CITY OF GRANITE FALLS,

SNOHOMISH COUNTY WASHINGTON

STORMWATER MANAGEMENT PLAN

GRANITE FALLS

DRAFT

G&O # 08433
MARCH 2008

Gray & Osborne, Inc.

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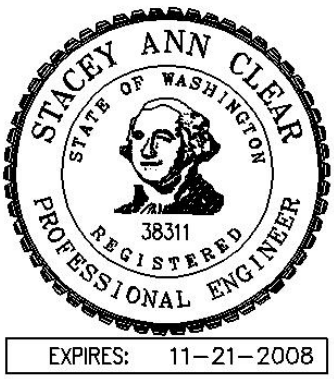

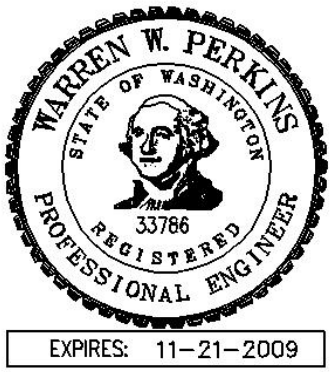

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City of Granite Falls
Stormwater Management Plan
Executive Summary

The Washington Department of Ecology issued a five year stormwater discharge permit to Phase 2 Cities on January 17, 2007. The permit requires Cities to commit to phasing in tasks, regulations, maintenance practices and reporting requirements over the 5-year permit cycle. This Stormwater Management Plan identifies those commitments necessary to implement this Stormwater Management Program (SWMP). This Plan is organized by the subjects listed in the permit. Specific tasks identified in this plan may change over time as the City gains experience with the Stormwater Management Program.

There are seven major requirements in the permit. The City, as part of this Plan, has developed a suite of tasks and measurable goals to satisfy the permit requirements. The permit requirements and tasks that have been developed are outlined below:

1. **Public Education and Outreach**
   TASK
   - Utility Bill Inserts Pertaining to Stormwater Issues
   - Stormwater Website
   - Encourage Proper Disposal of Household Hazardous Wastes
   - Address Illegal Dumping and Littering
   - Educate on Appropriate Gardening and Lawn Care Activities
   - Education on New/Low Impact Development

2. **Public Involvement and Participation**
   TASK
   - Post Public Involvement Opportunities on Website
   - Stormwater Management Program Meetings
   - Coordination with Adopt-a-Stream Program
   - Storm Drain Stenciling
   - Volunteer Monitoring
   - Community Hotline

3. **Illicit Discharge and Detection and Elimination**
   TASK
   - Review Illicit Discharge Legal Authority/Ordinance
   - Maintain Stormwater Inventory (Base Map)
   - Conduct Outfall Screening
   - Identify Stormwater Hotspots
   - Elimination of Septic/Gray Water Discharges
   - Sanitary Sewer Leak Elimination
   - Illicit Discharge Training

- Illicit Discharge Hotline
- Identify/Eliminate Discharges from Storage Tanks

4. **Control Stormwater Runoff From New Development, Redevelopment, And Construction Sites**
   TASK
   - Develop and Update Legal Authority/Ordinances
   - Conduct Construction Inspections
   - Plan Reviews for New and Redevelopment
   - Conduct Post-Developed Inspections
   - Provide Training for Personnel
   - Identify Sensitive Water Bodies and Protective Measures
   - Encourage Low Impact Development

5. **Pollution Prevention and Operations and Maintenance for Municipal Operations Program**
   TASK
   - Provide Employee Training
   - Develop Stormwater Pollution Prevention Plan (SWPPP) for City Facilities and Implement Maintenance Standards

6. **Long Term Monitoring Plan**
   TASK
   - Develop a Long Term Monitoring Plan related to the effectiveness of the SWPPP

7. **Reporting Requirements**
   TASK
   - Submit Annual Report by March 31st

Implementation of the Phase 2 Stormwater Program will require significant commitment by the City both in terms of personnel hours and financial resources. The City will need to make a long term commitment to maintain the stormwater program in order to achieve long term compliance with the Phase 2 stormwater permit.

PUBLIC EDUCATION AND OUTREACH PROGRAM

On January 17, 2007, Ecology issued requirements for the public education and outreach program requirement of the State NPDES Phase II permit program. The following program is based on these requirements.

Public Education and Outreach. An informed and knowledgeable community is crucial to the success of a stormwater management program since it helps to ensure greater support for the program and greater compliance. In order to complete its Public Education and Outreach requirements Granite Falls will:

1. No later than two years after the effective date of this Permit, provide an education and outreach program for the area served by the municipal separate storm sewer systems (MS4). The outreach program shall be designed to achieve measurable improvements in the City's understanding of stormwater impacts on the environment.
    a. Education and outreach efforts shall be prioritized to target the following audiences and subject areas:

        i. General public
            - General impacts of stormwater impacts on surface waters.
            - Impacts from impervious surfaces.
            - Source control Best Management Practices (BMPs) and environmental stewardship actions and opportunities to include: pet waste, vehicle maintenance, landscaping and buffers.

        ii. General public, businesses, including home-based and mobile businesses
            - BMPs for use and storage of automotive chemicals, hazardous cleaning supplies, carwash soaps and other hazardous materials.
            - Impacts of illicit discharges and how to report them.

        iii. Homeowners, landscapers and property managers
            - Yard care techniques protective of water quality.
            - BMPs for use and storage of pesticides and fertilizers.
            - BMPs for carpet cleaning and auto repair and maintenance.
            - Low Impact Development techniques, including site design, pervious paving, retention of forests and mature trees.
            - Stormwater pond maintenance.

        iv. Engineers, contractors, developers, review staff and land use planners
            - Technical standards for stormwater site and erosion control plans.
            - Low Impact Development techniques, including site design, pervious paving, retention of forests and mature trees.

(Coordination with City Planner and revisions to Land Use Development Code)
- Stormwater treatment and flow control BMPs. (City has adopted 2005 WDOE Manual)

b. Granite Falls shall measure the understanding and adoption of the targeted behaviors among the targeted audiences. The resulting measurements shall be used to direct education and outreach resources most effectively, as well as to evaluate changes in adoption of the targeted behaviors.

c. Granite Falls shall track and maintain records of public education and outreach activities.

The City of Granite Falls will implement Best Management Practices (BMPs) to perform public education and outreach activities on stormwater impacts. Specifically, the City will implement the following BMPs: A Public Outreach and Education Program must be in place by 2011.

- BMP 1(A): Utility Bill Inserts
- BMP 1(B): Stormwater Website
- BMP 1(C): Encourage Proper Disposal of Household Hazardous Wastes
- BMP 1(D): Address Illegal Dumping and Littering
- BMP 1(E): Gardening and Lawn Care Activities
- BMP 1(F): Education on New/Low Impact Development

Objective: Reduce pollutants from residential and industrial runoff through increased public awareness of the impacts of pollution stormwater runoff.

BMP 1A. UTILITY BILL INSERTS

Measurable Goals

1. Develop list of subjects addressing:
    - Citizen reporting under the illicit discharge and construction programs
    - Water quality impacts of stormwater runoff and impervious surfaces to local water bodies
    - Steps the public can take to reduce stormwater pollution including source control BMPs
    - Public involvement programs
    - Environmentally friendly landscaping and pest management techniques
2. Design and print utility bill inserts for selected topics
3. Track number of materials created and distributed

Description

Printed materials are a common way to inform the public about stormwater pollution. For greatest effectiveness, the City will determine who the targeted audience is, how the

audience of these materials will receive its information, and the knowledge base of the audience.

When designing the layout of an insert, brochure or flyer, the City will consider the following aspects:

- Restraint in design, consistency in artwork and graphic types, and quality materials are important factors because the audience should be invited into the materials with appealing, user-friendly layouts.
- The text will be kept to a minimum but still be interesting for readers.
- Using various formats and an active voice will make the text more engaging.
- Graphics – photos, logos, or other artwork, are great for breaking up long blocks of text, allowing readers a visual break.
- Images of lakes, streams, rivers, wetlands, and other stormwater features are "naturals" for enhancing any printed material and will be used if available.

The City will use inserts since they can easily be distributed to a large population. The City will use materials available from the EPA, the State or other public agencies as appropriate. They can be made using simple materials and graphics or they can be made more elaborate. They can also be made for all age levels, in any language or for specific audiences.

A one-page flyer will be produced to carry the basic message. Utility inserts offer an inexpensive, convenient way to convey the message to a large audience. These brochures will be appropriate for the public and can be effective if engaging, concise and memorable. They will contain brief, important messages, provide overview for the problems and solutions, or implore simple actions. The text in the brochures will be brief, the letters fairly large and the design attractive.

An example of information that will be included in a brochure discussing environmentally friendly landscaping techniques is included near the end of this section. These topics are appropriate for the residential, business and industrial community.

<u>Planning and design</u>
Emphasize the need for property owners to develop a landscape plan that utilizes the natural conditions of the property. For example, the regional and climatic conditions of the site, existing vegetation, topography, intended uses of the property, and the grouping of plants by their water needs are important considerations in designing a site that promotes natural vegetation growth while minimizing water loss and contamination.

<u>Appropriate Plant Selection</u>
The City will encourage property owners to choose local or regional plants when developing an environmentally friendly landscape. Indigenous plant species are generally more water efficient and disease resistant.

Use of Mulches

Mulches help retain water, reduce weed growth, prevent erosion, and improve the soil for plant growth. Mulches are usually wood bark chips, wood grindings, small gravel or shredded landscape clippings. Property owners will be encouraged to use mulches and will be informed of the benefits of these materials.

Fertilizers

Property owners will be discouraged from using fertilizers, or if they are used, from over-applying them. The City will recommend less-toxic alternatives to commercial fertilizers, such as composted organic material. The City currently produces compost at its wastewater treatment plant which is available for anyone at no cost.

Pesticides

Like fertilizers, pesticides should be used on lawns and gardens only when absolutely necessary. Pesticide use can be avoided entirely by selecting hearty plants that are native to the area and by keeping them healthy. It is also important to identify any potential pests to determine if they are truly harmful to the plant. The pests should always be removed by hand if possible. Chemical pest control should be used only if other approaches fail.

The City will obtain information from the following sources when preparing the brochures.

NRCS. 1997. *Lawn and Garden Care*. United States Department of Agriculture, National Resources Conservation Service, www.nrcs.usda.gov/feature/highlights/homegarden/lawn.html.

Water Quality Consortium. 1998. Surface Water Quality BMP: Fertilizer. Seattle Public Utilities, Seattle, WA, http://www.seattle.gov/util/Services/Drainage_&_Sewer/Keep_Water_Safe_&_Clean/USELESSF_200311261725423.asp

Water Quality Consortium. 1998. Surface Water Quality BMP: Landscape Maintenance. Seattle Public Utilities, Seattle, WA, http://www.seattle.gov/util/Services/Yard/Natural_Lawn_&_Garden_Care/index.asp

Washington State University, Pesticide Education Program, *Pesticide Urban Initiative*, http://pep.wsu.edu.

Copies of brochures and posters prepared by Ecology, Seattle, Bellevue, and Tacoma that look at surface water pollution are available from the Puget Sound Action Team at their website. (http://www.psat.wa.gov/Publications/Pub_Master.htm#pollution). Brochures and other printed material developed by EPA are available at their website (http://cfpub.epa.gov/npdes/stormwatermonth.cfm)

Timeline for Completion
The City will create and/or research for an annual insert and distribute it through utility bills in 2009 through 2011. Starting in 2008 the City will begin planning and budgeting for these inserts

BMP 1(B) STORMWATER WEBSITE

Measurable Goals
1. Develop a stormwater website and include a list of subjects for inclusion and discussion
2. Track number of updates to website per year
3. Develop login counter to determine the number of website hits per year

Description
Websites serve as a useful tool for disseminating stormwater related information to a broad audience. Since the internet is used regularly by citizens, agency personnel, environmental group leaders, and the business community, it can be a valuable tool in conveying a stormwater pollution related message. To target a specific audience, the City will create an automated e-mail address list (list server) which becomes an inexpensive way to disseminate information to interested parties. This list can be used to inform parties of updates on meetings, policy discussions and other matters. Specifically, the City will create list servers to the following audiences:

1. Businesses: Describe use and storage of automotive chemicals, hazardous cleaning supplies, carwash soaps, other hazardous material.
2. Landscapers and property managers: Describe yard care techniques, BMPs for use and storage of pesticides/fertilizers, carpet cleaning, and auto repair/maintenance, LID techniques and stormwater pond maintenance
3. Engineers/Developers: Technical standards for stormwater site and erosion control plans, LID standards, and stormwater treatment and flow control BMPs

Information to be considered for incorporation on the website will be information pertaining to the City's stormwater program such as brochures or displays and pertinent addresses and contact phone numbers. Also to be considered will be information on community car washes, NPDES permits, maps of the storm drainage system, glossary of standard stormwater terms, recommended best management practices, rate explanations, volunteer opportunities, fish/habitat related information, water quality data and a link to the City's Comprehensive Stormwater Plan. The website may also have links to state and national programs such as EPA's website and the Washington State Department of Ecology.

