ALASKA POLLUTANT DISCHARGE ELIMINATION SYSTEM

PERMIT FACT SHEET – FINAL

Permit Number: AKS052426

Port of Alaska Municipal Separate Storm Sewer System

DEPARTMENT OF ENVIRONMENTAL CONSERVATION
Wastewater Discharge Authorization Program
555 Cordova Street
Anchorage, AK 99501

Public Comment Period Start Date: May 1, 2020
Public Comment Expiration Date: June 1, 2020
Alaska Online Public Notice System

Technical Contact: Teri Buck
Alaska Department of Environmental Conservation
Division of Water
Wastewater Discharge Authorization Program
555 Cordova Street
Anchorage, AK 99501
907-334-2281
Fax 907-269-3487
Teri.Buck@alaska.gov

Proposed reissuance of the Alaska Pollutant Discharge Elimination System (APDES) Permit for Storm Water Discharges from the Municipal Separate Storm Sewer System (MS4) within the

Port of Alaska (Port)
(hereafter "permittee")

The Alaska Department of Environmental Conservation (the Department or DEC) proposes to reissue an APDES MS4 Permit (permit) for discharges from a Phase I MS4 to the Port of Alaska. The permit authorizes and sets conditions on the discharge of pollutants from municipal activities to waters of the United States. In order to ensure protection of water quality and human health, the permit establishes conditions, prohibitions, and management practices for discharges of storm water from the MS4 owned or operated by the permittee.

This fact sheet explains the nature of potential discharges from MS4 activities and the steps in the development of the permit, including:

- information on public comment, public hearing, and appeal procedures;
- a listing of proposed control measures and other conditions;
- technical material supporting the conditions in the permit; and
- proposed inspection, monitoring, and reporting requirements in the permit.

Appeals Process

The Department has both an informal review process and a formal administrative appeals process for final APDES permit decisions. An informal review request must be delivered within 20 days after receiving the Departments decision to the Director of the Division of Water at the following address:

Director, Division of Water
Alaska Department of Environmental Conservation
P.O. Box 111800
Juneau, AK 99811-1800

Location: 410 Willoughby Street, Suite 303, Juneau AK

Interested persons can review 18 AAC 15.185 for the procedures and substantive requirements regarding a request for an informal Department review. See http://dec.alaska.gov/commish/review-guidance/ for information regarding reviews of Department decisions.

An adjudicatory hearing request must be delivered to the Commissioner of the Department within 30 days of the permit decision or a decision issued under the informal review process. An adjudicatory hearing will be conducted by an administrative law judge in the Office of Administrative Hearings within the Department of Administration. A written request for an adjudicatory hearing shall be delivered to the Commissioner at the following address:

Commissioner
Alaska Department of Environmental Conservation
P.O. Box 111800
Juneau, AK 99811-1800

Location: 410 Willoughby Street, Juneau AK

Interested persons can review 18 AAC 15.200 for the procedures and substantive requirements regarding a request for an adjudicatory hearing. See http://dec.alaska.gov/commish/review-guidance/ for information regarding appeals of Department decisions.

Documents are Available

The permit, fact sheet, and related documents can be obtained by visiting or contacting the Department between 8:00 a.m. and 4:30 p.m., Monday through Friday at the addresses below. The permit, fact sheet, and other information can also be located on the Departments Wastewater Discharge Authorization Program website http://dec.alaska.gov/water/wastewater/.

Dept of Environmental Conservation
Division of Water
Wastewater Discharge Authorization Program
555 Cordova Street
Anchorage, AK 99501
(907) 269-6285

Table of Contents

List of Tables

List of Figures

1.0 INTRODUCTION

The Alaska Department of Environmental Conservation (the Department or DEC) is proposing to reissue an Alaska Pollutant Discharge Elimination System (APDES) Program permit that authorizes the discharge of pollutants in storm water discharges associated with municipal separate storm sewer systems (MS4s).

The permit and fact sheet reference various federal and state regulations. The state regulations are found in the Alaska Administrative Code (AAC), Chapter 83 "Alaska Pollutant Discharge Elimination System Program" (18 AAC 83). The federal regulations are incorporated by reference into the state APDES regulations in 18 AAC 83.010(b)(3). As an aid to readers, however, the permit and fact sheet in some areas cite the federal regulations where specific regulatory language can be found. If any discrepancy exists between the fact sheet and the actual permit language, the permittee must comply with the permit as written.

The Environmental Protection Agency (EPA) defines "municipal separate storm sewer" and those considered to be "large" and "medium" as Phase I MS4's and "small" as Phase II MS4's at Title 40 Code of Federal Regulations (CFR) §122.26(b). In general, an MS4 includes any publicly-owned conveyance or system of conveyances used for collecting and conveying storm water that discharges to waters of the United States. An MS4 includes roads with drainage systems, municipal streets, catch basins, curbs, gutters, ditches, man-made channels, and storm drains. EPA has designated large, medium, and small MS4s based on the population served; these regulated MS4s must obtain National Pollutant Discharge Elimination System (NPDES) permit coverage for their discharges. MS4 permits require the implementation of a storm water management program (SWMP) to control pollutants in the MS4 to the maximum extent practicable (MEP).

2.0 BACKGROUND

2.1 Delegation of Authority

In October 2008, EPA approved Alaska's application to administer the NPDES Program in the State of Alaska. The State's program is called the APDES Program. EPA's approval of the application included transferring authority to administer the APDES Program in phases. Authority to administer the storm water program transferred to DEC on October 31, 2009.

2.2 Permit Area and Applicant

In accordance with Section 402(p) of the Clean Water Act (CWA) and federal regulations at 40 CFR §122.32, the permit is for a system-wide basis for the following MS4 permittee:

Port of Alaska (Port)
2000 Anchorage Port Road
Anchorage, Alaska 99501

The storm sewer systems owned and operated by the applicant are located within the boundaries of the Port. See Appendix D of the permit, for a map depicting the permit area. Surface runoff within the Port is directed to a network of subsurface conveyances, ditches, and surface streets. These systems provide

drainage for a 220-acre industrial park, which adjoins the cargo docks of the Port to the east. Approximately 81 acres of the industrial park are under long-term lease to various Port Stakeholders. The majority of the Port's acreage is presently occupied by the two major cargo carriers, Matson, Inc., and Totem Ocean Trailer Express (TOTE Maritime). Other Stakeholders include Marathon Petroleum, Menzies Aviation (Aircraft Services International Group), Crowley, and Delta Western, Inc., all of which operate bulk fuel and /or methanol storage facilities. Another Stakeholder, Alaska Basic Industies (ABI), operates a storage and transfer facility for cement. The Port industrial park also has approximately 31 acres available for the temporary staging and storage of marine cargo in transit.

The permit specifically authorizes the discharge of urban runoff through the MS4 owned and operated by the Port, provided the permittee complies with the permit terms and conditions limiting the discharge of pollutants to the MS4 to the MEP.

Regulated storm water discharges associated with industrial activity and/or construction activity are authorized to discharge through the MS4, only when those discharges are separately permitted under the appropriate APDES permit. For example, some of the Stakeholders storm water discharges are associated with water transportation and marine cargo handling, or land transporation and petroleum bulk stations and terminals and must obtain authorization to discharge such "industrial storm water" through DEC's Multi-Sector General Permit for Storm Water Discharges Associated with Industrial Activities (Permit #AKR060000) (MSGP) or other APDES permit(s). Discharges from construction activities disturbing one or more acres operated by the permittee or Stakeholders are subject to the requirements of the APDES General Permit for Storm Water Discharges from Construction Activity (Permit #AK100000) (Construction General Permit or CGP).

Storm water discharges from all other permittee's areas and facilties that are not associated with regulated industrial operations or construction activity meeting the regulatory definition at 40 CFR 122.26(b)(14) and (15) – including, but not limited to, drainage and runoff from permittee-owned parking areas, storage areas, and/or structural storm water runoff management controls – are therefore authorized by this permit.

2.3 Description of the Permittee

The Port is an enterprise zone wholly owned by the Municipality of Anchorage (MOA). The permittee's surface runoff within its jurisdiction is directed to a system of mostly interconnected conveyances, which consist of subsurface storm sewers, ditches, and surface streets.

2.4 Permit History

The first MS4 permit for the Port was issued by EPA as the NPDES authority and became effective March 3, 1995. On March 3, 2000 the permit was administratively extended by EPA. The current APDES MS4 permit went into effect on 1 August 2015 and expires on 31 July 2020. An application for permit renewal was submitted prior to the 2 February 2020 compliance date. The Port MS4 permit is a Phase I permit.

2.5 Storm Water Management Program Overview

The permittee has managed storm water discharges from its MS4 in accordance with their Storm Water Management Program (SWMP) since 1995. The permittee has submitted a system-wide report each year. The permittee reports the greatest achievement of the SWMP is the public education aspect, which has increased the awareness of the importance of clean storm water and the need for pollution prevention measures to protect it. The inspection and annual interview process is another aspect of the SWMP that is important to improving storm water pollution prevention.

During the first four years of the permit, the permittee had difficulty with the wet weather monitoring program due to the storm drain design, nature and frequency of summer storm events, and tidal influence, and was subsequently suspended.

Dry weather sampling performed in 1999 indicates that the source of petroleum contamination (from past spills and 1964 earthquake) is independent of storm events. Flows during non-storm runoff periods are comprised of groundwater infiltration through perforated storm pipe, and possibly runoff from two surface water bodies (which are also fed by groundwater), one located to the east of Anchorage Fueling and Service Company (AFSC) and one located to the east of Tesoro.

