

# CHASTAIN-SKILLMAN, INC.

ENGINEERS • ARCHITECTS • SCIENTISTS • SURVEYORS

## CONSULTANT'S UPDATE

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### WHY IS NPDES PERMITTING IMPORTANT TO YOUR PROJECT?

By David J. Molnar, PE



In June of 2008, four of the nation's largest home builders (Centex Homes, KB Home, Richmond American Homes, and Pulte Homes) paid settlements totaling \$4.3 million in response to accusations of violating stormwater runoff regulations of the Clean Water Act (CWA). Such stories are becoming more common as the country increases its focus on the quality of our water resources.

The CWA was established in 1972 as a federal law to prohibit water pollution. The law requires industrial, municipal, and other facilities to obtain a permit through the National Pollutant Discharge Elimina-

tion System (NPDES) for any point source that discharges directly into a surface water. A point source is a defined location of stormwater discharge such as a pipe or swale. The governing body that oversees the regulations is the United States Environmental Protection Agency (EPA). The EPA has authorized agencies in 46 of the states to issue permits directly to applicants. Florida is one of the states authorized to issue permits, and this program is administered by the Florida Department of Environmental Protection (FDEP).

One of the most common CWA violations is the failure to acquire a permit prior to construction, or never obtaining one at all.

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### IS VAPOR INTRUSION A CONCERN AT YOUR SITE?

By Dan T. Stump, CHMM



Vapor intrusion (VI) is defined as vapor phase migration of volatile organic and/or inorganic compounds into buildings from underlying contaminated ground water and/or soil. Vapor intrusion requires three components: a source of contamination with sufficient mass that contains volatile chemicals, a structure with the ability to accumulate volatilized chemicals at sufficient levels to cause a threatening environment to individuals, and a pathway from the source into a qualified structure (i.e. conductive soils and cracks in the building floor). For years, subsurface contamination investigations have primarily focused on the assessment

and remediation of contaminated soil and groundwater as a means of reducing or eliminating direct exposure routes, such as ingestion and dermal contact. Until recently, VI was not routinely considered in petroleum or hazardous waste investigations. So why is VI being considered now? First, there is a new regulatory awareness given several highly publicized sites in the western United States. Second, more recently employed site closure options, such as natural attenuation monitoring or engineering and institutional controls, may allow higher levels of contaminants to remain at the site than in the past. As such, there is a potential for ongoing exposure through VI at these locations.

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### EOHS NEWS

- CDC Addresses Swine Flu Questions at: [www.cdc.gov/swineflu/swineflu\\_you.htm](http://www.cdc.gov/swineflu/swineflu_you.htm)
- OSHA:
  - ♦ Jordan Barab, Senior Labor Advisor on health and safety issues for the US House Education and Labor Committee, has been selected to be the new Deputy Assistant Secretary for OSHA and Acting Assistant Secretary as of April 13, 2009.
  - ♦ Jordan Barab, OSHA's acting chief, has stated that the agency will cite the General Duty Clause for regulating Ergonomic Hazards.
  - ♦ OSHA publishes guidance on silica exposure in construction. The 72-page guidance document provides employers with a task-based approach to protecting construction workers. Breathing dust that contains crystalline silica can cause silicosis—a potentially deadly lung disease.

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Other violations include improper installation of soil erosion control measures (such as silt fence), failure to conduct weekly inspections and inspections within 24 hours of a one-half inch rain event, the discharge of pollutants other than stormwater, and failure to provide mud tracking for vehicles entering and exiting the project site.

In order to apply for coverage under the NPDES, a Stormwater Pollution Prevention Plan (SWPPP) must be developed. An SWPPP is a “living” document that must be kept current and on site at all times. If changes to the site’s stormwater system occur, or if the controls are found to be ineffective, the SWPPP must be amended.

The SWPPP will contain a site description, including a description of what is being constructed, the sequence of activities, estimates of the total project area and area to be disturbed, and existing data concerning the site. Existing data pertains to soil information, current discharge quality, latitude and longitude of each discharge point, and the name of receiving waters for each discharge point.

An SWPPP will also include a site map showing drainage patterns and existing slopes, and areas of soil disturbance, as well as areas not to be disturbed. It must also contain the location of structural and non-structural controls, the location of stabilization, the position of wetlands and surface waters, and the points of discharge to surface water or state surface waters.

The purpose of structural controls is to control the stormwater volume and peak discharge rates, as well as to reduce the level of pollutants in the discharge wa-

ter. Examples of structural controls are detention ponds, infiltration trenches, and treatment swales. Non-structural controls are installed at or near the sources of water pollutants to reduce the amount of pollutants entrained in the stormwater runoff. It is important to note that retention ponds should not be used to reduce sediment in stormwater runoff, as the silt from construction activities can severely diminish the infiltration properties of stormwater ponds. It is better to add a temporary treatment swale or pond prior to the discharge to the retention area.