Timeline for Completion
The City will develop their stormwater website in 2008 and will make subsequent updates in following years.

BMP 1(C): ENCOURAGE PROPER DISPOSAL OF HOUSEHOLD HAZARDOUS WASTES

Measurable Goals

1. Research local and regional opportunities for the public to properly dispose of household hazardous waste
2. Develop an inventory of proper disposal events and opportunities based on research.
3. Development of a stormwater brochure dealing with hazardous materials disposal created and distributed.
4. Number of days educational advertisement shown on the side of the vactor truck during catch basin vactoring.

Description

Bad habits can lead to water pollution because citizens don't know that certain chemicals are dangerous to the environment. Once they are informed, most will adjust their behavior to help protect water quality. The City will use articles in the utility bill insert or on the City website discussing hazardous waste handling to make the residents aware of the potential impacts of hazardous household materials on water quality and inform residents of ways to properly store, handle, and dispose of the chemicals. Such household hazardous wastes include automotive chemicals, hazardous cleaning supplies, and carwash soap. The City will also provide information about less-toxic alternatives to household hazardous wastes. The information regarding hazardous waste storage, handling and disposal will be equally applicable to the commercial and industrial community. Car wash soap may add phosphorous to runoff. Elevated phosphorous levels in lakes generally lead to algae blooms. Since much of the stormwater runoff from the City goes directly to Lake Gardner the City should attempt to minimize the amount of phosphorous going into the lake.

A"Wastemobile" may be available where citizens can dispose of pesticides, oil-based paints, toxic cleaning products, products containing mercury, fluorescent light bulbs, automotive batteries, hobby chemicals, thinners and solvents, automotive products, aerosols, glues and adhesives, propane tanks and latex paint. In addition, transfer stations accept hazardous materials year round. The City of Granite Falls will promote this program by providing brochures on the program at City Hall.

The City will also advertise the importance of dealing with hazardous waste on the side of the vactor truck while vactoring catch basins.

The City will obtain information from the following sources when preparing the brochure entries.

Water Quality Consortium. 1998. Surface Water Quality BMP: Waste Management. Seattle Public Utilities, Seattle, WA, http://www.seattle.gov/util/Services/Garbage/Hazardous_Waste_Disposal_&_Reduction/WHERETOD_200312051016323.asp

Timeline for Completion
The City will create a stormwater brochure discussing waste management that will be distributed between 2008 and 2011.

BMP 1(D): ADDRESSING ILLEGAL DUMPING AND LITTERING

Measurable Goals
1. Number of additional trash bins installed
2. Number of signs posted at detention ponds
3. Litter ordinance reviewed and enforced
4. Distribute illegal dumping, littering, and illicit discharge public education material

Description
Trash and floating debris in waterways have become significant pollutants, especially in areas where a large volume of trash is generated in a concentrated area. Trash in waterbodies contributes to visual pollution and detracts from the aesthetic qualities of the landscape. It also poses a threat to wildlife and human health. In addition, less litter from individuals can save the City money for maintenance of structural-runoff controls.

When developing a trash management strategy, the City will follow the EPA recommended considerations discussed below.

- Regular cleaning and maintenance are necessary to prevent the trash accumulated at control structures from being hazardous itself.
- Control strategies should not just transport trash to another waterbody, but should reduce the quantity of trash in the water as a whole.

The EPA indicates that there are two main methods of trash control: source control and structural control. Source control includes community education, improved infrastructure, waste reduction and cleanup campaigns. Community education will be incorporated into City stormwater brochures and/or utility inserts. Citizen awareness is key to a successful trash management program. Citizens will be informed about the environmental consequences of littering. The City proposes to install signs at detention ponds indicating these consequences. The City also plans to increase the number of trash receptacles available for public use to encourage responsible trash management. Waste reduction programs such as encouraging the use of recycled products and products that contain limited amounts of packaging may be addressed in the stormwater brochure. The City will plan for cleanup campaigns such as street sweeping, receptacle servicing and using cleanup crews along roadsides.

Structural control involves structures that physically filter wastes and conduct centrifugal separation of trash. Physical methods of filtering include trash racks, mesh nets, bar screens and trash booms, all of which prevent trash from floating downstream. Centrifugal separation is the means of separating floating trash from water by increasing the settling rate of trash and particles. A number of commercial products based on this concept are available for stormwater applications. The City intends to encourage these forms of structural controls within its litter and stormwater ordinances.

The City will also provide pamphlets and educational material on its website regarding illicit discharges and illicit connections. A hotline to report these items will be listed on the materials as well.

Timeline for Completion
The City will evaluate the need for additional trash bins in 2008 and continue through 2011. Additional trash bins will be added if necessary starting in 2010. In addition, the City will address signage and the litter ordinance in the first year and revise it as necessary through 2011. Illicit discharge/connection information will be published as a topic in the utility insert.

BMP 1(E): GARDENING AND LAWN CARE ACTIVITIES

Measurable Goal
1. Develop a list of subjects to be included in public education material based on local gardening and lawn care practices.
2. Distribute gardening and lawn care public education material in accordance with the identified schedule.

Description
Lawn and garden activities can result in contamination of stormwater through pesticide, soil, and fertilizer runoff. Proper landscape management, however, can effectively reduce water use and contaminant runoff and enhance the aesthetics of a property. Environmentally friendly landscape management can protect the environment through careful planning and design, routine soil analysis, appropriate plant selection, use of practical turf areas, water use efficiency, use of mulches and appropriate maintenance.

It is important to emphasize that property owners develop a landscape plan that utilizes the natural conditions of the property. For example, the regional and climatic conditions of the site, existing vegetation, topography, intended uses of the property, and the grouping of plants by their water needs are all important considerations in designing a site that promotes natural vegetation growth while minimizing water loss and contamination. Residents and municipal crews can partner with local nurseries and irrigation and lawn services to identify the appropriate landscape design for a specific site and to offer environmentally friendly practices to homeowners.

Property owners and municipalities should be discouraged from using fertilizers, or if they are used, from over-applying them. The City can recommend less-toxic alternatives to commercial fertilizers, such as composted organic material. The City can also recommend practices to reduce the amount of fertilizer entering runoff. For example, slow-release organic fertilizers are less likely to enter stormwater. Application techniques such as tilling fertilizers into moist soil to move the chemicals directly into the root zone, reduce the likelihood that the chemicals will be mobilized in stormwater. Timing is also a concern where warm season grasses should be fertilized in the summer

in frequent and small doses while cool season grasses should be fertilized in the fall. In addition, pesticides should only be used when necessary.

Using proper landscaping techniques can effectively increase the value of a property while benefiting the environment through reducing water use, decreasing energy use (due to less water pumping), and minimizing storm runoff that transport soils, fertilizers and pesticides.

Timeline for Completion

The City will begin their gardening and lawn care strategy beginning in 2008 and will revise it as needed in years 2009 and 2011.

BMP 1(F): EDUCATION ON NEW DEVELOPMENT AND LOW IMPACT DEVELOPMENT (LID)

Measurable Goals

1. Land use codes reviewed to ensure consistency with low impact development (LID) principles
2. Identify construction related subjects for inclusion in construction/new development public education materials that focus on local construction
3. Distribute low impact development education material
4. Publish City Development Standards on the website
5. Number of new site plans with LID practices

Description

Using LID approaches for new development can help to achieve stormwater pollution reduction goals. Through LID approaches, stormwater runoff can be controlled while development objectives are achieved. In order for these measures to be implemented, the City will inform the public about these practices.

The first step in achieving LID involves the City's encouragement of developers to adopt such approaches. Simultaneously, the City will develop and implement a program to ensure that LID design standards are met.

When the City's program has been successfully implemented, the City will benefit from a reduction of stormwater runoff and pollution from LID developments. The developer will benefit from establishment of a marketing tool that will attract environmentally conscious buyers and create more landscaped areas that enhance the aesthetics of developed areas. In addition, the City program will educate property owners on effective pollution prevention measures and provide technical standards, promote the proper maintenance of BMPs, and inform commercial property owners of potential cost savings from using LID approaches.

As a first step, the City will adopt and implement appropriate LID practices that are beneficial to the community and target the goal of controlling runoff onsite and reducing pollutants in stormwater. The product of the program is a set of clear, concise LID codes that the developer may utilize. Once these measures have been adopted, an outreach program will be developed. For instance, in the planning stage of a development, the developer would meet with the City and determine which BMPs are applicable and would identify the maintenance requirements needed for a specific property. The developer should obtain and understand documentation of the construction and maintenance requirements of the BMPs and then pass this information on to the property owners. In addition, as an example to builders and homeowners in the community, the City shall implement these LID practices for their own facilities where feasible.

Timeline for Completion

The City will develop its LID codes and distribute educational information in 2008. In 2009 through 2011, the City will begin to monitor the number of private development plans implementing LID practices and the number of City facilities utilizing LID BMPs.

PUBLIC INVOLVEMENT AND PARTICIPATION PROGRAM

As of January 17, 2007, Ecology developed requirements for the public involvement and participation program requirement of the state NPDES Phase II permit program. The following program is based on these requirements.

Public Involvement and Participation Program. Public involvement/participation activities can be effective tools used to gain much needed public support for stormwater management program implementation. To satisfy this minimum control measure, the permittee needs to:

a. No later than one year from the effective date of this Permit, all permittees shall create opportunities for the public to participate in the decision-making processes involving the development, implementation and update of the Permittee's entire SWMP. Each Permittee shall develop and implement a process for consideration of public comments on their SWMP.
b. Each Permittee shall make their SWMP, the annual report required under S9.A and all other submittals required by this Permit, available to the public. The annual report, and SWMP that was submitted with the latest annual report, shall be posted on the permittee's website. To comply with the posting requirement, a permittee that does not maintain a website may submit the updated SWMP in electronic format to the Department for posting on the Department's website

The City of Granite Falls will implement Best Management Practices (BMPs) to implement a public involvement and participation program. These include notifying the public of stormwater related opportunities and encouragement of public participation. Specifically, the City will implement the following BMPs as discussed herein.

- BMP 2(A): Post Public Involvement Opportunities on Website
- BMP 2(B): Stormwater Management Program Meetings
- BMP 2(C:) Coordination with Adopt-a-Stream Program
- BMP 2(D): Storm Drain Stenciling
- BMP 2(E): Volunteer Monitoring
- BMP 2(F): Community Hotline

Objective: Provide opportunity for public involvement and participation.

BMP 2(A): POST PUBLIC INVOLVEMENT OPPORTUNITIES

Measurable Goal
1. Number of updates to the City stormwater website.

Description
The City will post its public involvement opportunities on its website. Such opportunities include public workshops on the City's Stormwater Management Program, storm drain stenciling, Adopt-a-Stream, and volunteer monitoring as described further in this Plan. Later into the permit cycle, the City may evaluate whether other opportunities are available to the public and post these as well. In addition, the City will post its annual stormwater reports.

Timeline for Completion
The City will determine an initial posting schedule in 2008 and will continue to update the website throughout 2011.

BMP 2(B): STORMWATER MANAGEMENT PROGRAM MEETINGS

Measurable Goal
1. Hold two public meetings during the first year of the program.
2. Publish a minimum of two notices during the first year of the program.