While essential maintenance on the existing facilities is ongoing, the Port is identifying and updating plans for modernizing the Port's facilities through the Anchorage Port Modernization Project (APMP) which primarily focuses on construction of new docks. The Port is currently conducting a system-wide inspection of infrastructure, to include storm drains, and is performing maintenance and improvement work as necessary through on-going maintenance and capital improvement program to help alleviate the infiltration of contaminated groundwater into the storm drain system.

Summary and detailed Annual Reports, including a current SWMP, are submitted to DEC each year. The report includes the results of an unannounced site-wide visual surface inspection and a Port user interview at least once annually to confirm whether the Port and Port users are adhering to the SWMP. At various times throughout the year, drive-by inspections are conducted. The site-wide visual surface inspection and spot inspections focused on identifying illicit discharges, solid waste accumulation, maintenance and repair of the storm drain system, identifying on-site and off-site sources of potential pollution, and prohibited outdoor work activities. The Port user interview focused on identifying and correcting failing Best Management Practices (BMPs), source reduction and elimination measures, and source control measures, changes in programs or standard operating procedures that have a direct effect on APDES compliance and storm water pollution prevention, identifying new spills, material and chemical handling practices, training, and disposal and recycling practices. The SWMP (February 2019) indicates the permittee is in compliance with the permit.

3.0 DESCRIPTION OF MUNICIPALITY AND RECEIVING WATERS

3.1 Municipal Activity

3.1.1 Municipal Summary

The Port is located in an industrial portion of the MOA on an approximately 220 acre tract of land bordered on the west by Cook Inlet (Knik Arm), on the north and east by Joint Base Elmendorf-

Richardson (JBER), and on the south by Alaska Railroad property. The Port initially began operations in September 1961. Thirty-eight thousand tons of marine cargo moved across its single berth during the first year. By 1997 more than 3.0 million tons of various commodities moved across the docks. By 2011, more than 4.0 million tons of various commodities moved across the docks.

The Port consists of five-berth terminals providing facilities for the movement of containerized freight, iron and steel products, wood products, methanol, bulk petroleum, and cement. The Port facilities include two petroleum, oil, and lubricant (POL) transfer terminals, three cargo ship terminals with gantry cranes, equipment and material staging yards, vehicle transit areas, cargo staging areas, administrative building and parking areas. Four underground POL pipelines and a pneumatic cement pipeline are located in utility easements. A POL pipeline valve yard is located in the South Transit Area. The Port property has been subdivided into twenty lots. Some of the lots are for common use during the course of Port operations, and others have been leased to several corporations who operate and maintain facilities at the Port.

The Port is used regularly by two major cargo carriers that bring several ships weekly from the Pacific Northwest. The Port is also used by petroleum tankers and barges that supply jet fuel for Ted Stevens Anchorage International Airport operations and petroleum products bound for western Alaska. Overseas cargo carriers from Japan and Korea use the port to import and export pipe, drilling mud, construction materials, automobiles, cement, and other freight.

The Port MS4 system consists of seven outfalls that discharge into the Cook Inlet tidelands: Outfalls 001, 002, 003, 004, 005, 006, and 007. The system includes numerous structural controls, such as solid piping, perforated piping, containment berms, drainage valves, catch basins, a sedimentation basin, manholes, sumps, grating, drainage ditches, and curbing. Outfalls 001, 002, and 003 have been monitored and included in the Port's MS4 since permit issuance. Outfall 006 collects and discharges storm water from a newly constructed area of the Port referred to as the South Backlands. Outfall 007 drains the North Extension Area. These areas are covered under the Port's existing MS4 permit.

There are currently two other outfalls that discharge into Cook Inlet at the Port: the Gaylor Gulch outfall (Outfall 005) and the Petroleum Hydrocarbon Valve Yard outfall (Outfall 004); neither of these were included in the Port's previous permit coverage, but were included in the 2012 reapplication. Gaylor Gulch drains storm water from JBER to the east and is covered by the JBER APDES MS4 permit as it enters the Port. Storm water traveling through Gaylor Gulch discharges into the Gaylor Gulch Weir at the base of Cherry Hill. The weir is drained by a buried storm drain line that trends north along Terminal Road before turning sharply to the west and transversing Port property to empty into Cook Inlet near Trestle No 1-A. Both the weir and the buried line belong to JBER. In its current configuration, several storm drain catch basins on Port Property discharge runoff into the line. It is roughly estimated that greater than 90% of the discharge in the storm drain originates on JBER. The Port is currently exploring alternatives with JBER to reduce or eliminate runoff from developed areas of the base that make up the vast majority of the volume of the discharge in Gaylor Gulch. The Gaylor Gulch Outfall (005) is included as part of this MS4 permit.

The Petroleum Hydrocarbon Valve Yard also has its own storm drain outfall (Outfall 004), which is not interconnected to the rest of the Port's storm drain system. The valve yard is equipped with a manual discharge value and oil/water separator. Since the inception of the Port's NPDES permit in 1995 the

Petroleum Hydrocarbon Valve Yard has been excluded from coverage. As a marine terminal, it was originally thought to fall under the jurisdiction of the U.S. Coast Guard. Based on further evaluation, it appears that this may not be the case. The Petroleum Hydrocarbon Valve Yard (Outfall 004) is included as part of this MS4 permit.

The Port acquired 48 acres of previously leased land form the U.S. Army in 2011, and has recently been platted and incorporated into Tract J. The land is mostly undeveloped and vegetated, with the exception of a rail spur, the Port's Security Center, and associated access roads (both paved and unpaved). For the undeveloped areas, storm water flows overland and downhill to receiving drainage ditches located along Terminal Road. In the Security Center area, storm water collected from the paved surfaces either sheet flows into drainage ditches or passes through a small network of storm drains that discharge to the drainage ditches.

The demand for Port services has grown steadily in recent years, and this growth is expected to continue into the near future.

To keep pace with future trends in the shipping industry and to better serve existing and potential clients, the Port planned to expand its facilities. Actual construction began in 2006 and was halted in 2012 pending additional design and scope changes. Areas of ground disturbance – the North Extension and South Backlands areas — have been stabilized. A notice of termination for coverage under the Alaska Construction General Permit (CGP) was submitted and until construction resumes, storm water discharges from these areas are included in the existing Port MS4 permit and the SWMP. The proposed design has significantly changed and strategic improvements/replacements rather than expansion are proposed under the new Port of Alaska Modernization Program (PAMP). Phase I of the PAMP began in 2018 with ground stabilization efforts for construction of a new Petroleum Cement Terminal and was completed in 2019.

3.1.2 Precipitation and Temperature

The National Oceanic and Atmospheric Administration's (NOAA) Western Regional Climate Center maintains historical climate information for various weather stations throughout the western United States. Annual average precipitation at the airport in Anchorage is approximately 15.97 water equivalent inches per year (see Figure 1 and Figure 2). Snow is the predominant precipitation during the winter months.

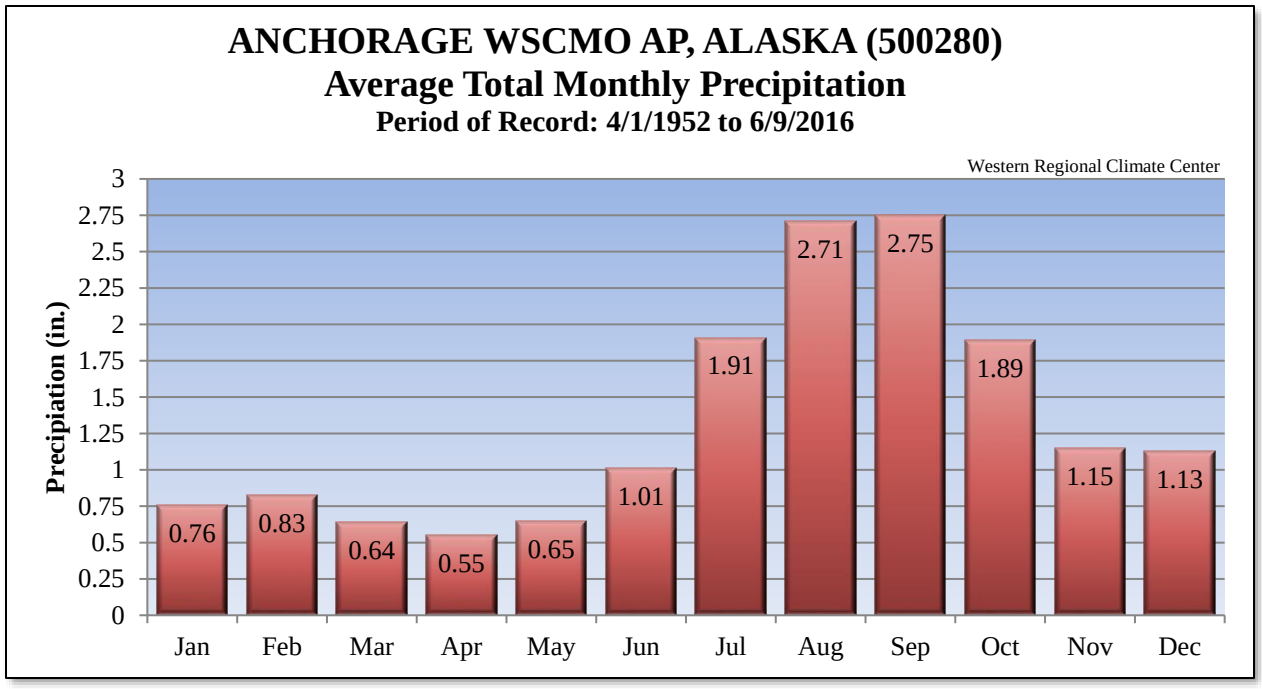

Figure 1: Average Total Monthly Precipitation (water equivalent) in Anchorage, Alaska

