

**Town of Essex Selectboard**

**Town Ordinance**

**The Selectboard of the Town of Essex hereby ordains that Chapter 10.20 be added to the Municipal Code:**

**Chapter 10.20**

**STORM WATER**

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**APPENDIX D: Storm Water Management Design Criteria**

**§10.20.010 General Provisions**

This chapter is adopted pursuant to the Town's enabled right to adopt ordinances, bylaws, and regulations according to Section 103(a), et seq. of the Town of Essex Charter, and Sections 3508 and 3617 of Title 24, Vermont Statutes Annotated.

**§10.20.011 Basis for the Ordinance**

A. Land development activities and associated increases in site impervious cover often alter the hydrologic response and water quality aspects of local watersheds and increase storm water runoff rates and volumes, flooding, stream channel erosion, sediment transport and deposition and the concentration of waterborne pollutants and pathogens.

B. Clearing and grading during construction tend to increase soil erosion and reduce the native vegetation important for terrestrial habitat, for stream regulation through shading and for maintenance of natural food cycles important to food chains and aquatic habitat.

C. Improper design and construction of storm water management practices can increase downstream flooding and increase the velocity of storm water runoff causing stream bank erosion and build-up of sedimentation.

D. Impervious surfaces allow less water to percolate into the soil, thereby decreasing groundwater recharge and stream base flow.

E. Storm water runoff, soil erosion and non-point source pollution can be controlled, minimized and in some cases eliminated through the regulation of storm water runoff from land development activities. Illicit discharges must be eliminated.

F. The regulation of storm water discharges from new development and redevelopment of existing sites, the elimination of illicit discharges and the control of erosion and sediment discharge is in the public interest and will minimize threats to public health and safety

G. Economic loss and stream water quality degradation can result from these adverse impacts. Pet and wildlife wastes in storm water may raise bacteria levels, potentially resulting in loss of recreation use of the streams and Lake Champlain

**§10.20.012 Purpose**

The purpose of this chapter is to provide for increased regulation to address the items outlined in Section 10.20.011 and to thereby protect the public health, safety, and general welfare of the Town of Essex through the establishment of storm water best management practices in the following areas:

- A. Illicit Discharges (reference Section 10.20.050).
- B. Erosion and Sediment Control (reference Section 10.20.060).
- C. Development Storm Water Management (reference Section 10.20.070).
- D. Storm Water Control, Operation, and Maintenance (reference Section 10.20.080).
- E. Riparian Buffer Zones (reserved for the future)

In addition, this chapter ensures compliance with the storm water management provisions of the Small Municipal Separate Storm Sewer Systems (MS4), General Permit No. 3-9014, for those construction sites and post construction storm water management projects which disturb 1 acre or more of earth.

**§10.20.013 Applicability.**

This chapter applies to all property within the Town of Essex, Vermont outside the Village of Essex Junction and shall apply specifically as indicated in other sections by topic matter in this Ordinance.

**§10.20.014 Documents Incorporated by Reference.**

The latest versions of the following documents are incorporated herein by reference:

- A. *Town of Essex Outside the Village of Essex Junction Official Subdivision Regulations.*
- B. *Town of Essex Outside the Village of Essex Junction Official Zoning Bylaws.*
- C. *Town of Essex Standard Specification for Construction.*
- D. *Vermont Storm water Management Manual, Volumes I and II.*
- E. *Vermont Handbook for Soil Erosion and Sediment Control on Construction Sites*
- F. *Town of Essex Storm Water Management Plan dated April 2003*

**§10.20.015 Definitions.**

As used in this chapter:

"Accelerated erosion" means erosion caused by development activities that exceeds the natural processes by which the surface of the land is worn by the action of water, wind, or chemical action.

“*Applicant*” means a property owner or duly designated agent who files an application for a land disturbance activity.

“*Best management practices*” (BMP’s) means schedules of activities, prohibitions of practices, maintenance procedures, the use of pollution control devices and other management practices to prevent or reduce the amount of pollution introduced to receiving bodies of water from storm water runoff. BMP’s can include treatment practices, operating procedures, and practices to control site runoff, spillage or leaks, sludge or water disposal, or drainage from raw materials storage.

“*Building*” is as defined in Article XXVII of the Town of Essex Zoning Bylaws, as amended.

“*Channel*” means a natural or artificial watercourse with a definite bed and banks that conducts continuously or periodically flowing water.

“*Clean Water Act*” means the federal Water Pollution Control Act (33 USC §1251, et seq.), and any subsequent amendments thereto.

“*Clearing*” means any activity that removes the vegetative surface cover.

“*Construction activity*” means activities such as clearing and grubbing, grading, excavating, and demolition. Coverage for construction site runoff under the State of Vermont General Permit may be required for projects resulting in land disturbance of 1 acre or more of land.

“*Conveyance*” means the process of water moving from one place to another.

“*Detention*” means the temporary storage of storm water runoff in a storm water system with the goal of controlling peak discharge rates and providing gravity settling of pollutants.

“*Detention facility*” means a detention basin or alternative structure designed to temporarily store stream flow or surface runoff and to gradually release stored water at controlled rates.

“*Development*” is as defined in Article XXVII of the Town of Essex Zoning Bylaws, as amended.

“*Drainage easement*” means a legal right granted by a landowner to a grantee allowing the use of land for storm water management purposes.

“*Drainage way*” means a channel that conveys surface runoff through the site.

“*Erosion*” means when land is diminished or worn due to wind or water. Often the eroded debris (silt or sediment) becomes a pollutant via storm water runoff. Erosion occurs naturally but can be intensified by land clearing activities such as farming, development, road building, and timber harvesting.

“*Erosion and sediment control plan*” means a plan that indicates the specific measures and their sequencing for use to control sediment and erosion on a development site during and after construction.

“*Existing development*” means a development that was built prior to the effective date of the adoption of this Ordinance.

“*Grading*” means excavation or fill of material, including the resulting conditions thereof.

“*Hazardous materials*” means any material, including any substance, waste, or combination thereof, that because of its quantity, concentration, or physical, chemical, or infectious characteristics may cause, or significantly contribute to, a substantial present or potential hazard to human health, safety, property, or the environment when improperly treated, stored, transported, disposed of, or otherwise managed.

“*Hotspot*” means an area where land use or activities generate highly contaminated runoff, with concentrations of pollutants in excess of those typically found in storm water.

“*Hydrologic soil group*” (HSG) means a Natural Resource Conservation Service classification in which soils are categorized into 4 runoff potential groups. The groups range from “A” soils with high permeability and little runoff production to “D” soils that have low permeability rates and produce much more runoff.

“*Illicit discharge*” means any direct or indirect non-storm water discharge to the storm drain system, except as may be exempted under this chapter.

“*Illicit connections*” means either of the following definitions:

- A. Any drain or conveyance, whether on the surface or subsurface, that allows an illicit discharge to enter the storm drain system including but not limited to any conveyances that allow any non-storm water discharge including sewage, process wastewater, and wash water to enter the storm drain system and any connections to the storm drain system from indoor drains and sinks, regardless of whether said drain or connection had been previously allowed, permitted, or approved by an authorized enforcement agency.
- B. Any drain or conveyance connected from a commercial or industrial land use to the storm drain system that has not been documented in plans, maps or equivalent records and approved by an authorized enforcement agency.

“*Impervious cover*” means human-made surfaces including, but not limited to, paved and unpaved roads, parking areas, building roofs, driveways (paved and unpaved) walkways and compacted surfaces, from which precipitation runs off rather than infiltrates. A measure of imperviousness is a “C” value for runoff under of the Unified Soil Classification System of .70 or greater.

“*Industrial activity*” means activities subject to NPDES Industrial Permits as defined in 40 CFR §122.26(b)(14).

“*Industrial storm water permit*” means a NPDES permit issued to a commercial industry or group of industries that regulates the pollutant levels associated with industrial storm water discharges or specifies on-site pollution control strategies.

“*Infiltration*” means the process of percolating storm water into the subsurface.

“*Infiltration facility*” means any structure or device designed to infiltrate retained water to the subsurface. These facilities may be above or below grade.

“*Jurisdictional wetland*” means an area inundated or saturated by surface water or groundwater at a frequency and duration sufficient to support a prevalence of vegetation typically adapted for life in saturated soil conditions, commonly known as hydrophytic vegetation.

“*Land disturbance activity*” means any activity that changes the volume or peak flow discharge rate of rainfall runoff from the land’s surface. This may include grading, digging, cutting, scraping, or excavating soil, placement of fill materials, paving, construction, substantial removal of vegetation, or any activity that bares soil or rock or involves the diversion or piping of any natural or human-made watercourse.

“*Landowner*” means the legal or beneficial owner of land, including those holding the right to purchase or lease the land, or any other person holding proprietary rights in the land.

“*Maintenance agreement*” means a legally recorded document that acts as a property deed restriction and that provides for long-term maintenance of storm water management practices.

“*Maximum extent practicable*” (MEP) means the requirement in the federal Clean Water Act permitting discharges from municipal storm sewers to include controls to reduce the discharge of pollutants to the maximum extent practicable, including management practices, control techniques and system, design and engineering methods, and such other provisions as the state of Vermont determines appropriate for the control of such pollutants.

“*Minimum control measures*” means any BMP or other method used to prevent or reduce the discharge of pollutants to waters of the United States.

“*MS4*” means the municipal separate storm water system.

“*National Pollutant Discharge Elimination System*” (NPDES) means the name of the surface water quality program authorized by Congress as part of the 1987 Clean Water Act. This is EPA’s program to control the discharge of pollutants to waters of the

United States and means a permit issued by EPA (or by a state under authority delegated pursuant to 33 USC §1342(b)) authorizing the discharge of pollutants to waters of the United States, whether the permit is applicable on an individual, group, or general area-wide basis.

“*New development*” means the construction of new impervious surfaces on a tract or tracts of land occurring after the effective date of this Ordinance

“*Non-point source (NPS) pollutants*” means pollutants from many diffuse sources. NPS pollution is caused by rainfall or snowmelt moving over and through the ground. As the runoff moves, it picks up and carries away natural and human-made pollutants, finally depositing them into lakes, rivers, wetlands, coastal waters, and even into underground sources of drinking water.

“*Non-storm water discharge*” means any discharge to the storm drain system that is not composed entirely of storm water.

“*Nonstructural best management practices*” means non physical methods or activities used to mitigate the adverse impacts of storm water runoff including, but not limited to ordinances, maintenance activities and education/outreach activities.

“*Offset fee*” means a monetary compensation paid to a local government for an inability to meet pollutant load reduction targets.

“*Offsite*” means the land within the development’s drainage area that is not owned or controlled by the permit applicant.

“*Outfall*” means the point where drainage discharges from a pipe, ditch, or other conveyance to a receiving body of water.

“*Perimeter control*” means a barrier that prevents sediment from leaving a site by filtering sediment-laden runoff or diverting it to a sediment trap or basin.

“*Person*” means any individual, association, organization, partnership, firm, corporation, or other entity recognized by law and acting as either the owner or as the owner’s agent.

“*Phasing*” means clearing of a parcel of land in distinct phases, with the stabilization of each phase completed before the clearing of the next.