Description
The City shall hold a minimum of two public meetings during 2008 to promote public involvement and participation in the City's stormwater management program. The City will ensure that all meetings are well advertised, will follow the applicable public notice requirements for the City and will make a concerted effort to solicit input from various sectors. Advertisement methods will include print media, and posting notices in public places, etc. When planning the public meetings, the City determined it would implement the following Ecology recommended steps.

1. **Determine the Appropriate Type of Public Meeting Format.** There are many things to consider when planning a public meeting, including format, time, location, agenda and the use of a facilitator. Not all public meeting formats are alike. The format chosen will depend on the goal of the meeting and the items on the agenda. Since the goal of the initial meeting is to inform and obtain stakeholder input, formats such as workshops and/or open houses are most appropriate. Stakeholders attending the meeting will be given an overview of the stormwater program and then transition into a format (e.g., workgroups) conducive to sharing ideas and information.

   The City will be sensitive to the factors that can influence stakeholder participation, such as the date and time of the meeting, the actual meeting site, and method of advertising for the meeting. The City will also consider other factors that may affect participation in the meeting such as, ensuring that presentation materials will avoid excessive use of acronyms, technical terminology, and large amounts of text and that the agenda allots enough time for people to ask questions and provide feedback. The City shall keep in mind that not all people feel comfortable speaking in public, so they may consider having a public comment form available for each participant and/or have staff available for one-on-one discussions.

2. **Announce the Meetings.** The City will ensure that announcements for the public meeting reach all stakeholders within the community, and that each category of stakeholder (i.e., similar to target audiences identified for public education and outreach) is represented during the public meeting. They will ensure that the announcements go out to all interested parties and will create and distribute the meeting announcement to local newspapers or through other appropriate mechanisms.

3. **Conduct Meeting and Solicit Stakeholder Input.** The City shall ensure that the agenda includes enough time for people to ask questions and provide feedback. A staff member will have the responsibility of recording comments from the public and the responses that they receive. Since not all people feel comfortable speaking in public, a public comment form will be available for participants to fill out. If possible, staff will be available for one-on-one discussions. In addition, participants may fill out an evaluation form to determine if the meeting was an effective mechanism to reach people.

4. **Perform Meeting Follow-up Activities.** Follow-up activities are just as important as planning. Essential follow-up activities include preparing a summary of the questions and answers discussed at the meeting, generating a participants' contact list (include these people on a mailing list), and compiling public comment forms received via mail or fax. City staff will review the information on the meeting evaluation forms and use the information when planning future public meetings. The types of information collected through the public meeting will help determine who was or wasn't represented during the meeting, what the perceptions and attitudes are of the participants and how best to reach stakeholders in the future.

   The City will use stakeholder input to develop and/or modify the stormwater program. Stakeholder input may influence the type of BMPs selected for each minimum measure and/or the measurable goals developed to track implementation progress. The City will make meeting follow-up information available to the public, either through newspapers, websites or a mailing. This will demonstrate to stakeholders that their input is taken seriously and that they have influence. This may have a positive impact on whether the stakeholder will continue to participate.

Timeline for Completion
The City will hold two public meetings and submit related public notices in 2008.

BMP 2(C): COORDINATION WITH ADOPT-A-STREAM PROGRAM

Measurable Goal
1. Identify target groups for the Adopt-a-Stream Foundation program.
2. Contact groups to participate in the program and assist in setting up training.

Description
The City shall identify target groups to be included in the Adopt-a-Stream program. Once the groups are identified, they shall be listed and contacted for interest in the

program. Such groups may include local boy and girl scout organizations, school groups, fundraising groups, or other civic organizations. The City can coordinate their program with the Tom Murdock of the Adopt-a-Stream Foundation (tomm@streamkeeper.org). Their current program information can be found at: http://www.streamkeeper.org/

Timeline for Completion
The City will coordinate the program in the third permit year (2009) and will continue to run it for each year thereafter.

BMP 2(D): STORM DRAIN STENCILING

Measurable Goal
1. Identify target areas or streets to be included in the storm drain stenciling program.
2. Develop stencils
3. List and invite targeted groups to participate in stenciling program

Description
The City shall continue to identify target areas or streets to be included in the storm drainage stenciling program. Once the streets or areas are identified, groups shall be listed and contacted for interest in the program. Such groups may include local boy and girl scout organizations, school groups, fundraising groups, or other civic organizations. The stencils shall be designed and created with slogans, logos and/or text appropriate for the area. Necessary support shall be given to the groups including stencils, appliqués, paint, rollers, traffic control if necessary, safety equipment, and trash bags.

Records of storm drain stenciling shall be maintained throughout the year and indicated in the annual report at the end of the year.

Timeline for Completion
The City will create the program in 2008 and will continue to run it for each year thereafter.

BMP 2(E): VOLUNTEER MONITORING

Measurable Goal
1. Identify outfalls or areas that are safe for volunteer monitoring groups to conduct stormwater monitoring or dry weather screening.
2. Develop guidelines for conducting volunteer monitoring in identified areas.
3. Invite identified groups to participate in the volunteer monitoring program.

Description
Data from volunteer monitoring can be useful to the City in terms of correcting actions that are currently degrading the environment or it can be used to set the background necessary to determine if a continuing downward trend is present. However, in order for this data to be useful, the City must develop appropriate guidelines so that data is

collected in a uniform manner that may be used comparatively with data collected by others.

For its volunteer monitoring program, the City will identify outfalls or areas safe for volunteer monitoring groups to conduct stormwater monitoring or dry weather screening. They will then assemble and provide the proper training and equipment for the groups. Guidelines detailing specific monitoring requirements will be developed and explained to each group. The guidelines shall be easy enough for volunteers to understand and follow completely. Potential volunteer groups will be listed and then contacted in regards to the program. If interested, the groups will be trained and given the appropriate equipment including data forms and safety equipment.

Records of each monitoring effort will be maintained and reported at the end of the year.

Timeline for Completion
The City will create the program in 2008 and will continue to advertise and/or monitor for each of the four years thereafter.

BMP 2(F): COMMUNITY HOTLINE

Measurable Goal
1. Identify phone number and contact person to receive reports on stormwater quality issues through the community.
2. Distribute phone number to community.
3. Number of inspections provided in response to public calls.

Description
Since regulators and authorities cannot monitor all waterbodies at once, the City will rely on the public to keep them informed of water polluters. An accessible phone number provides a means for concerned citizens and agencies to contact the appropriate authority when they see water quality problems. The City will provide a direct phone number or upon completion of their stormwater site, they can provide an electronic form linked directly to the City. A typical call may report a leaking automobile, concrete wash-out dumped on the street, paint in a creek, or organic debris (including pet waste) in a drainage system or waterway.

It is important to first establish a contact for these concerns. Therefore, the name and phone number for this contact will be advertised and distributed to the public. The phone number will be available on all distributed materials such as the utility insert and the City's website. The City may provide an electronic form on its website which will include spaces for information about the person making the complaint and the alleged violation. If worried about privacy, the citizen can submit a complaint by telephone. The phone number will also be advertised on the side of the vehicle while vactoring catch basins.

When a complaint comes in, City staff will dispatch qualified water quality investigators to respond to the complaint. They will make every attempt to determine the responsible party and inform them of the environmental impact of their actions. The responsible party will be required to stop the action that is polluting the surface water. In addition, staff members will provide the violator with information on cleanup, alternative disposal options, erosion control and other BMPs as approved by the City.

Timeline for Completion

The City will designate a few hours a year to monitor the progress of community calls beginning in 2008 and will continue through 2011.

ILLICIT DISCHARGE DETECTION AND ELIMINATION PROGRAM

Ecology has developed final permit requirements for the illicit discharge detection and elimination program requirement of the State's NPDES Phase II permit program. The following program is based on these requirements.

Illicit Discharge Detection and Elimination. Discharges from cities often include wastes and wastewater from non-stormwater sources. Illicit discharges enter the system through either direct connections, such as wastewater piping mistakenly or deliberately connected to the storm drains, or indirect connection, such as infiltration from cracked sanitary sewers, spills collected by drain outlets, or materials dumped into storm drains. To satisfy this minimum control measure, the permittee must develop, implement and enforce an illicit discharge detection and elimination program. Permittees shall fully implement an ongoing illicit discharge detection and elimination program no later than three years from the effective date of this permit.

The minimum performance measures are:

a. A municipal storm sewer system map shall be developed no later than four years from the effective date of this permit. Municipal storm sewer system maps shall be periodically updated and shall include the following information:
   i. The location of all known municipal separate storm sewer outfalls and receiving waters and structural stormwater BMPs owned, operated, or maintained by the Permittee. Each Permittee shall map the attributes listed below for all storm sewer outfalls with a 24 inch nominal diameter or larger, or an equivalent cross-sectional area for non-pipe systems:
      - Tributary conveyances (indicate type, material, and size where known).
      - Associated drainage areas.
      - Land use.
   ii. Each Permittee shall initiate a program to develop and maintain a map of all connections to the municipal separate storm sewer authorized or allowed by the Permittee after the effective date of this Permit.
   iii. Geographic areas served by the Permittee's MS4 that do not discharge stormwater to surface waters.
   iv. Each Permittee shall make available to Ecology, upon request, municipal storm sewer system map(s) depicting the information required in S5.C.3.a.i. through iv above. The preferred format of submission will be an electronic format with fully described mapping standards. An example description is provided on Ecology WebPages under Core Services, GIS Data.

vi. Upon request, and to the extent appropriate, permittees shall provide mapping information to co-permittees and secondary permittees.

b. Each Permittee shall develop and implement an ordinance or other regulatory mechanism to effectively prohibit non-stormwater, illegal discharges, and/or dumping into the Permittee's municipal separate storm sewer system to the maximum extent allowable under State and Federal law. The ordinance or other regulatory mechanism shall be adopted no later than 30 months from the effective date of this Permit.

i. The regulatory mechanism does not need to prohibit the following categories of non-stormwater discharges:

- Diverted stream flows.
- Rising ground waters.
- Uncontaminated ground water infiltration (as defined at 40 CFR 35.2005(20)).
- Uncontaminated pumped ground water.
- Foundation drains.
- Air conditioning condensation.
- Irrigation water from agricultural sources that is commingled with urban stormwater.
- Springs.
- Water from crawl space pumps.
- Footing drains.
- Flows from riparian habitats and wetlands.
- Non-stormwater discharges covered by another NPDES permit.
- Discharges from emergency fire fighting activities in accordance with S2 *Authorized Discharges*.

ii. The regulatory mechanism shall prohibit the following categories of non-stormwater discharges unless the stated conditions are met:

- Discharges from potable water sources, including water line flushing, hyperchlorinated water line flushing, fire hydrant system flushing, and pipeline hydrostatic test water. Planned discharges shall be de-chlorinated to a concentration of 0.1 ppm or less, pH-adjusted, if necessary, and volumetrically and velocity controlled to prevent re-suspension of sediments in the MS4.

- Discharges from lawn watering and other irrigation runoff. These shall be minimized through, at a minimum, public education activities (see section S5.C.1) and water conservation efforts.

- Dechlorinated swimming pool discharges. The discharges shall be dechlorinated to a concentration of 0.1 ppm or less, pH-adjusted and reoxygenized if necessary, volumetrically and velocity controlled to prevent re-suspension of sediments in the

MS4. Swimming pool cleaning wastewater and filter backwash shall not be discharged to the MS4.

- Street and sidewalk wash water, water used to control dust, and routine external building wash down that does not use detergents. The Permittee shall reduce these discharges through, at a minimum, public education activities (see section S5.C.1.) and/or water conservation efforts. To avoid washing pollutants into the MS4, Permittees must minimize the amount of street wash and dust control water used. At active construction sites, street sweeping must be performed prior to washing the street.
- Other non-stormwater discharges. The discharges shall be in compliance with the requirements of the stormwater pollution prevention plan reviewed by the Permittee, which addresses control of construction site de-watering discharges.

iii. The Permittee's SWMP shall, at a minimum, address each category in ii above in accordance with the conditions stated therein.

iv. The SWMP shall further address any category of discharges in i or ii above if the discharges are identified as significant sources of pollutants to waters of the State.

v. The ordinance or other regulatory mechanism shall include escalating enforcement procedures and actions.

vi. The Permittee shall develop an enforcement strategy and implement the enforcement provisions of the ordinance or other regulatory mechanism.

c. Each Permittee shall develop and implement an ongoing program to detect and address non-stormwater discharges, spills, illicit connections and illegal dumping into the Permittee's municipal separate storm sewer system. The program shall be fully implemented no later than 180 days prior to the expiration date of this Permit and shall include:

i. Procedures for locating priority areas likely to have illicit discharges, including at a minimum: evaluating land uses and associated business/industrial activities present; areas where complaints have been registered in the past; and areas with storage of large quantities of materials that could result in spills.

ii. Field assessment activities, including visual inspection of priority outfalls identified in i, above, during dry weather and for the purposes of verifying outfall locations, identifying previously unknown outfalls, and detecting illicit discharges.

