

# 2016 ANNUAL REPORT

*Alaska Pollutant Discharge Elimination System Permit No. AKS-053406*



January 2017



# 2016 ANNUAL REPORT

This Annual Report documents the activities undertaken January through December 2016 to comply with the requirements of Alaska Pollutant Discharge Elimination System Permit No. AKS-053406 issued by the Alaska Department of Environmental Conservation to the City of Fairbanks, City of North Pole, University of Alaska Fairbanks, and Alaska Department of Transportation & Public Facilities - Northern Region. By signature below, this report is hereby certified in accordance with 18 AAC 83.385 by each of the aforementioned permittees.

*"I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."*

## CITY OF FAIRBANKS



Jackson Fox, City Engineer

Jan. 16, 2017

Date

## CITY OF NORTH POLE



Bryce Ward, Mayor

1-18-17

Date

## UNIVERSITY OF ALASKA FAIRBANKS



Kari Burrell, Executive Officer - Chancellor's Office

1-24-2017

Date

## ALASKA DEPARTMENT OF TRANSPORTATION & PUBLIC FACILITIES - NORTHERN REGION



Jason Sakalaskas, Maintenance & Operations Chief

1/17/17

Date

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# STORM WATER PERMIT OVERVIEW

## Storm Water Permit Overview

### INTRODUCTION

This Annual Report documents the activities undertaken January through December 2016 to comply with the requirements of Alaska Pollutant Discharge Elimination System (APDES) Permit No. AKS-053406 issued by the Alaska Department of Environmental Conservation (ADEC) to the City of Fairbanks, City of North Pole, University of Alaska Fairbanks (UAF), and Alaska Department of Transportation & Public Facilities (ADOT&PF) Northern Region as “co-permittees.” Annual Reports are required to be submitted to the ADEC in accordance with Section 4.3 of the permit. The last report documented activities undertaken January through December 2015. Annual reports are required to be submitted to the ADEC by February 1.

### PERMIT HISTORY

The co-permittees were originally issued a Phase II National Pollutant Discharge Elimination System (NPDES) Permit from the U.S. Environmental Protection Agency (EPA) on June 1, 2005 for a term of five years. The ADEC later assumed authority over the permit in October 2009 under the APDES Program and provided an administrative extension for the existing permit’s requirements to remain effective and enforceable until a new permit could be developed and issued. The new permit, with new requirements, was issued to the co-permittees in June 2013 with an effective five-year term beginning August 1, 2013. A copy of the permit can be found at <http://www.co.fairbanks.ak.us/pw/StormWater/FbanksPermit.pdf>.

### COVERAGE AREA

The permit covers all areas within the boundary of the Fairbanks Urbanized Area that are served by the municipal separate storm sewer system (MS4) owned and operated by the co-permittees. Urbanized area boundaries are established by U.S. Census Bureau and defined as the core census block groups or blocks that have a population density of at least 1,000 people per square mile and surrounding census blocks that have an overall density of at least 500 people per square mile. The current boundary of the Fairbanks Urbanized Area was established using data from the 2010 Census. A map of this boundary can be found at <http://www.co.fairbanks.ak.us/pw/StormWaterDocuments/MS4boundary.pdf>.

### AUTHORIZED DISCHARGE

With some limitations, the permit authorizes the co-permittees to discharge storm water to waters of the U.S. from (1) all portions of the MS4 owned and operated by the City of Fairbanks, City of North Pole, and UAF; and (2) the portions of the MS4 within ADOT&PF rights-of-way located within the boundary of the Fairbanks Urbanized Area. The limitations are outlined in Section 1.4 of the permit and include non-storm water discharges, discharges threatening water quality, snow disposal to receiving waters, and discharges to water quality impaired receiving waters.

# STORM WATER PERMIT OVERVIEW

## PERMIT REQUIREMENTS

The permit requires the co-permittees develop and implement a Storm Water Management Plan and meet the following six minimum control measures:

1. Public Education & Outreach
2. Public Involvement & Participation
3. Illicit Discharge Detection & Elimination
4. Construction Site Storm Water Runoff Control
5. Post-construction Storm Water Management
6. Pollution Prevention & Good Housekeeping

The plan, which was written by the co-permittees in April 2014, and can be found at <http://www.co.fairbanks.ak.us/pw/StormWater/FbanksMPlan.pdf>. The plan identifies best management practices (BMPs) and other strategies to meet the requirements of the minimum control measures and reduce the discharge of pollutants from the MS4 to the maximum extent practicable to protect the water quality of receiving waters. Documentation of the activities undertaken in accordance with the plan is included in the next section of this report and Appendices A through F.

The permit also requires the co-permittees monitor water discharges from MS4 outfalls to local water bodies at least two times per year. Documentation of these monitoring events is included in Appendix F.

## ANNUAL REPORTS

In accordance with Section 4.3 of the permit, Annual Reports must include:

- An updated Storm Water Management Plan document [updated April 2014].
- Description of the effectiveness of each plan component or activity.
- Planned activities and changes for the next reporting period for each plan component or activity.
- An evaluation of compliance with the requirements of this permit, the appropriateness of identified BMPs, and progress toward achieving identified measurable goals of each minimum control measure.
- Results of any information collected and analyzed during the previous reporting period, including monitoring data used to assess the success of the program at reducing the discharge of pollutants to the maximum extent practicable.
- A summary of the activities the co-permittees' plan to undertake during the next reporting cycle (including an implementation schedule) for each minimum control measure.
- Proposed changes and completed changes to the plan, including changes to any BMPs or any identified measurable goals for any minimum control measure.
- Description and schedule for implementation of additional BMPs that may be necessary, based on monitoring results, to ensure compliance with applicable water quality standards.
- Notice if the co-permittees are relying on another entity to satisfy some of the permit obligations, if applicable.



# MINIMUM CONTROL MEASURES

## Minimum Control Measures

The following subsections list the individual requirements for each minimum control measure, a description of the activities undertaken by the co-permittees to comply with those requirements, and measureable goals for the next reporting period.

### PUBLIC EDUCATION & OUTREACH

#### Permit Requirements [Section 3.1]

To date, the co-permittees have met all the requirements under Minimum Control Measure 1 – Public Education & Outreach. The following table provides a summary of the individual requirements, compliance dates, and status as of December 2016.

Permit Requirements	Compliance Date	Status
<i>Co-permittees must maintain a public education program to educate the community about the impacts of storm water discharges on water bodies and the steps that citizens and businesses can take to reduce pollutants in storm water runoff. [Section 3.1.1]</i>	Annually	Complete, ongoing
<i>At least annually, the co-permittees must distribute storm water educational materials to target audiences that encourage the public to improve water quality. [Section 3.1.2]</i>	Annually	Complete, ongoing
<i>At least annually, the co-permittees must prepare and distribute appropriate information that encourages the public to improve water quality to local media outlets. [Section 3.1.3]</i>	Annually	Complete, ongoing

#### Compliance Activities

The co-permittees and Fairbanks North Star Borough (FNSB), which has a separate but similar APDES permit, have worked together since 2005 to implement a unified public education program on local storm water issues. The program's education and outreach activities are focused in the month of April of each year when snowmelt runoff is prevalent, parking lots and streets are flooded, and storm water concerns are easily identifiable to residents of the community. The program is focused on creating awareness and educating the public about the impacts of storm water discharges to the MS4 and local water bodies, and provides information on how citizens and businesses can take steps to reduce pollutants in storm water runoff. Program activities completed during the 2016 reporting year included the following:

- Updating and maintaining an informative storm water management program website
- Providing educational presentations on storm water at local schools
- Providing guest presentations on storm water to interested groups
- Distributing educational material at local events and by mail

# MINIMUM CONTROL MEASURES

## **Fairbanks Storm Water Management Program Webpage**

The website can be viewed at <http://www.co.fairbanks.ak.us/pw/Pages/Storm-Water.aspx>. It provides an overview of storm water and pollutants of concern in the Fairbanks area, program information for each of the six Minimum Control Measures, a list of ways the public can get involved (i.e. attending storm water committee meetings, participating in stream cleanup events, etc.), links to the Cities of Fairbanks and North Pole and FNSB storm water ordinances and corresponding site development plan review requirements, a link to access and view the comprehensive storm drain system map of the entire FNSB, links to local publications such as the Green Infrastructure Resource Guide for Fairbanks and Best Management Practice (BMP) Effectiveness Report for Fairbanks, directions on how to report illicit discharges, and contact information for the storm water coordinators for each of the co-permittees and FNSB. The website also provides viewers links to the ADEC Storm Water Program webpage, ADEC Construction General Permit, ADEC Alaska Storm Water Guide, Cities of Fairbanks and North Pole Storm Water Management Program Guide, FNSB BMP Design Guide, and a map and storm water plan submittal flowchart for the Fairbanks Urbanized Area. In 2016 the website had 1318 visitors.