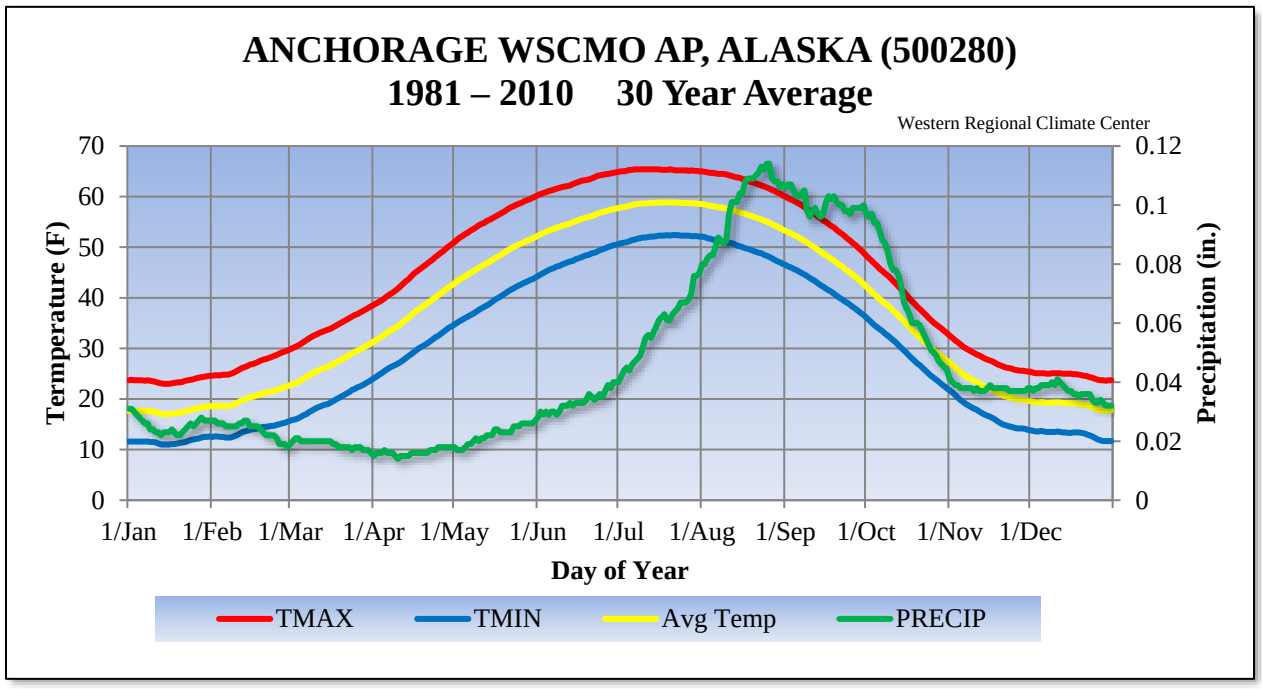

Figure 2: Temperature Record for Anchorage

The average rainfall depth in the Anchorage area, based on 45 years of 24-hour precipitation data obtained from NOAA and collected at Ted Stevens Anchorage International Airport, demonstrates that approximately 90% of all storms in the Anchorage area result in a rainfall volume of 0.63 inches or less (ADEC, 2011).

3.2 Receiving Waters

3.2.1 Water Quality Standards

Regulations in 18 AAC 70 require that the conditions in permits ensure compliance with the Alaska Water Quality Standards (WQS). The state's WQS are composed of use classifications, numeric and/or narrative water quality criteria, and an Antidegradation Policy. The use classification system designates the beneficial uses that each water body is expected to achieve. The numeric and/or narrative water quality criteria are the criteria deemed necessary by the state to support the beneficial use classification of each water body. The Antidegradation Policy ensures that the beneficial uses and existing water quality are maintained.

Water bodies in Alaska are designated for all uses unless the water has been reclassified under 18 AAC 70.230 as listed under 18 AAC 70.230(e). Some water bodies in Alaska can also have site–specific water quality criterion per 18 AAC 70.235, such as those listed under 18 AAC 70.236(b). Knik Arm/Cook Inlet has not been reclassified, nor have site-specific water quality criteria been established in the vicinity of the discharges.

For marine waters Alaska WQS designate seven uses (A) water supply (aquaculture, seafood processing, and industrial); (B) water recreation (contact and secondary); (C) growth and propagation of fish, shellfish, other aquatic life, and wildlife; and (D) harvesting for human consumption raw mollusks or other raw aquatic life). Waters adjacent to the Port's western boundary (Knik Arm) has been classified by DEC in 18 AAC 70.020 as marine water with the designated uses described above.

3.2.2 Water Quality Status of Receiving Water

DEC proposes to authorize storm water discharges from the MS4 owned and operated by the permittee to waters of the United States within the corporate limits of the Port. Waters receiving discharges from the MS4 include Knik Arm/Cook Inlet.

In 18 AAC 70.020, DEC has classified state waters the Port discharges to as marine water, with the following designated uses: water supply, water recreation, and growth and propagation of fish, shellfish, other aquatic life, and wildlife with the addition of harvesting for consumption of raw mullusks or other aquatic life.

Any part of a water body that the water quality does not or is not expected to meeting WQS is defined as a "water quality limited segment" and placed on the state's impaired waterbody list. Knik Arm of Cook Inlet is not included as in impaired waterbody on the *Alaska's Final 2014-2016 Integrated Water Quality Monitoring and Assessment Report*, November 2, 2018.

3.2.3 Potential Municipal Impact on Water Quality

Storm water is the surface runoff that results from precipitation events and snow melt. Storm water flowing across land surfaces has the potential to contain or mobilize high levels of contaminants. Under most natural conditions, storm water runoff is slowed and filtered as it flows through vegetation and wetlands. These flows soak into the ground, gradually recharging groundwater, and eventually seep into surface receiving waters.

Urban development has significantly altered the natural infiltration capability of the land, and often generates a host of pollutants that are associated with the activities of dense populations. This developed area in turn causes an increase in storm water runoff volumes and pollutant loadings in the storm water discharged to receiving waters. Urban development increases the amount of impervious surface in a watershed, as naturally vegetated areas are replaced with parking lots, roadways, and commercial, industrial, and residential structures. These surfaces inhibit rainfall infiltration into the soil and reduce evaporation and transpiration, thereby increasing the amount of precipitation that is converted to runoff. Storm water and snow melt runoff washes over impervious surfaces, picking up pollutants while gaining speed and volume because of the inability to disperse and filter into the ground.[1]

Uncontrolled storm water discharges from areas of urban development can negatively impact receiving waters by changing the physical, biological, and chemical composition of the water, resulting in an unhealthy environment for aquatic organisms, wildlife, and humans. The Nationwide Urban Runoff Program (NURP), conducted by EPA between 1978 through 1983, demonstrated that storm water runoff is a significant source of pollutants. The study indicated that discharges from separate storm sewer systems draining from residential, commercial, and light industrial areas carried more than 10 times the annual loadings of total suspended solids (TSS) than discharges from municipal sewage treatment plants providing secondary treatment. The study also identified a variety of other contaminants, such as oil and grease, copper, lead, and zinc that were detected frequently at levels of concern. Numerous other studies and reports have confirmed the average pollutant concentration data collected in the NURP study.

4.0 Basis for Permit Conditions

4.1 General Information

The conditions established by the permit are based on Section 402(p)(3)(B) of the CWA, 33 U.S.C. §1342(p)(3)(B), and 40 CFR 122.26 adopted by reference in 18 AAC 83.010(b)(3); which requires an APDES permit for MS4 discharges to 1) effectively prohibit non-storm water discharges from entering the MS4, and 2) requires controls necessary to reduce pollutants in MS4 discharges to the MEP, including management practices, control techniques, system design and engineering methods, and other provisions determined by DEC to be appropriate.

As authorized by 40 CFR §122.44(k), the permit uses BMPs, in the form of required pollution prevention measures and a comprehensive SWMP, as the mechanism to implement the statutory requirements. While Section 402(p)(3)(B)(iii) of the CWA clearly includes structural controls as a component of MEP, the Department encourages municipalities to first explore opportunities for pollution prevention measures, reserving more costly structural controls for where source controls are infeasible or ineffective.

EPA's permitting approach for storm water discharges uses BMPs in the first five year permit, and expanded or better tailored BMPs in subsequent permits with the goal of WQS attainment. See "*Interim Permitting Approach for Water Quality-Based Effluent Limitations in Storm Water Permits*," 61 Fed.

[1] 64 FR 68725-27 (December 8, 1999)

Reg. 43761 (Aug. 26, 1996)[2]. EPA reiterated this approach to address how to incorporate wasteload allocations (WLAs) for storm water discharges into NPDES permits in its November 2014 guidance entitled, "*Revisions to the November 22, 2002 Memorandum "Establishing Total Maximum Daily Load Wasteload Allocations for Storm Water Sources and NPDES Permit Requirements Based on Those WLAs*" (USEPA 2014)[3].

For the 2020 permit, DEC determined that BMPs, implemented and enforced through a comprehensive storm water management program (SWMP), are the most effective mechanisms for reducing the discharge of pollutants to the MEP and for complying with the water quality provisions of the CWA. This permit proposes to continue the use of BMPs as the primary means to ensure storm water discharges meet WQS.