- Receiving waters shall be prioritized for visual inspection no later than three years from the effective date of this Permit, with field assessments of three high priority water bodies made no later than four years from the effective date of this Permit. Field assessments on at least one high priority water body shall be made each year thereafter.

- Screening for illicit connections shall be conducted using: Illicit Discharge Detection and Elimination: A Guidance Manual for Program Development and Technical Assessments, Center for Watershed Protection, October 2004, or another methodology of comparable effectiveness.

iii. Procedures for characterizing the nature of, and potential public or environmental threat posed by, any illicit discharges found by or reported to the Permittee. Procedures shall include detailed instructions for evaluating whether the discharge must be immediately contained and steps to be taken for containment of the discharge.
Compliance with this provision shall be achieved by investigating (or referring to the appropriate agency) within 7 days, on average, any complaints, reports or monitoring information that indicates a potential illicit discharge, spill, or illegal dumping; and immediately investigating (or referring) problems and violations determined to be emergencies or otherwise judged to be urgent or severe.

iv. Procedures for tracing the source of an illicit discharge; including visual inspections, and when necessary, opening manholes, using mobile cameras, collecting and analyzing water samples, and/or other detailed inspection procedures.

v. Procedures for removing the source of the discharge; including notification of appropriate authorities; notification of the property owner; technical assistance for eliminating the discharge; follow-up inspections; and escalating enforcement and legal actions if the discharge is not eliminated.
Compliance with this provision shall be achieved by initiating an investigation within 21 days of a report or discovery of a suspected illicit connection to determine the source of the connection, the nature and volume of discharge through the connection, and the party responsible for the connection. Upon confirmation of the illicit nature of a storm drain connection, termination of the connection shall be verified within 180 days, using enforcement authority as needed.

d. Permittees shall inform public employees, businesses, and the general public of hazards associated with illegal discharges and improper disposal of waste.

i. No later than 180 days prior to the expiration date of this Permit, distribute appropriate information to target audiences identified pursuant to S5.C.1.

ii. No later than two years from the effective date of this Permit, publicly list and publicize a hotline or other local telephone number for public reporting of spills and other illicit discharges. Keep a record of calls received and follow-up actions taken in accordance with S5.C.3.c.ii. through v. above; include a summary in the annual

report (see section S9 Reporting and Record Keeping Requirements).

e. Permittees shall adopt and implement procedures for program evaluation and assessment, including tracking the number and type of spills or illicit discharges identified; inspections made; and any feedback received from public education efforts. A summary of this information shall be included in the Permittee's annual report (see section S9 Reporting and Recordkeeping Requirements).

f. Each Permittee will provide appropriate training for municipal field staff on the identification and reporting of illicit discharges into MS4s.

   i. No later than thirty months after the effective date of this Permit, each Permittee shall ensure that all municipal field staff who are responsible for identification, investigation, termination, cleanup, and reporting illicit discharges, including spills, improper disposal and illicit connections are trained to conduct these activities. Follow-up training shall be provided as needed to address changes in procedures, techniques or requirements. Permittees shall document and maintain records of the training provided and the staff trained.

   ii. No later than three years after the effective date of this Permit, an ongoing training program shall be developed and implemented for all municipal field staff, which, as part of their normal job responsibilities, might come into contact with or otherwise observe an illicit discharge or illicit connection to the storm sewer system shall be trained on the identification of an illicit discharge/connection, and on the proper procedures for reporting and responding to the illicit discharge/connection. Follow-up training shall be provided as needed to address changes in procedures, techniques or requirements. Permittees shall document and maintain records of the training provided and the staff trained.

The City of Granite Falls will implement Best Management Practices (BMPs) to detect and eliminate illicit connections during this permit cycle. This Plan further refines the City's program. The City will specifically address the following BMPs.

- BMP 3(A): Review Illicit Discharge Legal Authority/Ordinance
- BMP 3(B): Maintain Stormwater Inventory (Base Map)
- BMP 3(C): Conduct Outfall Screening
- BMP 3(D): Identify Stormwater Hotspots
- BMP 3(E): Elimination of Septic/Gray Water Discharges
- BMP 3(F): Sanitary Sewer Leak Elimination
- BMP 3(G): Illicit Discharge Training
- BMP 3(H): Illicit Discharge Hotline
- BMP 3(I): Identify/Eliminate Discharges from Storage Tanks

Objective: Establish and carry out procedures to identify and remove illicit discharges, and encourage public education and involvement in eliminating illicit discharges.

BMP 3(A): REVIEW ILLICIT DISCHARGE LEGAL AUTHORITY/ ORDINANCE

Measurable Goal

1. Review of related ordinance.
2. Develop supplemental legal authority if needed.

Description

The City will first determine if their existing codes relate appropriately to the prohibition of illicit discharges. The existing City of Granite Falls Municipal Code (BMC) contains regulations that prohibit illicit discharges and illegal dumping and authorizes enforcement actions on public and private property.

The following sections of the BMC address illicit discharges.

> 14.30.020 Definitions
> Illicit discharge means all nonstormwater discharges to stormwater drainage systems that cause or contribute to a violation of state water quality, sediment quality or ground water quality standards, including, but not limited to, sanitary sewer connections, industrial process water, interior floor drains, car washing and greywater systems.
>
> 14.30.063 Illicit Discharges
> Illicit discharges to stormwater drainage systems are prohibited (Ord. 25-95 §1, 1995).

The City will ensure that, as a minimum, the illicit discharge ordinance contains the Ecology permit requirements as noted earlier.

Timeline for Completion

The City will review its existing codes in 2008 and will revise them as necessary to meet the intent of this BMP. The fourth year of the permit, 2011, will entail an evaluation of the revised code to make certain the codes are assisting in accomplishing the desired task of enforcing the prohibition of illicit discharges.

BMP 3(B): MAINTAIN STORMWATER INVENTORY (BASE MAP)

Measurable Goal

1. Ensure current base map includes full stormwater system, receiving streams, outfalls, and displays the permit coverage area.
2. Develop procedures for updating base map.
3. Update base map with as-built information.

Description
A base map depicting the existing storm sewer system will be maintained by the City to aid in eliminating illicit discharges. The map will show at a minimum, the locations of all outfalls and the names and locations of all waterbodies that receive a discharge from those outfalls and tributary conveyance systems, associated tributary drainage areas, and land uses, of all municipal separate storm sewer outfalls with a 24 inches nominal diameter or larger, or an equivalent cross-sectional area for non-pipe systems, indicating type, material, and size where known. The map will be a minimum of 1" = 800' and will depict features such as storm sewer pipes, inlets, streets, and political boundaries. Drainage basin lines will be shown so the contributing area for a particular illicit discharge can be determined.

The City will use the map to target outfalls with dry weather flows and other suspicious discharges. These outfalls will receive more in-depth inspection and monitoring. The map will be used to coordinate management activities to remove illicit connections and track storm drain system maintenance. The City has teamed with Snohomish County to GPS and vactor catch basins through 2010. Information obtained from these inspections/cleanings will be added to the base map as appropriate. Subsequent updates will be provided by the City as development and repairs to the storm system occur.

Timeline for Completion
The City will review and update the existing storm sewer base map in 2008. Updates to this map will occur on an annual basis as necessary through 2011 and beyond.

BMP 3(C): CONDUCT OUTFALL SCREENING
BMP 3(D): IDENTIFY STORMWATER HOTSPOTS
BMP 3(E): ELIMINATION OF SEPTIC/GRAY WATER DISCHARGES
BMP 3(F): SANITARY SEWER LEAK ELIMINATION

Measurable Goals
1. Identify local facilities that have a high probability of discharging pollutants (stormwater hot spots).
2. Develop a list of potential pollutants that may be associated with stormwater hot spots.
3. Conduct inventory and prioritize sites for inspection.
4. Develop a schedule where 20% of outfalls are inspected each year in the permit cycle.
5. Number of illicit connections found and/or repaired.

Description
An illicit connection is defined as an illegal and/or improper connection to a storm drainage system and receiving water. A discharge of industrial wastewater to a storm sewer is "illicit" because it would ordinarily require a permit under the Clean Water Act. Many building owners or operators are not aware that improper connections exist in their facilities. Identifying and removing illicit connections is a measure that will reduce

stormwater pollution. Illegal dumping is also an illicit discharge to storm drainage systems.

Procedures for detecting and addressing illicit discharges include evaluation of land uses, identification of priority areas for assessment, field assessment activities, characterization of any discharges found, tracing of illicit discharge, and removal of the illicit discharge.

The major components of the City's future illicit discharge detection plan are described below:

Define priority areas. The procedure for locating priority areas in Granite Falls is simplified since the likelihood of illicit connections is greatest in the commercial areas of Granite Falls.

Many illicit connections are a result of connections to the storm drainage system that are unknown to the business owner and may not be evident in architectural plans. Illicit industrial connections can arise from cross connections with sanitary sewers and floor drains improperly attached to storm drainage pipes. The connections may be accidental or planned and may occur in new buildings as well as in existing buildings.

Another source of illicit connections is improperly constructed residential sewer systems. For new construction, preventative practices such as thorough inspection and verification during the entire construction phase can avoid the need for more extensive detection techniques and disconnection.

Field testing of dry weather discharges. Storm drain outfalls are monitored to identify those areas where discharges that exceed water quality standards are occurring. To satisfy the permit requirements, three high priority areas need to be assessed in the field by the third permit year and one high priority area needs to be assessed each year thereafter. Monitoring includes both visual inspection and chemical analysis to aid in identifying potential discharge sources.

Dry weather visual inspection for the presence of non-stormwater discharges will be conducted at the major outfalls. Field notes, recorded on the field inspection form, and photographs will be taken during the inspection and will be maintained for reference. If the outfall is not accessible, field crews must use the system map and identify the nearest point to assess the system. Staff will locate the storm sewer manhole closest to the outfall and remove the cover to identify signs of dry-weather flow, such as odor or residue.

Visual tests for possible contamination in dry weather flows are listed below. This information is from EPA, 1993, I*nvestigation of Inappropriate Pollutant Entries into Storm Drainage Systems: A User's Guide.* EPA/600/R-92/238. Another source includes *A Guidance Manual for Program Development and Technical Assessments*, Center for Watershed Protection, October 2004

Odor – Most strong odors, especially gasoline, oils, and solvents, are likely associated with high responses on the toxicity screening test. Typical obvious odors include: gasoline, oil, sanitary wastewater, industrial chemicals, and decomposing organic wastes.

- *Sewage:* Smell associated with the stale sanitary wastewater, especially in pools near outfalls.
- *Sulfur ("rotten eggs"):* Industries that discharge sulfide compounds or organics (meat packers, canneries, dairies, etc.).
- *Rancid-sour:* Food preparation facilities (restaurants, hotels, etc.)
- *Oil and gas:* Petroleum refineries or many facilities associated with vehicle maintenance or petroleum product storage.

Color – Important indicator of inappropriate industrial sources. Industrial dry-weather discharges may be of any color, but dark colors, such as brown, gray, or black, are most common.

- *Yellow:* Chemical plants, textile, and tanning plants.
- *Brown:* Meat packers, printing plants, metal works, stone and concrete, fertilizers, and petroleum refining facilities.
- *Green:* Chemical plants, and textile facilities.
- *Red:* Meat packers.
- *Gray:* Dairies.

Turbidity – Often affected by the degree of gross contamination. Dry-weather industrial flows with moderate turbidity can be cloudy, while highly turbid flows can be opaque. High turbidity is often a characteristic of undiluted dry-weather industrial discharges.