## **Educational Presentations on Storm Water at Local Schools**

As in previous reporting years, the co-permittees and FNSB partnered to deliver storm water educational presentations to various FNSB elementary and middle schools in Fairbanks and North Pole. The presentation consists of a 30-minute slide show on the types of pollutants carried in storm water, how those pollutants reach area water bodies, and what can be done to limit the effects, followed by a 20-minute watershed model demonstration using the EnviroScape® Nonpoint Source Model. The model helps children make the visual connection between what they learned during the slide show and what happens in their local watershed. The children watch storm water pick up pollutants (i.e. colored drink mixes) in a suburban area and carry them to a lake. After each presentation, promotional items such as bracelets, magnets, pencils, stickers, and education materials are also given out. In 2016, there were 19 presentations delivered to 505 elementary and middle school children in March and April. A copy of the slide show presentation, spreadsheet outlining participation, and picture of the model and goodies given to students are included in Appendix A.

The co-permittees also participated in an elementary school's STEM (Science, Technology, Engineering, & Mathematics) event held on February 4, and Fairbanks Outdoor Days event held May 13-15. At each event a storm water educational station was hosted with watershed model demonstrations and hands-on laboratory experiments. Approximately 800 students visited the stations and participated in the demonstrations and experiments at the two events.

## **Guest Presentations on Storm Water**

The co-permittees also provided the following guest presentations on storm water in 2016:

- Greater Fairbanks Chamber of Commerce, Transportation Committee (April 28, 2016) – “Green Streets” – 25 people in attendance



# MINIMUM CONTROL MEASURES

- UAF Osher Lifelong Learning Institute “The Chena River & You!” Course (April 29, 2016) – “Storm Water Management, Fairbanks, Alaska” – 55 people in attendance
- American Planning Association, Alaska Chapter 2016 State Planning Conference (November 15, 2016) – “Where Gray meets Green, Green Infrastructure in Fairbanks” – 20 people in attendance
- International Right-of-Way Association “Project Permitting” Conference (December 2, 2016) – “City of Fairbanks Right-of-Way Permitting System” – 60 people in attendance
- Greater Fairbanks Chamber of Commerce, Transportation Committee (December 22, 2016) – “Fairbanks Area Drainage Improvements Plan” – 22 people in attendance

Copies of the slideshows for these presentations are included in Appendix A.

## **Educational Material Distribution**

2016 [32nd Annual] Northern Living Home Show – The co-permittees distributed educational materials at the Home Show in Fairbanks during the weekend of March 25-27, 2016, at the Fairbanks Soil & Water Conservation District’s (FSWCD’s) booth. The Home Show is an annual event held in Fairbanks each spring to kick off the construction season, and includes a wide variety of local vendors showcasing building materials, equipment, and services. Approximately 150 vendors participate each year with an average of 7,500 people attending over a 3-day weekend. At this year’s event, the co-permittees distributed copies of the Green Infrastructure Resource Guide for Fairbanks and corresponding brochures. The brochures provided the step-by-step installation process, materials and tools needed, cost and time estimates for installation, and maintenance requirements for green infrastructure applications such as rain barrels, rain gardens, tree pits, infiltration planters, vegetated swales/retention gradings, dry wells, riparian buffers, green roofs, permeable pavers, and grass car parks. A copy of the guide, which includes copies of the brochures appended to the guide, can be found at <http://www.fairbanksgig.com/benefits/>.

In conjunction with the Home Show event, the FNSB also placed a storm water advertisement in a special section of the Fairbanks Daily News-Miner newspaper – the “Home” section that was published on March 25 & May 27, 2016. The advertisement targeted local developers/engineers/contractors to make them aware of the local storm water plan review and permitting requirements for the City of Fairbanks, City of North Pole, and FNSB. A copy of the advertisement is included in Appendix A.

2016 [5th Annual] Fort Wainwright Earth Day Fair – At the invitation of the U.S. Army Garrison, the co-permittees hosted a booth at the Earth Day Fair held on April 26, 2016. The booth showcased the educational materials used in classrooms, including the EnviroScape® Nonpoint Source Model and posters showing pictures of storm water conveyance systems and examples of illicit discharges. As giveaways, the people who stopped by the booth were given storm water bracelets, magnets, pencils, and stickers. Over 150 people visited the booth during the fair.

## **Other Public Education & Outreach Activities**

Additional public education and outreach activities completed during the 2016 reporting year included hosting a stream cleanup day event, funding the local Adopt-A-Stream (AAS) Program, implementing a storm drain stenciling program, conducting a storm drain art contest, and convening monthly storm water

# MINIMUM CONTROL MEASURES

advisory committee meetings open to the public; all of which are later discussed under Minimum Control Measure 2 – Public Involvement & Participation.

## Staff Responsible for Compliance Activities

The following individuals were responsible for implementing and coordinating the public education and outreach activities during the 2016 reporting period:

- City of Fairbanks – Jackson Fox, City Engineer
- City of North Pole – Bill Butler, Director of City Services
- UAF – Thadd Williamson, Environmental Health, Safety, & Risk Management Environmental Officer
- ADOT&PF – Katrina LeMieux, Maintenance & Operations Environmental Impact Analyst
- FNSB – David Bredlie, Public Works Department Chief Civil Engineer; and Ann Worhatch, Civil Engineer/Storm Water

## Measureable Goals

The following table details the measureable goals set forth in the co-permittees' April 2014 Storm Water Management Plan, whether or not the goals were achieved during the current reporting period, and lists proposed changes, if any, for the next reporting period.

Measureable Goals	Achieved during current reporting period?	Proposed changes for next reporting period?
Maintain the Storm Water Management Program website for the duration of the permit term	Yes	No
Annually provide a minimum of 15 educational presentations on storm water at local schools	Yes	No
Annually provide guest presentations on storm water to local interest groups, as requested	Yes	No
Annually distribute storm water educational brochures at a minimum of two local events	Yes	No
Annually mail educational brochures to landscaping, snow removal, and building contractors	No	No
Annually issue at least one PSA to local media outlets for broadcast	No	No

# MINIMUM CONTROL MEASURES

## PUBLIC INVOLVEMENT & PARTICIPATION

### Permit Requirements [Section 3.2]

To date, the co-permittees have met all of the requirements under Minimum Control Measure 2 – Public Involvement & Participation. The following table provides a summary of the individual requirements, compliance dates, and status as of December 2016.

Permit Requirements	Compliance Date	Status
<i>Co-permittees must comply with applicable state and local public notice requirements when implementing a public involvement/participation program. [Section 3.2.1]</i>	Annually	Complete, ongoing
<i>Co-permittees must continue to make the Storm Water Management Plan and all Annual Reports available to the public through the municipal library system, a co-permittee-maintained website, or other easily accessible location. Public outreach should include location information whenever appropriate. [Section 3.2.2]</i>	Annually	Complete, ongoing
<i>Co-permittees must continue the Storm Water Advisory Committee. The Storm Water Advisory Committee meeting schedule must be made known to the public and ADEC through direct mail or e-mail notification, if possible, and other locally appropriate means. [Section 3.2.3]</i>	Annually	Complete, ongoing
<i>Co-permittees must continue to implement a storm drain stenciling program. [Section 3.2.4]</i>	Annually	Complete, ongoing
<i>At least annually, co-permittees must continue to host a community Stream Cleanup Day. [Section 3.2.5]</i>	Annually	Complete, ongoing
<i>Co-permittees must continue an ongoing volunteer monitoring program and an Adopt-a-Stream program. [Section 3.2.6]</i>	Annually	Complete, ongoing
<i>Co-permittees must continue public knowledge and attitude survey work related to storm water management in the greater Fairbanks Urbanized Area. [Section 3.2.7]</i>	August 1, 2016	Complete

### Compliance Activities

#### Public Notices

The co-permittees follow the public notice requirements of the State of Alaska's Administrative Procedures Act (AS 44.62), including but not limited to the Open Meetings Act (AS 44.62.310), as well as all internal policies of the co-permittees' respective agencies.

#### Storm Water Management Plan & Annual Reports

Copies of both the co-permittees' and FNSB's APDES permits, Storm Water Management Plans, and most recent Annual Reports submitted to ADEC are made available to the public through the Fairbanks Storm Water Management Program website at <http://www.co.fairbanks.ak.us/pw/Pages/Storm-Water.aspx>.

# MINIMUM CONTROL MEASURES

## **Fairbanks Storm Water Advisory Committee**

In 2003, the co-permittees and FNSB formed the Fairbanks Storm Water Advisory Committee (FSWAC) to coordinate and carry out the development, implementation, and review of the Fairbanks Storm Water Management Program. The FSWAC is comprised of agency representatives from each of the co-permittees' agencies, FNSB, and ADEC, as well as two citizen members from Fairbanks and North Pole serving as representatives of their respective communities. The FSWAC meets at Fairbanks City Hall on the second Thursday of each month from 10:30 to 11:30 a.m. All meetings are open and advertised to the public. The meeting schedule is posted on the Fairbanks Storm Water Management Program website, in the local newspaper at least one week in advance of each meeting, and via email to the FSWAC's email distribution list. Minutes are drafted and approved by the FSWAC for every meeting held. Copies of the minutes for the 2016 reporting period are included in Appendix B.

