Washington Township Master Plan

Stormwater Management Element

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(The original of this report has been signed and sealed in accordance with the law

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I. Stormwater Management

Pursuant to New Jersey MLUL (ref. NJSA C.40:55D-93):

> Every municipality in the State shall prepare a stormwater management plan and a storm water control ordinance or ordinances to implement said plan.

Accordingly, it is recommended that the Township adopt a Municipal Stormwater Management Plan/Ordinance based upon the following principles as proposed by the Township's Environmental Engineer, Rich Fini, PE:

A. Mimic natural stormwater behavior;

B. Minimize disturbance of the site and retain natural features that perform stormwater functions (i.e. retain and protect natural buffers, not permitting the reduction of required setbacks to wetland buffers, etc.);

C. Minimize impervious surfaces (i.e. specification of maximum impervious lot coverage within the Township Ordinance, rather than simply building coverage limitations, etc.);

D. Disconnect impervious surfaces to provide opportunities for infiltration;

E. Use structural stormwater management facilities only in conjunction with non-structural practices -- referred to as a treatment train (ref. ANJEC -- Municipal options for Stormwater Management as included within this report).

Furthermore, NJDEP -- Stormwater Management, including Best Management Practices (BMP) should be implemented early into the planning and development process. Non-structural BMP's should be given priority over structural BMP's (ref. Revised Manual for New Jersey; Best Management Practices for Control of Nonpoint Source Pollution from Stormwater (dated 4 January 2004). Additionally, the Stormwater Management rules, N.J.A.C. 7:8 specify stormwater management standards that are mandatory for new major development.

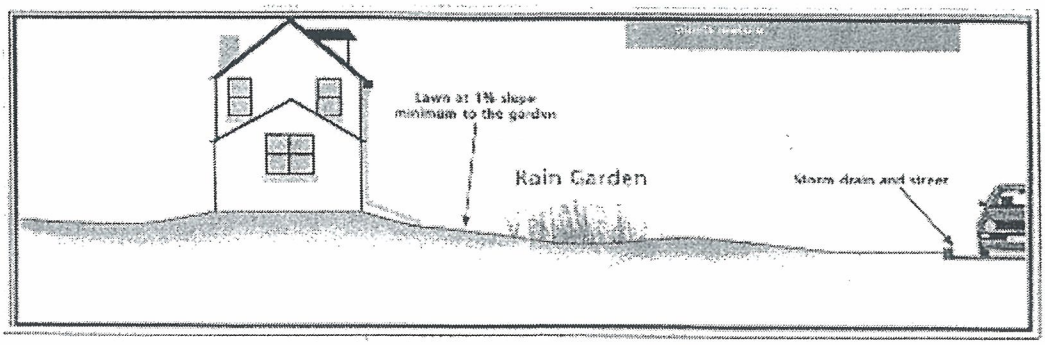
Low-Impact Development Design Strategies should be encouraged and implemented tot the extent practical for new site plan and subdivision designs. Designs should include minimization of stormwater runoff by use of interception, infiltration and depression storage methods, minimization of impervious surfaces, conservation of natural features -- buffers, open space, etc., and pollution prevention measures. Low-impact development hydrologic concepts such as the distributed control approach, hydrologically functional landscape, and integrated management practices should be used vs. conventional stormwater management concepts -- end of pipe control (ref. Low-Impact Development Design Strategies, Prince George's County, MD, Maryland Department of Environmental Resources, January 2000).

An important goal of the revised stormwater management guidelines is improved recharge into the acquifers. Via the use of the noted methods, detached basins on individual sites may see the clean recharge from rooftop drains separated appropriately from recharge that must be filtered prior to infiltration. The layout of basins should be natural/meandering designs that are appropriately landscaped for both aesthetics and functionality -- the inclusion of riparian and non-riparian vegetation is essential to water cleansing prior to infiltration. Furthermore, the implementation of bio-swales in conjunction with basins will provide for improved infiltration.

II. Residential Improvements to Stormwater Management

One procedure that can be used by an individual resident or a group thereof is Rain Gardens -- a household way to improve water quality within the community.