- *Cloudy:* Sanitary wastewater, concrete or stone operations, fertilizer facilities, automotive dealers.
- *Opaque:* Food processors, lumber mills, metal operations, and pigment plants.

Floatable matter – A contaminated flow may contain floating solids or liquids directly related to industrial or sanitary wastewater pollution. Floatables of industrial origin may include animal fats, spoiled food, oils, solvents, sawdust, foams, packing materials, or fuel.

- *Oil sheen:* Petroleum refineries or storage facilities, and vehicle service facilities.

- *Sewage:* Sanitary wastewater.

Deposits and stains – Refer to any type of coating near the outfall and are usually of a dark color. Deposits and stains often will contain fragments of floatable substances. These situations are illustrated by the grayish-black deposits that contain fragments of animal flesh and hair, which often are produced by leather tanneries, or the white crystalline powder that commonly coats outfalls due to nitrogenous fertilizer wastes.

- *Sediment:* Construction site erosion.

- *Oils:* Petroleum refineries or storage facilities and vehicle service facilities.

Vegetation – Vegetation surrounding an outfall may show the effects of industrial pollutants. Decaying organic materials coming from various food product wastes would cause an increase in plant life, while the discharge of chemical dyes and inorganic pigments from textile mills could noticeably decrease vegetation. It is important not to confuse the adverse effects of high stormwater flows on vegetation with highly toxic dry-weather intermittent flows.

- *Excessive growth:* Food product facilities.

- *Inhibited growth:* High stormwater flows, beverage facilities, printing plants, metal product facilities, drug manufacturing, petroleum facilities, vehicle service facilities and automobile dealers.

Damage to Outfall Structures – Another readily visible indication of industrial contamination. Cracking, deterioration, and spalling of concrete or peeling of surface paint, occurring at an outfall are usually caused by severely contaminated discharges, usually of industrial origin. These contaminants are usually very acidic or basic in nature. Primary metal industries have a strong potential for causing outfall structural damage because their batch dumps are highly acidic. Poor construction, hydraulic scour, and old age may also adversely affect the condition of the outfall structure.

- *Concrete cracking:* Industrial flows

- *Concrete spalling:* Industrial flows

- *Peeling paint:* Industrial flows

- *Metal corrosion:* Industrial flows

The City's goal is to inspect all outfalls over the 5-year permit term. Priority outfalls will be identified per the timeline set in the permit and then 3 priority outfalls will be inspected every year thereafter. If an indication of an illicit discharge exists, it will be reported to the responsible official from the Public Works Department and steps will be followed to identify and eliminate the source of the discharge.

If non-stormwater discharges are identified at an outfall, the source of the discharge will be investigated through several means including identification of potential sources within the basin, chemical analysis of the non-stormwater discharge to identify potential source, review of citizen complaints of dumping, odors, unusual activity, and review of sanitary sewer maps to identify possible cross connections. The list of potential non-stormwater discharge sites within the basin will be matched to the type of discharge identified. Often the source of the non-stormwater discharge will not be able to be readily identified. The presence of commercial or industrial activities, the surrounding land uses and the authority to investigate illicit connections given by City ordinances will affect the methods used to identify illicit connections.

In establishing illicit discharge investigation protocol, the City will evaluate the following EPA recommendations for detecting illicit connections.

- Instituting building and plumbing codes to prevent connections of sources of potentially hazardous pollutants to storm drains.
- Prioritizing structures to be inspected by building age and use. Older buildings and buildings whose processes have the potential to affect water quality should be given first priority.
- Mapping each area to be surveyed and indicating the route of the sewer system and the locations of storm drains on the map. This enables planners to estimate the likely locations of illicit connections.
- Survey individual buildings to identify connections to storm drains.
- Inspect sewer lines with television equipment to identify all physical connections.
- Compare the results of the field tests and the video inspection with the known connections on the map. Suspicious areas should be further investigated.
- Institute mandatory inspections for new developments or remodeling projects to identify illicit connections to the storm sewer system.
- Remove and test sediment from the catch basins or equivalent structures.
- Inspect suspected illicit connections to determine whether they should be connected to the storm drain system or to the sanitary sewer. Use methods of identification such as dye testing, visual inspection, smoke testing, or flow monitoring, as described below.

  Dye Testing. Flushing fluorometric dye into suspicious downspouts, sanitary fixtures, or sewers can be useful to identify illicit connections. Once the dye has been introduced into the suspicious connection, the storm and/or sanitary collection system is monitored to determine whether dye is present. The presence of dye will confirm whether the suspect element is connected to the proper collection system or is an illicit connection.

Visual Inspection. Remotely guiding television cameras through sewer lines is another way to identify physical connections.

Smoke Testing. Smoke testing is another method used to discover illicit connections. Zinc chloride smoke is injected into the sewer line and emerges via vents on connected buildings, through cracks or leaks in the sewer line, or through catch basins if the storm and sanitary sewers are cross connected. Monitoring and recording where the smoke emerges, crews can identify legal and illegal connections to the sewer system. Properly functioning drains should prevent the smoke from entering buildings; however, in some instances, this will occur. It is important to notify the public prior to smoke testing an area, to inform them that the smoke is non-toxic, though it should be avoided as it can cause irritation of the nose and throat for some people.

Flow Monitoring. Monitoring increases in storm sewer flows during dry periods can also lead investigators to sources of infiltration due to improper connections.

*Infrared, Aerial, and Thermal Photograph*y. Researchers are experimenting with the use of aerial, infrared, and thermal photography to locate sources of illicit discharges by studying the temperature of the receiving water and soils or land surface moisture and vegetative growth. This technique assumes that a failing septic system would create moisture in the surface soil, the area would be warmer, and the vegetation would grow faster than in the surrounding area.

The City will prioritize inspection sites in order to maximize the results of the inspections with the available time and funds associated with this BMP. The City is considering incorporating the following EPA prioritization scheme into their illicit detection program:

1. Automobile-related businesses/facilities and heavy manufacturing
2. Printers, dry cleaners/laundries, photo processors, utilities, paint stores, water conditioners, chemical laboratories, construction companies and medium light manufacturing
3. Institutional facilities, private service agencies, retail establishments, and schools

Timeline for Completion
The City will begin to prioritize and start inspections of illicit discharge connections in the third permit year of 2009. The number of illicit connections found in these inspections will be tallied annually.

BMP 3(G): RECEIVE TRAINING ON ILLICIT DISCHARGES

Measurable Goal
1. Develop list of personnel to be trained.
2. Develop training materials and/or research available classes.
3. Number of training days for staff.

Description
Training for detection and elimination of illicit discharges will be conducted for selected City staff, such as field maintenance crews and illicit discharge inspectors, on the proper BMPs to use for detecting and eliminating illicit discharges. The City has teamed with Snohomish County to be trained at vactoring catch basins and identifying illicit discharges. The City may elect to send staff to a training class as well. The class will include various means to identify illicit connections and methods used to disconnect them from the stormwater system. Reporting requirements will also be included in the training.

Timeline for Completion
The City will begin training their staff on illicit discharges beginning in 2008 and will continue a refresher class every other year in the following years.

BMP 3(H): COMMUNITY HOTLINE

Measurable Goal
1. Identify phone number and contact person to receive reports on illicit discharges through the community.
2. Distribute phone number to community.
3. Number of inspections provided in response to public calls.

Description
As noted for general stormwater concerns, a community hotline will help make City staff aware of illicit discharges throughout the City. When a complaint comes in, City staff will dispatch qualified investigators to respond to the complaint. They will make every attempt to determine the responsible party and inform them of the environmental impact of their actions. The responsible party will be required to remedy the illegal connection or discharge.

Timeline for Completion
The City will designate a few hours a year to monitoring the progress of community calls beginning in 2008 and will continue this monitoring through 2011.

BMP 3(I): IDENTIFY/ELIMINATE DISCHARGES FROM STORAGE TANKS

Measurable Goal
1. Identify facilities that own and operate large above or below ground storage tanks.
2. Distribute educational material on SWPPP elements for the tanks.

Description
Storage tanks, either above or below ground, may potentially degrade water quality if leaks are present. To contend with this problem, the City intends to first identify facilities within the area that own and operate large above or below ground storage tanks.

Educational material regarding maintenance for these tanks will be compiled and distributed to owners of these tanks. If needed, enforcement actions will be taken.

Timeline for Completion
The City will address the storage tank issue in 2008 with a follow up review in 2010.

CONTROL STORMWATER RUNOFF FROM NEW DEVELOPMENT, REDEVELOPMENT, AND CONSTRUCTION SITES

As with the other NPDES Phase II requirements, Ecology has developed requirements for the development related minimum control measures in the federal NPDES Phase II permit program. The following program is based on the January 17, 2007 permit requirements.

Site Runoff Control. Polluted stormwater runoff from construction and developed sites often flows to cities and ultimately is discharged into local rivers and streams. The Phase II Final Rule requires an operator of a regulated small city to develop, implement, and enforce a program to reduce pollutants in stormwater runoff to their city from construction activities that result in a land disturbance of greater than or equal to one acre or contain less than one acre and are part of a larger common plan of the development or sale. The permittee is required to have:

a. The program shall include an ordinance or other enforceable mechanism that addresses runoff from new development, redevelopment, and construction site projects. Pursuant to S5.A.2., in adopting this ordinance or other regulatory mechanism, existing local requirements to apply stormwater controls at smaller sites, or at lower thresholds than required pursuant to S5.C.4., shall be retained. The ordinance or other enforceable mechanism shall be in place no later than thirty months from the effective date of this Permit. The ordinance or other enforceable mechanism shall include, at a minimum:
    i. The Minimum Requirements, technical thresholds, and definitions in Appendix 1 or an equivalent approved by Ecology under the NPDES Phase I Municipal Stormwater Permit, for new development, redevelopment, and construction sites. Adjustment and variance criteria equivalent to those in Appendix 1 shall be included. More stringent requirements may be used, and/or certain requirements may be tailored to local circumstances through the use of basin plans or other similar water quality and quantity planning efforts. Such local requirements shall provide equal protection of receiving waters and equal levels of pollutant control to those provided in Appendix 1.
    ii. A site planning process and BMP selection and design criteria that, when used to implement the minimum requirements in Appendix 1 (or equivalent approved by Ecology under the Phase I Permit) will protect water quality, reduce the discharge of pollutants to the maximum extent practicable and satisfy the State requirement under Chapter 90.48 RCW to apply all known, available and reasonable methods of prevention, control and treatment (AKART) prior to

discharge. Permittees shall document how the criteria and requirements will protect water quality, reduce the discharge of pollutants to the maximum extent practicable, and satisfy State AKART requirements. Permittees who choose to use the site planning process and BMP selection and design criteria in the 2005 *Stormwater Management Manual for Western Washington,* or an equivalent manual approved by the Department under the Phase I Permit, may cite this choice as their sole documentation to meet this requirement.

iii. The legal authority, through the approval process for new development, to inspect private stormwater facilities that discharge to the Permittee's MS4.

iv. Provisions to allow non-structural preventive actions and source reduction approaches such as Low Impact Development Techniques (LID), measures to minimize the creation of impervious surfaces and measures to minimize the disturbance of native soils and vegetation. Provisions for LID should take into account site conditions, access and long term maintenance.

v. If the Permittee chooses to allow construction sites to apply the "Erosivity Waiver" in Appendix 1, Minimum Requirement #2, the ordinance or regulatory mechanism shall include appropriate, escalating enforcement sanctions for construction sites that provide notice to the Permittee of their intention to apply the waiver but do not meet the requirements (including timeframe restrictions, limits on activities that result in non-stormwater discharges, and implementation of appropriate BMPs to prevent violations of water quality standards) to qualify for the waiver.

b. The program shall include a permitting process with plan review, inspection and enforcement capability to meet the standards listed in (i) through (iv) below, for both private and public projects, using qualified personnel (as defined in Definitions *and Acronyms*). At a minimum, this program shall be applied to all sites that disturb a land area 1 acre or greater, including projects less than one acre that are part of a larger common plan of the development or sale. The process shall be in place no later than thirty months from the effective date of this Permit.

