

**Town of Ridgefield
Draft Stormwater Management Plan
May 13, 2004**

**General Permit for the Discharge of Stormwater from Small
Municipal Separate Storm Sewer Systems (MS4)**

Introduction

In 1990, the United States Environmental Protection Agency (EPA) started the Phase I stormwater management program. The Phase I program includes regulating stormwater discharges from municipalities with populations greater than 100,000 people and construction sites greater than 5 acres and discharges associated with industrial activities. The Town has registered the highway garage facility under this general permit for (discharges associated with industrial activities section, permit number GSI001485).

In December 1999, the EPA published the Phase II Final Rule in the Code of Federal Regulations. The Connecticut Department of Environmental Protection (DEP) is the regulatory agency of the final rule, which has issued a permit entitled “General Permit for the Discharge of Stormwater from Small Municipal Separate Storm Sewer Systems (Permit)”. This Permit has been issued to the local cities and towns located within an Urbanized Area (UA) in Connecticut to reduce and eliminate pollutants and potential pollutants discharging to town and state watercourses. There are several requirements of the Permit; completion of a two-part registration form and the development of a Stormwater Management plan (SWP). The first registration form (Part A) was submitted before the April 9, 2004 deadline. The second registration form (Part B) is due no later than July 9, 2004. Attached in Appendix A is a copy of the certificate of registration received from the DEP and a copy of the draft Part B registration form. The Part B registration form will include an outline of the SWP, listing the best management practices (BMP) the town will develop and implement to meet the minimum control measures necessary to maintain permit compliance. The SWP is a living document and will be amended over the next five years. It is anticipated by the permit expiration date, January 8, 2009, the SWP and the BMP’s will be completely implemented.

The Town of Ridgefield is located within two UA’s, Danbury and Bridgeport-Stamford, according to the 2000 Census. Attached in Appendix B is a map that depicts the UA’s located within the town. The permit requires the development of BMP’s to meet the six minimum control measures listed in the Permit. The measures were designed to be a foundation for communities to use as guidelines within the SWP to reduce and eliminate pollutants migrating to watercourses. The six minimum control measures are as follows;

1. Public Education and Outreach on Stormwater Impacts,
2. Public Involvement/Participation,
3. Illicit Discharge Detection and Elimination,
4. Construction Site Stormwater Runoff Control,
5. Post-Construction Stormwater Management and in New Development and Redevelopment,
6. Pollution Prevention/Good Housekeeping for Municipal Operations.

The town land use & development departments (Engineering, Health, Highway and Planning & Zoning) maintain several of the BMP’s required in the six minimum control measures required by this Permit. As can be seen from the attached reports, the Town’s various departments currently practice many of the BMP’s required to be developed. This report will discuss the current BMP’s and the BMP’s that need to be developed to

fulfill the minimum control measures and maintain permit compliance. The table below outlines a reference to the permit year to the corresponding calendar year.

Year 1 = 2004	Year 2 = 2005	Year 3 = 2006	Year 4 = 2007	Year 5 = 2008
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Permit Personnel and Department Structure

This permit will reach out to many departments within the town’s government. The involvement of the many departments will vary, some departments will be managing and developing BMP’s and other departments will be in the employee and public training programs of the BMP’s. The permit will also have connection with many of the public and commercial businesses in town as necessary to fulfill the requirements of the minimum control measures. Listed below are the personnel involved in the development and implementation of BMP’s and permit management.

Name	Title	Department
Rudy Marconi	First Selectman	Board of Selectman
Charles R. Fisher, P.E., L.S.	Town Engineer	Engineering
Jacob Muller	Assistant Engineer	Engineering
Edward Briggs	Director of Health	Health
Betty Brosius	Director of Planning	Planning & Zoning
Richard Baldelli	Zoning Enforcement Officer	Planning & Zoning
Peter Hill	Director of Public Services	Highway

This group of people will be known as the technical review team, which will hold annual meetings to discuss the SWP and the Permit. The meeting will involve the review of the current status of the BMP’s and 3rd party BMP’s that may be incorporated into a minimum control measure. In addition, the Town Counsel will review the legal issues associated with the Permit and verify that the town can complete the proposed BMP’s to fulfill the requirements of the minimum control measures.

Minimum Control Measures

1. Public Education and Outreach

The town is proposing to develop an Internet page that will be designed and dedicated to inform the public on stormwater. The main page will describe what stormwater pollutants are, detail the Permit, how it effects the town and its citizens and discuss the future development of the website. The time frame for the implementation of the website will be completed by the end of second year of the Permit. The Internet page will be available through the town’s Intranet and also the Internet for all web users. The Internet page will be protected to allow “administrator” privileges to only permit personnel (to post and change) the site and all users will have access to print, download and submit comments and/or questions. Additions to the Internet page will include new or existing stormwater BMP’s that will describe the elimination or reduction of specific pollutants. The Town of Ridgefield has many brochures, factsheets and flyers to distribute helpful

information. Some of these packets meet the criteria of this minimum control measure to help educate the public on the impacts of stormwater runoff. These specific BMP's will include linking existing brochures and information packets, available at town offices, and the development of new flyers, brochures and fact sheets on the reduction and elimination of stormwater pollution to the Stormwater Internet page. Specific BMP's will include;

1. Use the existing hazardous waste pick-up day invitation and explain the elimination of pollutants that occurs from the collection of hazardous wastes.
2. Develop a flyer to illustrate the benefits of using environmentally friendly pesticides and fertilizers.
3. Currently the town has a dog park that posts signs regarding the clean up of pet droppings, the town will continue to post additional signs throughout the town. Also create a fact sheet that will discuss and promote the clean up of pet droppings.
4. Use the existing brochure that is distributed by the town information desk discussing what is recycled by the town recycle center and what is collected at the transfer station and explain that properly maintaining your personal trash and debris helps to eliminate potential pollutants.
5. Link the existing regulations the Health department has for restaurants regarding grease traps and the maintenance of the traps.
6. Distribute information packets on the recommended maintenance of septic systems.
7. Develop a fact sheet on illegal connections and dumping and post on the Internet. The illegal connection fact sheet will include information for residents, commercial and industrial facilities.

BMP ID	Public Education – BMP Action	Responsible Department	Measurable Goal
1-1	Wetlands Viewing Platform	Engineering	Open for viewing
1-2	Develop Stormwater Internet Page	Engineering	Navigate to webpage – Year 2
1-3	Expand Haz. Waste & Recycling Brochures	Highway	Brochures available to public – Year 2
1-4	Pet Droppings Fact Sheet	Health	Factsheet available to public – Year 3
1-5	Environmental Friendly Pesticides and Fertilizers Factsheet	Engineering	Factsheet available to public – Year 3
1-6	Illegal Connections Factsheet	Health	Factsheet available to public – Year 4
1-7	Review 3 rd Party BMP's for Potential Use	Engineering	Completed annually at Team meeting
1-8	Link Existing\New BMP's to Stormwater Internet Page	Engineering	Completed during corresponding year
1-9	E&S Controls Seminar	P&Z	Beginning – Year 3

2. Public Involvement/Participation

This minimum control measure requires the town to have public involvement in the development, implementation and review of the Part B registration form and the SWP and supply notice to the public of such documents. The town follows the freedom of information act with all public documents available in the town departments. There are several programs and policies that currently require public involvement to result in a successful event. All documents associated with this SWP and Permit registration will be available on the Stormwater Internet page as described in the first minimum control measure. Included on the Stormwater Internet page will be the various flyers, brochures and factsheets that are developed by the town or 3rd party sources as they are completed. The highway department supervises several public participation programs to eliminate trash, debris and hazardous materials throughout the town. The programs managed by the highway department are as follows;

- Adopt-A-Street,
- Rid Litter Day,
- Hazardous Waste Collection Day,
- Waste Oil Collection.

All of the clean-up days need involvement from the public to be completed. These days allow for the public to drop off wastes in a common area to be collected and properly disposed of by the town or its agent. The town hires licensed contractors to handle the hazardous waste and waste oil collection days. Attached in Appendix C is a detailed description of the various clean-up days, managed by the Highway Department. The Planning and Zoning department has public hearings and meetings that the public is able to attend. These meetings allow for the public to comment on proposed developments located in the town. Attached in Appendix D is a memo from the Planning & Zoning Department that further describes the interaction with the public during the site development review process.

