5.4.2.3 Goals

Table 5-3 includes a summary of the goals for the Public Involvement and Public Participation Program.

MCM 2: Public Involvement and Participation

DMAFB is an active partner with the AZSTORM coalition and the Pima County Association of Governments Water Working Group.

TABLE 5.3: PUBLIC INVOLVEMENT AND PARTICIPATION GOALS

BMP Category	BMP Description (include personnel position or department responsible)	Measurable Goals (include milestones, timeframes and frequencies) and include the Targeted Audience	Start Date
Public Involvement	The Water Program Manager will "call for" base personnel involvement on stormwater activities and input/feedback on the base Stormwater Management Plan (SWMP).	1. Annual Notification will be made by email, electronic SharePoint updates, and through the environmental management system leadership meetings. --Comments will be reviewed, analyzed, and incorporated by the Water Program Manager. 2. Post the most current SWMP and the latest annual report to the base's SharePoint site annually	**Complete** 12/17
Public Participation	Water Quality Manager or representative will increase awareness of stormwater issues applicable in arid/semi-arid climates and learn about available resources and public involvement opportunities.	1. Attend 75% of the Pima Association of Governments (PAG) Stormwater Management Working Group meetings. 2. Post any relevant information to the SharePoint site and document in the annual report the topics and frequency of attendance	01/16
Public Involvement	Spill/Illicit discharge monitoring and reporting Stormwater Hotline Owner: Stormwater Program Manager; Facility Managers; Base Personnel; Emergency Management; and DMAFB Fire Department.	1. Document in the annual report the number of reported spills/discharges. 2. Provide an opportunity for base personnel to participate in monitoring and reporting spills, discharges or dumping by using the Stormwater Hotline and by including information about the Hotline on brochures distributed at base events and the SharePoint site. 3. Annually review/update Shop Specific Emergency Response Plans to ensure all information is correct and procedures are followed.	01/17

BMP Category	BMP Description (include personnel position or department responsible)	Measurable Goals (include milestones, timeframes and frequencies) and include the Targeted Audience	Start Date
		4. Monitor and report inspections performed by shop leads that are documented in the AF Management Internal Control Toolset (MICT). 5. Provide and publicize a reporting system to facilitate and track reporting of spills, discharges or dumping to the storm sewer system (via the D-M AFB SharePoint) on a continual basis.	

5.4.3 Illicit Discharge Detection and Elimination

The purpose of the Illicit Discharge Detection and Elimination (IDDE) control measure is to prevent the discharge of pollutants into the MS4 from sources other than stormwater and to prevent illicit connections to the stormwater infrastructure. Having a thorough understanding and awareness of the MS4 allows DMAFB personnel to determine the types and sources of illicit discharges entering the stormwater system (if any) and establish the legal, technical, and educational means needed to eliminate these discharges.

Federal regulations (40 CFR § 122.26[b][2]) define an illicit discharge as "...any discharge to a municipal separate storm sewer that is not composed entirely of storm water except discharges pursuant to an NPDES permit (other than the NPDES permit for discharges from the municipal separate storm sewer) and discharges resulting from firefighting activities." Illicit discharges are considered "illicit" because MS4s are not designed to accept, process, or discharge such non- storm water discharges.

Illicit discharges enter the storm drainage system through either direct connections (e.g., wastewater piping mistakenly connected to storm drains) or indirect connections (e.g., infiltration from cracked sanitary sewer systems or spills collected by storm drain outlets). Illicit discharges often result in untreated discharges that contribute pollutants to receiving water bodies.

To satisfy the requirement of illicit discharge detection and elimination as a minimum control measure, facility operators must:

- Develop, implement, and enforce a program (Ref Section 9.0 – Stormwater Program Enforcement) to detect and eliminate illicit discharges into the regulated small MS4, as defined at 40 CFR §122.26(b)(2).
- Develop, if not already completed, a storm drainage system map, showing the location of all outfalls and the names and locations of all waters of the United States that receive discharges from those outfalls.
- To the extent allowable under state or local law, effectively prohibit, through ordinance or other regulatory mechanism, non-storm water discharges into the small MS4 and implement appropriate enforcement procedures and actions.
- Develop and implement a plan to detect and address non-storm water discharges that are not authorized by a separate NPDES permit (including illegal dumping).
- Inform employees, businesses, and the public of the hazards that are generally associated with illegal discharges and improper disposal of waste.
- Address the following categories of non-storm water discharges or flows (i.e., authorized non-storm water discharges) only if they can be identified as significant contributors of pollutants to the small MS4:

The only discharges allowed by the MS4 Permit are:

1) Discharges composed entirely of stormwater
2) Discharges authorized under a separate NPDES permit
3) Non-stormwater discharges specifically identified in the MS4 Permit.

Allowable non-stormwater discharges include the following:

a. Water line flushing	b. Landscape irrigation
c. Diverted stream flows	d. Rising ground waters
e. Uncontaminated ground water infiltration	f. Uncontaminated pumped groundwater
g. Discharges from potable water sources	h. Foundation drains
i. Air conditioning condensate	j. Irrigation water
k. Springs	l. Water from crawl space pumps
m. Footing drains	n. Lawn watering
o. Individual residential car washing	p. Discharges from riparian habitats and wetlands
q. Dechlorinated swimming pool discharges	r. Street wash water
s. Discharges or flows from emergency firefighting activities	

The allowable non-stormwater discharges that occur at DMAFB are discussed below. Allowable non-stormwater discharges identified above that are not discussed below do not occur at the Base:

- Discharges from firefighting activities could occur at any location on the base. Residual water contaminated with fuel, aqueous film-forming foam, or other pollutants would be cleaned up according to the procedures in the DMAFB's Hazardous Waste Management Plan, which is mandated by Air Force Instruction (AFI) 32-7042, and AFI 10-2501, *Air Force Emergency Management.*
- Fire hydrant flushings occur at various locations around the base. The water may be passed through bags of Dechlorination compound using reducing agents such as sodium bisulfite and sodium metabisulfite to help reduce the amount of chlorine in the water as it is discharged to the ground and eventually the storm sewer system.
- Potable water is discharged base-wide during the flushing of the potable water lines. The water may be passed through bags of Dechlorination/reducing agents to help reduce the amount of chlorine in the water as it is discharged to the ground and eventually the storm sewer system.
- Swamp coolers and HVAC Condensers are present at various locations around the base. The swamp coolers and condensers are cleaned annually by physical means (e.g., pressure washer) in order to remove mineral build up and prevent fouling of the equipment.
- Landscape watering occurs at the golf course, parks, and at Headquarters buildings on-base. Fertilizers, pesticides, and herbicides are used on the golf course according to the management practices and in the quantities recommended by the manufacturer in order to reduce the potential for stormwater contamination. The Golf Course is managed in accordance with the "Blanchard Golf Course Environmental Management (GEM) Plan". Care is taken to ensure that any spilled pesticides or herbicides are quickly contained and cleaned up, to prevent slug discharges of these materials to the storm sewer system.
- Accumulated stormwater is released from the diked areas containing the bulk fuel aboveground storage tanks. Water to be released is first examined visually in accordance with 40 CFR Part 112.8(c)(3) to ensure that no oil or fuel is discharged.