i. Except as provided in S5.C.4.b.vii. below, review of all stormwater site plans for proposed development activities.

ii. Except as provided in S5.C.4.b.vii. below, inspect, prior to clearing and construction, all known development sites that have a high potential for sediment transport as determined through plan review based on definitions and requirements in Appendix 7 Identifying Construction Site Sediment Transport Potential.

iii. Except as provided in S5.C.4.b.vii. below, inspect all known permitted development sites during construction to verify proper installation and maintenance of required erosion and sediment controls. Enforce as necessary based on the inspection.

iv. Inspect all permitted development sites upon completion of construction and prior to final approval or occupancy to ensure proper installation of permanent stormwater controls such as stormwater facilities and structural BMPs. Also, verify a maintenance plan is completed and responsibility for maintenance is assigned. Enforce as necessary based on the inspection.

v. Compliance with the inspection requirements in (ii), (iii) and (iv) above shall be determined by the presence and records of an established inspection program designed to inspect all sites and achieving at least 95% of scheduled inspections.

vi. An enforcement strategy shall be developed and implemented to respond to issues of non-compliance.

vii. If the Permittee chooses to allow construction sites to apply the "Erosivity Waiver" in Appendix 1, Minimum Requirement #2, the Permittee is not required to review the construction stormwater pollution prevention plans as part of the site plan review in (i) above, and is not required to perform the construction phase inspections identified in (ii) and (iii) above related to construction sites which are eligible for the erosivity waiver.

c. The program shall include provisions to verify adequate long-term operation and maintenance (O&M) of post-construction stormwater facilities and BMPs that are permitted and constructed pursuant to (b) above. These provisions shall be in place no later than thirty months from the effective date of this Permit and shall include:

i. Adoption of an ordinance or other enforceable mechanism that clearly identifies the party responsible for maintenance, requires inspection of facilities in accordance with the requirements in (ii) through (iv) below, and establishes enforcement procedures.

ii. Each Permittee shall establish maintenance standards that are as protective or more protective of facility function than those specified in Chapter 4 of Volume V of the 2005 Stormwater Management Manual for Western Washington. For facilities which do not have maintenance standards, the Permittee shall develop a maintenance standard.

(1) The purpose of the maintenance standard is to determine if maintenance is required. The maintenance standard is not a measure of the facilities required condition at all times between inspections. Exceeding the maintenance standard between the period of inspections is not a permit violation.

(2) Unless there are circumstances beyond the Permittees control, when an inspection identifies an exceedence of the maintenance standard, maintenance shall be performed:

- Within 1 year for wet pool facilities and retention/detention ponds.
- Within 6 months for typical maintenance.

- Within 9 months for maintenance requiring re-vegetation, and
- Within 2 years for maintenance that requires capital construction of less than $25,000.

Circumstances beyond the permittees control include denial or delay of access by property owners, denial or delay of necessary permit approvals, and unexpected reallocations of maintenance staff to perform emergency work. For each exceedence of the required timeframe, the Permittee must document the circumstances and how they were beyond their control.

iii. Annual inspections of all stormwater treatment and flow control facilities (other than catch basins) permitted by the Permittee according to S5.C.4.b. unless there are maintenance records to justify a different frequency.

Reducing the inspection frequency shall be based on maintenance records of double the length of time of the proposed inspection frequency. In the absence of maintenance records, the Permittee may substitute written statements to document a specific less frequent inspection schedule. Written statements shall be based on actual inspection and maintenance experience and shall be certified in accordance with G19 *Certification and Signature*.

iv. Inspections of all new flow control and water quality treatment facilities, including catch basins, for new residential developments that are a part of a larger common plan of development or sale, every 6 months during the period of heaviest house construction (i.e., 1 to 2 years following subdivision approval) to identify maintenance needs and enforce compliance with maintenance standards as needed.

d. The program shall include a procedure for keeping records of inspections and enforcement actions by staff, including inspection reports, warning letters, notices of violations, and other enforcement records. Records of maintenance inspections and maintenance activities shall be maintained. Permittees shall keep records of all projects disturbing more than one acre, and all projects of any size that are part of a common plan of development or sale that is greater than one acre that are approved after the effective date of this Permit.

e. The program shall make available copies of the "Notice of Intent for Construction Activity" and copies of the "Notice of Intent for Industrial Activity" to representatives of proposed new development and redevelopment. Permittees will continue to enforce local ordinances controlling runoff from sites that are also covered by stormwater permits issued by Ecology.

f. No later than thirty months from the effective date of this Permit, each Permittee shall verify that all staff responsible for implementing the program to control stormwater runoff from new development,

redevelopment, and construction sites, including permitting, plan review, construction site inspections, and enforcement, are trained to conduct these activities. Follow-up training shall be provided as needed to address changes in procedures, techniques or staffing. Permittees shall document and maintain records of the training provided and the staff trained.

The City of Granite Falls will implement Best Management Practices (BMPs) to address site run-off control from new development, redevelopment and construction sites. These include the development, implementation and enforcement of a program to reduce site runoff and site inspections to enforce City ordinances related to site run-off. Specifically, the City is planning to implement the following BMPs.

- BMP 4(A): Develop and Update Legal Authority/Ordinances
- BMP 4(B): Conduct Construction Inspections
- BMP 4(C): Plan Reviews for New and Redevelopment
- BMP 4(D): Conduct Post-Developed Inspections
- BMP 4(E): Provide Training for Personnel
- BMP 4(F): Identify Sensitive Water Bodies and Protective Measures
- BMP 4(G): Encourage Low Impact Development

Objective: Continue and upgrade the set of development requirements for construction sites per the City's adopted ordinance, including planning, installation, inspection, maintenance and enforcement of development practices.

BMP 4(A): DEVELOP AND UPDATE LEGAL AUTHORITY/ORDINANCES

Measurable Goal

1. Identify any regulation areas not addressed within the current ordinance and revise if necessary.

Description

The City currently has regulations that require applicants for construction projects to plan for and implement erosion control practices and describe the inspection and enforcement authority of the City. The City will ensure that the erosion and sediment control ordinance(s) include all sufficient stormwater pollution prevention elements to prevent pollution resulting from erosion and sediment runoff during the construction phase, and an adequate enforcement plan to ensure compliance with the ordinance.

The GFMC Chapter 13.20 {Storm Sewer System}pertains to stormwater regulations for development under the 2005 DOE Manual.

The City will take Ecology's recommendation of referencing the adopted Ecology manual for details on appropriate BMPs to be applied rather than describing them within the ordinance itself. The City ordinance will require the submittal of a Construction

Stormwater Pollution Prevention Plan (SWPPP) which will cover the following 12 elements.

1. Mark Clearing Limits
2. Establish Construction Access
3. Control Flow Rates
4. Install Sediment Controls
5. Stabilize Soils
6. Protect Slopes
7. Protect Drain Inlets
8. Stabilize Channels and Outlets
9. Control Pollutants
10. Control De-Watering
11. Maintain BMPs
12. Manage the Project

In addition to the BMPs contained in the Ecology Manual, the City will reference erosion and sediment control techniques on its stormwater website that owners of construction sites would be allowed to use. The EPA has developed the National Menu of Best Management Practices which is available at http://cfpub2.epa.gov/npdes/stormwater/menuofbmps/index.cfm. The menu contains fact sheets on techniques for controlling erosion and sedimentation from construction sites. The techniques include:

- Minimize clearing (land grading, permanent diversions, preserving natural vegetation and construction entrances)
- Stabilize drainage ways (check dams, filter berms, grass-lined channels, riprap)
- Stabilize exposed soils (chemical stabilization, mulching, permanent seeding, sodding, soil roughening,
- Protect steep slopes (geotextiles, gradient terraces, soil retention, temporary slope drain)
- Phase construction (construction sequencing, dust control)
- Install perimeter controls (temporary diversion dikes, wind fences and sand fences, brush barrier, silt fence)
- Install sediment trapping devices (Sediment basins and rock dams, sediment filters and sediment chambers, sediment trap)
- Inlet protection (storm drain inlet protection)

- Good Housekeeping (general construction site waste management, spill prevention and control plan, vehicle maintenance and washing areas)

- Education and awareness (contractor certification and inspector training, construction review, BMP inspection and maintenance)

The City's current ordinance currently describes different levels of enforcement available to inspectors, such as warnings, compliance orders and stop work orders.

For developed or redeveloped sites, the City currently has regulations that establish the minimum level of compliance which must be met to permit a property to be developed or redeveloped within the City. The purpose of the regulations is to:

A. Minimize water quality degradation and sedimentation in streams, ponds, lakes, wetlands and other water bodies;
B. Minimize the impact of increased run-off, erosion and sedimentation caused by land development and maintenance practices;
C. Minimize adverse impacts of alterations on ground and surface water quantities, locations and flow patterns; and
D. Decrease potential landslide, flood and erosion damage to public and private property.

The City will review its current ordinance to determine the effectiveness of current measures in place. The City has adopted the 2005 Ecology Manual, including its Minimum Requirements, and will ensure that through this adoption, the ordinance will address post–construction runoff from new developments and redevelopment projects that disturb more than one acre. In this sense, "redevelopment" refers to alterations of a property that change the "footprint" of a site or building and is not intended to include such activities as exterior remodeling, which would not be expected to cause adverse stormwater quality impacts and offer no new opportunity for stormwater controls. The ordinance shall also allow for structural and non-structural BMPs and shall implement standards to ensure long-term operation and maintenance of the BMPs. The maintenance schedule will comply with the NPDES Phase II Permit requirements. Within the ordinance, the City must also state who will be responsible for the long term maintenance of permanent stormwater facilities. Record keeping of all inspections and maintenance will be performed as well.

By adopting the 2005 Ecology Manual, the City is addressing the post-construction runoff issue by requiring a permanent stormwater control plan which is part of the ten minimum requirements noted in the Manual. Stormwater technologies are constantly being improved and the City's program will be responsive to these changes, developments or improvements in control technologies.

Timeline for Completion
The City will review its existing codes in 2008 and will revise them as necessary to meet the intent of this BMP. The fourth year of the permit, 2010, will include an evaluation of the revised code to make certain the codes are assisting in accomplishing the desired task

of enforcing construction related erosion and sediment controls as well as developed and redeveloped site runoff.

BMP 4(B): CONDUCT CONSTRUCTION INSPECTIONS

Measurable Goal

1. Number of inspectors.
2. Develop inspection forms.
3. Frequency of inspection for compliance with construction site erosion/sediment controls and maintenance of installed BMPs.
4. An inventory of inspection activities created, maintained annually.
5. Review of ordinance for site inspection requirements.
6. Number of compliance letters.

Description

Inspections are necessary to ensure that erosion and sediment controls are properly installed and maintained and that the site plan reflects changes made on-site (e.g. different types of controls used and changed location of controls). To minimize the amount of staff needed for this BMP, erosion control inspectors include building inspectors and/or other staff under the duration of the head of the Public Works Department. Frequent and consistent inspections are the key to ensuring proper installation and maintenance of erosion and sediment controls. The frequency for inspection of construction sites will be determined by the City but, at a minimum, will be at least once during the duration of a project. More frequent inspections may be required during wet weather months.

Inspections will be prioritized based on the following:

- Construction sites on steep slopes or highly erodible areas
- Construction sites operated by contractors with past violations
- Construction sites disturbing more than one acre and/or
- Construction sites in operation during rain events

Timeline for Completion

Inspections shall begin in the first year and continue throughout the following permit years.

BMP 4(C): REVIEW SITE PLANS

Measurable Goal

1. Number of trained reviewers.
2. Develop checklist for reviewers.
3. Number of plans reviewed.

Description

The City (or consultant) will review construction site plans prior to construction to ensure that they include the required stormwater controls, erosion and sediment controls and post-construction controls in compliance with City codes.

At a minimum, the City will review all plans for sites disturbing at least one acre (or if less than one acre and are part of a planned development) to verify the following factors:

- Erosion and sediment controls consistent with City codes and control requirements.
- The construction operator is aware of his responsibility for implementing and maintaining erosion and sediment controls and is aware of the penalties for failing to do so.
- Post-construction controls consistent with the City codes are clearly described on the plan and are sized appropriately.
- The construction operator and landowner are aware of the responsibility for implementing and maintaining the post-construction controls and of the penalties for failing to do so.