“*Point source pollutant*” means pollutants from a single, identifiable source such as a factory or refinery.

“*Pollutant*” means anything that causes or contributes to pollution. Pollutants may include, but are not limited to, paints, varnishes and solvents, oil and other automotive fluids, non-hazardous liquid and solid wastes and yard wastes, refuse, rubbish, garbage, litter, or other discarded or abandoned objects, and accumulations, so that same may cause or contribute to pollution, floatables, pesticides, herbicides,

and fertilizers, hazardous substances and wastes, sewage, fecal coliform and pathogens, dissolved and particulate metals, animal wastes, wastes and residues that result from constructing a building or structure, and noxious or offensive matter of any kind.

“*Recharge*” means the replenishment of underground water reserves.

“*Redevelopment*” means in the context of storm water, any construction, alteration, or improvement exceeding 10,000 SF on previously developed land.

“*Riparian Buffer Zone*” means the width of land adjacent to streams or lakes between the top of the bank or top of slope or mean water level and the edge of other land uses. Riparian buffer zones are typically undisturbed areas that protect the waterbody and adjacent riparian corridor ecosystem from the impact of adjacent land uses.

“*Riparian corridor*” means the waterbody and width of adjacent land that supports a distinct ecosystem with abundant and diverse plant and animal communities and which provides for channel stability of the water body.

“*Runoff*” means drainage or flood discharge that leaves an area as surface flow or as pipeline flow that has reached a channel or pipeline by either surface or sub-surface routes.

“*Sediment*” means soil, sand, and minerals washed from land into water, usually after rain. Sediment can destroy fish-nesting areas, clog animal habitats, and cloud water so that sunlight does not reach aquatic plants.

“*Sediment control*” means measures that prevent eroded sediment from leaving the site.

“*Sheet flow*” means the portion of precipitation that moves initially as overland flow in very shallow depths before eventually reaching a stream channel.

“*Site*” means a parcel of land or contiguous combination thereof, where grading work is performed as a single unified operation.

“*Stabilization*” means the use of practices that prevent exposed soil from eroding.

“*Start of construction*” means the first land-disturbing activity associated with a development, including land preparation such as clearing, grading, and filling, installation of streets and walkways, excavation for basements, footings, piers, or foundations, erection of temporary forms, and installation of accessory buildings such as garages.

“*Stop work order*” means an order issued requiring that all construction activity on a site be stopped.

“*Storm drainage system*” means facilities by which storm water is collected and/or conveyed including, but not limited to, any roads with drainage systems, municipal streets, gutters, curbs, inlets, piped storm drains, pumping facilities, retention and detention basins, natural and human-made or altered

drainage channels, reservoirs, and other drainage structures.

“*Storm water*” means any surface flow, runoff, and drainage consisting entirely of water from any form of natural precipitation, and resulting from such precipitation.

“*Storm water management*” means the use of structural or non-structural practices that are designed to reduce storm water runoff pollutant loads, discharge volumes, and/or peak flow discharge rates.

“*Storm water pollution prevention plan*” means a document describing the BMP’s and activities to be implemented by a person or business to identify sources of pollution or contamination at a site and the actions to eliminate or reduce pollutant discharges to storm water, storm water conveyance systems, and/or receiving waters to the maximum extent practicable.

“*Storm water retrofit*” means a storm water management practice designed for an existing development site that previously had either no storm water management practice in place or a practice inadequate to meet the storm water management requirements of the site.

“*Storm water runoff*” means flow on the surface of the ground, resulting from precipitation.

“*Storm water treatment practices*” (STP’s) means measures, either structural or non-structural, that are determined to be the most effective, practical means of preventing or reducing point source or non-point source pollution inputs to storm water runoff and water bodies.

“*Structural best management practices*” means physical features used to improve storm water quality or reduce peak flows such as detention ponds, grassed swales, sand filters, and infiltration basins.

“*Substantially deteriorated*” means the condition of a storm water treatment practice that would necessitate repair or reconstruction beyond that which would be considered typical, periodic maintenance for a system of similar design.

“*Total maximum daily load*” (TMDL) means the maximum amount of pollutants that can be released into a water body without adversely affecting the water quality.

“*Urban runoff*” means storm water from urban areas that tend to contain heavy concentrations of pollutants from urban activities.

“*Wastewater*” means any water or other liquid other than uncontaminated storm water discharged from a facility.

“*Water quality volume*” (Wq<sub>v</sub>) means the storage needed to capture and treat 90% of the average annual storm water runoff volume. Numerically (Wq<sub>v</sub>) will vary as a function of long-term rainfall statistical data.

“*Watercourse*” means a permanent or intermittent stream or other body of water, either natural or human-made, that gathers or carries surface water.

“*Watershed*” means that geographical area that drains to a specified point on a watercourse, usually a confluence of streams or rivers.

“*Wetland*” means those areas that are inundated by surface or ground water with a frequency sufficient to support plants and animals that depend on saturated soil conditions for growth and reproduction. Designated wetlands in Vermont are classified as Class I, II or III.

#### § 10.20.016 General Exemptions

The Illicit Discharge requirements of this Ordinance are applicable in all cases.

The following activities are exempt from review or control under this Ordinance to the extent they do not involve Illicit Discharges:

A. Agricultural and silvicultural activity, except that log landing and log haul roads are subject to the provisions of this Ordinance. In addition, logging or silvicultural activity conducted as a part of a land development application is not exempt from the general provisions of this Ordinance.

B. Repairs to any storm water management system that is deemed necessary by the Town Engineer

C. Cemetery facilities

D. Installation of fence, sign, telephone and electric poles and other kinds of fences, posts or poles.

E. Emergency activity immediately necessary to protect life, property or natural resources.

F. Activities of an individual engaging in home gardening by growing flowers, vegetable and other plants primarily for the use by that person and his/her family.

G. Land development activities that disturb less than one (1) acre.

H. Municipal activities not requiring Site Plan or Subdivision approval. Reconstruction/maintenance of municipal gravel roads shall adhere to the guidelines entitled “Vermont Better Back Roads Manual,” latest version.

#### §10.20.050 Illicit Discharges

##### §10.20.051 Illicit Discharges - General.

This sub-chapter regulates non-storm water discharges to the storm drainage system as required by federal and state law. Methods are established for controlling the introduction of pollutants into the municipal separate storm water system (MS4) to meet the following objectives, consistent with the

requirements of the State of Vermont General Permit process:

- A. To regulate the contribution of pollutants to the MS4 by storm water discharges by any user.
- B. To prohibit illicit connections and discharges to the MS4.
- C. To establish legal authority to carry out all inspection, surveillance, and monitoring procedures necessary to ensure compliance with this Ordinance.

#### §10.20.052 Discharge Prohibitions.

Prohibition of illicit discharges. No person shall discharge or cause to be discharged into the municipal storm drain system or watercourses any materials including, but not limited to, pollutants or waters containing any pollutants that cause or contribute to a violation of applicable water quality standards, other than storm water.

The commencement, conduct, or continuance of any illicit discharge to the storm drain system is prohibited except as described herein. The following discharges are exempt from discharge prohibitions established by this sub-chapter:

- A. Flushing of water line or other potable water sources (except when a particular substance in the water is subject to control by State or federal regulation and then the discharge is still exempt if within the limits of acceptability for the controlled substance).
- B. Landscape irrigation or lawn watering (unless such watering results in a direct discharge and the discharge is identified as containing pollutants or chemicals that are required to be controlled by state or federal regulation).
- C. Diverted stream flows.
- D. Rising or pumped ground water, providing such groundwater is not contaminated or polluted.
- E. Ground water infiltration to storm drains.
- F. Foundation or footing drains (not including active ground water dewatering systems) containing no contaminants or pollutants.
- G. Air conditioning condensation (except when control of a particular substance in the water is by federal regulation and then the discharge is still exempt if within the limits of acceptability for the controlled substance).
- H. Uncontaminated springs.
- I. Non-commercial washing of vehicles (unless such watering results in a direct discharge and the discharge is identified as containing pollutants or chemicals that are

required to be controlled by state or federal regulation).

- J. Natural riparian habitat or wetland flows.
- K. Swimming pools (if de-chlorinated– typically less than one PPM chlorine and except when control of a particular substance in the water is by State or federal regulation and then the discharge is still exempt if within the limits of acceptability for the controlled substance).
- L. Fire fighting activities, not including the cleanup of spills or accidents involving contaminated material such as oil spills or hazardous wastes.
- M. Any other water source not containing pollutants.
- N. Discharges specified in writing by an authorized representative of the Town of Essex as being necessary to protect public health and safety.
- O. Dye testing is an allowable discharge, if approved by the Town Engineer.

The prohibition shall not apply to any non-storm water discharge permitted under an NPDES permit, waiver, or waste discharge order issued for the discharge and administered under the authority of the US EPA, provided that the discharger is in full compliance with all requirements of the permit, waiver, or order and other applicable laws and regulations, and provided that written approval has been granted by the Town for any discharge to the storm drain system.

**Prohibition of illicit connections.** The construction, use, maintenance, or continued existence of illicit connections to the storm drain system is prohibited.

This prohibition expressly includes, without limitation, illicit connections made in the past, regardless of whether the connection was permissible under law or practices applicable or prevailing at the time of connection.

A person is in violation of this sub-chapter if the person connects a line conveying sewage, laundry waste or other forms of gray water to the MS4 or allows such a connection to continue.

#### **§10.20.053 Suspension of MS4 Access.**

**Suspension due to illicit discharges in emergency situations.** The Town may, without notice, suspend MS4 discharge access to a person when such suspension is necessary to stop an actual or threatened discharge that presents or may present imminent and substantial danger to the environment, or to the health or welfare of persons, or to the MS4 or waters of the United States. If the violator fails to comply with a suspension order issued in an emergency, the Town

Engineer may take such steps as deemed necessary to prevent or minimize damage to the MS4 or water of the United States, or to minimize danger to persons.

A person commits a violation of this Ordinance if the person reinstates MS4 access to premises terminated pursuant to this section, without the prior approval of the Town Engineer.

#### **§10.20.054 Industrial or Construction Activity Discharges.**

Any person subject to an industrial multi-sector permit or other separately-issued storm water permit by the Town, State or EPA shall comply with all provisions of such permit. Proof of compliance with said permit may be required in a form acceptable to the Town prior to the allowing of discharges to the MS4.

#### **§10.20.055 Monitoring of Discharges.**

**Applicability.** This section applies to all facilities that have storm water discharges associated with industrial activity, including construction activity.

**Access to facilities.** Authorized representatives of the Town shall be permitted to enter and inspect facilities subject to regulation under this chapter as often as may be necessary to determine compliance with this chapter. If a discharger has security measures in force that require proper identification and clearance before entry into its premises, the discharger shall make the necessary arrangements to allow access to authorized representatives of the Town.

Facility operators shall allow the authorized Town representative ready access to all parts of the premises for inspection, sampling, examination, and copying of records that must be kept under the conditions of an NPDES or State permit to discharge storm water, and the performance of any additional duties as defined by state and federal law.