The Permit requires the public to be involved in the development, implementation and review of the SWP. Every year at the town budget meetings the public is allowed to comment on the funds that are allotted to various town departments. The funds that are approved directly effects what the specific projects the departments are able to complete during the course of a fiscal year. The participation from the public may include referendum votes that may allow additional or eliminate funding that will be required by the BMP's to properly operate. The estimated funds that this SWP will need to fulfill the goals the town sets out is listed in the environmental commitment section of this SWP. The Part B registration form and this draft SWP will be made available for the required 30-day period, which will be located at the Board of Selectman. A newspaper notice will be posted the week prior of the available Permit and SWP to inform the public the information is available for review. Attached in Appendix E is a copy of the legal notice posted in The Ridgefield Press newspaper on May 13, 2004. The public will be able to review and submit written comments on their assessment(s) of the registration and the SWP. The public comments will be reviewed and discussed by the town to consider if they can be incorporated into the SWP or other supporting documentation. The final SWP will be available to the public for review at any time located at the Board of Selectman. The town will also generate additional BMP's to have the public involved in the continued maintenance of the storm sewer system. It is anticipated the town will draft

an additional BMP's to further exceed the goals of this minimum control measure, which will include the development of an Adopt-A-Stream program. The Adopt-A-Stream program will follow similar procedures to the Adopt-A-Street program. The Stream program will be designed to have volunteers annually clean debris and trash from stream banks and beds for the section of stream the group has adopted.

BMP ID	Public Participation – BMP Action	Responsible Department	Measurable Goal
2-1	Develop Public Involvement & Participation Program	Engineering	The town maintains a current policy
2-2	Follow FOI Requirements	Engineering	The town maintains a current policy
2-3	Rid Litter Day	Highway	Annually in the Spring of each year
2-4	Adopt-A-Street	Highway	Annually in the Spring of each year
2-5	Waste Oil Collection Day	Highway	Annually in the Winter of each year
2-6	Hazardous Waste Collection Day (Multi Town)	Highway	Annually in the Winter of each year
2-7	Develop and Implement a Adopt-A-Stream BMP	Engineering	The program will be drafted Year 4 and implemented Year 5

3. Illicit Discharge Detection and Elimination

Currently, the town has a policy that only stormwater discharges can be connected to the storm sewer system. The connections must be made directly to a catchbasin only if the catchbasin can support the additional pipe. The town will develop a BMP that will state the procedures to connect a stormwater discharge to the storm sewer system. The written ordinance will describe; the discharges allowed to be connected, permits necessary to complete the connection, an inspection procedure to verify the connection and develop penalties associated with illegal connections. A brochure or factsheet will also be developed to achieve the goals associated with notifying the public and community businesses regarding illicit discharges and proper trash disposal. This BMP will help to fulfill this requirement and also further enhance the Public Education and Outreach minimum control measure.

Mapping Requirements

The town has two urbanized areas, Danbury and Bridgeport-Stamford, within its limits. To meet the requirements of this portion of the minimum control measure the town is in the process of developing a map of the entire storm sewer system. The development of the map has begun within the Danbury UA located in the northern portion of the town. The process has included the location of discharges (12” diameter and larger) and the first coinciding up-stream storm sewer structure. The locations of the storm sewer structures

and discharges are being completed using a global positioning system survey unit, typically to within submeter accuracy. The town has completed the locations in the Danbury UA and has started surveying the storm sewer structures in the Bridgeport-Stamford UA. Upon completion of the Bridgeport-Stamford UA the remaining streets in town will be completed and finishing the GPS survey locations of all stormwater discharges. The surveying requires clear skies in order to maintain proper satellite coverage; therefore the GPS surveying is scheduled to be complete by Year 2 for the UA's. The remainder of the storm sewer structures outside the UA's will be located by the end of Year 3. The map will include all outfalls 12" in diameter or greater throughout the town and the first upstream storm sewer structure. All required features items listed in Section 5 3Bi of the Permit are being captured during the location of the outfalls and storm sewer structures. The town is in the process of procuring funds to purchase a town wide landbase to create the necessary base map to plot the discharge locations and the storm sewer structures. The schedule to complete the storm sewer map will be completed by end of the Year 3 of the permit, assuming the funds can be procured. The required funding for this landbase and software package is estimated to be \$54,000. The monies for this landbase package will need to be approved by the Board of Selectman and the Board of Finance, if the monies are denied the town will have to wait until the State completes the proposed flyover. The anticipated date for the state to complete the flyover will be 2007, which will delay the completion of the storm sewer mapping.

A BMP will be developed and implemented to detect and eliminate existing illegal discharges of which the program will address the proposed connections of non-stormwater discharges. Currently, the Health and Highway Departments receive calls and written complaints that deal with illegal discharges and failing septic systems. Town employees investigate these complaints resulting in a notice being sent to the property owner to remove the connection from the storm sewer system and a follow-up inspection to verify the connection has been eliminated. If the complaint is regarding a failing septic, the system is investigated and the Health Department will notify the homeowner of the proper actions that will be required to eliminate the discharge. Both of these complaints are tracked throughout the course of a year. The BMP will further describe the activities necessary to achieve a comprehensive illicit discharge detection program. The program will be developed, implemented and enforced by the end of Year 4. The current methods will be maintained and enforced until the completion of this BMP.

BMP ID	Illicit Discharge Detection & Elimination – BMP Action	Responsible Department	Measurable Goal
3-1	Map Outfalls Greater than 15" in UA's	Engineering	Database available including all GPS locations on a bi-monthly basis
3-2	Map Outfalls Greater than 15" entire town	Engineering	Database available including all GPS locations on a bi-monthly basis
3-3	Map Outfalls Greater than 12" in	Engineering	Database available

	UA's		including all GPS locations on a bi-monthly basis
3-4	Program to Detect & Eliminate Illicit Discharges	Health	Currently the Health Department handles illicit discharges complaints
3-5	Develop Illicit Discharge Ordinance	Engineering	The Engineering Dept will begin drafting an Ordinance in Year 3 and complete the approval by Year 5
3-6	Basemap Development – Contingent on Procurement of Funds	Engineering	See details in MCM #3 regarding the timeline
3-7	Review of Septic Designs to Verify Proper Distances from Storm Sewer Systems	Health	Currently the Health reviews all septic designs to verify compliance
3-8	“FOG” Ordinance – Management of Grease Traps	Health	All restaurants are required to install a grease trap to collect associated wastes

4. Construction Site Stormwater Runoff Control

This section of the General Permit will require the town to develop a program to reduce pollutants in runoff from construction activities. There are several specific items that are listed in the minimum control measure that will need to be fulfilled. The town's Planning and Zoning Department has regulations, Zoning Regulations, has developed and enforces the majority of the requirements of this minimum control measure. In Sections 306.0 Excavation, Filling and Grading and 306.01 Accelerated Erosion and Sedimentation Control of the Zoning Regulations, the ordinance regulates erosion associated with construction activities. The regulations allow the Zoning Commission to review, inspect and enforce the following;

- The developer must submit engineered plans detailing the erosion and sedimentation proposed for the site with a review period by the Commission and public,
- Installation of proper erosion and sedimentation controls to reduce pollutants migrating to the town watercourses,
- An inspection and compliance program to ensure the erosion and sediment control measures are installed and maintained properly with penalties if the controls are not installed or maintained as designed or directed,
- The designed erosion and sedimentation plan serves as the developers BMP and therefore, the site operator is required to maintain its erosion control measures and allow continuous inspections by the town if necessary,

- The engineered plans must show analysis and calculations for any disturbances to drainage, the groundwater table and pond development
- The Zoning Commission holds a public hearing, which requires the developer to present the proposed project and provide written statements to answer question and/or comments to the public hearing attendees. All public hearings are voice recorded for the Zoning Commission. This public hearing is referenced in Section 306.0 and the requirements and procedures are in Section 312.02 of the Zoning Regulations,
- The Planning and Zoning Department has an inspection program and maintains a log that describes the date, site, inspector and inspection recommendations for each inspection completed.
- Copies of Sections 306.0 and 306.01 of the Zoning Regulations are attached in Appendix D.

There are two requirements in Section 6a (4Ai b&d) of the Permit that are not included in the Zoning Regulations. The first requirement is to notify the contractors\developers regarding the General Permit for the Discharge of Stormwater and Dewatering Wastewaters Associated with Construction Activities. This will be met by including a reference to the permit by adding it to the subdivision packet distributed by the Planning and Zoning Department. The proposed action will include the notification to the applicant with a reference copy of the permit at the Planning and Zoning Department. The Planning and Zoning Department will only distribute the general permit to the developers, the DEP will administer, regulate and enforce the general permit. This amendment will be completed by the end of Year 1. The requirement for the site operators to maintain a clean site will require the town to draft and approve a blanket BMP to all construction sites. Currently the Planning and Zoning department requires specific sites to properly maintain site trash and debris. The approved BMP will be completed by the end of Year 1. The requirement for this to apply to all projects, excluding projects less than one acre or single lot development, these sites may not be allowable under the General Statues. The Town Counsel will review the General Statues and verify what sites can and can not be included in the BMP.

