SCIENCE AND ENVIRONMENT COUNCIL
OF SARASOTA COUNTY

WATER PRIORITIES & NEXT STEPS
SEC WATERSHED LEADERSHIP WORKSHOP
September 6, 2007

PRIORITY 1: LOW IMPACT DESIGN AND DEVLOPMENT STANDARDS AND INCENTIVES

BACKGROUND:

The removal of barriers to the implementation of "low impact development" standards was identified as the top priority. Low Impact Development (LID) techniques typically involve reducing stormwater runoff close to its potential source (i.e. where it falls from the sky) and through natural processes (i.e. vegetation uptake through evapotranspiration and aquifer recharge through soil infiltration). Examples of LID techniques include bio-retention swales and medians, pervious concrete, native landscaping, green roofs, and stormwater recycling.

Low Impact Development should not be confused with Low Density Development. In fact, the highest application for LID techniques may be in compact urban forms where land values are significant. This could also include redevelopment in urban areas that are typically located closest to the bays and estuaries and in many cases were originally developed prior to any stormwater regulations. As a result, the area being redeveloped is an opportunity to improve water quality. However, this desired outcome must be weighed against other desired outcomes to maximize the use of some of the most expensive land as well as to maximize density in areas that are typically already served by public infrastructure. Incorporating LID strategies into the landscape of the urban environment requires a rethinking of stormwater management.

In addition, infill development and even the "village" development form anticipated under Sarasota County's 2050 Plan may benefit from LID strategies and techniques as an alternative or in addition to standard stormwater management designs such as stormwater management ponds.

To date, one of the primary barriers to implementation is that regulatory agencies are not willing to give stormwater credits for LID. Therefore, there is little or no incentive to consider their use in current stormwater design.

STATUS OF LID IMPLEMENTATION:

LID is not in not currently common practice primarily because development trends over the past 20 years have been primarily suburban greenfield development and master planned communities where land costs have typically not been high enough to financially inhibit land set asides for stormwater management systems, particularly lakes. In addition, this form of development typically requires fill for its footprint which is typically accommodated with on-site stormwater lake excavation. The resulting "lake-front" lots are then beneficially marketed.

However, research is indicating that the presumptive criteria established and widely utilized to mitigate potential water quality impacts from this form of development may not be adequate for some pollutants such as nitrogen. In addition, current regulations do not address the increase in runoff volumes associated with suburban and urban development stormwater design. Therefore, there has been an increasing concern from regulatory and watershed management interests that adjustments to the current stormwater treatment design criteria and philosophy are warranted to meet State water quality goals. The mandated Total Maximum Daily Load (TMDL) program that is being administered by both EPA and FDEP to identify and correct existing surface water quality problems will also play a significant role in this evolution of surface water quality management.

In recognition of this evolution, the State of Florida through the Florida Department of Environmental Protection (FDEP) has been charged with the administering the TMDL program pursuant to the *1999 Florida Watershed Protection Act*. FDEP is also in the process of re-writing the State Stormwater Rule, which is expected to promote LID techniques as necessary to address deficiencies in the effectiveness of current practices and the TMDL program. Once approved, the new State Stormwater Rule will be incorporated into the rules of all of the State water management districts.

From a local standpoint, Sarasota County Comprehensive Plan Policy 2.3.2.2.e. requires that:

By 2007, Sarasota County shall provide design standards for low impact design (LID) measures to mitigate the effect of impervious surfaces and stormwater pollutants on increased runoff volumes.

From an academic standpoint, the Stormwater Academy at the University of Central Florida is a leader in LID research and demonstration (pervious concrete, green roof, stormwater recycling, etc.). Much of the research being conducted at UCF is specific to the Florida climate and hydrologic conditions and has been appropriately factored into the new State Stormwater Rule.

NEXT STEPS:

Challenge 1: The implementation of new and different methods to address stormwater quality will be a challenge because they are **new and different**. Therefore, policy makers, regulators, practitioners (i.e. engineers, landscape architects, planners), contractors, and developer organizations will all need to be engaged and work together. It will also be important to highlight early success stories in terms of cost effectiveness, pollutant removal efficiency, and even other socioeconomic benefits. These early successes will likely be the most significant milestone since duplication of success is a strength of all parties indentified above, but taking a chance on something new or different requires both leadership and risk.

Recommendation: SEC members should consider implementing demonstration LID techniques and/or support fellow members that provide demonstration projects. The new Florida House Learning Center site is considering such LID demonstrations.