The Town shall have the right to require the discharger to install on any permitted facility such devices necessary in the opinion of the Town Engineer to conduct monitoring and/or sampling of the facility's storm water discharge at the expense of the discharger.

The facility's sampling and monitoring equipment shall be maintained at all times in a safe and proper operating condition by the discharger at its own expense. All devices used to measure storm water flow and quality shall be calibrated to ensure their accuracy.

Any temporary or permanent obstruction to safe and easy access to the facility to be inspected and/or sampled shall be promptly removed by the operator at the written or oral request of the authorized Town

representative and shall not be replaced. The costs of clearing such access shall be borne by the operator.

Unreasonable delay in allowing the authorized Town representative access to a permitted facility is a violation of a storm water discharge permit and of this Ordinance. A person who is the operator of a facility with a NPDES permit to discharge storm water associated with industrial activity commits a violation of this Ordinance if the person denies the authorized Town representative reasonable access to the permitted facility for conducting any activity authorized or required by this chapter.

If the authorized Town representative has been refused access to any part of the premises from which storm water is discharged, such refusal shall be a violation of this Ordinance. The authorized Town representative may secure warrants from the applicable court having jurisdiction in cases where access is refused.

**§10.20.056 Requirement to Prevent, Control, and Reduce Storm Water Pollutants.**

The Town has adopted best management practices for any activity, operation, or facility that may cause or contribute to pollution or contamination of storm water, the storm drain system, or waters of the United States through the State of Vermont Phase II Storm-water Permit. The owner or operator of a commercial or industrial establishment shall provide, at their expense, reasonable protection from accidental discharge of prohibited materials or other wastes into the municipal storm drain system or watercourses through the use of applicable structural and non-structural BMP's. Further, any person responsible for a property or premise, that is, or may be, the source of an illicit discharge, may be required to implement, at said person's expense, additional structural and non-structural BMP's to prevent the further discharge of pollutants to the MS4. Compliance with all terms and conditions of a valid Multi-sector General permit authorizing the discharge of storm water associated with industrial activity, to the extent practicable, shall be deemed compliance with the provision of this section. These BMP's shall be part of a storm water pollution prevention plan (SWPP) as necessary for compliance with requirements of the NPDES permit.

**§10.20.057 Watercourse Protection.**

Every person owning property through which an intermittent or continuously flowing watercourse passes, or such person's lessee, shall not deposit in the watercourse or on the land impacted by runoff to the watercourse trash, debris, cut brush, grass or

wood, pet waste and other obstacles that would pollute, contaminate, or significantly alter the natural flow of water through the watercourse. Natural blockages of the stream by wildlife are considered not the responsibility of the landowner or lessee. In addition, the owner or lessee shall maintain existing privately owned structures within or adjacent to a watercourse, so that such structures will not become a hazard to the use, function, or physical integrity of the watercourse.

Riparian buffers established as part of development approval and required by Town regulations shall be maintained by the developer and all other subsequent property owners or associations within the development.

**§10.20.058 Notification of Spills.**

Notwithstanding other requirements of law, as soon as any person responsible for a facility or operation, or responsible for emergency response for a facility or operation has information of any known or suspected release of materials that are resulting or may result in illegal discharges or pollutants discharging into storm water, the storm drain system, or waters of the United States from such facility or operation, said person shall take all necessary steps to ensure the discovery, containment, and cleanup of such release. In the event of such a release of hazardous materials said person shall immediately notify emergency response agencies and the Town Engineer of the occurrence. In the event of a release of non-hazardous materials, said person shall notify the Town Engineer no later than the next business day. Notifications in person or by phone shall be confirmed by written notice addressed and mailed to the Town Engineer within 3 business days of the phone or in-person notice. If the discharge of prohibited materials emanates from a commercial or industrial establishment, the owner or operator of such establishment shall also retain an on-site written record of the discharge and the actions taken to prevent its recurrence. Such records shall be retained for at least 3 years.

**§10.20.060 Erosion and Sediment Control**

**§10.20.061 Erosion and Sediment Control-General.**

During construction, soil is vulnerable to erosion by wind and water. Eroded soil endangers water resources by reducing water quality and causing the siltation of aquatic habitat for fish and other desirable species. Clearing and grading during construction causes the loss of native vegetation necessary for terrestrial and aquatic habitat. For erosion and sediment control, this sub-chapter:

- A. Safeguards persons, protects property, and prevents damage to the environment.
- B. Promotes the public welfare by guiding, regulating, and controlling the design, construction, use, and maintenance of any development or other activity that disturbs or breaks the topsoil or results in the movement of earth on land.

**§10.20.062 Erosion and Sediment Control Applicability.**

This sub-chapter applies to any clearing, grading, construction or land disturbance activity within the jurisdictional area of the Ordinance.

All such activities are regulated under this sub-chapter unless exempted under section 10.20.016

**§10.20.063 Disturbance of Less Than One Acre of Land**

Erosion Control Permits will not be required for clearing, grubbing, grading or any land disturbance activities that involve one acre or less of contiguous disturbed land, unless a Storm Water Management Plan per Section 10.20.072 is required.

The Town shall provide erosion and sediment control standard diagrams for mandatory compliance on sites that involve less than one acre of disturbance, and that do not require a Storm Water Management Plan. The small site plan diagrams and guidelines shall be provided with the issuance of each building permit issued within the Town and shall be available for all persons within the Town at the Town offices. The information is contained in Appendix A. Non-compliance with any of the provisions within Appendix A is a violation of this Ordinance, subject to the same legal remedies and fines as under the main body of the Ordinance.

Compliance with the erosion control guidelines is also required for individual building construction performed within a larger subdivision or project which is subject to additional conditions imposed under a broader Town or State issued General Permit for Construction Site Runoff.

**§10.20.064 Applicability of State Erosion and Sediment Control Permits**

The Town shall accept a State of Vermont General Permit for construction site runoff as evidence of meeting Town erosion and sediment control permit requirements for those projects which fall under the jurisdiction of the State requirements. If a state permit is accepted as evidence of compliance with the Town Ordinance, a separate Town application will not be required and Town storm-water permit fees shall be waived.

**§10.20.065 Permit Required**

No person shall be granted a permit for construction activities disturbing more than one acre of land without the Town Engineer’s approval of an erosion and sediment control plan.

Appendix B to this Ordinance contains the requirements for inclusion in an Erosion and Sediment Control Permit issued by the Town. Each permit application shall be accompanied by a non-refundable permit application fee as established by the Selectboard, which shall be reviewed annually. Incomplete applications will not be accepted. The erosion and sediment control plan shall be submitted by a registered professional engineer in the State of Vermont or by a licensed and certified erosion control technician. Each application shall include a statement that any land clearing, construction, or development involving the disturbance of at least one acre of earth shall be in accordance with the erosion and sediment control plan and that an authorized representative of the applicant shall be onsite or readily accessible on all days when construction or grading takes place.

The applicant shall file with the Town, if required based upon the scope of the work, a faithful form of improvement security, such as a letter of credit or similar financial instrument, in an amount deemed sufficient by the Town to cover all costs of improvements, landscaping and maintenance of improvements for such period as specified by the Town, including any necessary amount to cover inflationary and contingency costs, and engineering and inspection costs to cover the cost of failure or repair of improvements installed on the site. If the project is included as part of an overall development involving a formal letter of Credit and Highway Agreement, the estimated costs for erosion control compliance may be included as a line item in the overall development letter of credit.

Review and approval. The Town shall review each application for an erosion and sediment control permit to determine its conformance with the provisions of this regulation. Within 15 business days after receiving an application deemed complete by the Town, the Town shall, in writing: approve the permit application; approve the permit application subject to such reasonable conditions as may be necessary to secure substantially the objectives of this regulation, and issue the permit subject to these conditions; or, disapprove the permit application, indicating the reason(s).

**§10.20.066 Erosion and Sediment Control Plans.**

A description and listing of the plan requirements is contained in Appendix B.

**§10.20.067 Construction Site Access and Driveway requirements.**

All construction site accesses shall meet the minimum requirements for a construction access road as contained in Appendix A. In addition:

A. The Town may require more stringent site access requirements if conditions warrant or if the construction site access is not maintained in an acceptable condition.

B. All persons within the Town of Essex are required to take preventative action to prevent the tracking of sediment from construction sites and driveways onto Town or State roads. Immediate action shall be taken by the responsible persons to wet sweep the road and to clean any catch basins or remove such sediment from drainage ditches affected by the tracking of sediment onto paved roadways. Failure to comply shall be a violation of this Ordinance, subject to the remedies contained therein.

**§10.20.068 Inspection.**

The Town Engineer or his representative shall make inspections on an as needed basis.

For projects operating under a Town approved and issued erosion control plan, periodic scheduled inspections are required by the design engineer or licensed technician to certify the status of the implemented plan. The following inspection schedule is a requirement of the issued permit:

- A. Start of construction.
- B. Installation of sediment and erosion measures.
- C. Completion of final grading.
- D. Close of the construction season (if multi-season).

E. Completion of final landscaping and following clean-up of all impacted Town infrastructure, such as catch basins, storm water piping and detention basins.

The permit holder shall notify the Town Engineer or his authorized representative at least 24 hours in advance of the scheduled inspections by the certifying engineer or licensed technician.

All inspections shall be documented in writing and submitted to the Town Engineer as specified by the approved permit.

The authorized representative of the Town shall enter the property of the applicant as deemed necessary to conduct periodic inspections.

Failure to inspect or keep a written record of the inspection as required shall be considered a violation of this Ordinance.

**§10.20.070 Development Storm Water Management**

**§10.20.071 Development Storm Water Management - General.**

This subchapter establishes minimum storm water management requirements for new development/redevelopment to augment existing Town development regulations and to provide controls to protect and safeguard the general health, safety, and welfare of the public. This subchapter:

- A. Minimizes increases in storm water runoff from new development/redevelopment to reduce flooding, siltation, and streambank erosion.
- B. Minimizes increases in non-point source pollution caused by storm water runoff from development that would otherwise degrade water quality.
- C. Minimizes the total annual volume of surface water runoff that flows from any specific site during and following development to not exceed the predevelopment hydrologic regime to the maximum extent practicable.
- D. Reduces storm water runoff rates and volumes, soil erosion, and non-point source pollution, wherever possible, through storm water management controls and to ensure that these management controls are properly maintained and pose no threat to public safety.

**§10.20.072 Development Storm Water Management Applicability.**

This subchapter applies to all subdivision and site plan applications for new development and redevelopment activities that create new or is an expansion of old impervious surfaces that are equal to or greater than one-half (1/2) acre.

In addition, this subchapter applies to land development activities smaller than the minimum applicability criteria if such activities are part of a larger common plan of development (Master Plan, Planned Residential Development, Planned Unit Development) meeting the applicable criteria, even though multiple separate and distinct land development activities may take place at different times on different schedules.

Exemptions. The following activities shall be exempt from the provisions of this chapter:

Additions/modifications to existing single-family residential structures

Permit required. No landowner or land operator shall receive any Town permit, including a Zoning Permit, required for new development or redevelopment projects that creates a new or expanded impervious area of one-half (1/2) acre or more without first meeting the requirements of this chapter.