## **Storm Drain Stenciling Program**

The co-permittees annually stencil storm drain inlets to bring attention to inlets, educate the public on where storm water drains empty to, and discourage illicit discharges. There is a common misconception that storm drains flow to the City's sewer treatment plant, and the stenciling program helps clear up this misconception. The co-permittees have two types of storm drain stencils – one with an outline of a salmon on it with the words "Dump No Waste, Drains to River" for those inlets draining to the Chena River, and another with an outline of an arctic grayling with the words "Dump No Waste, Drains to Slough" for those inlets draining to Noyes and Chena Sloughs. During the 2016 reporting year, the co-permittees stenciled a total of 75 inlets. A table showing the location and number of all storm drains stenciled to date is included in Appendix B.

## **Storm Drain Art Contest (3rd Annual)**

In coordination with the storm drain stenciling program, the co-permittees held a 3rd annual Storm Drain Art Contest in downtown with help from the TVWA. In total, 16 artists painted 11 storm drains on Cowles Street from 1st Avenue to Airport Way on June 4, 2016. The art was themed to bring awareness to the public that our storm drains empty into the river (i.e. not the wastewater treatment plant). Pictures of the finished artwork, as well as advertisements for the contest, are included in Appendix B.

## **2016 Annual Stream Cleanup Day Event**

The co-permittees and FNSB held the 12th Annual Stream Cleanup Day event in Fairbanks on June 11, 2016. Volunteers were assigned to clean up the various sections of the 5.5-mile long Noyes slough and the 2.5-mile long section of the Chena River running through downtown Fairbanks. In total, 55 people volunteered for the event and removed over 1,000 pounds of trash (including litter, bags, tires, vehicle parts, bicycles, and various other items) out of the waterways. Volunteers included residents who live or work along the waterways, as well as a number of other citizens and community groups who responded to the advertisements. Copies of the 2016 Stream Cleanup Day advertisements, Facebook posts, photos, maps, participants briefing sheet, and other associated materials are included in Appendix B.

# MINIMUM CONTROL MEASURES

## Volunteer Water Quality Monitoring & AAS Programs

The co-permittees entered into a Memorandum of Agreement (MOA) with the TVWA in 2008 to implement the Volunteer Water Quality Monitoring and AAS Programs on behalf of the co-permittees. Under the terms of the MOA, the TVWA agreed to administer the programs contingent on funding support and additional, in-kind assistance from the co-permittees. Elements of the programs include water quality monitoring, bio-assessment studies, additional litter cleanup activities, and stream bank restoration and maintenance. In December 2015 the co-permittees updated and re-signed the MOA to increase program funding, more accurately describe the arrangement between the co-permittees and TVWA, and set a term for the MOA to follow the term of the permit. A copy of the new MOA is included in Appendix B.

The co-permittees provided \$12,000 in program funding to the TVWA in 2016. A copy of the TVWA's 2016 Annual Report of program activities is included in Appendix B. The TVWA provided two trainings for volunteers (aka "Citizen Scientists") in 2016 that performed water quality sampling in the Chena River, Noyes Slough, and Tanana River. All of the data collected was uploaded to the EPA's Storage & Retrieval Data Warehouse (STORET) database, which is accessible by agencies and the general public to look up the analytical details of each sample taken. Other accomplishments included donating a rain barrel to be raffled at the FSWCD booth at the Northern Living Home Show, participating in the KTVF Kids Day Activity Fair, planting numerous trees and shrubs during the Arbor Day Celebration, hosting a booth at the Midnight Sun Festival, training Camp Habitat staff members in water quality sampling and providing 15 new kid kits, and showcasing the new "Voices of the Chena" short film at local venues to showcase the Chena River an importance to King salmon

## Public Comments Log

In addition to all of the activities listed above, the co-permittees maintain a log of public comments related to storm water. Comments are accepted via telephone, electronic mail, postal mail, and in person; and directed to appropriate staff to be addressed. Public comments received during the 2016 reporting period are included in Appendix B.

## Staff Responsible for Compliance Activities

The following individuals were responsible for implementing and coordinating the public involvement and participation activities during the 2016 reporting period:

- City of Fairbanks – Jackson Fox, City Engineer; and Andrew Ackerman, Environmental Manager
- City of North Pole – Bill Butler, Director of City Services
- UAF – Thadd Williamson, Environmental Health, Safety, & Risk Management Environmental Officer
- ADOT&PF – Katrina LeMieux, Maintenance & Operations Environmental Impact Analyst

## MINIMUM CONTROL MEASURES

### Measureable Goals

The following table details the measureable goals set forth in the co-permittees' April 2014 Storm Water Management Plan, whether or not the goals were achieved during the current reporting period, and lists proposed changes, if any, for the next reporting period.

Measureable Goals	Achieved during current reporting period?	Proposed changes for next reporting period?
Continue holding monthly FSWAC meetings for the duration of the permit term	Yes	No
Annually stencil a minimum of 75 storm drain inlets	Yes	No
Annually host a Stream Cleanup Day event	Yes	No
Annually fund the AAS Program	Yes	No
Redistribute the community survey on storm water to the public April through September 2014 ( <i>Completed in 2015</i> )	No	No



# MINIMUM CONTROL MEASURES

## ILLICIT DISCHARGE DETECTION & ELIMINATION

### Permit Requirements [Section 3.3]

To date, the co-permittees have met some, but not all, of the requirements under Minimum Control Measure 3 – Illicit Discharge Detection & Elimination. The following table provides a summary of the individual requirements, compliance dates, and status as of December 2016.

Permit Requirements	Compliance Date	Status
<i>The co-permittees shall review and revise as necessary, the program to detect and eliminate illicit discharges. The co-permittees must, as part of this activity, maintain an information management system to track illicit discharges. [Section 3.3.1]</i>	August 1, 2015	Complete, ongoing
<i>No later than three years from the effective date of this permit, the co-permittees must review and update an inventory and map of industrial facilities and activities that are covered by the APDES Multi-Sector General Permit (MSGP) AKR050000, and that discharge directly to their MS4. At a minimum, the inventory must include the facility name and address, nature of the business or activity, Standard Industrial Classification code(s) or the newer North American Industry Classification System code(s) that best reflect the facility product or service, the receiving water body, and type of pollutants that may be discharged by the facility or activity. [Section 3.3.2]</i>	August 1, 2016	Complete
<i>No later than four years from the effective date of this permit, all co-permittees must review the effectiveness and revise, as necessary, ordinances or procedures that effectively prohibit non-storm water discharges into their MS4s. Co-permittees must implement appropriate enforcement procedures and actions, including enforcement escalation procedures for recalcitrant or repeat offenders. [Section 3.3.3]</i>	August 1, 2017	Not complete
<i>Co-permittees must prohibit any of the non-storm water flows listed in Part 1.4.1.3 through ordinance if such flows are identified by ADEC or the co-permittees as a source of pollutants to the MS4. Co-permittees must document any existing local controls or conditions placed on such discharges. [Section 3.3.4]</i>	August 1, 2017	Complete, ongoing
<i>Annually the co-permittees must inform users of the MS4 and the general public of hazards associated with illegal discharges and improper disposal of waste. [Section 3.3.5]</i>	Annually	Complete, ongoing
<i>No later than three years from the effective date of this permit, the co-permittees must update, as necessary, the comprehensive MS4 map developed during the previous permit cycle. At a minimum, the map must show jurisdictional boundaries, the location of all inlets and outfalls, names and locations of all waters that receive discharges from those outfalls, and locations of all municipally-owned and operated facilities, including public snow disposal sites. If available, locations of all privately operated snow disposal sites must also be indicated on the comprehensive map. A copy of the completed map must be submitted to DEC as part of the Annual Report. [Section 3.3.6]</i>	August 1, 2016	Complete

# MINIMUM CONTROL MEASURES

<p><i>Co-permittees must continue dry weather field screening for non-storm water flows from all outfalls. By no later than the expiration date of this permit, all of the co-permittees' outfalls within the permit area must be screened for dry weather flows. The screening should include field tests of selected chemical parameters as indicators of discharge sources where sufficient flow is found at an outfall to allow for monitoring. Screening level tests may utilize less expensive "field test kits" using test methods not approved by EPA under 40 CFR Part 136 (adopted by reference at 18 AAC 83.010), provided the manufacturer's published detection ranges are adequate for the illicit discharge detection purposes. The co-permittees must investigate any illicit discharge within 15 days of its detection and must take action to eliminate the source of the discharge within 45 days of its detection. Raw data and narrative review of screening and mapping shall be included in the following year's Annual Report from the year the data was collected. [Section 3.3.7]</i></p>	<p>August 1, 2018</p>	<p>Not complete</p>
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## Compliance Activities

### Illicit Discharge Investigations

Illicit discharge investigations are initiated when one of the co-permittees has been notified a discharge occurred. Most notifications come from either the general public or co-permittee public works and maintenance staff working in the field that observe a discharge actively occurring and/or evidence a discharge recently occurred. Commonly the discharge is observed at its source and the responsible party is readily apparent; however, other discharges are detected at the outfall with dry-weather, non-storm water flows and/or an abnormal color or odor to the water. These discharges are tracked "up-pipe" back to their source using the co-permittees' comprehensive MS4 map and through manhole observations until a manhole junction is reached that shows no evidence of discharge, indicating that the discharge originated down-pipe of that manhole junction. The responsible party is then determined by examining and investigating nearby facilities based on the type of discharge/pollutant observed, land and building use, and history of public complaints and/or previously confirmed illicit discharges.