BMP ID	Construction Site Runoff Control – BMP Action	Responsible Department	Measurable Goal
4-1	Review Land Use Regulations	P&Z	BMPS are proposed to address deficiencies See 4-7 & 4-8
4-2	Plan Review Completed by P&Z	P&Z	Included in Zoning Regulations
4-3	Plan Provides Calculations for Disturbed Areas	P&Z	Included in Zoning Regulations
4-4	Installation of Proper E&S Controls	P&Z	Included in Zoning Regulations
4-5	Inspection Procedures for E&S Controls	P&Z	Included in Zoning Regulations
4-6	Public Hearings and Pre-App	P&Z	Included in Zoning

	Meetings with Public		Regulations
4-7	Add Reference to GP for Construction Site Dewatering	P&Z	Reference will be completed by Year 1
4-8	Complete On Site Trash Management policy	P&Z	Formal policy will be drafted and approved by the end of Year 1

5. Post-construction Stormwater Management in New Development and Redevelopment

The subdivision procedures require the submission of engineered plans that detail and specify the proposed storm drainage for the site. The town has standard road details that include storm drainage design criteria that must be followed. The submitted plans are reviewed by the Engineering Department to verify the criteria are met. The review will sometimes result with recommendation(s) to install grit separator(s), additional or relocate catchbasins or detention basins. The Engineering Department is in the process of updating standards and details that will fully comply with this minimum control measure. The Engineering Department is proposing the following BMP's to fulfill the goals associated with this control measure;

- Update Existing Construction Standards.
- Continued use of State erosion and sedimentation control standards as a reference guide for contractors, developers and the public.
- Development of an Ordinance that will require developers to set up site specific BMP's for long term maintenance of the installed storm system sewer system.

This ordinance may require the site owners\developers to make future commitments to the maintenance of the new storm sewer system by supplying the town with a management BMP and bond. The BMP will provide for the potential stormwater sampling and necessary housekeeping requirements of the installed storm sewer system. The site specific BMP will be need to drafted and certified by a professional engineer. The engineer will also have to certify that the site conforms to the goals of this SWP and the Permit guidelines. The town will review this BMP and if deemed inadequate, the engineer will be required to submit approved alternatives. The town will verify the proposed BMP is adequate and manageable, either by the town or an approved outside agent, prior to the completion of the subdivision. The most recent example of this is a proposed subdivision, currently in the review process, is being required to include a BMP for future maintenance of the site and provide for potential sample analysis of the storm sewer system. As the Permit states now, there may be a potential conflict with project sites that are less than 1 acre, this may not be allowable under the existing State General Statues. The Town's Counsel will be reviewing the Permit guidelines and verify the conflicts, if any, resulting in the proper modifications to this ordinance or requirements developed by the town.

BMP ID	Post Construction Runoff Control – BMP Action	Responsible Department	Measurable Goal
5-1	Review Land Use Regulations	Engineering	BMP's are proposed to

			address deficiencies See 5-2 thru 5-5
5-2	Develop Post Construction Ordinance	Engineering	Ordinance will be drafted and approved by the end of Year 5
5-3	Develop and Implement Post Construction BMP Strategy	Engineering	Current plan review may require developer to complete, Ordinance will require all sites to comply
5-4	Develop Program to Ensure long-term O&M of BMP's	Engineering	Current plan review may require developer to complete, Ordinance will require all sites to comply
5-5	A BMP that will Require the Engineer to Certify the Site Complies with Phase II Goals	Engineering	Submission of plans that will provide research of Phase II

6. Pollution prevention/good housekeeping for municipal operations

The town currently completes some of the programs required to meet this minimum control measure. In order to comply fully with this minimum control measure, the town will need to develop and expand the first and second portions of this requirement, Section 6a (6Ai & ii). The town will need to prepare an operation and maintenance (O&M) plan to fulfill this portion of the minimum control measure. The town has many facilities and programs in operation that assist in the reduction of potential pollutants migrating to watercourses. The facilities include; the Transfer Station, Recycle Center and the brush and leaf recycle area. The programs are listed in the Public Involvement\Participation section of this document. These facilities and programs will be used as the foundation of the O&M plan. The O&M plan will be drafted and approved in Year 4.

The town highway garage facility is registered with the CT DEP for the General Permit for the Discharge of Stormwater Associated with Industrial Activities, permit number GSI001485. This permit requires the facility to develop a training program to educate its staff of the effects of pollutants migrating from the site to town watercourses. A similar training program will be developed to include all of the requirements of this section of the minimum control measure. The training program will include all field staff to be trained on what the potential pollutants are and the proper handling and disposal of the pollutants. The training will include using personnel from the Highway, Engineering and Planning and Zoning Departments. The training program will be completed by the end of Year 3 and include maintaining records of the attendees.

The highway garage currently has programs in place that meet the other requirements of this minimum control measure. The street sweeping program includes a two-phase sweep; contractors are hired to sweep all town roads and the Highway Department has

identified areas to be swept twice a year. The Highway Department completes the areas that are swept twice. Most of the streets that are swept twice a year are located within a UA, there are a small percentage that are located outside the UA's. The catchbasins and sediment basins are cleaned on an annual basis, however this procedure becomes limited because of weather and the health department begins tracking the West Nile Virus using traps in the catchbasins, which forces the cleaning program to end. The Highway Department addresses the repair and/or replacement of storm sewer structures as the structures age or fail. The street-resurfacing program evaluates all storm sewer structures and systems prior to completing any road reconstruction or resurfacing. During the evaluation process, all failing storm sewer structures are replaced prior to starting the resurfacing. Attached in Appendix C, is a memo that further details the activities of the Highway Department that fulfills this minimum control measure.

BMP ID	Good Housekeeping – BMP Action	Responsible Department	Measurable Goal
6-1	Develop Training Program	Engineering	Use training from Phase I GP as outline for new program
6-2	Sweep Streets Once a Year	Highway	Completed annually each Spring
6-3	Evaluate Streets to Swept Twice a Year in UA	Highway	Completed annually each Spring
6-4	Clean Stormwater Structures Once a Year	Highway	Completed annually until West Nile Monitoring begins
6-5	Develop a System to Repair and/or Replace MS4 Structures	Highway	Completed annually as required
6-6	Develop and Implement O&M Plan	Engineering	A O&M plan will be drafted and amended to the SWP by the end of Year 4

Environmental Commitment

The Town of Ridgefield is committed to protecting the environment. The town has met many of the **mandated and unfunded** requirements by State and Federal agencies and the town has also developed programs to further protect the environment. The commitment to protecting and enhancing the environment for the town and its citizen is not free. There are many programs that the town has established that requires current and additional funding. These programs also require tools, equipment and education materials to be able to develop, implement and enforce the existing and proposed BMP's and now maintain permit compliance. There is some state and federal funding for portions of these BMP's however the financial burden falls primarily on the small local municipal governments. Listed below are two tables that depict the current monies expended for the established BMP's and a second table listing the anticipated additional monies necessary to develop, implement and enforce the proposed BMP's. In Appendix

F there is a copy of the executive summary detailing the costs associated with developing a limited GIS, mentioned in minimum control measure 3.

Existing Program Costs

Existing Program	Department Manager	Type of Cost	Program Cost
Adopt-A-Road	Highway	annual	\$ 500
Rid Litter Day	Highway	annual	\$ 1,500
Haz. Waste Collection	Highway	annual	\$ 2,000
Waste Oil Collection	Highway	annual	\$ 6,000
Street Sweeping	Highway	annual	\$ 80,000
Storm Drain Repairs/New	Highway	annual	\$ 140,000
Dredging and plunge pools	Highway	annual	\$ 15,000
Phase I sample analysis	Engineering	annual	\$ 500
GPS Survey Equipment	Engineering	one time fee	\$ 11,000
		Total	\$ 256,500

Proposed Program & Equipment Costs

Proposed Program	Department Manager	Type of Cost	Program Cost
Rain gauge & pH meter	Engineering	one time fee	\$ 600
Internet development software	Engineering	one time fee	\$ 350
Landbase for base map	Engineering	one time fee	\$ 54,000
Repair costs associated w\ GPS	Engineering	annual	\$ 500
Updating landbase flyover	Engineering	annual	\$ 1,720
Adopt-A-Stream	Engineering	annual	\$ 500
Phase II sample analysis	Engineering	annual	\$ 1,500
Phase II review fee	Engineering	annual	\$ 187.50
Copy services for BMP factsheets and brochures	Engineering, Health and P&Z	annual	\$ 4,000
E & S controls seminar	Planning & Zoning	annual	\$ 500
		Total	\$63,857.50

The annual total cost to maintain the existing and proposed BMP will cost the town approximately \$ 265,500. These costs reflect materials only, the manpower necessary completed by the town is not included in the estimates.

