LAND DISTURBANCE

NATURAL LAND DISTURBANCE
Land erosion takes place by the wearing away of the surface of the land by the action of the wind, water, snow, ice and gravity. Natural or geologic erosion occurs over a long period of time, resulting in the wearing away of mountains and the building of flood plains to create the topography we know today.

ACCELERATED LAND DISTURBANCE
Accelerated land erosion is primarily the result of the influence of human activities on the environment such as from construction-related activities. Once soil is disturbed, the unprotected soil is then subject to rapid erosion by the action of wind, rain, snow and ice.

STORMWATER: EROSION AND SEDIMENT ACTION
As noted above, land erosion can be caused by water, wind, ice and gravity. The focus of this fact sheet is directed at erosion caused by stormwater runoff. Rain drops initiate the process of erosion. Initially, individual soil particles are disturbed and transported by the splashing water. This action is typically followed by sheet erosion, which is the removal of a thin layer of soil from the land surface caused by shallow sheets of water running off the land. In some cases, rill erosion develops, as the shallow surface flows begin to concentrate in low spots and irregularities of the land. Gully erosion occurs when the flows in the rills come together to form larger channels. Channel erosion is the result of a larger volume of runoff and greater velocity in the drainage channels causing movement of the stream bed and bank materials. When rainfall events occur near shorelines, shoreline erosion may occur from the surging of the stormwater runoff onto the coast line and estuarine shorelines.
FACTORS INFLUENCING EROSION POTENTIAL
The erosion potential of any area is determined by four principal factors: soil characteristics, vegetative cover, topography and rainfall intensity. The erosion potential is higher from fine sands and silts than from gravel and course sands. Vegetative cover will reduce erosion and greater erosion will occur from higher intensity, frequent and longer duration rainfall events.

LAND USE CHANGES DEVELOPMENT
Reshaping of the land during construction or development alters the soil cover, often detrimentally affecting on-site drainage and stormwater runoff patterns. Construction-related activities affect erosion by:

- Removing the existing vegetative cover
- Prolonging the exposure of unprotected disturbed areas
- Increasing the impervious surfaces by compaction during construction
- Modifying drainage areas and topography of the land

PHASE II STORMWATER REGULATIONS
Phase II stormwater regulations deal with erosion and stormwater runoff from construction sites disturbing over one acre of soil. Under these regulations, a construction permit and a stormwater pollution prevention plan must be developed and submitted to the State for approval, before any construction can be initiated if the project will disturb more than one acre of soil. In addition all construction activities must be inspected by a licensed professional to ensure that the construction complies with the approved stormwater pollution prevention plan.