Every illicit discharge detected is entered into the co-permittee's jointly-maintained Illicit Discharge Log, which records the date, location, and nature of the discharge, as well as a written description of the follow-up investigations and resolutions. A copy of the log for the 2016 reporting year is included in Appendix C.

### Industrial Facilities Map

In June 2016 the FNSB updated the MS4 map to include the locations of all industrial facilities and activities covered by the APDES MSGP in the Fairbanks area. A copy of the map showing the new MSGP layer is included in Appendix C.

### Illicit Discharge Ordinances

The Cities of Fairbanks and North Pole are the only co-permittees that have municipal authority to adopt and enforce ordinances. The City of Fairbanks approved and adopted an Illicit Discharge Ordinance (No. 07-5703) in July 2007, and the City of North Pole adopted a similar ordinance (No. 08-21) in November 2008. The two ordinances are nearly identical in content, which provides users of the MS4 a clear understanding

# MINIMUM CONTROL MEASURES

of the type of discharges and acts prohibited throughout the Fairbanks Urbanized Area, regardless of the separate jurisdictions of the municipal authorities. Copies of the ordinances can be found at <http://www.co.fairbanks.ak.us/pw/Pages/Storm-Water-Ordinances.aspx>. The Cities of Fairbanks and North Pole will review and revise these ordinances, as necessary, by August 1, 2017, in accordance with the requirement set forth in the permit.

In addition to these ordinances, the City of Fairbanks adopted two new ordinances in 2016 related to illicit discharges and the protection of water quality:

- Ordinance No. 16-6001 requiring tow companies promptly clean up glass, fluids, and other hazardous debris following a motor vehicle accident (with fine penalty)
- Ordinance No. 16-6010, requiring pet owners to remove pet excrement deposited on any public right-of-way or another person's property (with fine penalty)

Enforcement Policy & Jurisdiction – As stated in the codified ordinances, whenever the City of Fairbanks or North Pole finds that a person, business, or public entity has violated a prohibition of the ordinances, compliance will be ordered by verbal or written notice of the violation to the responsible party. The notice may require the performance of monitoring, analyses, and reporting; elimination of illicit connections, discharges, practices, or operations; abatement or remediation of storm water pollution or contamination hazards and the restoration of any affected property; payment of a fine to cover administrative and remediation costs; and implementation of source control or treatment BMPs. If the abatement of a violation and/or restoration of affected property are required, the notice will provide a deadline for completion of the remediation or restoration. The notice will also advise that, should the violator fail to remediate or restore affected property within the established deadline, the work will be performed by the City of Fairbanks or North Pole, or a designated contractor, and the expense thereof will be charged to the violator. In such cases where the investigation indicates the illicit discharge originated outside the City of Fairbanks' or North Pole's jurisdiction, the co-permittees will notify the appropriate agency which has jurisdiction, namely the FNSB or ADEC. The City of Fairbanks' and North Pole's jurisdiction to enforce the ordinance applies to the MS4, in its entirety, within the Fairbanks Urbanized Area inside the City Limits of Fairbanks and North Pole; including the portions of the MS4 with State of Alaska ROWs located within the Fairbanks Urbanized Area inside the City Limits of Fairbanks and North Pole which are owned or operated by the DOT&PF. The FNSB has jurisdiction over the portion of MS4 owned and operated by UAF and DOT&PF within the Fairbanks Urbanized Area outside the City Limits of Fairbanks and North Pole.

Non-storm Water Discharges – The existing ordinances address non-storm water flows within their "Discharge Prohibitions" subsections. Certain non-storm water flows listed in the permit (i.e. water line flushing, landscape irrigation, dechlorinated swimming pool discharges, firefighting activities, etc.) are allowed to discharge to the MS4; however, none of these flows are allowed to contain any pollutants prohibited to be discharged to waters of the U.S. under the federal Clean Water Act (CWA).

# MINIMUM CONTROL MEASURES

## Public Awareness Efforts

As discussed under the “Public Education & Outreach” and “Public Involvement & Participation” subsections, efforts are made annually to inform the public about illicit discharges and improper disposal of waste. Efforts include (1) maintaining the Fairbanks Storm Water Management Program website, which outlines procedures for reporting illicit discharges to the co-permittees and FNSB; (2) incorporating information about the types and causes of illicit discharges into the educational/guest presentations on storm water; (3) implementing the Storm Drain Stenciling Program, which creates public awareness about where storm water goes after it enters a storm drain inlet; and (4) mailing brochures to local landscaping and snow removal contractors, which apprises them of the local illicit discharge ordinances.

## Annual Employee Training

The co-permittees conduct annual employee trainings using two storm water training DVD kits from Excal Visual. One training is titled “Storm Water Pollution Prevention for MS4 Operations” and includes a 30-minute employee training DVD, training acknowledgement forms, pocket guides, and quizzes covering the topics of good housekeeping and spill prevention/control/response, vehicle and equipment fueling/maintenance/washing, waste and materials management, facility maintenance, parking lot and street sweeping, storm drain cleaning, landscaping and grounds maintenance, and working over or near surface waters. The second training is titled “Illicit Discharge Detection & Elimination for MS4 Employees” and similarly includes a 15-minute employee training DVD and amenities covering the topics of spotting illicit discharges at their source and outfalls, as well as the employees’ role in illicit discharge detection and elimination. Every April the co-permittees gather up their public works/maintenance/parks employees and have them watch the DVDs, and are thereafter requested to maintain a continued surveillance of storm water conveyance systems when in the field. Training acknowledgement forms for each of the co-permittees’ respective agencies for the 2016 reporting year are included in Appendix C.

## Comprehensive MS4 Map Update

In 2008 the co-permittees and FNSB combined their individual MS4 maps into a single comprehensive map showing all storm water conveyance systems within the Fairbanks Urbanized Area. The map currently resides within the FNSB’s Geographical Information System (GIS) database, and can be accessed by the public at <http://www.co.fairbanks.ak.us/pw/Pages/Storm-Drain-Map.aspx>. The map contains all jurisdictional boundaries, storm drain inlets and outfalls, outfall receiving waters, and FNSB and co-permittee owned and operated facilities, including snow disposal sites. From 2013 to the present, the ADOT&PF Northern Region Hydraulics Section furthered this effort by hiring a consultant to perform additional field surveying and modeling of the MS4. The initial study area was bound by Davis Road, Lathrop Street, Peger Road, and the Chena River, and the consultant is now working in downtown Fairbanks. The previous 2008 mapping efforts collected only horizontal data for the MS4, whereas this new effort is collecting both horizontal and vertical data and modeling different storm events using Bentley CivilStorm® software to look for deficiencies in the system. A progress report titled “Fairbanks Area Drainage Improvements Plan, Phase II” on this effort is included in Appendix C.

# MINIMUM CONTROL MEASURES

## Dry-weather Outfall Screening

The co-permittees began conducting dry-weather screening outfalls in 2007. The co-permittees screened approximately one-third of the outfalls each summer in 2007, 2008, and 2009 until every outfall had been screened. A second, larger effort to screen outfalls was also completed in 2011 where every outfall was screened in a single summer. In accordance with the requirements of the new permit, the co-permittees will again screen every outfall owned and operated by the co-permittees prior to the end of the permit term – August 1, 2018.

## Staff Responsible for Compliance Activities

The following individuals were responsible for implementing and coordinating the illicit discharge detection and elimination activities during the 2016 reporting period:

- City of Fairbanks – Jackson Fox, City Engineer; and Andrew Ackerman, Environmental Manager
- City of North Pole – Bill Butler, Director of City Services
- UAF – Thadd Williamson, Environmental Health, Safety, & Risk Management Environmental Officer
- ADOT&PF – Katrina LeMieux, Maintenance & Operations Environmental Impact Analyst

## Measureable Goals

The following table details the measureable goals set forth in the co-permittees' April 2014 Storm Water Management Plan, whether or not the goals were achieved during the current reporting period, and lists proposed changes, if any, for the next reporting period.

