FAIRBANKS NORTH STAR BOROUGH STORM WATER MANAGEMENT PLAN

July 2014

Alaska Pollutant Discharge Elimination System Permit No. AKS-053414

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This Storm Water Management Plan presents the implementation strategy to meet the requirements of Alaska Pollutant Discharge Elimination System Permit No. AKS-053414 issued by the Alaska Department of Environmental Conservation to the Fairbanks North Star Borough. By signature below, this plan is hereby approved and certified in accordance with 18 AAC 83.385.

"*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.*"

Name	Title	Signature	Date
for Luke Hopkins	Mayor, Fairbanks North Star Borough		7/28/14
Scott Johnson	Director, Fairbanks North Star Borough, Department of Public Works	Scott Johnson	7/25/14

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STORM WATER PERMIT REQUIREMENTS

INTRODUCTION

This Storm Water Management Plan presents the implementation strategy to meet the requirements of Alaska Pollutant Discharge Elimination System (APDES) Permit No. AKS-053414 issued by the Alaska Department of Environmental Conservation (ADEC) to the Fairbanks North Star Borough (FNSB). Preparation of this plan was required by Section 2.1 of the permit.

PERMIT OVERVIEW

The FNSB was originally issued a 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. Prior to its expiration, the ADEC assumed authority over the permit in October 2009 under the newly created APDES Program. The ADEC 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 FNSB in June 2013 with an effective five-year term beginning August 1, 2013. A copy of the permit is included in Appendix A.

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 FNSB. 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 is included in Appendix B.

AUTHORIZED DISCHARGE

With some limitations, the permit authorizes the FNSB to discharge storm water to waters of the U.S. from all portions of the MS4 owned and operated by the FNSB. 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. See Appendix A for further information on these limitations.

MINIMUM CONTROL MEASURES

Section 3.0 of the permit requires the FNSB meet six minimum control measures for:

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

The following subsections list the individual requirements of each minimum control measure, followed by a description of the FNSB implementation strategy to meet those requirements.

PUBLIC EDUCATION AND OUTREACH

Section 3.1.1 – The permittee 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.

The City of Fairbanks, City of North Pole, University of Alaska Fairbanks, and Alaska Department of Transportation & Public Facilities – Northern Region (Fairbanks permittees) have a separate but similar APDES permit (Fairbanks permit) as the FSNB. The FNSB and the Fairbanks permittees 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.

- Updating and Maintaining an Informative Storm Water Management Program Website
- Providing Educational Presentations on Storm Water to Classes at Local Schools
- Providing Guest Presentations on Storm Water to Local Interest Groups
- Distributing Educational Material at Local Events and by Mail

The website can be viewed at:
http://co.fairbanks.ak.us/PWorks/StormWaterManagementProgram/. It provides an overview of storm water and pollutants of concern in the Fairbanks area, program information for each 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 FNSB, City of Fairbanks, and City of North Pole 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 Fairbanks 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 addition to providing guest presentations on storm water to local interest groups each year, the FNSB and Fairbanks permittees annually give 15 to 20 educational presentations on storm water at local schools. In mid-March each year, an invitation for educational presentations is sent to every elementary and middle school in the FNSB School District. Interested teachers then sign up for a presentation for their class anytime during the month of April. 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, and education materials are also given out.

Section 3.1.2 – At least annually, the permittee must distribute storm water educational materials to target audiences that encourage the public to improve water quality.

Over the years, the FSNB and the Fairbanks permittees have developed a variety of educational brochures, including:

- 10 Ways You can Prevent Storm Water Runoff Pollution (trifold)
- Green Infrastructure: Put Rainwater to Work for You (rack card)
- Water Pollution Solutions for Commercial Landscapers & Lawn Care Professionals (trifold)
- Snow Storage & Disposal Practices for Local Contractors (trifold)
- Erosion & Sediment Control Practices for Small Construction Sites (trifold)

Each of the brochures has a different target audience and is distributed annually at local events and by mail. The three primary events where these brochures are handed out from booths are the Northern Living Home Show in March, Fort Wainwright Earth Day Fair in April, and Chena River Summit in May. The two brochures from the top of list have also been

included in mass mailings to Fairbanks area residents and the three brochures from the bottom of the list are mailed annually to all locally-licensed landscaping contractors, snow removal contractors, and building contractors.

Copies of the brochures are included in Appendix C.

Section 3.1.3 – At least annually, the permittee must prepare and distribute appropriate information that encourages the public to improve water quality to local media outlets.

The FNSB and Fairbanks permittees developed a spring public service announcement (PSA) that is annually disseminated for broadcast to all local television news and radio stations, as well as the local newspaper. The PSA is generally broadcast during the first week of May each year, and reads as follows:

> *The Fairbanks Storm Water Advisory Committee would like to remind you to pay attention to the location of storm drains and ditches during this year's spring cleanup. Storm water can carry harmful pollutants such as excess fertilizers, grass clippings, motor oil, car wash detergents, pet waste, loose soil, and litter to Alaska's rivers, lakes and streams – which are important to fish and wildlife. Your help is needed to keep these pollutants OUT of local storm drains and ditches, and ultimately out of Alaska's waterways. For more information on storm water and how it affects you please visit the Fairbanks Storm Water Management Program website by Googling "Fairbanks Storm Water."*

MEASUREABLE GOALS FOR "PUBLIC EDUCATION & PARTICIPATION"

Permit Term: August 1, 2013 – July 31, 2018

- Maintain the Storm Water Management Program website for the duration of the permit term
- Annually provide a minimum of 15 educational presentations on storm water at local schools
- Annually provide guest presentations on storm water to local interest groups, as requested
- Annually distribute storm water educational brochures at a minimum of two local events
- Annually mail educational brochures to landscaping, snow removal, and building contractors
- Annually issue at least one PSA to local media outlets for broadcast

MINIMUM CONTROL MEASURES

PUBLIC INVOLVEMENT AND PARTICIPATION

Section 3.2.1 – The permittee must comply with applicable state and local public notice requirements when implementing a public involvement/participation program.

The FNSB follows 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.

Section 3.2.2 – The permittee must continue to make the SWMP and all Annual Reports available to the public through the municipal library system, a permittee-maintained website, or other easily accessible location. Public outreach should include location information whenever appropriate.

Copies of both the FNSB's and the Fairbanks permittees' 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/pworks/stormwatermanagementprogram/programinformation.htm.

Section 3.2.3 – The permittee must continue to convene a volunteer citizen committee to advise the Borough on storm water program activities, and accomplish the goals of the SWMP. The permittee may comply with this requirement by both participating in, and promoting Fairbanks North Star Borough (FNSB) citizen participation in, any other locally organized municipal storm water management committee(s). The meeting schedule must be made known to the public, EPA and ADEC through direct mail or e-mail notification, if possible, and/or other locally appropriate means.

In 2003 the FNSB and the Fairbanks permittees 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 Fairbanks permittee 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 10:30am to noon. 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 and submitted to ADEC each year in the FNSB's and Fairbanks permittees' Annual Reports.

MINIMUM CONTROL MEASURES

Section 3.2.4 – The permittee must continue to implement a storm drain stenciling program.

The FNSB and Fairbanks permittees instituted a Storm Drain Stenciling Program in 2006. The purpose of the stenciling program is to bring attention to storm drain 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 a sewer treatment plant, and the stenciling program helps clear up this misconception. The FNSB and Fairbanks 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.

Section 3.2.5 – At least annually, the permittee must continue to host a community Stream Cleanup Day.

The FNSB and Fairbanks permittees, with help from a variety of local organizations, have held an Annual Stream Cleanup Day event every year since 2005. The water body chosen for the event has changed year to year from the Chena River to Noyes Slough to Chena Slough, but more events have focused on Noyes Slough than any other water body. Litter is more persistent in this water body since it has 11 beaver dams that inhibit its flow. Regardless of the water body, each year the event has 30 to 40 volunteers that remove at least 1,000 pounds of litter every single year. Volunteers include residents who live or work along the water bodies, as well as a number of other citizens and community groups that see or hear the advertisements for the event.

Section 3.2.6 – The permittee must maintain the means of providing relevant storm water information to and accepting input from the public; this requirement can be accomplished through providing the public with internet access via a website, a telephone hotline, and/or other appropriate means. The availability of this education and communication tool must be advertised to the public through the permittee's ongoing public education efforts.

The FNSB maintains and hosts the Fairbanks Storm Water Management Program website. As described in previous sections the website can be viewed at: http://co.fairbanks.ak.us/PWorks/StormWaterManagementProgram/. It provides an overview of storm water and pollutants of concern in the Fairbanks area, program information for each 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 FNSB, City of Fairbanks, and City of North Pole 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

MINIMUM CONTROL MEASURES

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 Fairbanks 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. The website address is printed on educational brochures distributed at local events and through the mail.

MEASUREABLE GOALS FOR "PUBLIC INVOLVEMENT & PARTICIPATION"

Permit Term: August 1, 2013 – July 31, 2018

- Continue attending monthly FSWAC meetings for the duration of the permit term
- Annually stencil FNSB storm drain inlets as needed
- Annually host a Stream Cleanup Day event
- Maintain the Storm Water Management Program website for the duration of the permit term

ILLICIT DISCHARGE DETECTION AND ELIMINATION

Section 3.3.1 – The permittee shall review and revise, as necessary, the program to detect and eliminate illicit discharges. The permittee must, as part of this activity, maintain an information management system to track illicit discharges.

FNSB has 107 Road Service Areas. Each area was established through an election process by area specific residents to provide road powers to FNSB for area specific roads. The FNSB Rural Services Division supports and provides training to the Road Service Area Commissioners, who were granted road maintenance responsibilities through the aforementioned election process. Fifty-one of these service areas are located within the Fairbanks Urbanized Area. The storm water conveyance systems within these 51 service areas make up the FNSB MS4.

Road Service Area Commissioners are asked to notify the Department of Public Works if an illicit discharge is identified with the understanding that identifying and eliminating illicit discharges can lower yearly maintenance costs. Additionally, the Storm Water Management Program Website has a link to allow residents to send a message to Public Works on potential illicit discharges, specifically citing dirty or oily water and foam or dumping activities. When an illicit discharge is reported, it is logged and investigated. A plan for elimination is developed and includes consideration of jurisdiction, ownership, and enforcement provisions.

MINIMUM CONTROL MEASURES

Section 3.3.2 – No later than three years from the effective date of this permit, the permittee must review and update an inventory and map of industrial facilities and activities that are covered by the 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.

The FNSB does not currently have an inventory or map of industrial facilities and activities that are covered by the APDES MSGP in the Fairbanks area, but will ensure the inventory and map are developed no later than three years from the effective date of the permit.

Section 3.3.3 – No later than four years from the effective date of this permit, the permittee must review the effectiveness and revise, as necessary, ordinances that effectively prohibit non-storm water discharges into their MS4s. The permittee must implement appropriate enforcement procedures and actions, including enforcement escalation procedures for recalcitrant or repeat offenders.

On June 12, 2008, FNSB adopted Ordinance 2008-22 establishing Title 21 of the FNSB Code of Ordinances. Chapter 21.30 prohibits illicit discharges to the MS4 through storm water, direct dumping, or snow clearance operations and requires immediate notification upon identifying a violation. The FNSB illicit discharge enforcement policy is regulated in Title 1 by the fine schedule. The schedule was revised as part of Ordinance 2008-22 to include fines on an escalation basis for illicit discharges and failure to notify authorities of illicit discharges. The FNSB will review and revise these ordinances, as necessary, no later than 4 years from the effective date of the permit.

Section 3.3.4 – The permittee must prohibit any of the non-storm water flows listed in Part 1.4.1.3 through ordinance if such flows are identified by DEC or the permittee as a source of pollutants to the MS4. The permittee must document any existing local controls or conditions placed on such discharges.

The existing Illicit Discharge Ordinances of the FNSB address non-storm water flows within their "Prohibited discharges or acts" subsection. Certain non-storm water flows (i.e. water line flushing, landscape irrigation, decholorinated swimming pool discharges, firefighting activities, etc.) listed 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

Section 3.3.5 – Annually the permittee must inform users of the MS4 and the general public of hazards associated with illegal discharges and improper disposal of waste.

As discussed under "Public Education & Outreach" and "Public Involvement & Participation," efforts are made annually to inform the public about illicit discharges and improper disposal of waste. Effort include (1) maintaining the Fairbanks Storm Water Management Program website, which includes procedure for reporting illicit discharges to the Fairbanks 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, snow removal, and building contractors which in part apprises them of the local illicit discharge ordinances.

Section 3.3.6 No later than three years from the effective date of this permit, the permittee 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.

In 2008 the Fairbanks permittees and FNSB combined their individual MS4 maps into a single comprehensive map of all storm water conveyance systems within the Fairbanks Urbanized Area. The map currently resides within the FNSB's Geographical Information System database, and can be accessed by the public at:
http://www.co.fairbanks.ak.us/pworks/stormwatermanagementprogram/stormdrainmap.htm.
The map contains all jurisdictional boundaries, storm drain inlets and outfalls, outfall receiving waters, and FNSB and Fairbanks permittees owned and operated facilities, including snow disposal sites. Since 2008, however, 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 conveyance system components. The Fairbanks permittees and FNSB will work together over the next couple years to update the map with information on the unmapped and new features. Effort will also be made to map the privately operated snow disposal sites, which are not currently shown on the map.

MINIMUM CONTROL MEASURES

Section 3.3.7 – The permittee 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 permittee's 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 permittee 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.

The FNSB began conducting dry-weather screening of outfalls in 2008. The FNSB screened all known MS4 outfalls in 2008, 2010, 2011, and 2012. FNSB has not detected flow at any of the outfalls therefore; testing for pollutant types has not been conducted. FNSB will monitor the known outfalls prior to the end of the permit's term in 2018.

MEASUREABLE GOALS FOR "ILLICIT DISCHARGE DETECTION & ELIMINATION"

Permit Term: August 1, 2013 – July 31, 2018

- Develop an inventory and map of MSGP-covered facilities and activities by August 1, 2016
- Review and revise, as necessary, the illicit Discharge Ordinances by August 1, 2017
- Review and update the comprehensive MS4 map by August 1, 2016
- Screen 100% of the outfalls owned and operated by the FNSB by August 1, 2018

CONSTRUCTION SITE STORM WATER RUNOFF CONTROL

Section 3.4.1 – The permittee must annually review and revise the development, implementation, and enforcement of its existing program that reduces pollutants in any storm water runoff to the MS4 from construction activities 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 permittee must discuss revisions, planned improvements, and schedule in the Annual Report.

The FNSB's existing efforts to control construction site storm water runoff include a plan review and site inspection program, published local BMP design guide, and biennial training/workshops for local developers, engineers, and contractors. The FNSB will annually discuss revisions, planned improvements, and schedule for these efforts in the Annual Report to ADEC.

MINIMUM CONTROL MEASURES

Section 3.4.2 – If DEC 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 permittee is not required to develop, implement, or enforce the program to reduce pollutant discharges from that particular site.

Small construction activities as defined by ADEC include projects that result in a ground disturbance of greater than or equal to one acre but less than five acres. The ADEC may waive the Alaska CGP requirements for these projects where:

- The "R" value, or rainfall erosivity factor, is less than five during the period of construction activity [40 CFR §122.26(b)(15)(i)(A)]; and/or
- Storm water controls are not needed based on a Total Daily Maximum Load (TMDL) approved or established by the U.S. EPA that addresses the pollutant(s) of concern or, for non-impaired waters that do not require TMDLs, an equivalent analysis that determines allocations for small construction sites for the pollutant(s) of concern or that determines that such allocations are not needed to protect water quality based on consideration of existing in-stream concentrations, expected growth in pollutant contributions from all sources, and a margin of safety [40 CFR §122.26(b)(15)(i)(B)].

Section 3.4.3 – The permittee 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.

On June 12, 2008 FNSB adopted Ordinance 2008-22 establishing Title 21 of the FNSB Code of Ordinances. Chapter 21.40 addresses construction site storm water runoff control by establishing a permit process for all regulated construction sites. Through this process, FNSB will review storm water management plans and conduct site inspections for each site. Regulated construction sites may not operate prior to issuance of a FNSB permit and must follow appropriate permit closure procedures prior to facility occupancy. Copies of the ordinances are included in Appendix D. The FNSB will review and revise these ordinances, as necessary, before the end the new permit term.

Section 3.4.4 – The permittee 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.

The FNSB, in coordination with the City of Fairbanks and the City of North Pole, has prepared a BMP Design Guide. 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 that cover 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 for download. A copy of the guide and handout are included in Appendix E. In addition to reviewing and revising the aforementioned ordinances, the FNSB will review and revise the guide, as necessary, before the end the new permit term.

Section 3.4.5 – The permittee 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.

The site development plan review and inspection program is part of FNSB Planning and Construction Permitting, which directs all contractors/owners to submit storm water plans in accordance with the requirements of the ordinances and all applicable review fees before a permit will be issued. The program also apprises contractors/owners their construction site(s) will be inspected at least once per year for proper erosion and sediment controls. In the event that any person holding a permit pursuant to these ordinances violates the terms of the permit, the FNSB may issue a notice of violation, suspend, or revoke the permit.

The FNSB maintains a log of public comments related to storm water. Public comments can be in the form of a question, concern, or general observation and can be provided in person, via telephone, or through email to the Department of Public Works. Phone calls or email received by other departments are forward directly to Public Works by the recipients. Once Public Works receives a comment, the comment is logged and if necessary, investigated. Jurisdictional authority is established and remedies are recommended or completed by Public Works as appropriate.

Section 3.4.6 – The permittee 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 permittee shall inspect all construction activities as required in Part 3.4.1 in its jurisdictions for appropriate erosion, sediment, and waste control at least once per year.

Pursuant to the requirements set forth in the Construction Site Storm Water Runoff Control Ordinances, every permitted construction site that results in a ground disturbance greater than

or equal to one acre will be inspected at least once per year for proper erosion and sediment controls. Each inspection involves 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.

Section 3.4.7 – The permittee 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.

The Cities of Fairbanks and North Pole, FNSB, and ADEC conducted a joint three-hour storm water workshop in April 2010 to educate local developers, engineers, and contractors about the new 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 2015 and April 2017 to meet the biennial training session requirement of the new permit.

MEASUREABLE GOALS FOR "CONSTRUCTION SITE STORM WATER RUNOFF CONTROL"

Permit Term: August 1, 2013 – July 31, 2018

- Review and revise, as necessary, the Construction Site Storm Water Runoff Control Ordinances by August 1, 2018
- Review and revise, as necessary, the Storm Water BMP Design Guide by August 1, 2018
- Conduct a training/workshop for local developers, engineers, and contractors in April 2015 and April 2017

POST CONSTRUCTION STORM WATER MANAGEMENT

Section 3.5.1 – The permittee 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.

The FNSB's existing efforts to manage post-construction storm water include a plan review program for permanent storm water controls for sites disturbing greater than or equal to one acre, published BMP design guide, green infrastructure application guide, and biennial training/workshops for local developers, engineers, and contractors. All of these efforts are described in greater detail in the following subsections.

MINIMUM CONTROL MEASURES

Section 3.5.2 – The permittee 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. The permittee must implement appropriate enforcement procedures and actions, including enforcement escalation procedures for recalcitrant or repeat offenders.

On July 16, 2009 FNSB adopted Ordinance 2009-27 adding a new chapter to FNSB Code of Ordinances Title 21. Chapter 21.50 addresses post-construction storm water management by establishing a submittal process for Permanent Storm Water Control Plans (PSWCP) for regulated sites. The FNSB post-construction storm water management policy is regulated in Title 1 by the fine schedule. The FNSB will review and revise these ordinances, as necessary, before the end of the new permit term.

Section 3.5.3 – The permittee 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.

As stated previously, the FNSB published the Storm Water BMP Design Guide. 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 copy of the guide is included in Appendix E. The FNSB will review and revise the guide, as necessary, before the end the new permit term.

Section 3.5.4 – The permittee must ensure proper long-term operation and maintenance of post-construction BMPs.

In accordance with the requirements set forth in FNSB Post-Construction Storm Water Management Ordinances, developers are required to submit a Permanent Storm Water Control Plan (PSWCP) for review and approval prior to being granted a Site Development 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. Site development permits cannot be issued for construction on regulated sites prior to acceptance of a PSWCP and no person or entity may occupy, utilize, or operate a constructed facility or site without submittal of an as-built plan and execution of a maintenance agreement.

MINIMUM CONTROL MEASURES

Section 3.5.5 – The permittee must continue to conduct biennial training for local construction, design, and engineering audiences.

As stated previously, the Cities of Fairbanks and North Pole, FNSB, and ADEC conducted a joint three-hour storm water workshop in April 2010 to educate local developers, engineers, and contractors about the new 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 2015 and April 2017 to meet the biennial training session requirement of the new permit.

Section 3.5.6 – Green Infrastructure/Low Impact Development (LID)
Section 3.5.6.1 – The permittee shall incorporate into their education materials information about green infrastructure strategies, such as green roofs, rain gardens, rain barrels, bioswales, permeable piping, dry wells, and permeable pavement that mimic natural processes and direct storm water to areas where it can be infiltrated, evapotranspirated, or reused. The information must discuss the benefits and costs of such strategies and provide guidance to the public on how to implement them.

The FNSB participates in the Fairbanks Area Green Infrastructure group that developed the Green Infrastructure Resource Guide for Fairbanks, AK. This guide is available on the Fairbanks Storm Water Management Program website which is hosted by FNSB.

Section 3.5.6.2 – The permittee must develop and implement strategies, which include a combination of structural and/or non-structural BMP's appropriate for projects within their community for all new development and redevelopment that will reduce the discharge of pollutants and the volume and velocity of storm water flow to the maximum extent practical.

The FNSB has been implementing BMP's that reduce the discharge of pollutants, and the volume and velocity of storm water for several years in projects. Many Borough facilities utilize dry wells to dispose of roof runoff. The Borough Solid Waste Facility employs infiltration planters, bioswales, dry wells, and detention basins to manage storm water. FNSB projects will continue to be evaluated for implementing these types of BMP's.

MEASUREABLE GOALS FOR "POST-CONSTRUCTION STORM WATER MANAGEMENT"

Permit Term: August 1, 2013 – July 31, 2018

- Review and revise, as necessary, the Post-construction Storm Water Management Ordinances by August 1, 2018
- Review and revise, as necessary, the Storm Water BMP Design Guide by August 1, 2018
- Conduct a training/workshop for local developers, engineers, and contractors in April 2015 and April 2017
- Review and revise, as necessary, strategies that reduce the discharge of pollutants for new development and redevelopment by August 1, 2018

MINIMUM CONTROL MEASURES

POLLUTION PREVENTION & GOOD HOUSEKEEPING

Section 3.6.1 – The permittee must continue to maintain and implement an operation and maintenance program intended to prevent or reduce pollutant runoff from municipal activities.

As previously noted, the FNSB MS4 is defined as the storm drain pipes, ditches, and other conveyances located within the 51 Road Service Areas in the Fairbanks Urbanized Area. The MS4 is maintained by various Road Service Area contractors. The FNSB Rural Services Division has developed a set of standard specifications for maintenance. The specifications include standards for replacing or repairing damaged culverts, furnishing and placing ditch lining material, cleaning and restoring the capacity of the ditches, cleaning culverts and catch basins, thawing frozen culverts and catch basins, and snow removal. Each Road Service Area is responsible for maintenance schedules and inspection of controls.

In addition, appropriate controls for reducing the discharge of pollutants are addressed on a per-department or division basis. The following table identifies specific controls being utilized.

Department/Division	Operation	Control
Transportation	Fueling station	• Indoor, concrete lined facility w/ contained drainage. • Triennial inspection. • Shut-off valves clearly marked and visible. • Spill response protocols in place.
	Vehicle maintenance	• Scheduled inspections. • Indoor facility w/ designated parts cleaning area and contained drainage. • Fluid disposal at HHW facility or by certified vendor. • Spill response protocols in place.
	Vehicle washing	• Self-contained, automated drive-through facility. • Wash water is recycled.
Parks and Recreation	Stockpiles	• Aggregate stored in bins. • Compost/soil stored away from water bodies.
	Chemicals	• Pesticides are not used. • Fertilizers stored indoors; application records kept. • Herbicides stored in secured isolated containers; use limited to ball facilities (under bleachers/at backstops)
	Watering	• Sprinklers equipped with automatic shut-off. • Winterization program in place.
	Trash management	• Scheduled volume checks w/ removal as appropriate. • Consolidated at central facility for disposal.
	Tool/equipment maintenance and storage	• Indoor facilities with contained drainage.
	Snow management	• Clearing conducted w/in 48 to 72 hrs of snowfall. • All snow kept on site. • Recreational snow ramps into sloughs/river utilize clean snow inspected and approved by the USACE.

MINIMUM CONTROL MEASURES

Department/Division	Operation	Control
Public Works	Building and road construction	• All project managers and engineers are AK-CESCLs. • Standard specifications require ESCPs for projects under 1 acre/CGP compliance for projects over 1 acre. • All SWPPPs must be developed by PE or CPESC. • All inspections must be performed by PE, CPESC, or AK-CESCL.
	Permitting	• All right-of-way and driveway permits require the use of appropriate BMPs.
Public Works - Facilities Maintenance	Materials storage	• Materials stored in drums or gallon size containers with clear labels in indoor facilities. • All floor drains connected to sanitary sewer system. • MSDSs for all substances kept on file. • Spill response protocols in place.
	Pool drainage	• All pools drained to the sanitary sewer system.
Public Works - Solid Waste	Transfer sites	• Certified contractor maintains general site. • Certified contractor empties/transports general waste. • FNSB staff maintains re-use areas/all HHW areas. • FNSB staff transfers all HHW materials.
	Landfill facility	• Operates under the MSGP.

Section 3.6.2 – Annually, the permittee must continue appropriate training for municipal personnel related to optimum maintenance practices for the protection of water quality.

The FNSB conducts 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. Annually the FNSB will gather up the appropriate public works/transportation/parks and recreation employees and have them watch the DVDs to meet the annual employee training requirements of the permit. Training acknowledgement forms for each of the FNSB respective departments will be submitted to ADEC each year in the Annual Reports.

Section 3.6.3 – The permittee 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.

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, U.S. Fish & Wildlife Service, 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 steam bank erosion, protection of fish and wildlife habitats, and adherence to Alaska Water Quality Standards and the CWA.

MEASUREABLE GOALS FOR "POLLUTION PREVENTION & GOOD HOUSEKEEPING"

Permit Term: August 1, 2013 – July 31, 2018

- Continue current operation and maintenance efforts intended to prevent and reduce pollutant runoff from municipal activities for the duration of the permit term
- Annually provide employee training on storm water pollution prevention for MS4 operations

MONITORING, EVALUATION & REPORTING

MONITORING AND EVALUATION OF OVERALL PROGRAM EFFECTIVENESS

The FNSB does not conduct water quality monitoring. Each year the FNSB will evaluate their compliance with the permit requirements and progress toward achieving the measurable goals for each of the minimum control measures. Based on the results of the evaluation the FNSB will then develop and implement a plan to address needed improvements/modifications, and document that plan in the Annual Reports to ADEC.