Application requirements. Unless specifically excluded by this chapter, any person desiring a permit for a new development or redevelopment project creating or disturbing one acre or more of land and/or creates a new or expanded impervious land area of one-half acre (1/2) acre or greater shall submit to the Town Engineer a Development Storm-water Permit application on a form provided for that purpose.

State permits. Projects requiring a State Storm-water permit may submit a copy of the issued State permit with supporting documentation as evidence of compliance with the requirement for a Town Development Storm-water Management Permit. The permit requirements are found in Appendix C.

Unless otherwise exempted by this chapter, a Development Storm-water Management Permit application must be accompanied by the following for an application to be considered complete: a storm water management plan; a maintenance agreement; an erosion and sediment control permit per Section 10.20.065, if applicable and a non-refundable permit review fee. The storm water management plan shall be prepared to meet the requirements of this chapter, and the fees shall be those established by the Selectboard of the Town, which shall be reviewed annually.

Application review fees. The fee for review of a Development Storm-water Management permit shall be based on the amount of new or disturbed impervious land. The fee shall be used to support local plan review, inspection, and program administration or related municipal storm water projects or storm-water related taskings. The fee must be submitted with the application prior to the issuance of any Zoning Permit for construction.

Application procedure. Applications for Development Storm-water Management Permit Applications must be filed with the Town. An original and three copies of the permit application shall be submitted, including four copies of all supporting documents. Within 15 business days of the receipt of a complete application, including all documents as required by this chapter, the Town shall inform the applicant whether the application, plan, and maintenance agreement is approved, approved with conditions, or disapproved. If the permit application, final storm water management plan, and maintenance agreement are approved (with or without conditions), a Development Storm-water Management Permit shall be issued.

Permit duration. Permits issued under this section shall be valid from the date of issuance through the date three years after the Town notifies the permit holder that all storm water management practices have passed final inspection.

Other related permits. Issuance of a local Development Storm-water Management Permit does not negate the requirement of the applicant to obtain State or other storm-water permits as may be required.

#### **§10.20.073 Storm Water Design Manual.**

The storm water manual as referenced in this chapter refers to the technical analysis and design standards specified in the *Vermont Storm Water Management Manual* (volumes I and II), latest revision.

#### **§10.20.074 General Performance Criteria.**

The following performance criteria shall be addressed for storm water management at all sites:

- A. All site designs shall establish storm water management practices to control the peak flow rates of storm water discharge associated with specified design storms, as noted in the Vermont Storm Water Management Manual, Volumes I and II, aimed at reducing the generation of storm water. These practices should seek to use pervious areas for storm water treatment and to infiltrate storm water runoff from driveways, sidewalks, rooftops, parking lots, and landscaped areas to the maximum extent practical to provide for both water quality treatment and control of quantity.
- B. All storm water runoff generated from new development shall not discharge storm water directly into a jurisdictional wetland or local water body without adequate treatment. Where such discharges are proposed, the impact of the proposal on wetland functional values shall be assessed using a method acceptable to the Town. In no case shall the allowable impact on functional values be any less than the impact allowed by the Army Corps of Engineers (ACE) or the state wetlands office (or its successor).
- C. Annual groundwater recharge rates shall be maintained by promoting infiltration through the use of structural and non-structural methods. At a minimum, annual recharge from the post development site shall be at the same rate as the annual recharge from pre-development site conditions.

- D. For new development, structural storm water treatment practices, where required, shall be designed at a minimum to remove 80% of the average annual post development total suspended solids load (TSS) and 40% of the total phosphorus load, unless a TMDL has been established requiring a more stringent criteria in the receiving water. It is presumed that a STP complies with this performance standard if it is: sized to capture the prescribed water quality volume, designed according to the specific performance criteria outlined in the current state storm water manual, constructed properly, and maintained regularly.
- E. To protect stream channels from degradation, a specific channel protection criteria shall be provided as prescribed in the current state storm water manual.
- F. Storm water discharges to critical areas with sensitive resources (e.g., swimming areas, recharge areas, water supply reservoirs) may be subject to additional performance criteria, or may need to use or restrict certain storm water management practices.
- G. Certain industrial sites are required to prepare and implement a storm water pollution prevention plan and shall file a notice of intent (NOI) under the provisions of the National Pollutant Discharge Elimination System (NPDES) general permit. The storm water pollution prevention plan requirement applies to existing and new industrial sites.
- H. Storm water discharges from land uses or activities with higher potential pollutant loadings, know as “hotspots,” may require the use of specific structural STP’s and pollution prevention practices.
- I. Prior to design, applicants are required to consult with the Town to determine if they are subject to additional storm water design requirements.
- J. The calculations for determining peak flows as found in the current storm water design manuals shall be used for sizing all storm water management practices.
- K. An evaluation may be required of any downstream impacts.

**§10.20.075 Basic Storm Water Management Design Criteria.**

Minimum control requirements are contained in Appendix D to this Chapter, which is incorporated herein by reference.

Maintenance agreements. All storm water treatment practices shall have an enforceable operation

and maintenance agreement to ensure the system functions as designed. This agreement will include any and all maintenance easements required to access and inspect the storm water treatment practices and to perform routine maintenance as necessary to ensure proper functioning of the storm water treatment practice. In addition, a legally binding covenant specifying the parties responsible for the proper maintenance of all storm water treatment practices shall be secured prior to issuance of any permits for land disturbance activities.

On projects involving storm-water systems that will ultimately become the responsibility of the Town because of location in the public right of way or on public land, the maintenance agreement shall identify the responsibilities of all parties from permit approval through transfer of responsibility to the Town.

**§10.20.076 Requirements for Development Storm Water Management Plan Approval.**

A storm water management plan is required for all developments, meeting the criteria of section 10.20.072. No application for development, meeting the criteria of section 10.20.072, will be approved unless it includes a storm water management plan detailing in concept how runoff and associated water quality impacts resulting from the development will be controlled or managed. This plan must be prepared by a professional engineer and must indicate whether storm water will be managed on-site or off-site and, if on-site, the general location and type of practices. The complexity and details of the submitted plan may vary depending upon the extent of the submitted project.

The storm water management plan(s) shall be referred for comment to all other interested agencies, and any comments must be addressed in a final storm water management plan. This final plan must be signed by a licensed, professional engineer, who will verify that the design of all storm water management practices meet the submittal requirements. No building permit shall be issued until a satisfactory final storm water management plan, or a waiver thereof, shall have undergone a review and been approved by the Town after determining that the plan or waiver is consistent with the requirements of this chapter.

**§10.20.077 Construction Inspection.**

The applicant must notify the Town in advance before the commencement of construction. Regular inspections of the storm water management system construction shall be conducted by the professional design engineer and certified upon completion to the Town.

The Town shall also conduct periodic inspections as verification of the work progress and compliance with the approved plans. All inspections shall be documented and written reports prepared that contain the following information: date and location of the inspection; whether construction is in compliance with the approved storm water management plan; variations from the approved construction specifications; and, any violations that exist.

If any violations are found, the property owner shall be notified in writing of the nature of the violation and the required corrective actions. All corrective actions shall be made within a reasonable time as determined by the Town. If corrective actions are not taken in accordance with the Town's schedule, it shall be considered a violation of this Ordinance subject to the penalties established herein. If the situation is determined to pose an immediate threat to the environment or the public health, safety and welfare, the Town may order work to cease on the project until the corrections are satisfactorily completed.

**§10.20.078 As-built Plans.**

All applicants shall submit actual "as-built" plans for any storm water management practices after final construction completion. The plan must show the final design specifications for all storm water management facilities and must be certified by a professional engineer. A satisfactory final inspection by the Town Engineer is required before the release of any performance securities may occur.

If the final construction is substantially different from the approved plans, a final plan amendment may be required as part of the development review process.

**§10.20.079 Landscaping and Stabilization Requirements.**

Any area of land from which the natural vegetative cover has been either partially or wholly cleared or removed by development activities shall be revegetated within 10 business days from the substantial completion of such clearing and construction, or as otherwise approved by the Town. The criteria for vegetative cover are identified in Appendix D.

A landscaping plan must be a component element of the final design describing the vegetative stabilization and management techniques to be used at a site after construction is completed. This plan will explain not only how the site will be stabilized after construction, but who will be responsible for the maintenance of vegetation at the site and what practices will be employed to ensure that adequate vegetative cover is preserved. This plan must be prepared by a registered landscape planner or other qualified person, and must be approved prior to receiving a

permit. A landscaping plan submitted in compliance with other Town requirements as noted in the Subdivision Regulations or Zoning Bylaws will satisfy the requirements in this Ordinance provided the landscaping plan addresses the requirements of this Ordinance.

**§10.20.080 Storm Water Control, Operation and Maintenance.**

**§10.20.081 Design.**

All storm water Best Management Practices (BMP's) shall be designed to minimize the need for maintenance and reduce the chance of failure in accordance with the design guidelines outlined in the most current state storm water management manual.

Storm water easements and covenants shall be provided by the property owner for access for facility inspections and maintenance. Easements and covenants shall be recorded in the Town Land Records for any storm water discharge permit.

**§10.20.082 Routine Maintenance.**

All storm water BMP's shall be maintained according to the measures outlined in the current state storm water management manual or as directed in approval documents issued by the Town specific to the permit.

**§10.20.083 Maintenance Easement.**

Prior to the issuance of any permit that has a storm water management facility as one of the requirements of the permit, the property owner of the site must execute a maintenance access agreement that shall be binding on all subsequent owners of land served by the storm water management facility. The agreement shall provide for access to the facility at reasonable times for periodic inspection by the Town and for regular or special assessments of property owners to ensure that the facility is maintained in proper working condition to meet design standards and any other provisions established by this chapter. The easement agreement shall be recorded in the Town Land Records.

**§10.20.084 Maintenance Covenants.**

Maintenance of all storm water management facilities shall be ensured through the creation of a formal maintenance covenant that must be approved by the Town and recorded in the Town Land Records prior to final plan approval. As part of the covenant, a schedule shall be developed for when and how often maintenance will occur to ensure proper function of the storm water management facility. The covenant shall include plans for periodic inspections to

ensure proper performance of the facility between scheduled cleanouts.

The Town, in lieu of a maintenance covenant, may accept dedication of an existing or future storm water management facility for maintenance, provided such facility meets all the requirements of this chapter, includes adequate and perpetual access and sufficient areas, by easement or otherwise, for inspection and regular maintenance, and the components of the system are entirely within a Town right-of-way or Town easement. All storm water management facilities must undergo, at a minimum, an annual inspection to document maintenance and repair needs and ensure compliance with the requirements of this chapter and accomplishment of its purposes. These needs may include: removal of silt, litter, and other debris from all catch basins, inlets and drainage pipes, grass cutting and vegetation removal, and necessary replacement of landscape vegetation. Any identified maintenance needs must be addressed in a timely manner, as determined by the Town, and the inspection and maintenance requirement may be increased as deemed necessary to ensure proper functioning of the storm water management facility.