Others topics that will be addressed in the SWPPP include disposal methods for waste material such as paints, cement wash-out, and other debris, the method of reducing tracking from trucks that enter or leave the site, and methods for minimizing construction dust. In those instances where fertilization is necessary, the application rates should also be included. It is important only to fertilize when necessary to establish vegetation. The SWPPP must also address the required frequency and methods for stormwater control maintenance. This helps to ensure that the systems will be effective.

Lastly, the SWPPP will contain a certification statement identifying the contractor responsible for each measure being implemented. The contractor must sign the certification statement before conducting any on-site activities.

At least seven days prior to construction, a permit application must be submitted to the FDEP. The application is called the Generic Permit for Stormwater Discharge from Large and Small Construction Activity Notice of Intent. Large construction activity is described

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All dewatering practices require approved filtering devices. This outlet has completely washed out



All sediment should be removed from filter cloth to allow for proper filtration



Silt fence must be trenched into the ground



This silt fence needs to be completely reinstalled and maintained



Illegal vehicular tracking of sediment onto public road



Inlet has no inlet protection. Protection must be installed and maintained during construction



Sediment laden stormwater discharging into stream

(VI—Continued from page 1)

So how is it determined if VI is a concern at your site? Initially, one would ask “why not collect and analyze air samples within the building?” This may be effective in structures with grossly contaminated atmospheric conditions utilizing portable detection devices (i.e. combustible gas meter, organic vapor analyzer, etc.) or laboratory analyses. However, in scenarios involving relatively low levels of volatilized chemicals that present a chronic long-term exposure, portable detection devices normally lack the range for positive identification. Additionally, laboratory analyses of air samples may lead to false positive results, as many of the same volatile chemicals present in contaminated soil or groundwater are also present in many commonly used commercial products (i.e., paints, glues, cleaners, construction materials). One alternative to direct sampling is to model potential VI based upon available soil and groundwater analytical results. However, this method is not recommended as the basis for determining the need for remediation or for assessing long-term exposure potential.

Currently, the Florida Department of Environmental Protection (FDEP) is conducting assessment activities on a number of petroleum- and dry cleaning-impacted sites across Florida to gauge the importance of the VI pathway in Florida, better understand which types of sites may be affected, and determine the level of background concentrations and variability that

are likely to be encountered. Ultimately, a decision will have to be made as to whether incorporation of the VI pathway into default values is warranted, or continued use of site-by-site assessment is more feasible.

Vapor intrusion of contaminants into structures has also increasingly become a concern as part of property transactions. While regulatory officials continue to evaluate how VI should be addressed in Florida's cleanup programs, *ASTM E 2600-08 Standard Practice for Assessment of Vapor Intrusion in Structures on Property Involved in Real Estate Transactions* currently provides a relatively fast and inexpensive screening process to assess potential VI within indoor environments. This procedure was developed as a voluntary supplement to *ASTM E 1527-05 Standard Practice for Environment Site Assessments: Phase I Environmental Site Assessment Process*, with a goal of identifying whether or not a VI condition (VIC) exists or is likely to exist on the property. A VIC is defined as the presence or likely presence of any chemical of concern in the indoor air environment of existing or planned structures caused by the release of vapor from contaminated soil or groundwater, either on the property or within close proximity to the property, at a concentration that presents or may present an unacceptable health risk to occupants.

*ASTM E 2600-08* utilizes a relatively conservative four-tiered screening process. The first two tiers are designed to quickly

and inexpensively identify whether a VIC exists onsite. If the VIC is not screened out at Tier 1 or Tier 2, the process identifies three options: (1) proceed to Tier 3, which consists of a more site-specific and comprehensive investigation; (2) proceed directly to mitigation (Tier 4); or (3) conduct an additional investigation to achieve a higher level of assurance that a VIC exists. Currently, several changes are planned for the *ASTM E 2600-08* standard that should improve its practicality, clarity, and consistency. It is anticipated that the revised standard could be available by the end of 2009.

As previously mentioned, *ASTM E 2600-08* is a stand-alone voluntary supplement to, and does not replace, expand, or otherwise change *ASTM E 1527-05*. As such, VI is generally not included within the standard scope-of-services for a Phase I ESA. However, VI can be included as a supplement to Phase I and/or Phase II Environmental Site Assessments.

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## CSI IN THE COMMUNITY – EMPLOYEE SPOTLIGHT

One of CSI's best known administrative employees is our invaluable “Runner”, Brian Templin. Brian has delivered or picked up drawings, plans, specs and every other manner of important paperwork for CSI for over 20 years. Brian is not just a key employee for CSI, but an unsung hero in the community as well. In June of this year, Brian attended the graduation of a very special young man he has mentored for several years. In itself, that's not much of a story. Thousands of seniors graduated throughout Florida this month. However, this story has more layers. For over a year, on a monthly basis and with no fanfare, Brian has driven to Orlando to donate an entire day to interact with children at an orphanage. One of the several orphans to whom he is assigned, is a young man from Russia who was given up for adoption. Subsequently, his adoptive family in the United States gave him up to an orphanage because of a perceived “learning disability”. As others at CSI were recently sharing their children's graduation stories, Brian could barely hold back his pride as he told of attending the graduation of this same young man. With so many hurdles to overcome, he not only graduated, but graduated as class Valedictorian, receiving a minutes-long standing ovation as the students went wild over his outstanding speech! CSI proudly salutes one of its own as an integral member of our community.