To aid in the reviewing process, the City will create a developer review checklist to make certain that all concerns are addressed during the review. A pre-construction site plan meeting with the construction operator may be required to ensure that all parties are comfortable with the plan and requirements.

Timeline for Completion
The City currently reviews plans prior to construction. This review will continue throughout the 5-year permit cycle. A reviewer's checklist will be developed during 2008.

BMP 4(D): CONDUCT POST-DEVELOPED INSPECTIONS

Measurable Goal
1. Number of inspectors.
2. Develop inspection forms.
3. Frequency of inspection for compliance with installed BMPs.
4. An inventory of inspection activities created, maintained annually.
5. Review of ordinance for site inspection requirements.
6. Number of compliance letters.

Description
Similar to construction inspections, post-developed inspections are necessary to ensure that stormwater controls are properly installed and maintained. Inspections will be conducted to ensure facilities were built as designed. A maintenance plan will be verified as part of this process as well. Compliance with inspections should be achieved at a 95% level. To minimize the amount of staff needed for this BMP, inspectors will include building inspectors and/or other staff under direction of the responsible official from the Public Works Department.

Timeline for Completion
Inspections shall begin in the first year and continue throughout the following permit years.

BMP 4(E): PROVIDE TRAINING FOR PERSONNEL

Measurable Goal
1. Develop list of personnel to be trained.
2. Number of training days for staff.

Description
The City adopted the latest Ecology Manual into their Municipal Code. The Manual states:

> Plans involving construction of treatment facilities or flow control facilities (detention ponds or infiltration basins), structural source control BMPs or drainage conveyance systems generally involve engineering principles and should be prepared by or under the direction of a licensed engineer. Construction Stormwater Pollution Prevention Plans (SWPPPs) that involve engineering calculations must also be prepared by or under the direction of a licensed engineer.

One of the most important factors determining whether or not erosion and sediment controls will be properly installed and maintained on a construction site is the knowledge and experience of the contractor. Minimum requirement #2, Construction Stormwater Pollution Prevention, in the 2005 Ecology *Stormwater Management Manual for Western Washington* requires that a Certified Professional in Erosion and Sediment Control must be on-site or on-call at all times during a construction project. By adopting the 2005 Manual, the City has included this requirement by ordinance.

A construction site inspection program is also very important to ensure that the sediment and erosion control plans for the construction site are properly implemented and that best management practices are properly installed and maintained. The City of Granite Falls will evaluate whether the funding and staffing resources are available to support a construction site inspection program using City staff or whether it is better to hire certified private inspectors with stormwater management and ESC training on a job by job basis.

A variety of organizations offer training courses on construction site sediment and erosion control. The Association of General Contractors (AGC) offers two courses on erosion and sediment control. "Construction Site Erosion and Sediment Control Certification" is a 12-hour course that meets Ecology's requirements for Contractor Erosion and Spill Control Lead (CESCL) certification. "Construction BMP Field Training" is a two-day course that combines classroom work with field exercises. AGC states that this course will set the standard for proper erosion and control training on

construction sites in Washington. Course information for these training programs and others is available on the Internet at the addresses below:

Association of General Contractors of Washington
http://www.agcwa.com/Public/education/classes.asp#env

University of Washington's Engineering Professional Program
http://www.engr.washington.edu/~uw-epp/Pepl/cec.html

International Erosion Control Association
http://www.ieca.org/Education/Public/PublicCourses.asp

Timeline for Completion
The City will allow staff to attend an erosion and sediment control class (or one refresher course) for each year of the permit cycle.

BMP 4(F): IDENTIFY SENSITIVE WATER BODIES AND PROTECTIVE MEASURES

Measurable Goal
1. Identify sensitive water bodies within the jurisdiction.
2. Develop guidelines for permitting development projects near sensitive areas.
3. Review/revise zoning in sensitive areas.
4. Review and revise critical area requirements/buffers in relation to sensitive areas.

Description
Sensitive water bodies play a crucial part in the health of an overall stormwater system. The City will identify sensitive or impaired water bodies located within the jurisdiction. Staff will then research opportunities for changing the zoning of buffer areas adjacent to the sensitive or impaired water bodies. Guidelines may be developed with the consideration of using hiking and biking trails, parks and natural spaces, minimizing impervious areas, and using riparian corridors and/or wetlands.

Timeline for Completion
The City will identify the sensitive or impaired water bodies in 2008 with updates done in 2009 and 2011.

BMP 4(G): ENCOURAGE LOW IMPACT DEVELOPMENT (LID)

Measurable Goals
1. Land use codes reviewed to ensure consistency with low impact development (LID) principles
2. Identify construction related subjects for inclusion in construction/new development public education materials that focus on local construction
3. Distribute development education material
4. Number of new site plans with LID practices

Description
As indicated with BMP 1(F), using low-impact development approaches for new development can help to achieve stormwater pollution reduction goals. Through LID approaches, stormwater runoff can be controlled while development objectives are achieved. In order for these measures to be implemented, the City will inform the public about these practices through the consideration of LID practices and the establishment of an outreach program as described for BMP 1(F).

Timeline for Completion
The City will develop and consider adoption of draft LID codes and distribute educational information in 2008. If adopted, in 2009 and 2011, an assessment of the LID program will be conducted for effectiveness and will be revised if necessary.

POLLUTION PREVENTION AND OPERATIONS AND MAINTENANCE FOR MUNICIPAL OPERATIONS PROGRAM

As with the other elements, Ecology developed permit requirements for the pollution prevention (good housekeeping) program minimum measure of the federal NPDES Phase II permit program. The following program is based on DOE's permit requirements.

This measure requires the City to examine and subsequently alter their own actions to help ensure a reduction in the amount and type of pollution that: (1) collects on streets, parking lots, open spaces, and storage and vehicle maintenance areas and is discharged into local waterways; and (2) results from actions such as environmentally damaging land development and flood management practices or maintenance of storm sewer systems.

The DOE Phase II permit states that the "Within three years of the effective date of this permit, each Permittee shall develop and implement an Operations & Maintenance program that includes a training component and has the ultimate goal of preventing or reducing pollutant runoff from municipal operations."

The permit regulations require the permit holder to do the following:

a. Each Permittee shall establish maintenance standards that are as protective, or more protective, of facility function than those specified in Chapter 4 of Volume V of the 2005 Stormwater Management Manual for Western Washington. For facilities which do not have maintenance standards, the Permittee shall develop a maintenance standard.
   i. The purpose of the maintenance standard is to determine if maintenance is required. The maintenance standard is not a measure of the facilities required condition at all times between inspections. Exceeding the maintenance standard between inspections and/or maintenance is not a permit violation.
   ii. Unless there are circumstances beyond the Permittees control, when an inspection identifies an exceedence of the maintenance standard, maintenance shall be performed:
      - Within 1 year for wet pool facilities and retention/detention ponds.
      - Within 6 months for typical maintenance.
      - Within 9 months for maintenance requiring re-vegetation.
      - Within 2 years for maintenance that requires capital construction of less than $25,000.

   Circumstances beyond the permittees control include denial or delay of access by property owners, denial or delay of necessary permit approvals, and unexpected reallocations of maintenance staff to perform emergency work. For each exceedence of the required

timeframe, the Permittee shall document the circumstances and how they were beyond their control.

b. Annual inspection of all municipally owned or operated permanent stormwater treatment and flow control facilities, other than catch basins, and taking appropriate maintenance actions in accordance with the adopted maintenance standards. The annual inspection requirement may be reduced based on inspection records.

   Reducing the inspection frequency shall be based on maintenance records of double the length of time of the proposed inspection frequency. In the absence of maintenance records, the Permittee may substitute written statements to document a specific less frequent inspection schedule. Written statements shall be based on actual inspection and maintenance experience and shall be certified in accordance with G19 *Certification and Signature*.

c. Spot checks of potentially damaged permanent treatment and flow control facilities (other than catch basins) after major (greater than 24-hour-10-year recurrence interval rainfall) storm events. If spot checks indicate widespread damage/maintenance needs, inspect all stormwater treatment and flow control facilities that may be affected. Conduct repairs or take appropriate maintenance action in accordance with maintenance standards established above, based on the results of the inspections.

d. Inspection of all catch basins and inlets owned or operated by the Permittee at least once before the end of the Permit term. Clean catch basins if the inspection indicates cleaning is needed to comply with maintenance standards established in the 2005 *Stormwater Management Manual for Western Washington*. Decant water shall be disposed of in accordance with Appendix 6 *Street Waste Disposal*.

   Inspections may be conducted on a "circuit basis" whereby a sampling of catch basins and inlets within each circuit is inspected to identify maintenance needs. Include in the sampling an inspection of the catch basin immediately upstream of any system outfall. Clean all catch basins within a given circuit at one time if the inspection sampling indicates cleaning is needed to comply with maintenance standards established under S5.C.4.c., above.

   As an alternative to inspecting catch basins on a "circuit basis," the Permittee may inspect all catch basins, and clean only catch basins where cleaning is needed to comply with maintenance standards.

e. Compliance with the inspection requirements in a, b, c and d above shall be determined by the presence of an established inspection program designed to inspect all sites and achieving inspection of 95% of all sites.

f. Establishment and implementation of practices to reduce stormwater impacts associated with runoff from streets, parking lots, roads or highways owned or maintained by the Permittee, and road maintenance activities conducted by the Permittee. The following activities shall be addressed:

- Pipe cleaning
- Cleaning of culverts that convey stormwater in ditch systems
- Ditch maintenance
- Street cleaning
- Road repair and resurfacing, including pavement grinding
- Snow and ice control
- Utility installation
- Pavement striping maintenance
- Maintaining roadside areas, including vegetation management
- Dust control

g. Establishment and implementation of policies and procedures to reduce pollutants in discharges from all lands owned or maintained by the Permittee and subject to this Permit, including but not limited to: parks, open space, road right-of-way, maintenance yards, and stormwater treatment and flow control facilities. These policies and procedures shall address, but are not limited to:
    - Application of fertilizer, pesticides, and herbicides including the development of nutrient management and integrated pest management plans.
    - Sediment and erosion control.
    - Landscape maintenance and vegetation disposal.
    - Trash management.
    - Building exterior cleaning and maintenance.

h. Develop and implement an on-going training program for employees of the Permittee whose construction, operations or maintenance job functions may impact stormwater quality. The training program shall address the importance of protecting water quality, the requirements of this Permit, operation and maintenance standards, inspection procedures, selecting appropriate BMPs, ways to perform their job activities to prevent or minimize impacts to water quality, and procedures for reporting water quality concerns, including potential illicit discharges. Follow-up training shall be provided as needed to address changes in procedures, techniques or requirements. Permittees shall document and maintain records of training provided.

i. Development and implementation of a Stormwater Pollution Prevention Plan (SWPPP) for all heavy equipment maintenance or storage yards, and material storage facilities owned or operated by the Permittee in areas subject to this Permit that are not required to have coverage under the Industrial Stormwater General Permit. Implementation of non-structural BMPs shall begin immediately after the pollution prevention plan is developed. A schedule for implementation of structural BMPs shall be included in the SWPPP. Generic SWPPPs that can be applied at multiple sites may be used to comply with this requirement. The SWPPP shall include periodic visual observation of discharges from the facility to evaluate the effectiveness of the BMP.

j. Records of inspections and maintenance or repair activities conducted by the Permittee shall be maintained in accordance with S9 *Reporting Requirements*.

The City of Granite Falls plans to implement the following BMPs to address pollution prevention.

- BMP 5(A): Provide Employee Training
- BMP 5(B): Develop Stormwater Pollution Prevention Plan (SWPPP) for City Facilities and Implement Maintenance Standards

Objective: Promote pollution prevention/good housekeeping measures.

BMP 5(A): EMPLOYEE TRAINING

Measurable Goal

1. Number of training hours for staff.

Description

At a minimum, the City will ensure that employees in stormwater and maintenance related positions are trained on the requirements of the stormwater good housekeeping/pollution prevention program by the end of the permit term. The training program will incorporate the following measures.