If there becomes a need for water quality monitoring, the Fairbanks Permittees and the FNSB drafted a Quality Assurance Project Plan (QAPP) in January 2014 to meet the requirements of the permit. A copy of the QAPP is included in Appendix F.

ANNUAL REPORTS

By February 1 of each year, the FNSB will submit an Annual Report to ADEC detailing the activities undertaken to comply with the requirements of the permit. The Annual Reports will additionally be made available to the public through the Fairbanks Storm Water Management Program website at:
http://www.co.fairbanks.ak.us/pworks/stormwatermanagementprogram/programinformation.htm.

RECORD KEEPING

The FNSB will retain records and copies of all information used in the development and implementation of the Storm Water Management Program (including all permit application materials, monitoring data, calibration/maintenance records, and reports required by the permit) for a period of at least five years from the date of the application, sample, measurement, or report.

Appendix A
APDES Permit No. AKS-053414

ALASKA POLLUTANT DISCHARGE ELIMINATION SYSTEM

PERMIT FOR STORM WATER DISCHARGE FROM SMALL MUNICIPAL SEPARATE STORM SEWER SYSTEMS

FINAL - PERMIT

Permit Number: AKS-053414

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

In compliance with the provisions of the Clean Water Act (CWA), 33 U.S.C. §1251 *et seq.*, as amended by the Water Quality Act of 1987, P.L. 100-4; this permit is issued under provisions of Alaska Statutes 46.03; the Alaska Administrative Code (AAC) as amended; and other State laws and regulations. The

Fairbanks North Star Borough
(hereinafter "permittee")

is authorized to discharge from all municipal separate storm sewer system (MS4) outfalls existing as of the effective date of this permit to receiving waters, which include Beaver Springs, Chena River, Chena Slough, Noyes Slough, and other associated waters of the United States within the Fairbanks Urbanized Area in accordance with the conditions and requirements set forth herein.

This permit shall become effective **August 1, 2013**.

This permit and the authorization to discharge shall expire after, **July 31, 2018**.

The permittee must reapply for permit reissuance on or before **February 1, 2018**, 180 days before the expiration of this permit if the permittee intends to continue operation and discharges from the MS4 beyond the term of this permit.

Wade Strickland	June 10, 2013
Signature	Date
Wade Strickland	Program Manager
Printed Name	Title

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SCHEDULE OF SUBMISSIONS

The Schedule of Submissions summarizes some of the required submissions and activities the permittee must complete and submit to the Alaska Department of Environmental Conservation (the Department or DEC) during the term of this permit. The permittee is responsible for all submissions and activities even if they are not summarized below.

Table 1: Schedule of Submissions – Storm Water Management Program

Part of Permit	Storm Water Management Program Component	Compliance Date
	Storm Water Management Program Requirements (40 CFR §122.34)	
2.0	Develop, implement, and enforce a Storm Water Management Program (SWMP) document as implemented and included in the Annual Report.	Within one year of the effective date of this permit, annual revisions thereafter.
	Public Education and Outreach (40 CFR §122.34(b)(1))	
3.1	Continue public education program for local communities. (3.1.1)	Ongoing, with documented outreach at least once per year.
	Distribute storm water educational materials to target audiences. (3.1.2)	Ongoing, with documented outreach at least once per year.
	Prepare and distribute outreach material to local print and broadcast media. (3.1.3)	Ongoing, with documented outreach at least once per year.
	Document the SWMP information related to the control measure in the Annual Report. (3.1.4)	Annually.
	Public Involvement and Participation (40 CFR §122.34(b)(2))	
3.2	Convene a Storm Water Advisory Committee to coordinate and advise SWMP activities on a regularly scheduled basis (3.2.3)	Ongoing.
	Continue to implement a storm drain stenciling program. (3.2.4)	Ongoing.
	Organize and host one "Stream Clean Up Day" event. (3.2.5)	Annually.
	Maintain the means of providing relevant storm water information to the public. (3.2.6)	Ongoing.
	Document the SWMP information related to the control measure in the Annual Report. (3.2.7)	Annually.
	Illicit Discharge Detection and Elimination (40 CFR §122.34 (b)(3))	
3.3	Update program to detect and address illicit discharges to the MS4(s) in SWMP documentation. Describe system for tracking information on illicit discharge discovery and response in SWMP documentation. (3.3.1)	Within two years of the effective date of this permit
	Review and update inventory and map of industrial facilities and activities. (3.3.2)	Within three years of the effective date of this permit.
	Review effectiveness of ordinance or other control measure to prohibit illicit discharges to the MS4(s), prohibit any specific non-storm water discharge, if necessary. (3.3.3&3.3.4)	Within four years of the effective date of this permit.
	Inform the public, et al, of the hazards associated with illegal discharges and improper waste disposal to the MS4. (3.3.5)	Annual public outreach.
	Update a comprehensive storm sewer map. (3.3.6)	Within three years of the effective date of this permit.
	Complete dry weather field screening for non-storm water from 100% of all outfalls (3.3.7)	Within five years of the effective date of this permit.
	Document the SWMP information related to the control measure in the Annual Report. (3.3.8)	Annually.

Table 1: Schedule of Submissions – Storm Water Management Program

Part of Permit	Storm Water Management Program Component	Compliance Date
Construction Site Storm Water Runoff (40 CFR §122.34(b)(4))		
3.4	Review and revise construction site runoff control program for sites disturbing one or more acres of land. (3.4.1)	Ongoing.
	Maintain an ordinance or other control measure to require construction site operators to practice erosion, sediment and waste control. (3.4.3)	
	Publish and distribute written requirements for construction site best management practices. (3.4.4)	
	Review and revise procedures for reviewing site plans and receiving public comment. (3.4.5)	
	Review and revise procedures for site inspection and enforcement. (3.4.6)	
	Conduct training for contractors/developers/engineers on the construction ordinance(s) and BMP requirements. (Part 3.4.7)	
	Document SWMP information related to the control measure in the Annual Report. (3.4.8)	Annually.
Post-Construction Storm Water Management (40 CFR §122.34(b)(5))		
3.5	Review and revise a program to address post-construction runoff from new development and redevelopment. (3.5.1)	Within two years of the effective date of this permit.
	Conduct a workshop for developers and engineers. (3.5.5)	Biennially.
	Document SWMP information related to the control measure in the Annual Report.(3.5.7)	Annually.
Pollution Prevention/Good Housekeeping (40 CFR §122.34(b)(6))		
3.6	Implement an operation and maintenance program to prevent pollutant runoff from municipal activities. (3.6.1)	Ongoing.
	Maintain appropriate training for municipal personnel provided annually after initial offering. (3.6.2),	Annually.
	Evaluate other municipal activities/flood management projects for potential storm water impacts on water quality, make changes if necessary (3.6.3)	Ongoing.
	Document SWMP information related to the control measure in the Annual Report. (3.6.4)	Annually.
MONITORING, EVALUATION, RECORD KEEPING, AND REPORTING REQUIREMENTS		
4.1.2	Provide monitoring results with the Annual Report.	Annually.
4.2	Conduct a SWMP overall program effectiveness assessment and document in the Annual Report.	Annually.
4.3	Submit an Annual Report comprised of a summary annual report and a detailed annual report.	Annually.

1.0 APPLICABLITY

1.1 Introduction

The permittee was issued a Phase II National Pollutant Discharge Elimination System (NPDES) permit #: AKS-053414 from the U.S. Environmental Protection Agency (EPA) on June 1, 2005. Since this inception date the permittee is authorized to discharge storm water to Beaver Springs, Chena River, Chena Slough, Noyes Slough, and other associated waters of the United States as defined in Part 1.2 *Permit Coverage Area* from Part 1.3 *Discharges Authorized Under this Permit*.

1.2 Permit Coverage Area

This permit covers all areas within the Fairbanks Urbanized Area served by the MS4 owned or operated by the permittee.

1.3 Discharges Authorized Under this Permit

During the effective term of this permit, the permittee is authorized to discharge storm water to waters of the United States from all portions of the MS4 located within the Fairbanks Urbanized Area which is owned or operated by the permittee subject to the conditions set forth herein. This permit also authorizes the discharge of storm water commingled with flows contributed by process wastewater, non-process wastewater, and storm water associated with industrial activity, provided that the storm water in these flows is only commingled with those categories of allowable non-storm water discharges set forth in Part 1.4 of this permit.

1.4 Limitations on Permit Coverage

1.4.1 **Non-Storm Water Discharges**. The permittee is not authorized to discharge non–storm water, except where such discharges satisfy one of the following three conditions:

1.4.1.1 The non-storm water discharges are in compliance with a separate Alaska Pollution Discharge Elimination System (APDES) permit; or

1.4.1.2 The non–storm water discharges result from a spill and:

1.4.1.2.1 Are the result of an unforeseen weather event where reasonable and prudent measures have been taken to minimize the impact of such discharge; or

1.4.1.2.2 Consist of emergency discharges required to prevent imminent threat to human health or severe property damage, provided that reasonable and prudent measures have been taken to minimize the impact of such discharges; or

1.4.1.3 The non-storm water discharges satisfy each of the following two conditions:

1.4.1.3.1 The discharges consist of uncontaminated water line flushing, landscape irrigation, diverted stream flows, rising ground waters, uncontaminated ground water infiltration (as defined at 40 CFR§ 35.2005(20)), uncontaminated pumped ground water, discharges from potable water sources, foundation drains, air conditioning condensate, irrigation water, springs, water from crawlspace pumps, footing drains, lawn watering, individual residential car washing, flows from riparian habitats and wetlands, dechlorinated swimming pool discharges, street wash water, residential building wash waters without detergents, and flows from emergency firefighting activities; and

1.4.1.3.2 The discharges are not sources of pollution to waters of the United States. A discharge is considered a source of pollution to waters of the United States if it:

1.4.1.3.2.1 Causes excessive foam in the receiving waters or contains floating and/or settleable solids in amounts sufficient to make the water unsafe or unfit for providing water supply or other beneficial uses;

1.4.1.3.2.2 Contains oil or other substances in amounts sufficient to create a visible film or sheen on the receiving waters;

1.4.1.3.2.3 Contains substances that are in amounts sufficient to be unsightly or deleterious or which produce color, odor, or other conditions to such a degree as to create a nuisance;

1.4.1.3.2.4 Contains any substance or combination of substances in amounts sufficient to be acutely toxic to, or to otherwise severely injure or kill aquatic life, other animals, plants or humans; or

1.4.1.3.2.5 Contains any substances or combination of substances that will cause or contribute to the growth of aquatic plants or algae to such degree as to create a nuisance, be unsightly, or otherwise impair the designated use.

1.4.2 **Discharges Threatening Water Quality**. The permittee is not authorized to discharge storm water that DEC determines will cause, or have the reasonable potential to cause or contribute to, violations of water quality standards (WQS, 18 AAC 70).

1.4.3 **Snow Disposal to Receiving Waters.**

1.4.3.1 The permittee is not authorized to dispose of snow directly to waters of the United States or directly to the MS4(s). Discharges from permittee's snow disposal and snow management practices are authorized under this permit when such practices are operated using appropriate BMPs required in Part 3.6. 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 maximum extent practicable so as to avoid excursions above WQS.

1.4.4 **Discharges to Water Quality-Impaired Receiving Waters**

1.4.4.1 For the purposes of this Permit, the CWA §303(d) listed water bodies are those cited in the Final DEC 2010 Integrated Report - the Noyes Slough, Chena River, and Chena Slough. "Pollutant(s) of concern" refer to the pollutant(s) identified as causing or contributing to the water quality impairment. Pollutants of concern for the purposes of this Permit are: residues (in the form of debris), petroleum hydrocarbons, oil and grease, and sediment.

1.4.4.2 The permittee must conduct a storm water discharge monitoring program as required in Part 4.0.

1.4.4.3 The permittee's SWMP documentation must include a description of how the activities of each minimum control measure in Part 3.0 are implemented by the permittee to control the discharge of pollutants of concern and ensure that the MS4 discharges will not cause or contribute to an excursion above applicable WQS. This discussion must specifically identify how the permittee evaluates and measures the effectiveness of the SWMP to control the pollutants of concern. For those activities identified in Part 3.0 requiring multiple years to develop and implement, the permittee must provide interim updates on progress to date. Consistent with Part 2.1, the permittee must update and submit this description of the SWMP implementation to DEC as part of the Annual Report required in Part 4.2, and must update its description annually in subsequent Annual Reports.

2.0 STORM WATER MANAGEMENT PROGRAM REQUIREMENTS

2.1 Storm Water Management Program Document

2.1.1 No later than one year from the effective date of the permit, the permittee shall review, and revise as necessary its written documentation of the SWMP as implemented within its jurisdiction. The SWMP documentation must be organized according to the program components in Parts 3.0 and 4.0 of this permit. At a minimum, the permittee must include the following information:

2.1.1.1 Ordinances or other regulatory mechanisms, providing the legal authority necessary to implement and enforce the requirements of this permit.

2.1.1.2 A written outline describing how the permittee will implement the requirements of Parts 3.0 and 4.0 of this permit.

2.1.2 The permittee must track the annual number of inspections, official enforcement actions, and types of public education activities and outcomes, as stipulated by the respective program requirement. Information summarizing these activities during the previous reporting period must be included in the Annual Report.

2.1.3 The SWMP document must be reviewed and updated at least annually and submitted with the Annual Report.

2.2 General Requirements

2.2.1 **Reduce pollutants to the maximum extent practicable**. The permittee must implement and enforce the SWMP designed to reduce the discharge of pollutants from the MS4 to the maximum extent practicable to protect water quality in the receiving waters. The SWMP must include BMPs, control techniques, system design, engineering methods, and other provisions appropriate to control and minimize the discharge of pollutants from the MS4.

2.2.2 The SWMP developed by the permittee and submitted to DEC covers the term of this permit and must be updated as necessary or as required by the Department to ensure compliance with Section 402(p)(3)(B) of the CWA, 33 U.S.C. §1342(p)(3)(B). Modifications to the SWMP must be made in accordance with Part 2.3 of this permit. The SWMP submitted to DEC by the permittee, and all approved updates made in accordance with Part 2.3 of this permit, are hereby incorporated by reference. All components and requirements of the SWMP are enforceable as conditions of this permit.

2.2.3 The permittee must submit any plan revisions or documents which require review and approval by DEC to the address listed in Part 4.5, and in accordance with Parts 2.3 and/or 4.0 of this permit. Within 60 days of receipt of such plans or documents, DEC shall have the right to disapprove or require modifications to the plans or documents for approval.

2.2.4 **SWMP Elements**. The SWMP actions and activities are outlined through the minimum control measures in Part 3.0 and the assessment/monitoring requirements described in Part 4.1. The permittee must implement a SWMP that provides:

2.2.4.1 BMPs that are selected, implemented, maintained and updated to ensure that storm water discharges do not cause or contribute to an exceedance of an applicable numeric or narrative WQS; and

2.2.4.2 Measurable goals, including interim milestones, for each BMP.

2.2.5 **Shared Implementation with Outside Entities**. Implementation of one or more of the minimum measures may be shared with another entity who is not subject to this permit, or the entity may fully take over the measure. The permittee may rely on another entity only if:

2.2.5.1 The other entity, in fact, implements the control measure;

2.2.5.2 The control measure, or component of that measure, is at least as stringent as the corresponding permit requirement; and

2.2.5.3 The other entity agrees to implement the control measure on the permittee's behalf. A legally binding written acceptance of this obligation is required. The permittee must maintain this obligation as part of the SWMP description. If the other entity agrees to report on the minimum measure, the permittee must supply the other entity with the reporting requirements in Part 4.3 of this permit. The permittee remains responsible for compliance with the permit obligations.

2.3 Reviewing and Updating the Storm Water Management Program

2.3.1 The permittee must annually review the SWMP as part of the preparation of the Annual Report required under Part 4.3.

2.3.2 The permittee may request changes to any SWMP action or activity specified in this permit according to the following procedures:

2.3.2.1 Changes to delete or replace an action or activity specifically identified in this permit with an alternate action or activity may be requested at any time. Modification requests to DEC must include:

2.3.2.1.1 An analysis of why the original action or activity is ineffective, infeasible, or cost prohibitive;

2.3.2.1.2 Expectations on the effectiveness of the replacement action or activity; and

2.3.2.1.3 An analysis of why the replacement action or activity is expected to better achieve the SWMP requirements.

2.3.2.2 Change requests or notifications must be made in writing and signed by the permittee in accordance with Appendix A, Part 1.12.

2.3.2.3 Documentation of the actions or activities as required by this permit must be submitted to DEC upon request. DEC may review and subsequently notify the permittee that changes to the SWMP are necessary to:

2.3.2.3.1 Address discharges from the MS4 that are causing or contributing to water quality impacts;

2.3.2.3.2 Include more stringent requirements necessary to comply with new federal or state statutory or regulatory requirements;

2.3.2.3.3 Include other conditions deemed necessary by DEC to comply with water quality standards, and/or other goals and requirements of the CWA; or

2.3.2.3.4 Address the SWMP requirements of the permit, if DEC determines that the permittee's current SWMP does not meet permit requirements.

2.3.2.4 If DEC notifies the permittee that changes are necessary, the notification will offer the permittee an opportunity to propose alternative program changes to meet the objectives of the requested modification. Following this opportunity, the permittee must implement any required changes according to the schedule set by DEC.

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

2.4.1 Transfer of ownership, operational authority, or responsibility for SWMP implementation requires submittal of all corrected documentation to DEC for a 60-day review before implementation of transfer.

2.4.2 The permittee must implement the SWMP in all new areas added or transferred to the permittee's MS4 (or for which the permittee becomes responsible for implementation of storm water quality controls) as expeditiously as practicable, but no later than one year from the date upon which the new areas are added. Such additions and schedules for implementation must be documented in the next Annual Report following the transfer.

2.5 Storm Water Management Program Resources

The permittee must continue to provide adequate finances, staff, equipment, and other support capabilities to implement the SWMP actions and activities outlined in this permit.

3.0 MINIMUM CONTROL MEASURES

The six minimum control measures that must be included in the SWMP are:

3.1 Public Education and Outreach

3.1.1 The permittee 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.

3.1.2 At least annually, the permittee must distribute storm water educational materials to target audiences that encourages the public to improve water quality.

3.1.3 At least annually, the permittee must prepare and distribute appropriate information that encourages the public to improve water quality to local media outlets.

3.1.4 The permittee must document the following information related to public education and outreach in each Annual Report:

3.1.4.1 Describe the public education program and outreach activities accomplished during the previous calendar year, including at least one copy of each educational material distributed;

3.1.4.2 Describe the methods and frequency of disseminating information;

3.1.4.3 Describe the target audiences and pollutants/ sources that are addressed by the program and how they were selected;

3.1.4.4 Estimate the number of people reached by the program over the previous twelve month period;

3.1.4.5 List the measurable goals for the public education and outreach program over the next calendar year;

3.1.4.6 List the dates by which the measurable goals will be achieved; and

3.1.4.7 Identify the person(s) responsible for implementing and coordinating the education activities.

3.2 Public Involvement and Participation

3.2.1 The permittee must comply with applicable state and local public notice requirements when implementing a public involvement/participation program.

3.2.2 The permittee must continue to make the SWMP and all Annual Reports available to the public through the municipal library system, a permittee-maintained website, or other easily accessible location. Public outreach should include location information whenever appropriate.

3.2.3 The permittee must continue to convene a volunteer citizen committee to advise the Borough on storm water program activities, and accomplish the goals of the SWMP. The permittee may comply with this requirement by both participating in, and promoting Fairbanks North Star Borough (FNSB) citizen participation in, any other locally organized municipal storm water management committee(s). The meeting schedule must be made known to the public, EPA and ADEC through direct mail or e-mail notification, if possible, and/or other locally appropriate means.

3.2.4 The permittee must continue to implement a storm drain stenciling program.

3.2.5 At least annually, the permittee must continue to host a community Stream Clean Up Day.

3.2.6 The permittee must maintain the means of providing relevant storm water information to and accepting input from the public; this requirement can be accomplished through providing the public with internet access via a website, a telephone hotline, and/or other appropriate means. The availability of this education and communication tool must be advertised to the public through the permittee's ongoing public education efforts.

3.2.7 The permittee must document the following information related to public involvement/participation in each Annual Report:

3.2.7.1 Describe the activities and target audiences for public involvement that the program accomplished for the preceding twelve-month period, including any monitoring and/or survey results, number of storm drains stenciled, etc.;

3.2.7.2 Describe the procedure(s) for receiving and reviewing public comments;

3.2.7.3 Describe the measurable goals for the public involvement/participation program over the next twelve-month period;

3.2.7.4 List the dates by which the permittee will accomplish each of the upcoming measurable goals; and

3.2.7.5 Identify the person(s) responsible for implementing and coordinating the public involvement/participation activities.

3.3 Illicit Discharge Detection and Elimination

An illicit discharge is any discharge to a MS4 that is not composed entirely of storm water. Exceptions are described in Part 1.4 of this permit. At the volunteer citizen committee meetings (Part 3.2.3), the permittee shall discuss illicit discharge detection and elimination.

3.3.1 The permittee shall review and revise, as necessary, the program to detect and eliminate illicit discharges. The permittee must, as part of this activity, maintain an information management system to track illicit discharges.

3.3.2 No later than three years from the effective date of this permit, the permittee must review and update an inventory and map of industrial facilities and activities that are covered by the 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 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.

3.3.3 No later than four years from the effective date of this permit, the permittee must review the effectiveness and revise, as necessary, ordinances that effectively prohibit non-storm water discharges into their MS4. The permittee must implement appropriate enforcement procedures and actions, including enforcement escalation procedures for recalcitrant or repeat offenders.

3.3.4 The permittee must prohibit any of the non-storm water flows listed in Part 1.4.1.3 through ordinance if such flows are identified by DEC or the permittee as a source of pollutants to the MS4. The permittee must document any existing local controls or conditions placed on such discharges.

3.3.5 Annually the permittee must inform users of the MS4 and the general public of hazards associated with illegal discharges and improper disposal of waste.

3.3.6 No later than three years from the effective date of this permit, the permittee 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.

3.3.7 The permittee 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 permittee's 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 permittee 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.

3.3.8 The permittee must document the following information related to illicit discharge detection and elimination in the Annual Report:

3.3.8.1 A description of the criteria used to prioritize investigations in areas suspected of having illicit discharges, for example: targeting older areas of the city, areas of high public complaints, and areas of high recreational value or high environmental value such as beaches and drinking water sources;

3.3.8.2 A description of procedures used to locate and remove illicit discharges, including detection methods;

3.3.8.3 A summary of all dry weather testing conducted to date, and of permittee's activity to remove any illicit discharge(s) identified;

3.3.8.4 A copy of the established ordinance or other regulatory mechanism used to prohibit illicit discharges into the MS4;

3.3.8.5 A description of enforcement policy and jurisdiction. The program must include procedures for coordination with adjacent municipalities and/or state or federal regulatory agencies to address situations where investigations indicate the illicit discharge originates outside the permittee's jurisdiction. Where the permittee lacks legal authority to establish enforceable rules or if an illicit discharger fails to comply with procedures or policies established by the permittee, the program must include procedures for notifying DEC for assistance in enforcement of this provision of the permit;

3.3.8.6 A description of the methods used over the previous twelve-month period to inform the public and train public employees about illicit discharges and the improper disposal of waste;

3.3.8.7 A list of measurable goals for the illicit discharge detection and elimination program for the next twelve-month period, and the dates by which the permittee will achieve each of the measurable goals; and

3.3.8.8 The name and title of the person(s) responsible for coordination and implementation of the illicit discharge detection and elimination program.

3.4 Construction Site Storm Water Runoff Control

3.4.1 The permittee must annually review and revise the development, implementation, and enforcement of its existing program that reduces pollutants in any storm water runoff to the MS4 from construction activities 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 permittee must discuss revisions, planned improvements and schedule within in the Annual Report.

3.4.2 If DEC 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 permittee is not required to develop, implement, or enforce the program to reduce pollutant discharges from that particular site.

3.4.3 The permittee 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.

3.4.4 The permittee 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.

3.4.5 The permittee 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.

3.4.6 The permittee 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 permittee shall inspect all construction activities as required in Part 3.4.1 in it's jurisdiction for appropriate erosion, sediment, and waste control at least once per year.

3.4.7 The permittee 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.

3.4.8 The Annual Reports will document data, actions, and analysis on data and program elements. The Annual Report must document the following SWMP information related to construction site runoff control:

3.4.8.1 A copy of the established ordinance or other regulatory mechanism used to require erosion, sediment and waste controls at construction sites as referenced in Part 3.4.3;

3.4.8.2 A copy of the written requirements for appropriate erosion, sediment and waste control BMPs at construction sites;

3.4.8.3 A summary of the number of sanctions and enforcement actions taken by the permittee to ensure compliance with the construction site ordinance during the previous twelve–month period. To the extent allowable under the legal authority of the permittee, sanctions may include both monetary and non-monetary penalties;

3.4.8.4 A summary of the number of site plan reviews conducted;

3.4.8.5 A description of the procedures for receipt and consideration of information submitted by the public;

3.4.8.6 A summary of the number of sites inspected during the previous twelve–month period, including a description of the site inspection procedures, how sites will be prioritized for inspection, when and how often a site will be inspected;

3.4.8.7 A list of measurable goals for the construction site runoff control program, including dates by which the permittee will achieve each of the measurable goals; and

3.4.8.8 The name and title of the person(s) responsible for coordination and implementation of the construction site runoff control program.

3.5 Post–Construction Storm Water Management in New Development and Redevelopment

3.5.1 The permittee 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.

3.5.2 The permittee 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. The permittee must implement appropriate enforcement procedures and actions, including enforcement escalation procedures for recalcitrant or repeat offenders.

3.5.3 The permittee 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 MS4.

3.5.4 The permittee must ensure proper long-term operation and maintenance of post-construction BMPs.

3.5.5 The permittee must continue to conduct biennial training for local construction, design, and engineering audiences.

3.5.6 Green Infrastructure/Low Impact Development (LID)

3.5.6.1 The permittee shall incorporate into their education materials information about green infrastructure strategies, such as green roofs, rain gardens, rain barrels, bioswales, permeable piping, dry wells, and permeable pavement that mimic natural processes and direct storm water to areas where it can be infiltrated, evapotranspirated, or reused. The information must discuss the benefits and costs of such strategies and provide guidance to the public on how to implement them.