Rain gardens are just what they sound like - gardens that soak up rainwater, mainly from your roof, but also from your driveway and lawn. They are landscaped areas planted with wild flowers and other native vegetation to replace areas of lawn. The gardens fill with a few inches of water and allow the water to slowly filter into the ground rather than running off to storm drains. Compared to a patch of conventional lawn, a rain garden allows about 30 percent more water to soak into the ground. Holding back the runoff helps prevent pollutants such as fertilizers from washing off a resident's yard, into storm sewers, and eventually into nearby streams and lakes. By reducing the amount of water that enters the local storm drain systems, rain gardens can also reduce the chances for local flooding, as well as bank and shoreline damage where storm drains empty into streams and lakes. People in many parts of the country are starting to build rain gardens in their yards and promoting their use in other locations, such as neighborhood parks. An individual can help in their own yard by simply building one or more rain gardens to collect runoff from the roof. Rainwater can sometimes be collected from driveways or lawns by locating a rain garden in a low spot where the water naturally drains.



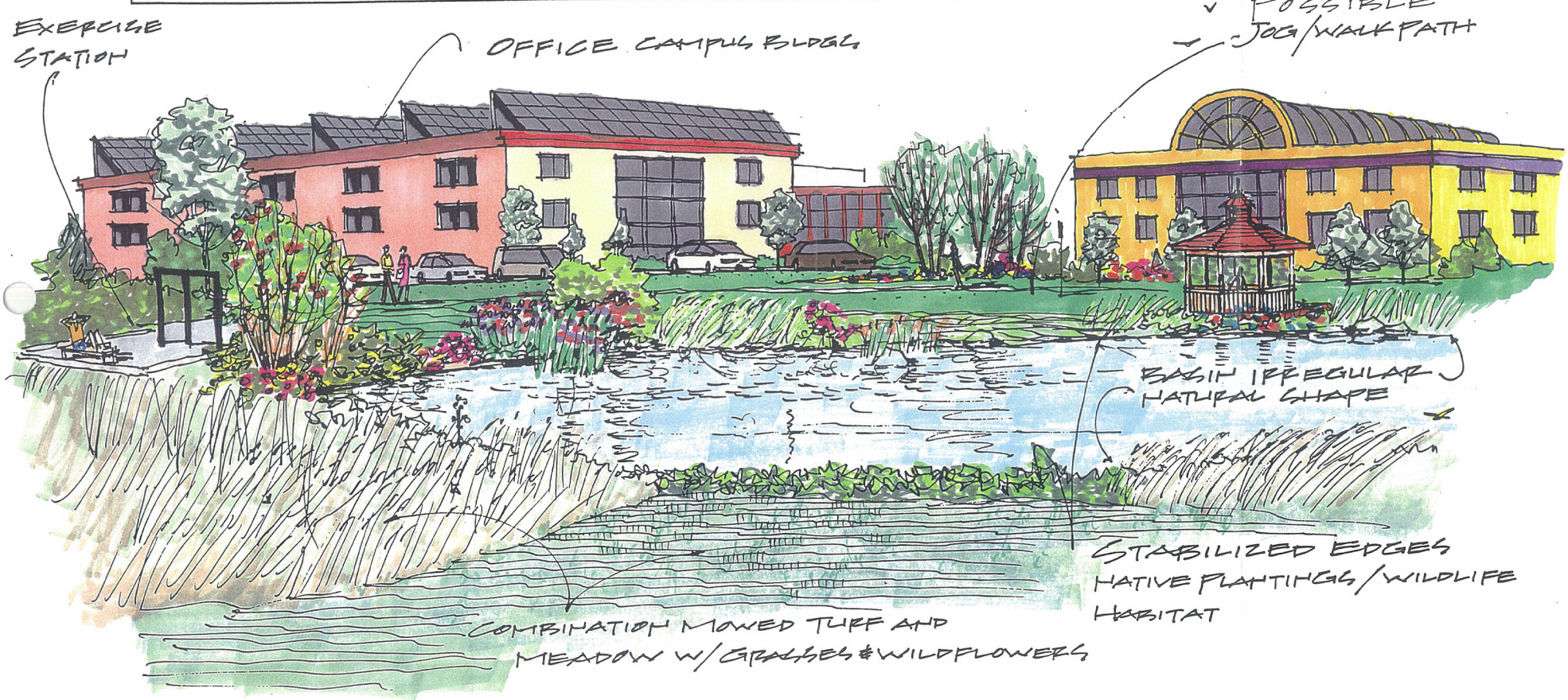
Source: Controlling Urban Runoff (Washington DC Council of Governments)

