

Stormwater Pollution from Construction Sites

Overview:

Stormwater is rainwater, surface runoff, snowmelt, and drainage. Stormwater Management is the use of structural or nonstructural practices that are designed to reduce stormwater runoff and mitigate its adverse impacts on property, natural resources and the environment.

Heated stormwater runoff flows into receiving waters where it mixes and can potentially increase the base temperature of surface water in harbors, lakes, and streams. The amount of heat transferred and the degree of thermal pollution is of great importance for the ecological integrity of receiving waters such as Northport Harbor. The increase in thermal energy in stormwater runoff is a product of an increase in impervious cover (IC) of the surrounding area. Impervious covers like roads, parking lots, and sidewalks absorb and emit heat which creates air and surface temperatures that are significantly higher than those in rural areas. An increase in impervious covers also results in additional surface runoff. The combination of these phenomena creates a larger volume of runoff with increased temperatures.

Regarding erosion and sediment control, the Village of Northport has made findings of fact. One such finding is that clearing and grading during construction tends to increase soil erosion and add to the loss of native vegetation necessary for terrestrial and aquatic habitats. Additionally, the Village of Northport finds that land development activities and associated increases in site-impervious cover often alter the hydrologic response of local watersheds and increase stormwater runoff rates and volumes, flooding, stream channel erosion, or sediment transport and deposition. These findings along with others can be found in Chapter 255-22 of the Village of Northport Code.

The Village of Northport intends to achieve multiple objectives based on the findings mentioned above. For example, we intend to minimize increases in stormwater runoff from land development activities in order to reduce flooding, siltation, increases in stream temperature, and streambank erosion and maintain the integrity of Northport Harbor. Furthermore, the Village of Northport intends to reduce stormwater runoff rates and volumes, soil erosion and nonpoint source pollution, wherever possible, through stormwater management practices, and to ensure that these management practices are properly maintained and eliminate threats to public safety. These objectives along with others we intend to achieve can be found in Chapter 255-23 of the Village of Northport Code.

Construction Site Managers must adhere to the findings of fact and our objectives that we have laid out.

Pollutant	Source	Result
Sediments & Soil	Runoff from stockpiled materials (gravel, sand, concrete), vehicles and feet tracking onto right of way	Sediments cover valuable habitat; toxins adhere to sediment and poison aquatic life in local bodies of water
Nutrients	Decaying leaves and vegetation, fertilizers, food waste and detergents	Increased growth of algae leads to a decrease in oxygen levels for fish
Oil & Grease	Leaking automobiles and construction machinery	Harms wildlife and vegetation, leaves a toxic sheen
Metals	Batteries, brake pads, corrosion, paint and machinery	Toxic to aquatic wildlife
Garbage & Debris	Construction debris, leaking dumpsters, careless dumping, food waste	May contain oxygen-depleting or toxic substances

Construction Site Erosion Concerns

- Sediments (sand, silt, clay) are the most common pollutants in stormwater runoff
- Construction site erosion is a significant source of sediments
- When vegetation is removed, soils are exposed thus allowing erosion to begin
- Erosion increases on long, steep slopes and on sites with exposed clay and silt
- Eroded sediments can affect nearby properties and clog catch basins and storm drains
- Sediments that enter waterways block sunlight, limit plant growth, and harm aquatic life
- Sediments can remove oxygen from water making it difficult for fish to breathe
- Other pollutants such as nutrients, bacteria, and metals can attach to sediments and are carried into the waterway

Education

- Educate employees and subcontractors on potential dangers to humans and the environment from spills and leaks
- Hold meetings to discuss and reinforce appropriate disposal procedures

- Instruct employees and subcontractors on identification of solid waste and hazardous waste
- Require that employees and subcontractors follow solid waste handling and storage procedures
- Make sure that hazardous waste is collected, removed, and disposed of only at authorized disposal areas
- Educate employees and subcontractors in identification of contaminated soil and on contaminated soil handling, containment and disposal procedures
- Educate employees, subcontractors, and suppliers on sanitary and septic waste storage and disposal procedures
- Instruct employees, subcontractors, and suppliers in identification of sanitary/septic waste
- Educate employees and subcontractors on liquid waste generating activities, and liquid waste storage and disposal procedures
- Instruct employees, subcontractors, and suppliers that it is unacceptable for any liquid waste to enter any storm drainage structure, waterway, or receiving water