3.5.6.2 The permittee must develop and implement strategies, which include a combination of structural and/or non-structural BMPs appropriate for projects within their community for all new development and redevelopment that will reduce the discharge of pollutants and the volume and velocity of storm water flow to the maximum extent practical.

3.5.7 The Annual Report must document the following SWMP information related to post-construction storm water management:

3.5.7.1 A copy of the BMP design manual containing structural and non-structural BMPs that will be used to manage post-construction runoff from new development and redevelopment projects within the MS4. List any specific priority areas for this program;

3.5.7.2 An explanation of the design and performance features of the chosen BMPs that are intended to minimize water quality impacts;

3.5.7.3 A copy of the established ordinance or other regulatory mechanism used to address post-construction runoff control;

3.5.7.4 A description of how long-term operation and maintenance of the selected BMPs will be ensured, including the organizations responsible and their expected operation and maintenance schedule;

3.5.7.5 A description of the plans to inform and educate developers and the public about appropriate project designs that minimize water quality impacts;

3.5.7.6 A list of measurable goals for the post-construction runoff control program, including dates by which the permittee will achieve each of the measurable goals; and

3.5.7.7 The name and/or title of the person(s) responsible for coordination and implementation of the post-construction SWMP.

3.6 Pollution Prevention and Good Housekeeping

3.6.1 The permittee must continue to maintain and implement an operation and maintenance program intended to prevent or reduce pollutant runoff from municipal activities. This program must:

3.6.1.1 Include an employee training component;

3.6.1.2 Address the following activities at a minimum:

3.6.1.2.1 Park and open space maintenance,

3.6.1.2.2 Fleet and building maintenance,

3.6.1.2.3 New construction and land disturbances,

3.6.1.2.4 Storm water system maintenance, and

3.6.1.2.5 Snow disposal site operation and maintenance.

3.6.2 Annually, the permittee must continue appropriate training for municipal personnel related to optimum maintenance practices for the protection of water quality.

3.6.3 The permittee 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.

3.6.4 The Annual Report must document the permittee's efforts during the previous twelve-month period to prevent or reduce pollutant runoff from the municipal operations through the Operation and Maintenance Program, including:

3.6.4.1 A description of the activities, maintenance schedules, and long-term inspection procedures for controls to reduce floatables and other pollutants to the MS4;

3.6.4.2 A description of the employee training program used to prevent and reduce storm water pollution including the targeted department personnel, frequency of such training, and a copy of training materials;

3.6.4.3 A summary description of the controls for reducing or eliminating the discharge of pollutants from areas owned or operated by the permittee, including but not limited to streets, roads, and highways; municipal parking lots; maintenance and storage yards; waste transfer stations; fleet or maintenance shops with outdoor storage areas; salt/sand storage locations; and snow disposal sites operated by the permittee;

3.6.4.4 A description of procedures to ensure proper disposal of waste removed from the MS4 and the MS4 operations including dredge spoil, accumulated sediments, floatables, and other debris;

3.6.4.5 A description of procedures 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;

3.6.4.6 A list of all industrial facilities owned or operated by the permittee that discharge to the MS4, including industrial facilities that are subject to the MSGP or APDES individual permits for discharges of storm water associated with industrial activity. Include the DEC permit tracking number or a copy of the Industrial Notice of Intent (NOI) form for each facility, as appropriate;

3.6.4.7 A list of measurable goals for the pollution prevention and good housekeeping program, including dates by which the permittee will achieve each of the measurable goals; and

3.6.4.8 The name and title of the person(s) responsible for coordination and implementation of the Operation and Maintenance Program.

4.0 MONITORING, EVALUATION, REPORTING, AND RECORD KEEPING REQUIREMENTS

4.1 Monitoring Program Plan

4.1.1 The permittee must continue to implement, and revise as necessary, a comprehensive Monitoring and Program Plan. A description of this program must be included in the SWMP document. The Monitoring Program Plan must be designed to meet the following objectives:

4.1.1.1 Assess compliance with this permit;

4.1.1.2 Measure the effectiveness of the permittee's SWMP;

4.1.1.3 Characterize storm water discharges;

4.1.1.4 Identify sources of specific pollutants;

4.1.1.5 Detect and eliminate illicit discharges and illegal connections to the MS4.

4.1.2 If the permittee conducts water quality monitoring, the permittee must comply with the following:

4.1.2.1 **Representative monitoring**: All samples and measurements must be representative of the monitored activity;

4.1.2.2 **Test Procedures**. Monitoring must be conducted according to test procedures approved under 40 CFR Part 136 (adopted by reference at 18 AAC 83.010), unless otherwise specified; and

4.1.2.3 **Discharge Monitoring Report**: Monitoring results must be recorded on a Discharge Monitoring Report (DMR) form (EPA No. 3320-1) or equivalent, and submitted annually for the previous twelve-month period along with the Annual Report.

4.1.3 **Monitoring Program Plan including Quality Assurance Requirements**: Within 180 days prior to the anticipated start date of any monitoring activity, the permittee must develop a Monitoring Program Plan that includes a Quality Assurance Project Plan (QAPP) for all analytical monitoring to be conducted, including but not limited to discharge detection and elimination activities described in Parts 3.2 and 3.3. The Monitoring and Assessment Program shall be submitted to address indicated in Part 4.4.

4.1.3.1 The QAPP must be designed to assist in planning for the collection and analysis of water samples in support of the SWMP.

4.1.3.2 Throughout all sample collection and analysis activities, the permittee must use the EPA-approved Quality Assurance/Quality Control (QA/QC) and chain-of-custody procedures described in *Requirements for Quality Assurance Project Plans* (EPA/QA/R-5), *Guidance for Quality Assurance Project Plans* (EPA/QA/G-5) and the DEC Quality Assurance Plan Checklist. The QAPP must be formatted as specified in these documents.

4.1.3.3 At a minimum, the QAPP must include the following:

4.1.3.3.1 Details on the number of samples, type of sample containers, preservation of samples, holding times, analytical methods, analytical detection and quantitation limits for each target compound, type and number of quality assurance field samples, precision and accuracy requirements, sample preparation requirements, sample shipping methods, and laboratory data delivery requirements.

4.1.3.3.2 Map(s) indicating the location(s) of each sampling point.

4.1.3.3.3 Qualification and training of personnel.

4.1.3.3.4 Name(s), address(es) and telephone number(s) of the laboratories, used by or proposed to be used by the permittee.

4.1.3.4 Annually, the permittee must review the adequacy of the QAPP based on permit compliance activities and sampling results. The permittee must amend this Monitoring Program Plan and QAPP whenever there is a modification in the sample collection, sample analysis, or other conditions or requirements of the plan.

4.1.3.5 Copies of the Monitoring Program Plan and QAPP must be kept on site and made available to DEC upon request.

4.1.4 Records of monitoring information must include:

4.1.4.1 The date, exact place, and time the samples or measurements were taken;
4.1.4.2 The names(s) of the individual(s) who performed the sampling or measurements;
4.1.4.3 The date(s) upon which analysis of each sample was performed;
4.1.4.4 The names of the individuals who performed each analysis;
4.1.4.5 The analytical techniques or methods used; and
4.1.4.6 The results of each analysis.

4.1.5 If the permittee monitors more frequently than required by this permit using test procedures approved in 40 CFR Part 136 (adopted by reference at 18 AAC 83.010), or as otherwise specified by this permit, the results of this monitoring must be included with the data submitted as part of the Annual Report.

4.2 Evaluation of Overall Program Effectiveness

Annual Effectiveness Assessment – At least annually, the permittee must evaluate its compliance with the permit conditions, the appropriateness of identified BMPs, and progress toward achieving identified measurable goals for each of the minimum control measures in Part 3.0. This evaluation of program compliance must be documented in the Annual Report. The annual effectiveness assessment must:

4.2.1 Use the monitoring and assessment data described in Part 4.1 to specifically assess the effectiveness of each of the following:

4.2.1.1 Each significant activity/control measures or type of activity/control measure implemented;

4.2.1.2 Implementation of each major component of the SWMP (Public Education/Involvement, Illicit Discharges, Construction, Post-Construction, Pollution Prevention and Good Housekeeping); and

4.2.1.3 Implementation of the SWMP as a whole.

4.2.2 Identify and use measurable goals, assessment indicators, and assessment methods for each of the items listed in Part 4.2.1.

4.2.3 Document the permittee's compliance with permit conditions.

4.2.4 Based on the results of the effectiveness assessment, the permittee must annually review its activities or control measures to identify modifications and improvements needed to maximize SWMP effectiveness, as necessary to achieve compliance with this permit. The permittee must develop and implement a plan and schedule to address the identified modifications and improvements. Municipal activities/control measures that are ineffective or less effective than other comparable municipal activities/control measures must be replaced or improved upon by implementation of more effective municipal activities/control measures.

4.3 Annual Reports

4.3.1 According to the schedule in Table 2: Submission Deadlines for Annual Reports, and annually thereafter, the permittee must submit an Annual Report for the previous twelve months to DEC to the address in Part 4.5. The Annual Report must clearly refer to the permit requirements and describe in quantifiable terms the status of activities undertaken to comply with each requirement. In addition, copies of all Annual Reports must be available to the public through the municipal library system, a permittee-maintained website, or other easily accessible location.

Table 2: Submission Deadlines for Annual Reports

Reporting Period	Submission Deadline
1st year Annual Report (permit issuance date – December 2014)	February 1, 2015
2nd year Annual Report (January 1, 2015 – December 31, 2015)	February 1, 2016
3rd year Annual Report (January 1, 2016 – December 31, 2016)	February 1, 2017
4th year Annual Report (January 1, 2017 – December 31, 2017)	February 1, 2018
5th year Annual Report (January 1, 2018 – permit expiration date[1])	February 1, 2019

Note:
1. Unless the permit is extended to or past December 31, 2018; in which case December 31, 2018. Subsequent reporting periods will follow similar format for the calendar year with submission deadline of February 1st the following year.

4.3.2 **Summary Annual Report** – The permittee must use the MS4 – Summary Annual Report template in Appendix D to document a summary of the past year's activities. All of the information required on this form must be submitted.

4.3.3 **Detailed Annual Report** – The permittee must also submit a detailed Annual Report that addresses the activities described in the SWMP document required in Part 2.0. The Annual Report must include, at a minimum:

4.3.3.1 An updated SWMP document as required in Part 2.0.

4.3.3.2 A description of the effectiveness of each SWMP program component or activity (see Part 4.2).

4.3.3.3 Planned activities and changes for the next reporting period for each SWMP program component or activity.

4.3.3.4 An evaluation of compliance with the requirements of this permit, the appropriateness of identified BMPs, and progress toward achieving identified measurable goals of the SWMP for each minimum control measure.

4.3.3.5 Results of any information collected and analyzed during the previous twelve month reporting period, including monitoring data used to assess the success of the program at reducing the discharge of pollutants to the maximum extent practicable.

4.3.3.6 A summary of the activities the permittee plans to undertake during the next reporting cycle (including an implementation schedule) for each minimum control measure.

4.3.3.7 Proposed changes and completed changes to the SWMP, including changes to any BMPs or any identified measurable goals for any minimum control measures.

4.3.3.8 Description and schedule for implementation of additional BMPs that may be necessary, based on monitoring results, to ensure compliance with applicable water quality standards.

4.3.3.9 Notice if the permittee is relying on another entity to satisfy some of the permit obligations, if applicable.

4.4 Record Keeping

4.4.1 **Retention of Records**: The permittee must retain records and copies of all information (including all monitoring, calibration and maintenance records and all original strip chart recordings for any continuous monitoring instrumentation, copies of all reports required by this permit, copies of DMRs, a copy of the NPDES permit, and records of all data used to complete the application for this permit) for a period of at least five years from the date of the sample, measurement, report or application, or for the term of this permit, whichever is longer. This period may be extended at the request of DEC at any time. Records include all information used in the development of the SWMP, all monitoring data, copies of all reports, and all data used in the development of the permit application.

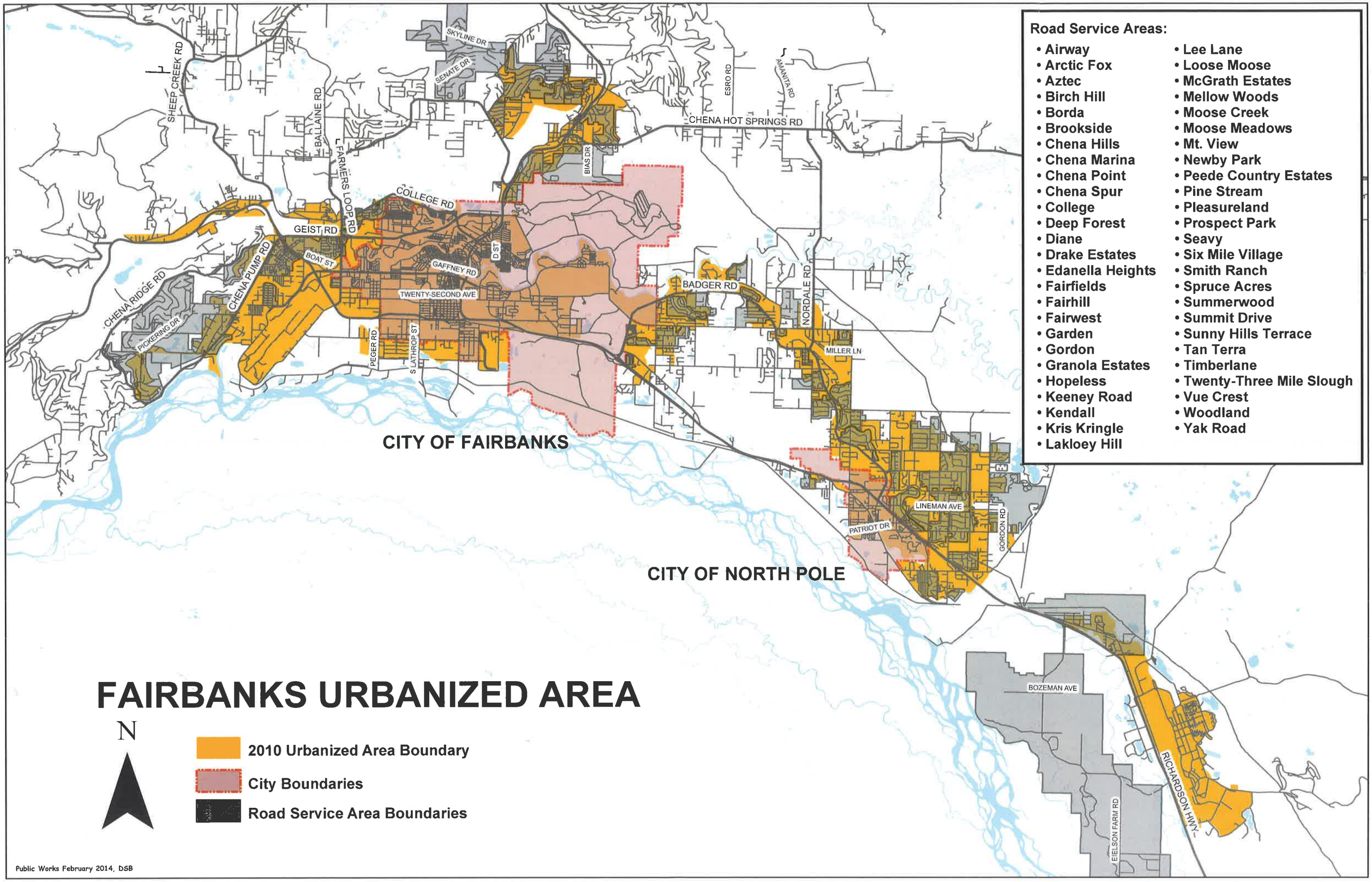
4.4.2 **Availability of Records**: The permittee must retain the SWMP required by this permit (including a copy of the permit language and all Annual Reports) at a location accessible to DEC. The permittee must make records, including the permit application and the SWMP, available to the public if requested to do so in writing and make those records available for view during normal business hours.

4.5 Address

Submittals required by this permit must be made to the following address:

Alaska Department of Environmental Conservation
Wastewater Discharge Authorization – Storm Water Program
555 Cordova Street
Anchorage, Alaska 99501
Telephone (907) 269-6285
Email: dec-wqreporting@alaska.gov

Appendix B
Fairbanks Urbanized Area Map


FAIRBANKS URBANIZED AREA
N
2010 Urbanized Area Boundary
City Boundaries
Road Service Area Boundaries
CITY OF FAIRBANKS
CITY OF NORTH POLE
SHEEP CREEK RD
SKYLINE DR
SENATE DR
BALLAINE RD
FARMERS LOOP RD
ESRO RD
AMANITA RD
CHENA HOT SPRINGS RD
BIAS DR
COLLEGE RD
GEIST RD
BOAT ST
CHENA PUMP RD
CHENA RIDGE RD
PICKERING DR
GAFFNEY RD
D ST
TWENTY-SECOND AVE
PEGER RD
S LATHROP ST
BADGER RD
NORDALE RD
MILLER LN
LINEMAN AVE
PATRIOT DR
GORDON RD
BOZEMAN AVE
EIELSON FARM RD
RICHARDSON HWY
Road Service Areas:
• Airway
• Arctic Fox
• Aztec
• Birch Hill
• Borda
• Brookside
• Chena Hills
• Chena Marina
• Chena Point
• Chena Spur
• College
• Deep Forest
• Diane
• Drake Estates
• Edanella Heights
• Fairfields
• Fairhill
• Fairwest
• Garden
• Gordon
• Granola Estates
• Hopeless
• Keeney Road
• Kendall
• Kris Kringle
• Lakloey Hill
• Lee Lane
• Loose Moose
• McGrath Estates
• Mellow Woods
• Moose Creek
• Moose Meadows
• Mt. View
• Newby Park
• Peede Country Estates
• Pine Stream
• Pleasureland
• Prospect Park
• Seavy
• Six Mile Village
• Smith Ranch
• Spruce Acres
• Summerwood
• Summit Drive
• Sunny Hills Terrace
• Tan Terra
• Timberlane
• Twenty-Three Mile Slough
• Vue Crest
• Woodland
• Yak Road
Public Works February 2014, DSB

Appendix C
Public Education and Outreach Materials

10 Ways You Can Prevent Storm Water runoff Pollution (trifold) C-1
Green Infrastructure: Put Rainwater to Work for You (rack card) C-2
Water Pollution Solutions for Commercial Landscapers & Lawn Care Professionals (trifold) C-3
Snow Storage & Disposal Practices for Local Contractors (trifold) C-4
Erosion & Sediment Control Practices for Small Construction Sites (trifold) C-5

Pet Care

7 Pick up after your pet outdoors if you are near a storm drainage system or water body. Pet waste can be a major source of bacteria and excess nutrients in local water bodies.

Home Improvements

8 Consider directing your downspouts away from paved surfaces and onto lawns to increase infiltration and reduce runoff.

9 Do not place piles of soil, mulch, or other landscaping materials in the street or on sidewalks where storm drainage systems are nearby.

10 Sweep up outdoor work areas prior to storm events to prevent materials from being washed into storm drainage systems.

Clean Water is Important to All of Us

It's up to all of us to make it happen. Clean water provides recreation, fish and wildlife habitat, and adds beauty to our community. All of us benefit from clean water, and all of us have a role in helping and keeping our local sloughs, creeks, rivers, and lakes clean.

For more information...

City of Fairbanks

Attn. Jackson Fox
800 Cushman Street
Fairbanks, AK 99701
Phone: 907.459.6758
jcfox@ci.fairbanks.ak.us

Fairbanks North Star Borough

Attn. Jennifer Schmetzer
809 Pioneer Road
Fairbanks, AK 99701
Phone: 907.459.1327
jschmetzer@co.fairbanks.ak.us

Attention Homeowners!

10 Ways You Can Prevent Storm Water Runoff Pollution

Brought to you by the

Fairbanks Storm Water Advisory Committee

What's Storm Water Runoff?

Storm water runoff is water from rain or melting snow that flows from rooftops, over lawns, driveways, sidewalks, and paved streets and into drainage systems that lead to nearby water bodies. As runoff flows over these developed land surfaces, it collects and transports pollutants to these water bodies without receiving treatment from a wastewater (sewage) treatment plant.

By practicing **healthy household habits**, homeowners can keep common pollutants like fertilizers, pesticides, grass clippings, automotive fluids, detergents, pet waste, and loose soil out of our storm water. Here's 10 ways you can prevent storm water pollution and help protect our local sloughs, creeks, rivers, and lakes....

Lawn & Garden Care

1 Use fertilizers and pesticides sparingly, only in recommended amounts, and avoid applications if the forecast calls for rain.

2 Select native plants and grasses for your lawn and garden. Native plants require less water, fertilizer, and pesticides.

3 Mulch, compost, or bag your yard waste. Grass clippings and leaves contain nitrogen and phosphorus, and when disposed/carried to a water body can cause algal blooms and reduce the amount of light and oxygen in the water, disadvantaging fish and other aquatic life.

Vehicle Care

4 Never dispose of automotive fluids down storm drains, onto the ground, or into a ditch.

5 Regularly check your vehicle for oil and antifreeze leaks to keep these fluids off paved surfaces where they are susceptible to being flushed into storm drainage systems.

6 Take your vehicle to a commercial car wash or wash it on a lawn or other unpaved surface. Detergents in wash water contain phosphates and other chemicals that can harm fish and other aquatic life.

Green Infrastructure

Put rain water to work for you

These best management practices can be used to manage wet weather runoff. It can be done in ways that are cost effective, sustainable, and environmentally friendly.

Rain Barrel

A rain barrel connected to a gutter is used to collect rain water for non-potable uses. A rain barrel can be constructed for minimal costs using locally available materials.

Rain Garden

A rain garden helps to divert runoff from your gutters. It is usually in a low section of land and is assembled with water-tolerant plants that absorb rainwater and also filter out harmful chemicals.

Tree Pit

Tree pits are gravel lined pits used to plant trees and shrubs in. A shallow depression is left around the base of the tree to collect diverted rainwater runoff and allows it to be absorbed and maximized by the plant.

Flowthrough/Infiltration Planters

These types of planters can be connected to gutters. They require less watering, provide filtration of pollutants, and are suitable in areas with limited space.

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Put rain water to work for you

Dry Well

A perforated pipe that drains into a small pit filled with gravel. Only roof runoff should be redirected into a dry well. If your yard frequently floods you may want to install more than one dry well.

Swales and Berms

A vegetated swale is usually a grass-lined depression. Plants slow down runoff water velocity and infiltrate the water into the soil.

Berms can be used to help retain runoff in a designated area by piling up an appropriate amount of soil along the downhill side of the location.

Permeable Pavers

These porous blocks allow water to pass through them and into the soil. Permeable pavers can be used instead of concrete or asphalt for driveways, patios, and walkways, or in place of some concrete/asphalt.

Grass Reinforcement Mesh

A polyethylene grid placed directly on grass and secured with metal U-Pins or plastic pegs, the mesh helps stabilize the grass so that it can handle much more traffic than a unprotected lawn, without damage.

Green Roof

A roof completely or partially covered with vegetation in a growing medium planted over a waterproof membrane, root barrier, and a drainage board. A green roof can absorb up to half of the rainwater that falls on it and greatly increase the insulation value of your roof.

Riparian Zone Revegetation

Healthy vegetated riparian areas keep your land from eroding, improve water quality and quantity, provide important fish and wildlife habitat, and help sustain aquatic life. Roots of riparian vegetation stabilize the stream bank and reduce stream bank erosion and sedimentation.

For more information on these rainwater runoff control projects please visit: ***www.cchrc.org/green-infrastructure***

FAIRBANKS SOIL & WATER CONSERVATION DISTRICT

GW Scientific

COLD CLIMATE HOUSING RESEARCH CENTER

CCHRC

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FAIRBANKS SOIL & WATER CONSERVATION DISTRICT

GW Scientific

COLD CLIMATE HOUSING RESEARCH CENTER

CCHRC

- Use soaker hoses or drip irrigation. This is more efficient than sprinklers and can significantly reduce water use!
- Water plants when needed, not according to a predetermined schedule. Water requirements vary depending on plant species, age, and size as well as weather and soil characteristics.

DID YOU KNOW that grass clippings are composed of 85% water? Keep them on the lawn!

- Avoid frequent, light irrigations as they tend to encourage shallow rooting and make plants more susceptible to drought.

PEST MANAGEMENT

- Offer your clients fresh designs each season! Rotating plants and plant families so that they do not occupy the same space year after year can reduce insect infestations and the buildup of soilborne disease.
- Properly identify plant problems before acting! Most problems are cultural or environmental and are not corrected with pesticide application.

A SPECIAL NOTE ON PESTICIDES....

State regulation requires anyone engaging in the commercial or contract use of a pesticide OR acting as a pesticide consultant to be a certified pesticide applicator. Any product with an EPA registration number on it is a pesticide! For more information go to **www.dec.state.ak.us/eh/pest/permit.htm** or contact the Department of Environmental Conservation.

- Apply pesticides when the pest is most susceptible, not according to a fixed schedule.
- Spot treat only those plants or plant parts that are affected by the pest. Spot treatments can reduce pesticide use and still achieve results!

LANDSCAPE DEBRIS

- Use leaves and grass clippings as mulch. This practice reduces erosion, watering requirements, and weed problems.
- Run prunings and woody brush through a chipper for use as mulch or as a permeable cover for pathways.
- Compost what you do not use as mulch. Leaves, grass clippings, and weeds (before they flower) create a valuable organic soil addition. The use of compost improves soil texture, structure, and moisture retention and adds valuable nutrients. But be careful if you've used pesticides!

DID YOU KNOW that grass clippings, leaves, and other landscape debris contain phosphorus? One pound of phosphorus can grow up to 500 pounds of algae!

- Do not blow, sweep, or dump landscaping debris into the street, down a storm drain inlet, or into a drainage ditch. Decaying plant matter can deplete dissolved oxygen levels in waterbodies killing aquatic plant and animal life. This type of disposal is also illegal!
- Mulch-mow grass to reduce the amount of fertilizer necessary. This type of grass recycling builds the organic matter in the soil.

Updated: 4/7/2014

For more information on Storm Water issues in Fairbanks, check out the FSWAC website at: http://co.fairbanks.ak.us/pworks/StormWaterManagementProgram/

WATER POLLUTION SOLUTIONS

FOR COMMERCIAL LANDSCAPERS AND LAWN CARE PROFESSIONALS

Are your landscaping and lawn care practices as "green" as you think?

...

Brought to you by the Fairbanks Storm Water Advisory Committee (FSWAC).