Additional Permit Requirements

The Permit requires other items to be maintained and completed throughout the issued period. Listed are the additional requirements the town will maintain as required by the Permit;

- Keeping Plans Current – The town will maintain all plans that are required by the Permit, including the SWP, the O&M plan, the training guidelines and the storm sewer system map.
- Information Availability – The town will keep a copy of the SWP available for review at the Board of Selectman and the Engineering Department offices. If the DEP Commissioner requests a copy of the SWP one will be provided.
- Stormwater Sampling Requirements – The town will perform the following monitoring required stormwater outfalls as directed in the Permit. Attached in Appendix G is a copy of the quote supplied from the laboratory that will complete the parameter analysis. The list of parameters is as follows;
 - pH (SU),
 - Hardness (mg/l),
 - Conductivity (umos),
 - Oil and grease (mg/l),
 - Chemical Oxygen Demand (mg/l),
 - Turbidity (NTU),
 - Total Suspended Solids (mg/l),
 - Total Phosphorous (mg/l),
 - Ammonia (mg/l),
 - Total Kjeldahl Nitrogen (mg/l),
 - Nitrate plus Nitrite Nitrogen (mg/l),
 - E. coli (col/100ml).
- Recordkeeping and reporting – The town will maintain records of the development and implementation of the BMP’s that will assist in the submission of the Annual Report to the DEP. The Annual Report will include the results of the stormwater sample analysis, appropriate supporting documentation and the required \$187.50 fee.

BMP ID	Good Housekeeping – BMP Action	Responsible Department	Measurable Goal
S-1	Sample 6 Outfalls Once a Year	Engineering	The outfalls will be sampled each fall
S-2	Prepare and Submit Annual Report	Engineering	The annual report will be submitted upon completion of the sample analysis

- All regulations of Connecticut State Agencies will be followed throughout the permit period that involve the discharge of Stormwater.
- All violations will be corrected and reported as required in the Permit.
- Information or documentation containing inaccuracies will be corrected as required by the Permit.

APPENDIX A
General Permit Registration
Part B Registration Form



Part B - General Permit Registration Form for the Discharge of Stormwater from Small Municipal Separate Storm Sewer Systems (MS4)

Please complete this form in accordance with the general permit (DEP-PED-GP-021) in order to ensure the proper handling of your registration. Print or type unless otherwise noted.

DEP USE ONLY	
Application No.	_____
Permit No.	_____
Town I.D.	_____

Part I: Registrant Information

1. Name of Town/City: **TOWN OF RIDGEFIELD**
 Name of Chief Elected Official (CEO) or Principal Executive Officer (PEO):
RUDY MARCONI Title: **FIRST SELECTMAN**
 Mailing Address: **400 MAIN STREET**
 City/Town: **RIDGEFIELD** State: **CT** Zip Code: **06877**
 Business Phone: **203 431-2774** ext. Fax: **203 431-2311**
 Contact Person: **CHARLES R. FISHER, P.E., L.S** Title: **TOWN ENGINEER**

Check here if there are adjacent towns or other entities with which you will be coordinating implementation of your Stormwater Management Plan for a portion of your MS4 (See Section 6(b)(3) of the general permit). If so, label and attach additional sheet(s) with the required information as supplied above.

2. List primary contact for departmental correspondence and inquiries, if different than the CEO/PEO
 Name: **CHARLES R. FISHER, P.E., L.S.**
 Mailing Address: **66 PROSPECT STREET**
 City/Town: **RIDGEFIELD** State: **CT** Zip Code: **06877**
 Business Phone: **203 431-2751** ext. Fax: **203 431-2737**
 E-Mail: **cf.eng@ridgefieldct.org**
 Contact Person: Title: **TOWN ENGINEER**

3. List any engineer(s) or other consultant(s) employed or retained to assist in preparing the registration.
 Check here if additional sheets are necessary, and label and attach them to this sheet.

Name: **CHARLES R. FISHER, P.E., L.S.**
 Mailing Address: **66 PROSPECT STREET**
 City/Town: **RIDGEFIELD** State: **CT** Zip Code: **06877**
 Business Phone: **203 431-2751** ext. Fax: **203 431-2737**
 E-Mail: **cf.eng@ridgefieldct.org**
 Contact Person: Title: **TOWN ENGINEER**
 Service Provided: **REGISTRATION PREPARATION, DEVELOPMENT AND IMPLEMENTATION**

Part II: Site Information

1. Is there any activity included in your Stormwater Management Plan that would adversely affect properties listed or eligible for listing in the National Register of Historic Places? Yes No

If yes, the registrant must be in compliance with requirements of the National Historic Preservation Act and must coordinate with the appropriate State Historic Preservation Officer to avoid or minimize impacts from any necessary activities.

2. Is there any activity included in your Stormwater Management Plan that is located within the coastal boundary as delineated on DEP approved coastal boundary maps? Yes No

If yes, and this application is for a new authorization or for a modification of an existing permit, you must submit a *Coastal Consistency Review Form* (DEP-APP-004) with your application as Attachment A.

For forms or assistance, please call the Permit Assistance Office at 860-424-3003.

3. Is there any activity included in your Stormwater Management Plan that is located within an area identified as a habitat for endangered, threatened or special concern species as identified on the "State and Federal Listed Species and Natural Communities Map"?

Yes No Date of Map: **7/2001**

If yes, complete and submit a *Connecticut Natural Diversity Data Base (CT NDDDB) Review Request Form* (DEP-APP-007) to the address specified on the form.

When submitting this permit application, please include copies of any correspondence to the NDDDB, including copies of the completed CT NDDDB Review Request Form, any field surveys, and any other information which may lead you to believe that endangered or threatened species may or may not be located in the area of your existing or proposed permitted activity, as Attachment B.

Has a field survey been conducted to determine the presence of any endangered, threatened or special concern species? Yes No If yes, provide:

Biologist's Name:

Address:

and submit a copy of the field survey with your application as an Attachment as specified above.

Part III: Supporting Documents

Please check the attachments submitted as verification that *all* applicable attachments have been submitted with this application form. When submitting any supporting documents, please label the documents as indicated in this part (e.g., Attachment A, etc.) and be sure to include the applicant's name as indicated on the *Permit Application Transmittal Form*.

- Attachment A: Coastal Consistency Review Form: Activities within the state's coastal area, which includes the coastal boundary, must be consistent with the Connecticut Coastal Management Act (Sections 22a-90 through 22a-112 CGS). You may be required to complete a *Coastal Consistency Review Form* (DEP-APP-004) to demonstrate that the activity is consistent with the standards and policies of the Connecticut Coastal Management Act.
- Attachment B: CT NDDDB Information: Submit copies of any correspondence provided to or received from the CT NDDDB program, including a copy of a completed *CT NDDDB Request Form* (DEP-APP-007) and copies of any field surveys previously conducted to determine the presence of any endangered, threatened or special concern species.

Part IV: Registrant Certification

The registrant *and* the individual(s) responsible for actually preparing the registration must sign this part. A registration will be considered incomplete unless all required signatures are provided.

<p>“I have personally examined and am familiar with the information submitted in this document and all attachments thereto, and I certify that, based on reasonable investigation, including my inquiry of those individuals responsible for obtaining the information, the submitted information is true, accurate and complete to the best of my knowledge and belief.</p> <p>I certify that this permit registration is on complete and accurate forms as prescribed by the Commissioner without alteration of the text.</p> <p>I also certify under penalty of law that I have read and understand all requirements of the General Permit for the Discharge of Stormwater from a Municipal Separate Storm Sewer System issued on January 9, 2004 and that all requirements for authorization under the general permit are met and that a system is in place to ensure that all terms and conditions of this general permit will continue to be met for all discharges authorized by this general permit for the municipality. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowingly making false statements.”</p>	
<p>Signature of CEO/PEO or designee [as specified in RCSA Section 22a-430-3(b)(2)(B)]</p>	<p>Date</p>
<p>RUDY MARCONI</p>	<p>FIRST SELECTMAN</p>
<p>Name of CEO/PEO or designee (print or type)</p>	<p>Title (if applicable)</p>
<p>Signature of Preparer (if different than above)</p>	<p>Date</p>
<p>CHARLES R. FISHER, P.E., L.S.</p>	<p>TOWN ENGINEER</p>
<p>Name of Preparer (print or type)</p>	<p>Title (if applicable)</p>
<p><input type="checkbox"/> Check here if additional signatures are necessary. If so, please reproduce this sheet and attach signed copies to this sheet.</p>	

Note: Please submit the Permit Application Transmittal Form, Application Form, Fee, and all Supporting Documents to:

STORMWATER PERMIT COORDINATOR
 BUREAU OF WATER MANAGEMENT
 DEPARTMENT OF ENVIRONMENTAL PROTECTION
 79 ELM STREET
 HARTFORD, CT 06106-5127