Measureable Goals	Achieved during current reporting period?	Proposed changes for next reporting period?
Develop an inventory map of MSGP-covered facilities and activities by August 1, 2016	Yes	No
Review and revise, as necessary, the illicit Discharge Ordinances by August 1, 2017	No	No
Annually provide employee training on illicit discharges to the MS4	Yes	No
Review and update the comprehensive MS4 map by August 1, 2016	Yes	No
Screen 100% of the outfalls owned and operated by the co-permittees by August 1, 2018	No	No

# MINIMUM CONTROL MEASURES

## CONSTRUCTION SITE STORM WATER RUNOFF CONTROL

### Permit Requirements [Section 3.4]

To date, the co-permittees have met all the requirements under Minimum Control Measure 4 – Construction Site Storm Water Runoff Control – except developing provisions for receipt and consideration of information submitted by the public on site plan reviews. These provisions will be developed and implemented by the end of the permit term – August 1, 2018. The following table provides a summary of the individual requirements, compliance dates, and status as of December 2016.

Permit Requirements	Compliance Date	Status
<i>The co-permittees must annually review and revise the development, implementation, and enforcement of their existing program that reduces pollutants in any storm water runoff to the MS4 from construction activities consistent with this permit and the current version of the APDES General Permit for Storm Water Discharges from Large and Small Construction Activities in Alaska Permit #: AKR100000 (Alaska Construction General Permit or ACGP). The co-permittees must discuss revisions, planned improvements, and schedule in the Annual Report. [Section 3.4.1]</i>	Annually	Complete, ongoing
<i>If ADEC waives the permit requirements for storm water discharges associated with a specific small construction activity (i.e., a single project) in accordance with 40 CFR §122.26(b)(15)(i)(A) or (B), the co-permittee is not required to develop, implement, or enforce the program to reduce pollutant discharges from that particular site. [Section 3.4.2]</i>	Annually	Complete, ongoing
<i>The co-permittees must maintain and update as necessary, an ordinance or other regulatory mechanism to be consistent with this Permit and with the current version of the ACGP. This ordinance or regulatory mechanism must include sanctions to ensure compliance. [Section 3.4.3]</i>	Annually	Complete, ongoing
<i>Co-permittees must continue to publish and distribute requirements for construction site operators to implement appropriate erosion and sediment control BMPs and to control waste such as discarded building materials, concrete truck washout, chemicals, litter and sanitary waste at the construction site that may cause adverse impacts to water quality. [Section 3.4.4]</i>	Annually	Complete, ongoing
<i>Co-permittees must review, and revise as necessary procedures for reviewing all site plans as required in Part 3.4.1 for potential water quality impacts, including erosion and sediment control, control of other wastes, and any other impacts that must be examined according to the requirements of the law, ordinance, or other enforceable mechanism of Part 3.4.3. These procedures must include provisions for receipt and consideration of information submitted by the public. [Section 3.4.5]</i>	Annually	Complete, ongoing; except public info. req.
<i>Co-permittees must review and revise as necessary, procedures for site inspection and enforcement of control measures established as required in Parts 3.4.3 and 3.4.4, including enforcement escalation procedures for recalcitrant or repeat offenders. The co-permittees shall inspect all construction activities as required in Part 3.4.1 in their jurisdictions for appropriate erosion, sediment, and waste control at least once per year. [Section 3.4.6]</i>	Annually	Complete, ongoing



# MINIMUM CONTROL MEASURES

<i>Co-permittees must conduct a biennial training session for the local construction, design, and engineering audiences related to the construction ordinance and BMP requirements referenced in Parts 3.4.3 and 3.4.4. [Section 3.4.7]</i>	Biennially	Complete, ongoing
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## Compliance Activities

The co-permittees' efforts to control construction site storm water runoff include codified ordinances, publication of a local BMP design guide, a municipal plan review and site inspection program, and biennial trainings for local developers, engineers, and contractors. The co-permittees annually review and update these program elements for their appropriateness and consistency with permit requirements and the ACGP.

## Construction Site Storm Water Runoff Control Ordinances

The Cities of Fairbanks and North Pole are the only co-permittees that have municipal authority to adopt and enforce ordinances. The City of Fairbanks originally approved and adopted a Construction Site Storm Water Runoff Ordinance (No. 07-5702) in July 2007, but later amended it with a new ordinance (No. 08-5751) in May 2008 to streamline its content and requirements. The City of North Pole adopted a similar ordinance (No. 08-14) to that of the amended City of Fairbanks ordinance in June 2008. Similarity in these ordinances provides users of the MS4 a clear understanding of the storm water plan review and inspection requirements throughout the Fairbanks Urbanized Area, regardless of the separate jurisdictions of the municipal authorities. Copies of the ordinances can be found at <http://www.co.fairbanks.ak.us/pw/Pages/Storm-Water-Ordinances.aspx>. The Cities of Fairbanks and North Pole will review and revise these ordinances, as necessary, before the end of the new permit term – August 1, 2018.

## BMP Design Guide

The Cities of Fairbanks and North Pole published the Fairbanks & North Pole Storm Water Management Program Guide in September 2009. The guide provides an overview of both construction and post-construction storm water management design and construction requirements for new development and redevelopment projects within the Fairbanks Urbanized Area. The focus of the guide is to educate developers, engineers, contractors, and the general public on local storm water pollution control laws, and provide resources for effective structural and non-structural BMPs for the Fairbanks area. Included in the manual is a brief overview of the local storm water management program, agency review requirements, general design considerations, and list of effective BMPs for the Fairbanks area, including discussion of the design and construction requirements for snow disposal sites, septic systems, and parking lots. A two-page handout was also created for local developers, engineers, and contractors which covers the different agencies' jurisdictions and plan submittal requirements for storm water within the Fairbanks Urbanized Area. Both the guide and handout are posted on the Fairbanks Storm Water Management Program website at <http://www.co.fairbanks.ak.us/pw/Pages/SiteRequirements.aspx>. In addition to reviewing and revising the aforementioned ordinances, the Cities of Fairbanks and North Pole will review and revise the guide, as necessary, before the end of the new permit term – August 1, 2018.

# MINIMUM CONTROL MEASURES

## Plan Reviews & Site Inspections

The construction site storm water runoff plan review and inspection program has been added to the Residential & Commercial Building Permit application process at the Cities of Fairbanks and North Pole, which directs all contractors/owners applying for a permit to submit storm water plans in accordance with the requirements of the ordinances and all applicable review fees before a permit will be issued. At the City of Fairbanks, plans must be submitted for all projects resulting in a ground disturbance of 10,000 square feet or greater, and at the City of North Pole for all projects resulting in a ground disturbance of one acre or greater. The program also appraises contractors/owners that their construction site(s) will be inspected at least once per year for proper erosion and sediment controls. Inspections involve a tour of the entire construction site, close inspection of each BMP installed, and a secondary review of the storm water plan, which must be maintained onsite. All BMP and/or storm water plan components needing corrective action are documented on an inspection checklist and signed by both the site inspector and onsite contact. Corrective action items may be resolved by verbal agreement, written agreement, re-inspection, and/or fines or temporary stop-work orders. In the event that any person holding a permit pursuant to these ordinances violates the terms of the permit, the Cities of Fairbanks and North Pole may issue a notice of violation, suspend, or revoke the permit. The procedures currently do not have provisions for receipt and consideration of information submitted by the public; however, such provisions will be developed and added to the procedures before the end of the new permit term – August 1, 2018.

In total, three plan reviews and one site inspection was conducted during the 2016 reporting period. Two of the construction projects were within the City of North Pole's jurisdiction and one was determined to be under ADEC's jurisdiction, and no sanctions or enforcements actions were necessary for compliance. A site inspection was completed for only one of the North Pole projects because construction had not yet started for the other project in 2016.

## Training for Local Developers/Engineers/Contractors

The Cities of Fairbanks and North Pole, FNSB, and ADEC jointly conducted a three-hour storm water training on April 7, 2015, to educate developers, engineers, and contractors about the local construction site storm water runoff and post-construction storm water management requirements within the Fairbanks Urbanized Area. This training is scheduled to be offered again in April 2017 to meet the biennial training session requirement of the permit.

Annually the ADOT&PF, ADEC, and Associated General Contractors of Alaska also host "Alaska Certified Erosion & Sediment Control Lead [AK-CESCL]" trainings in Fairbanks. The training consists of either a two-day course or one-day refresher that covers erosion and sedimentation processes, ACGP regulatory requirements, BMPs, site inspections, record-keeping, and cold climate challenges. A summary of all of the AK-CESCL trainings held in Fairbanks during the 2016 reporting period is included in Appendix D.

# MINIMUM CONTROL MEASURES

## Staff Responsible for Compliance Activities

The following individuals were responsible for implementing and coordinating the construction site storm water runoff control activities during the 2016 reporting period:

- City of Fairbanks – Jackson Fox, Planning & Permitting Manager
- City of North Pole – Bill Butler, Director of City Services
- UAF – Thadd Williamson, Environmental Health, Safety, & Risk Management Environmental Officer
- ADOT&PF – Katrina LeMieux, Maintenance & Operations Environmental Impact Analyst

## Measureable Goals

The following table details the measureable goals set forth in the co-permittees' April 2014 Storm Water Management Plan, whether or not the goals were achieved during the current reporting period, and lists proposed changes, if any, for the next reporting period.