#### **§10.20.085 Maintenance Inspections.**

Inspection programs. Inspection programs may be established on any reasonable basis including, but not limited to: routine inspections; random inspections; inspections based on complaints or other notice of possible violations; inspection of drainage basins or areas identified as higher than typical sources of sediment or other contaminants or pollutants; inspections of businesses or industries of a type associated with higher than usual discharges of contaminants or pollutants or with discharges of a type that are more likely than the typical discharge to cause violations of state or federal water or sediment quality standards or the NPDES storm water permit; and, joint inspections with other agencies inspecting under environmental or safety laws. Inspections may include, but are not limited to: reviewing maintenance and repair records; sampling discharges, surface water, groundwater, and material or water in drainage control facilities; and, evaluating the condition of drainage control facilities and other storm water treatment practices.

Right-of-entry for inspection. When any new drainage control facility is installed on private property, or when any new connection is made between private property and a public drainage control system, sanitary sewer or combined sewer, the property owner shall grant to the Town the right to enter the property at reasonable times and in a reasonable manner for the purpose of inspection. This includes the right to enter a property when it has a reasonable basis to believe that a violation of this chapter is oc-

curing or has occurred, and to enter when necessary for abatement of a public nuisance or correction of a violation of this chapter.

#### **§10.20.086 Records of Installation and Maintenance Activities.**

Parties responsible for the operation and maintenance of a storm water management system including but not limited to catch basins, pipes and treatment systems shall make records of the installation and of all maintenance and repairs, and shall retain the records for at least 5 years. These records shall be made available to the Town during inspection of the facility and at other reasonable times upon request.

#### **§10.20.087 Failure to Maintain Practices.**

If a responsible party fails or refuses to meet the requirements of the maintenance covenant, the Town after reasonable notice may correct a violation of the design standards or maintenance needs by performing all necessary work to place the facility in proper working condition. In the event that the storm water management facility becomes a danger to public safety or public health, the Town shall notify the party responsible for maintenance of the storm water management facility in writing. Upon receipt of that notice, the responsible person shall have 30 days to effect maintenance and repair of the facility in an approved manner. After proper notice, the Town may assess the owner of the facility for the cost of repair work and any penalties, and the cost of the work shall be a lien upon the real estate furnished with such service in the same manner and to the same effect as taxes are a lien upon real estate under section 5061 of Title 32 and shall be an assessment enforceable under the procedures set forth in section 3504 of Title 24.

#### **§10.20.090 Riparian Buffer Zones (Reserved for Future)**

#### **§10.20.100 Waivers.**

Every applicant shall provide for storm water management as required by this chapter, unless a written request is submitted to the Town Selectboard to waive applicable portions of this Ordinance.

Input from the Town Engineer shall be obtained as to whether there is a technical basis for the granting of a waiver.

Minimum requirements for storm water management may be waived in whole or in part provided at least one of the following conditions applies:

- A. It can be demonstrated that the proposed development will not impair attainment of the objectives of this chapter.

- B. Alternative minimum requirements for on-site management of storm water discharges have been established in a storm water management plan approved by the Town.
- C. Provisions are made to manage storm water by an off-site facility. The off-site facility is required to be in place, designed and adequately sized to provide a level of storm water control that is equal to or greater than that which would be afforded by on-site practices and there is a legally obligated entity responsible for long-term operation and maintenance of the storm water practice.
- D. The Town finds meeting the minimum on-site management requirements is not feasible due to the natural or existing physical characteristics of a site.
- E. Non-structural practices will be used on the site that reduce: the generation of storm water from the site, the size and cost of storm water storage, and the pollutants generated at the site. These non-structural practices are explained in detail in the current state design manual and the amount of credit available for using such practices shall be determined by the Town.

In instances where one of the above conditions applies, the Town may grant a waiver from strict compliance with this chapter, as long as acceptable mitigation measures are provided. However, to be eligible for a waiver, the applicant must demonstrate to the satisfaction of the Town that the waiver will not result in any of the following impacts to downstream waterways: deterioration of existing culverts, bridges, dams, and other structures; degradation of biological functions or habitats; accelerated stream bank or streambed erosion or siltation; or increased threat of flood damage to public health, life, and property.

Furthermore, where compliance with minimum requirements for storm water management is waived, the applicant shall satisfy the minimum requirements by meeting one of the following mitigation measures approved by the Town.

Mitigation measures may include, but are not limited to, the following: the purchase and donation of privately owned lands, or the grant of an easement to be dedicated for preservation and/or re-forestation (these lands should be located adjacent to the stream corridor to provide permanent buffer areas to protect water quality and aquatic habitat); the creation of a storm water management facility or other drainage improvements on previously developed properties, public or private, that currently lack storm water management facilities designed and constructed pur-

suant to the purposes and standards of this chapter; monetary contributions (fee-in-lieu) to fund storm water management activities such as research and studies.

- A. Where the Town waives all or part of the minimum storm water management requirements, or where the waiver is based on the provision of adequate storm water facilities provided downstream of the proposed development, the applicant shall be required to pay a fee based on the impact of the impervious area created in an amount determined by the Town.
- B. In lieu of a monetary contribution, an applicant may obtain a waiver of the required storm water management practice by entering into an agreement with the Town for the granting of an easement or the dedication of land by the applicant, for the construction of an off-site storm water management facility. The agreement shall be entered into by the applicant and the Town prior to the recording of a plat(s) or, if no record of a plat(s) is required, prior to the issuance of any Zoning Permit for construction.

**§10.20.105 Appeals.**

Any applicant aggrieved by a decision of the Town not associated with a noticed violation of this Ordinance may appeal that decision in writing to the Selectboard within 15 calendar days of such decision. With public notice, the Selectboard shall hold a hearing within calendar 30 days of such an appeal and shall render a decision within calendar 15 days after the close of such hearing. Following the Selectboard's decision, any person aggrieved by the decision may appeal that decision to the appropriate court. The administrative process must be exhausted before appeal to court.

**§10.20.110 Enforcement.**

**§10.20.111 Stop-work Order; Revocation of permit.**

Should any person holding a development storm water permit or erosion and sediment control permit pursuant to this chapter, violate the terms of the permit or implement site development in such a manner as to materially adversely affect the health, welfare, or safety of persons residing or working in the neighborhood or development site, the Town may suspend or revoke the storm water permit.

**§10.20.112 Violation and Penalty.**

No person shall construct, enlarge, alter, repair, or maintain any grading, excavation, fill, or cause the

same to be done, contrary to or in violation of any terms of this Ordinance. Any person violating any of the provisions of this Ordinance or a permit issued hereunder shall be subject to a civil penalty of Five Hundred Dollars (\$500.00) for each violation of this Civil Ordinance.

Each day that any violation of any of the provisions of this Ordinance or a permit issued hereunder continues shall constitute a separate offense.

Any person, partnership, or corporation convicted of violating any of the provisions of this chapter shall bear the expense of any required restoration. The Town may recover all attorney's fees, court costs, and other expenses associated with enforcement of this chapter, including sampling and monitoring expenses.

#### **§10.20.113 Notice of Violation.**

Whenever the Town finds that a person violates a prohibition or fails to meet a requirement of this Ordinance or any permit issued hereunder, the Town may order compliance by written notice of violation to the responsible person. Such notice may require without limitation: the performance of monitoring, analyses, and reporting; the elimination of illicit connections or discharges; that violating discharges, practices, or operations shall cease and desist; the abatement or remediation of storm water pollution or contamination hazards and the restoration of any affected property; payment of a fine to cover administrative and remediation costs; and, the implementation of source control or treatment BMP's.

If abatement of a violation and/or restoration of affected property is required, the notice shall set forth a deadline within which such remediation or restoration must be completed. Said notice shall further advise that, should the violator fail to re-mediate or restore within the established deadline, the work will be done by the Town or its designated contractor and the expense thereof shall be charged to the violator.

#### **§10.20.114 Appeal of Notice of Violation.**

Any person receiving a notice of violation may appeal the determination of the authorized representative of the Town to the Selectboard. The notice of appeal must be received by the authorized representative of the Town or the Town Clerk within 5 business days from the date of the notice of violation. After public notice, the Selectboard shall conduct a hearing on the appeal. The hearing shall take place within 30 calendar days of the date of receipt of the notice of appeal. The decision of the Town Selectboard shall be final, subject to appeal procedures under Vermont Statutes.

#### **§10.20.115 Enforcement Measures after Appeal.**

If the violation has not been corrected pursuant to the requirements set forth in the notice of violation or, in the event of any appeal, within 10 business days of the decision of the Town upholding the violation, then representatives of the Town shall be authorized to enter upon the subject property and take any and all measures necessary to abate the violation and/or restore the property. It shall be unlawful for any person, owner, agent or person in possession of any premises to refuse to allow the Town to enter upon the premises for the purposes set forth above.

#### **§10.20.116 Cost of Abatement of the Violation.**

Within 30 calendar days after abatement of the violation, the property owner shall be notified of the cost of abatement, including administrative costs. The property owner may file a written protest objecting to the amount of the assessment within 10 calendar days. If the amount due is not paid within a timely manner as determined by the decision of the Town or by the expiration of the time in which to file an appeal, the charges shall become a lien upon the real estate furnished with such service in the same manner and to the same effect as taxes are a lien upon real estate under section 5061 and Title 32 and shall be an assessment enforceable under the procedures set forth in section 3504 of Title 24.

Any person violating any of the provisions of this section shall become liable to the Town for the cost of abating such violation. Interest at the legal percentage rate established by State Statute shall be assessed on the balance beginning on the 1<sup>st</sup> day of the 1<sup>st</sup> month following discovery of the violation.

#### **§10.20.117 Injunctive Relief.**

It shall be unlawful for any person to violate any provision or fail to comply with any of the requirements of this Ordinance or any permit issued hereunder. If a person has violated or continues to violate the provisions of this chapter, the Town may petition for an injunction restraining the person from activities that would create further violations or compelling the person to perform abatement or remediation of the violation.

#### **§10.20.118 Violations Deemed a Public Nuisance.**

In addition to the enforcement processes and penalties provided, any condition caused or permitted to exist in violation of any of the provisions of this Ordinance or any permit issued hereunder is a threat to public health, safety, and welfare, and is declared and deemed a nuisance, and may be summarily

abated or restored at the violator's expense, and/or a civil action to abate, enjoin, or otherwise compel the cessation of such nuisance may be taken.

**§10.20.119 Remedies not Exclusive.**

The remedies listed in this chapter are not exclusive of any other remedies available under any applicable federal, state, or local law and it is within the discretion of the Town to seek cumulative remedies.

**§10.20.120 Other Applicable Regulations.**

In case of any other applicable regulation, bylaw, ordinance, or statute that differs from this chapter, the stricter shall apply.

Any requirements under this chapter may be administered by the Town through other regulatory and permitting processes including but not limited to the reviews enabled in the Essex Zoning Bylaws and the Essex Subdivision Regulations.

**§10.20.130 Adherence to Public Works Specifications.**

All development, redevelopment, construction, etc. shall adhere to the Town's Public Works Specifications.

**§10.20.140 Fees, Fines, and Applicable Charges.**

The Town Selectboard shall adopt a schedule of reasonable fees, fines, and other charges applicable to carrying out the purposes of this chapter, and shall review the schedule of fines and fees on an annual basis.