5.0 PERMIT CONDITIONS

This section is intended to help the permittees and members of the public understand the intent and basis of the permit language. If any confusion or conflicts exist between this summary and the actual permit language, the permittee must comply with the permit as written.

The conditions established by the permit are based on Section 402(p)(3)(B) of the CWA, 33 U.S.C. §1342(p)(3)(B), and 18 AAC 83.105-120. This section requires that permits for an MS4 must effectively prohibit non-storm water discharges from entering the MS4 and requires controls to reduce the discharge of pollutants to the MEP, including management practices, control techniques and system, design and engineering methods, and other provisions as the permitting authority determines appropriate for the control of such pollutants.

The permit uses BMPs as the primary means to control the sources of pollution in storm water discharges. DEC has determined that BMPs implemented and enforced through a comprehensive local SWMP are the most effective mechanism for reducing the discharge of pollutants to the MEP and for complying with the water quality provisions of the CWA. EPA considers MEP to be an iterative process in which an initial SWMP is proposed and then periodically upgraded as new BMPs are developed or new information becomes available concerning the effectiveness of existing BMPs.[4] DEC concurs with EPA's iterative process approach for MS4 improvement. The NPDES regulations at 40 CFR §122.44(k) allow for use of BMPs when numeric limits are infeasible. EPA's *Interim Permitting Approach for Water Quality-Based Effluent Limitations in Storm Water Permits Policy* (August 1996) addresses the use of BMPs in storm water permits to provide for attainment of WQS. This policy is available on-line at http://www.epa.gov/npdes/pubs/swpol.pdf.

The APDES application requirements for MS4 permittee's at 18 AAC 83.110 describe in detail the information that must be submitted to DEC to obtain permit coverage. The MS4 permittee is required to develop, implement, and enforce a SWMP designed to reduce the discharge of pollutants from its MS4 to the MEP, to protect water quality, and to satisfy the water quality requirements of the CWA. DEC

[2] Available on-line at http://www.epa.gov/npdes/pubs/swpol.pdf
[3] https://www.epa.gov/sites/production/files/2015-12/documents/epa_memorandum_establishing_tmdl_wlas_for_stormwater_sources_2014_00000002.pdf
[4] 64 FR 68754 (December 8, 1999)

then determines the specific permit conditions necessary to reduce the discharge of pollutants to the MEP. DEC carefully considered the program information submitted by the permittee in their APDES application as well as information contained in Annual Reports from the previous permit term to develop permit conditions.

5.1 Applicability

5.1.1 Discharges Authorized Under this Permit

The permit authorizes the discharge of storm water to waters of the United States from all portions of the MS4s owned and operated by the permittee within the corporate boundary of the Port. The permit limits the authorization to discharge municipal storm water in a variety of ways:

- Storm water runoff that is commingled with process wastewater, non-process wastewater, and storm water associated with industrial or construction activity (as defined in 40 CFR §122.26(b)(14) and (15)) are authorized to be discharged from the MS4, provided the commingled flows are authorized by a separate individual or general APDES permit (e.g., CGP, MSGP) as necessary.
- Certain types of discharges unrelated to precipitation events (i.e., “non-storm water discharges”), which are listed in 40 CFR §122.26(d)(2)(iv)(B)(1) are allowed to enter the MS4, as long as the discharges are not considered to be sources of pollution to the waters of the United States. However, the permittee is responsible for the quality of the combined discharge and therefore has an interest in locating any uncontrolled or un-permitted discharges to the storm drain system. In Part 3.3, the permit requires the permittee to prohibit, through ordinance or other enforceable means, all other types of non-storm water discharges into the MS4. The permittee conducts a dry weather screening program to identify illicit discharges to the MS4.
- Discharges from the MS4 must not cause violations of state WQS.

5.1.2 Limitations on Permit Coverage

5.1.2.1 Non-Storm Water Discharges

The permit authorizes the discharge of non-storm water if it meets one of three conditions: (1) the discharge is in compliance with a separate APDES permit, (2) the discharge is the result of a spill due to unusual and severe weather event or consists of an emergency discharge, where reasonable and prudent measures have been taken to prevent and minimize the impact of such discharge, or (3) consists of uncontaminated water from a list of approved sources, and the discharge is not a source of pollution to waters of the United States.

5.1.2.2 Discharges Threatening Water Quality

The permit does not authorize the discharge of storm water that the Department determines will cause, or have the reasonable potential to cause or contribute to, violations of WQS.

5.1.2.3 Snow Disposal to Receiving Waters

Disposal of snow directly into waters of the United States, or directly to the MS4, is prohibited, due to concerns that the accumulated snow and melt water may contain elevated levels of chloride and other

salts, suspended sediment, turbidity, and metals associated with sediment and turbidity. Discharges of snow melt resulting from, or associated with, the permittees' snow management practices (such as street plowing, and application of traction material) are conditionally authorized, provided such activities are conducted in accordance with BMPs and a manner that minimizes adverse water quality impacts. DEC recognizes the permittee's use of the snow management practice of using ditches for snow storage as an acceptable management practice. The primary function of using the ditches during the winter months is for snow storage and as is part of the permittee's snow disposal and management practices. The ditches are maintained by the permittee and are lined with gravel, soil, and vegetation that allows melting of snow and rainwater to infiltrate into the ground to help filter pollutants from directly entering surface receiving waters. As stated in the permit, discharges from the permittee's snow disposal and snow management practices are authorized under the permit when such practices are operated using appropriate BMPs required in Permit Part 3.6 Pollution Prevention and Good Housekeeping. BMPs may include detention basins, dikes, berms, ditches, and vegetative buffers. BMPs shall be designed, operated, and maintained to prevent and reduce pollutants in the discharges to the MEP so as to avoid excursions above WQS.

5.2 Storm Water Management Program Requirements

5.2.1 General Requirements

The permittee is required to update, implement, and enforce a SWMP designed to reduce pollutants to the MEP, to control the discharge of pollutants from the MS4 in order to protect water quality, and to satisfy the water quality requirements of the CWA.

The APDES permit application submitted by the permittee in February 2020 contains proposed revisions to the 2015 permit. The permit incorporates those BMPs, and includes the specific activities put forth by the permittee. Milestones and compliance dates are also contained in Table 1: Schedule of Submissions of the permit. Annual reports are required to document program accomplishments. DEC may review and approve any plans or plan modifications required by the permit.

5.2.1 Legal Authority

The permittee has to ensure they have legal authority to control discharges to and from the portions of the MS4 over which they have jurisdiction. This legal authority may be a combination of statute, ordinance, permit, contract, order or inter-jurisdictional agreements with Port lessees.

5.2.2 Reviewing and Updating the Storm Water Management Program

The SWMP is intended to be a functioning mechanism for the permittee to use. Therefore, minor changes and adjustments to the various SWMP elements are expected and may be necessary to more successfully adhere to the goals of the permit. DEC has determined that minor changes to the SWMP shall not constitute the need for permit modifications as defined in the regulations at 40 CFR §122.6. Part 2.4. of the permit describes procedures to be used to perform additions and minor changes to the SWMP. The permit does not allow the permittee to remove elements in the SWMP that are required through permit conditions or regulatory requirements. Any changes requested by the permittee will be reviewed by DEC.

5.2.3 Transfer of Ownership, Operational Authority, or Responsibility for SWMP Implementation

DEC does not intend to mandate a permit modification should the permittee annex additional lands or accept the transfer of operational authority over portions of the MS4. Implementation of appropriate SWMP elements for these additions (annexed land or transferred authority) is required. The permittee must notify DEC of any such additions or transfers in the Annual Report. DEC may require a modification to the permit based on such new information.

5.2.4 Storm Water Management Program Resources

Part 2.6 of the permit requires permittee to provide adequate support to implement their activities under the SWMP. Compliance with Part 2.6 will be demonstrated by the permittee's ability to fully implement the SWMP and other permit requirements as scheduled. The permit does not require specific funding or staffing levels, thus providing the permittee the ability and incentive to adopt the most efficient methods to comply with permit requirements.

5.3 Minimum Control Measures

The permittee is a Phase I MS4 (see requirements at 40 CFR 122.26(d)(2)(iv), listed in Table 1). The Phase I Rule defines a storm water management program for a MS4 as a program composed of several elements that, when implemented together, are expected to reduce pollutants discharged into receiving waterbodies to the MEP. The MS4 program elements, or minimum control measures, are orgainized into the following categories:

- Public Education and Outreach;
- Public Involvement/Participation;
- Illicit Discharge Detection and Elimination;
- Construction Site Runoff Control;
- Post-Construction Storm Water Management in New Development and Redevelopment;
- Pollution Prevention/Good Housekeeping for Municipal Operations.

The permit requires the permittee to comply with non-numeric technology-based standards (Part 3.0 of the permit) by implementing minimum control measures. The achievement of these non-numeric standards will result in the reduction or elimination of pollutants from the permittees' storm water discharge.