Clean water is important to all of us. It is essential for human health, wildlife, recreation, and industry. But pesticides, fertilizers, and your various types of landscape debris used here in Fairbanks can pollute our lakes, creeks, sloughs, rivers, and groundwater. This type of pollution can pose many problems including:

- Contamination of drinking water supplies.
- Destruction of aquatic habitat.
- Overstimulation of oxygen depleting algae in surface water.
- Contamination of fish and wildlife harvested for human consumption.
- Contamination of recreation areas.

You do not want that on your business's record! Since landscapes thrive when good water quality practices are implemented and the same techniques that protect water quality also improve soil, reduce landscaping maintenance, and enhance plant health, it is in your best interest to keep our area waterbodies clean. ***Green-up*** your clients' landscape with the following best management practices!

DESIGN AND INSTALLATION

- Design a landscape that uses native vegetation or plants (including grass) best adapted to our sub-arctic climate. This will reduce maintenance needs!
- Protect nearby waterbodies and reduce erosion by including a vegetative buffer along stream banks. Did you know soil, fertilizers, pesticides, or other landscape debris draining directly from your site into a nearby stream is an illicit discharge, which is illegal and subject to the fines outlined in both city and borough ordinances?
- Capture roof runoff to supplement irrigation or direct it into a rain garden.

HELPFUL HINT: Check out the Department of Natural Resources' *Revegetation Manual for Alaska* at **dnr.alaska.gov/ag/RevegManual.pdf**. This is a great tool when choosing ground cover! Also look at the Cold Climate Housing Research Center's guide for planting rain gardens in Fairbanks at **www.cchrc.org/green-infrastructure**.

- Do not use grass in densely shaded areas, on steep slopes, or in narrow, hard to irrigate areas. Think trees, shrubs, or other native perennials.
- Use porous material such as wood decking, gravel, or wood chips for pathways, and consider building gravel trenches along driveways where impermeable pavements are used.

SOIL MANAGEMENT

- Provide soil testing services for your clients. Testing can detect pH problems and nutrient imbalances or deficiencies. Knowing the chemical make-up of the soil will help you determine your mulch and fertilizer needs.

SOIL IS ALIVE AND SOIL LIFE MATTERS!
A teaspoonful of healthy soil contains about **4 billion organisms**! These creatures create a loose environment that allows air, water, and root growth into the soil. Compost and proper fertilization will benefit this soil life!

- Apply only the type and amount of fertilizer that is necessary. More is not always better! And remember, trees and shrubs do not need annual applications if they are putting on adequate growth and their leaf color is healthy.
- Time your fertilizer applications correctly. Different plants make the most out of fertilizers at different times in their growing cycle.
- Avoid fertilizing when heavy or extended rain showers are predicted...rain can wash fertilizer away or increase leaching potential. Also avoid fertilizing during periods of limited rainfall as fertilizers can dehydrate plant roots.
- Use your fertilizer application equipment to your advantage...calibrate it to ensure proper application rates, use deflector shields when application is near a waterbody, and close the spreader when passing over non-target areas.
- Use "slow release" fertilizers! If you must use "quick release" fertilizers, make several small applications over a period of time instead of a large application at once.

WATER USAGE

- Select plants suited for the sub-arctic and limit the amount of lawn. Lawn requires more irrigation than established trees, shrubs, and native groundcovers.
- Increase the drought tolerance of lawn by proper soil preparation and proper mowing frequency and height.
- Divide the landscape into irrigation zones by grouping plants based on their water needs.

Materials

Buying the cheapest product is not always the least expensive practice and more is not always better!

- Consider using magnesium chloride instead of sodium chloride. Though it costs more, a molecule of magnesium chloride provides twice as much chloride as a molecule of sodium chloride. Magnesium chloride is also more effective at lower temperatures and it is less corrosive and far less damaging to landscaping. That means a reduction in your client's capital and maintenance costs!
- Use coarser aggregate for sanding. This will improve winter traction. It will also reduce the loss of effectiveness due to burial with continued snowfall or displacement by traffic. That means a reduction in re-application! Coarser aggregate also requires smaller additions of "antifreeze" salt to keep it free-flowing and it is easier to spread uniformly. All these factors can greatly reduce material volumes!

Application

When and how you apply materials make a big difference in how well they work, how much you apply, and ultimately how much it costs you!

- Lightly apply deicers just before or just as snow begins to fall. This will help prevent formation of a bond between the ice and the surface, making it easier to shovel or plow later.
- Do not apply deicers during the middle of a storm. They may appear to work right after application, but with continued snowfall will dilute and refreeze to form an even icier surface.
- Do apply deicers at the end of the storm if feasible. Application will be most effective immediately after you have removed the last of the new fallen snow. This is because to work, salt deicers not only require some moisture (to dissolve the salt) but also some heat. The heat, which is what actually melts the snow, may come from warming ambient temperatures, the sun's heat, or traffic. Applying deicers at the end of a snow storm takes advantage of these processes. You will use less deicer and have greater effect because temperatures will still be warm from the retreating storm front and the deicer will maintain greater anti-freezing potency as the snow and ice melts.
- Sweep or shovel surfaces free of slush and melted snow as soon as possible. A given concentration of salt is effective down to a certain temperature ... as temperatures fall following a storm, melted ice will refreeze, necessitating continuing ice removal expenses.

WHAT TO DO WITH ALL THAT SNOW!

SNOW STORAGE AND DISPOSAL PRACTICES FOR LOCAL CONTRACTORS

LIMIT YOUR RISK!
LIMIT YOUR LIABILITY!

The importance and practicability of best management practices ... brought to you by the Fairbanks Storm Water Advisory Committee (FSWAC).

http://co.fairbanks.ak.us/pworks/StormWaterManagementProgram/

Winter living in Fairbanks means snow … typically more than 60 inches of it! Finding a place to put it when you clear driveways, sidewalks, and parking lots can be difficult. Along with ensuring clear, safe access to homes, schools, and businesses, snow clearing contractors must also consider the water quality impacts of snow storage and disposal. FSWAC hopes that the following tips will help you develop practices that reduce your environmental risk and limit your liability!

WHAT'S THE BIG DEAL?

Snow removed from roads, sidewalks, and parking lots may contain products from various land uses related to urbanization and human activities including salt, sand, litter, landscaping chemicals, animal waste, automotive byproducts, and petroleum. As snow melts, these contaminants are transported directly into surface water in concentrated amounts either overland or through the community storm drain system.

THE RESULTS?

Contaminants entering surface water can have severe consequences including:

- Increased turbidity.
- Reduction in dissolved oxygen levels.
- Stimulation of nuisance plants and algae growth.
- Destruction of habitat.
- Deposition of litter on stream or lake bottoms and along shorelines.
- Release of harmful bacteria.

In other words, the contaminants contained in snow melt can foul or kill fish, make humans sick, and destroy the riparian environment. And don't forget … putting contaminated snow or snow melt into surface waters is considered an illicit discharge and subject to the fines outlined in both city and borough ordinances.

This picture shows snow contaminated with gravel, litter, and deicing salt plowed from a parking lot into a slough. The contractor was required to remove all contaminated snow per city ordinance.

This picture shows snow contaminated with litter, animal waste, and sand plowed from sidewalks onto a storm drain inlet. The contractor was required to remove all contaminated snow per city ordinance.

STORAGE AND DISPOSAL SITES

Location, location, location! The key to selecting effective snow storage and disposal sites is to locate them adjacent to or on pervious surfaces in upland areas where direct drainage to surface waters or storm drains is not possible and where the groundwater table is low. At such locations, snow melt can filter into the soil, leaving behind sand and debris which can be removed after breakup. The best disposal sites are lands that drain into detention basins or are protected by dikes or berms. Some dos and don'ts when selecting a site:

- Avoid dumping snow into any waterbody, ice covered or open, including drainage ditches or storm drain inlets … it is illegal! And remember, storm drain inlets do not treat melt water prior to discharge!
- If a site must be located near a waterbody, maintain a vegetated buffer between the site and the waterbody. The buffer helps trap fine sediments, automotive byproducts, and petroleum.
- Avoid sites near wellheads or other areas that could potentially affect groundwater including landfills or gravel pits.
- Choose sites where there is little risk of human exposure after breakup. Accidental ingestion of contaminated soils can impact human health.
- After breakup, remove and properly dispose of trash and litter from the site. Fencing a site will prevent litter from blowing or drifting.

BEST MANAGEMENT PRACTICES

Contractors responsible for snow storage and disposal are also frequently responsible for the application of sand, gravel, and deicers as well. Implementing best management practices when selecting and applying these materials will greatly reduce the amount of contaminants in the plowed snow and may reduce operation costs! The following up-front best management practices can be realistically applied and will help you avoid fines and costly cleanups.

Storm water runoff is generated when water from rain and melting snow flows over land instead of infiltrating into the ground. As runoff travels over the exposed soils typically found on construction sites, it accumulates pollutants such as sediment, vehicle fluids, litter, and debris. Local storm water conveyance systems, including the open ditches along many of our area roads, concentrate this runoff. When the concentrated flow leaves the system, it can empty into local water bodies carrying the pollutant load with it. The results can significantly alter our natural environment by contaminating drinking water supplies, making recreational areas unsafe and unpleasant, harming fish and wildlife populations, and killing native vegetation.

By implementing simple best management practices (like those shown above) in the design and construction of your project, **you can help** control the pollutant loading entering our storm water and protect area resources!

ADDITIONAL PERMITS MAY BE REQUIRED

If your total disturbed area equals or exceeds 1.0 acre, you may be required to submit a *Permanent Storm Water Control Plan* and obtain a *Site Development Permit* from the Department of Public Works. Plan and permit approval are required **before** you dig! Please plan ahead to avoid violations and possible fines!

Estimate your total disturbed area:

1) House and garage = _____

2) Yard (be sure to include areas disturbed for the septic, drain field, well, etc.) = _____

3) Driveway (be sure to include areas disturbed near the road and ditch line) = _____

4) Other disturbed areas = _____

TOTAL SQUARE FOOTAGE = _____

1 acre equals 43,560 square feet. If your disturbed area equals or exceeds 1 acre, contact the Department of Public Works for permit information at 907-459-1345

REMEMBER approval is required before you dig!

For additional information on the Fairbanks Storm Water Management Program, visit the web at:

http://co.fairbanks.ak.us/PWorks/StormWaterManagementProgram/

EROSION AND SEDIMENT CONTROL PRACTICES FOR SMALL CONSTRUCTION SITES

What you need to know before you build!

Fairbanks North Star Borough
Department of Public Works
809 Pioneer Road
907-459-1345

SUCCESSFUL BEST MANAGEMENT PRACTICES FOR SMALL CONSTRUCTION

Protect natural features. Undeveloped sites can have numerous natural features that provide environmental, aesthetic, and recreational benefits if protected from the impacts of construction. These features include wetlands, riparian areas, floodplains, forested areas, and other wildlife habitat. In addition, properties being redeveloped might have attractive open space, gardens, or other man-made features that could be protected.	➢ **Before** your dirt contractor arrives, identify areas where existing features are not to be disturbed. ➢ Protect these areas by fencing (**plastic orange snow fence** works well) or otherwise clearly marking them, but remember it can be hard to see some markers from the top of a bulldozer!
Construction Phasing. Construction site phasing involves disturbing only one part of a site at a time. Grading and construction are completed and soils are stabilized in one area before grading and construction commence at another area. This reduces the potential for erosion and sediment transport.	➢ Sequence construction activities so that the soil is not exposed for long periods of time. ➢ Schedule or limit grading to small areas. ➢ Install key sediment control devices (**silt fence or fiber rolls** for example) before site grading begins. ➢ Schedule site stabilization activities (**seeding, mulching, soil roughening**, etc.) to be completed immediately after the land has been graded to its final contour.
Vegetative Buffers. Vegetation provides erosion control, storm water detention, biofiltration, and aesthetic values to a site during and after construction activities.	➢ **Protect and install** vegetative buffers along water bodies, drainage ditches, and neighboring properties to slow and filter storm water runoff. ➢ **Maintain** buffers by mowing or replanting periodically to ensure their effectiveness.
Construction Entrances/Exits. Stabilizing the entrance to your construction site (with a pad of gravel over a filter cloth, for example) helps minimize the amount of sediment leaving the site on vehicles and tires. This is especially important when your site is along a paved roadway.	➢ Remove mud and dirt from the tires of construction vehicles **before** they enter the roadway. ➢ Properly size the stabilization zone for **all** anticipated vehicles. ➢ Make sure that the stabilization zone does not become buried in sediment.

Each day that you have bare soil exposed, ask:

1) Is it going to rain? Today? Tonight?

2) How will I stop sediment from washing onto the neighbor's property? Into the drainage ditch?

3) How will I keep mud from being tracked out onto the public road?

4) How will I keep sediment from washing into any stream or wetlands near my project?

Some simple ideas:

You probably want a nice stand of grass on your yard...why not ***seed and mulch early*** in construction?

You most likely want a nice driveway...why not ***put down some gravel early*** in construction?

Be a good neighbor.

PREVENT SEDIMENT DAMAGE!

Keep our ditches open and our roads smooth and stable.

Appendix D
Fairbanks North Star Borough Storm Water Ordinances

Title 21 Storm Water Discharge D-1
Chapter 1.04 Penalty Provisions D-2

Title 21
STORM WATER DISCHARGE

Chapters:

21.10 General Provisions

21.20 Definitions

21.30 Illicit Discharge Detection and Elimination

21.40 Construction Site Storm Water Runoff Control

21.50 Post-Construction Storm Water Management

The Fairbanks North Star Borough Code is current through Ordinance 2014-33, passed June 26, 2014.

Disclaimer: The Borough Clerk's Office has the official version of the Fairbanks North Star Borough Code. Users should contact the Borough Clerk's Office for ordinances passed subsequent to the ordinance cited above.

Chapter 21.10
GENERAL PROVISIONS

Sections:

21.10.010 Purpose.
21.10.020 Responsibility for administration.
21.10.030 Enforcement.

21.10.010 Purpose.

A. The purpose of this title is to provide for the health, safety, and general welfare of the citizens of the Fairbanks North Star Borough by regulating storm water and non-storm water discharges to the municipal separate storm sewer system (MS4) to the maximum extent practicable as required by federal and state law.

B. This purpose is achieved by:

1. Prohibiting illicit discharges and acts to the MS4 by any person.

2. Regulating the contribution of pollutants from construction activities to the MS4 by any person.

3. Establishing legal authority to carry out all inspection, surveillance, and monitoring procedures necessary to ensure compliance with this title. (Ord. 2008-22 § 3, 2008)

21.10.020 Responsibility for administration.

The department of public works shall administer, implement, and enforce the provisions of this title. Any powers granted or duties imposed upon the department of public works may be delegated in writing by the department director to the department's employees or agents. (Ord. 2008-22 § 3, 2008)

21.10.030 Enforcement.

A. Any person who permits or causes a violation of a provision of this title is subject to the provisions of Chapter 1.04 FNSBC.

B. In addition to any civil or criminal penalties imposed by law, any person who permits or causes a violation of any provision of this title shall be subject to cleanup and remediation costs incurred as a result of the violation.

C. Any person who permits or causes a violation of this title shall be strictly liable, regardless of intent, for the full amount of any fines or other liquidated penalties incurred by the department for any violations of federal or state law which are caused by the violation.

D. No provision of this section shall prohibit the department from seeking other remedies available in law or in equity as necessary to ensure compliance with this title, including injunctive relief.

E. The remedies listed in this section are not exclusive of any other remedies available under any applicable federal, state or local law. (Ord. 2008-22 § 3, 2008)

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Chapter 21.20
DEFINITIONS

Sections:

21.20.010 Definitions.

21.20.010 Definitions.

For the purposes of this title, certain words and phrases used herein shall be construed as defined in this chapter. For convenience, simplified explanations of some federal regulatory or statutory definitions have been provided. In the event of a conflict, the definition found in the regulation or statute takes precedence.

"Best management practices" or "BMPs" means schedules of activities, prohibitions of practices, maintenance procedures, and other management practices to prevent or reduce the pollution of waters of the United States or the municipal separate storm sewer system. BMPs also include treatment requirements, operating procedures, and practices to control runoff, spillage or leaks, sludge or waste disposal, or drainage from raw material storage.

"CFR" means the Code of Federal Regulations.

"Construction activities" means activities subject to NPDES construction permits. These include construction projects resulting in land disturbance of one acre or more. Such activities include but are not limited to clearing and grubbing, grading, excavating and demolition.

"CWA" means the Clean Water Act (formerly referred to as the Federal Water Pollution Control Act or Federal Water Pollution Control Act Amendments of 1972) Pub. L. 92-500, as amended by Pub. L. 95 -217, Pub. L. 95-576, Pub. L. 96-483 and Pub. L. 97-117, 33 U.S.C. 1251 et seq.

"Department" means the borough's department of public works and its employees and agents.

"Environmental Protection Agency" or "EPA" means the U.S. Environmental Protection Agency, or any duly authorized official of said agency.

"Fairbanks Urbanized Area" means the area of the Fairbanks North Star Borough delineated by the U.S. Census Bureau consisting of contiguous, densely settled census block groups and census blocks that meet minimum population density requirements, along with adjacent densely settled census blocks that together encompass a population of at least 50,000 people. The Fairbanks Urbanized Area was named by the Bureau on May 1, 2002 (67 FR 21962).

"Illicit discharge" is defined at 40 CFR Section 122.26(b)(2) and refers to any discharge to the MS4 not consisting entirely of storm water unless a specific exception applies to the discharge.

"Maximum extent practicable" is the technology-based discharge standard to reduce pollutants in storm water discharges that was established by CWA Section 402(p).

"Municipal separate storm sewer system" or "MS4" means the conveyance or system of conveyances (including roads with drainage systems, municipal streets, catch basins, curbs, gutters, ditches, man-made channels, or storm drains): (1) owned or operated by the Fairbanks North Star Borough; (2)

designed or used for collecting or conveying storm water; (3) which is not a combined sewer; (4) which is not part of a publicly owned treatment works as defined at 40 CFR Section 122.2; and, (5) which discharges to waters of the United States.

"National Pollutant Discharge Elimination System" or "NPDES" means the national program for issuing, modifying, revoking and reissuing, terminating, monitoring and enforcing permits, and imposing and enforcing pretreatment requirements, under Sections 307, 318, 402 and 405 of the CWA.

"Non-storm water discharge" means any discharge to the MS4 that does not consist entirely of storm water.

"NPDES permit" means a permit issued by the EPA or state agency with authority that authorizes the discharge of pollutants to waters of the United States, whether the permit is applicable on an individual, group, or general area-wide basis.

"Permanent storm water control plan" or "PSWCP" means a document that describes the specific BMPs, and maintenance thereof, to be incorporated into the project design to eliminate or reduce pollutant discharges to storm water, storm water conveyance systems, and/or receiving waters to the maximum extent practicable.

"Person" means any individual, partnership, firm, association, joint venture, public or private corporation, trust, estate, commission, board, public or private institution, utility, cooperative, city, county or other political subdivision of the state, governmental entity or any other legal entity.

"Pollutant" is defined at 40 CFR Section 122.2. Pollutants may include, but are not limited to: dredged spoil, solid waste, sewage, garbage, sewage sludge, chemical wastes, biological materials, heat, wrecked or discarded equipment, rock, sand, cellar dirt, and industrial or municipal waste.

"Storm water" is defined at 40 CFR Section 122.26(b)(13) and means storm water runoff, snow melt runoff, and surface runoff and drainage.

"Storm water pollution prevention plan" or "SWPPP" means a document that describes the BMPs and activities to be implemented during construction by a person or business to identify sources of pollution or contamination at a site, and the actions to eliminate or reduce pollutant discharges to storm water, storm water conveyance systems, and/or receiving waters to the maximum extent practicable.

"Waters of the United States" means:

1. All waters which are currently used, were used in the past, or may be susceptible to use in interstate or foreign commerce, including all waters which are subject to the ebb and flow of the tide;

2. All interstate waters, including interstate "wetlands";

3. All other waters such as interstate lakes, rivers, streams (including intermittent streams), mudflats, sandflats, wetlands, sloughs, prairie potholes, wet meadows, playa lakes, or natural

ponds the use, degradation, or destruction of which would affect or could affect interstate or foreign commerce, including any such waters:

a. Which are or could be used by interstate or foreign travelers for recreational or other purposes;

b. From which fish or shellfish are or could be taken and sold in interstate or foreign commerce; or

c. Which are used or could be used for industrial purposes by industries in interstate commerce;

4. All impoundments of waters otherwise defined as waters of the United States under this definition;

5. Tributaries of waters identified in subsections (1) through (4) of this definition;

6. The territorial sea; and

7. Wetlands adjacent to waters (other than waters that are themselves wetlands) identified in subsections (1) through (6) of this definition.

Waste treatment systems, including treatment ponds or lagoons designed to meet the requirements of the CWA (other than cooling ponds for steam electric generation stations per 40 CFR Part 423) which also meet the criteria of this definition are not waters of the United States.

"Waters of the United States" do not include prior converted cropland. Notwithstanding the determination of an area's status as prior converted cropland by any other federal agency, for the purposes of the Clean Water Act, the final authority regarding Clean Water Act jurisdiction remains with EPA. (Ord. 2009-27 § 3, 2009; Ord. 2008-22 § 4, 2008)

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Chapter 21.30
ILLICIT DISCHARGE DETECTION AND ELIMINATION

Sections:

21.30.010 Applicability.
21.30.020 Prohibited discharges or acts.
21.30.030 Notification of spills or other violations.

21.30.010 Applicability.

This chapter shall apply to all discharges generated on any developed and undeveloped lands that enter that portion of the MS4 located within the Fairbanks Urbanized Area unless explicitly exempted by an authorized enforcement agency. (Ord. 2008-22 § 5, 2008)

21.30.020 Prohibited discharges or acts.

A. No person shall cause or permit the commencement, conduct, or continuance of any non-storm water discharge into the MS4, except where such discharges satisfy one of the following three conditions:

1. The non-storm water discharges are in compliance with a separate NPDES permit;

2. The non-storm water discharges result from a spill and:

   a. Are the result of an unforeseen weather event where reasonable and prudent measures have been taken to minimize the impact of such discharge; or

   b. Consist of emergency discharges required to prevent imminent threat to human health or severe property damage; provided, that reasonable and prudent measures have been taken to minimize the impact of such discharges; or

3. The non-storm water discharges satisfy each of the following two conditions:

   a. The discharges consist of uncontaminated water line flushing, landscape irrigation, diverted stream flows, rising ground waters, uncontaminated ground water infiltration (as defined at 40 CFR Section 35.2005(20)), uncontaminated pumped ground water, discharges from potable water sources, foundation drains, air conditioning condensate, irrigation water, springs, water from crawlspace pumps, footing drains, lawn watering, individual residential car washing, flows from riparian habitats and wetlands, dechlorinated swimming pool discharges, street wash water, residential building wash waters without detergents, and flows from emergency firefighting activities; and

   b. The discharges are not sources of pollution to waters of the United States. A discharge is considered a source of pollution to waters of the United States if it:

      i. Causes excessive foam in the receiving waters or contains floating and/or settleable solids in amounts sufficient to make the water unsafe or unfit for providing water supply or other beneficial uses;

ii. Contains oil or other substances in amounts sufficient to create a visible film or sheen on the receiving waters;

iii. Contains substances that are in amounts sufficient to be unsightly or deleterious or which produce color, odor, or other conditions to such a degree as to create a nuisance;

iv. Contains any substance or combination of substances in amounts sufficient to be acutely toxic to, or to otherwise severely injure or kill aquatic life, other animals, plants or humans;

v. Contains any substances or combination of substances that will cause or contribute to the growth of aquatic plants or algae to such degree as to create a nuisance, be unsightly, or otherwise impair the designated use.

B. No person shall deposit, dump, abandon, throw, scatter, or transport solid waste, garbage, rubbish, junk, fill, soil, dirt, or other material in such a manner as to obstruct, impound, or cause siltation to the MS4 except as otherwise allowed by valid federal, state, or local permits.

C. No person shall dispose of snow directly into the MS4. Discharges from public snow disposal sites and approved road service area snow management operations may be authorized when appropriate BMPs are utilized. Such BMPs must be designed to prevent pollutants in the discharge and to assure that applicable water quality standards are not violated. (Ord. 2008-22 § 5, 2008)

21.30.030 Notification of spills or other violations.

A. Notwithstanding other requirements of law, any person who permits, causes, or identifies any known or suspected release of materials which result or may result in an illicit discharge into the MS4 shall report such discharge or violation to the department as soon as practicable and shall make available any information or records related to the contents of the substance discharged.

B. All immediate steps necessary to ensure the discovery, containment and cleanup of such release so as to minimize the effects of the discharge shall be taken.

C. All immediate steps necessary to ensure no recurrence of the discharge or spill will occur shall be taken. (Ord. 2008-22 § 5, 2008)

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Chapter 21.40
CONSTRUCTION SITE STORM WATER RUNOFF CONTROL

Sections:

21.40.010 Applicability.
21.40.020 Permit application.
21.40.030 Standards.
21.40.040 Inspections.
21.40.050 Permit closure.

21.40.010 Applicability.

A. This chapter applies to construction activities that result in a land disturbance of greater than or equal to one acre, or result in a land disturbance less than one acre but are part of a larger common plan of development or sale that will collectively disturb more than one acre, and discharge storm water to that portion of the MS4 located within the Fairbanks Urbanized Area, unless explicitly exempted by an authorized enforcement agency.

B. If EPA 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 Section 122.26(b)(15)(i) (A) or (B), the provisions of this chapter do not apply to that particular site. (Ord. 2008-22 § 6, 2008)

21.40.020 Permit application.

A. A site development permit shall be required prior to the commencement of any activity regulated by this chapter. An application for a site development permit shall be made on such form as is prescribed by the department.

B. In addition to a completed application form, each application shall contain the following information:

1. A copy of the applicant's notice of intent submitted to the EPA;

2. A copy of the applicant's SWPPP developed by a certified professional in erosion and sediment control or a professional engineer registered in the state of Alaska;

3. Payment of the SWPPP plan review fee in the amount prescribed by the department;

4. Payment of the construction site inspection fee in the amount prescribed by the department; and

5. An approved PSWCP plan.

C. Each application will be approved, approved with conditions, or denied based on its conformance with the standards set forth in this chapter.

D. Any applicant may petition the department for reconsideration of a permit application determination within 30 days of the decision. Any such reconsideration request must be accompanied by the application documents and the specific reason for requesting reconsideration. The department will

notify the applicant within seven days if reconsideration of the decision is granted. Reconsideration decisions are final decisions appealable to the superior court in accordance with the rules of appellate procedure.

E. No person shall operate a construction site regulated by this chapter without a site development permit or with a suspended site development permit. (Ord. 2009-27 § 4, 2009; Ord. 2008-22 § 6, 2008)

21.40.030 Standards.

A. The specifications and standards set forth in the following documents will be used to execute the provisions of this chapter:

1. EPA Storm Water Construction General Permit (CGP). This document outlines a set of provisions that owners or operators of construction sites must follow if the construction activities disturb more than one acre of land and discharge storm water to an MS4 or waters of the United States. The most recently issued CGP shall be used.