**§10.20.150 Severability.**

If any portion of this chapter is held unconstitutional or invalid by a court of competent jurisdiction, the remainder of this chapter shall not be affected.

Approval of any storm water management system design and installation by the granting of a municipal storm water permit and certificate of compliance shall not imply that the approved system will be free from malfunction. Proper maintenance of storm water systems is vital to their proper functioning. The provisions of this chapter shall not create liability on the part of the Town, of any Town official, or employee for the storm water management system.

Adopted this \_\_\_\_\_ day of \_\_\_\_\_ 2005, by the Essex Selectboard

\_\_\_\_\_  
Tom E. James, Chair

\_\_\_\_\_  
Jeffrey B. Carr, Vice Chair

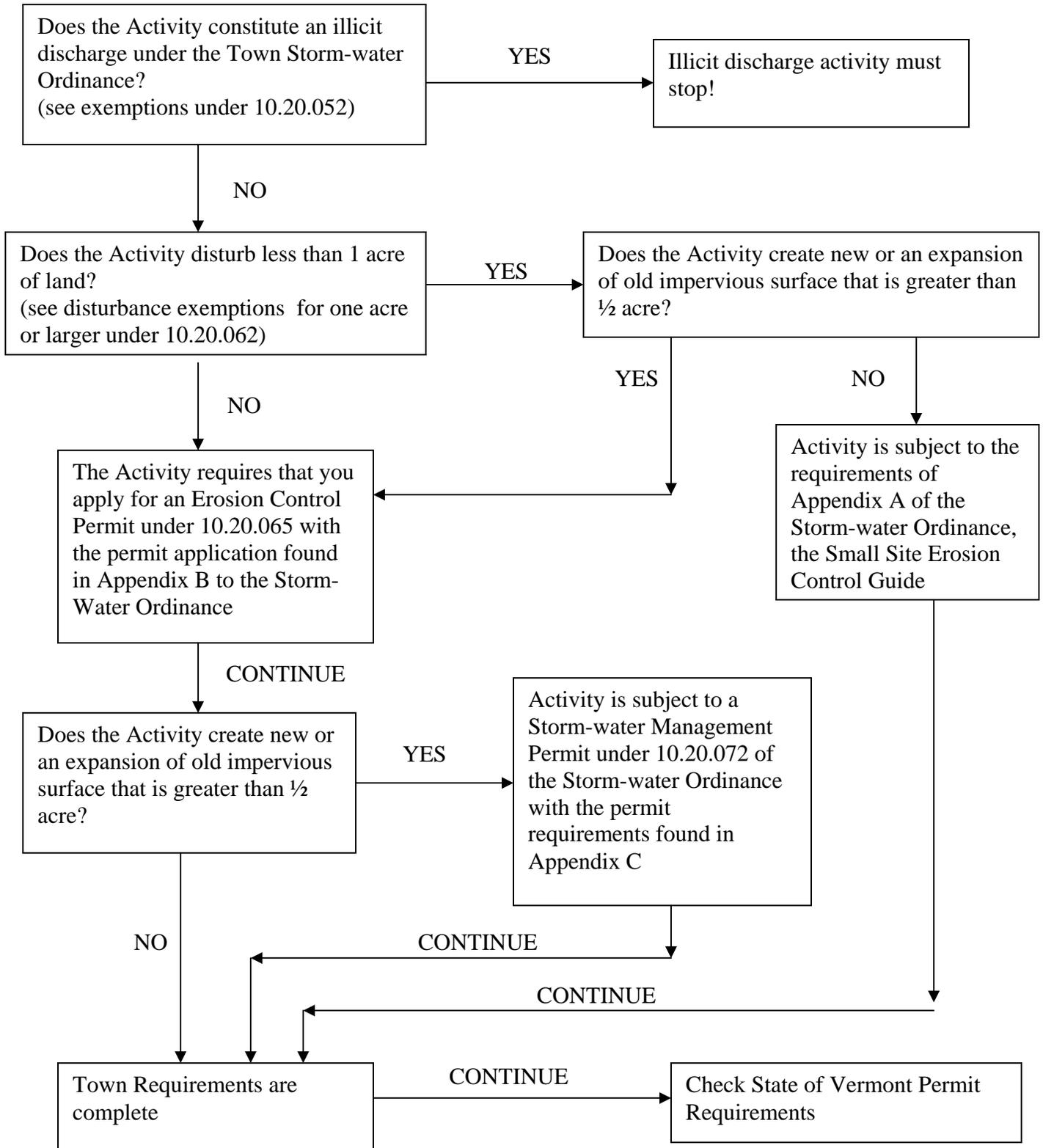
\_\_\_\_\_  
Thomas W. Torti, Clerk

\_\_\_\_\_  
Linda K. Myers

\_\_\_\_\_  
Alan L.Nye

Received for Record by Essex Clerk this \_\_\_\_\_ day of \_\_\_\_\_, 2005.

# Storm-water Activity Within the Town of Essex



# Town of Essex

## Small Site Erosion Control Guide

### Why do we need to protect against erosion?

**Water Quality:** Erosion and the transport of sediment and pollutants impacts the water quality of nearby streams which all flow into Lake Champlain. Erosion degrades the habitat of aquatic organisms and fish, decreases the recreational value of the waterways and promotes the growth of nuisance weeds and algae.

**Local Taxes:** Sediment that finds its way into streets, catch basins, storm sewers and ditches results in added maintenance and removal costs for local government. Tax dollars used for sediment clean up are not available for other purposes such as road repair or education.

**Flooding:** Sediment accumulates in streams and rivers reducing their capacity to carry runoff. The gradual build-up clogs natural channels resulting in increased flooding and property damage.

**Property Values:** Erosion and sediment loss can cause soil instability, which can create unsafe conditions around structures. Soil erosion can lead to expensive repairs to fix damaged property.

### What can you do to minimize erosion during construction?

- Disturb the minimum construction area at any given time.
- Reduce runoff over disturbed areas. Divert run off away from slopes into grassed swales or temporary silt basins. Keep runoff velocities as low as possible. If permanent measures for drainage control are in the plans,, build these first.
- Use sediment fence and other measures to keep soil onsite
- Sediment basins or traps should be considered to allow settling of particles before any storm water is discharged from the site. Mulch and erosion control blankets reduce erosion.

### Areas to pay special attention to:

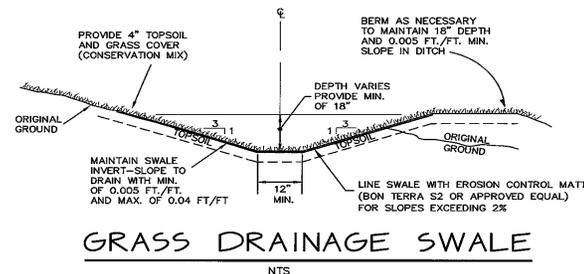
- Culvert inlets and outlets
- Steep Slopes
- Any areas of concentrated flow
- Ditches
- Accesses to the property
- Inlets and outlets of catch basin systems
- Area abutting waterways or wetlands

## Erosion Control Basics

- 1) Evaluate the site for the effect of runoff from sudden rainstorms.
- 2) Identify areas where you want to limit construction traffic. Wherever possible, preserve existing vegetation. To protect root damage to trees and other sensitive areas, mark areas off for preservation and do not allow grading, burning, storage, parking or driving within these areas. Place mesh snow fence around the drip lines of trees, designated leach field areas and across any protected buffer zones.
- 3) Install erosion/sediment control before the site is cleared.
- 4) At least once a week and after each rainfall event inspect measures put in place and repair them as necessary.
- 5) Ensure that all drainage is away from the home and not directed to an adjacent property owners lot. Provide an outlet for foundation drains and for general lot drainage by using storm sewers or by obtaining drainage easements if you must cross or if the runoff affects adjoining properties.
- 6) Do not fill existing drainage channels or roadside ditches. This could result in flow capacity reduction, flooding on another property and/or damage to adjacent road.
- 7) Do not flush sediment to the street with water.
- 8) Re-vegetate the site as soon as possible. A well-maintained lot has a higher sale potential.
- 9) Pay special attention to runoff adjacent to driveways and affected road ditches; use stone/erosion control in the ditch to prevent erosion.

## Erosion Control Options

**Ditch and Swale Protection:** These are often a basic element of any storm water and erosion control plan. All ditches and swales should be protected by plantings or coarse stone. The decision should be made based upon slope and potential velocities in the channel. Preferred grasses include Bermuda grass, reed canary grass, tall fescue, Kentucky bluegrass, grass legume mixtures, and red fescue.



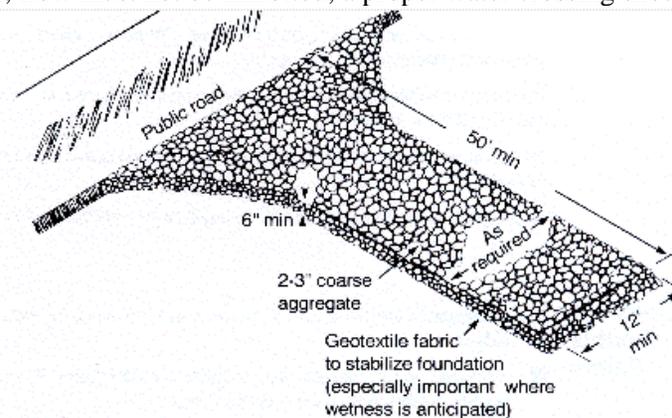
**Erosion Control Blankets:** Blankets are made of biodegradable materials such as jute matting, excelsior wood fiber; coconut fiber, straw or interwoven paper strips and netting made of biodegradable polypropylene or extruded plastics. These are formed into sheets and used as temporary or permanent mulching primarily to stabilize disturbed slopes and can be used in areas of moderate concentrated flows such as ditches and swales. Use anchoring staples. Place at least four inches of the material edge into a dug slot or soil then tamp down firmly to prevent floating blankets. The surface below the blanket should be smooth and stabilized to prevent the flow of water underneath.

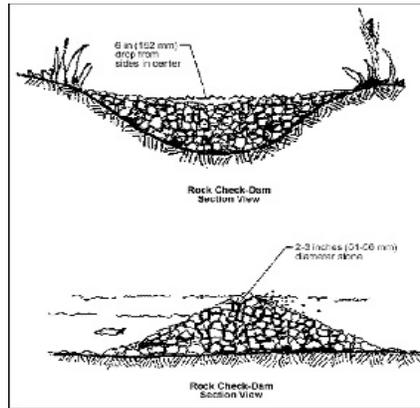
**Vegetative Filter Strips:** On hillside slopes, preserve a 20 foot wide vegetative buffer strip back from the top of slope.

**Mulch:** Apply hay, straw, bark mulch, crushed stone or cellulose fiber to disturbed surfaces. This method can be used on any area subject to erosion, as well as any area that may be otherwise unfavorable for plant establishment. Permanent mulch is particularly valuable in stabilizing chronic erosion areas such as those subject to high vehicle or foot traffic.