In addition, the base hosts charity car washes periodically and there are base-wide exercises/training activities involving vehicle wash-down that may occur on-base throughout the year. Charity car washes typically occur in

the base chapel parking lot and occur two or three times a year. The Water Manager is to be notified of each charity car wash event to obtain approval for the event. Base-wide exercises/training activities involving vehicle wash-down do not utilize detergents. These activities utilize potable water only and occur in areas where the water will infiltrate the ground and not run off. The ADEQ has notified DMAFB that this is an allowable non-stormwater discharge (see Appendix F).

5.4.3.1 Analytical Monitoring Program

In accordance with Section 7.1 of the MS4 Permit, no analytical monitoring is currently required at DMAFB.

5.4.3.2 Sampling and Analyses Plan

A sampling and analyses plan will be developed if analytical monitoring is required in the future.

5.4.3.3 Responsible Personnel

Security and CE personnel inspect the fenceline at least weekly. Dry weather flows and illicit discharges observed during these inspections would be reported to the Water Manager. The Water Manager at DMAFB manages the stormwater program at the base and would be responsible for investigating dry weather flows, illicit discharges, and performing analytical monitoring if requirements become applicable in the future. One of DMAFB's first line of illicit discharge detection is Street Sweeping which is performed to improve appearance and reduce Foreign Objects and Debris (FOD) on the airfield. An example schedule is presented in Appendix F. See also Stormwater Program Enforcement (Section 9.0).

5.4.3.4 Best Management Practices Goals

DMAFB is a fully fenced facility. Security Forces and CE personnel both inspect the perimeter at least weekly. These offices have been requested to provide photos of the stormwater outfalls and any items of interest near an outfall. The Water Manager takes photos at interval throughout the year to document the flows are not occurring during dry weather conditions and during smaller rain events. The SWPPP provides for inspections and testing on an ongoing basis to eliminate possible new unauthorized non-storm water discharges and to prevent their recurrence. Detection of non-storm water discharges is accomplished by investigation and observation by the Shop Unit Environmental Coordinators (UECs). These UECs insure spills or other reportable discharges are stopped and reported in accordance with the DMAFB's SPCC and Hazardous Waste Management Plan. They also insure secondary containments are kept clean and POL free, and any accumulation of rainwater is check and released according to the SPCC. In this manner, the Base periphery is kept clear of non-Stormwater Discharges. Illicit Discharges if they occur are detected and contained/removed before they reach the Storm drains and piped system.

In accordance with the Small MS Permit, DMAFB will investigate any identified illicit discharge following its detection.

Task 1. Identify the Outfalls

All existing outfalls and associated structures are visually inspected as part of the SWMP. As new storm drain and/or drainage structure construction projects are completed, they are included in the

non-storm water visual observation program.

Task 2. Prepare For Field Work

To perform field work efficiently, all planning and preparation of materials are completed before field work begins. This preparation includes the following.

- The locations of all outfalls to be investigated are shown on the Station site map.
- A Site Inspection Form (presented in Appendix F) is completed for each outfall.
- Several copies of the Site Inspection Form (presented in Appendix F) are reproduced for the inspections.
- Field work is preceded by at least 72 hours of dry weather.

5.4.3.5 Goals

Table 5-4 includes a summary of the goals for the IDDE Program.

MCM 3: Illicit Discharge Detection and Elimination (IDDE) Program

Reporting is done under the Environmental Management System (EMS) for DMAFB. Compliance monitoring and reporting has been initiated and is officially tracked quarterly.
All qualifying Spills once reported to Water Manager, are required by AFI 32-7001 to be input into the Air Force Tracking system, EASI. EASI tracks actions completely, reporting and providing oversight/accountability by and up to the Pentagon level.
The Emergency Management and Spill Reporting System is tested semi-annually through exercises to ensure all resources, plans, and programs are in place and operational.
All units on the base are required to complete internal environmental self-inspections through their Wing Commander's Inspection Program (CCIP) IAW the Environmental Inspection Process (EIP). The EIP is part of the EMS Check Phase and will ensure the base is compliant with Federal, state, and local environmental laws and regulations, as well as Department of Defense, and Air Force policies and instructions, through the use of EMS conformance and compliance self-assessments and management action plans. Installations will conduct, and track preventative/corrective actions, integrating environmental impact analysis, operational risk management, and pollution prevention into the EMS to institute sustainable practices across the AF mission and reduce both environmental risk and the AF's environmental footprint. Violations of regulations or laws, or "findings" documented during the EIP are presented to the Wing Commander who ensures corrective actions are implemented within an established and reasonable time frame. The EMS process will re-inspect the corrective action to ensure the implementation is successful.