Measureable Goals	Achieved during current reporting period?	Proposed changes for next reporting period?
Review and revise, as necessary, the Construction Site Storm Water Runoff Control Ordinances by August 1, 2018	No	No
Review and revise, as necessary, the Fairbanks & North Pole Storm Water Management Program Guide by August 1, 2018	No	No
Incorporate provisions for receipt and consideration of information submitted by the public into the plan review process by August 1, 2018	No	No
Conduct a training/workshop for local developers, engineers, and contractors in April 2015 (completed) and April 2017	No	No

# MINIMUM CONTROL MEASURES

## POST-CONSTRUCTION STORM WATER MANAGEMENT

### Permit Requirements [Section 3.5]

To date, the co-permittees have met some, but not all, of the requirements under Minimum Control Measure 5 – Post-construction Storm Water Management. The following table provides a summary of the individual requirements, compliance dates, and status as of December 2016.

Permit Requirements	Compliance Date	Status
<i>Co-permittees must continue the implementation and enforcement of a program to address post-construction storm water runoff from new development and redevelopment projects that disturb greater than or equal to one acre, including projects less than one acre that are part of a larger common plan of development or sale that disturb one acre or more, that discharge into the MS4. The program must ensure that controls are in place that would prevent or minimize water quality impacts. [Section 3.5.1]</i>	Annually	Complete, ongoing
<i>Co-permittees must review the effectiveness and revise, as necessary, ordinances or other regulatory mechanisms to the extent allowable under state or local law to address post-construction runoff from new development and redevelopment projects. Co-permittees must implement appropriate enforcement procedures and actions, including enforcement escalation procedures for recalcitrant or repeat offenders. [Section 3.5.2]</i>	August 1, 2018	Not complete
<i>Co-permittees must review and revise, as necessary, the publishing and distribution of a BMP design manual for post-construction storm water management, which includes a list of strategies reflecting a combination of structural and non-structural BMPs appropriate to the MS4s. [Section 3.5.3]</i>	August 1, 2018	Not complete
<i>Co-permittees must ensure proper long-term operation and maintenance of post-construction BMPs. [Section 3.5.4]</i>	Annually	Complete, ongoing
<i>Co-permittees must continue to conduct biennial training for local construction, design, and engineering audiences. [Section 3.5.5]</i>	Biennially	Complete, ongoing
<i>Green Infrastructure/Low Impact Development (LID) Incentive Strategy and Pilot Project. [Section 3.5.6]</i>	August 1, 2016	Complete

### Compliance Activities

The co-permittees' existing efforts to manage post-construction storm water include codified ordinances; a municipal plan review program for permanent storm water controls for sites disturbing greater than or equal to one acre; publication of a local BMP design guide; biennial training/workshops for local developers, engineers, and contractors; publication of a green infrastructure application guide; mapping priority areas for green infrastructure in Fairbanks; and construction of a green infrastructure/LID pilot project. The co-permittees annually review and update these program elements for their appropriateness and consistency with permit requirements.

# MINIMUM CONTROL MEASURES

## **Post-construction Storm Water Management Ordinances**

The Cities of Fairbanks and North Pole are the only co-permittees that have municipal authority to adopt and enforce ordinances. The City of Fairbanks originally approved and adopted a Post-Construction Storm Water Management Ordinance (No. 07-5704) in July 2007, but later amended it with a new ordinance (No. 09-5780) in August 2009 to streamline its content and requirements. The City of North Pole adopted a similar ordinance (No. 09-10) to that of the amended City of Fairbanks ordinance in September 2009. Similarity in these ordinances provides users of the MS4 a clear understanding of the post-construction storm water management requirements throughout the Fairbanks Urbanized Area, regardless of the separate jurisdictions of the municipal authorities. Copies of the ordinances can be found at <http://www.co.fairbanks.ak.us/pw/Pages/Storm-Water-Ordinances.aspx>. The Cities of Fairbanks and North Pole will review and revise these ordinances, as necessary, before the end of the permit term – August 1, 2018.

Long-term Operation & Maintenance of BMPs – In accordance with the requirements set forth in the ordinances, developers are required to submit a Permanent Storm Water Control Plan (PSWCP) to the Cities of Fairbanks and North Pole for review and approval prior to being granted a Residential or Commercial Building Permit. Included in the PSWCP, a signed statement must be submitted stating the owner of the site will operate, maintain, and/or schedule all permanent BMP(s) in accordance with the PSWCP. The PSWCP must also be developed by a Certified Professional in Erosion and Sediment Control or a Professional Engineer registered in the State of Alaska.

## **BMP Design Guide**

As stated previously, the Cities of Fairbanks and North Pole published the Fairbanks & North Pole Storm Water Management Program Guide in September 2009. The guide provides an overview of both construction and post-construction storm water management design and construction requirements for new development and redevelopment projects within the Fairbanks Urbanized Area. The focus of the guide is to educate developers, engineers, contractors, and the general public on local storm water pollution control laws, and provide resources for effective structural and non-structural BMPs for the Fairbanks area. Included in the manual is a brief overview of the local storm water management program, agency review requirements, general design considerations, and list of effective BMPs for the Fairbanks area, including discussion of the design and construction requirements for snow disposal sites, septic systems, and parking lots. The guide is posted on the Fairbanks Storm Water Management Program website at <http://www.co.fairbanks.ak.us/pw/Pages/SiteRequirements.aspx>. The Cities of Fairbanks and North Pole will review and revise the guide, as necessary, before the end of the permit term – August 1, 2018.

Design Criteria & Performance Goals – The design criteria and performance goals for post-construction (permanent) BMPs are outlined in Section 4.3 of the guide and in both of the City of Fairbanks' and North Pole's ordinances. For runoff volume, post-construction peak runoff is required to be limited to 5% over pre-construction peak runoff using the 10-year, 1-hour duration storm event. For runoff quality, the initial 1/2-inch of runoff must be treated, and after this first flush, treatment must be provided at a minimum rate of 0.005 inches per minute. These design criteria and performance goals were developed by City of

# MINIMUM CONTROL MEASURES

Fairbanks and FNSB engineers in close coordination with ADEC and in consideration of Fairbanks's rainfall intensity data and design standards used by the Municipality of Anchorage.

## **Training for Local Developers/Engineers/Contractors**

As stated previously, the Cities of Fairbanks and North Pole, FNSB, and ADEC jointly conducted a three-hour storm water training on April 7, 2015, to educate developers, engineers, and contractors about the local construction site storm water runoff and post-construction storm water management requirements within the Fairbanks Urbanized Area. This workshop is scheduled to be offered again in April 2017 to meet the biennial training session requirement of the permit.

## **Green Infrastructure Application Guide**

In late 2009, the City of Fairbanks partnered with the Cold Climate Housing Research Center, GeoWatersheds Scientific, and FSWCD, and successfully applied for a grant from the Alaska Department of Natural Resources to develop a local Green Infrastructure Resource Guide for Fairbanks. The project was kicked off by having each of the project partners compile their personal collections of research data and publications related to green infrastructure in Alaska and other cold-climate regions to assist in the selection of 10 green infrastructure applications appropriate for use in the Fairbanks area. The applications ultimately selected included the rain barrel, rain garden, tree pit, infiltration planter, vegetated swale/retention grading, dry well, riparian buffer, green roof, permeable pavers, and grass car park. For each of these applications, design drawings were drafted, local and stock photographs acquired, and text written discussing the step-by-step installation process, materials and tools needed, cost and time estimates for installation, maintenance requirements, and pros and cons of each application. The final guide, titled Green Infrastructure Resource Guide for Fairbanks, was published in November 2010, and posted to the Cold Climate Housing Research Center's website for homeowners to download at <http://www.cchrc.org/green-infrastructure>. In addition to being made available online, each year the co-permittees print hundreds of copies of the guide to give away at a variety of local events, as well as to all of the local plant nurseries and home improvement stores in the Fairbanks area to provide to their customers free of charge. A copy of the guide can be found at <http://www.fairbanksig.com/benefits/>.

## **Green Infrastructure Priority Area Maps**

In late 2011, the City of Fairbanks also completed a mapping project to identify which subdivisions in the Fairbanks area are in the greatest need of Green Infrastructure applications (i.e. permanent/post-construction BMPs). The effort produced three new maps showing what portion of the Fairbanks area was served by a piped storm drain system, land use types (residential, commercial/public exempt, and industrial) within this area, and a five-tier ranking scheme to categorize each subdivision by their level of need for permanent/post-construction BMPs to help improve storm water quality and reduce the quantity of runoff to the piped storm drain system. The ranking scheme included factors such as storm water discharge location, percent of impervious land cover, amount of area served by a pipe storm drain system, and amount of roads with curb and gutter as opposed to ditches and/or swales. Copies of the maps produced by this effort were included in the 2014 Annual Report.