Table 1: Storm Water Management Program Elements

Required Program Element	Regulatory Reference (40 CFR)	Permit Citation
Operation and maintenance of structural controls	122.26(d)(2)(iv)(A)(1)	Part 3.6.8
Control of discharges from areas of new development and significant redevelopment	122.26(d)(2)(iv)(A)(2)	Part 3.5.1- 3.5.3
Operation and maintenance of public streets, roads, and highways	122.26(d)(2)(iv)(A)(3)	Part 3.6.9
Ensuring flood control projects consider water quality impacts	122.26(d)(2)(iv)(A)(4)	Part 3.6.10

Table 1: Storm Water Management Program Elements

Required Program Element	Regulatory Reference (40 CFR)	Permit Citation
Control of pollutants related to application of pesticides, herbicides, and fertilizers	122.26(d)(2)(iv)(A)(6)	Part 3.6.11
Detection and removal of illicit discharges and prevention of improper disposal into the storm sewer	122.26(d)(2)(iv)(B)(1) 122.26(d)(2)(iv)(B)(7)	Part 3.3.1 – 3.3.7.
Procedures to conduct on-going field screening activities	122.26(d)(2)(iv)(B)(2)	Part 4.1- 4.3
Procedures to be followed to investigate portions of the MS4 that indicate a reasonable potential to contain illicit discharges	122.26(d)(2)(iv)(B)(3)	Part 3.3.1 – 3.3.7
Prevention, containment, and response to spills that may discharge into the MS4	122.26(d)(2)(iv)(B)(4)	Part 3.6.6
Identification, Monitoring, and control of discharges from municipal landfills; hazardous waste treatment, storage, disposal and recovery facilities and facilities that are subject to EPCRA Title III, Section 313; and any other industrial or commercial discharge the permittee determines are contributing a substantial pollutant loading to the MS4	122.26(d)(2)(iv)(C)	Part 3.6.7
Control of pollutants in construction site runoff	122.26(d)(2)(iv)(D)	Part 3.4.1 – 3.4.5.
Public and industry education	122.26(d)(2)(iv)(A)(6) 122.26(d)(2)(iv)(B)(5) 122.26(d)(2)(iv)(B)(6) 122.26(d)(2)(iv)(D)(4)	Part 3.1.1 – 3.1.3 Part 3.4.6 Part 3.6.8

5.3.1 Public Education and Outreach

The permittee must implement a public education program to distribute educational materials to the lessees or conduct equivalent outreach activities about the impacts of storm water discharges on water bodies and steps the public can take to reduce pollutants in storm water runoff.

Informed and knowledgeable lessees is crucial to the success of a SWMP, since there is greater support for the program as the lessee gains a better understanding of the reasons why the program is necessary and important. Lessee support is particularly beneficial when operators of MS4s attempt to institute new funding initiatives for the program or seek volunteers to help implement aspects of the program. Education can lead to greater compliance with the program, as the lessees become aware of the personal responsibilities expected of them, including individual actions they can take to protect or improve the quality of receiving waters.

Three activities are identified to accomplish this control measure, which include: distribution of storm water education materials throughout the port area, educating lessees, and posting informational signs. DEC encourages the permittee to coordinate their efforts to educate lessees about storm water pollution.

5.3.2 Public Involvement and Participation

This measure complements the Public Education control measure. If given the opportunity to participate, members of the public generally will become more supportive of a program. The permit requires that the public participation efforts comply with the public notice requirements of the state and local law. DEC encourages the Port to provide more opportunities for lessee and user participation, and to attempt to engage all groups serviced by the storm sewer system.

DEC believes that the Port personnel can provide valuable input and assistance to the development of a municipal SWMP. The Port personnel are given opportunities to play an active role in both the development and implementation of the program. Broad Port-wide support is crucial to the success of a SWMP; lessees who participate in the development and decision making process are partially responsible for the program and, therefore are more likely to take an active role in its implementation. In addition, the community is a valuable, and free, intellectual resource providing a broader base of expertise and economic benefit.

The permittee has identified an active public involvement component to their program, including the activity of developing a storm drain stenciling program. In addition, the permittee meets regularly through the Storm Water Pollution Prevention Team, which serves as a coordinating forum and provides an opportunity for the lessees to be involved in the ongoing development and implementation of the storm water program. DEC encourages the permittee to invite members representing all lessees to participate in the Team. The permittee should also work and meet cooperatively with the MOA to discuss mutual efforts to engage in the discussion of storm water management in the area.

5.3.3 Illicit Discharge Detection and Elimination

An illicit discharge, typically, is any discharge to a MS4 that is not composed entirely of storm water. There are some exceptions, such as fire fighting activities, certain types of *de minimus* discharges, or otherwise permitted discharges. Part 1.3.1 of the permit lists the types of non-storm water which can be discharged, provided they are not significant contributors of pollutants to the system. This minimum measure requires the Port to detect and eliminate illicit discharges from their system.

Illicit discharges enter the system through either direct connections (e.g., wastewater piping either mistakenly or deliberately connected to the storm drains) or indirect connections (e.g., infiltration into the MS4 from cracked sanitary systems, spills collected by drain outlets, or paint or used oil dumped directly into a drain). Examples of other sources include, but are not limited to: domestic wastewater effluent from septic tanks; car wash wastewater; radiator flushing disposal; laundry wastewater; and improper disposal of auto and household toxic waste. The result is the discharge of untreated wastewater that may contribute high levels of pollutants, including heavy metals, toxics, oil and grease, solvents, nutrients, viruses, and bacteria to receiving water bodies. Pollutant levels from these illicit discharges have been shown in EPA studies to be high enough to significantly degrade receiving water quality and threaten aquatic, wildlife, and human health.

Eight activities are identified to accomplish this control measure, including: conducting wet and dry weather outfall inspections; development of a specific plan to detect and address illicit discharges; adoption of ordinances or other regulatory mechanism to prevent illicit discharges; and completion of a comprehensive storm sewer map for the areas served by the MS4.

The Port area has a history of petroleum contaminated groundwater entering the Port's MS4, particularly in Outfall-003. The Port has been working over the last several years to reduce the impact regarding the infiltration with the installation of monitoring wells, test pits, an interceptor trench and product recovery system, and an underflow weir to mitigate the impact. The permit requires the permittee to further describe controls, timeline, and resources to further limit groundwater infiltration from the petroleum-contaminated sites to the MS4.

5.3.4 Construction Site Storm Water Runoff Control

MS4 operators are required to develop, implement, and enforce a program to reduce pollutants in storm water runoff from construction activities that result in a land disturbance. Polluted storm water runoff from construction sites often flows to MS4s and ultimately is discharged into local rivers and streams. Sediment is usually the main pollutant of concern, as it has been demonstrated that sediment runoff rates from construction sites are typically 10 to 20 times greater than those of agricultural lands, and 1,000 to 2,000 times greater than those of forest lands. During a short period of time, construction sites can contribute more sediment to streams than can be deposited naturally during several decades. The resulting siltation, and the contribution of other pollutants from construction sites, can cause physical, chemical, and biological harm to our nation's waters.

Construction activities at the Port must comply with APDES construction storm water permitting requirements. When a construction storm water permit is needed, DEC's Construction General Permit (CGP, AKR100000) is the typical permitting route (as opposed to applying for an individual permit). As construction activities occur within the MS4 boundaries of the Port, the installation is required to ensure that construction site and post-construction measures for erosion and sediment control measures are met. Since facilities, including the Port, are not municipalities, they cannot issue an ordinance to ensure compliance with these requirements. This presents a challenge to installations in enforcing a SWMP in cases where they do not have direct management control over a project. To address this issue the Port has developed and implemented a Tenant Policy letter specifically addressing storm water management. The purpose of the Tenant Policy is to enforce the Port's SWMP that is used to reduce the discharge of pollutants from its MS4 to the MEP and to identify enforcement actions the installation will apply against violator(s).

Even though discharges from all Alaskan construction sites disturbing more than one acre in Alaska are independently required to be authorized by an APDES storm water discharge permit (specifically, the APDES General Permit for Storm Water Discharges from Construction Activity, AKR100000, i.e., CGP); this control measure with the MS4 is reduced to a 10,000 square foot requirement and is necessary to enable the local MS4 operators to effectively and directly control construction site discharges into their storm sewer systems.

The Port can and should review what existing procedures are already in place in their jurisdiction for these activities. MS4 operators (the Municipality of Anchorage, Alaska Department of Transportation and Public Facilities and the Port of Alaska) must work to optimize coordination between different governmental offices.

The permit allows MS4 operators to exempt from local regulation those sites which qualify for the low rainfall erosivity waiver from the APDES General Permit for Storm water Discharges from Construction

Activity. This waiver, allowed by EPA regulation at 40 CFR §122.26(b)(15)(i)(A), is based on the "R" factor from the Revised Universal Soil Loss Equation (RUSLE) and applies to projects when (and where) negligible rainfall/runoff is expected.

Six activities are identified to fulfill the requirements of this control measure, including; to adopt and implement a construction activity storm water control regulatory mechanism; adopt or develop procedures for reviewing all site plans; adopt or develop requirements for construction site operators; and to conduct at least one educational workshop for the local construction/design engineering audience.

5.3.5 Post-Construction Storm Water Management for Areas of New and Redevelopment

Post-construction runoff can cause an increase in the type and quantity of pollutants in storm water runoff. As runoff flows over areas altered by development, it can pick up harmful sediment and chemicals such as oil and grease, pesticides, heavy metals, and nutrients (e.g., nitrogen and phosphorus). These pollutants often become suspended in runoff and are carried to receiving waters, such as lakes, ponds, and streams. Post-construction runoff also increases the quantity of water delivered to the water body during storms. Increased impervious surfaces interrupt the natural cycle of gradual percolation of water through vegetation and soil. Instead, water is collected from surfaces such as asphalt and concrete, and routed to drainage systems where large volumes of runoff quickly flow to the nearest receiving water. The effects of this process include stream bank scouring and downstream flooding, which often lead to a loss of aquatic life and damage to property

This minimum measure requires municipal operators to develop, implement, and enforce a program to reduce pollutants in post-construction runoff from areas of new development and redevelopment. This measure applies at minimum to projects which are greater than or equal to 10,000 square feet in size.