Part V: Best Management Practice List (BMP)

BMP ID	Public Education	Responsible Dept. or Person	Measurable Goal
1-1	WETLANDS VIEWING PLATFORM AT THE GREAT SWAMP	ENGINEERING	LOCATED ON SOUTH ST
1-2	DEVELOP AND IMPLEMENT A STORMWATER INTERNET HOMEPAGE	ENGINEERING	NAVIGATE TO HTTP
1-3	EXPAND EXISTING HAZARDOUS WASTE & RECYCLING BROCHURES	HIGHWAY	POST INFO. ON INTERNET
1-4	CREATE A FACT SHEET ON THE CLEAN UP OF PET DROPPINGS	HEALTH	POST INFO. ON INTERNET
1-5	DEVELOP A FACTSHEET ON ENV. FRIENDLY FERTILIZERS	ENGINEERING	POST INFO. ON INTERNET
1-6	CREATE AN ILLEGAL CONNECTIONS FACT SHEET	HEALTH	POST INFO. ON INTERNET
1-7	REVIEW 3RD PARTY (EPA/DEP) DOCUMENTS FOR POTENTIAL USE	ENGINEERING	REVIEW ANNUALLY
1-8	LINK EXISTING NEW BMPS TO INTERNET PAGE	ENGINEERING	POST SHEETS ON INTERNET
1-9	P&Z TO HOLD ANNUAL TRAINING ON E&S CONTROLS	P&Z	SUBMIT SIGN-IN SHEETS
1-10			
BMP ID	Public Participation	Responsible Dept. or Person	Measurable Goal
2-1	Develop public involvement/participation program	ENGINEERING	PUBLIC HEARINGS
2-2	Comply with state and local public notice and FOI requirements	ENGINEERING	ALL PUBLIC FILES AVAIL.
2-3	RID LITTER DAY	HIGHWAY	TOWN VOLUNTEERS NEEDED
2-4	ADOPT-A-STREET	HIGHWAY	TOWN VOLUNTEERS NEEDED
2-5	WASTE OIL COLLECTION DAY	HIGHWAY	HELD FOR PUBLIC USE
2-6	HAZARDOUS WASTE COLLECTION DAY (MULTI TOWN)	HIGHWAY	HELD FOR 4 AREA TOWNS
2-7	DEVELOP AND IMPLEMENT AN ADOPT-A-STREAM BMP	ENGINEERING	USE BMP 2-4 AS MODEL
2-8			
2-9			
2-10			
BMP ID	Illicit Discharge Detection & Elimination	Responsible Dept. or Person	Measurable Goal
3-1	Map outfalls greater than 15" in Urbanized Area (Year 2)	ENGINEERING	GPS IN THE FALL '04
3-2	Map outfalls greater than 15" in town-wide (Year 3)	ENGINEERING	GPS IN THE WINTER '04-05
3-3	Map outfalls greater than 12" in Urbanized Area (Year 4)	ENGINEERING	GPS IN THE FALL '04
3-4	Develop program to detect and eliminate illicit discharges	HEALTH	CURRENT POLICY
3-5	Develop illicit discharge ordinance	ENGINEERING	DRAFT ORDINANCE YEAR 4
3-6	BASEMAP DEVELOPMENT CONTINGENT ON PROCUREMENT OF FUNDS	ENGINEERING	FUNDING STATUS UNKNOWN
3-7	REVIEW OF SEPTIC DESIGNS TO VERIFY PROPER DISTANCES	HEALTH	CURRENT REGULATIONS
3-8	"FOG" ORDINANCE - MANAGEMENT OF GREASE TRAPS	HEALTH	CURRENT ORDINANCE
3-9			
3-10			

BMP ID	Construction Site Runoff Control	Responsible Dept. or Person	Measurable Goal
4-1	Review land use regulations to meet requirements of MS4 permit and E&S Guidelines	P&Z	COMPLETE
4-2	PLAN REVIEW BY P&Z COMMISSION	P&Z	CURENET REGULATION
4-3	PLAN MUST PROVIDE CALC. FOR DISTURBED AREAS	P&Z	CURENET REGULATION
4-4	CONTRACTOR MUST INSTALL PROPER E&S CONTROLS	P&Z	CURENET REGULATION
4-5	INSPECTION BY P&Z OF E&S CONTROLS	P&Z	ANNUAL LOG MAINTAINED
4-6	PUBLIC HEARINGS AND PRE-APP MEETINGS WITH PUBLIC	P&Z	CURENET REGULATION
4-7	ADD REFERENCE TO DEWATERING GEN. PERMIT TO REGULATIONS	P&Z	REFERENCE ON REGS YEAR 1
4-8	DEVELOP REQUIREMENT FOR ON SITE TRASH MANAGEMENT	P&Z	DRAFT RULE COMPLETE
4-9			
4-10			
BMP ID	Post Construction Runoff Control	Responsible Dept. or Person	Measurable Goal
5-1	Review land use regulations to meet requirements of MS4 permit and E&S Guidelines	ENGINEERING	AMENDING CURRENT
5-2	Develop post-construction ordinance or regulation	ENGINEERING	DRAFT ORD. YEAR 4
5-3	Develop and implement post-construction BMP strategy	ENGINEERING	INCLUDED IN ORDINANCE
5-4	Develop program to ensure long-term operation and maintenance of BMPs	ENGINEERING	INCLUDED IN ORDINANCE
5-5	ENGINEER TO CERTIFY SITE COMPLIANCE WITH PHASE II GOALS	ENGINEERING	VERIFIED IN SITE REVIEW
5-6			
5-7			
5-8			
5-9			
5-10			
BMP ID	Good Housekeeping	Responsible Dept. or Person	Measurable Goal
6-1	Develop training program for municipal employees	ENGINEERING	USE GPI AS GUIDE
6-2	Sweep streets at least once a year as soon as possible after snowmelt	HIGHWAY	COMPLETED EVERY SPRING
6-3	Evaluate Urbanized Area for possible sweeping more than once a year	HIGHWAY	COMPLETED EVERY SPRING
6-4	Develop program to evaluate and clean stormwater structures at least once a year	HIGHWAY	VAC. TRUCK COMPLETES
6-5	Develop program to evaluate and prioritize system for upgrade and/or repair	HIGHWAY	PROTOCOLS DEVELOPED
6-6	DEVELOP & IMPLEMENT AN O&M PLAN FOR FACILITIES MANAGEMENT	ENGINEERING	PLAN COMPLETE YEAR 4
6-7			
6-8			
6-9			
6-10			
BMP ID	Monitoring	Responsible Dept. or Person	Measurable Goal
S-1	Sample 6 outfalls once a year	ENGINEERING	LISTED IN ANNUAL REPORT
S-2	ANNUAL REPORT	ENGINEERING	SUBMITTED AS DIRECTED

Part VIA: Best Management Practice Timeline

BMP ID	Permit Year One				Permit Year Two				Permit Year Three				Permit Year Four				Permit Year Five				Next Permit
	Spring 2004	Summer 2004	Fall 2004	Winter 2004-05	Spring 2005	Summer 2005	Fall 2005	Winter 2005-06	Spring 2006	Summer 2006	Fall 2006	Winter 2006-07	Spring 2007	Summer 2007	Fall 2007	Winter 2007-08	Spring 2008	Summer 2008	Fall 2008	Winter 2008-09	
Public Education																					
1-1	DONE																				
1-2			----	----	----	----	----	DONE													
1-3					----	----	----	DONE													
1-4									----	----	----	DONE									
1-5									----	----	----	DONE									
1-6													----	----	----	DONE					
1-7							X				X				X				X		
1-8								X				X				X				X	
1-9												X				X				X	
1-10																				X	
Public Participation																					
2-1	DONE																				
2-2	DONE																				
2-3	X				X				X												
2-4	X				X				X				X				X				
2-5				X			X				X		X				X				
2-6				X			X				X				X				X		
2-7													----	----	----	----	----	----	----	DONE	
2-8																					
2-9																					
2-10																					
Illicit Discharge Detection & Elimination																					
3-1	----	----	----	----	----	----	----	DONE													
3-2									----	----	----	DONE									
3-3	----	----	----	----	----	----	----	DONE													
3-4	DONE																				
3-5									----	----	----	----	----	----	----	----	----	----	----	DONE	
3-6					----	----	----	----	----	----	----	DONE									
3-7	DONE																				
3-8	DONE																				
3-9																					
3-10																					