# MINIMUM CONTROL MEASURES

In 2016 the City of Fairbanks and TVWA additionally created a map titled “Green vs. Gray Infrastructure” of Fairbanks city limits. The map distinguishes four major land cover types – water bodies, natural vegetation, parks and fields, and development – to highlight green versus gray infrastructure. The map shows over 90-percent of the land cover is developed and offers a unique perspective on the impervious surface runoff issues in Fairbanks. A copy of the map is included in Appendix E.

## **LID Incentive Strategy**

Public Sector Development Projects – In 2016 the City of Fairbanks worked with the Fairbanks Metropolitan Area Transportation System (FMATS) Office to prepare a new “Green Streets Policy.” The policy aims to have transportation projects minimize environmental impacts by retaining and treating, or even eliminating, runoff at the source using green infrastructure applications. FMATS is allocated state and federal money each year for local transportation projects, and they would like adopt the policy for the projects they fund. When projects are nominated to FMATS, having green street elements included in their scope will help projects score better. The FMATS Policy Committee officially adopted the new Green Streets Policy on June 15. The City of North Pole, City of Fairbanks, and FNSB additionally passed Resolutions of Support for the policy on October 3, October 10, and November 10, respectively. Copies of the adopted policy and Resolutions of Support are included in Appendix E.

Private Sector Development Projects – In 2010 the City of Fairbanks instituted a reimbursement program for homeowners for installation of green infrastructure applications (i.e. rain barrels, rain gardens, permeable pavers, etc.) on their properties. The program reimbursed homeowners up to \$500 for materials, equipment rentals, and/or contractual labor, and the installations were showcased as demonstration sites. The FSWCD, with funding from the USFWS, has continued the program annually since 2010 and expanded the program to businesses and areas outside city limits. In 2016, seven green infrastructure projects were awarded and installed under this program.

## **Green Infrastructure/LID Pilot Project**

The co-permittees completed construction of the Green Infrastructure/LID pilot project in August 2013. The project was located at Shoreway Park on the north bank of the Chena River directly across from downtown Fairbanks. The park has a large, 21,000-square-foot parking area for residents and visitors alike to park, have a picnic lunch, and access downtown on foot via a pedestrian bridge over the river. There were two problems with the park that needed attention. One problem was that the rainwater runoff, which collects pollutants such as leaking vehicle fluids and litter from the parking lot, drained directly into the river via a concrete chute without any form of treatment. The other problem was that there was a missing segment of pedestrian pathway between the park and the pedestrian bridge. Both of these problems were fixed in 2013 through a collaborative effort by the City of Fairbanks Public Works Department, ADOT&PF Maintenance Division, TVWA, Student Conservation Association, U.S. Fish & Wildlife Service, Wounded Warrior Project, and FSWCD Youth Corps crew. First, the concrete chute was removed from the river bank and a catch basin for the runoff was installed. Then, approximately 125 feet of new concrete pathway was poured and 40 feet of riparian area was rehabilitated with topsoil, grass seed, and 70 willows that were hand-dug and replanted along the riverbank. The catch basin is intended to capture sediment and litter

# MINIMUM CONTROL MEASURES

from the parking lot runoff, while the flow leaving the catch basin trickles down the newly vegetated banks to help filter out some of the other pollutants such as vehicle fluids before they reach the river. Copies of the project design plans and before and after photographs of the construction were included in the 2014 Annual Report. The effectiveness of this project in reducing the amount of pollutants reaching the river will be monitored and evaluated year-to-year until the end of the permit term.

## Staff Responsible for Compliance Activities

The following individuals were responsible for implementing and coordinating the post-construction storm water management activities during the 2016 reporting period:

- City of Fairbanks – Jackson Fox, Planning & Permitting Manager
- City of North Pole – Bill Butler, Director of City Services
- UAF – Thadd Williamson, Environmental Health, Safety, & Risk Management Environmental Officer
- ADOT&PF – Katrina LeMieux, Maintenance & Operations Environmental Impact Analyst

## Measureable Goals

The following table details the measureable goals set forth in the co-permittees' April 2014 Storm Water Management Plan, whether or not the goals were achieved during the current reporting period, and lists proposed changes, if any, for the next reporting period.

Measureable Goals	Achieved during current reporting period?	Proposed changes for next reporting period?
Review and revise, as necessary, the Post-construction Storm Water Management Ordinances by August 1, 2018	No	No
Review and revise, as necessary, the Fairbanks & North Pole Storm Water Management Program Guide by August 1, 2018	No	No
Conduct a training/workshop for local developers, engineers, and contractors in April 2015 (completed) and April 2017	No	No
Annually promote and distribute copies of the Green Infrastructure Resource Guide for Fairbanks at local events, nurseries, and home improvement stores	Yes	No
Develop an LID Incentive Strategy for private and public sector development projects by August 1, 2016	Yes	No
Evaluate the effectiveness of the Green Infrastructure/LID pilot project (constructed in August 2013) by August 1, 2018	No	No

# MINIMUM CONTROL MEASURES

## POLLUTION PREVENTION & GOOD HOUSEKEEPING

### Permit Requirements [Section 3.6]

To date, the co-permittees have met all the requirements under Minimum Control Measure 6 – Pollution Prevention & Good Housekeeping. The following table provides a summary of the individual requirements, compliance dates, and status as of December 2016.

Permit Requirements	Compliance Date	Status
<i>Co-permittees must continue to maintain and implement an operation and maintenance program intended to prevent or reduce pollutant runoff from municipal activities. [Section 3.6.1]</i>	Annually	Complete, ongoing
<i>Annually, co-permittees must continue appropriate training for municipal personnel related to optimum maintenance practices for the protection of water quality. [Section 3.6.2]</i>	Annually	Complete, ongoing
<i>Co-permittees must continue to ensure that new flood management projects are assessed for impacts on water quality and existing projects are assessed for incorporation of additional water quality protection devices or practices. [Section 3.6.3]</i>	Annually	Complete, ongoing

### Compliance Activities

#### Operation & Maintenance Program

Within their respective rights-of-way, each co-permittee is responsible for snow removal and street sanding operations during the winter months and street sweeping and storm drain cleaning operations during the summer months. Beginning in 2006, the co-permittees instituted an information tracking system for these activities to assist with reducing the discharge of pollutants, including sediment, to the MS4.

Winter Operation & Maintenance Activities – Comparatively, the ADOT&PF maintains major and minor arterials while the Cities of Fairbanks and North Pole maintain major and minor collectors and local streets. Snow plowing, street sanding, and snow removal is primarily focused on routes to the local hospital, area schools, primary business districts, and core downtown areas of Cities of Fairbanks and North Pole; followed by local streets within residential neighborhoods. The co-permittees utilize designated snow storage sites that are generally suitable for onsite containment of accumulated sediment and miscellaneous debris. Snow removal and storage operations are tracked by date of operation, area and subarea, number of loads and cubic yards hauled, haul time, and snow storage site used. Debris is collected following spring break-up and disposed of at the FNSB Solid Waste Landfill. Street sanding operations are similarly scheduled by area of priority depending on street surface conditions, and tracked by date of operation, area, and number of loads, cubic yards, and tonnage spread. Copies of the co-permittees' snow removal and street sanding logs are included in Appendix F.

Summer Operation & Maintenance Activities – During spring break-up, which typically commences in early to mid-April, the co-permittees focus on ensuring the MS4 is operating effectively. Steam is often used to open frozen storm drains and culverts, and pumps are used to transfer water from areas of ponding, in an

# MINIMUM CONTROL MEASURES

attempt to maintain flow in the MS4 and minimize damage to residential, commercial, and public property. Street sweeping operations generally commence after spring break-up in late April through early May, and continue until all arterials, collectors, and local streets are clean of aggregate. Street sweeping operations are tracked by date of operation, broom number, area and subarea, street location, number of loads and cubic yards hauled, haul time, and storage site used. During the summer months, the co-permittees also clean and maintain the MS4 using a vacuum truck to flush and pump accumulated sediment and debris from catch basins, lateral lines, manholes, sedimentation collection devices, and culverts. Storm drain cleaning operations are tracked by date of operation, equipment number/type, area and subarea, street location, number of loads hauled, haul time, and storage site used, and gallons of liquid and cubic yards of solids collected. Copies of the co-permittees' street sweeping and storm drain cleaning logs are included in Appendix F.

Hazardous Wastes – In coordination and compliance with EPA Hazardous Waste Regulations, each of the co-permittees also control discharges of hazardous wastes and other pollutants to the MS4 from their respective facilities and rights-of-way such as streets, parking lots, maintenance yards, storage yards, waste transfer stations, maintenance shops, sand and gravel storage locations, and snow storage sites. Permanent controls include oil recycling, glycol recycling, sand and gravel recycling, designated vehicle wash down areas, sumps and oil/water separators in vehicle storage buildings, wash racks that drain to the sanitary sewer, and containment and retention BMPs at sand/gravel and snow storage sites. Day-to-day operations and the use of heavy equipment therein, also generate small quantities of non-recyclable oils and fuels, non-recyclable hydraulic fluid, solvents and degreasers, petroleum-contaminated pads, and empty petroleum product containers. All hazardous wastes generated are properly stored and later transferred and released to a licensed Hazardous Waste Contractor for processing and offsite disposal.

