Except from MINUTES
Thursday - December 6, 2007 - 7:00 p.m.
9.0 NEW BUSINESS

9.1 Mike Warner requested the definition for green infrastructure provided in the packet for SMC's use in watershed planning be approved. SMC's definition leans towards the USEPA definition. That organization provides grant funds and this definition will help in SMC's grant opportunities. Anne Flanigan Bassi move the definition be approved as presented. Steve Carlson seconded. Motion passed unanimously by Voice Vote.

LAKE COUNTY

STORMWATER MANAGEMENT COMMISSION

MEMO

To: Stormwater Management Commissioners

From: Mike Warner, Patty Werner

Subject: Green Infrastructure Definition

ACTION REQUESTED: APPROVAL

Staff is providing SMC Commissioners with the following information on "Green Infrastructure" and requests that the Commission approve the definition for green infrastructure provided below for SMC's use in watershed planning.

What is Green Infrastructure?

Green infrastructure represents an emerging approach to stormwater management that is cost-effective, sustainable, and environmentally friendly. Green infrastructure techniques utilize natural systems, or engineered systems that mimic natural landscapes, to capture, cleanse and reduce stormwater runoff. Green infrastructure is an adaptable term used to describe an array of products, technologies, and practices that use natural systems, or engineered systems that mimic natural processes, to enhance overall environmental quality and provide utility services. As a general principal, Green Infrastructure techniques use soils and vegetation to infiltrate, evapotranspirate, and/or recycle stormwater runoff.

Green Infrastructure is a stormwater management approach that saves money, supports sustainability, and more efficiently uses limited financial and natural resources. It is achieved by capturing raindrops where they fall reducing runoff volumes, and recharging groundwater supplies.

Why is Green Infrastructure Important?

As detailed below, when used as components of a stormwater management system, Green Infrastructure practices can produce a variety of environmental benefits. In addition to effectively retaining and infiltrating rainfall, these technologies can simultaneously help filter air pollutants, reduce energy demands, mitigate urban heat islands, and sequester carbon at the same time providing communities with aesthetic and natural resource benefits.

BENEFITS OF GREEN INFRASTRUCTURE

Green Infrastructure is associated with a variety of environmental, economic, and human health benefits, many of which go hand-in-hand with one another. The benefits of green infrastructure are particularly accentuated in urban and suburban areas where green space is limited and environmental damage is more extensive. Green infrastructure benefits include:

- **Reduced and Delayed Stormwater Runoff Volumes** - Green infrastructure reduces stormwater runoff volumes and reduces peak flows by utilizing the natural retention and absorption capabilities of vegetation and soils. By increasing the amount of pervious ground cover, green infrastructure techniques increase stormwater infiltration rates, thereby reducing the volume of runoff entering our combined or separate sewer systems, and ultimately our lakes, rivers, and streams.
- **Enhanced Groundwater Recharge** - The natural infiltration capabilities of green infrastructure technologies can improve the rate at which groundwater aquifers are 'recharged' or replenished. This is significant because groundwater provides about 40% of the water needed to maintain normal base flow rates in our rivers and streams. Enhanced groundwater recharge can also boost the supply of drinking water for private and public uses.
- **Stormwater Pollutant Reductions** - Stormwater runoff is a major source of water pollution in the United States. Green Infrastructure techniques infiltrate runoff close to its source and help prevent pollutants from being transported to nearby surface waters. Once runoff is infiltrated into soils, plants and microbes can naturally filter and break down many common pollutants found in stormwater.
- **Reduced Sewer Overflow Events** - Utilizing the natural retention and infiltration capabilities of plants and soils, green infrastructure limits the frequency of sewer overflow events by reducing runoff volumes and by delaying stormwater discharges.
- **Increased Carbon Sequestration** - The plants and soils that are part of the green infrastructure approach serve as sources of carbon sequestration, where carbon dioxide is captured and removed from the atmosphere via photosynthesis and other natural processes.
- **Urban Heat Island Mitigation and Reduced Energy Demands** - Urban heat islands form as cities replace natural land cover with dense concentrations of pavement, buildings, and other surfaces that absorb and retain heat. The displacement of trees and vegetation minimizes their natural cooling effects. Additionally, tall buildings and narrow streets trap and concentrate waste heat from vehicles, factories, and air conditioners. By providing increased amounts of urban green space and vegetation, green infrastructure can help mitigate the effects of urban heat islands and reduce energy demands. Trees, green roofs and other green infrastructure can also lower the demand for air conditioning energy, thereby decreasing emissions from power plants
- **Improved Air Quality** - Green infrastructure facilitates the incorporation of trees and vegetation in urban landscapes, which can contribute to improved air quality. Trees and vegetation absorb certain pollutants from the air through leaf uptake and contact removal. If widely planted throughout a community, trees and plants can even cool the air and slow the temperature-dependent reaction that forms ground-level ozone pollution (smog).
- **Additional Wildlife Habitat and Recreational Space** - Greenways, parks, urban forests, wetlands, and vegetated swales are all forms of green infrastructure that provide increased access to recreational space and wildlife habitat.
- **Improved Human Health** - An increasing number of studies suggest that vegetation and green space - two key components of green infrastructure - can have a positive impact on human health. Recent research has linked the presence of trees, plants, and green space to reduced levels of inner-city crime and violence, a stronger sense of community, improved academic performance, and even reductions in the symptoms associated with attention deficit and hyperactivity disorders.
- **Increased Land Values** - A number of case studies suggest that green infrastructure can increase surrounding property values.

PROPOSED SMC DEFINITION OF GREEN INFRASTRUCTURE

On the local scale, municipal or neighborhood, green infrastructure consists of site-specific best management practices (such as naturalized detention facilities, vegetated swales, porous pavements, rain gardens and green roofs) that are designed to maintain natural hydrologic functions by absorbing and infiltrating precipitation where it falls.

On the regional scale, green infrastructure consists of the interconnected network of open spaces and natural areas (such as forested areas, floodplains and wetlands, greenways, parks and forest preserves) that mitigate stormwater runoff, naturally recharge aquifers, improve water quality while providing recreational opportunities and wildlife habitat.