---- Work in Progress

X Task Completed as a One-time Event During that Quarter

Done Task Completed

BMP ID	Permit Year One				Permit Year Two				Permit Year Three				Permit Year Four				Permit Year Five				Next Permit
	Spring 2004	Summer 2004	Fall 2004	Winter 2004-05	Spring 2005	Summer 2005	Fall 2005	Winter 2005-06	Spring 2006	Summer 2006	Fall 2006	Winter 2006-07	Spring 2007	Summer 2007	Fall 2007	Winter 2007-08	Spring 2008	Summer 2008	Fall 2008	Winter 2008-09	
Construction Site Runoff Control																					
4-1	DONE																				
4-2	DONE																				
4-3	DONE																				
4-4	DONE																				
4-5	DONE																				
4-6	DONE																				
4-7						----	DONE														
4-8							----	----	----	----	DONE										
4-9																					
4-10																					
Post Construction Runoff Control																					
5-1			----	DONE																	
5-2																				DONE	
5-3	DONE																				
5-4																				DONE	
5-5			----	----	----	----	DONE														
5-6																					
5-7																					
5-8																					
5-9																					
5-10																					
Good Housekeeping																					
6-1				----	----	----	----	----	----	----	DONE										
6-2	DONE																				
6-3	DONE																				
6-4	DONE																				
6-5	DONE																				
6-6											----	----	----	----	DONE						
6-7																					
6-8																					
6-9																					
6-10																					
Monitoring																					
S-1			X				X				X				X				X		
S-2				X				X				X				X				X	

ATTACHMENT B
CONNECTICUT NATURAL DIVERSITY DATA BASE
REVIEW REQUEST FORM



Connecticut Natural Diversity Data Base Review Request Form

Please complete this form *only* if you have conducted a review which determined that your activity is located in an area of concern.

Name: **CHARLES R. FISHER, P.E., L.S.**

Affiliation: **TOWN OF RIDGEFIELD**

Mailing Address: **66 PROSPECT STREET**

City/Town: **RIDGEFIELD**

State: **CT**

Zip Code: **06877**

Business Phone: **203 431-2751**

ext.

Fax: **203 431-2737**

Contact Person:

Title: **TOWN ENGINEER**

Project or Site Name: **MS4 PART B GENERAL PERMIT REGISTRATION**

Project Location

Town: **RIDGEFIELD**

USGS Quad: **SEE ATTACHED**

Brief Description of Proposed Activities:

THE TOWN IS MAINTAINING A STORM SEWER SYSTEM AND HAS BEEN REQUIRED TO DEVELOP AND IMPLEMENT A STORMWATER MANAGEMENT PLAN. THE EXISTING STORM SEWER SYSTEM IS NOW REGISTERED WITH THE CT DEP, AS REQUIRED.

Have you conducted a "State and Federal Listed Species and Natural Communities Map" review?

Yes

No

Date of Map: **7/2001**

Has a field survey been previously conducted to determine the presence of any endangered, threatened or special concern species? Yes No

If yes, provide the following information and submit a copy of the field survey with this form.

Biologists Name:

Address:

If the project will require a permit, list type of permit, agency and date or proposed date of application:

GENERAL PERMIT REGISTRATION OF THE DISCHARGE OF STORMWATER FROM SMALL MUNICIPAL SEPARATE STORM SEWER SYSTEMS (MS4), CT DEPARTMENT OF ENVIRONMENTAL PROTECTION, ISSUED 4/13/04, PERMIT NO. GSM000041.

(See reverse side - you must sign the certification on the reverse side of this form)

The Connecticut Natural Diversity Data Base (CT NDDB) information will be used for:

- permit application
- environmental assessment (give reasons for assessment):

- other (specify):

"I certify that the information supplied on this form is complete and accurate, and that any material supplied by the CT NDDB will not be published without prior permission."

Signature

5/14/2001
Date

All requests must include a USGS topographic map with the project boundary clearly delineated.

Return completed form to:

NATURAL DIVERSITY DATA BASE/DATA REQUEST
ENVIRONMENTAL & GEOGRAPHIC INFORMATION CENTER
DEPARTMENT OF ENVIRONMENTAL PROTECTION
79 ELM STREET, STORE LEVEL
HARTFORD, CT 06106-5127

* You must submit a copy of this completed form with your registration or permit application.

APPENDIX B
Urbanized Area Map

APPENDIX C
Highway Department Memo

Storm Water Phase II – DPS

1) Street Sweeping

In the spring, as soon as winter weather ends, we begin sweeping town roads to remove sand from watershed areas, in particular Mamasasco Lake, Fox Hill Lake, Twin Ridge area, Hidden Lake, Mimosa area, etc., as well as the town center, public schools, municipal lots and railroad station.

By late April or early May, we employ the services of a private contractor to assist in the annual sweeping of the entire town (approximately 360 lane miles of road).

We employ one water truck to pre-wet dry road surfaces and minimize airborne dust. We follow with 2 sweepers, one to "cut gutters" and the second to "clean up". Any debris is loaded into a Mack truck, hauled back to our yard to be recycled by mixing with clean fill, screening, and using in backfilling operations associated with our road paving program.

In addition, we perform gutter cutting and sweeping a second time on roads scheduled for overlay.

2) Basin and Pipe Cleaning

As soon as temperatures recover to 40^o, we put our vacor truck into service. Again, we begin by cleaning silt from catch basins, and flushing pipes, in the watershed areas and in areas where there is outfall into ponds and streams.

We then proceed to the roads on our paving list for the current year, followed by our regular routine maintenance in the rest of town.

Please note, that with concern over health risks related to the spread of the West Nile Virus, the Town Health Department "seeds" all 4,000+ basins in June with "traps" for mosquito larvae. At that time our regular maintenance program must end and does not resume until we get authorization from the Health Dept. in the fall. During this period, we can only perform emergency work related to flooding conditions. Once we are allowed to resume our routine work, we continue as late into the fall as temperatures permit.

3) Channelization / Dredging

During the course of the summer months, we excavate to recover siltation from the mouth of discharge pipes, from plunge pools, from drainage channels and from local ponds.

The recovered material is de-watered on site. The final disposition of the material is dependent upon the location of the source.

Contractors may sometimes be employed if the town lacks the proper equipment or manpower for a particular project.

4) Drainage Installation / Repair

We annually carry out a routine program of drainage installation and/or maintenance. The bulk of new installation takes place on roads scheduled for overlay. Repair or replacement of existing drainage is performed throughout town as necessary.

An example of basin repair might go as follows: a call is received from a resident alerting us to a situation where a basin appears to be "sinking" lower into the pavement. The information is recorded on a request/complaint form and passed on to one of our foremen. An investigation is performed and we find that one of our block and cement construction sumps is in need of repair. A work order is written and a crew is dispatched. The basin top is removed, block is reset or replaced, the basin is recemented and the top re-installed. The date of completion and names of crew are noted on the work order and it is closed out.

5) Resident Input / Communication / Recordkeeping

In all of the above areas, we rely very heavily on input from residents and businesses in town. We have a small staff responsible for over 480 roads, so communication with residents is essential for us in locating areas which may need attention. Our department investigates any call we receive, and work orders are written to perform any necessary work (see attached samples). Hard copy printouts and computer databases are maintained.

6) Litter

The town sponsors several programs designed to prevent litter or hazardous materials from finding their way into the local water system.

A) Adopt-a-Street – this program encourages residents, businesses, or organizations to adopt a street in their neighborhood and collect roadside litter on a routine basis, which is then collected and disposed of by the Highway Department crews. We currently have approximately 40 such areas in town.

B) Rid Litter Day – each spring the town and civic organizations sponsor a day to collect litter all around town, to be picked up by Highway and Parks Dept. staff and disposed of at the Transfer Station and Recycling Center. Annually 2 to 3 tons of material is collected.

C) Hazmat Day – once a year, in the fall, five area towns under the auspices of the HRRRA, hold a Hazardous Materials Collection Day allowing residents to dispose of chemicals, paints, and other potential pollutants.

D) Waste Oil – twice each year, the town holds Waste Motor Oil Collection Days. A licensed environmental contractor is employed to work with Highway Department staff accepting used motor oil from residents.

APPENDIX D
Planning & Zoning Memo

MEMORANDUM

April 29, 2004

To: Jacob Muller, Assistant Engineer

From: Betty Brosius, Director of Planning/Inland Wetlands Agent

Re: Stormwater Phase II General Permit

cc: Richard Baldelli, Zoning Enforcement Officer
Charles Fisher, P.E., Town Engineer

In response to your request for information about procedures and practices in the Planning and Zoning Department related to stormwater management, I have compiled the attached list and supporting documents.

In addition, Zoning Enforcement Officer Richard Baldelli and I have attended the two-day session of classroom instruction offered by the CTDEP, for "Two days of Classroom Instruction on Erosion and Sediment Controls for E&S Plan Designers, Reviewers and Inspectors." This class focused on the new *2002 Connecticut Guidelines for Soil Erosion and Sediment Control*, DEP Bulletin 34, and implementation of stormwater control measures.