TABLE 5.4: ILLICIT DISCHARGE DETECTION AND ELIMINATION

BMP Category	BMP Description (include personnel position or department responsible)	Measurable Goals (include milestones, timeframes and frequencies)	Start Date (MM/YY)
Training	Train base personnel equal with their level of program involvement to equip personnel with the detection, identification, and reporting of illicit discharges. Owner: Stormwater Program Manager; Facility Managers; Base Personnel; Emergency Management; and DM AFB Fire Department.	1. Provide training to stormwater inspectors/field staff to equip personnel in the detection, investigation, and identification of illicit/de-minimis/other sources of non-stormwater discharges. 2. Training is provided for program owners annually and new employees are trained within the first year of employment/assignment. 3. Document in the annual report the number of personnel trained and sufficiently document why if no personnel were trained.	01/18
Dry Weather Screening	Inspection of potential stormwater impacts during non-rain events. Owner: Stormwater Program Manager; Base Personnel	1. Perform a minimum of four inspections per year. The inspector will trace a dry weather flow to its source and determine if the flow is the result of an illicit discharge. 2. Conduct ongoing dry weather visual inspections of all major outfalls. 3. A visual inspection will include documentation the following: • Flow being present or not • Water color, odor and clarity • If floating/settled/suspend solids exist • If there is foam, an oil sheen or other form of pollution (i.e. trash, debris, etc.)	01/18

		Annually report inspection results, number of inspections, and report any illicit discharges identified within the reporting year and provide closure steps.	
Outfall Inventory	Ensure all stormwater outfalls are identified and mapped and to ensure the outfalls are properly inventoried. Owner: Stormwater Program Manager; GIS Informational Management	1. Maintain a GIS map that identifies all the major outfalls and the illicit discharge source(s) if id'd/known. 2. Document in the annual report any updates to the map.	01/16
Wet Weather Monitoring	Inspection of potential stormwater impacts during rain events. Owner: Stormwater Program Manager; Base Personnel; Facility Managers	1. Perform a minimum two inspections per year. 2. Annually report inspection results, number of inspections, and report any illicit discharges identified within the reporting year and provide closure steps.	01/16
Written IDDE Procedures	Ensure practices/ procedures in-place to investigate reported/ discovered illicit or nonstormwater discharges (to determine if they are allowable or require further investigation) and to ensure appropriate actions are taken to eliminate illicit discharges in the future. See ETL 14-1, pages 48-51. Owner: Stormwater Program Manager; Emergency Management Personnel; Base Personnel; Facility Managers	1. Document in the annual report the number of reported/discovered discharges, the number of those discharges investigated and the outcome of the investigation. 2. If the initial investigation reveals that the discharge is not an allowable discharge and the inspector cannot readily identify the source then initiate the procedures outlined in Air Force Instruction 32-7001, reporting via the EASI. Once initiated the EASI reporting has 14 days to complete investigation and then another 14 days to complete a final report/update in EASI. Document in the annual report the number of EASI results and the change to measures instituted to prevent the discharge from occurring in the future.	07/18

5.4.4 Construction Site Runoff Control

The construction site runoff control measure is intended to reduce pollutants in stormwater runoff from construction activities that result in a land disturbance of greater than or equal to one acre. The requirements for construction site runoff control are outlined below.

5.4.4.1 Responsible Personnel

Most of the construction work that is performed at DMAFB is completed by outside contractors, which are required by contract to obtain any required NPDES permits for construction activity per ADEQ and EPA regulations. This includes submittal of the NOI for coverage under the permit and preparation and implementation of the associated construction SWPPP, and associated stormwater control measures to minimize impacts of construction activities on surface waters. Only minor construction activities, which are generally less than one (1) acre in size, are completed by base personnel. DMAFB personnel with responsibilities for construction site runoff control include the Water Manager and CES personnel.

5.4.4.2 Best Management Practices

Contractor Management

Construction contractors are selected through use of Federal procurement guidelines. Contractors are required to have the expertise necessary to comply with the regulatory requirements associated with the construction industry, including Construction General Permit (CGP) compliance. While DMAFB requires the construction contractors to obtain coverage under the CGP and prepare and implement the SWPPP, the DMAFB Water Manager conducts regular inspections of construction activities to ensure compliance with the CGP and the associated SWPPP. In addition, DMAFB CES personnel review all plans for construction sites where one (1) or more acres will be disturbed.

DMAFB has the authority to require contractors to comply with construction requirements, including those pertaining to stormwater pollution prevention and compliance with the CGP, and to impose penalties for noncompliance with such contract obligations. Penalties can include stop work orders and termination of a contract.

Site Plan Review

Prior to the start of any construction, site plan(s) are reviewed. The reviewer verifies the proper design and location of structural BMPs, such as silt fences, rock berms, erosion control mats, drainage swales, and detention ponds. Various other BMPs that may be considered are located at the International Stormwater BMP Database at http://www.bmpdatabase.org/.

Additionally, the Air Force's *Engineering Technical Letter (ETL) 14-1:* ***Construction and Operation and Maintenance Guidance for Storm Water Systems*** "prescribes procedures and practices to eliminate or minimize stormwater pollution resulting from Air Force construction activities" and requires that reviewing engineers complete a "Stormwater Control Declaration, " which states whether each construction project requires a NPDES permit for stormwater discharges from construction activities and provides for a thorough explanation of the circumstances behind this determination. This Declaration,

which is required for all construction projects regardless of size, ensures that regulated construction activities are permitted as required.

Programmatic Reviews

Programmatic reviews will align with the International Organization for Standardization (ISO) 14001 standard, *Environmental Management Systems* (EMS). In addition, the following Air Force Instructions AFI 32-7001 *Environmental Management*, AFI 90-201 *Air Force Inspection Systems*, and AFI 90-801 *Environmental, Safety, and Occupational Health Councils* require that internal Environmental, Safety and Occupational Health (ESOH) assessments and inspections be performed throughout the year by base personnel and external ESOH assessments be performed every three (3) years by experienced environmental professionals.

5.4.4.3 Goals

Table 5-5 includes a summary of the goals for Construction Site Runoff Control.

MCM 4: Construction Activity Stormwater Runoff Control

Construction contractors are required to provide and maintain training and applicable certifications for each project prior to project start and subsequent inspections are performed to ensure all certifications, and site is in conformance with project SWPPPs. At the pre-construction meeting various base personnel provide safety and environmental standards for which the company will be held accountable. The Contractors Environmental Guide was created to standardize some of these requirements.
Construction sites will Install BMPs such as silt fences, straw bales, retention basins, etc. during construction to control erosion.