2. Alaska Storm Water Pollution Prevention Plan Guide. The Alaska Department of Transportation and Public Facilities prepared this guide to help contractors, consultants, and the public understand and comply with the requirements of the CGP. Appendix F of this guide is a discussion of the more commonly used erosion and sediment control construction BMPs in Alaska. The most recently issued guide shall be used.

3. Additional standards may be adopted by the department as necessary to ensure that construction site operators practice erosion, sediment and waste control in accordance with the department's NPDES permit.

B. No person shall operate a construction site unless in compliance with the standards set forth in this section. (Ord. 2008-22 § 6, 2008)

21.40.040 Inspections.

A. The department will inspect each permitted construction site at least once per year.

B. Access to a construction site for inspection shall not be denied. In addition to other available penalties, any permit issued under this chapter may be immediately suspended until an inspection is conducted.

C. If, during inspection, the department finds that BMPs are improperly installed, not maintained, or inappropriate for proper erosion, sediment and waste control, any permit issued under this chapter may be immediately suspended until the identified problem is resolved. (Ord. 2008-22 § 6, 2008)

21.40.050 Permit closure.

A. The owner or operator of a construction site shall request permit closure in writing and include a copy of the notice of termination submitted to EPA.

B. The department will issue a letter certifying permit closure upon receipt and approval of the notice of termination and/or upon otherwise determining that all work of the permit has been satisfactorily completed in accordance with this chapter.

C. No person or entity shall occupy, utilize, or operate a constructed facility or site until the site development permit obtained from the department for the facility or site is closed. (Ord. 2008-22 § 6, 2008)

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Chapter 21.50
POST-CONSTRUCTION STORM WATER MANAGEMENT

Sections:

21.50.010 Applicability.
21.50.020 Plan submittal.
21.50.030 Maintenance and repair.
21.50.040 Standards.
21.50.050 Inspections.

21.50.010 Applicability.

This chapter applies to 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, and discharge storm water to that portion of the MS4 located within the Fairbanks urbanized area, unless explicitly exempted by an authorized enforcement agency. (Ord. 2009-27 § 5, 2009)

21.50.020 Plan submittal.

A. A permanent storm water control plan (PSWCP) for each project subject to the provisions of this chapter shall be submitted and accepted by the department prior to issuance of a site development permit.

B. The PSWCP must be developed by a certified professional in erosion and sediment control or a professional engineer registered and licensed in the state of Alaska and shall include the following items as set forth in the standards of this chapter:

1. The name and contact information of the site owner;

2. Project site plan;

3. BMP selection narrative;

4. BMP sizing and design information; and

5. BMP operation and maintenance schedule.

C. Payment of the plan review fee must accompany each PSWCP submittal.

D. The department shall conduct a review of the PSWCP and accept the PSWCP, accept the PSWCP with conditions, or reject the PSWCP in writing based on its conformance with the standards set forth in this chapter.

E. Any applicant may petition the department for reconsideration of a decision regarding a PSWCP submittal within 30 days of the decision. Any such reconsideration request must be accompanied by the original submittal documents and the specific reason for requesting reconsideration. The department will notify the applicant within seven days if reconsideration of the decision is granted.

Reconsideration decisions are final decisions appealable to the superior court in accordance with the rules of appellate procedure.

F. No person shall commence with construction of a project regulated by this chapter without an accepted PSWCP. (Ord. 2009-27 § 5, 2009)

21.50.030 Maintenance and repair.

A. No person or entity shall occupy, utilize, or operate a constructed facility or site until the owner has submitted an as-built plan and executed a maintenance agreement in accordance with this section.

B. The owner of a project subject to the provisions of this chapter shall submit an as-built plan and a certification prepared by a certified professional in erosion and sediment control or a registered professional engineer that all permanent storm water controls have been installed in accordance with the PSWCP or approving any changes or modifications to the PSWCP.

C. The owner shall execute a maintenance agreement to be recorded and binding upon all subsequent owners of the property. Maintenance agreements shall specify:

1. The persons responsible for the maintenance of permanent storm water controls. A homeowner's association may be designated; provided, that provisions for financing necessary maintenance are included in deed restrictions or other contractual agreements.

2. That the persons responsible shall maintain permanent storm water controls in accordance with the PSWCP, and will correct any deficiencies in the system including repair or replacement of the controls if needed.

3. That the department is authorized to enter the property at reasonable times to conduct on-site inspections of the controls. (Ord. 2009-27 § 5, 2009)

21.50.040 Standards.

The specifications and standards set forth in the following document will be used to execute the provisions of this chapter:

A. FNSB BMP Design Guide. This document includes a description of the required PSWCP contents, local design considerations, and best management practices found effective for the Fairbanks urbanized area. The most recently issued guide shall be used.

B. Additional standards may be adopted by the department as necessary to ensure runoff and associated storm water impacts from the development will be controlled and managed. (Ord. 2009-27 § 5, 2009)

21.50.050 Inspections.

A. The department may inspect each project site as necessary to complete review of a PSWCP submittal or maintenance agreement.

B. Access to a project site for inspection shall not be denied. A PSWCP or maintenance agreement will be rejected if an inspection deemed necessary by the department cannot be conducted. (Ord. 2009-27 § 5, 2009)

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Chapter 1.04
PENALTY PROVISIONS Revised 7/14 Pending Ord. 2014-28

Sections:

1.04.010 Penalties. Pending Ord. 2014-28
1.04.015 Penalty surcharge.
1.04.020 Legal accountability based upon the conduct of another – Complicity.
1.04.030 Exemptions to legal accountability for conduct of another.
1.04.040 Application of fine schedule. Pending Ord. 2014-28
1.04.050 Fine schedule. Revised 7/14 Pending Ord. 2014-28
1.04.060 Code enforcement officer designation. Pending Ord. 2014-28
1.04.070 Training requirements.

1.04.010 Penalties. Pending Ord. 2014-28

A. A *person* who violates a provision of this code is guilty of a *misdemeanor* or a *violation*. *Violations* shall be punished by a fine not to exceed $1,000. Unless otherwise specified, *misdemeanors* shall be punished by a fine not to exceed $1,000 or imprisonment for not more than 90 days or both.

B. All *offenses* are *violations* unless expressly designated as a *misdemeanor*.

C. The *borough* may institute a civil action against a *person* who violates a provision of this code. In addition to injunctive and compensatory relief, the *borough* may obtain a civil penalty not to exceed $1,000 for each *violation*. The *borough* may bring an action to enjoin a *violation* or to recover a civil penalty notwithstanding the availability of any other remedy.

D. Notwithstanding the availability of any other remedy in this or any other title of this code, in accordance with AS 29.25.070(a), citations or complaints for *violations* for which a particular amount is provided as the fine under FNSBC 1.04.040 may be disposed of as provided in FNSBC 1.04.020 through 1.04.050.

E. The penalties authorized under this section may be imposed only if copies of the ordinance are made available for distribution to the public at no more than cost.

F. Excepting those enumerated *violations* arising from FNSBC Title 6, Animals, no more than two citations under FNSBC 1.04.040 for a continuing *violation* shall be issued to the same individual in a calendar year without full resolution of the *violation*. Continuing *violation(s)* shall be forwarded to the department of law for consideration of other available remedies. Each day that a *violation* of an ordinance continues constitutes a separate *violation*. (Ord. 2013-26 § 2, 2013; Ord. 2012-66 § 2, 2013; Ord. 2005-39 §§ 2, 3, 2005; amended during 1993 republication; Ord. 86-071 § 2, 1986)

1.04.015 Penalty surcharge.

A. In addition to any fine or other penalty prescribed by law, a *person* who pleads guilty or nolo contendere to, forfeits bail for, or is convicted of:

1. A *misdemeanor* or other *violation* of this code if a sentence of incarceration may be imposed, shall be assessed a surcharge of $50.00;

2. A *misdemeanor* or a *violation* of this code if a sentence of incarceration may not be imposed, shall be assessed a surcharge of $10.00 if the fine or bail forfeiture amount for the *offense* is $30.00 or more.

B. The surcharge shall be deposited into the general fund of the *state* in accordance with AS 29.25. (Ord. 98-029 § 2, 1998)

1.04.020 Legal accountability based upon the conduct of another – Complicity.

A *person* is legally accountable for the conduct of another constituting an *offense* if:

A. The *person* is made legally accountable by a provision of law defining the *offense*;

B. With intent to promote or facilitate the commission of the *offense*, the *person*:

1. Solicits the other to commit the *offense*; or

2. Aids or abets the other in planning or committing the *offense*; or

C. Acting with the culpable mental state that is sufficient for the commission of the *offense*, the *person* causes an innocent *person* or a *person* who lacks criminal responsibility to engage in the proscribed conduct. (Ord. 86-071 § 2, 1986)

1.04.030 Exemptions to legal accountability for conduct of another.

A. In a prosecution for an *offense* or in a civil action, in which legal accountability is based on the conduct of another *person*:

1. It is an affirmative defense that the defendant, under circumstances manifesting a voluntary and complete renunciation of intent:

a. Terminated the defendant's complicity before the commission of the *offense*;

b. Wholly deprived the defendant's complicity of its effectiveness in the commission of the *offense*; and

c. Gave timely warning to *borough* authorities or, if timely warning could not be given to *borough* authorities by reasonable efforts, otherwise made a reasonable effort to prevent the commission of the *offense*.

2. It is not a defense that:

a. The other *person* has not been prosecuted for or convicted of an *offense* based upon the conduct in question or has been convicted of a different *offense* or degree of *offense*;

b. The *offense*, as defined, can be committed only by a particular class of *persons* to which the defendant does not belong, and the defendant is for that reason legally incapable of committing the *offense* in an individual capacity; or

c. The other *person* is not guilty of the *offense*.

B. Except as otherwise provided by an ordinance defining an *offense*, a *person* is not legally accountable for the conduct of another constituting an *offense* if:

1. The *person* is the victim of that *offense*; or

2. The *offense* is so defined that the *person's* conduct is inevitably incidental to its commission. (Ord. 86-071 § 2, 1986)

1.04.040 Application of fine schedule. Pending Ord. 2014-28

A. The purpose of this section is to provide a standardized fine schedule for certain *violations* of the *borough* code for use in accordance with the Alaska Rules of Minor *Offense* Procedure.

B. Any *person* violating any provision of this section, FNSBC 1.04.050, or regulations issued hereunder, is guilty of a *violation* and shall be punished upon conviction by a fine not to exceed $1,000, as set forth in the schedule of fines set forth in this chapter.

C. Fines set out in FNSBC 1.04.050 are separate from and cumulative to penalties, costs, assessments and/or other remedies allowed under other titles of the FNSBC and any surcharge imposed under AS 29.25.074 and FNSBC 1.04.015.

D. Voluntary Disposition Before Arraignment. In accordance with AS 29.25.070(a), citations or complaints for *violations* for which a particular amount is provided as the fine under FNSBC 1.04.050 may be disposed of as provided in AS 12.25.195 through 12.25.230 without a court appearance by submitting payment of the fine amount and the applicable statutory police training surcharge together with the citation number to the Alaska Court System within 30 days. (Ord. 2013-65 § 2, 2013; Ord. 2012-66 § 3, 2013; Ord. 2008-22 § 7, 2008; Ord. 2005-39 § 4, 2005)

1.04.050 Fine schedule. Revised 7/14 Pending Ord. 2014-28

Code Section	*Offense*	Penalty/Fine	Mandatory Warning Requir
3.08.022	Failure to notify assessor or false application for exemption.	$1,000	Yes, 1st *offense* only
3.10.020(C)	False representation regarding tax exemption or deferral.	$1,000	Yes, 1st *offense* only
3.44.020	Removal of mobile home from *borough* without paying tax due.	$1,000	Yes, 1st *offense* only
3.57.040(A)	Failure to register as tobacco distributor.	$1,000	Yes, 1st *offense* only
3.57.050(A)	Failure to pay tax due.	$1,000	Yes, 1st *offense* only

Code Section	*Offense*	Penalty/Fine	Mandatory Warning Requir
3.57.050(B)	Failure to file required report(s).	$1,000	Yes, 1st *offense* only
3.57.050(C)	Failure to pay tax when due.	$1,000	Yes, 1st *offense* only
3.57.050(D)	Attempting to assign or transfer registration.	$1,000	Yes, 1st *offense* only
3.57.050(E)	Importing tobacco in *violation* of chapter.	$1,000	Yes, 1st *offense* only
3.58.020(D)	Failure to transmit hotel-motel room tax.	$1,000	Yes, 1st *offense* only
3.58.040(A)	Failure to register as operator; failure to display registration.	$1,000	Yes, 1st *offense* only
3.58.040(D)	Failure to surrender certificate of registration.	$1,000	Yes, 1st *offense* only
3.58.040(F)	Renting rooms without valid registration.	$1,000	Yes, 1st *offense* only
3.58.050(D)	Failure to maintain invoices or provide books/invoices upon request.	$1,000	Yes, 1st *offense* only
3.58.060(A)	Guest failure or refusal to pay room tax.	$1,000	Yes, 1st *offense* only
3.58.060(B)	Failure to file required report(s).	$1,000	Yes, 1st *offense* only
3.58.060(C)	Failure or refusal to pay room tax to *borough*.	$1,000	Yes, 1st *offense* only
3.58.060(D)	False statement regarding room tax; misappropriation.	$1,000	Yes, 1st *offense* only
3.58.060(E)	Failure to separately *state* room tax to guest.	$1,000	Yes, 1st *offense* only
3.58.060(F)	False statement regarding taxability of rental.	$1,000	Yes, 1st *offense* only
3.58.060(G)	Failure to register, furnish data, display registration or attempted assignment or transfer.	$1,000	Yes, 1st *offense* only
3.58.060(H)	Attributing room revenue to exempt location or entity to evade tax.	$1,000	Yes, 1st *offense* only

Code Section	*Offense*	Penalty/Fine	Mandatory Warning Requir
3.58.130(A)	Failure to maintain records for six years.	$1,000	Yes, 1st *offense* only
3.58.130(B)	Refusal to allow inspection or examination of books, records, documents.	$1,000	Yes, 1st *offense* only
3.59.050(A)	Failure to possess current certificate of registration.	$1,000	Yes, 1st *offense* only
3.59.050(D)	Failure to surrender certificate of registration.	$1,000	Yes, 1st *offense* only
3.59.050(E)	Failure to submit updated application.	$1,000	Yes, 1st *offense* only
3.59.060	Failure to collect alcoholic beverage tax.	$1,000	Yes, 1st *offense* only
3.59.080(A)	Buyer failure or refusal to pay alcoholic beverage tax.	$1,000	Yes, 1st *offense* only
3.59.080(B)	Failure or refusal to file report(s).	$1,000	Yes, 1st *offense* only
3.59.080(C)	Failure or refusal to remit taxes to *borough*.	$1,000	Yes, 1st *offense* only
3.59.080(D)	False statement regarding tax; absorption, failure to add assumption, or failure to refund tax.	$1,000	Yes, 1st *offense* only
3.59.080(E)	Failure to make record at time of sale.	$1,000	Yes, 1st *offense* only
3.59.080(F)	Attempting to assign or transfer registration.	$1,000	Yes, 1st *offense* only
3.59.160(A)	Failure to maintain records for six years.	$1,000	Yes, 1st *offense* only
3.59.160(B)	Failure to make records available for inspection.	$1,000	Yes, 1st *offense* only
6.04.030	Interference with officer in the performance of duty; seeking to release animal in custody.	$1,000	Yes, 1st *offense* only
6.06.010(C)	Adoptive *owner* possessing unspayed/unneutered animal. 1st *offense*	$100.00	No

Code Section	*Offense*	Penalty/Fine	Mandatory Warning Requir
6.06.010(C)	Adoptive *owner* possessing unspayed/unneutered animal. 2nd *offense*	$200.00	No
6.06.010(C)	Adoptive *owner* possessing unspayed/unneutered animal. 3rd or subsequent *offense* within a five-year period	$300.00	No
6.12.010(E)(1)	Failure to surrender animal. 1st *offense*	$100.00	Yes
6.12.010(E)(1)	Failure to surrender animal. 2nd *offense*	$200.00	No
6.12.010(E)(1)	Failure to surrender animal. 3rd *offense*	$300.00	No
6.14.010(E)	Failure to maintain a classified animal according to conditions of release. 1st *offense*	$100.00	No
6.14.010(E)	Failure to maintain a classified animal according to conditions of release. 2nd *offense*	$200.00	No
6.14.010(E)	Failure to maintain a classified animal according to conditions of release. 3rd or subsequent *offense* within a five-year period	$300.00	No
6.16.010(A)	Failure to report animal bite/failure to quarantine bite animal. 1st *offense*	$100.00	No
6.16.010(A)	Failure to report animal bite/failure to quarantine bite animal. 2nd *offense*	$200.00	No
6.16.010(A)	Failure to report animal bite/failure to quarantine bite animal. 3rd or subsequent *offense* within a five-year period	$300.00	No
6.16.010(B)	Failure to surrender animal upon demand. 1st *offense*	$100.00	No
6.16.010(B)	Failure to surrender animal upon demand. 2nd *offense*	$200.00	No
6.16.010(B)	Failure to surrender animal upon demand. 3rd or subsequent *offense* within a five-year period	$300.00	No

Code Section	*Offense*	Penalty/Fine	Mandatory Warning Requir
6.16.010(C)	Failure to report treatment of animal bites. 1st *offense*	$100.00	No
6.16.010(C)	Failure to report treatment of animal bites. 2nd *offense*	$200.00	No
6.16.010(C)	Failure to report treatment of animal bites. 3rd or subsequent *offense* within a five-year period	$300.00	No
6.16.010(D)	Failure to report rabies diagnosis. 1st *offense*	$100.00	No
6.16.010(D)	Failure to report rabies diagnosis. 2nd *offense*	$200.00	No
6.16.010(D)	Failure to report rabies diagnosis. 3rd or subsequent *offense* within a five-year period	$300.00	No
6.16.010(J)	Killing any rabid animal or animal biting a human not in defense of life and limb, or removal without permission; failure to make efforts to save head for observation. 1st *offense*	$100.00	No
6.16.010(J)	Killing any rabid animal or animal biting a human not in defense of life and limb, or removal without permission; failure to make efforts to save head for observation. 2nd *offense*	$200.00	No
6.16.010(J)	Killing any rabid animal or animal biting a human not in defense of life and limb, or removal without permission; failure to make efforts to save head for observation. 3rd or subsequent *offense* within a five-year period	$300.00	No
6.16.010(K)	Failure to surrender carcass of animal with suspected rabies exposure. 1st *offense*	$100.00	No
6.16.010(K)	Failure to surrender carcass of animal with suspected rabies exposure. 2nd *offense*	$200.00	No
6.16.010(K)	Failure to surrender carcass of animal with suspected rabies exposure. 3rd or subsequent *offense* within a five-year period	$300.00	No

Code Section	*Offense*	Penalty/Fine	Mandatory Warning Requir
6.16.010(M)	Failure to surrender animal for quarantine or destruction. 1st *offense*	$100.00	No
6.16.010(M)	Failure to surrender animal for quarantine or destruction. 2nd *offense*	$200.00	No
6.16.010(M)	Failure to surrender animal for quarantine or destruction. 3rd or subsequent *offense* within a five-year period	$300.00	No
6.16.020(A)	Failure to immunize animal against rabies. 1st *offense*	$100.00	No
6.16.020(A)	Failure to immunize animal against rabies. 2nd *offense*	$200.00	No
6.16.020(A)	Failure to immunize animal against rabies. 3rd or subsequent *offense* within a five-year period	$300.00	No
6.16.030	Providing false proof of rabies immunization. 1st *offense*	$100.00	No
6.16.030	Providing false proof of rabies immunization. 2nd *offense*	$200.00	No
6.16.030	Providing false proof of rabies immunization. 3rd or subsequent *offense* within a five-year period	$300.00	No
6.16.040	Failure to provide proof of immunization. 1st *offense*	$100.00	Yes
6.16.040	Failure to provide proof of immunization. 2nd *offense*	$200.00	No
6.16.040	Failure to provide proof of immunization. 3rd *offense*	$300.00	No
6.24.010	Failure to properly restrain animal to prevent running at large. 1st *offense*	$100.00	No
6.24.010	Failure to properly restrain animal to prevent running at large. 2nd *offense*	$200.00	No

Code Section	*Offense*	Penalty/Fine	Mandatory Warning Requir
6.24.010	Failure to properly restrain animal to prevent running at large. 3rd or subsequent *offense* within a five-year period	$300.00	No
6.24.020	Failure to remove dog or cat excreta. 1st *offense*	$100.00	No
6.24.020	Failure to remove dog or cat excreta. 2nd *offense*	$200.00	No
6.24.020	Failure to remove dog or cat excreta. 3rd or subsequent *offense* within a five-year period	$300.00	No
6.24.030(A)	Harboring animal infected with contagious or pestilent disease. 1st *offense*	$100.00	No
6.24.030(A)	Harboring animal infected with contagious or pestilent disease. 2nd *offense*	$200.00	No
6.24.030(A)	Harboring animal infected with contagious or pestilent disease. 3rd or subsequent *offense* within a five-year period	$300.00	No
6.24.030(B)	Failure to exercise proper care and control of animal to prevent public nuisance. 1st *offense*	$100.00	No
6.24.030(B)	Failure to exercise proper care and control of animal to prevent public nuisance. 2nd *offense*	$200.00	No
6.24.030(B)	Failure to exercise proper care and control of animal to prevent public nuisance. 3rd or subsequent *offense* within a five-year period	$300.00	No
6.24.030(C)	Tying, staking or fastening animal within *street*, alley, sidewalk or public place. 1st *offense*	$100.00	No
6.24.030(C)	Tying, staking or fastening animal within *street*, alley, sidewalk or public place. 2nd *offense*	$200.00	No
6.24.030(C)	Tying, staking or fastening animal within *street*, alley, sidewalk or public place. 3rd or subsequent *offense* within a five-year period	$300.00	No

Code Section	*Offense*	Penalty/Fine	Mandatory Warning Requir
6.24.030(D)	Failure to confine female dog or cat in heat. 1st *offense*	$100.00	No
6.24.030(D)	Failure to confine female dog or cat in heat. 2nd *offense*	$200.00	No
6.24.030(D)	Failure to confine female dog or cat in heat. 3rd or subsequent *offense* within a five-year period	$300.00	No
6.24.040(B)	Failure to provide humane care. 1st *offense*	$100.00	Yes
6.24.040(B)	Failure to provide humane care. 2nd *offense*	$200.00	No
6.24.040(B)	Failure to provide humane care. 3rd *offense*	$300.00	No
6.24.050	Release from restraint by nonowner. 1st *offense*	$100.00	No
6.24.050	Release from restraint by nonowner. 2nd *offense*	$200.00	No
6.24.050	Release from restraint by nonowner. 3rd or subsequent *offense* within a five-year period	$300.00	No
6.24.060(A)	Failure to report accident involving domestic animal. 1st *offense*	$100.00	No
6.24.060(A)	Failure to report accident involving domestic animal. 2nd *offense*	$200.00	No
6.24.060(A)	Failure to report accident involving domestic animal. 3rd or subsequent *offense* within a five-year period	$300.00	No
6.24.060(B)	Failure to restrain animal in open motor vehicle. 1st *offense*	$100.00	No
6.24.060(B)	Failure to restrain animal in open motor vehicle. 2nd *offense*	$200.00	No
6.24.060(B)	Failure to restrain animal in open motor vehicle. 3rd or subsequent *offense* within a five-year period	$300.00	No
8.07.020(A)	Curfew *violation* – minor. 1st *offense*	$75.00	No

Code Section	*Offense*	Penalty/Fine	Mandatory Warning Requir
8.07.020(A)	Curfew *violation* – minor. 2nd *offense*	$100.00	No
8.07.020(A)	Curfew *violation* – minor. 3rd *offense*	$125.00 plus additional $25.00 for each subsequent *violation*	No
8.07.020(B)	Curfew *violation* – parent or legal guardian. 1st *offense*	$75.00	No
8.07.020(B)	Curfew *violation* – parent or legal guardian. 2nd *offense*	$100.00	No
8.07.020(B)	Curfew *violation* – parent or legal guardian. 3rd *offense*	$125.00 plus additional $25.00 for each subsequent *violation*	No
8.07.020(C)	Curfew *violation* – establishment. 1st *offense*	$75.00	No
8.07.020(C)	Curfew *violation* – establishment. 2nd *offense*	$100.00	No
8.07.020(C)	Curfew *violation* – establishment. 3rd *offense*	$125.00 plus additional $25.00 for each subsequent *violation*	No
8.08.020	Sale of fireworks.	$1,000	Yes, 1st *offense* only
8.08.030	Unauthorized use or exploding of fireworks.	$1,000	Yes, 1st *offense* only
8.08.040(B)	Transfer of fireworks display permit.	$1,000	Yes, 1st *offense* only
8.08.040(C)	Failure to dispose of unfired fireworks from public display.	$1,000	Yes, 1st *offense* only
8.12.031(A)	Dumping solid waste outside of specified area. 1st *offense*	$100.00	No

Code Section	*Offense*	Penalty/Fine	Mandatory Warning Requir
8.12.031(A)	Dumping solid waste outside of specified area. 2nd *offense*	$200.00	No
8.12.031(A)	Dumping solid waste outside of specified area. 3rd *offense*	$300.00	No
8.12.041(A)	Disposal of solid waste in unauthorized location. 1st *offense*	$100.00	No
8.12.041(A)	Disposal of solid waste in unauthorized location. 2nd *offense*	$200.00	No
8.12.041(A)	Disposal of solid waste in unauthorized location. 3rd *offense*	$300.00	No
8.12.041(B)	Unauthorized disposal of special solid waste. 1st *offense*	$100.00	No
8.12.041(B)	Unauthorized disposal of special solid waste. 2nd *offense*	$200.00	No
8.12.041(B)	Unauthorized disposal of special solid waste. 3rd *offense*	$300.00	No
8.12.041(C)	Accumulation of waste or other materials on *property* – public health threat. 1st *offense*	$100.00	No
8.12.041(C)	Accumulation of waste or other materials on *property* – public health threat. 2nd *offense*	$200.00	No
8.12.041(C)	Accumulation of waste or other materials on *property* – public health threat. 3rd *offense*	$300.00	No
8.12.041(D)	Littering on water or land. 1st *offense*	$100.00	No
8.12.041(D)	Littering on water or land. 2nd *offense*	$200.00	No
8.12.041(D)	Littering on water or land. 3rd *offense*	$300.00	No
8.12.041(E)	Dumping solid waste in public dumpsters not from individual residences located in the *borough* but outside of the *city* of Fairbanks. 1st *offense*	$100.00	No