My notes further outline plans for future programs, especially regarding "public outreach" and proposed training for builders, developers, etc.

Please let me know if you need additional information or clarification.

PLANNING AND ZONING DEPARTMENT

Personnel Responsible for Stormwater Management and Erosion Control:

Richard Baldelli, Zoning Enforcement Officer

Betty Brosius, Director of Planning and Inland Wetlands Agent

MEASURES TAKEN ON INDIVIDUAL LOT DEVELOPMENT:

1. **Zoning Permits:** The issuance of a zoning permit is dependent on the proper installation of Erosion and sedimentation (E&S) measures. All sites, both commercial and residential, are inspected for E&S control measures prior to the issuance of a zoning permit.
2. **Additional Inspections:** Most sites are inspected at least once during the construction process, to insure proper maintenance of E&S controls. Sites that are potentially more problematic (steep slopes, proximity to wetlands and watercourses, large areas of clearing) are marked for more frequent inspections. Additional E&S controls are required if the originally installed measures are not effective.
3. **Site Inspection Report and Inspection Log:** Site inspections are written up and signed by the inspector, with notes for any compliance action, and a copy of the inspection report is sent to the property owner in most cases. A log of sites targeted for inspection is kept by the Zoning Enforcement Officer, to provide timely visits and to ensure that problem sites are scheduled on a regular basis. (*See “Site Inspection Report” and “Site Inspection Tracking Log” attached*)

MEASURES AND ACTIONS TAKEN BY BOARDS AND COMMISSIONS:

1. **Pre-Application Meetings:** Pre-application meetings between developers and town officials are required as part of the application process for subdivisions and special permits that will be submitted to the Planning and Zoning Commission and the Inland Wetlands Board for approval. The applicant attends with his technical consultants, and town officials make comments on the plans that are proposed for submission. As part of this process, all applicants receive the “E&S Plan Checklist” (*copy attached*), developed by the CTDEP as an aide to implementation of the *2002 Connecticut Guidelines for Soil Erosion and Sedimentation Control* (DEP Bulletin 34).
2. **“Conditions” of Approvals Granted by the Boards and Commissions:** As part of every approval granted by the Planning and Zoning Commission and the Inland Wetlands Board, the applicant is required to install E&S measures prior to the initiation of any construction activity on the site, in accordance with the new CTDEP *Guidelines*. Typical conditions of approval are as follows:
 - a. “Prior to the issuance of any zoning permit or the initiation of any construction activity, all erosion and sedimentation control measures shall be properly installed in accordance

with the 2002 Connecticut Guidelines for Soil Erosion and Sediment Control (DEP Bulletin 34), and shall be maintained and repaired according to the guidelines. The Planning and Zoning Commission and its designated agent shall have the right to require additional E&S measures throughout the construction process and until the site is fully stabilized.”

- b. “The Planning & Zoning Office reserves the right to require additional or modified erosion and sedimentation control measures throughout the construction process.”
3. **Section 306.0 of the Zoning Regulations (“Excavation, Filling and Grading”)**: The zoning regulations include requirements for submission of plans and application for permits to control the disturbance of soil during excavation, filling and grading activities. This section pertains to earthwork activities whether or not these activities are part of an application for site plan approval, special permit, subdivision, etc. A special permit is required for earthwork including materials processing, screening and/or crushing is required. Under this section, administrative permits may be issued by the Zoning Enforcement Officer when the area to be excavated or filled is between 100 and 500 cubic yards. *(This section and section 306.01 are attached)*
 4. **Section 306.01 of the Zoning Regulations (“Accelerated erosion and sedimentation control”)**: Any application for site plan, special permit or subdivision that involves earth-disturbing activities is required to include an E&S plan under the regulations found in Section 306.01 of the zoning code. The intent and purpose of these regulations is to “control all earth-disturbing activities which are likely to result in accelerated erosion and sedimentation in order to avoid unnecessary damage to all features of the land, bodies of water and public works, both on-site and off-site.” The regulations include specifications for detailed plans, and a requirement that the plans be designed in accordance with the DEP Guidelines. The regulations provide for inspections by staff during construction processes, and authorizes the withholding of the issuance of zoning permits and zoning certificates of compliance, “unless in [its] judgment accelerated erosion and sedimentation control measures have been complied with.”
 5. **The Annual Report for the Planning and Zoning Department lists the following number of projects reviewed by the P&Z Commission and the Inland Wetland Board under the provisions noted above:**
 - 9 subdivisions, approving nineteen new building lots.
 - 5 special permits for non-residential uses.
 - 14 summary ruling applications for inland wetlands activity.
 - In addition to these approvals, there were 392 residential zoning permits for new home construction and/or additions, and 32 zoning permits for commercial construction.

PUBLIC OUTREACH AND PUBLIC EDUCATION:

1. **Meetings with property owners and developers on specific sites:** As part of the permit approval process and during the construction process, there are frequent conferences with individual property owners and developers about the importance of maintaining proper

erosion and sedimentation controls. The principles of protecting wetlands, watercourses, and preventing erosion and damage from stormwater are emphasized at every opportunity.

2. **Memorandum to developers, engineers, contractors about new *Guidelines***: The attached memorandum was widely distributed in October, to notify as many builders, contractors and engineers as possible about the need to adhere to the new DEP *Guidelines*. The training sessions for developers have not been scheduled as of this date, but the intention is to schedule a program at the earliest opportunity. There were four Ridgefield employees who attended the DEP sessions to learn about the use and implementation of the new *Guidelines*.

IMMEDIATE PLANS FOR FUTURE PUBLIC EDUCATION AND INVOLVEMENT:

1. **Town Website**: The town Website contains very little information about permits and instructions for approvals. There is no “Frequently Asked Questions” (FAQ) section. The website affords a good opportunity for the dissemination of information about stormwater management and erosion and sedimentation control.
2. **Training for Builders, Developers, Contractors**: The planned session for education of contractors and site developers should be held within the next 12-18 months, to outline the major changes and improvements in the newly revised *Guidelines*, DEP Bulletin 34.

APPENDIX E
Legal Notice

APPENDIX F
GIS Executive Summary

Town of Ridgefield
Engineering Department
GIS Proposal
Executive Summary

Introduction

The Town of Ridgefield currently does not have town wide data storage or digital mapping system capabilities. In the past, there has been discussions and reports about connecting the various town department data with an accurate town base map and creating a Geographic Information System (GIS). The budgets that have been reported for this would start at approximately \$175,000. These proposed budgets included; GIS software, hardware components (CPU's, digitizer and collection instruments) and data conversion by vendors. Since those reports, the Engineering Department has procured a Trimble Global Positioning System (GPS) receiver in November of 2001 and has been collecting the Town's infrastructure. The Engineering Department has completed data collection of structures in the sewer system and has a database of the sewer manhole inventory from the 1992 manhole inspection report. This data is currently not being maintained and it is not shared with other town departments efficiently. The data is stored on a network drive that can be viewed by software only the Engineering uses and is in a raw format. If there were a GIS implemented this data would be useful to many departments in a software package that would be easily distributed and implemented.

GIS Proposal

Building and implementing a town-wide GIS would be costly and obstacles may occur during the design\build and implementation phases. The GIS that the Engineering Department is proposing will be to develop a comprehensive system in the sewer areas, to start, which will reduce and potentially eliminate the implementation obstacles. The GIS would include a "landbase" layer developed from the Town tax maps and the purchase of the SNET\SBC digital ortho photographs and vector data. The combination of these datasets would create an accurate landbase to build the GIS. The landbase will be geo-referenced and connected using the assessor map and lot identifier as the primary key. This will consistent throughout any and all layers. The development of new layers would continue to use the assessor map and lot identification to allow the to implemented to the GIS. We are proposing to limit the area of the converted tax maps to save on the initial costs associated with building the landbase for the GIS. This proposal will include all sewer areas, District 1, Route 7 and Turner Hill, converting 26 tax maps, approximately 2,200 parcels, to complete the parcel layer and database in the sewer areas. The tax map conversion will include; scanning, vectorizing and geo-referencing the parcels to connect to the appropriate map and lot identification number. The accuracy of the parcel geo-referencing will update of the revision date of the tax map, attached in Appendix 1 is a copy of the vector-imaging quote. The SNET\SBC data will cover the entire town. The SNET\SBC data is accurate to mapping accuracy of 3' and is available for purchase. The data is generated from aerial photography to outputs of digital ortho photos and vector data. The SNET\SBC data is valuable data; they have completed a full update of the state, by re-flying approximately 1/3 of the state each year, beginning in 2000. Starting in 2004, SNET\SBC will be flying the state using color and black & white film, allowing for both color and black & white digital ortho photographs to accompany the vector data. The

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vector data in the SNET\SBC dataset package includes; street centerlines, some buildings, watercourses and more. The complete SNET\SBC data specifications are attached in Appendix 2.