TABLE 5.5: CONSTRUCTION SITE RUNOFF CONTROL

BMP Category	BMP Description (in BMP Description (include personnel position or department responsible)	Measurable Goals (include milestones, timeframes and frequencies)	Start Date (MM/YY)
Education/ Public Involvement	Enforce instruction or policy directive that will make all new construction site plans obtain engineering review and evaluation for proper stormwater pollution prevention BMPs	Develop the construction policy directive. Document is entitled "Civilian Contractor's Environmental Guide" (Appendix G). This document requires that construction site plans obtain an engineering review and evaluation for proper SWPP BMPs during construction.	**04/02 Start; 8/06 Rev1; 01/16 Rev**
Enforcement	Enforce instruction or policy directive that will make all new construction site plans obtain engineering review and evaluation for proper stormwater pollution prevention BMPs	Distribute and enforce the construction policy directive to contractors working on Base.	**On-going as contracts awarded**

Training	Support contractor and Quality Assurance Evaluators (QAE) training to stormwater construction site inspectors/ project managers to ensure compliance with SWPPP and proper stormwater controls instituted are maintained and do not impact the installation stormwater system. Owner: Stormwater Program Manager; Construction Site Superintendents; Construction Quality Assurance Evaluators (QAE)	1. Provide training for each construction site to include all personnel. 2. Document in the annual report the number of personnel trained 3. Training will include construction site SWPPP review, grading and drainage design standards, requirements for structural and nonstructural control measures on construction sites, construction control measures maintenance requirements, inspection procedures, post-construction stormwater controls & enforcement procedures to ensure compliance with ADEQ Construction General Permit for Discharges from Construction Activities.	**On-going as contracts awarded**
BMPs Erosion/Sediment Control	To ensure all construction projects disturbing one acre of land or more have a Stormwater Pollution Prevention Plan (SWPPP) and that it addresses all requirements outlined in the ADEQ Construction General Permit for Discharges from Construction Activities. Owner: Stormwater Program Manager; Construction Site Superintendents; Construction Quality Assurance Evaluators	1. DMAFB will review 100% of construction site SWPPPs. 2. Document in the annual report the number of SWPPPs submitted and the number reviewed.	**01/16**

BMPs Erosion/ Sediment Control	Ensure construction site owners/operators are complying with the project SWPPP for the period of construction. Owner: Stormwater Program Manager; Construction Quality Assurance Evaluators	1. Inspection of 80% of construction sites at least once per month to ensure controls are being maintained. 2. Document in the annual report the number of sites inspected each year.	12/17
Control Wastes	Ensure all materials brought on to the installation are properly tracked and conform to material handling BMP. Owner: Stormwater Program Manager; Construction Site Superintendents; Construction Quality Assurance Evaluators , Hazardous Material Management	1. Review and evaluate sites to ensure all materials brought onto to base are being tracked within the EESOH-MIS reporting system. 2. Ensure information is received by contractors each month. 3. Annually document any issues or non-compliance with installation material handling BMP.	01/16

5.4.5 Post-Construction Storm Water Management

Post-construction runoff controls are implemented to prevent surface runoff from transporting contamination to surface water after projects have been completed. Post-construction runoff control measures must be designed into the project plans.

Some examples may be found on the Texas Nonpoint Source Book web page at http://www.txnpsbook.org/sitetable.htm and the City of Fort Worth Department of Environmental Management Stormwater Quality web page at http://ci.fort-worth.tx.us/dem/stormcontacts.htm.) The three requirements are:

- Develop and implement strategies that include a combination of structural and nonstructural BMPs,
- Implement or enforce an instruction or policy directive which requires post-construction runoff controls to be implemented, and
- Ensure the controls set in place are adequately operated and maintained.

5.4.5.1 Responsible Personnel

Construction work that is performed at DMAFB is completed by outside contractors and Architecture and Engineering firms develop the designs in support of the construction projects; DMAFB does not conduct or directly manage construction site operations on the base. Contractors are required by contract to obtain any required NPDES permits for construction activity per ADEQ and EPA regulations. This includes submittal of the NOI for coverage under the Construction General CGP preparation and implementation of the associated SWPPP, which requires a description of post-construction stormwater management measures that will be installed during the construction process to control pollutants in stormwater discharges after construction operations have been completed.

DMAFB personnel with responsibilities for Post-Construction Stormwater Management include the Water Manager and CE Flight personnel.

5.4.5.2 Best Management Practices

The Air Force, and therefore DMAFB, has a history of a sound base appearance program. These operation and maintenance requirements for stormwater structures are inherent in our business model. Cleaning and appearance driven requirements are innate to our mission. AFI 32-1023 says in part, “Facilities should foster a sense of pride among its occupants.”

The Construction General Permit, as implemented by through the SWPPP, is the regulatory driver that supports the SWMP and effectively ensures post-construction runoff control measures are effectively constructed and/or implemented, operating properly, and maintained (refer to Table 5-6 for BMPs addressing structural control maintenance).

Listed below are structural and non-structural BMPs that will be incorporated into contract language to satisfy the post-construction runoff control measure:

Structural BMPs

- Storage Practices: Retention or detention ponds. It should be noted that Bird-Aircraft Strike Hazard (BASH) concerns must be considered when ponds are suggested at an Air Force Base as ponds serve as habitats for birds, and if constructed near runways, pose a safety concern for aircraft.
- Infiltration Practices: Infiltration basins/trenches, dry wells, porous pavement. It should be noted that the nature of military operations at DMAFB may limit flexibility with regard to certain practices, such as construction of runways and aprons, which must be composed of flat, impervious surfaces.
- Vegetative Practices: Grassy swales, filter strips, artificial wetlands, wetland channels, basins. In cases where retention/detention ponds and/or impervious surfaces are not possible, such as is described above near runways and aprons, stormwater discharges will be handled through use of drainage swales, storm sewer systems, and catchment basins. Pervious drainage swales will be used whenever practicable.

Non-Structural Controls

- Land Use Planning. CES will be responsible for promoting growth of the base away from sensitive areas (forested areas, wetlands, streams, etc.); contractors and CES will coordinate with the base planner to control growth in sensitive areas.
- Site-based Local Controls. Contractors will be required to preserve buffer strips and riparian zones, minimize disturbance and imperviousness to the extent practicable, and maximize open space.

Contractor Management

Design contractors are selected through use of Federal procurement guidelines. Contractors are required to have the expertise necessary to comply with the regulatory requirements. DMAFB CES personnel review all plans for construction sites where one (1) or more acres will be disturbed and will ensure that adequate post-construction BMPs are identified in the site plans.

DMAFB has the authority to require contractors to comply with construction requirements, including those pertaining to compliance with the CGP, and to impose penalties for noncompliance with such contract obligations. Penalties can include stop work orders and termination of a contract.