Challenge 2: There are several **legitimate regulatory issues** that will need to be addressed as a pre-requisite to the implementation of LID practices. For example, how will the vegetation on green roofs be maintained? Or what happens if pervious pavement becomes clogged? These and other legitimate regulatory issues are typical of those that had to be addressed for current stormwater management practices but will require their own unique design, operation, and maintenance guidelines.

Recommendation: Regulators, practitioners, contractors, developers and maintenance entities should be convened to identify and develop guidelines for design, operation, and maintenance of LID techniques. Sarasota County is proposing a forum in late October and early November of 2007 to begin this type of implementing dialogue. Care should be taken to assure that all affected parties are represented for the specific dialogue. The SEC should endorse this initiative and consider sending a representative to the forum.

Challenge 3: There will also likely be legitimate and perceived concerns from the development community relative to the **cost** of LID techniques. In addition, the inability to obtain **credit** for LID to date from regulatory agencies has been a significant obstacle. It is anticipated that implementation of the new State Stormwater Rule will address the LID credit issue. Fortunately, there are also several innovative developers and organizations within the region that are receptive and even desire to implement LID. In fact, several of these developers and entities are interested in engaging regulatory and academic leadership in the State to work through outstanding credit and costs concerns. The value to all parties of such a proactive engagement for implementing LID cannot be undervalued.

Recommendation: The SEC should support this initiative and the leadership of these proactive and innovative developer organizations.

PRIORITY 2: REGIONAL CONSERVATION PLANNING / DEMAND MANAGEMENT

BACKGROUND:

Water conservation or demand management for both potable and non-potable water use has become more and more of a prominent strategy as the cost and awareness of the natural resource value of water has increased. Wasting natural resources is also contrary to the values and ethics of a sustainable community. The establishment of a "Water Conservation Ethic" and recognition of the true environmental and economic value of water throughout the region would go a long way towards establishing an effective demand management program.

Although the value of water conservation becomes particularly acute during the periodic natural droughts in southwest Florida, it is recognized that a permanent demand management strategy is the best way to affect desirable behavioral changes and promote sustainability values. Although droughts, like floods have been a constant part of Florida's history, the drought in early 2000's resulted in the 2004 Joint Statement of Commitment for the development and implementation of a statewide comprehensive program for public water supply. This Commitment was signed by FDEP, the Florida Public Service Commission, the Florida Rural Water Association, the Florida Section of the American Water Works Association, Florida Water Environment Association, and all 5 State Water Management Districts. In addition, Section 373.227, Florida Statutes, enacted

in 2004, directed the establishment of a comprehensive statewide water conservation program for public water supply. The mission of the resulting program, Conserve Florida Water (http://conservefloridawater.org/) is to develop collaborative relationships with related programs, and to collect, analyze, and make available reliable information and technical assistance to public water supply utilities and water managers for use in developing effective and efficient water conservation programs. The Peace River/Manasota Regional Water Supply Authority was involved in the formation of Conserve Florida Water through their involvement in the American Water Works Association, and the City of Venice has served as the medium-sized utility case study for Conserve Florida's Water Conservation Guide.

From a regional perspective, the Southwest Florida Water Management (SWFWMD) promotes water conservation through education, water shortage restrictions, and water use permit conditions. While these strategies are effective, water restrictions are often indirect methods for controlling unnecessary water use. For example, limiting watering to specific days of the week may make regulatory enforcement of restrictions easier. However, it can also lead to unnecessary watering because water users believe they need to take advantage of "their day" to water. Recently, the SWFWMD has also engaged in research with the University of Florida using rainfall and soil moisture sensor technologies for residential irrigation. These irrigation management technologies and many others for indoor (http://www.bracsystems.com/) and outdoor (http://www.treehugger.com/files/2007/08/driwater_time-release.php) water use could dramatically reduce the amount of water used for irrigation through increased irrigation efficiency and elimination of wasteful watering practices.

Locally, each utility in Sarasota County including the City of Longboat Key, the City of Sarasota, the City of Venice, the City of North Port, Englewood Water District and Sarasota County Government all have their own water conservation or demand management plans. Similarly, each utility within the PRMRWSA and the SWFWMD have their own water conservation plan. While there are unique conditions associated with each utility, there are also many common elements and all could greatly benefit from the sharing of, and a clearinghouse for, demand management strategies.

STATUS OF REGIONAL CONSERVATION PLANNING:

The current drought conditions highlight the continued need for a regional demand management plan. Conserve Florida Water has recently published two milestone documents: Long-Term Plan

(January 2007) and Water Conservation *Guide* (February 2007). The Long-Term Plan identified six core services in association with the University of Florida Water Institute:

- Host and refine the on-line water conservation program tool known as the Guide.
- Establish and develop a water conservation Library.
- Establish and refine an integrated Data Infrastructure.
- Provide Technical Assistance.
- Develop a Research Agenda/Program.
- Provide Outreach to users.