Three activities are identified to accomplish this control measure: develop a strategy for evaluating Green Infrastructure projects; adopt a program to address post-construction storm water runoff from new development and redevelopment projects; and adopt an ordinance or other regulatory mechanism to require post-construction storm water controls at new and re-developed sites.

5.3.6 Pollution Prevention and Good Housekeeping

This control measure requires the permittee to implement an operation and maintenance program to prevent or reduce pollutant runoff from activities conducted by the Port and its lessees. The MS4 operator must examine and subsequently alter their own actions to reduce the amount and type of pollution that: (1) collects on streets, parking lots, open spaces, storage and vehicle maintenance areas, which may be discharged into the storm sewer system; and (2) results from actions such as environmentally damaging land development and flood management practices or poor maintenance of storm sewer systems. Activities associated with maintenance of cargo storage and open spaces, as well as fleet and building maintenance, must also be considered for possible water quality impacts. While this measure is meant primarily to improve or protect receiving water quality by improving municipal or facility operations, it also can result in a cost savings for the MS4 operator, since proper and timely maintenance of storm sewer systems can help avoid repair costs from damage caused by age and neglect.

The permittee must examine their maintenance activities and schedules, and inspection procedures for controls to reduce floating debris and other pollutants. By evaluating existing practices, the permittee

can improve operations to reduce or eliminate discharges from roads, parking lots, maintenance and storage yards, waste transfer stations, salt/sand storage locations, and snow storage/disposal areas.

Snow storage and disposal practices are specifically identified in the permit as deserving particular attention by the permittee, given the annual accumulation of snow in the Anchorage area and the increased potential for accumulated pollutants to be discharged from snowmelt during the spring season. Snow plowed from paved working areas and parking lots often contains the variety of materials which have accumulated on the snowpack and other cleared surfaces. Studies of urban snow disposal sites in northern climates demonstrate that snow meltwater can be a potential source of significant pollutant loadings to surface water, and commonly contains pollutants such as debris, sediment, chlorides, and oil and grease. Part 3.6.2. of the permit requires the permittee to implement controls at snow disposal sites to reduce the discharge of pollutants in meltwater. Snow disposal site design criteria created by MOA and/or snow management practices already developed by Alaska Department of Transportation and Public Facilities, may assist the permittee to collectively address conditions for appropriate snow disposal practices in the arctic environment. DEC encourages the permittee to work with the MOA and lessees to identify appropriate management measures.

Thirteen activities are identified to accomplish this control measure, including: conduct storm water pollution prevention inspections; develop and implement an operation and maintenance program; provide an area for washing Port vehicles; allow access for lessees to Port vehicle washing facility; implement a program to prevent, contain, and respond to spills; monitor storm water discharges from industrial facilities; and conduct appropriate training for personnel.

5.4 Monitoring, Evaluation, Reporting, and Record Keeping Requirements

5.4.1 Monitoring Program Plan

MS4 operators must evaluate program compliance, the appropriateness of Control Measures in their SWMP, and progress towards meeting their measurable goals. These requirements have been included in Part 4 of the permit.

Two types of monitoring are required by the permit: 1) Storm event monitoring of representative sampling points and screening of the system for areas needing additional controls; and 2) dry weather screening to locate illicit connections and areas of improper disposal of non-storm water.

The permittee proposed to EPA to eliminate the wet weather monitoring program in 1999 and the wet weather monitoring was suspended. DEC has determined it appropriate to reinstate the wet weather monitoring program. The monitoring of the quality of representative outfalls during actual storm events will provide information on the quality of runoff from the MS4, a basis for estimating annual pollutant loads, and a mechanism to evaluate reductions in pollutants discharged form the MS4. The representative outfall monitoring frequencies were determined from the 1995 permit.

The dry weather screening program is a continuation of efforts to locate and eliminate illicit connections to the MS4. This program is intended to support the permit requirement to effectively prohibit non-storm water discharges to the MS4. All portions of the MS4 must be screened at least once during the permit term.

The monitoring program plan must be submitted to DEC in the Annual Report described below. For chemical, biological, or physical storm water monitoring conducted by the permittee, Part 4.1.2. of the permit includes requirements related to representative monitoring, test procedures, and recording results. All chemical, physical, or analytical monitoring must be conducted according to a Quality Assurance Project Plan (QAPP). The permit requires the permittee to submit a written notice affirming that its QAPP is up to date after which monitoring activities may begin.

5.4.2 Evaluation of Overall Program Effectiveness

The permittee must evaluate their compliance with the permit conditions, the appropriateness of identified BMPs, and progress toward achieving identified measurable goals for each minimum control measures at least once annually.

5.4.3 Annual Reports

Monitoring must be performed by a qualified person; either the permittee's own personnel or a third party hired to perform the monitoring. The person collecting the samples and analyzing them must be knowledgeable and possess the skills to assess conditions at the facility that could impact storm water quality and assess the effectiveness of sedimentation and erosion control measure chosen to control the quality of the storm water discharges.

The permittee must submit Annual Reports during the five-year permit term. Components for the Annual Report as outlined in Permit Part 4.3 requires the permittee to evaluate their program for compliance with the terms of the permit, the appropriateness of the identified control measures, and progress towards achieving their measurable goals. The permittee may need to change their SWMP based on this evaluation process. The permittee may also need to change their SWMP based on the need to address water quality impacts, to include more stringent requirements to comply with federal law, or to include conditions necessary to comply with the goals of the CWA. Requirements for the minimum control measures in Permit Part 3.0 detail specific information to be reported for each control measure. The Annual Report must also contain a summary of any information that has been collected and analyzed, including any and all types of data. The permittee must indicate what activities are planned for the next reporting cycle, and discuss any changes to either control measures or measurable goals. Appendix E of the permit contains a suggested format for the Annual Report. The Annual Report(s) may be submitted to DEC in electronic format (preferred) on CD-ROM(s) using universally available document formats, such as Adobe Acrobat PDF or other available means. However, while the Annual Report text can be submitted in electronic format, the required certification statement must be signed and dated in hard copy by the permittee as directed in Appendix A, Part 1.12.2 of this permit.

For each part of the permit where data collection or action has taken place:

- Develop and state criteria for evaluation of success;
- Present data in appropriate tables and/or graphical representations;
- Explain that data was or was not adequate for findings;
- Identify trends and patterns;
- Explain what corrective action or program changes were made during the reporting year relevant to each part of the permit;
- Explain how well program goals were met for each part of the permit;

- Explain what measures may be warranted in the future for improving effectiveness of reporting parts of the permit; and
- Include references to data in appendices and to appropriate documents outside of the annual report.

Thus, part by part, the programs under the permit need to be evaluated by the permittee, and such narrative report shall stand within the Annual Report but also may be referenced as a stand-alone document for both clarifying effectiveness of permit programs to the public, the Department, and any concerned agencies.

5.4.4 Recordkeeping

Part 4.4 of the permit requires permittee to keep all records required by this permit for a period of at least three years past the end of the permit term. Records need to be submitted only when requested by DEC. The permittee's SWMP must be available to the public; the permittee may charge a reasonable fee for copies, and may require a member of the public to provide advance notice of their request. DEC encourages the permittee to make their program materials available to the public electronically via a website or other viable means.

5.4.5 Address

Submittals required by the permit must be made to the following address specified in the Permit, Appendix A, Part 1.1.2 Compliance and Enforcement Program.

5.5 Appendices

5.5.1 Standard Conditions (Appendix A)

Appendix A of the permit contains standard regulatory language that must be included in all APDES permits. These requirements are based on the regulations and cannot be challenged in the context of an individual APDES permit action. The standard regulatory language covers requirements such as monitoring, recording, and reporting requirements; compliance responsibilities; and other general requirements.

5.5.2 Acronyms (Appendix B)

Appendix B is a list of acronyms found in the permit and fact sheet which aids in the understanding of the permit and its requirements.

5.5.3 Definitions (Appendix C)

Appendix C contains definitions of statutory, regulatory, and other terms important for understanding the permit and its requirements.

5.5.4 Summary Annual Report Form (Appendix D)

Appendix D contains an annual report form for summarizing the annual results of storm water activities.

5.5.5 Map of Port of Alaska (Appendix E)

6.0 ANTIBACKSLIDING

18 AAC 83.480 requires that "effluent limitations, standards, or conditions must be at least as stringent as the final effluent limitations, standards, or conditions in the previous permit." 18 AAC 83.480(c) also states that a permit may not be reissued "to contain an effluent limitation that is less stringent than required by effluent guidelines in effect at the time the permit is renewed or reissued." All permit requirements are at least as stringent as the previous permit.

7.0 ANTIDEGRADATION

Section 303(d)(4) of the CWA states that, for water bodies where the water quality meets or exceeds the level necessary to support the waterbody's designated uses, WQBELs may be revised as long as the revision is consistent with the State's antidegradation policy and implementation methods. Alaska's current Antidegradation Policy and implementation methods are presented in 18 AAC 70.015 *Antidegradation policy* (Policy) and in 18 AAC 70.016 *Antidegradation implementation methods for discharges authorized under the federal Clean Water Act* (Implementation Methods). The Policy and Implementation Methods amended through April 6, 2018 are consistent with 40 CFR 131.12; and were approved by EPA on July 26, 2018.

The following subsections document the Department's conformance with the Policy and Implementation Methods for reissuance of the Permit.