- Crews trained in proper maintenance activities, including record keeping, disposal and inspections.
- Only properly trained individuals will be allowed to handle hazardous materials/wastes.
- City employees from all departments will be trained to recognize and report illegal dumping.
- City employees will be trained and will educate businesses, contractors, and the general public in proper and consistent methods for disposal.
- City staff will be trained regarding non-stormwater discharges (illicit connections).

A general, brief, 1-hour training session will be held for the employees. Longer, specific training will be given for program specific areas such as vehicle washing and illicit discharge inspections. The City has also teamed up with Snohomish County to provide training on vactoring catch basins, reporting conditions, and identifying illicit discharges through 2010.

The City will also ensure that employees have access to public education materials produced as part of this permit so that they may implement best management practices in their day-to-day actions as well.

Timeline for Completion
The City will begin tracking employee training hours in 2008. Tracking will continue through 2011.

BMP 5(B): DEVELOP STORMWATER POLLUTION PREVENTION PLAN (SWPPP) AND IMPLEMENT MAINTENANCE STANDARDS

Measurable Goal
1. Develop a Stormwater Pollution Prevention Plan (SWPPP)
2. Adopt City Operation and Maintenance Standards
3. Measures in the SWPPP are implemented

Description
During the first Phase II NPDES permit cycle, the City of Granite Falls will concentrate on developing, implementing and monitoring the success of a stormwater pollution prevention plan/good housekeeping program for City facilities and activities. The program will include the following:

- Adoption of maintenance standards
- Training in the proper methods of facility maintenance to minimize stormwater pollution,
- Training in the proper methods for disposal of solid and liquid wastes from maintenance activities,
- Develop and implement a maintenance schedule to include inspection of 95% of all sites, and
- Evaluate the effectiveness of the program.

A plan that discusses good housekeeping procedures is essential to ensure that all City activities and programs impacting stormwater are implemented efficiently and effectively. The Good Housekeeping/Stormwater Pollution Prevention Plan is intended to reduce the amount of pollutants carried by stormwater runoff into the storm drainage system. Comprised of a description of procedures and associated schedules, the Good Housekeeping/Stormwater Pollution Prevention Plan will serve as a tool for all City employees that are directly involved in stormwater management or administer programs that impact stormwater. The plan will contain the following:

- Description of activities and programs that have the potential to impact stormwater quality and procedures to follow to minimize the risk of pollution. These activities include the application of fertilizers/pesticides/herbicides, sediment and erosion control, landscape maintenance and vegetation disposal, trash management, and building exterior cleaning and maintenance.
- List of responsible departments and personnel for each activity
- Schedule of activities, including maintenance, inspections and reporting which will comply with the NPDES Phase II permit requirements

To gain an understanding of existing City operations, the City will assemble and review existing materials from various departments who perform these activities. In reviewing information on existing programs, specific attention will be paid to the frequency of activities; types of substances used; materials storage, handling and disposal practices; type and frequency of employee training; record keeping practices; and inspection procedures and frequencies. If the documentation does not exist, brief interviews with the staff from the various departments may be conducted. If no program exists for certain activities, then the City will determine which department would best be suited to take on the activity.

The final Good Housekeeping/Stormwater Pollution Prevention Plan will serve as a reference manual for all City employees. To fully implement the program, training for City staff should be conducted on the information contained within the Plan.

Timeline for Completion
In 2008, the City will develop a Good Housekeeping/Stormwater Pollution Prevention Plan with the elements stated above.

LONG TERM MONITORING PLAN

As of January 17, 2007, Ecology developed an NPDES Phase II permit which contained a requirement for the compilation of a long term monitoring plan to be implemented in the second permit cycle (beginning in 2012). The following program is based on this proposed requirement.

Long Term Monitoring Plan. According to the Phase II permit, permittees shall develop a comprehensive long-term water quality monitoring program during the term of the permit. The following requirements shall be met:

1. All cities, towns and counties shall prepare to participate in the implementation of a comprehensive long-term monitoring program. The monitoring program will include two components: stormwater monitoring and targeted Stormwater Management Program (SWMP) effectiveness monitoring. Stormwater monitoring is intended to characterize stormwater runoff quantity and quality at a limited number of locations in a manner that allows analysis of loadings and changes in conditions over time and generalization across the permittees' jurisdictions. Stormwater program effectiveness monitoring is intended to improve stormwater management efforts by evaluating issues that significantly affect the success of, or confidence in, stormwater controls. The monitoring program can include long-term monitoring and short-term studies. The results of the monitoring program will be used to support the adaptive management process and lead to refinements of the SWMP.
    a. Stormwater monitoring
    Cities having a population greater than 10,000 and counties having a population greater than 25,000 shall identify sites for long-term stormwater monitoring. Adequate sites will be those completely mapped as required in S5.C.3.a. and be suitable for permanent installation and operation of flow-weighted composite sampling equipment. No later than December 31, 2010:
        i. Each county having a population greater than 100,000 shall identify three outfalls or conveyances where stormwater sampling could be conducted. One outfall or conveyance shall represent commercial land use, the second shall represent low-density residential land use and the third will represent medium-to-high density residential land use.
        ii. Each city having a population greater than 75,000 shall identify three outfalls or conveyances where stormwater sampling could be conducted. One outfall or conveyance shall represent commercial land use, the second shall represent high-density residential land use and the third will represent industrial land use.
        iii. Each county having a population between 25,000 and 100,000 shall identify two outfalls or conveyances where stormwater sampling could be conducted. One outfall shall represent commercial land use and the second one will represent low-density residential land use.

iv. Each city having a population between 10,000 and 75,000 shall identify two outfalls or conveyances where stormwater sampling could be conducted. One outfall shall represent commercial land use and the second will represent high-density residential land use.

v. Permittees shall document how sites are selected and justify the basin size, based on comparison of the times of concentration with rainfall durations for typical seasonal storms. Each site shall represent a discernible type of land use, but not be a single industrial or commercial complex. Ideally, to represent a particular land use, no less than 80% of the area served by the outfall or conveyance will be classified as having that land use. Permittees may move upstream in the conveyance system to achieve the desired land use, or, if a primarily industrial or commercial area is not present, an area of mixed industrial and commercial land use may be selected**.**

b. SWMP effectiveness monitoring

i. Each city, town and county shall prepare to conduct monitoring to determine the effectiveness of the Permittee's SWMP at controlling stormwater-related problems that are directly addressed by actions in the SWMP. This component of the monitoring program shall be designed to answer the following types of questions:

- How effective is a targeted action or narrow suite of actions?
- Is the SWMP achieving a targeted environmental outcome?

ii. No later than December 31, 2010, each city, town and county shall identify at least two suitable questions and select sites where monitoring will be conducted. This monitoring shall include, at a minimum, plans for stormwater, sediment or receiving water monitoring of physical, chemical and/or biological characteristics. This monitoring may also include data collection and analysis of other measures of program effectiveness, problem identification and characterizing discharges for planning purposes.

iii. For each question, the Permittee shall develop a monitoring plan containing the following elements:

- A statement of the question, an explanation of how and why the issue is significant to the Permittee, and a discussion of whether and how the results of the monitoring may be significant to other MS4s.
- A specific hypothesis about the issue or management actions that will be tested.
- Specific parameters or attributes to be measured.
- Expected modifications to management actions depending on the outcome of hypothesis testing.

2. Monitoring program reporting requirements

a. The fourth annual report shall:

i. Describe the status of identification of sites for stormwater monitoring, if required for the Permittee.

ii. Include a summary of proposed questions for the SWMP effectiveness monitoring and describe the status of developing the monitoring plan, including the proposed purpose, design, and methods.

b. To comply with the requirements of all or part(s) of this section, permittees in a single Urbanized Area or WRIA may choose to submit a collaborative report or reports in lieu of separate reports.

The City of Granite Falls will develop the following to meet the Long-Term Planning Goal:

- BMP 6(A): Develop a Long Term Monitoring Plan

Objective: Develop a monitoring plan to be used during the second permit cycle beginning in 2011.

BMP 6(A): LONG TERM MONITORING PLAN

Measurable Goal

1. Monitoring plan developed.

Description

In an attempt to determine the effectiveness of stormwater BMPs, DOE is requiring municipalities to develop and eventually implement a stormwater monitoring plan. This plan can be created with neighboring jurisdictions in mind, if applicable, to lessen the burden of extensive monitoring costs, analysis and record keeping. The City will create a plan developed around the DOE guidelines in regards to the effectiveness of BMPs to prevent adverse impacts to water quality. The City will also incorporate a plan intended to meet the TMDL requirements along the Pilchuck River. A Quality Assurance Project Plan (QAPP) has already been submitted to DOE for their review in regards to monitoring sites related to the TMDL requirements.

Timeline for Completion

The City will begin to develop this plan in 2008, yet the SWMP effectiveness plan will not go into effect until the second permit cycle beginning in 2012.

REPORTING REQUIREMENTS

As with the other elements, Ecology developed permit requirements for the NPDES Phase II reporting requirement. The following program is based on DOE's permit requirements.

Reporting Requirement. According to the Phase II permit, each Permittee, Co-permittee and Secondary Permittee shall submit, no later than March 31st of each year beginning in the year 2008, an annual report. The reporting period for each annual report shall be the previous calendar year.

The following requirements shall be met:

A. No later than March 31 of each year beginning in 2008, each Permittee shall submit an annual report. The reporting period for the first annual report will be from the effective date of this permit through December 31, 2007. The reporting period for all subsequent annual reports will be the previous calendar year.

B. Two printed copies and an electronic (PDF) copy of each document shall be submitted to Ecology. All submittals shall be delivered to:
Department of Ecology
Water Quality Program
Municipal Stormwater Permits
P.O. Box 47696
Olympia, WA 98504-7696

C. Each Permittee is required to keep all records related to this permit and the SWMP for at least five years. Except for the requirements of the annual reports described in this permit, records shall be submitted to Ecology only upon request,

D. Each Permittee shall make all records related to this permit and the Permittee's SWMP available to the public at reasonable times during business hours. The Permittee will provide a copy of the most recent annual report to any individual or entity, upon request.
   1. A reasonable charge may be assessed by the Permittee for making photocopies of records.
   2. The Permittee may require reasonable advance notice of intent to review records related to this Permit.

E. The annual report for cities, towns, and counties shall include the following:
   1. A copy of the Permittee's current Stormwater Management Program as required by S5.A.2.
   2. Submittal of Appendix 3 – *Annual Report Form for Cities, Towns, and Counties,* which is intended to summarize the Permittees compliance with the conditions of this permit, including:

a. Status of implementation of each component of the SWMP in section S5 *Stormwater Management Program for Cities, Towns and Counties*.

b. An assessment of the Permittee's progress in meeting the minimum performance standards established for each of the minimum control measures of the SWMP.
c. A description of activities being implemented to comply with each component of the SWMP, including the number and type of inspections, enforcement actions, public education and involvement activities, and illicit discharges detected and eliminated.
d. The Permittee's SWMP implementation schedule and plans for meeting permit deadlines, and the status of SWMP implementation to date. If permit deadlines are not met, or may not be met in the future, include: reasons why, corrective steps taken and proposed, and expected dates that the deadlines will be met.
e. A summary of the Permittee's evaluation of their SWMP, according to sections S5.A.4. and S8.B.2.
f. If applicable, notice that the MS4 is relying on another governmental entity to satisfy any of the obligations under this permit.
g. Updated information from the prior annual report plus any new information received during the reporting period, pursuant to S8.B.2. above.
h. Certification and signature pursuant to G19.D, and notification of any changes to authorization pursuant to G19.C.

3. Permittees shall include with the annual report, notification of any annexations, incorporations or jurisdictional boundary changes resulting in an increase or decrease in the Permittee's geographic area of permit coverage during the reporting period, and implications for the SWMP.

The City of Granite Falls will develop an annual report to meet these guidelines.

Objective: Prepare annual report on effectiveness of Stormwater Management Program.

BMP 7(A): ANNUAL STORMWATER MANAGEMENT PROGRAM REPORT

Measurable Goal

1. Annual report prepared.

Description

The City will compile an annual report beginning in 2008 per the permit requirements noted earlier.

Timeline for Completion

The City will submit the first annual report by March 31st of 2008 and will continue each year thereafter.

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