As previously indicated, the PRMRWSA was involved at the inception of Conserve Florida Water program. With the recent completion of Conserve Florida's Long-Term Plan and the Water Conservation Guide, the PRMRWSA has initiated discussions with the Conserve Florida Water to become a regional conduit and facilitator for both the member governments as well as the members of the water alliance. The PRMRWSA is also currently compiling and assimilating water conservation plans from each of its member governments and ultimately, the Alliance members.

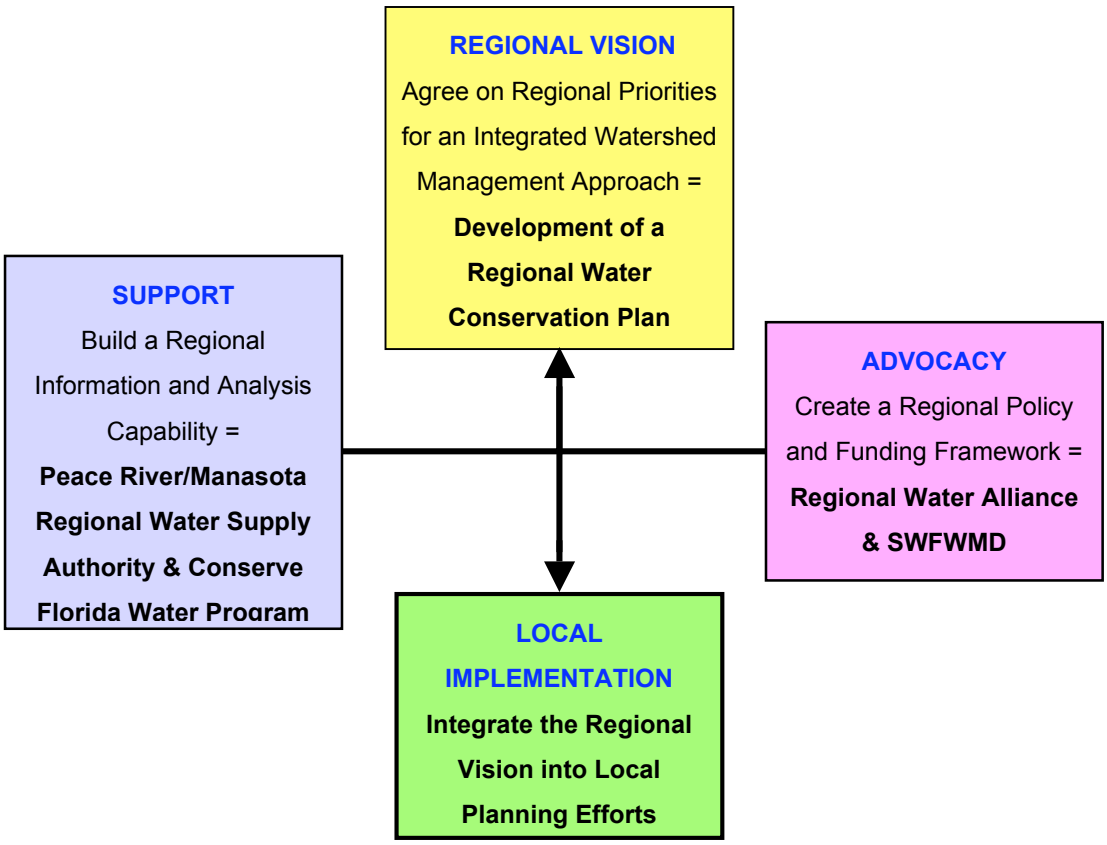
A second state water conservation initiative that has gained momentum in the St. Johns River Water Management District is the Florida Water Star program. This program targets new residential construction and is intended to provide water-efficient housing options and help prevent water leaks. It is established as a certification rating program based upon a tiered point system. Certification rating criteria includes landscaping, irrigation, and indoor uses (i.e. toilets, appliances, water heater, showers, etc.). The certification framework is similar to, and could potentially be incorporated in some fashion into the Florida Green Building Coalition (FGBC) certification framework with the assistance of involved stakeholders.

NEXT STEPS:

Challenge 1: Development of a regional demand management program needs to have the flexibility to reflect the uniqueness and common elements of each utility and/or alliance member in the region. Initially, there is clear value in the sharing of water conservation plans and integration into the Conserve Florida Water program. The PRMRWSA is in the process of compiling and assimilating regional member conservation plans, and engaging the Conserve Florida Water program towards a goal of conducting a demand management workshop for the regional alliance in early 2008.