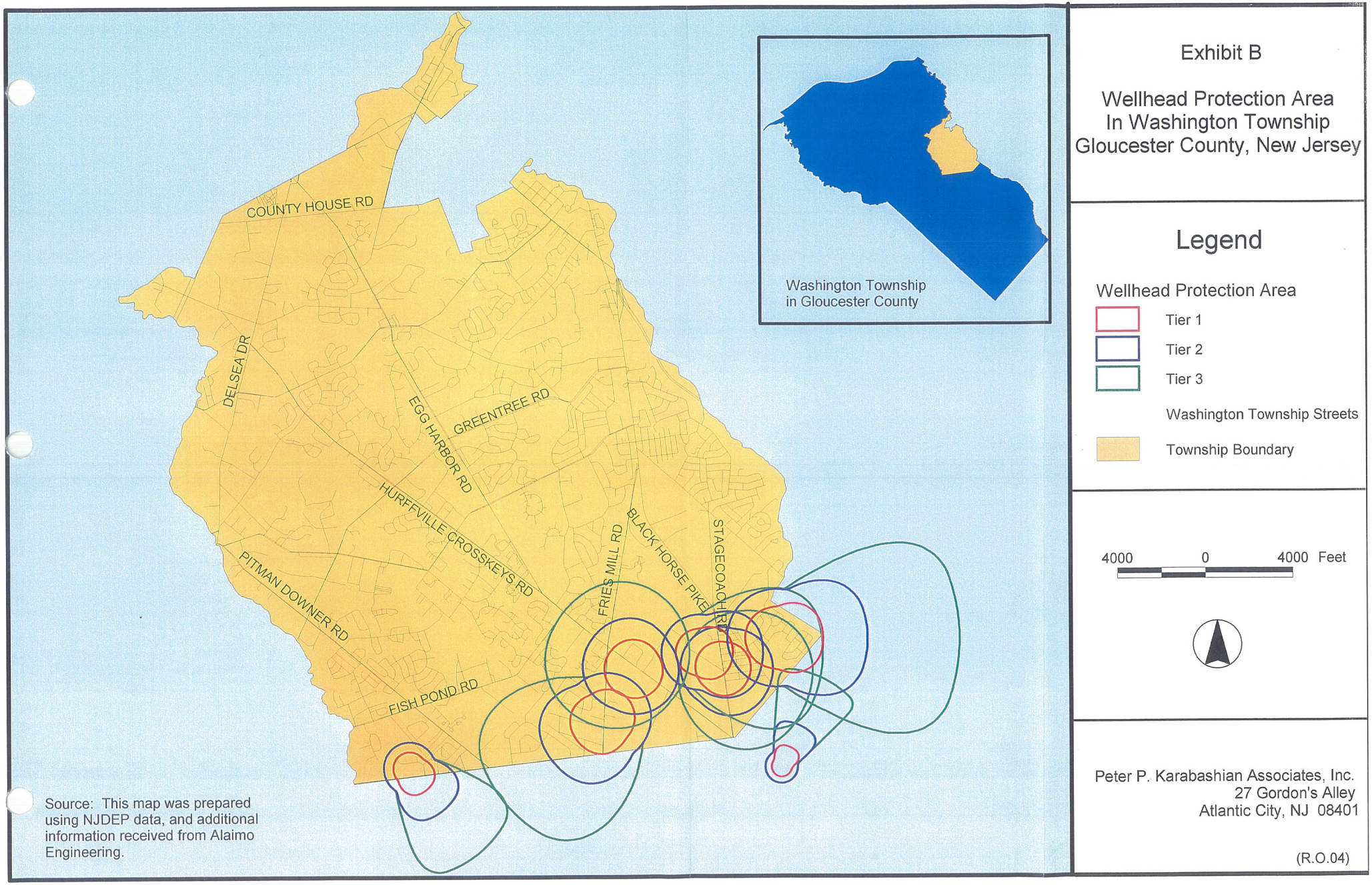
III. Summary

The utilization of the aforementioned procedures will result in the creation of improved stormwater basins and cleaner water for future generations. The protection of the Township's groundwater supplies is essential to an increase in the quality of life for all residents. An improved Stormwater Management Plan makes sense at this time, especially given the recent passage of the Wellhead Protection Ordinance in August 2002.

ILLUSTRATION "NATURALIZED STORMWATER RETENTION

TYPICAL OFFICE CAMPUS 1/03




COUNTY HOUSE RD
DELSEA DR
EGG HARBOR RD
GREENTREE RD
HURFFVILLE CROSSKEYS RD
PITMAN DOWNER RD
FISH POND RD
FRIES MILL RD
BLACK HORSE PIKE
STAGECOACH RD
Washington Township
in Gloucester County
Exhibit B
Wellhead Protection Area
In Washington Township
Gloucester County, New Jersey
Legend
Wellhead Protection Area
Tier 1
Tier 2
Tier 3
Washington Township Streets
Township Boundary
4000 0 4000 Feet
Source: This map was prepared using NJDEP data, and additional information received from Alaimo Engineering.
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