Receiving Water Status, Tier Determination, and Analysis Requirements

Alaska's antidegradation policy (through 18 AAC 70.015(a)(1)-(3)) identifies three tiers of water quality and water quality protections, Tiers 1, 2, and 3 respectively. An antidegradation analysis is tier-specific. Using the Policy and corresponding Implementation Methods, the Department determines a Tier 1 or Tier 2 classification and protection level on a parameter by parameter basis. A Tier 3 protection level would apply to a designated waterbody or segment.

- Tier 1 requires existing water uses and the level of water quality necessary to protect existing uses be maintained and protected. Tier 1 applies to all waters of the U.S. in the state. If criteria are exceeded for a water quality parameter (and the receiving water is not a Tier 3 water), then Tier 1 is the only protection level. This can be due to naturally occurring constituents in the water or can be due to pollutants introduced by humans.
- Tier 2 applies when the water quality for a parameter does not exceed the applicable criteria, and is presumed to apply as the default protection level for all parameters in all waters in Alaska unless found otherwise.
- Tier 3 applies to designated waters and no lowering of the water quality is allowable unless temporary and limited. At this time, no Tier 3 waters have been designated in Alaska.

Tier 1 protection applies to all waters of the U.S. in the state, the analysis must be conducted with implementation procedures in 18 AAC 70.016(b)(5). For Tier 2 protection level the analysis is performed on a parameter by parameter basis consistent with 18 AAC 70.016(c)(1) and 18 AAC 70.015(a)(2) that states if the quality of water exceeds levels necessary to support propagation of fish,

shellfish, wildlife, and recreation in and on the water, that quality must be maintained and protected, unless the Department authorizes a reduction in water quality for a short-term variance under 18 AAC 70.200, a zone of deposit under 18 AAC 70.210, a mixing zone under 18 AAC 70.240 or another purpose as authorized in a department permit, certification, or approval. Lastly, because the antidegradation analysis is for a general permit, 18 AAC 70.016(e) also applies.

Tier 1 Analysis of Existing Use Protection

The summary below presents the Department's analyses and findings for the Tier 1 analysis of existing use protections per 18 AAC 70.016(b)(5) finding that:

(A) existing uses and the water quality necessary for protection of existing uses have been identified based on available evidence, including water quality and use related data, information submitted by the applicant, and water quality and use related data and information received during public comment;

(B) existing uses will be maintained and protected, and

(C) the discharge will not cause water quality to be lowered further where the department finds that the parameter already exceeds applicable criteria in 18 AAC 70.020(b), 18 AAC 70.030, or 18 AAC 70.236(b).

For the purpose of this analysis, the Department classifies the impaired water bodies (Categories 4 or 5) in *Alaska's Final 2014/2016 Integrated Water Quality Monitoring and Assessment Report*) as Tier 1 for the parameters causing the impairment. Knik Arm of Cook Inlet is not listed as an impaired waterbody, therefore, the remainder of this antidegradation analysis conservatively assumes that Knik Arm of Cook Inlet is a Tier 2 water, which provides for the next highest level of protection.

Tier 2 Analysis for Lowering Water Quality

Scope of Tier 2 Analysis. Per 18 AAC 70.016(c)(2), an antidegradation analysis is only required for those waterbodies needing Tier 2 protection and which have any new or existing discharges that are being expanded based on permitted increases in loading, concentration, or other changes in effluent characteristics that could result in comparative lower water quality or pose new adverse environmental impacts. Per 18 AAC 70.016(c)(2)(A), the analysis will only be conducted for the portion of the discharge that represents an increase from the existing authorized discharge. Additionally, per 18 AAC 70.016(c)(3), DEC is not required to conduct an antidegradation analysis for a discharge that is not expanding.

Per 18 AAC 70.990(75), "new or expanded" with respect to discharges means discharges that are regulated for the first time or discharges that are expanded such that they could result in an increase in pollutant load or concentration or other discharge characteristics that could lower water quality or have other adverse environmental impacts.

In the context of the permit, there are no increases in permitted loads or concentration to existing, previously regulated discharges. Therefore, for Tier 2 protection, the analysis must comply with 18 AAC 70.016(c)(7)(A-F). Lastly, the analysis and associated finding are summarized below.

Tier 2 Analysis.

Per Antidegradation Policy and Implementation Methods 18 AAC 70.016(c)(7)(A-F) stipulates that after review of available evidence, the department finds that the proposed discharge will lower water quality in the receiving water, the department will not authorize a discharge unless the department finds that

- 18 AAC 70.016(c)(7) (A) the reduction of water quality of water exceeds levels necessary to support propagation of fish, shellfish, wildlife, and recreation in and on the water, that quality must be maintained and protected, and not violate water the applicable criteria of 18 AAC 70.020 or 18 AAC 70.235, or whole effluent toxicity limit in 18 AAC 70.235, unless the Department authorizes a reduction in water quality for a short-term variance under 18 AAC 70.200, a zone of deposit under 18 AAC 70.210, or a mixing zone under 18 AAC 70.240.

The adaptive management approach (from permit cycle to permit cycle) is used in MS4 permits (unlike other types of NPDES permits) because there is not a need to require strict compliance with WQS if discharges are controlled to the MEP and comply with such other provisions as the NPDES authority determines to be appropriate (See *Defenders of Wildlife v. Browner*, 191 F3d 1159 (9th Cir., 1999)). The MEP provision of the CWA allows the NPDES authority the broad discretion whether to require strict compliance with state WQS.

A key requirement in the storm water Phase II rule[5] is a report (40 CFR 122.34(g)(3)) that includes "the status of compliance with permit conditions, an assessment of the appropriateness of identified [control measures] and progress towards achieving identified measurable goals for each of the minimum control measures." This assessment is critical to the storm water program framework which uses an adaptive management approach of implementing controls, conducting assessments, and designating refocused controls leading toward attainment of water quality criteria. The permittee is required to conduct an annual effectiveness assessment to assess the effectiveness of significant control measures, SWMP components, and the SWMP as a whole. The permittee is to assess and modify, as necessary, any or all existing SWMP components and adopt new or revised SWMP components to optimize reductions in storm water pollutants through an iterative process. This iterative process includes routine assessment of the need to further improve water quality and protect beneficial uses, review of available technologies and practices to accomplish the needed improvement, and evaluate resources available to implement the technologies and practices. Through this type of analysis, the applicable criteria found in 18 AAC 70.020 will be maintained and protected.

With respect to 18 AAC 70.235 and 18 AAC 70.030, no site-specific criteria has been designated for any of the subject water bodies and permit conditions are designed to control potentially toxic discharges.

The Department has determined that reducing water quality will not violate the applicable criteria of 18 AAC 70.020, 18 AAC 70.235, or the whole effluent toxicity limit in 18 AAC 70.030, and that the finding is satisfied.

- 18 AAC 70.016(c)(7) (B) each requirement under 18 AAC 70.016(b)(5) for a discharge to a Tier 1 water is met:

[5] Stormwater Phase II Final Rule (64 FR 68722).

As discussed in the preceding Tier 1 analysis, the waters within a project site are protected for all uses. Hence, this finding is satisfied.

- 18 AAC 70.016(c)(7) (C) point source and state-regulated nonpoint source discharges to the receiving water will meet requirements under 18 AAC 70.015(a)(2)(D) where all wastes and other substances discharged will be treated and controlled to achieve (i) for new and existing point sources, the highest statutory and regulatory requirements, and (ii) for non-point sources, all cost-effective and reasonable best management practices the most effective and reasonable methods of pollution prevention control and treatment will be applied to all wastes and other substances to be discharged. To make this finding the department will
    - Identify point sources and state-regulated nonpoint sources that discharge to, or otherwise impact the receiving water;
    - Consider whether there are outstanding noncompliance issues with other point source permits or required state-regulated nonpoint source best management practices, consider whether receiving water quality has improved or degraded over time, and if necessary and appropriate, take actions that will achieve the requirements of 18 AAC 70.015(a)(2)(D); and
    - Coordinate with other state and federal agencies as necessary.

DEC generally implements permit conditions that specify that a municipality implement controls, BMPs or control measures, and other activities to reduce pollutants as identified in a SWMP. The SWMP may address control measures such as: public education and outreach, public participation/involvement, illicit discharge detection and elimination, construction site runoff control, post construction runoff control, and pollution prevention/good housekeeping. The SWMP must also include measureable goals to evaluate the effectiveness of individual control measures and the SWMP as a whole, requirements for industrial storm water discharges to the MS4, and reporting requirements.

The site-specific, activity-specific process of developing, implementing, and adjusting the pollution control practices contained in the SWMP constitutes the type of alternatives analysis and use of "the most effective and reasonable" . . . "methods of pollution, prevention, control, and treatment" cited as requirements under Alaska's antidegradation policy for activities that would degrade water quality.

Control measures that prevent or minimize water quality impacts from municipal activities and construction activities are described in Part 3.0 of the proposed MS4 permit and in Chapters 4 and 5 of the *Alaska Storm Water Guide* (DEC, 2009). The *Alaska Storm Water Guide* provides detailed information on temporary storm water controls for active construction sites. The storm water management process outlined in those chapters consists of the development of a SWMP which provides the basis for all pollutant discharge prevention/minimization activities. As noted below, development of the SWMP requires a comprehensive evaluation of the community, the proposed construction activities, and possible pollutant discharges. This information is used to create the SWMP, which contains structural and non-structural management practices; specifications for selecting, sizing, sitting, operating, and maintaining them; and procedures for inspecting the management practices and repairing or replacing them as needed.