Recommendation: SEC endorse the PRMRWSA demand management workshop initiative. As an outcome, minimum water conservation standards may be identified and SWFWMD could factor attainment of these minimum standards into pre-requisite water supply development funding approval. SWFWMD has similar pre-requisite funding requirements for minimum reclaimed wastewater reuse. An illustrative framework for this initiative is provided below and is based upon that presented in the SEC Watershed Leadership Consensus document.

Potential Road Map for a Regional Demand Management Program



Challenge 2: The SEC Regional Leadership members have suggested through the watershed leadership consensus document, that the cost effectiveness (in terms of $/mgd) of water conservation should be weighed against the cost of developing new water supplies. This is an intriguing concept and may have merit as a future water supply investment alternative. Although the SWFWMD has historically heralded water conservation as an alternative to water supply development, this issue is worthy of greater discussion and consideration.

Recommendation: The SEC engage the PRMRWSA to consider evaluating the cost effectiveness of water conservation as an alternative to water supply development. Preliminary indications from the PRMRWSA regarding this concept indicate that they recognize it has validity. However, there may be initial political obstacles beyond their control.

Challenge 3: The previous challenges and recommendations are intended to consider demand management primarily at a regional scale. However, a comprehensive approach requires local implementation by municipalities, developers, builders and the design community. The Florida Water Star certification program should be integrated into other new construction certification programs such as those used by the Florida Green Building Coalition and widely accepted by the local building industry. The success attained by the St. Johns River Water Management District with the Florida Water Star program could be used as a model. The involvement of stakeholders early on to gain their "buy-in" will be critical to ensure that realistic and effective standards are established.

Recommendation: The SEC should champion programs such as Conserve Florida Water and the Florida Water Star to local policy-makers including City and County Commissioners as well as local SWFWMD governing board members .

PRIORITY 3: TOTAL WATER INTEGRATION (Integrated Water and Watershed Management)

BACKGROUND:

A re-occurring theme throughout the SEC Watershed Leadership workshops has been the need to integrate water management programs and disciplines. So it is no surprise that the concept of total water integration followed by the related "Developing partnerships with government

agencies to support new regulations so all the parts work together" were identified as top priorities in moving forward.

STATUS OF TOTAL WATER INTEGRATION:

Since the SEC consensus document, there is some very positive progress to report with respect to an integrated water and watershed management approach. First, Sarasota County Government developed the Dona Bay Watershed Management Plan to address the diversion of excess freshwater to the estuary and recapture historical watershed storage. This hydrologic restoration project resulted in both natural system benefits and a potential new alternative surface water supply. Another important aspect of the Dona Bay Watershed Plan is that it engaged the Charlotte Harbor National Estuary Program (CHNEP), SWFWMD and the PRMRWSA as partners and brought together many of the diverse water objectives of these agencies. The lesson learned was that by considering the entire watershed and by prioritizing natural systems, solutions were found that synergistically encompassed all water interests. Therefore natural system restoration, pollutant load reduction, flood protection, and new water supply sources can all be concurrently accomplished. The challenges and opportunities associated with the Dona Bay System are not unique to the region or the State of Florida.

Following this successful model, the PRMRWSA recently selected 3 potential regional water supply projects for evaluation based upon the potential for hydrologic restoration to address natural system and water supply needs concurrently. The Dona Bay project was one of the 3 projects selected. This could be an important turning point in total water integration on a regional basis.

NEXT STEPS:

Challenge 1: This priority represents probably the most significant challenge, because of all the regional interests involved. However, it is essential that the multi-disciplinary, watershed approach of considering hydrologic restoration as a means to both natural systems restoration and alternative water supply development be maintained to assure successful water resource outcomes. There are definitive examples where SCG, the CHNEP, and the PRMRWSA have adopted such an approach in their current efforts. But it is a long journey, and there is the potential for many diversions along the way.

Recommendation: SEC should endorse the multi-disciplinary, watershed approach for all water programs (i.e. natural system protection and restoration, pollutant load reduction, floodplain management, and water supply/demand development) and agencies. As time permits the SEC should follow regional water programs and advocate for this watershed approach. Two current regional programs that could benefit from this watershed approach include:

- The FDEP Total Maximum Daily Load's (TMDL) Basin Management Action Plans (i.e. watershed plans) to reduce pollutant loads to water bodies.
- The PRMRWSA's Water Source Feasibility Studies (through hydrologic restoration) for the Dona Bay, Shell/Prairie Creek, and Upper Myakka/Flatford Swamp systems.