5.4.5.3 Goals

Table 5-6 includes a summary of the goals for Post-Construction Stormwater Management.

MCM 5: Post-Construction Stormwater Management in New Development and Redevelopment

TABLE 5.6: POST-CONSTRUCTION STORMWATER MANAGEMENT

BMP Category	BMP Description (include personnel position or department responsible)	Measurable Goals (include milestones, timeframes and frequencies)	Start Date (MM/YY)
Inspections	Visually inspect and assess effectiveness of long term structural and nonstructural controls instituted during the construction phase are adequate, complete and maintained. Owner: Stormwater Program Manager; Construction Quality Assurance Evaluators; Facility Managers	1. Inspect ALL completed construction sites twice in the year following completion to ensure controls are being maintained, evaluate the effectiveness of the implemented stormwater controls, and determine if new or modified structural or non-structural BMPs are necessary. 2. Document in the annual report the number of sites inspected and results of the stormwater control(s) effectiveness assessments.	01/18
Runoff Control Assessment	Continual monitoring of completed construction projects for 3 years after close of the project. Owner: Stormwater Program Manager; Facility Managers	1. DMAFB will inspect all closed sites for the 1st year as described in MCM G-5, Inspections, then annually for the next 2 years to ensure no changes in site conditions. 2. Document in the annual report the number of sites inspected and results of the stormwater control(s) effectiveness assessments.	01/18

Training	Adopt MCM 3 Training for all new sites and associated personnel Owner: Stormwater Program Manager; Facility Managers	1. Training will be provided to each new facility manager upon completion of the facility. Training will include measures to monitor post-closure runoff. 2. Annually report the number of facility managers trained and number of facility assessments performed	01/18
Training	Train base construction shops, architects, and applicable base personnel on development of project designs that minimize water quality impacts.	Develop a Microsoft PowerPoint presentation training course for base construction shops, architects, and applicable base personnel on stormwater pollution prevention topics and techniques, including designing projects to minimize water quality impacts through use of structural and non- structural controls and practices.	03/18

5.4.6 Pollution Prevention and Good Housekeeping Program

The purpose of the pollution prevention (P2) and good housekeeping program at DMAFB is to prevent or reduce pollutant runoff and protect water quality. The program applies to base operations that are not addressed as industrial activities under the DMAFB SWPPP. Base personnel are trained on operating and maintaining these facilities such that the occurrences of contaminating stormwater runoff is minimized.

5.4.6.1 Responsible Personnel

The Environmental Flight and Water Manager are primarily responsible for overseeing the P2 and Good Housekeeping Program. Environmental monitors have the responsibility for ensuring that inspection and housekeeping practices are being properly implemented. DMAFB employees and contractors are responsible for implementing housekeeping activities in their work areas.

5.4.6.2 Best Management Practices

Inspection and Maintenance and Prioritization Protocols

BMP Prioritization

Due to the large area and the variety of operational activity on the base, many areas can be prioritized for levels and degrees of BMP applications. The types of activities considered are: housing (both family and dormitory), roads and streets, recreational areas, business and administration, and the industrial sectors.

The housing areas were evaluated for stormwater pollution impacts and need for BMPs and inspection. The base housing areas are typically desert landscaped with rock and gravel and minimal vegetative areas. This style of landscaping does not require large volumes of potable water and applications of fertilizer or other chemicals. Residents are also not allowed to store or use industrial cleaning or hazardous material other than consumer grade household materials. The evaluation of the housing areas resulted in a very low priority for BMP applications and minimal impact to stormwater pollution. Therefore, DM's housing areas will not have any inspection and maintenance requirements.

DM's recreational areas include a golf course and small parks. The golf course was recently closed and is now a minimally maintained area pending studies for re-use. BMPs will not be evaluated for this area since the typical issues for golf course maintenance is no longer applicable. The base parks have a low usage and are minimally maintained. They will be designated a very low priority for stormwater BMPs at this time.

Like any small city or municipality, DMAFB has many facilities designated for business and administrative use. These areas typically parallel or are adjacent to the industrial sectors that will be addressed later. Similar to the housing areas, the property around these buildings are desert landscaped with little to no vegetation. Decorative gravel is used to minimize landscape maintenance. Most parking areas are designed to control stormwater runoff into basins. These areas require some level of maintenance but is typically minimal. Other business areas include a gas station and a small shopping area with a fast food

restaurant. The business areas have been prioritized with a moderate level of BMP requirements and inspection procedures.

DMAFB's roads and streets are required to move a variety of equipment and vehicles. Stormwater runoff does occur and requires BMPs to control pollution. This infrastructure has a high priority for BMP applications and inspection.

The industrial sectors include a typical airport environment with an airfield and aircraft hangers. Associated with this activity is aircraft and automotive maintenance, fuel storage and refueling, and hazardous material management. These areas have the largest impact to stormwater pollution and have the highest priority for BMP applications and inspection.

Inspection and Maintenance

Approximately twenty (20) hours of street and parking lots sweeping is performed weekly with an emphasis on the main streets (Craycroft, Ironwood, 5th Avenue, etc.). The runway, main taxiways and parking ramps are swept seven (7) days a week. (example schedule in Appendix F)

Street sweeping waste is disposed of by empting trucks into the Base landscaping rock storage area. Potential floatables and debris are raked to remove them from the rock storage area and disposed of in solid waste containers, which are removed weekly through regular trash pick-up. Residual sediments are rinsed at one designated water station. These locations are the only authorized areas for street sweeping equipment cleaning.

Catch basin and retention basin maintenance are handled by a contractor as part of a base-wide landscaping contract. Garbage collected through catch basin and retention basin maintenance is disposed of in solid waste containers. Organic materials and dirt are collected, stored temporarily in the landscaper's maintenance area, and then hauled off-site.

Other municipal operations that are addressed through this minimum control measure include: refuse management, construction and demolition debris removal, and regular drainage channel cleaning.

Periodic facility inspections are performed to ensure that materials are being stored properly and that all spill/leak preventive measures are implemented.

The Environmental Flight developed the following list of inspection and maintenance measures for Base personnel to use to ensure work areas and/or projects are managed to prevent or minimize stormwater impacts.

