Green Infrastructure

As our population has grown, natural landscapes, prairies and forests have been replaced by agricultural land and sprawling cities. Stormwater, once easily absorbed into the ground, now flows as runoff across pavement and other hard surfaces. Stormwater runoff is comprised of water from rain or snowmelt that flows over hard, non-absorbent surfaces, also known as impervious surfaces, like driveways, roofs, sidewalks, and streets. Stormwater gains speed as it travels across these impervious surfaces. The increased speed and volume of runoff reaching the banks of a water body causes erosion. Stormwater picks up chemicals, nutrients, debris, sediment, and other pollutants as it travels across the pavement to the storm inlet. Heat from roadways and other impervious surfaces increases the temperature of stormwater, causing a rise in the temperature of streams, rivers, and lakes. Untreated stormwater runoff can be harmful to the water bodies we use for swimming, fishing, and as a source of drinking water.

To counter the effects of excessive stormwater runoff, we can manage stormwater with green infrastructure. Green Infrastructure involves the use of soils, plants, and land features that mimic natural processes to absorb the impact of stormwater where it first falls. This reduces the volume of runoff and pollutants entering our waterways. Using Green Infrastructure to manage stormwater, we can prevent untreated water from negatively impacting our environment. Common strategies include the collection and conveyance of stormwater runoff from roofs, driveways and other hard surfaces so that rain is absorbed into the ground through deep-rooted, drought-resistant native plants, or so it can be stored for re-use.

Incorporating Green Infrastructure into the landscape of your own property offers many benefits, including water conservation and aesthetic appeal.

Soil Conditioning

Description:

Soil conditioning is a post-construction practice designed to reduce runoff and increase infiltration by improving soil structure and decreasing compaction of the disturbed areas. It is most applicable for areas where turf grass, landscape beds or native prairies are planted.

Land development and construction practices can create compacted soil and expose pollutants to stormwater. When harsh chemicals and fertilizers drain from lawns of compacted soil, they enter waterways – killing fish, destroying wildlife habitats, and contaminating the water people use for drinking, boating, and swimming. By implementing soil conditioning, soil compaction is reduced and increases are achieved in both organic material and plant performance.

Considerations:

- To properly condition disturbed or compacted soil, a two-inch layer of compost should be tilled to a depth of six inches of existing soil.
- Compost should be derived from plant material, free of viable weed seeds and fully decomposed.
- Soil conditioning should be implemented at least ten feet from the foundation of a building and outside the drip line of a tree (to avoid damaging the root system).
- Soil conditioning is intended to absorb the first half-inch of rainfall prior to any runoff occurring.
- Soil conditioning is not recommended on slopes greater than 10%.
- Soil conditioning should not be used where groundwater levels are shallow (less than 1.5 feet from the surface.
- Ensure site conditions are dry prior to beginning soil conditioning.

To learn more about this and other Green Infrastructure strategies, visit:

www.OmahaStormwater.org

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