Code Section	*Offense*	Penalty/Fine	Mandatory Warning Requir
8.12.041(E)	Dumping solid waste in public dumpsters not from individual residences located in the *borough* but outside of the *city* of Fairbanks. 2nd *offense*	$200.00	No
8.12.041(E)	Dumping solid waste in public dumpsters not from individual residences located in the *borough* but outside of the *city* of Fairbanks. 3rd *offense*	$300.00	No
8.12.041(F)	Disposing of solid waste outside of public dumpster. 1st *offense*	$100.00	No
8.12.041(F)	Disposing of solid waste outside of public dumpster. 2nd *offense*	$200.00	No
8.12.041(F)	Disposing of solid waste outside of public dumpster. 3rd *offense*	$300.00	No
8.12.041(G)	Disposal of specified wastes at public dumpster. 1st *offense*	$100.00	No
8.12.041(G)	Disposal of specified wastes at public dumpster. 2nd *offense*	$200.00	No
8.12.041(G)	Disposal of specified wastes at public dumpster. 3rd *offense*	$300.00	No
8.12.061(A)	Collecting/transporting solid waste to other than approved waste disposal facility. 1st *offense*	$100.00	No
8.12.061(A)	Collecting/transporting solid waste to other than approved waste disposal facility. 2nd *offense*	$200.00	No
8.12.061(A)	Collecting/transporting solid waste to other than approved waste disposal facility. 3rd *offense*	$300.00	No
8.12.061(B)	Collecting/transporting specified materials in unapproved container. 1st *offense*	$100.00	No

Code Section	*Offense*	Penalty/Fine	Mandatory Warning Requir
8.12.061(B)	Collecting/transporting specified materials in unapproved container. 2nd *offense*	$200.00	No
8.12.061(B)	Collecting/transporting specified materials in unapproved container. 3rd *offense*	$300.00	No
8.12.061(C)	Solid waste spillage from vehicle or container; failure to pick up fallen materials/clean area. 1st *offense*	$100.00	No
8.12.061(C)	Solid waste spillage from vehicle or container; failure to pick up fallen materials/clean area. 2nd *offense*	$200.00	No
8.12.061(C)	Solid waste spillage from vehicle or container; failure to pick up fallen materials/clean area. 3rd *offense*	$300.00	No
8.12.061(D)	Uncovered or unsecured load at disposal facility. 1st *offense*	$100.00	No
8.12.061(D)	Uncovered or unsecured load at disposal facility. 2nd *offense*	$200.00	No
8.12.061(D)	Uncovered or unsecured load at disposal facility. 3rd *offense*	$300.00	No
8.14.015(A) and (B)	Unlawful abandonment of a vehicle.	$300.00	Yes
8.20.010(A)	Vehicle plug-in program *violation*.	$300.00	Yes
9.04.010(A)	Interference with disaster relief personnel – obstruct, hinder, delay.	$1,000	Yes, 1st *offense* only
9.04.010(B)	Interference with disaster relief personnel – prohibited acts.	$1,000	Yes, 1st *offense* only
9.12.010(A)	Use of park/recreation facility in *violation* of rules/regulations.	$500.00	Yes, 1st *offense* only
9.12.010(B)	Moving, defacing, damaging or destroying park/recreation *property*.	$1,000	Yes, 1st *offense* only
9.12.010(C)	Putting garbage, rubbish, or discarded objects in or on park/recreation facility.	$1,000	Yes, 1st *offense* only

Code Section	*Offense*	Penalty/Fine	Mandatory Warning Requir
9.12.020(C)	Loss, retention or destruction of library *property*.	$1,000	Yes, 1st *offense* only
9.12.030	Consumption, possession or use of alcoholic beverages in posted areas in *borough* parks.	$50.00	No
12.01.020	Causing, creating, maintaining or expanding an encroachment.	$300.00	Yes, unless healt and safety issue
14.03.020	Failure to reconstruct public road in service area.	$300.00	Yes, unless healt and safety issue
14.03.030	Commencing excavation or construction in or on public road in service area without a permit.	$300.00	Yes, unless healt and safety issue
15.04.040	Constructing without a floodplain permit.	$500.00	No
15.04.055	Failure to obtain a certificate of compliance.	$500.00	No
15.04.080	Failure to comply with floodplain construction requirements.	$500.00	No
17.10.030(A)	Subdividing land without Title 17 compliance.	$500.00	Yes, 1st *offense* only
17.10.030(B)	Aiding or abetting unapproved land *subdivision*.	$500.00	Yes, 1st *offense* only
17.10.030(C)	Recording *subdivision* without *borough* approval.	$500.00	Yes, 1st *offense* only
18.04.030	Zoning regulation *violation*.	$300.00	Yes, 1st *offense* only
18.10.020(A)	Permitted use *violation* – outdoor recreational district.	$300.00	Yes, 1st *offense* only
18.10.020(B)	Conditional use *violation* – outdoor recreational district.	$300.00	Yes, 1st *offense* only
18.10.030	Standards *violation* – outdoor recreational district.	$300.00	Yes, 1st *offense* only
18.11.020(A)	Permitted use *violation* – open space buffer district.	$300.00	Yes, 1st *offense* only
18.11.020(B)	Conditional use *violation* – open space buffer district.	$300.00	Yes, 1st *offense* only
18.11.030	Standards *violation* – open space buffer district.	$300.00	Yes, 1st *offense* only

Code Section	*Offense*	Penalty/Fine	Mandatory Warning Requir
18.14.020(A)	Permitted use *violation* – rural and agricultural district.	$300.00	Yes, 1st *offense* only
18.14.020(B)	Conditional use *violation* – rural and agricultural district.	$300.00	Yes, 1st *offense* only
18.14.030	Standards *violation* – rural and agricultural district.	$300.00	Yes, 1st *offense* only
18.16.020(A)	Permitted use *violation* – rural farmstead district.	$300.00	Yes, 1st *offense* only
18.16.020(B)	Conditional use *violation* – rural farmstead district.	$300.00	Yes, 1st *offense* only
18.16.030	Standards *violation* – rural farmstead district.	$300.00	Yes, 1st *offense* only
18.18.020(A)	Permitted use *violation* – rural estate district.	$300.00	Yes, 1st *offense* only
18.18.020(B)	Conditional use *violation* – rural estate district.	$300.00	Yes, 1st *offense* only
18.18.030	Standards *violation* – rural estate district.	$300.00	Yes, 1st *offense* only
18.20.020(A)	Permitted use *violation* – rural residential district.	$300.00	Yes, 1st *offense* only
18.20.020(B)	Conditional use *violation* – rural residential district.	$300.00	Yes, 1st *offense* only
18.20.030	Standards *violation* – rural residential district.	$300.00	Yes, 1st *offense* only
18.22.020(A)	Permitted use *violation* – single-family residential district.	$300.00	Yes, 1st *offense* only
18.22.020(B)	Conditional use *violation* – single-family residential district.	$300.00	Yes, 1st *offense* only
18.22.030	Standards *violation* – single-family residential district.	$300.00	Yes, 1st *offense* only
18.24.020(A)	Permitted use *violation* – two-family residential district.	$300.00	Yes, 1st *offense* only
18.24.020(B)	Conditional use *violation* – two-family residential district.	$300.00	Yes, 1st *offense* only

Code Section	*Offense*	Penalty/Fine	Mandatory Warning Requir
18.24.030	Standards *violation* – two-family residential district.	$300.00	Yes, 1st *offense* only
18.26.020(A)	Permitted use *violation* – multiple-family residential district.	$300.00	Yes, 1st *offense* only
18.26.020(B)	Conditional use *violation* – multiple-family residential district.	$300.00	Yes, 1st *offense* only
18.26.030	Standards *violation* – multiple-family residential district.	$300.00	Yes, 1st *offense* only
18.28.020(A)	Permitted use *violation* – multiple-family residential/professional office district.	$300.00	Yes, 1st *offense* only
18.28.020(B)	Conditional use *violation* – multiple-family residential/professional office district.	$300.00	Yes, 1st *offense* only
18.28.030	Standards *violation* – multiple-family residential/professional office district.	$300.00	Yes, 1st *offense* only
18.32.020(A)	Permitted use *violation* – light commercial district.	$300.00	Yes, 1st *offense* only
18.32.020(B)	Conditional use *violation* – light commercial district.	$300.00	Yes, 1st *offense* only
18.32.030	Standards *violation* – light commercial district.	$300.00	Yes, 1st *offense* only
18.34.020(A)	Permitted use *violation* – general commercial district.	$300.00	Yes, 1st *offense* only
18.34.020(B)	Conditional use *violation* – general commercial district.	$300.00	Yes, 1st *offense* only
18.34.030	Standards *violation* – general commercial district.	$300.00	Yes, 1st *offense* only
18.36.020(A)	Permitted use *violation* – central business district.	$300.00	Yes, 1st *offense* only
18.36.020(B)	Conditional use *violation* – central business district.	$300.00	Yes, 1st *offense* only
18.36.030	Standards *violation* – central business district.	$300.00	Yes, 1st *offense* only
18.38.020(A)	Permitted use *violation* – light industrial district.	$300.00	Yes, 1st *offense* only

Code Section	*Offense*	Penalty/Fine	Mandatory Warning Requir
18.38.020(B)	Conditional use *violation* – light industrial district.	$300.00	Yes, 1st *offense* only
18.38.030	Standards *violation* – light industrial district.	$300.00	Yes, 1st *offense* only
18.40.020(A)	Permitted use *violation* – heavy industrial district.	$300.00	Yes, 1st *offense* only
18.40.020(B)	Conditional use *violation* – heavy industrial district.	$300.00	Yes, 1st *offense* only
18.40.030	Standards *violation* – heavy industrial district.	$300.00	Yes, 1st *offense* only
18.42.020(A)	Permitted use *violation* – mineral lands district.	$300.00	Yes, 1st *offense* only
18.42.020(B)	Conditional use *violation* – mineral lands district.	$300.00	Yes, 1st *offense* only
18.42.030	Standards *violation* – mineral lands district.	$300.00	Yes, 1st *offense* only
18.44.020(A)	Permitted use *violation* – general use district (GU-1).	$300.00	Yes, 1st *offense* only
18.44.020(B)	Conditional use *violation* – general use district (GU -1).	$300.00	Yes, 1st *offense* only
18.44.030	Standards *violation* – general use district (GU-1).	$300.00	Yes, 1st *offense* only
18.45.020(A)	Permitted use *violation* – general use district (GU-5).	$300.00	Yes, 1st *offense* only
18.45.020(B)	Conditional use *violation* – general use district (GU -5).	$300.00	Yes, 1st *offense* only
18.45.030	Standards *violation* – general use district (GU-5).	$300.00	Yes, 1st *offense* only
18.48.060(B)	Correctional facility standards *violation*.	$300.00	Yes, 1st *offense* only
18.48.070(B)	Groundwater damage protection standards *violation*.	$300.00	Yes, 1st *offense* only
18.48.080(B)	Airport noise sensitive area standards *violation*.	$300.00	Yes, 1st *offense* only

Code Section	*Offense*	Penalty/Fine	Mandatory Warning Requir
18.48.090(B)	Waterways setback standards *violation*.	$300.00	Yes, 1st *offense* only
18.48.100(B)	Waterways protection standards *violation*.	$300.00	Yes, 1st *offense* only
18.48.110(B)	Special landscape area standards *violation*.	$300.00	Yes, 1st *offense* only
18.48.120(B)	Communications towers standards *violation*.	$300.00	Yes, 1st *offense* only
18.50.020	Buildings per lot *violation*.	$300.00	Yes, 1st *offense* only
18.50.030(A)	Accessory structure yard *violation*.	$300.00	Yes, 1st *offense* only
18.50.030(B)	Accessory structure discharge *violation*.	$300.00	Yes, 1st *offense* only
18.50.030(C)	Accessory structure *violation* – designated zone requirements.	$300.00	Yes, 1st *offense* only
18.50.060(A)	Off-*street* parking and loading *violation*.	$300.00	Yes, 1st *offense* only
18.50.060(C)	Off-*street* parking standards *violation*.	$300.00	Yes, 1st *offense* only
18.50.060(D)	Off-*street* loading standards *violation*.	$300.00	Yes, 1st *offense* only
18.50.060(E)	Off-*street* parking location *violation*.	$300.00	Yes, 1st *offense* only
18.50.060(F)	Shared off-*street* parking *violation*.	$300.00	Yes, 1st *offense* only
18.50.060(G)	Handicapped parking *violation*.	$300.00	Yes, 1st *offense* only
18.50.060(H)	Off-*street* parking/loading design *violation*.	$300.00	Yes, 1st *offense* only
18.50.070(A)	Sign *violation*.	$300.00	Yes, 1st *offense* only
18.50.070(B)	Sign *violation* – defined zone.	$300.00	Yes, 1st *offense* only

Code Section	*Offense*	Penalty/Fine	Mandatory Warning Requir
18.50.070(C)	Temporary sign *violation*.	$300.00	Yes, 1st *offense* only
18.50.080	Home occupation *violation*.	$300.00	Yes, 1st *offense* only
18.50.090	Exceeding permitted fence height.	$100.00	Yes
18.50.100(A)	*Street* intersection visibility *violation*.	$300.00	Yes, unless healt and safety issue
18.50.100(B)	*Street* intersection visibility – parking *violation*.	$300.00	Yes, 1st *offense* only
18.50.110(A)	Campground standards *violation*.	$300.00	Yes, 1st *offense* only
18.50.110(B)	Failure to submit compliant site plan.	$300.00	Yes, 1st *offense* only
18.50.110(C)	Campground area, setback, or height requirements *violation*.	$300.00	Yes, 1st *offense* only
18.50.110(D)	Entrance/exit design *violation*.	$300.00	Yes, 1st *offense* only
18.50.110(E)	Internal *street* standards *violation*.	$300.00	Yes, 1st *offense* only
18.50.110(F)	*Street* alignment/gradient *violation*.	$300.00	Yes, 1st *offense* only
18.50.110(G)	*Street* surfacing *violation*.	$300.00	Yes, 1st *offense* only
18.50.110(H)	*Street* width *violation*.	$300.00	Yes, 1st *offense* only
18.50.110(I)	Office/facility location *violation*.	$300.00	Yes, 1st *offense* only
18.50.110(J)	Waste disposal *violation*.	$300.00	Yes, 1st *offense* only
18.50.110(K)	Exterior lighting *violation*.	$300.00	Yes, 1st *offense* only
18.50.120	Storage of hazardous substance in *violation* of limitation or condition of conditional use approval.	$300.00	No

Code Section	*Offense*	Penalty/Fine	Mandatory Warning Requir
18.50.130(A)	Failure to comply with location limitation.	$300.00	Yes, 1st *offense* only
18.50.130(B)	Failure to comply with screening requirements.	$300.00	Yes, 1st *offense* only
18.50.130(C)	Failure to comply with runoff/drainage plan requirements.	$300.00	Yes, 1st *offense* only
18.50.130(D)	Failure to mitigate – rats.	$300.00	Yes, 1st *offense* only
18.50.140	Lighting *violation*.	$100.00	Yes
18.50.150	Public utility and service use standards *violation*.	$300.00	Yes, 1st *offense* only
18.50.155	Communication tower standards *violation*.	$300.00	Yes, 1st *offense* only
18.50.160	Residential cluster development standards *violation*.	$300.00	Yes, 1st *offense* only
18.50.170	Self-storage establishment *violation*.	$300.00	Yes, 1st *offense* only
18.50.180	Sewage and toilet facilities *violation*.	$300.00	Yes
18.50.190	Residential district structural change *violation*.	$300.00	Yes, 1st *offense* only
18.50.200(D)	Large-scale development standards *violation*.	$300.00	Yes, 1st *offense* only
18.54.025	Violating special limitation of rezone.	$300.00	Yes
18.54.030	Failure to timely cease conditional use	$300.00	Yes
18.54.060	Failure to obtain a zoning permit.	$300.00	Yes
18.56.030	Nonconforming use restriction *violation*.	$300.00	Yes, 1st *offense* only
19.10.010	Unlawful expansion, reconstruction or operation of mobile home park.	$1,000	Yes, 1st *offense* only
19.10.020	Failure to obtain annual mobile home park permit.	$1,000	Yes, 1st *offense* only
19.10.040	*Violation* of mobile home park spacing requirements.	$1,000	Yes, 1st *offense* only

Code Section	*Offense*	Penalty/Fine	Mandatory Warning Requir
19.10.050	Wiring *violation*.	$1,000	Yes, 1st *offense* only
19.10.060	*Street* and block layout *violation*.	$1,000	Yes, 1st *offense* only
19.10.070	Water and sewer *violation*.	$1,000	Yes, 1st *offense* only
19.10.080	Access *violation*.	$1,000	Yes, 1st *offense* only
19.10.090	Convenience establishment restrictions *violation*.	$1,000	Yes, 1st *offense* only
19.10.100	Construction standards *violation*.	$1,000	Yes, 1st *offense* only
19.10.110	Campers and travel trailers *violation*.	$1,000	Yes, 1st *offense* only
19.10.120	Garbage removal *violation*.	$1,000	Yes, 1st *offense* only
19.10.130	Fuel supply anchoring *violation*.	$1,000	Yes, 1st *offense* only
19.10.160	Unlawful expansion, reconstruction or operation of a mobile home park.	$1,000	Yes, 1st *offense* only
21.30.020	Illicit discharge. 1st *offense*	$500.00	Yes, unless healt and safety issue
21.30.020	Illicit discharge. 2nd *offense*	$750.00	No
21.30.020	Illicit discharge. 3rd *offense*	$1,000	No
21.30.030	Failure to notify of spills. 1st *offense*	$500.00	No
21.30.030	Failure to notify of spills. 2nd *offense*	$750.00	No
21.30.030	Failure to notify of spills. 3rd *offense*	$1,000	No
21.40.020	Operating construction site without a permit.	$500.00	Yes
21.40.030	Failure to comply with construction site standards.	$500.00	No

Code Section	*Offense*	Penalty/Fine	Mandatory Warning Requir
21.40.040	Denying access for inspection.	$500.00	No
21.40.050	Failure to obtain permit closure.	$500.00	No
21.50.020	Commencing with construction without an accepted PSWCP.	$500.00	Yes
21.50.030	Occupying, utilizing, or operating a constructed facility or site without a recorded maintenance agreement.	$500.00	No
21.50.030	*Violation* of terms of maintenance agreement.	$500.00	No

(Ord. 2014-19 § 4, 2014; Ord. 2013-86 § 2, 2013; Ord. 2013-65 § 24, 2013; Ord. 2013-43 § 3, 2013; Ord. 2013-26 § 3, 2013; Ord. 2012-61 § 4, 2012; Ord. 2012-09 § 5, 2012; Ord. 2011-12 § 4, 2011; Ord. 2011-03 § 8, 2011; Ord. 2010-28 § 4, 2010; Ord. 2009-55 § 3, 2010; Ord. 2009-27 § 6, 2009; Ord. 2008-22 § 7, 2008; Ord. 2007-04 § 6, 2007; Ord. 2006-40 § 2, 2006; Ord. 2005-82 § 3, 2006; Ord. 2005-39 § 5, 2005)

1.04.060 Code enforcement officer designation. Pending Ord. 2014-28

The *mayor* may designate in writing up to three total *persons* who shall be authorized to enforce this code, except FNSBC Title 6, Animals, as code enforcement officers. Any officer so designated to enforce some or all provisions of the FNSBC is authorized to issue citations, or notices of *violation*, for any *violation* of this code which the officer is authorized to enforce in the manner provided by AS 12.25.180 through 12.25.230. Code enforcement officers appointed under the authority of this section shall not have the general authority of police officers.

Animal control officers as defined in FNSBC Title 6 shall have authority to enforce the provisions of FNSBC Title 6 including the issuance of citations and notices of *violation*. (Ord. 2013-72 § 2, 2013; Ord. 2013-26 § 4, 2013; Ord. 2005-39 § 6, 2005)

1.04.070 Training requirements.

Citations authorized by this chapter shall be issued in accordance with a training manual approved by the *mayor*. No citation shall be issued by a code enforcement officer until that officer has been trained as to the requirements of this chapter and the training manual. (Ord. 2005-39 § 6, 2005)

The Fairbanks North Star Borough Code is current through Ordinance 2014-33, passed June 26, 2014.

Disclaimer: The Borough Clerk's Office has the official version of the Fairbanks North Star Borough Code. Users should contact the Borough Clerk's Office for ordinances passed subsequent to the ordinance cited above.

Appendix E
FNSB Storm Water BMP Design Guide

Fairbanks North Star Borough

Department of Public Works

Storm Water
BMP Design Guide

March 2010

Preface

This guide provides an overview of the storm water management design and construction requirements for new development and redevelopment projects regulated by the Fairbanks North Star Borough (FNSB). It is one part of a collaborative effort by the City of Fairbanks, City of North Pole, and FNSB to educate developers, engineers, contractors, and the general public on local storm water pollution control laws. Included in this guide is a brief overview of the FNSB storm water management program, project review requirements, general design considerations, and effective best management practices for the Fairbanks Urbanized Area. The City of Fairbanks and City of North Pole have a separate, but similar, design guide for their jurisdictions.

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Acronyms & Abbreviations

ADEC	Alaska Department of Environmental Conservation
ADOT&PF	Alaska Department of Transportation & Public Facilities
BMP	Best Management Practice
FNSB	Fairbanks North Star Borough
IDF	Intensity-Duration-Frequency
MS4	Municipal Separate Storm Sewer System
PSWCP	Permanent Storm Water Control Plan
RSA	Road Service Area
SWPPP	Storm Water Pollution Prevention Plan
TMDL	Total Maximum Daily Load
UAF	University of Alaska Fairbanks

1. Storm Water Management Program Overview

Storm water runoff is generated when water from rain and melting snow flows over land instead of infiltrating into the ground. As runoff travels over developed land such as lawns, driveways, streets, parking lots, building rooftops, and other constructed improvements, it accumulates pollutants. Such pollutants can include sediment, oil and grease, solvents, detergents, heavy metals, litter/debris, pesticides, fertilizers, nutrients, and pathogens. Local storm water conveyance systems, known as Municipal Separate Storm Sewer Systems (MS4s), concentrate runoff into storm drain pipes, ditches, and other conduits. When this concentrated flow leaves the MS4, it empties into local water bodies carrying the pollutant load with it. The results can significantly alter our natural environment by contaminating drinking water supplies, making recreational areas unsafe and unpleasant, harming fish and wildlife populations, and killing native vegetation.

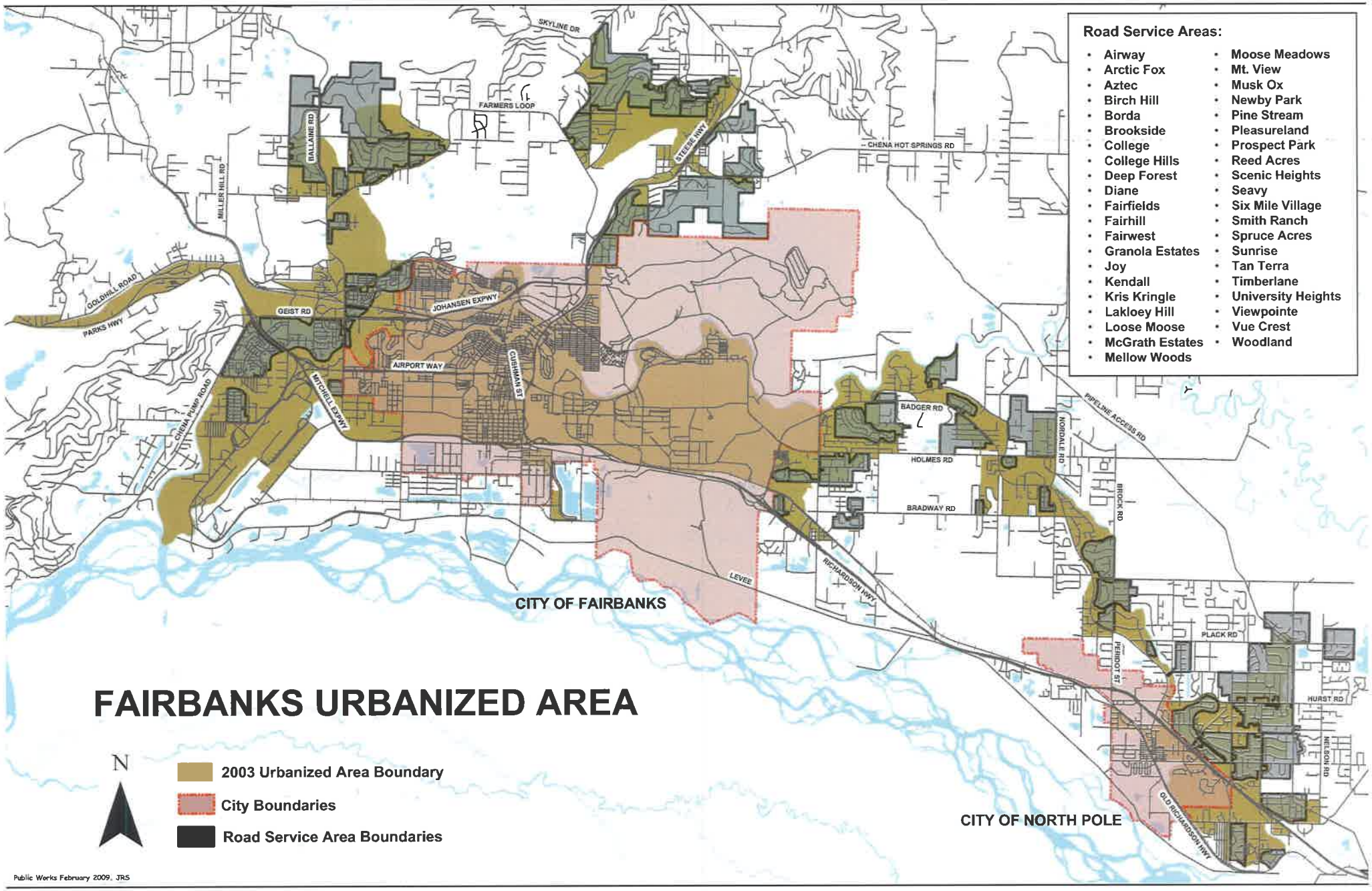
Federal and State regulations based on the Clean Water Act require communities that reach certain population density levels to develop, implement, and enforce storm water management programs that will reduce the discharge of pollutants from the MS4 and protect water quality. These regulations are triggered when a community receives an urbanized area designation by the U.S. Census Bureau. By definition, an urbanized area is a land area comprised of an urban district and the adjacent densely settled surrounding area, known as the urban fringe, that together have a residential population of at least 50,000 people and an overall population density of at least 1,000 people per square mile. The U.S. Census Bureau determines urbanized areas based on census data and then maps the areas based on both visible physical boundaries such as roads or streams, and invisible administrative boundaries such as political corporate limits or subdivisions.