A permittee is required to implement erosion, sediment, and other storm water management practices to avoid or minimize pollutant discharges, as detailed in Part 3.0 of the permit. Alternative control measures that may provide equal or better water quality protection are also allowable, and encouraged, especially where those alternatives would provide better water quality and environmental protection.

The Department uses an integrated approach in the permit for developing and implementing "methods of pollution, prevention, control, and treatment" required by Alaska's antidegradation policy. This integrated approach includes requirements for:

- Erosion and sediment control, pollution prevention measures and prohibiting certain discharges,
- Revised and expanded training requirements for the construction and post-construction, and
- Monitoring of storm water discharges for illicit discharges.

Most pollution controls at construction sites are not installed in isolation, but instead are part of a suite of control measures that are all designed to work together. Designers use the treatment train approach to design a series of practices that minimize storm water pollution and achieve compliance with Alaska Construction General Permit (CGP, AKR100000) requirements. For example, a designer may use as a series of control measures to prevent sediment discharges from a site – a diversion ditch at the top of a disturbed slope (to minimize storm water flowing down the slope), mulching on the slope (to minimize erosion), and silt fence at the bottom of the slope (to capture sediment). This treatment train would help protect the slope better than relying on a single control measure, such as silt fence.

The site-specific nature of the SWMP, the requirement that it be implemented in a manner that addresses storm water impacts to the maximum extent practicable, and provisions that the approach be adjusted to ensure ongoing storm water management effectiveness provide the implementation methods needed to appropriately support the antidegradation policy.

The Department has determined the methods of pollution prevention, control, and treatment in the permit to be the most effective and reasonable, which will be applied to all wastes and other substances to be discharged, and the finding is satisfied.

- 18 AAC 70.016(c)(7) (D) the alternatives analysis provided demonstrates that (i) a lowering of water quality under 18 AAC 70.015(a)(2)(A) is necessary; when one or more practicable alternatives that would prevent or lessen the degradation associated with the proposed discharge are identified, the department will select one of the alternatives for implementation; and (ii) the methods of pollution prevention, control, and treatment applied to all waste and other substances to be discharged are found by the department to be the most effective and practicable;

The *MS4 Permit Improvement Guide* (EPA, 2010), in conjunction with the six minimum control measures, constitutes the highest regulatory requirements for municipal storm water management. This permit, as part of the iterative process of improvement of MS4 permits, forms the basis from which incremental changes will be made in the future through changes in the permit requirements.

Green infrastructure is an approach that communities can choose to maintain healthy waters, provide multiple environmental benefits and support sustainable communities. Green infrastructure uses vegetation, soils, and natural processes to manage water and create healthier urban environments. At the scale of a city or county, green infrastructure refers to the patchwork of natural areas that provides

habitat, flood protection, cleaner air, and cleaner water. At the scale of a neighborhood or site, green infrastructure refers to storm water management systems that mimic nature by soaking up and storing water.

LID is an approach to land development (or re-development) that works with nature to manage storm water as close to its source as possible. By preserving and recreating natural landscape features, LID minimizes effective imperviousness, creating functional and appealing site drainage that treats storm water as a resource rather than a waste product. Bioretention facilities, rain gardens, vegetated rooftops, rain barrels, and permeable pavements are some of the LID practices used to adhere to these principles. By implementing LID principles and practices, water can be managed in a way that reduces the impact of built areas and promotes the natural movement of water within an ecosystem or watershed. Applied on a broad scale, LID can maintain or restore a watershed's hydrologic and ecological functions.

The requirements contained in the Alaska CGP, the SWPPP development process (Part 5 of the CGP permit), development and implementation of the SWMP to include construction site storm water runoff control and post-construction storm water management control measures and good housekeeping measures (Part 3 of this permit), and BMP's provided in the *Alaska Storm Water Guide* (Chapter 4) comprise a comprehensive, integrated approach for developing and implementing "methods of pollution, prevention, control, and treatment" required by Alaska's antidegradation policy.

The Department has determined that the permit complies with the highest statutory and regulatory requirements for the industry and types of pollutants expected from this industry. The department concludes that this finding is satisfied.

- 18 AAC 70.016(c)(7) (E) except if not required under (4)(F) of this subsection, the social or economic importance analysis provided under (4)(G) and (5) of this subsection demonstrates that a lowering of water quality accommodates important social or economic development under 18 AAC 70.015(a)(2)(A); and

In order to conduct their important ongoing municipal and civic functions, the permittees require that infrastructure be constructed and maintained to accommodate important economic and social development in the area. Without road construction and maintenance, as well as storm water collection systems with discharge points, successful operations of the permittees important functions (and the citizens they serve) would be severely hampered. Storm water discharges associated with the permittee activities will be controlled via the requirements of applicable SWMPs, which implement the most effective and reasonable practices. Accordingly, in order to provide important services and employment opportunities to the resident and visiting population, the lowering of water quality is necessary.

The Department has determined that the lowering of water quality is necessary to accommodate important economic and social development in the area where the waters are located and that the finding is satisfied.

- 18 AAC 70.016(c)(7) (F) 18 AAC 70.015 and this section have been applied consistent with 33 U.S.C. 1326 (CWA §316) with regard to potential thermal discharge impairments.

Discharges authorized under the permit are not associated with a potential thermal discharge impairment; therefore, the finding is not applicable.

8.0 OTHER REQUIREMENTS

8.1 Endangered Species Act

The Endangered Species Act (ESA) requires federal agencies (commonly known as the "Services") to consult with the U.S. Fish and Wildlife Service (USFWS) and the National Oceanic and Atmospheric Administration (NOAA) National Marine Fisheries Service (NMFS) to determine if the permitted actions could beneficially or adversely affect any threatened or endangered species. As a state agency, DEC is not required to consult with these federal agencies regarding permitting actions; however DEC voluntarily contacted the agencies to notify them of the development of the permit and to obtain listings of threatened and endangered species near the proposed discharges. There is one listed species for Cook Inlet, the Beluga Whale. However, the Port of Anchroage is excluded from critical habitat designation for national security reasons. The Services will be provided the draft permit and fact sheet during public review. Any comments received from the Services regarding the listing of threatened or endangered species will be considered prior to reissuance of this permit.

8.2 Essential Fish Habitat

Essential fish habitat (EFH) includes the waters and substrate (sediment, etc.) necessary for fish from commercially-fished species to spawn, breed, feed, or grow to maturity. The Magnuson-Stevens Fishery Conservation and Management Act (January 21, 1999) requires federal agencies to consult with NMFS when a proposed discharge has the potential to adversely affect (reduce quality and/or quantity of) EFH. As a state agency, DEC is not required to consult with federal agencies regarding permitting actions; however, DEC will contact NMFS and USFWS to notify them of the development of the permit and in attempt to obtain listings of EFH near the proposed discharges.

This permit includes non-fishing activities that may have the potential to adversely affect the quantity or quality of EFH in upland and riverine systems. DEC addressed EFH considerations in its Antidegradation Analysis. DEC believes with the addition of the non-numeric effluent limits (the control measures detailed in Part 3.0 of the permit) that all the non-fisheries impacts expected by this industry are being addressed in the permit.

Most pollution controls at construction sites are not installed in isolation, but instead are part of a suite of control measures that are all designed to work together. Designers use the treatment train approach to design a series of practices that minimize storm water pollution and achieve compliance with APDES ACGP requirements. For example, a designer may use as a series of control measures to prevent sediment discharges from a site – a diversion ditch at the top of a disturbed slope (to minimize storm water flowing down the slope), mulching on the slope (to minimize erosion), and silt fence at the bottom of the slope (to capture sediment). This treatment train would help protect the slope better than relying on a single control measure, such as silt fence. Because the permit encourages the treatment train approach, DEC believes the permit addresses EFH considerations.

Discharges of municipal storm water from the MS4 in the Port of Alaska has occurred for many years prior to the promulgation of EPA regulations to permit such discharges, and as with the first issuance of this permit in 1995, this permit restricts the discharge of pollutants through source control. NMFS and

USFWS will be provided with a draft permit and fact sheet during the review period. Any comments received from NMFS and USFWS regarding EFH will be considered prior to reissuance of the permit.

8.3 Permit Expiration

The permit will expire five years from the effective date of the permit.

9.0 REFERENCES

AAC. 2009. Alaska Administrative Code, Revised 2009. State of Alaska, Juneau, AK.

ADEC. 2008. *Public Participation in APDES Permitting Process*. Alaska Department of Environmental Conservation, Wastewater Discharge Authorization Program, Juneau, AK.

ADEC. 2011. *Alaska Storm Water Guide*. Alaska Department of Environmental Conservation, Division of Water. Anchorage, AK.

ADEC. 2011. *Alaska Pollutant Discharge Elimination System Permit for Storm Water Discharges from Small Municipal Separate Storm Sewer Systems. Permit number AKS-052426*. Alaska Department of Environmental Conservation, Wastewater Discharge Authorization Program, Anchorage, AK.

ADEC. 2010. *Alaska's Final 2010 Integrated Water Quality Monitoring and Assessment Report*, July 15, 2010. Alaska Department of Environmental Conservation, Wastewater Discharge Authorization Program, Juneau, AK.

NMFS, 2005. Appendix G: Non-fishing Impacts to Essential Fish Habitat and Recommended Conservation Measures. Prepared by the National Marine Fisheries Service, April 2005.

USEPA. (U.S. Environmental Protection Agency). 2010. *MS4 Permit Improvement Guide*. EPA-833-R-10-001. U. S. Environmental Protection Agency, Washington, DC.