- Identify systems or equipment that may malfunction and cause spills, leaks, or other situations that could lead to stormwater pollution, including:
  - Pipes and pumps
  - Storage tanks and bins
  - Pressure vessels
  - Pressure release valves

  - Process and material handling equipment
  - Oil water separators, catch basins, secondary containment structures
- Schedule routine inspections to look for:
  - Leaks
  - Corrosion
  - Support or foundation failure
  - Other forms of deterioration
  - Spots or puddles on the ground
  - Smoke or fumes
  - Other signs of leaks
- Promptly repair or replace defective equipment
- Keep spare parts available for repair of equipment
- Keep records of inspections and repairs of equipment
- Inspect:
  - Areas where spills and leaks have occurred in the past
  - Outdoor materials processing areas
  - Loading/unloading docks, transfer areas
  - Waste generation, storage, treatment and disposal areas

Spill Prevention, Control and Countermeasures Plan, Section 3, contains a complete list of all facilities/buildings (Table 3-1: Locations with Greatest Potential for Petroleum Product Spill). There is no history of non-Petroleum products spills.

Housekeeping Guidelines

Elements of good housekeeping apply to the operation and maintenance of industrial machinery and processes, material inventory controls, routine and regular cleanup schedules, the organization of work areas, and educational programs for personnel. The Environmental Flight developed the following list of housekeeping measures for Base personnel to use to ensure work areas and/or projects are managed to prevent or minimize stormwater impacts.

- Maintain dry and clean floors, ground surfaces, and work areas
- Clean areas that flow to a storm drain by means other than hosing down, such as mopping or using absorbents
- Pick up and dispose or recycle waste material regularly
- Routinely inspect dumpsters to verify that they are closed and covered
- Use alternative non-toxic substances (e.g. biodegradable cleaners and degreasers, pesticides that are not listed by a government agency as a toxic of concern)
- Ensure that all equipment and machinery are working properly
- Ensure that personnel know the locations of spill kits and understand proper spill cleanup procedures
- Routinely inspect equipment and vehicles for leaks or conditions that could lead to the discharge of pollutants that may contaminate stormwater
- Use drip pans under leaking vehicles and equipment
- Inspect drip pans and secondary containment areas during and after each rainfall (if necessary, empty after checking that the stormwater is not contaminated)

- Inspect for improper disposal of materials or non-stormwater in storm drains
- Remove hoses to discourage outdoor washing in areas that drain to the storm drain
- Prepare guidelines for, and make personnel aware of, materials not suitable for outdoor storage (e.g., batteries), limit the length of time material is stored outdoors, and consolidate areas used for outdoor storage
- Use locks for valves, gates, faucets, and pumps to limit their use
- Keep adequate aisle space to facilitate material transfers, inventories, and inspections
- Store and stack all containers, drums, and bags in a manner minimizing the potential for accidental damage
- Clearly label drums of hazardous materials and wastes
- Provide secondary containment for all drums that are stored outdoors where a spill may reach the storm drainage system
- Provide secondary containment for all hazardous waste 90-day accumulation points and outdoor initial accumulation points
- Maintain organized shelves and cabinets, and ensure that all materials are placed in the proper area for storage after use
- Store flammable materials in metal lockers or ventilated storage buildings
- Stock only the quantity of material that is needed

5.4.6.3 Goals

Table 5-7 includes a summary of the goals for the P2 and Good Housekeeping Program.

MCM 6 Pollution Prevention and Good Housekeeping

Solid waste receptacles are managed under a base wide solid waste contract and is documented in the DMAFB Solid Waste Management Plan. In accordance with the Solid Waste Management Plan trash dumpsters are inspected for proper operating condition to include installation of drain plugs and ensure dumpsters are covered with lid(s). A schedule is established for the inspection of these dumpsters. Material storage is typically within a covered facility and managed in accordance with the DMAFB Hazardous Material Management Plan. These areas with hazardous materials may also generate a special or hazardous waste. The management of hazardous waste is enforced in accordance with 40 CFR parts 260 through 273 and in the DMAFB Hazardous Waste Management Plan.

Petroleum and other fuel storage and dispensing activities are enforced in accordance with 40 CFR 112, Oil Pollution Prevention and in the DMAFB Spill Prevention, Control, and Countermeasures (SPCC) Plan. See Appendix x.

Facility Names: Industrial shops (CE, Fuel Truck Parking, Hanger bays, Wash racks, Paint Barns)

TABLE 5.7: POLLUTION PREVENTION AND GOOD HOUSEKEEPING PROGRAM

BMP Category	BMP Description (include personnel position or department responsible)	Measurable Goals (include milestones, timeframes and frequencies)	Start Date (MM/YY)
O&M procedures and Reduce Trash/ Floatables	Personnel insure no trash or spills at the end of each day	No trash or spills or visible staining. If applicable, shut rainwater intrusion valve(s) at end of business.	**Complete** 06/16
Inspections	Visually inspect the stormwater conveyance system to evaluate and document maintenance/repair needs. Owner: Stormwater Program Manager; Facility Managers; Civil Engineering Operations	1. Visually inspect 25% of its stormwater conveyance system (to include channels, washes, roadside inlets, linear systems, basins, etc.) per year so that 100% of the system is inspected every four (4) years. 2. Document in the annual report the number of units (inlets, feet/miles, basins, etc.) inspected.	06/17
O&M Procedures	Conduct proper infrastructure maintenance to prevent contaminated runoff from entering waters of the United States. Owner: Stormwater Program Manager; Facility Managers; Civil Engineering Operations	1. Evaluate the visual stormwater conveyance system through formal inspections that document and prioritize the maintenance requirements. 2. Document in the annual report the number of units (inlets, feet/miles, basins, pounds of debris, etc.) cleaned that year.	01/18