The combination of the vectorized tax map data and the SNET\SBC will generate an accurate Town of Ridgefield landbase to develop the GIS. The GPS data, coordinate information, which the town has collected, will be connected to the coordinating database attributes to complete the specific GIS layer to be viewed and analyzed with the GIS software. Typically the GPS data collected is at “sub-meter”, $\pm 3'$, accuracy that can be post-processed to a higher accuracy. The Engineering Department envisions the development of several layers to be part of the GIS. Layers would include physical information collected via the GPS system connected to data located within a database or text file. For example potential data layers may include;

GIS Data Layer	Layer Description
Landbase	The landbase will be comprised of tax map parcel line information and the SNET\SBC orthro photos and vector data.
Sanitary Sewer System	Location of main & structures, billing information, manhole inventory data, record drawings and future studies and reporting.
Storm Drain system	Location of structures and development of watersheds and drainage basins, will be helpful to generate requirements of the CT DEP Phase II MS4 permit.
Zoning	The zoning districts and the historic districts can become separate layers.
Health	Connection with electronic data from the Health department via map & lot or address.
Building	Connection with electronic data from the Building department via map & lot or address.
Fire Department Routes	Vehicular routing maps to various locations in the town.
Tree Inventory	The tree committee data can be located and added as a layer to the GIS.
Map Data	Record map data, soils and aquifer protection maps, could be scanned and become separate layers.
School Districts	The various school districts could be located on the base map.

This is a brief list and with time layers will continue to evolve and new layers will be developed. Scanning map information, rubber sheeting and geo-referencing the image to the landbase for presentation and reporting purposes will generate additional layers. The landbase layer, tax parcel info & tax id and the SNET\SBC data, will create a sound and accurate foundation to build the GIS and continue its development in the future.

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GIS Benefits

There will be immediate and future benefits to having this GIS built and implemented. The GIS would begin to efficiently share accurate data and to help to eliminate redundancies and discrepancies in data with many departments. The Engineering Department and the WPCA would be immediately impacted with this GIS proposal. An up to date sanitary sewer system map would be readily available to employees and customers. As briefly described above, this sanitary sewer layer will have a geo-referenced map showing all sanitary sewer structures and pipes located in the system, connection with WPCA data showing billing information and even future project data, possibly television inspection video and associated data. The Engineering Department, WPCA and OMI will be able to share and confirm data for manhole information, pipe sizes and locations, reporting, mark outs and other important data. The Engineering Department will maintain the data and all three departments would verify the integrity of the data. The sanitary sewer layer, as a part of a GIS application, will be very helpful and useful for year-end reporting, including; NPDES permit application renewals, GASB-34 reporting, sewer system maintenance, future rehabilitation projects and customer service. The Connecticut Department of Environmental Protection has issued a new permit called the General Permit for the Discharge of Stormwater from Small Municipal Separate Storm Sewer Systems. This permit will require annual reports and a comprehensive storm drain system map to be developed and managed. This data will be very helpful as a layer in the GIS to facilitate the reporting and maintenance of this permit requirement. Attached in Appendix 3, is a sample of the entry screen and a printed report from the sanitary sewer manhole database. The ultimate goal of this GIS will be to present the system to other departments to gain support and eventually run it over an intranet and even the internet. Similar detail can be inputted in other department's data layer as the layers are developed. As data layers are developed and implemented many departments will gain access to efficient and accurate data that will help their daily tasks.

GIS Development

The development of the GIS will need a commitment of funding, not the funding that has been mentioned in the introduction and in past reports. This initial funding will allow the GIS to develop over time and in the future become a town-wide software service. This proposed GIS will be a very helpful presentation package for other departments to see the impacts and service provided and will generate support for future funding commitment and expansion. I have drafted a list of necessary hardware, software and data to procure to begin the development of this GIS. The list below describes various components that the Engineering Department is requesting funding to begin this GIS project;

Component	Description	Cost
CPU Workstation	ESRI\Dell special offer "package 1" item #94516, includes a Dell Workstation 650 and ArcEditor 8.x, see specifications in <u>Appendix 4</u> for details on CPU and ArcEditor 8.x. Purchasing this package is an	\$9,700

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	approximate cost saving of \$825 to buy these items individually.	
HP Designjet 815MFP*	The HP Designjet 815 MFP is a 42” multifunction Scanner, Printer and Copier. This HP 815 MFP unit will be very helpful to expand the parcel landbase in-house. The HP 815 MFP has many long term advantages; outside of building a GIS the unit could be used for printing, archiving plans sets and copy maps. This unit would be able to pay for itself. See the specification sheet in <u>Appendix 4</u> for details on the unit.	\$18,956
ESRI ArcEditor	ArcEditor 8.x will be the main software development tool for GIS program The cost of ArcEditor 8.x is built in to the CPU workstation and the specs are attached in <u>Appendix 4</u> .	The price is included in the CPU total.
ESRI ArcView	GIS user will run ArcView to navigate, query and analyze the GIS.	\$1220
Tax map vector data	There will be 24 tax maps scanned, vectorized and georeferenced. These maps will encompass approximately 2100 parcels that will be closed polygons and have the corresponding map and lot number connected to a parcel database. The vector-imaging quote is attached in <u>Appendix 4</u> .	\$2100
SNET\SBC landbase	The SNET\SBC landbase would include several layers to the GIS. The data is compiled from April 2003 areal photography and has many attribute layers to the digital orthro photographs. The costs associated with this data are expensive, however the purchase of the data would reduce the costs of hiring a consultant to fly the town and develop the same vector data. The cost includes a 3-year maintenance fee for the updated 2006 digital orthro photos. A complete list of the data integrity and data layers is attached in <u>Appendix 5</u> .	\$20874
Training	Initially training may not need to take place. I have found that working with the software package and developing questions and trial and error is a good approach. The costs are anticipated to be \$500 per day for 5 people on-site, assume 4 days.	\$2,000
	Totals	\$54,760

The above mentioned hardware and software components are essential, however the HP Designjet 815 MFP printer, scanner and copier *is the only item that is not a necessity*. Eliminating the HP 815 MFP will reduce the start-up cost to **\$35,804**. The capabilities of

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the HP 815 MFP will allow the town to complete in-house data archiving, expand the parcel database layer for further landbase development and the ability print out receivables for a profit. The HP 815 MFP will help to recoup the costs associated with the initial implementation of the GIS. Initially, the HP 815 MFP can be used to generate funds by completing large format copies of hard copy maps on file in the Mapping Department, while the GIS is being designed and implemented. The other items listed in the GIS development section will be necessary to begin the landbase and GIS data set layers.

This proposal does not account for a dedicated server, which will be required as the GIS data set expands to allow for greater security and data sharing. Initially, the development of the landbase will not require a server, however as the GIS expands and grows the dedicated server will be necessary to accommodate for a well-powered secure GIS. The dedicated server is anticipated to cost approximately \$3,500.

GIS Security, Maintenance and Expansion

The development of a GIS will require software security parameters to limit access to certain data sets to avoid corruption and maintain good data integrity. The initial security issues will be to restrict certain users from the individual data files and allow users to access the data sets through the GIS browser software to analyze, modify and interpret the data layers. The maintenance of the GIS will be required in two areas; 1.) the GIS system has a whole (landbase, communications and database integrity) and 2.) the individual department data layers. The GIS will require overall database clean up and other debugging as necessary to maintain an efficient running system. The proposed system will administered by the Engineering Department and have the respective town department's maintain their individual data layer. The individual data layer maintenance will take place in the original data file (database, excel or word file), which will not create additional work for the employees. The security privileges will allow for these types of data maintenance protocols to continue through the life of the GIS. The development of the landbase and the sanitary sewer data layer will allow the other town departments to see the effectiveness of a GIS and should promote additional layer development. As stated in the GIS proposal section, the additional layers to be developed will take place after the completion of the sanitary sewer layer that will require the involvement of other town departments and funding. As the GIS expands the funding should be spread through the various departments to encompass the specific needs of each department's data layers.

Conclusion

The proposed GIS will be a helpful tool to complete analysis of data, generate reports and expedite daily tasks. The anticipated timeline for the implementation for the GIS with sanitary sewer will be approximately 6 months after receiving the proposed hardware, software and landbase development. As mentioned in this report, additional layers will be installed in the GIS as they are developed. The GIS project will continue to evolve and develop creating a continuous maintenance project, which will allow new layers to be

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developed and implemented into the system. The use of the assessor map and lot identifier will allow for communication between existing and future software packages to happen easily and will allow for the GIS to grow. The end vision of this GIS will be to start with a compact GIS (sewered areas) and expand to a town wide comprehensive GIS.

APPENDIX G
Stormwater Parameter Analysis Quote