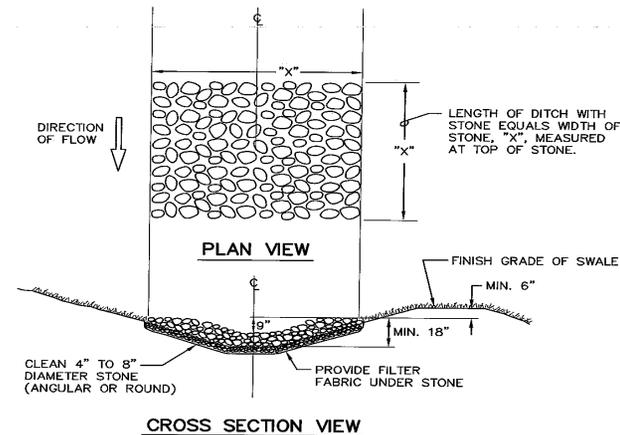
Mulch Material	Application per Acre	Depth of application of Area covered per unit	Notes
Hay or Straw	90 - 100 bales	95-100% coverage	Hay and Straw are not effective in areas of concentrated flows.
Green Wood Chips or Shavings	10 - 20 tons	2 - 4 inches	Decomposes rapidly, resistant to wind blowing, can be used in critical areas if protected from washing.
Bark Mulch	14,000 cubic feet	4 inches	Decomposes slowly, can be left for long periods of time, resistant to wind, vegetation may eventually grow over
Gravel and Stone	11,500 cubic feet	100% surface coverage	Should be ¼ inch to 5 inches in size. Should be washed before placement in sensitive areas

**Stabilized Construction Entrances:** Entrances shall be installed at every point where construction vehicles leave a paved or gravel road and enter onto a site. Large washed stone that is round in shape to prevent damage to tires should be placed over geo-textile. The protected entrance will minimize dusting as well as transportation of sediment into existing drainage ways. If two-way traffic is likely the entrance must be wide enough to allow for this. If the entrance crosses a swale or stream, flow must not be inhibited; a proper water crossing should be constructed.





**Check Dams:** Small dams constructed of dumped stone are effective in drainage channels both for temporary and permanent use. They are placed in small open channels, which are under construction or are downstream from a disturbed area. They lose efficiency on slopes greater than 15% ; however they can still be utilized in such case to slow flow. Only stone check dams may be left over the winter. Sediment that builds up behind the check dam should be removed when it has accumulated to ½ the original height of the dam. Repairs should be done frequently to ensure the system is effective. They should only be removed when vegetation has been established sufficiently.



**NOTES:**

1. STONE DAMS SHALL BE INSTALLED AT THE LOCATIONS SHOWN ON THE PLANS.
2. SWALE SHALL BE SEEDED & MULCHED (IF GRASS-LINED) PRIOR TO THE INSTALLATION OF THE STONE FILTER.
3. THE CONTRACTOR IS RESPONSIBLE FOR PREVENTING CLOGGING / SILTATION OF THE STONE DAM DURING AND IMMEDIATELY AFTER CONSTRUCTION UNTIL THE PROJECT'S PERMANENT EROSION CONTROLS ARE IN PLACE ( VEGETATION ESTABLISHED, ETC. ) AND THE PROJECT HAS BEEN ACCEPTED BY THE OWNER. IF NECESSARY THE STONE SHALL BE CLEANED AND REPLACED.

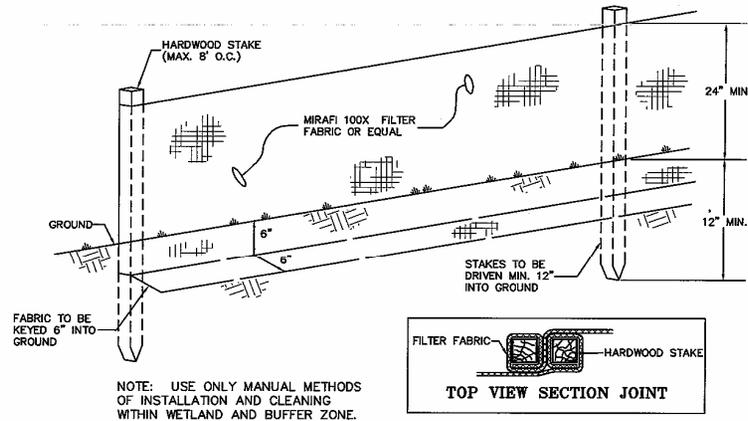
**STONE FILTER DAM**

NTS

**Slope Steepness    Maximum Slope Length**

2:1—(50%)	50 feet
3:1—(33%)	75 feet
4:1—(25%)	125 feet
5:1—(20%)	175 feet
<5:1—(<20%)	200 feet

**Silt Fences:** A geo-textile fabric wall is effective as a temporary measure. The fence is held in place with stakes or fence posts and compacted soil. These can be used as an alternative to straw bales to catch sediment on slopes or to prevent sediment from leaving the property. The fence should be aligned perpendicular to the flows and following the above slope limitations. Fence should be inspected after every storm event and sediment build up behind the fence should be removed and any torn sections of fence should be promptly repaired.



TEMPORARY SILT FENCE

NTS

**Storm Drain Inlet Protection:** If storm drains on site or adjacent to construction will receive flow from the site, these drains must be protected. Protect storm sewer curb inlets with stone filled or gravel filled geo-textile bags before disturbing the soil. Means of sediment detention such as hay bale dams or silt fence can be used to protect the inlet; otherwise, runoff should be diverted to a detention area on site.

Placing of filter fabric under the catch basin cover is an acceptable method of protecting the basin.

Another option is to construct drop inlet protection. This includes the building of a box like structure to surround the inlet, lining the box with filter fabric, then burying the edges of the filter fabric to prevent flow from going around or under the filter.

All new or existing catch basins affected by the construction must be cleaned at the project completion.

**Seeding:** Rapid restoration of vegetation is one of the most important elements of erosion control. It is used both as a temporary and a permanent solution. Seeding provides long term protection, while reducing runoff velocities and promoting infiltration of runoff into the soil. Disturbed areas that are not fine graded and will otherwise remain exposed for several weeks must be seeded. Examples of areas needing temporary vegetative cover may include soil stockpiles, dams, sediment basin sides, buffer areas, filter strips, vegetative ditches or swales, steep slopes and stream banks. Exposed soils that are not immediately seeded should be mulched. Soil amendments may be necessary to establish permanent growth. Conventional fertilizers should not be applied near areas that flow directly to a waterway. Permanent seeding should be performed in combination with other erosion and sediment control practices until full cover has been firmly established.

**Trees, Shrubs, Vines, Groundcover:** These materials are used as permanent vegetative stabilization. Install them on steep and rocky slopes where mowing would be difficult, for landscaping purposes, in shady areas where turf maintenance is difficult, and in vegetated buffer areas.

**Gutters and Downspouts:** should have downspout extenders installed as soon as gutters are installed. They aid in preventing erosion from roof runoff.

## Quick Access Guide to Erosion Control

<b>Feature</b>	<b>Suggested Erosion Control Measure</b>
Slopes	Erosion control blankets, filter strips, diversion ditches, silt fence and/or straw bale fence.
Construction Access	Stabilized Gravel Construction Entrance.
Ditches and Swales	Plantings, check dams and/or erosion control blankets
Storm Water Inlet	Prevent sediment from entering system though use of filter
Edge of disturbed Area	Silt Fence or Straw Bales
Paths	Gravel Mulch
Flat Disturbed Area	Mulch, and seed if it will be exposed and unmodified for more than week
Finished graded area	Hay or straw mulch and seeding

To minimize erosion the best practice is always to leave area undisturbed and vegetated whenever possible.

## Town of Essex Erosion and Sediment Control Permit Application

A permit is required per Section §10.20.065 of the Town Storm Water Ordinance when one acre or more of land is disturbed, except as exempted for certain activities under the Ordinance, or when a Storm Water Management plan is required. Completion of this permit is not required if an Erosion and Sediment Control Plan has been prepared for coverage under the State of Vermont General Permit. Plans and information required for issuance of the Erosion and Sediment Control Permit may be included within Site Plans or Subdivision Plans required by the Town.

The application consists of the following seven components: (1) administrative data (2) a narrative statement (3) a location map (if not provided as a component of other submitted plans) (4) an existing conditions site plan (5) an erosion and sediment control site plan(s) (6) a permit fee and (7) an applicant certification.

### \_\_\_ **Item 1, Administrative Data:**

1. Applicant Name: \_\_\_\_\_  
(Person or corporation to whom the permit will be issued)

2. Legal Entity: \_\_\_\_\_  
(Individual, corporation, partnership, firm, other)

3. Mailing Address: \_\_\_\_\_  
\_\_\_\_\_

4. Contact: \_\_\_\_\_ Telephone: \_\_\_\_\_  
(Person to contact regarding the application) Fax: \_\_\_\_\_  
E-Mail: \_\_\_\_\_

### \_\_\_ **Item 2, Narrative:**

Provide a general written description of the project, containing the following information:

- \_\_\_ Site inventory and analysis, with name and location of all affected streams, general topography, soils and type of vegetation and the calculation of disturbed land acreage
- \_\_\_ A description of the proposed grading plan and a timetable by project phase from start of project to completion, including winter shutdowns if applicable
- \_\_\_ A description of the strategies of the erosion and sediment control plan and how it will protect the nearby watercourses
- \_\_\_ A discussion of the seeding and mulching plan
- \_\_\_ A description of the erosion and sediment control measures, both temporary and permanent
- \_\_\_ A copy of the supporting design calculations
- \_\_\_ A discussion of the proposed maintenance and inspection plan

### \_\_\_ **Item 3, Location Map:**

Provide a 7½ minute U.S.G.S. quadrangle map or equal that shows:

- \_\_\_ The proximity of the site to any surface water bodies
- \_\_\_ Property lines
- \_\_\_ Any significant features affected by the project

**\_\_\_ Item 4, Existing Site Conditions Map:**

Provide an existing conditions map on a scale of 1 inch = 100 feet or larger with the following information:

- \_\_\_ Existing topographic features with a minimum of five-foot contours
- \_\_\_ Existing soils and general vegetative cover types
- \_\_\_ Existing drainage ways, water features and FEMA identified floodplains
- \_\_\_ Identification of sensitive areas including slopes greater than 25% and wetlands
- \_\_\_ Basic site and plan data with property lines, scale, elevation USGS datum or similar

**\_\_\_ Item 5, An Erosion and Sediment Control Site Plan:**

Provide a site plan that depicts the location of all erosion and sediment control measures, the timetable for the work and the sequencing of the control measures, including:

- \_\_\_ The limits of the disturbed area and phases as applicable
- \_\_\_ Any riparian conservation buffer limits and the method to be used for demarcation
- \_\_\_ The location of all temporary and permanent erosion and sediment control measures and details supporting the measures
- \_\_\_ The location of all soil stockpiles and areas to be seeded/mulched and timetables
- \_\_\_ Chart of the inspection and maintenance frequency for all control measures, to include street sweeping of affected roads both new and existing, cleaning of existing catch basins
- \_\_\_ Details of construction including storm water inlet protection, stabilized entrance construction, silt fence construction, permanent rock check-dams
- \_\_\_ Designated responsible party with contact information

**\_\_\_ Item 6, Permit Fee:**

A permit fee of \$300 plus an additional \$100 per acre of disturbed area shall be paid at the time of permit application.

