

FINDING WATER THROUGH RAIN

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Abstract. This presentation introduces several conservation alternatives in rainwater and stormwater management. These concepts include greenway acquisition, wetlands, cisterns, pervious concrete, earthworks, native plants and green roofs. By implementing these practices Atlanta could use rainwater more efficiently.

This paper examines water use in the Metro North GA Water Planning District, which encompasses 14 counties. This paper 1) compares daily water use to an accumulation of 1-inch of rainwater within the district, 2) describes the cost of treating stormwater runoff from impervious surfaces, and 3) loss of groundwater recharge due to the presence of impervious surface (Figure 1. American River).

The alternatives presented here evolved from research promoted by USGBC's Leadership in Energy and Environmental Design LEED accreditation process. The concepts include forgotten knowledge from thousands of years ago (e.g. cisterns, green roofs, and earthworks) and those only a few decades old (e.g. pervious concrete, wetlands replication, bio-swales). Although these methods are sometimes initially more costly, when properly installed and maintained, they have a life-cycle-cost less than today's traditional systems of paving and piping stormwater.

By implementing simple and natural concepts in rainwater and stormwater management, water can be cleaned, harvested, and used in an efficient way; thus, reducing the financial burden and environmental problems created in the past century.

Specific alternatives to be presented include:

- Loss of pervious land
- The cost of this loss
- The problems with traditional infrastructure
- New ways of management.
- Greenway Acquisition: Purchase and restoration of native ecosystems primarily along streams
- Small Ponds and Wetlands: Cisterns: Onsite storage of water for onsite use
- Pervious Concrete: Allows stormwater runoff to be treated and then returned to the ground
- Contouring land through Earthworks: Introducing basins and swales to keep the water on the land longer for plants and groundwater recharge.
- Native Plants: Using native plants for diversity and natural water use.
- Green Roofs: Promoting Green Roofs for stormwater management, reducing the heat island effect and increasing insulation

References:

American Rivers, Natural Resources Defense Council and Smart Growth America, Report

Landscaping with Native Plants Fact Sheet

<http://www.epa.gov/greenacres/nativeplants/factsht.html#Native%20Plant>

Metro North GA Water Planning District 5 year update for 2008, Chattahoochee Basin Advisory Committee meetings, Metcalf & Eddy | AECOM

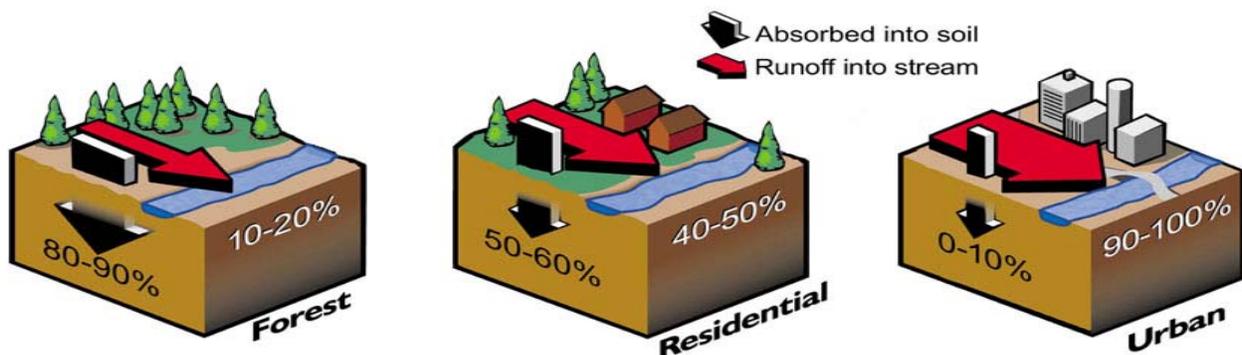


Figure 1.1-2 Changes in Hydrology and Runoff Due to Development
Based on Marsh, 1983. Graphic courtesy of Atlanta Journal-Constitution