1.1 Fairbanks Urbanized Area

The U.S. Census Bureau designated the Fairbanks Urbanized Area in May 2002. It includes portions of the City of Fairbanks, City of North Pole, and 41 FNSB Road Service Areas (RSAs). A map of the urbanized area is included as Figure 1. To meet Federal and State storm water management mandates, FNSB adopted ordinances to regulate the design and construction of large new development and redevelopment projects within the urbanized area boundary when the projects impact the MS4. The MS4 is defined as the storm drain pipes, ditches, and other conveyances located within RSAs. Projects within the urbanized area boundary that do not impact the MS4 and projects that are outside of the urbanized area boundary are not regulated under FNSB's adopted ordinances. The adopted ordinances are contained in FNSB Code of Ordinances Title 21 and should be reviewed prior to the design or construction of a regulated project.

1.2 Comprehensive MS4 Map

In addition to the adoption of the aforementioned ordinances, the City of Fairbanks, City of North Pole, and FNSB, working collectively with the Alaska Department of Transportation & Public Facilities (ADOT&PF) and the University of Alaska Fairbanks (UAF), developed an area wide MS4 map. The map is GIS-based and includes the location of MS4 components for each entity including catch basins, manholes, storm drain pipe, ditches, culverts, and outfalls, as well as the locations of water bodies that will receive the storm water discharges from the outfalls. FNSB is developing a link to the map on the Fairbanks Urbanized Area Storm Water Management webpage. The link is scheduled to be posted online in summer 2010. The map may be used by interested parties to identify the location of MS4 components near their project sites. All MS4 component information shown on the map must be field verified prior to design.


Road Service Areas:
Airway
Arctic Fox
Aztec
Birch Hill
Borda
Brookside
College
College Hills
Deep Forest
Diane
Fairfields
Fairhill
Fairwest
Granola Estates
Joy
Kendall
Kris Kringle
Lakloey Hill
Loose Moose
McGrath Estates
Mellow Woods
Moose Meadows
Mt. View
Musk Ox
Newby Park
Pine Stream
Pleasureland
Prospect Park
Reed Acres
Scenic Heights
Seavy
Six Mile Village
Smith Ranch
Spruce Acres
Sunrise
Tan Terra
Timberlane
University Heights
Viewpointe
Vue Crest
Woodland
SKYLINE DR
FARMERS LOOP
BALLAINE RD
MILLER HILL RD
STEESE HWY
CHENA HOT SPRINGS RD
GOLDHILL ROAD
PARKS HWY
GEIST RD
JOHANSEN EXPWY
AIRPORT WAY
CUSHMAN ST
MITCHELL EXPWY
CHENA PUMP ROAD
BADGER RD
HOLMES RD
BRADWAY RD
HORDALE RD
PIPELINE ACCESS RD
BROCK RD
RICHARDSON HWY
LEVEE
CITY OF FAIRBANKS
PLACK RD
PERIDOT ST
HURST RD
NELSON RD
OLD RICHARDSON HWY
CITY OF NORTH POLE
FAIRBANKS URBANIZED AREA
N
2003 Urbanized Area Boundary
City Boundaries
Road Service Area Boundaries
Public Works February 2009, JRS

2. Review Requirements

New development and redevelopment projects that, when constructed, will result in a ground disturbance of greater than or equal to one acre, or result in a ground disturbance less than one acre but will be part of a larger common plan of development or sale that will collectively disturb more than one acre; and, impact the MS4 must have permanent and temporary storm water best management practices (BMPs) approved prior to construction. The approval process is administered through the FNSB Department of Public Works (Department) and consists of the acceptance of a Permanent Storm Water Control Plan (PSWCP) and approval of a Site Development Permit. Upon completion of construction, each Site Development Permit must be closed and certified as-built plans of the permanent storm water BMPs must be submitted along with a maintenance agreement, which will be recorded with the State of Alaska.

Within ten business days after receiving all pertinent data, the Department will accept, accept with conditions, or deny a PSWCP and approve, approve with conditions, or deny a Site Development Permit based on conformance with the provisions of Title 21. The Department may inspect project sites as necessary to complete review of a PSWCP or maintenance agreement. All permitted construction sites will be inspected at least once per year. No person or entity shall occupy, utilize, or operate a constructed facility or site until the Site Development Permit is closed, certified as-built plans are submitted, and a maintenance agreement is recorded. A copy of the latest review and inspection fee schedule is available through the FNSB permits webpage.

2.1 Permanent Storm Water Control Plan Submittals

PSWCP submittals may be forwarded to the Department by cover letter from the project site owner. Each submittal shall contain the following information:

A. Cover Letter

B. PSWCP developed by a Certified Professional in Erosion and Sediment Control or a Professional Engineer registered in the State of Alaska containing the following items:

   i. BMP Selection Narrative

      a. Site Description: Provide a description of the property boundary, construction site boundary (area of disturbance), existing soil types, and approximate depth to groundwater.
      b. Site Conditions: Include a summary of pre- and post-developed site conditions including existing and proposed land use, amount of impervious area, drainage patterns to and from the site, existing and expected storm water runoff quantities, and any known historical drainage problems such as flooding and/or erosion.
      c. Receiving Waters: Identify the point of discharge to the MS4 and the receiving water to which the MS4 outfalls. Also include the name and approximate distance (to the nearest 100 feet) of all other receiving waters, including wetlands as defined by the U.S. Army Corps of Engineers, where storm water will discharge.
      d. Pollutant Sources: Include a description of all potential pollutant sources from the proposed land use, which may add pollutants to storm water discharges.

e. BMP Selection: Identify all permanent structural and non-structural BMPs selected and incorporated into the project design to eliminate or reduce pollutant discharges to storm water, storm water conveyance systems, and/or receiving waters to the maximum extent practicable.
f. Operation & Maintenance Procedures: Include a description of all operation and maintenance procedures for each BMP to be installed on site including snow storage provisions.

ii. Site Plan

a. Site Characteristics: Include the property boundary, construction site boundary, names of all adjacent streets or roadways, north arrow, and scale bar.
b. Development Plan: Include the location of all planned excavation and fill activities, existing and proposed buildings, surfaced areas, and utility installations.
c. Drainage Patterns: Include approximate slopes (to the nearest percent) and direction of slopes (i.e. flow direction arrows) for both pre- and post-development for all surfaces, ditches, and culverts.
d. Receiving Waters: Identify the point of discharge to the MS4. Also identify all other surface waters and wetlands within one mile of the construction site, including the location where storm water will discharge to the receiving waters.
e. Permanent Storm Water Controls: Identify the location of all permanent structural BMPs to be installed on site, as well as all areas where non-structural BMPs will be implemented.

iii. Sizing & Design Information

i. Include calculations, manufacturers' guidance, or other process decisions showing how all permanent structural BMPs were sized and designed, and their performance goals.

C. Payment of the PSWCP Plan Review Fee.

2.2 Site Development Permit Application

A Site Development Permit application may be forwarded to the Department from the project site owner or construction contractor. Application forms are available through the FNSB permits webpage and must be accompanied by the following items:

A. Copy of the Storm Water Pollution Prevention Plan (SWPPP) developed by a Certified Professional in Erosion and Sediment Control or a Professional Engineer registered in the State of Alaska and conforming to the most recently issued Alaska Department of Environmental Conservation (ADEC) Construction General Permit, the most recently issued Alaska Storm Water Guide and ADOT&PF Alaska SWPPP Guide, and any additional construction site storm water runoff standards adopted by FNSB, as appropriate.

B. Copy of the Notice of Intent submitted to the ADEC.

C. Payment of the SWPPP Plan Review Fee.

D. Payment of the Construction Site Inspection Fee.

3. General Design Considerations

Storm water BMPs must be designed and implemented based on the unique characteristics of the urbanized area. Geology, climate, precipitation intensities, and existing pollutant loads and distributions all factor into how much storm water can be expected and how the storm water can be managed.

3.1 Geology

The urbanized area lies on the northern edge of the Tanana River Valley in the interior of the state. The valley is bounded by the White Mountains to the north and the Alaska Range to the south with gently sloping alluvial fans between the hills and floodplains. The uplands in the immediate vicinity of the urbanized area are comprised of rounded ridges and hills consisting of weathered bedrock covered by varying depths of windblown silt. The lowlands are generally level floodplains and low benches consisting of sand and gravel deposits covered by varying depths of silts and peat. Meandering streams with sloughs and oxbow lakes are abundant. In general, vegetation is dominated by black spruce and sphagnum moss in the poorly drained lowlands and higher north facing slopes, and white spruce with paper birch and aspen in the better drained uplands and south facing slopes.

Discontinuous permafrost is present in the lowlands and on the higher north facing slopes. This permafrost is often found to be at or near 32 °F and thus susceptible to melting when ground cover is disturbed by fire or human activity. The active layer varies from two feet or less in areas with undisturbed vegetated cover to in excess of 10 feet under roads or parking areas that are kept free of snow during winter. Groundwater levels are also prone to fluctuations with groundwater in the lowlands generally observed at depths between five and 20 feet below the ground surface. These levels are highly influenced by the Tanana and Chena Rivers and can vary from two to five feet throughout the year. Levels are highest in the late spring and early summer and drop throughout the late fall and winter with the lowest levels reached just before the spring melt.

3.2 Climate

The region has a continental subarctic climate with the warmest summers in the state, as well as the lowest record winter temperatures with extremes ranging from above 90 °F to below -60 °F. Mean annual temperatures average slightly below freezing, with a mean summer (June through August) temperature of approximately 59 °F and a mean winter (November through March) temperature of approximately -1 °F. Wintertime temperatures are strongly controlled by ground-based inversions, and as such may vary widely over short distances and in response to human modification of the local environment. The average annual precipitation is slightly above 10 inches with July and August on average the wettest months and April the driest. Snow covers the ground continuously from mid-October to late April with an average annual snowfall of approximately 68 inches and a mean monthly snow depth of approximately 14 inches.

3.3 Precipitation Data

Rainfall intensity-duration-frequency (IDF) curves for the Fairbanks area were developed as part of a storm water management study conducted by UAF in 2002. The IDF curves are presented in tabular form below for use in designing storm water BMPs in the Fairbanks Urbanized Area. Note that a second study conducted by UAF in 2003 contained possible calculation errors producing intensities for small duration

storms much larger than field observations support. Use of the 2003 study is discouraged without further clarification from the study's authors.

Table 1. Selected Rainfall Intensity Data (inches per hour) for Fairbanks

Duration (hours)	Return Period (years) 1.5	2	5	10	25	50
0.083 (5 min)	0.91	1.00	1.38	1.90	2.74	2.98
0.167 (10 min)	0.70	0.77	1.06	1.46	2.11	2.29
0.25 (15 min)	0.59	0.65	0.89	1.23	1.78	1.93
0.50 (30 min)	0.41	0.45	0.62	0.86	1.23	1.34
1	0.26	0.28	0.40	0.52	0.72	0.81
2	0.17	0.19	0.26	0.32	0.43	0.52
3	0.13	0.15	0.20	0.24	0.32	0.41
6	0.09	0.10	0.13	0.15	0.19	0.26
12	0.06	0.06	0.08	0.09	0.11	0.17
18	0.04	0.05	0.06	0.07	0.09	0.13
24	0.04	0.04	0.05	0.06	0.07	0.11

3.4 Receiving Waters & Pollutants of Concern

The primary receiving waters within the urbanized area are the Chena River, Chena Slough, and Noyes Slough. Although any water body impacted by storm water from a new development or redevelopment project must be considered in the design and implementation of BMPs, these primary receiving waters are identified as impaired on ADEC's 303(d) list and, therefore, require added attention. The State of Alaska's Final 2008 Integrated Water Quality Monitoring and Assessment Report identifies the pollutants of concern for the Chena River and Chena Slough as petroleum products and sediment from urban runoff, and for Noyes Slough as petroleum products, sediment, and debris from urban runoff. To date, the only Total Maximum Daily Load (TMDL) established for any of these identified pollutants is a TMDL of zero for debris on Noyes Slough. This TMDL document can be viewed from ADEC's TMDL webpage at www.dec.state.ak.us/water/tmdl/tmdl_index.htm.

Developers must ensure the project design and construction site controls adhere to all approved TMDLs, as well as identify other potential pollutants of concern for the design so appropriate BMPs are selected to address those pollutants. The type and amount of pollutants generated in storm water is often determined by the type of land use. Some examples of pollutants of concern for various land uses in the Fairbanks area are provided in Table 2 below.

Table 2. Pollutants of Concern for Various Land Uses

Category	Sediment	Oil & Grease	Solvents & Detergents	Heavy Metals	Litter & Debris	Pesticides & Fertilizers	Nutrients	Pathogens
Residential Development	X	X	X		X	X	X	X
Commercial Development	X	X	X		X	X	X	X
Car Wash Facilities	X	X	X	X	X			
Gas Stations/ Automotive Repair Shops	X	X	X	X	X			
Restaurants			X		X		X	X
Hotels/ Motels			X		X	X		
Shopping Centers	X	X			X			
Streets and Highways	X	X		X	X			

3.5 Snow Disposal Sites

Snow removed from roads and parking lots contains various pollutants including sand, litter, animal waste, and automotive fluids. Finding a place to dispose of this collected snow can be difficult as the pollutants are easily transported with melt water runoff. ADEC has developed a guide for the selection, preparation, and maintenance of snow disposal facilities. The guide is available on the ADEC storm water webpage at www.dec.state.ak.us/water/wnpspc/stormwater/stormwater.htm and should be used for all new development or redevelopment projects regulated by FNSB that include a constructed snow disposal facility. Note that normal snow storage areas located on the same property where the snow fell are not considered to be constructed snow disposal facilities.

3.6 Septic Systems

Conventional on-site wastewater disposal systems, or septic systems, are widely used in the urbanized area. Proper installation and care of these systems by home-owners and contractors is an essential part of keeping associated pollutants out of storm water. ADEC has developed various training programs and manuals on installation and maintenance. These publications are available on the ADEC on-site disposal systems webpage at www.dec.state.ak.us/water/wwdp/onsite/index.htm and should be used for all new development or redevelopment projects regulated by FNSB that include installation of a septic system.

3.7 Parking Lots

Parking lots can collect sediment, oil, grease, litter, debris, pesticides, and/or fertilizers, which are often released in large concentrations during spring breakup and summer rain events. In order to protect water quality, permanent storm water treatment BMPs must be included in the PSWCP for parking areas that serve commercial developments or multi-family residential lots. In addition to the treatment BMPs, parking lot maintenance practices, such as sweeping, must be addressed.

4 Effective Best Management Practices for Fairbanks

BMPs are the methods or system of methods that developers, operators, or consumers use to control the adverse water quality impacts associated with storm water runoff. BMPs can include the prohibition of certain practices, the use of scheduling and phasing techniques, the development of permanent physical controls, or the establishment of operation and maintenance procedures. BMP selection is based on project type and local environment. As noted in Section 3, the urbanized area has unique cold climate characteristics. Specific challenges that must be considered in cold climates include, but are not limited to, the susceptibility of pipes to freezing due to deep winter frost penetration, ice formation on ponded water surfaces, reduction in biological activity due to cooler year-round temperatures, shorter growing seasons, permafrost, frost heaves, and high pollutant loads contained in the spring melt runoff volumes. This chapter lists recommended non-structural and structural BMPs for use in the urbanized area, outlines general BMP performance goals for the urbanized area, and identifies pertinent resources that should be used in the BMP selection process.

4.1 Non-structural Best Management Practices

Non-structural BMPs are management practices that can be implemented without constructing physical improvements. They are designed to prevent or limit the entry of pollutants into storm water runoff and are typically less costly than structural BMPs.

Table 3. Examples of Non-structural BMPs

Type	Examples
Project Design	Preserve natural vegetation
	Utilize buffer zones
	Design improvements with existing topography in mind
	Limit encroachments in natural drainage paths
	Cluster Development
Good Housekeeping	Routinely clean catch basins
	Routinely sweep streets and parking lots
	Place snow storage facilities away from lowlands and water bodies
	Select a proper location and use proper materials for vehicle/equipment washing
	Prepare spill prevention and control plans for liquid storage and handling
	Dispose of trash and debris appropriately
Construction Scheduling or Phasing	Schedule activities to minimize soil exposure during high precipitation periods
	Phase clearing and grading activities to minimize extent of soil exposure

4.2 Structural Best Management Practices

Structural BMPs are physical improvements. They are designed to either reduce the amount of pollutants that accumulate in storm water runoff by reducing the amount of runoff itself or by providing mechanisms to remove and/or treat the pollutants.

Table 4. Examples of Structural BMPs

Type	Examples
Erosion Control or Stabilization	Mark clearing limits
	Surface roughening and terracing
	Mulching
	Temporary seeding or sodding
	Use of manufactured rolled products (nets, blankets, etc.)
Sediment Control	Temporary sediment trap
	Silt fence
	Inlet protection (sandbag filters, catch basin inserts, etc.)
	Brush barriers
	Wattles
	Vehicle tracking entrance/exit
Velocity Control	Slope drains
	Rock flumes
	Outlet protection
	Diffusers
	Storm water conveyance channels
	Rock check dams
Treatment Practices	Bioretention
	Infiltration
	Filtering practices
	Dry ponds
	Grass channels
	Filter strips

4.3 Performance Goals

Temporary BMPs are those utilized during the construction phase of a project. They focus on erosion and sediment control with the goal being to limit erosion and stop sediment from leaving a construction site to the maximum extent practicable. Permanent BMPs are those expected to stay in place for the life of the new or redeveloped facility. They focus on runoff volume and quality control with the goal being to limit and treat post-development runoff to the maximum extent practicable. Table 5 identifies the parameters that should be used to attain these goals.

Table 5. Temporary and Permanent BMP Design Criteria

Category	Design Requirement	Purpose	Criteria
Temporary BMPs	Erosion Control	Limit erosion from the construction site to the maximum extent practicable.	All erosion control BMPs shall be designed to handle the 2-year, 6-hour duration storm event without failure of the BMPs.
	Sediment Control	Remove sediment from runoff from the construction site to ensure the water quality of receiving water(s) will not degrade.	Provide sediment control for all down slope boundaries (i.e. silt fence, vegetative buffer strips, etc.) and, as necessary, provide for storage of runoff.
Permanent BMPs	Runoff Volume	Limit post-development peak runoff to 5% over pre-development peak runoff.	Runoff calculations shall be based on the 10-year, 1-hour duration storm event.
	Runoff Quality	Treat first flush pollutant loading.	Treat the initial 0.5 inch of runoff from each storm event.
		Treat runoff after first flush.	Provide treatment at a minimum rate of 0.005 inches per minute.

4.4 Resources

The following resources contain information on non-structural and structural BMPs suitable for the Fairbanks area, and should be used in the BMP selection process.

- Alaska Storm Water Guide (ADEC, 2009)
  - http://www.dec.state.ak.us/water/wnpspc/stormwater/stormwater.htm
- BMP Effectiveness Report for Fairbanks (Shannon & Wilson, 2006)
  - http://www.dec.state.ak.us/water/wnpspc/stormwater/stormwater.htm

- ADOT&PF Alaska SWPPP Guide (2005)
  - http://www.dot.state.ak.us/stwddes/dcsenviron/resources/stormwater.shtml

- Stormwater BMP Design Supplement for Cold Climates (Center for Watershed Protection, 1997)
  - http://www.cwp.org/Resource_Library/Special_Resource_Management/coldclimate.htm

References

Armstrong, R.A., & R.F. Carlson. 2002. Analysis of Rainfall Frequency Data for Fairbanks, Alaska. University of Alaska, Fairbanks.

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ADOT&PF. 2005. Alaska Storm Water Pollution Prevention Plan Guide. January 14.

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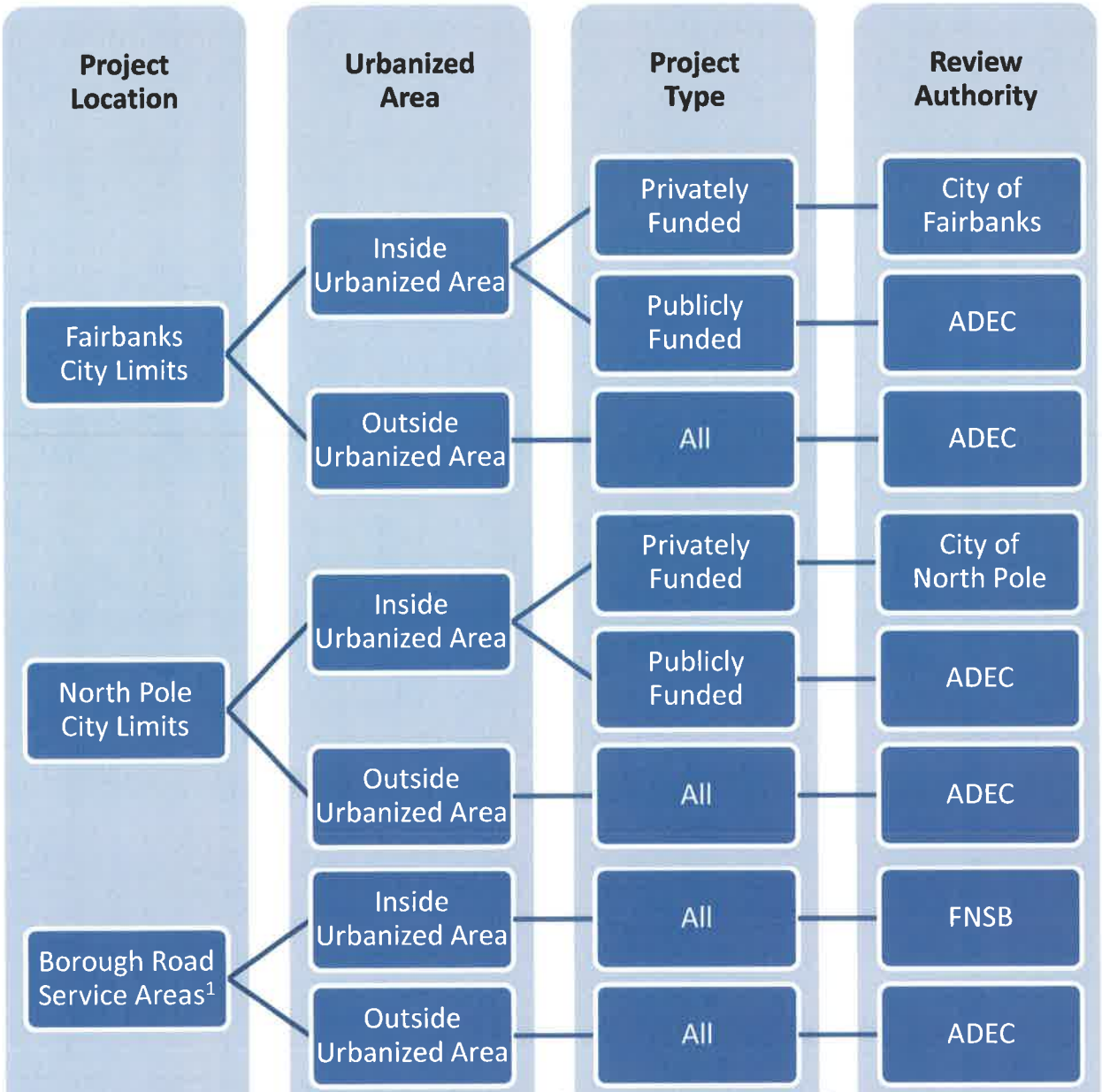
Shannon & Wilson, Inc. 2006. BMP Effectiveness Report, 18-9001-15, Fairbanks, Alaska. Alaska Department of Environmental Conservation, Water Quality Program, Fairbanks, Alaska. February.

U.S. Department of Agriculture, Natural Resources Conservation Service. 2004 . Soil Survey of Greater Fairbanks Area, Alaska.

Fairbanks Urbanized Area Storm Water Management
Agency Review & Project Submittal Requirements – January 2014

The City of Fairbanks, City of North Pole, Fairbanks North Star Borough (FNSB), and Alaska Department of Environmental Conservation (ADEC) have separate areas of jurisdiction and project review authority for storm water management in the Fairbanks Urbanized Area. This two-page handout is intended to help developers identify the appropriate regulatory agency and submittal requirements for their projects. The following chart outlines the separate areas of jurisdiction and project review authority for each agency. The second page includes a project submittal matrix and agency contact information.



[1] If the project is located within the Borough and does not impact a Road Service Area, the review authority is the ADEC.

The City of Fairbanks, City of North Pole, and FNSB have worked collaboratively to develop similar storm water management project submittal requirements for new development and redevelopment projects within the urbanized area. Below is a list of the key storm water management project submittals applicable to the urbanized area, as well as an agency submittal matrix.

- ✓ **Permanent Storm Water Control Plan (PSWCP)**
- ✓ **Erosion & Sediment Control Plan (ESCP)**
- ✓ **Storm Water Pollution Prevention Plan (SWPPP)**
- ✓ **ADEC Notice of Intent (NOI)**

Fairbanks Urbanized Area Storm Water Management Project Submittal Matrix

Agency	Submittal	10,000 SF to 1 acre, privately funded	1 or more acres, privately funded	1 or more acres, publicly funded
City of Fairbanks	PSWCP		✓	
	ESCP	✓		
	SWPPP		✓	
	NOI (copy)		✓	✓
City of North Pole	PSWCP		✓	
	ESCP			
	SWPPP		✓	
	NOI (copy)		✓	✓
FNSB	PSWCP		✓	✓
	ESCP			
	SWPPP		✓	✓
	NOI (copy)		✓	✓
ADEC	PSWCP[2]			✓
	ESCP			
	SWPPP			✓
	NOI (original)		✓	✓

[2]The ADEC requires submittal of a PSWCP (a/k/a "Engineering Plan Review") for all publicly-funded projects, regardless of size. See 18 AAC 72.600 for more information.