**\_\_\_ Item 7, Applicant Certification:**

I, \_\_\_\_\_, hereby certify that the application as submitted is accurate to the  
(Name of Applicant)  
best of my knowledge, and that I will take all steps necessary to comply with the erosion and sediment controls as submitted or as required as a condition of approval by the Town.

\_\_\_\_\_  
(Signature of Applicant) (Date)

- \_\_\_ Approved as submitted
- \_\_\_ Approved with conditions as attached

\_\_\_\_\_  
(Town of Essex Representative) (Date)

## **Storm-water Management Permit and Plan**

A storm-water management permit is required per section §10.20.072 of the Town Storm Water Ordinance when a project creates new or an expansion of old impervious surfaces that are equal or greater than one-half (1/2) acre in size.

### **A Storm-water management permit shall contain the following items:**

- 1) A completed permit application form
- 2) A storm-water management plan
- 3) An erosion and sediment control permit
- 4) A proposed long term maintenance agreement
- 5) A non-refundable permit application fee

### **Preliminary Storm water management plan requirements.**

A preliminary storm water management plan shall be submitted early in the development review process with sufficient information (e.g., maps hydrologic calculations, etc.) to evaluate the environmental characteristics of the project site, the potential impacts of all proposed development of the site, both present and future, on the water resources, and the effectiveness and acceptability of the measures proposed for managing storm water generated at the project site. For most projects submitted for development review, the preliminary storm-water management plan shall be submitted as part of the preliminary subdivision application. The intent of the preliminary management plan is to determine the type of storm water management measures necessary for the proposed project, and to ensure adequate planning for management of storm water runoff from future development. To accomplish this goal the following information shall be included:

- A. Map(s) indicating the location of existing and proposed buildings, roads, parking areas, utilities, structural storm water management and sediment control facilities. The map(s) shall clearly show proposed land use with tabulation of the percentage of surface area to be adapted to various uses; drainage patterns, locations of utilities, roads and easements; the limits of clearing and grading; written description of the site plan and justification of proposed changes in natural conditions.
- B. Sufficient engineering analysis to show that the proposed storm water management measures are capable of controlling runoff from the site in compliance with this ordinance and the specifications of the current state storm water manual.
- C. Written or graphic inventory of the natural resources at the site and surrounding area as it exists prior to the commencement of the project and a description of the watershed and its relation to the project site. This description should include a discussion of soil conditions, forest cover, topography, wetlands, and other native vegetative areas on the site. Particular attention should be paid to environmentally sensitive features that provide particular opportunities or constraints for development.

- D. Written description of the required maintenance burden for any proposed storm water management facility.
- E. At the Town's discretion, the management shall consider the maximum development potential of a site under existing zoning, regardless of whether the applicant presently intends to develop the site to its maximum potential.

For development or redevelopment occurring on a previously developed site, an applicant shall be required to include within the storm water preliminary management plan measures for controlling existing storm water runoff discharges from the site in accordance with the provisions of this chapter to the maximum extent possible.

#### **Final storm water management plan requirements.**

After review of the preliminary storm water management plan, and modifications to that plan as deemed necessary the Town, a final storm water management plan must be submitted for approval. A final storm-water management plan shall be submitted as part of the Final Subdivision application process or as part of a final Site Plan application. The final storm water management plan, in addition to the information from the concept plan, shall include the following information:

- A. Name, address, and telephone number of all persons having a legal interest in the property and the parcel number of properties affected.
- B. 1"=200' topographic base map of the site that extends a minimum of 100 feet beyond the limits of the proposed development and indicates existing surface water drainage including streams, ponds, culverts, ditches, and wetlands; current land use including all existing structures; locations of utilities, roads, and easements; and significant natural and human-made features not otherwise shown.
- C. Hydrologic and hydraulic design calculations for the design storms specified in the Ordinance and Appendices. Such calculations shall include: description of the design storm frequency, intensity and duration; time of concentration; soil curve numbers or runoff coefficients; peak runoff rates and total runoff volumes for each watershed area; infiltration rates, where applicable; culvert capacities; flow velocities; data on the increase in rate and volume of runoff for the design storms referenced in the current state storm water design manual; and, documentation of sources for all computation methods and field test results.
- D. If a storm water management control measure depends on the hydrologic properties of soils, a soils report submittal. The soils report shall be based on SCS soils information at a minimum. On-site boring logs or soil pit profiles may be required if an infiltration system of treatment is proposed. The number and location of required soil borings or soil pits shall be determined based on what is needed to determine the suitability and distribution of soil types present at the location of the control measure.
- E. Detailed maintenance procedures to ensure their continued function. The parts or components of a storm water facility that need to be maintained, the necessary equipment and a maintenance schedule will be identified. Provisions for the periodic review and evaluation of the effectiveness of the maintenance program and the need for revisions or additional maintenance procedures shall be included in the plan.

- F. Ensured access to all storm water treatment practices at the site for inspection and repair by securing all the maintenance easements needed on a permanent basis. These easements will be recorded with the plan in the Town Land Records and shall run with the land.
- G. Executed easement and an inspection and maintenance agreement binding on all subsequent owners of land served by an on-site storm water management measure in accordance with the provisions of this chapter.
- H. At the Town's discretion, a performance security or bond prior to issuance of a permit to insure storm water practices are installed by the permit holder as required by the approved storm water management plan may be required. There is a requirement for such a Town performance security or bond, even if the storm water permit is a State rather than Town permit. The amount of the installation performance security shall be the total estimated construction cost of the storm water management practices approved under the permit. The performance security shall contain forfeiture provisions for failure to complete work specified in the storm water management plan. The installation performance security shall be released in full only upon submission of "as-built" plans and written certification by a registered professional engineer that the storm water practice has been installed in accordance with the approved plan and other applicable provisions of this chapter. The Town will make a final inspection of the storm water practice to ensure that it is in compliance with the approved plan and the provisions of this chapter. Provisions for a partial pro-rata release for the performance security based on the completion of various development stages can be done at the discretion of the Town.



## **Storm Water Management Design Criteria**

Storm water management design criteria apply to the following: (1) erosion and sediment control systems (2) conveyance systems such as culverts, catch basins and pipelines and (3) treatment systems. Existing Town and State Standards apply as noted in the Town Storm Water Ordinance, Section §10.20.014. The purpose of this Appendix is to provide supplemental guidance to those guidelines and standards that are listed in the Ordinance.

The goal for all new development and redevelopment is to reduce the impervious area to the minimum essential area to meet regulatory requirements and to restrict runoff to the maximum practical extent from the site.

### **Erosion and Sediment Control Systems**

Clearing, except that necessary to establish sediment control devices, shall not begin until all sediment control devices have been installed and stabilized.

Soil stabilization shall be completed within 10 business days following clearing or construction inactivity.

Soil stockpiles must be protected or stabilized at the end of each workday; properly installed silt fence or hay bales shall be used to prevent erosion from unused soil stockpiles in existence for longer than 72 hours.

The entire disturbed site must be stabilized, using a heavy mulch layer or another method that does not require germination to control erosion, at the close of the construction season.

The area of disturbance shall be limited to the minimum necessary to perform the construction task being undertaken; entire sites shall not be cleared or graded without prior permission from the Town.

Temporary and permanent erosion and sediment control, if required, may consist of rock check dams, specialized plantings for erosion control and topographic changes that create grassed depressed areas to allow for the infiltration of runoff water onsite.

A component of an effective erosion and sediment control plan is the rapid growth of replacement land cover and landscaping. The landscaping plan, when required, shall detail both the vegetation to be used in the practice and how/who will manage and maintain this vegetation. This plan must be prepared by a qualified person, experienced in landscape planning. The criteria for vegetative cover is:

- A. Reseeding must be done with an annual or perennial cover crop accompanied by placement of straw mulch or its equivalent of sufficient coverage to control erosion until such time as the cover crop is established over 90% of the seeded area.
- B. Replanting with native woody and herbaceous vegetation must be accompanied by placement of straw mulch or its equivalent of sufficient coverage to control erosion until the plantings are established and are capable of controlling erosion.
- C. Any area of re-vegetation must exhibit survival of a minimum of 90% of the cover crop throughout the year immediately following re-vegetation. Re-vegetation must be repeated in successive years until the minimum 90% survival for 1 year is achieved.
- D. All disturbed areas must be mulched before winter.

### **Conveyance Systems**

All storm water management practices shall be designed to convey storm water to allow for the maximum removal of pollutants and reduction in flow velocities.

Pre and post development drainage calculations must be submitted. The post development calculations shall include conveyance systems and treatment systems.

Conveyance systems that allow for the infiltration of storm water, in part or in whole are preferred, providing the designer can demonstrate that the underlying soil can accommodate the infiltration without a negative impact on adjacent roads, structures, etc.

All conveyance systems located within a current or planned Town Right of Way shall be designed with non-leak joints for both pipes and catch basins. Catch basin “boots” for both the inlet and outlet piping shall be provided on all catch basins. No new catch basins will be allowed that have a portion of the frame or concrete basin under the curb.

In special situations, the Town may require the use of catch basin inserts to capture added solids, organics or oil based products

Flow paths shall be maximized from inflow points to outflow points.

All catch basins and associated piping shall be protected from sediment during construction and shall be cleaned prior to Town acceptance..

The outlet from all piped drainage systems shall be designed so there is no vertical head loss to the adjacent stream and the outlet stream channel shall be stone lined to eliminate erosive flow velocities.

The as built plans on all completed projects shall contain a certification that no cross-connections have been made between storm and sanitary service lines and main lines.

The Town Subdivision requirements state that all post-development drainage calculations must be based on a 25-year storm event; structural components of a storm drainage system may be designed on the basis of a lesser storm event providing the calculations demonstrate that the 25 year event can be accommodated through a combination of design features, such as infiltration and storage. The minimum pipe sizes in the Public Works Specifications shall apply.

### **Treatment Systems:**

All storm water management systems shall be designed to capture and treat storm water runoff according to the specifications outlined in the current State Storm Water Design Manual.

On large projects, involving up to 5% of the specific watershed in the Town, the Town may require that studies be undertaken to determine the cumulative impact on other downstream storm-water facilities in the specific watershed of the Town.

Site design feasibility. Storm water management practices for a site shall be chosen based on the physical conditions of the site. Factors that should be considered include: topography, maximum drainage area, depth to water table, soils, slopes, terrain, head, location in relation to environmentally sensitive features or ultra-urban areas.

Applicants shall consult the current state storm water design manual for guidance on the factors that determine site design feasibility when selecting a storm water management practice.

Pretreatment requirements. Every storm water treatment practice shall have an acceptable form of water quality pretreatment, in accordance with the pretreatment requirements found in the current state storm water design manual. Certain storm water treatment practices, as specified in said manual are prohibited even with pretreatment in the following circumstances: storm water generated from highly contaminated source areas know as “hotspots,” storm water carried in a conveyance system that also carries contaminated non-storm water discharges, storm water managed in a designated groundwater recharge area, or certain geologic conditions that prohibit the proper pretreatment of storm water.