Industrial Facilities – The co-permittees do not own or operate any industrial facilities that discharge to the MS4.

## **Annual Employee Training**

As stated previously, the co-permittees conduct annual employee trainings using two storm water training DVD kits from Excal Visual. One training is titled "Storm Water Pollution Prevention for MS4 Operations" and includes a 30-minute employee training DVD, training acknowledgement forms, pocket guides, and quizzes covering the topics of good housekeeping and spill prevention/control/response, vehicle and equipment fueling/maintenance/washing, waste and materials management, facility maintenance, parking lot and street sweeping, storm drain cleaning, landscaping and grounds maintenance, and working over or near surface waters. The second training is titled "Illicit Discharge Detection & Elimination for MS4 Employees" and similarly includes a 15-minute employee training DVD and amenities covering the topics of spotting illicit discharges at their source and outfalls, as well as the employees' role in illicit discharge detection and elimination. Every April the co-permittees gather up their public works/maintenance/parks employees and have them watch the DVDs to meet the annual employee training requirements of the permit. Training acknowledgement forms for each of the co-permittees' respective agencies for the 2016 reporting year are included in Appendix C.

# MINIMUM CONTROL MEASURES

## Flood Management Projects

Assessment of flood management projects for impacts on water quality do not fall under the purview of the co-permittees unless the projects meet the criteria for plan review under one of the Cities of Fairbanks' or North Pole's Construction Site Storm Water Runoff or Post-Construction Storm Water Management Ordinances. This would be a rare case, however, since the Cities of Fairbanks and North Pole only have jurisdiction over privately-funded projects occurring on private property. It is presumed that most or all flood management projects would be publicly-funded occurring on public property. In addition, all flood management projects require federal, state, and FNSB authorization, often in the form of a permit.

Flood management projects generally result in dredge or fill in wetlands and other water bodies, which fall under the purview of the U.S. Army Corps of Engineers (USACE) and ADEC. The USACE requires a Department of the Army Permit for all dredge and fill activities regulated under Section 404 of the CWA and Section 10 of the Rivers and Harbors Act. The ADEC also requires a Certificate of Reasonable Assurance be issued for the project(s) in accordance with Section 401 of the CWA before the Department of the Army Permit can be issued. The Certificate of Reasonable Assurance is the state's proclamation the project(s) will meet Alaska Water Quality Standards and the requirements of the CWA; and retains conditioning authority therein, under the Federal Power Act, to require implementation of erosion and sediment control BMPs to ensure the project(s) will not violate Alaska Water Quality Standards or the CWA.

All flood management projects within the Fairbanks Urbanized Area, regardless of whether or not they result in dredge or fill in wetlands and other water bodies, additionally require a Title 15 Floodplain Permit from the FNSB. The Floodplain Permit is required for any new or substantially improved structure, alteration of a watercourse, or other development within the flood hazard area, Flood Zone A, inundated by the 100-year flood event. The goal of this permitting process is to ensure the cumulative effect of the proposed development would not create an obstruction in the floodplain, increase water surface elevation of the base flood more than one foot at any point within the Fairbanks area, or increase flood heights or velocities.

For smaller flood management projects within the Fairbanks area, such as bank stabilization projects, a multi-agency permitting process has also been established to streamline the permit application process. The permit application is collectively reviewed by the USACE, ADEC, Alaska Department of Fish & Game, Alaska Department of Natural Resources, USFWS, U.S. Department of Agriculture Natural Resources Conservation Service, and FNSB; and subsequently approved by the Alaska Department of Fish & Game in accordance with prevention of stream bank erosion, protection of fish and wildlife habitats, and adherence to Alaska Water Quality Standards and the CWA.

## Staff Responsible for Compliance Activities

The following individuals were responsible for implementing and coordinating the pollution prevention and good housekeeping activities during the 2016 reporting period:

- City of Fairbanks – Jackson Fox, Planning & Permitting Manager
- City of North Pole – Bill Butler, Director of City Services

## MINIMUM CONTROL MEASURES

- UAF – Thadd Williamson, Environmental Health, Safety, & Risk Management Environmental Officer
- ADOT&PF – Katrina LeMieux, Maintenance & Operations Environmental Impact Analyst

### Measureable Goals

The following table details the measureable goals set forth in the co-permittees' April 2014 Storm Water Management Plan, whether or not the goals were achieved during the current reporting period, and lists proposed changes, if any, for the next reporting period.

Measureable Goals	Achieved during current reporting period?	Proposed changes for next reporting period?
Continue current operation and maintenance efforts intended to prevent and reduce pollutant runoff from state and municipal activities for the duration of the permit term	Yes	No
Annually provide employee training on storm water pollution prevention for MS4 operations	Yes	No



# OUTFALL MONITORING

## Outfall Monitoring

The co-permittees are required by the permit to monitor the water discharging from MS4 outfalls to local water bodies at least two times per year – once during the spring when snowmelt runoff is prevalent, and once in late summer when Fairbanks typically receives its largest rain events. The permit does not specify how many outfalls are required to be monitored; however, monitoring efforts are planned to target 12 outfalls per monitoring event, which equates to 10 percent of the total number of outfalls owned and operated by the co-permittees. Additionally, effort is made during every monitoring event to monitor at least one outfall owned by each co-permittee, monitor at least one outfall for each impaired water body (Chena River, Noyes Slough, & Chena Slough), and repeat monitoring locations year to year whenever possible so the data sets can be compared. The parameters monitored include dissolved oxygen, pH, temperature, turbidity, flow, conductivity, total suspended solids, chloride, oil and grease, and BTEX. The co-permittees purchased a new multi-probe field instrument and flow meter in 2014 to assist with the monitoring effort. The permit also requires the co-permittees conduct monthly visual screening for petroleum sheens on Noyes Slough during the summer months.

The co-permittees have been annually monitoring outfalls since 2006, but recently drafted a new Quality Assurance Project Plan (QAPP) in January 2014 to reflect the above monitoring plan in coordination with the requirements of the new permit. A copy of the new QAPP was included in the 2014 Annual Report. During the 2016 reporting period, the co-permittees conducted the following monitoring efforts:

- Spring Outfall Monitoring – 12 outfalls sampled in April
- Monthly Visual Screenings for Petroleum Sheens on Noyes Slough – completed April, May, June, July, and August
- Fall Outfall Monitoring – 9 outfalls sampled in September

Copies of the Outfall Discharge Monitoring Reports for the spring and fall monitoring efforts, as well as a summary of the analytical results, are included in Appendix G.

# EVALUATION OF PROGRAM EFFECTIVENESS

## Evaluation of Program Effectiveness

Each year the co-permittees are required to evaluate the program's effectiveness and address any needed improvements/modifications. Overall, the co-permittees believe the program has been very effective in reducing the discharge of pollutants from the MS4 through implementation of the compliance activities under each minimum control measure. This is evidenced by the water quality data collected by the co-permittees and ADEC since the original permit was issued in 2005. Over time the data has shown improvement in water quality in both the Chena River and Chena Slough – the two primary water bodies in Fairbanks and North Pole to which the MS4 discharges. Both were previously listed as impaired by petroleum products and sediment from urban runoff, and in 2010 the ADEC determined both water bodies met state water quality standards for petroleum products. In December 2013 the ADEC announced the Chena River was also meeting state water quality standards for sediment. The Chena River is therefore expected to be removed from state's impaired waters list entirely.

The program is currently in its 13th year of development and implementation, and most of the needed improvements/modifications identified over time have already been addressed. However, there are a few items the co-permittees believe should be addressed over the next year or two to strengthen the program, as follows:

- Ordinances – between 2007 and 2009 the Cities of Fairbanks and North Pole adopted ordinances on illicit discharge detection and elimination, construction site storm water runoff control, and post construction storm water management. Because it has been over five years since these ordinances have been codified and enforced, a review and potential revision of their content would be beneficial.
- Comprehensive MS4 Map – since the map was originally created in 2008, some unmapped features have been discovered in the field such as inlets and segments of pipe not show on the map. There have also been a number of road construction projects in the Fairbanks area since 2008 that have replaced, moved, and expanded some of the storm drain system components. More updates of the map are needed over the next year or two.
- Snow Disposal Sites – in 2006 the co-permittees evaluated their snow disposal sites for siting, maintenance, and use of BMPs. A new evaluation would be beneficial in the next year or two to help further reduce discharge of pollutants to the MS4 and/or nearby water bodies.

**Public Education & Outreach**

**Public Involvement & Participation**

## **Illicit Discharge Detection & Elimination**

**Construction Site Storm Water Management**

**Post-construction Storm Water Management**



**Pollution Prevention & Good Housekeeping**

### Monitoring Data