Street Sweeping	Conduct proper infrastructure maintenance to prevent contaminated runoff from entering waters of the United States through street sweeping. Owner: Stormwater Program Manager; Facility Managers; Civil Engineering Operations	1. Implement a street clean/sweep program where all major streets are cleaned as needed, or after a rain event, or upon request. Remaining streets will be cleaned IAW Civil Engineering Operations' schedule, or upon request, or prior to a special event 2. Document the scheduled of routine cleaning, and include any special events, and storm event clean-up within the annual report. (Volume and/or weight will be estimated due to commingled waste collection.)	01/18
SWPPP	Annually review/update the DM AFB Multi-Sector General Permit SWPPP. Owner: Stormwater Program Manager; Facility Managers; Civil Engineering Operations, Emergency Response Personnel, Unit Environmental Coordinators	1. Perform an annual comprehensive review of the current approved SWPPP 2. Post the most recent version of the SWPPP on the internal SharePoint site to allow for access by all affected personnel and activities. 3. Document in the annual report the date of last review and any significant changes.	01/18
Training	Maintain training for personnel equal with their level of program involvement on Hazardous Material Management, Waste Management, and non-structural BMP. Owner: Stormwater Program Manager; Facility Managers; Hazardous Material Managers; Waste Accumulation Point Managers	1. Provide training to owners to educate personnel about potential sources of stormwater contamination and ways to minimize the water quality impact of municipal activities through respective environmental program areas of responsibility. Training will be provided as needed through the SharePoint Site and at Facility Manager Training. 2. Document in the annual report the number of personnel trained and sufficiently document why if no personnel were trained.	01/18

Facility Prioritization and Implement Controls	Visually inspect the exterior of facilities to evaluate and document maintenance/repair needs affecting stormwater structural controls Owner: Stormwater Program Manager; Facility Managers; Civil Engineering Operations	1. Visually inspect 25% of the exterior of its facilities per year so that 100% of the system is inspected every four (4) years to validate and/or update Potential Stormwater Pollutant Sources and Control Measures for structural and non-structural BMPs. 2. Document in the annual report the number of facilities inspected and any significant actions.	01/18

6.0 Monitoring Requirements

In accordance with Section 7.1 of the MS4 Permit, no analytical monitoring is currently required at DMAFB. This section of the SWMP is reserved; a sampling and analysis plan will be developed if analytical monitoring is required in the future. Dry weather inspections and visual screening of outfalls are performed at least monthly for the MSGP and SWMP, with additional weekly checks performed by Security and CE personnel. The Base has not identified any problem outfalls or high priority outfalls. Every outfall described in Section 2.5 is treated as a large outfall. Since each outfall is inspected more than annually, the schedule listed in Appendix F is exceeded.

6.1 Responsible Personnel

Personnel who are responsible for dry weather monitoring and visual screening of outfalls include the Water Manager, Environmental Flight Unit Environmental Coordinators, Security personnel and CE personnel.

6.2 Best Management Practices

DMAFB personnel check for flows routinely, and perform dry weather inspections and visual screening of all outfalls at a frequency that exceeds the requirements in the Small MS4 Permit.

6.3 Goals

Reserved

7.0 Program Evaluation Protocol

In association with preparing the Annual MS4 Report, DMAFB will perform an annual self-assessment of the Stormwater Management Program to evaluate compliance with permit requirements and identify any requirements that are due during the next reporting year. A written summary of the findings will be included in both the annual report and Appendix D of the SWMP.

This self-evaluation will include consideration of the following program elements at a minimum:

- Appropriateness/effectiveness of BMPs in achieving measurable goals in each area
- A discussion of BMPs that will be replaced or modified as a result of the review
- Any new BMPs needed to maintain compliance with permit, reduce impacts on water quality, or meet new or additional agency requirements
- Revisions to regulatory mechanisms or Air Force protocols impacting the program

In addition to these annual reviews, AFI 32-7001, AFI 90-803 and ACC Instruction 90-801 require that internal EMS assessments be performed throughout the year by base personnel and external EMS assessments be performed every three (3) years by experienced environmental professionals. Implementation of the Stormwater Management Program is included in these assessments.

8.0 Responsible Personnel

The Water Manager is responsible for ensuring that the Base Commander is briefed on a regular basis with regard to the status of MS4 Permit compliance and program implementation. This includes programming for future funding and resource needs, requirements to be addressed during the next reporting year, and significant enforcement issues.

9.0 Stormwater Program Enforcement

9.1 Enforcement Requirements

a. Illicit connections and discharges as described in Section 5.4.3 – Illicit Discharge Detection and Elimination (IDDE) Program, is prohibited and enforceable by direct order from DM's 355 Fighter Wing Commander.

b. Only stormwater is to enter the MS4. Dumping or disposal of materials other than stormwater is prohibited.

c. Contractors working at DMAFB are to follow requirements of the facility's permit and to minimize discharge of pollutants to the MS4 through installation, implementation, and maintenance of stormwater control measures which must be contained in their project proposal documents and the subsequent contract.

d. Violators must cease and desist illicit discharges and spills in violation of the facility's permit and/or abate such discharges.

e. Unit Commanders, facility managers, and Unit Environmental Coordinators (UECs) have primary responsibility to ensure their facility and surrounding areas have the appropriate BMPs in place and in working condition.

9.2 Enforcement Response Plan

a. Stormwater Permit compliance is enforced with a DMAFB Wing Policy letter signed by the 355 Fighter Wing Commander and acts as an official military order and enforceable under the Uniform Code of Military Justice (UCMJ).

b. All unit commanders and supervisors at DMAFB will enforce violations of stormwater pollution on the installation property. If necessary, calls may be placed to the base Security Forces who in turn will coordinate with Base Environmental Managers or Unit Commanders.

c. First offenses will be coordinated through facility managers, UEC's and/or the appropriate military chain-of-command structure to the Base Water Quality Manager. A Memo for Record will be created by the Base Water Quality Manager to document the violation and procedures to correct. An inspection will be coordinated with the Unit Commander to evaluate the corrective actions and recorded in the Air Force Enforcement Actions, Spill, and Inspection platform (EASI).

d. In the event of a repeat offense, the case may be forwarded to the installation Wing Commander for additional review to include possible disorderly conduct charges resulting in reduction in rank or imprisonment under the UCMJ. Additional staff assistance from outside agencies may also be requested for site review and inspection.

e. The stormwater enforcement plan will be amended as necessary and reviewed at least once a year as part of the annual Stormwater Management Plan review.