For more information, contact the following agency representatives:

Jackson Fox, Environmental Manager **City of Fairbanks, Engineering Division** 800 Cushman Street, Fairbanks, Alaska 99701 Phone (907) 459-6758 Email jcfox@ci.fairbanks.ak.us	Bill Butler, Director of City Services **City of North Pole** 125 Snowman Lane, North Pole, Alaska 99705 Phone (907) 488-2281 Email bill@northpolealaska.com
David Bredlie **FNSB, Department of Public Works** P.O. Box 71267, Fairbanks, Alaska 99707 Phone (907) 459-1345 Email dbredlie@fnsb.us	Jake Greuey, Storm Water Coordinator **ADEC, Division of Water** 555 Cordova Street, Anchorage, Alaska 99501 Phone (907) 269-4597 Email jake.greuey@alaska.gov

Appendix F
QAPP for MS4 Outfall Discharge Monitoring

QUALITY ASSURANCE PROJECT PLAN – MS4 OUTFALL DISCHARGE MONITORING

January 2014

Fairbanks & North Pole, Alaska

APDES Permit No. AKS-053406

City of Fairbanks, City of North Pole, UAF, ADOT&PF

APDES Permit No. AKS-053414

Fairbanks North Star Borough

INTRODUCTION & APPROVALS

This Quality Assurance Project Plan (QAPP) presents the objectives and procedures for outfall discharge monitoring of the municipal separate storm sewer system (MS4) owned and operated by the City of Fairbanks, City of North Pole, University of Alaska Fairbanks (UAF), Alaska Department of Transportation & Public Facilities (ADOT&PF) Northern Region, and Fairbanks North Star Borough (FNSB). Preparation of this QAPP was required by the Alaska Department of Environmental Conservation (ADEC) for analytical monitoring conducted under Alaska Pollutant Discharge Elimination System (APDES) Permit No. AKS-053406 (collectively held by the City of Fairbanks, City of North Pole, UAF, and ADOT&PF as co-permittees) and APDES Permit No. AKS-053414 (held solely by the FNSB). By signature below, this QAPP is hereby approved by each of the aforementioned permittees' personnel responsible for its use.

CITY OF FAIRBANKS

Jan. 27, 2014

Jackson C. Fox, Planning & Permitting Manager — Date

CITY OF NORTH POLE

1/27/2014

Bill Butler, Director of City Services — Date

UAF

27 Jan 2014

Thaddeus Williamson, Safety Officer — Date

ADOT&PF NORTHERN REGION

1-27-14

Katrina LeMieux, Environmental Impact Analyst — Date

FNSB

1/27/14

David Bredlie, Civil Engineer – Storm Water — Date

DISTRIBUTION LIST

The following table lists the recipients of the original, approved QAPP and its subsequent revisions.

Table 1. QAPP Distribution List

Name	Agency	Contact Information
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Jackson Fox, Planning & Permitting Manager	**City of Fairbanks** Department of Public Works - Engineering Division	800 Cushman St, Fairbanks, AK 99701 / 459-6758 / jcfox@ci.fairbanks.ak.us
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Name	Agency	Contact Information
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Bill Gryder, Chief Civil Engineer	**FNSB** Department of Public Works	PO Box 71267, Fairbanks, AK 99707 / 459-1360 / bgryder@fnsb.us

Quality Assurance Project Plan – MS4 Outfall Discharge Monitoring

FAIRBANKS & NORTH POLE, ALASKA

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ACRONYMS & ABBREVIATIONS

ADEC	Alaska Department of Environmental Conservation
ADOT&PF	Alaska Department of Transportation & Public Facilities
APDES	Alaska Pollutant Discharge Elimination System
BTEX	Benzene, Toluene, Ethylbenzene, & Xylene
CWA	Clean Water Act
DMR	Discharge Monitoring Report
EPA	U.S. Environmental Protection Agency
FNSB	Fairbanks North Star Borough
MDL	Method Detection Limit
ND	Non-detect
NPDES	National Pollutant Discharge Elimination System
PAH	Polycyclic Aromatic Hydrocarbons
QAPP	Quality Assurance Project Plan
QA/QC	Quality Assurance / Quality Control
TMDL	Total Maximum Daily Load
UAF	University of Alaska Fairbanks
VOA	Volatile Organic Analysis

PROJECT MANAGEMENT

Project/Task Organization

This QAPP presents the objectives and procedures for outfall discharge monitoring of the MS4 owned and operated by the City of Fairbanks, City of North Pole, UAF, ADOT&PF Northern Region, and FNSB. Preparation of this QAPP was required by ADEC for analytical monitoring conducted under APDES Permit No. AKS-053406 (collectively held by the City of Fairbanks, City of North Pole, UAF, and ADOT&PF as co-permittees) and APDES Permit No. AKS-053414 (held solely by the FNSB). The effective date for both APDES Permits was August 1, 2013. APDES Permit No. AKS-053406 requires outfall discharge monitoring during wet weather events at least two times per year. Monitoring is not required under APDES Permit No. AKS-053414; however, should the FNSB choose to perform monitoring of their outfalls, use of a QAPP is required. This QAPP is therefore intended to cover monitoring conducted under both Permits.

Each permittee is individually responsible for monitoring only the portion of the MS4 owned and operated by that permittee. The personnel assigned to this effort are listed in Table 2 below. For purposes of efficiency and upon mutual agreement, permittees may choose to have other permittees perform their monitoring on their behalf. Individual permittees may also choose to delegate the monitoring to other qualified personnel within their respective agency to complete monitoring on their behalf.

Table 2. Agencies & Personnel Responsible for Monitoring

Agency (permittee)	Name	Title	Department/Division
City of Fairbanks	Jackson Fox	Planning & Permitting Manager	Department of Public Works – Engineering Division
City of North Pole	Bill Butler	Director of City Services	Department of Public Works
UAF	Thaddeus Williamson	Safety Officer	Environmental Health, Safety, & Risk Management
ADOT&PF	Katrina LeMieux	Environmental Impact Analyst	Maintenance & Operations Division
FNSB	David Bredlie	Civil Engineer – Storm Water	Department of Public Works

Grab samples collected during monitoring will be provided to an ADEC-approved, third-party laboratory for analysis. The laboratory that will perform the analyses is not specified in this QAPP because it will be selected through a competitive procurement process. Table 3 on the following page provides the names, addresses, and phone numbers for all of the ADEC-approved laboratories in Fairbanks.

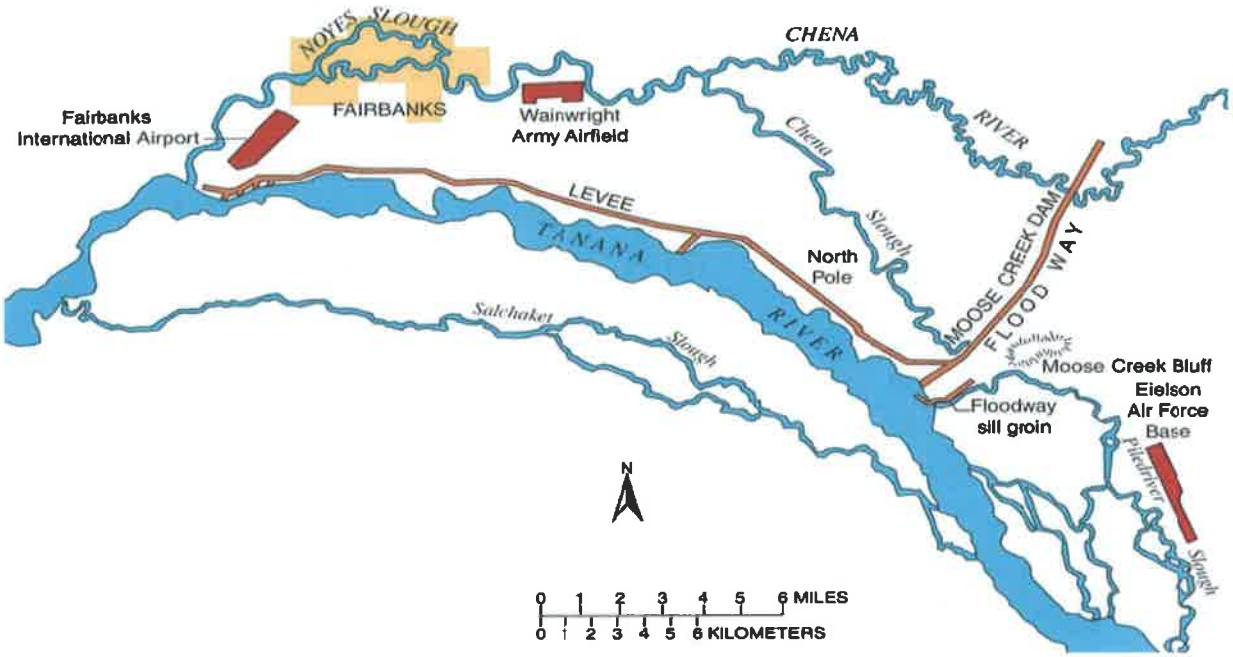
Table 3. ADEC-approved Laboratories in Fairbanks

Name	Address	Phone
SGS Environmental Services Inc.	3180 Peger Road, Fairbanks, Alaska 99709	(907) 474-8656
Analytica International Inc.	475 Hall Street, Fairbanks, Alaska 99701	(907) 456-3116
Pollen Environmental LLC	3536 International Street, Fairbanks, Alaska 99701	(907) 479-8368

Problem Definition/Background

Under their respective APDES Permits, the permittees are collectively authorized to discharge storm water from MS4 outfalls to the Chena River, Noyes Slough, Chena Slough, Beaver Springs, and other associated waters of the United States (see Figure 1 below). Storm water carries pollutants such as sediment, litter, and vehicle fluids from street and parking lot surfaces to nearby water bodies through the MS4. This polluted discharge is a likely contributor to including the Chena River, Noyes Slough, and Chena Slough on Alaska's Impaired Waters List since 1990 as CWA Section 303(d) impaired water bodies. All three water bodies are listed as impaired from sediment from urban runoff. Noyes Slough is also listed as impaired from petroleum products and debris (litter), and Total Maximum Daily Load (TMDLs) have been set for both of those pollutants at zero discharge. No TMDLs have been set to date for sediment in any of the water bodies, but the impairment is currently being reviewed by ADEC.

Figure 1. Fairbanks & North Pole Water Bodies Map



The City of Fairbanks, City of North Pole, UAF, and ADOT&PF Northern Region received a Phase II National Pollutant Discharge Elimination System (NPDES) Permit from the U.S. Environmental Protection Agency (EPA) in 2005, and began outfall discharge monitoring the following year even though the NPDES Permit did not specifically require monitoring. The permittees elected to start the monitoring program to help establish baseline data for the pollutants of concern being discharged to the above-listed impaired water bodies. The FNSB also received an NPDES Permit, but they did not elect to begin monitoring at that time.

ADEC later assumed authority over the Permits under the APDES Program and issued the new Permits in June 2013. Monitoring is now a requirement under the Permit issued to the City of Fairbanks, City of North Pole, UAF, and ADOT&PF Northern Region, but still not a requirement under the Permit issued to the FNSB. As previously noted, however, this QAPP is intended to cover monitoring conducted under both Permits should the FNSB choose to perform monitoring of their outfalls.

Project/Task Description & Schedule

Project/Task Description

The Permit issued to the City of Fairbanks, City of North Pole, UAF, and ADOT&PF Northern Region requires monitoring during wet weather events at least two times per year for the parameters listed in Table 4 below. Each year monitoring will be conducted 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, previous monitoring efforts targeted 10 outfalls per monitoring event. Unless ADEC requests otherwise, future monitoring efforts will be increased to target 12 outfalls per monitoring event, which equates to 10 percent of the total number of outfalls owned and operated by the permittees. Should the FNSB choose to perform monitoring of their outfalls, they will monitor for the same parameters as the City of Fairbanks, City of North Pole, UAF, and ADOT&PF Northern Region.

Table 4. Monitoring Requirements

Parameter	Frequency	Method
Dissolved Oxygen (mg/L)	Twice per Year	Grab or Recording
pH (SU)	Twice per Year	Grab or Recording
Temperature (°C)	Twice per Year	Grab or Recording
Turbidity (NTU)	Twice per Year	Grab or Recording

Parameter	Frequency	Method
Flow (cfs)	Twice per Year	Grab, Recording, or Gauge
Total Suspended Solids (mg/L)	Twice per Year	Grab
Conductivity (µS/cm)	Twice per Year	Grab or Recording
Chloride (mg/L)	Twice per Year	Grab
Oil & Grease (sheen)[1]	Monthly	Visual

[1] Monitoring for this parameter applies only to Noyes Slough.

Implementation Schedule

The Permit issued to the City of Fairbanks, City of North Pole, UAF, and ADOT&PF Northern Region requires monitoring to begin within one year of the effective date of the Permit, which was August 1, 2013. Monitoring is therefore scheduled to begin in April 2014 during the first spring snowmelt runoff event following issuance of the Permit. Monitoring will continue at a frequency of at least two times per year until a new Permit with new requirements is issued and/or ADEC directs otherwise.

Quality Objectives & Criteria

Data Quality Objectives

The data quality objectives of this QAPP are to ensure the data collected:

- Meet the requirements of both APDES Permits, are scientifically verifiable and valid, and are representative of the monitored activity;
- assist ADEC in measuring the impacts of storm water discharges to their receiving waters; and
- are conducted in accordance with the test procedures approved under 40 CFR 136 (adopted by reference under 18 AAC 83.010).

Measurement Performance Criteria

The measurement performance criteria of this QAPP are as follows:

- Detectability – the ability of the test method to reliably measure a pollutant concentration above background. Monitoring data measured below the method detection limit (MDL) are reported as non-detect (ND).

- Precision – the degree of agreement among duplicate field measurements/samples and/or multiple analytical measurements of the same sample that provide insight into the consistency of instrument, sampling, and test methods. Precision of instrument measurement and sampling methods will be measured by collection of a set of duplicate measurements and samples for at least one outfall during each monitoring event. Acceptable ranges for precision of duplicate measurements will be ±20 percent for dissolved oxygen, ±0.1 units for pH, ± 0.2°C for temperature, ±20 percent for turbidity, and ±10 percent for conductivity. Precision of duplicate samples and analytical test methods will be carried out in accordance with the third-party laboratory's internal quality assurance / quality control (QA/QC) procedures.
- Accuracy – an assessment of the closeness of the measured value to the true value. For field accuracy, the potential for cross contamination of collected samples will be measured with the use of water "blanks" during every monitoring event. Analytical accuracy in the laboratory will be measured by spiking samples with known concentrations of chemicals and measuring recovery in accordance with the laboratory's internal QA/QC procedures.
- Completeness – a measure of the amount of data collected that is valid and useable in proportion to the total amount of data collected in accordance with the monitoring plan. The goal for completeness will be for at least 90 percent of the monitoring data collected to be valid and useable.
- Representativeness – the degree to which the data reflects the actual environmental condition. The goal for representativeness will be to monitor at least 10 percent of the total number of outfalls owned and operated by the permittees.
- Comparability – the confidence with which one data set can be evaluated in relation to another data set. The City of Fairbanks, City of North Pole, UAF, and ADOT&PF Northern Region have been monitoring outfalls twice per year every year since 2006. This QAPP will ensure all new data collected can be compared to the existing data set collected between 2006 and 2013.

Personnel Qualification & Training

The qualification of personnel participating in the outfall discharge monitoring will be determined internally by each permittee based on their personnel's work experience and knowledge of water sampling techniques, chain of custody procedures, field instrument calibration, and health and safety policies. Cross-training will also be conducted between these personnel and the laboratory supervisor to ensure all of the analytical test method protocols for collection and delivery of field samples to the laboratory are followed.

Documents & Records

As required by both APDES Permits, all monitoring results will be recorded on Discharge Monitoring Report (DMR) forms (EPA Form No. 3320-1) and submitted to ADEC as an appendix to the permittees' Annual Reports. Records will also be kept, and made available to ADEC upon request, for each the following:

- Dates, exact location, and time the measurements and samples were taken
- Names of the individuals who performed the sampling or measurements
- Dates upon which analysis of each sample was performed
- Names of the individuals who performed each analysis
- Analytical techniques or methods used
- Detailed results of each analysis

DATA GENERATION & ACQUISITION

Sampling Process Design

The permittees own and operate a total of 127 outfalls – 117 outfalls in Fairbanks (see Figure 2 below) and 10 outfalls in North Pole (see Figure 3 on the following page). Previous monitoring efforts from 2006 through 2013 targeted 10 outfalls per monitoring event. Future monitoring efforts will be increased to target 12 outfalls per monitoring event, which equates to 10 percent of the total number of outfalls owned and operated by the permittees. Additionally, effort will continue to be made during every monitoring event to:

- Monitor at least one outfall owned by each permittee;
- monitor at least one outfall for each impaired water body – Chena River, Noyes Slough, and Chena Slough; and
- repeat monitoring locations year to year whenever possible so the data sets can be compared.

Figure 2. Fairbanks Outfall Locations

Figure 3. North Pole Outfall Locations

Monitoring Locations

Table 5 below lists the all the outfall monitoring locations sampled between 2006 and 2013. The number of outfalls on the list exceeds the targeted amount per monitoring event because alternate outfall locations are needed when flow at one or more outfall locations is not sufficient to measure/sample. To ensure the data collected to date can be compared over time, the permittees will continue to monitor from these same locations. Should the FNSB choose to perform monitoring of their outfalls, this QAPP will be updated to include those new monitoring locations.

Table 5. Monitoring Locations

Location	Water Body	Owner
Danby Road	Noyes Slough	ADOT&PF

Location	Water Body	Owner
Front Street	Noyes Slough	City of Fairbanks
Hurst Road	Chena Slough	City of North Pole
Illinois Street	Noyes Slough	ADOT&PF
Johansen Expressway	Noyes Slough	ADOT&PF
Minnie Street	Noyes Slough	ADOT&PF
Moore Street	Chena River	ADOT&PF
Noble Street	Chena River	City of Fairbanks
Peger Road	Chena River	ADOT&PF
Santa Claus Lane	Beaver Springs	City of North Pole
Steese Highway	Chena River	ADOT&PF
Stewart Street	Chena River	City of Fairbanks
Taku Drive	N/A	UAF
University Avenue	Chena River	ADOT&PF
Washington Drive	Chena River	ADOT&PF
UAF Campus - West Ridge	N/A	UAF
Wickersham Street	Chena River	City of Fairbanks

Monitoring Frequency & Timing

As previously noted in this QAPP, the Permit issued to the City of Fairbanks, City of North Pole, UAF, and ADOT&PF Northern Region requires monitoring during wet weather events at least two times per year. Each year monitoring will be conducted once during the spring (April) when snowmelt runoff is prevalent, and once in late summer (August) when Fairbanks typically receives its largest rain events.

Monitoring Parameters

The parameters required to be monitored by the Permit are listed in Table 4 on Page 8 of this QAPP. Previous monitoring efforts between 2006 and 2013 monitored for these same parameters as well as

polycyclic aromatic hydrocarbons (PAH) and benzene, toluene, ethylbenzene, and xylene (BTEX) compounds. The permittees do not plan to continue monitoring for PAH; however, monitoring for BTEX will continue for outfalls discharging to Noyes Slough to help collect source data for its TMDL for petroleum products. Likewise, monitoring for oil and grease will be conducted along Noyes Slough, not just visually as required by the Permit, but also by grab sample collection to help collect additional source data for the TMDL.

Monitoring Methods

The Permit provides options of monitoring methods for most of the parameters – either by instrumentation or grab sample collection. The only parameter that will not regularly use these methods is oil and grease, which will be visually observed and recorded on a monthly basis. Table 6 below provides a summary of the parameters, frequency, and methods selected for monitoring under this QAPP.

Parameters Measured by Instrumentation

The parameters that will be measured by instrumentation include dissolved oxygen, pH, temperature, turbidity flow, and conductivity. All of these parameters, except flow, will be measured using a YSI 650 MDS Multi-probe Meter or equivalent. Flow will be measured using a Global Water Flow Probe FP111 or equivalent.

Parameters Measured by Grab Sample Collection

The parameters that will be measured by grab sample collection, and later submitted to a laboratory for analysis, include total suspended solids, chloride, oil and grease, and BTEX.

Table 6. Monitoring Parameters, Frequency, & Methods

Parameter	Frequency	Selected Method
Dissolved Oxygen (mg/L)	Twice per Year	Instrument Recording
pH (SU)	Twice per Year	Instrument Recording
Temperature (°C)	Twice per Year	Instrument Recording
Turbidity (NTU)	Twice per Year	Instrument Recording
Flow (cfs)	Twice per Year	Instrument Recording
Total Suspended Solids (mg/L)	Twice per Year	Grab Sample
Conductivity (µS/cm)	Twice per Year	Instrument Recording
Chloride (mg/L)	Twice per Year	Grab Sample

Parameter	Frequency	Selected Method
BTEX (µg/L)[1,2]	Twice per Year	Grab Sample
Oil & Grease (mg/L)[1,2]	Twice per Year	Grab Sample
Oil & Grease (sheen)[1]	Monthly	Visual

[1] Monitoring for these parameters applies only to Noyes Slough.
[2] Monitoring for these parameters by grab sample collection is voluntary and not required by the Permit.

Sample Handling & Custody

Coolers packed with the appropriate sample containers, labels, water blanks, ice packs, and chain of custody forms will be supplied by the laboratory. The sample containers will be plastic 1000-mL bottles for total suspended solids, plastic 250-mL bottles for chloride, amber-colored glass 1000-mL jars for oil and grease, and glass 40-mL volatile organic analysis (VOA) vials for BTEX. The coolers will be maintained within a temperature range of 0°C to 6°C and each contain a single chain of custody form in a sealed plastic bag. The samples taken will remain in the field personnel's exclusive possession until custody is transferred to the laboratory using the chain of custody form.

Analytical Test Methods

The analytical test methods and MDLs to be used by the laboratory are listed in Table 7 below.

Table 7. Analytical Test Methods & MDLs

Parameter	Analytical Test Method	Method Detection Limit (MDL)
Total Suspended Solids (mg/L)	Standard Method (SM) 2540D	2.0 mg/L
Chloride (mg/L)	EPA 300.0A	0.04 mg/L
Oil & Grease (mg/L)	EPA 1664A	1.4 mg/L
BTEX (µg/L)	EPA 602/624	Benzene – 0.33 µg/L Toluene – 0.46 µg/L Ethylbenzene – 0.35 µg/L Xylene – 0.82 µg/L

Quality Control

Field Quality Control Measures

Field quality control measures are described throughout this QAPP. The measures include:

- Ensuring personnel are qualified and properly trained to perform the monitoring;
- testing, inspecting, and calibrating instruments prior to and after each monitoring event;
- following the analytical test methods' protocols for collection, handling, custody, and delivery of samples;
- collecting a set of duplicate measurements and samples for at least one outfall during each monitoring event; and
- using water "blanks" during every monitoring event to test for cross contamination of samples.

Laboratory Quality Control Measures

The laboratory will follow their internal QA/QC procedures.

Instrument Testing, Inspection, Maintenance, & Calibration

Prior to and after each monitoring event, all instruments will be tested, inspected, and calibrated in accordance with the manufacturers' specifications. Monitoring personnel will document on the field data sheets this has been performed. The laboratory will follow the testing, inspection, maintenance, and calibration procedures required by EPA approved methods and as outlined by the laboratory's internal QA/QC procedures.

Inspection/Acceptance of Supplies & Consumables

Sample containers provided by a laboratory will only be accepted if they are certified as contaminant-free for the analyses of interest; and no standard solutions, buffers, or other chemical additives will be used if the expiration date has passed.

Data Management

Data collected as part of the monitoring program will be maintained by the permittees in an up-to-date spreadsheet that includes the monitoring data collected from 2006 to the present time. A copy of the spreadsheet will be submitted annually to ADEC, along with the required DMR forms, as an appendix to the permittees' Annual Reports.

ASSESSMENT, OVERSIGHT, & DATA VALIDATION

Assessments & Response Actions

The permittees will review the field instrument measurements and sample analysis results from the laboratory to look for irregularities, or "red flags," in the data. An example of a red flag would be a high concentration of a particular pollutant indicating a problem source area and/or illicit discharge (i.e. such as an unusually high turbidity recording attributed a construction site discharging sediment into the MS4). Once detected at the outfall, the polluted discharge can be tracked up-drain to its source using the permittees' MS4 map and lifting manhole lids until a junction is reached that shows no evidence of the discharge. Identification of the source and responsible party can then be determined by examining nearby inlets and activities on adjacent properties. The discharge can subsequently be addressed by the City of Fairbanks, City of North Pole, or FNSB, each of which have municipal ordinances and enforcement authority within their respective jurisdictions to prohibit and eliminate illicit discharges.

Revisions to QAPP

As required by both APDES Permits, the permittees will annually review the adequacy of this QAPP based on Permit compliance activities and monitoring results. The QAPP will be amended whenever there is a modification to the monitoring requirements, objectives, parameters, methods, locations, or other conditions of the monitoring plan.

Data Review, Verification, & Validation

The permittees will review, verify, and validate the data to ensure the data quality objectives and measurement performance criteria listed in this QAPP are met prior to submittal to ADEC in the Annual Reports.

APPENDIX A

Field Data Sheets

MS4 Outfall Discharge Monitoring – Field Data Sheet

Date _____ Start Time _____ End Time _____ Field Personnel _____

Current Weather _____ Recent Weather (last 24 hrs) _____

Instruments Used _____ Initial Calibration & Post Verification? Y N (see next page) Laboratory where Grab Samples Delivered _____

Outfall Location/ID	Water Body	Instrument Measurements						Grab Sample Taken (Y/N)			
		Dissolved O_2 (mg/L)	pH (SU)	Temp (°C)	Turbidity (NTU)	Flow (cfs)	Conductivity (µS/cm)	Total Suspended Solids	Chloride	Oil & Grease	BTEX

Initial Calibration

Date _____ Time _____ Performed by _____

Dissolved O_2 (mg/L)			pH (SU)			Turbidity (NTU)			Conductivity (µS/cm)		
Standard (Acceptable Range)	Reading	Pass/Fail	Standard (Acceptable Range)	Reading	Pass/Fail	Standard (Acceptable Range)	Reading	Pass/Fail	Standard (Acceptable Range)	Reading	Pass/Fail
0 (<0.5)			4 (±0.1)			0 (<1)			1413 (±5%)		
			7 (±0.1)			126 (±10%)					
			10 (±0.1)								

Post Verification

Date _____ Time _____ Performed by _____

Dissolved O_2 (mg/L)			pH (SU)			Turbidity (NTU)			Conductivity (µS/cm)		
Standard (Acceptable Range)	Reading	Pass/Fail	Standard (Acceptable Range)	Reading	Pass/Fail	Standard (Acceptable Range)	Reading	Pass/Fail	Standard (Acceptable Range)	Reading	Pass/Fail
0 (<0.5)			4 (±0.3)			0 (<1)			1413 (±10%)		
			7 (±0.3)			126 (±20%)					
			10 (±0.3)								

Noyes Slough – Monthly Visual Screening for Oil & Grease (Sheen)

Date _____ Start Time _____ End Time _____ Field Personnel _____

Current Weather _____ Recent Weather (last 24 hrs) _____

Screening Location	Sheen Observed (Y/N)	Photos Taken (Y/N)	Sample Taken (Y/N)	Observations	Source of Sheen (if known)