Appendix A AZPDES General Permit for Discharge from Small MS4s to Waters of the United States (Permit No. AZG2015-00X)

ADEQ's MS4 permit

Appendix B NOI for Coverage under AZPDES Permit No. AZMGSG2010-002

Adobe Acrobat Document

Adobe Acrobat Document

ADEQ MS4 Final Approval Letter and NOI

Appendix C Acronyms

A.A.C.	Arizona Administrative Code
ACC	Air Combat Command
AFI	Air Force Instruction
AMARG	Aerospace Maintenance and Regeneration Group
AZPDES	Arizona Pollutant Discharge Elimination System
BMP	Best Management Practice
BX	Base Exchange
CE	Civil Engineering
CES	Civil Engineering Squadron
CFI	Comprehensive Facility Inspection
CGP	Construction General Permit
CSCE	Comprehensive Site Compliance Evaluation
DMAFB	Davis-Monthan Air Force Base
EPA	Environmental Protection Agency
ESOHCAMP	Environmental, Safety and Occupational Health Compliance Assessment and Management Program
ESOHLC	Environmental, Safety and Occupational Health Leadership Council
ETL	Engineering Technical Letter
HMERP	Hazardous Material Emergency Response Plan
IDDE	Illicit Discharge Detection and Elimination
MEP	Maximum Extent Practicable
MS4	Municipal Separate Storm Sewer System
MSGP	Multi-Sector General Permit
NOI	Notice of Intent
NPDES	National Pollutant Discharge Elimination System
PAG	Pima Association of Governments
P2	Pollution Prevention
SWMP	Stormwater Management Plan
SWMWG	Stormwater Management Working Group
SWPPP	Stormwater Pollution Prevention Plan
TMDL	Total Maximum Daily Load

DEFINITIONS

Best Management Practices (BMPs)
Schedules of activities, prohibitions of practices, maintenance procedures, and other management practices to prevent or reduce the discharge of pollutants to waters of the United States. BMPs also include treatment requirements, operating procedures, and practices to control plant site runoff, spillage or leaks, sludge or waste disposal, or drainage from raw material storage.

Discharge of a Pollutant
1. Any addition of any "pollutant" or combination of pollutants to "waters of the United States" from any "point source," or 2. Any addition of any pollutant or combination of pollutants to the waters of the "contiguous zone" or the ocean from any point source other than a vessel or other floating craft which is being used as a means of transportation. This definition includes additions of pollutants into waters of the United States from: surface runoff which is collected or channeled by man; discharges through pipes, sewers, or other conveyances owned by a state, municipality, or other person which do not lead to a treatment works; and discharges through pipes, sewers, or other conveyances, leading into privately owned treatment works. This term does not include an addition of pollutants by any "indirect discharger."

Illicit Connection
Any man-made conveyance connecting an illicit discharge directly to a municipal separate storm sewer.

Illicit Discharge
Any discharge to a municipal separate storm sewer that is not composed entirely of stormwater except discharges pursuant to a NPDES or AZPDES permit (other than the NPDES or AZPDES permit for discharges from the municipal separate storm sewer) and discharges resulting from firefighting activities.

Measurable Goal
A quantitative measure of progress in implementing a component of a stormwater management system.

Minimum Control Measure
Refers to any Best Management Practice or other method used to prevent or reduce the discharge of pollutants to waters of the United States.

Municipal Separate Storm Sewer System (MS4)
An “MS4”, as defined in 40 CFR 122.26(b)(8), “means a conveyance or system of conveyances (including roads with drainage systems, municipal streets, catch basins, curbs, gutters, ditches, man-made channels, or storm drains): (i) Owned or operated by a state, city, town, borough, county, parish, district, association, or other public body…that discharges into waters of the United States; (ii) Designed or used for collecting or conveying stormwater; (iii) Which is not a combined sewer; AND (iv) Which is not part of a Publicly Owned Treatment Works.”

Pollutant
Pollutant is defined at R18-9-A901(22). A partial listing from this definition includes: dredged spoil, solid waste, sewage, garbage, sewage sludge, chemical wastes, biological materials, heat, wrecked or discarded equipment, rock, sand, cellar dirt, and industrial or municipal waste.

Regulated Small MS4
Not all small MS4s are subject to the Phase II stormwater regulations. To be required to obtain a NPDES stormwater permit, a small MS4 must be a "regulated small MS4". There are two ways a facility can be considered a regulated small MS4: if the facility is automatically designated or if the NPDES permitting authority determines that the facility is regulated. In the latter case, the facility is notified by the NPDES permitting authority the facility is regulated. Per 40 CFR 122.32(a), a small MS4 is regulated if it:

1. Is located in an urbanized area (UA) as determined by the latest decennial census (refer to http://cfpub.epa.gov/npdes/stormwater/urbanmaps.cfm for urbanized area boundary maps, as determined in the 2000 census) (e.g., the facility is an automatically-designated MS4); OR

2. Is located outside of a UA and contributes to the pollutant loadings of a physically interconnected MS4 regulated by the NPDES stormwater program (e.g., NPDES permitting authority-designated regulated small MS4); OR

3. Is located outside of a UA if the NPDES permitting authority determines that its discharges cause or may cause an adverse impact on water quality (e.g., NPDES permitting authority-designated regulated small MS4).

Small MS4
A "small MS4" is defined in 40 CFR 122.26(b)(16) as a separate storm sewer system that is:

1. Owned and operated by a public body with jurisdiction over stormwater, sewage, or other wastes; AND

2. Not designated as large (serves a population of 250,000 or more) or medium (serves a population of at least 100,000 but less than 250,000) in size.

Stormwater
Stormwater runoff, snow melt runoff, surface runoff and drainage.

Stormwater Management Program (SWMP)
A comprehensive program to manage the quality of stormwater discharges from the municipal separate storm sewer system.

Urbanized Area
The U.S. Bureau of the Census' general definition of a UA, based on population and population density, is a land area comprising one or more places – central place(s) – and the adjacent densely settled surrounding area – urban fringe – that together have a residential population of at least 50,000 and an overall population density of at least 1,000 people per square mile. A UA can comprise places, counties, Federal Indian Reservations, and minor civil divisions such as towns and townships.

Appendix D Annual Report Form

Appendix E Storm Sewer System Maps

Appendix F Documentation Developed in Support of the DMAFB SWMP

Site Inspection Form

Site Inspection Form 1

Examples of Street Sweeper Schedules:


Example Sweeper Schedule


Example Sweeper Schedule

LETTER OF AGREEMENT (LOA)


LETTER OF AGREEMENT (LOA)

Appendix G Contractor Environmental Guide

Contractor Environmental Guid