If you're interested in finding out more about the Redeemed Examples Accountable for Life (REAL) orphan mentoring program, call Richey Ruiz at (407) 902-8730.

## THE STATUS OF AMERICAN RECOVERY AND REINVESTMENT ACT FUNDS FOR WATER AND WASTEWATER PROJECTS

By Steven A. Dutch, PE



On February 17 2009, the American Recovery and Reinvestment Act (ARRA) was signed by the President to create jobs through public works construction. Part of the Act authorized the

United States Environmental Protection Agency (EPA) to provide money for drinking water and clean water projects through State Revolving Fund (SRF) programs administered in Florida by the Florida Department of Environmental Protection (FDEP). Florida's allocated funds have included approximately \$132 million for clean water projects, and \$88 million for drinking water projects. Fifty percent of these funds must be obligated to loan forgiveness. The Act also requires that 20% of the money be dedicated to green projects.

In order to preclude the potential for monies to be withdrawn and allocated to another state, the FDEP is required to have all ARRA funds obligated and construction contracts signed by February 17, 2010. The FDEP's goal, however, is to have all loan agreements signed by September 23, 2009 and construction projects bid, awarded and contracts executed by October 1, 2009. This will enable the FDEP to be eligible to receive monies that may be reallocated from other programs.

To make sure the deadlines would be met; complete project submittals were due by April 29, 2009. These submittals included facilities plans, biddable plans and specs, and construction permits. The selection process for project eligibility follows existing rules and priority criteria set up for the SRF program. All projects that met the April 29, 2009 deadline were evaluated and scored on the basis of the documentation submitted in the application. Priority scores were reviewed by a committee of SRF staff, and the eligibility of local governments for principal forgiveness was determined based on existing statutory criteria and rules. Projects that had already been approved and placed on the SRF priority list had a distinct advantage to receive ARRA funding.

It should be noted that approved Environmental Information Documents were not required by the deadline, as these documents are advertised for comment by the

FDEP after the submittal date. Funding agreements, however, will not be prepared for the local governments to sign until the environmental comment period has passed. If there are comments, the agreement will be held until the comments are addressed. If the comments cannot be adequately addressed and the funding agreement is not executed by October 1, 2009, the project may be bypassed and the funds will be reallocated to other projects.

The funding limits for individual projects were set at \$10 million for clean water projects from combined ARRA and Clean Water SRF funds, and \$6 million for drinking water projects, with a maximum of \$3 million from the ARRA funds. For projects with estimated costs that exceed the funding limits, the local government must demonstrate that they have committed to funding the balance of the project costs.

The response to the ARRA program has been overwhelming. Requests for funding under the clean water portion of the program have totaled over \$1.5 billion with projects meeting the program requirements totaling \$317 million and, as of May 13, 2009, the FDEP has obligated nearly \$64 million of the clean water funds to ten local governments. This has included over \$29 million to green projects. An additional 15 local government projects have been recommended to receive a combined \$68 million, which would obligate the balance of the clean water funds. Other communities meeting the program requirements by the April 29, 2009 deadline are declared eligible to receive reallocated funds or new funds, if available. The reallocated funds will first be provided to incompletely funded projects on the approved list up to the maximum amount. Funds will then be given to the next eligible project on the priority list.

Requests for funding under the drinking water program have totaled approximately \$1 billion. Because the backlog of SRF requests for drinking water funds was small, and the priority ranking criteria included a public health component, projects meeting the drinking water program requirements totaled only \$152 million. Of those, through mid-May 22 projects totaling \$63 million have been funded and additional projects are being reviewed for eligibility. Priority is being given to those projects

documented to be addressing public health issues, supported by studies and lab results. The deadline for submittal of documentation for this aspect of the program is July 12, 2009, with the hearing for obligation of funds scheduled for August 12, 2009.

Projects receiving funds must agree to include the FDEP Supplementary Conditions, Davis-Bacon wage rate criteria, Disadvantage Business requirements, and a Buy-American Certification in the bid documents. With the large amount of imported construction materials, the Buy-American requirements have raised the largest concern. At present, if a piece of equipment is assembled in the United States, even if it has foreign manufactured components, it meets the Buy-American criteria. However, there has been particular concern regarding incidental items such as nuts, bolts, and other fasteners, fittings, tubing, gaskets and the like that are manufactured overseas. In response to these concerns, the EPA reviewed the impacts of using 100% American-made materials in all equipment and determined that the increase in costs and, more importantly, the delays in implementing of the construction projects, would be inconsistent with the public interest and the goals of the ARRA. Therefore, the EPA issued a nationwide waiver of the Buy-American requirements for *de minimus* incidental components to be incorporated into the project, not to exceed 5% of the total cost of materials.

If all requirements and schedules are met, the ARRA will bring over \$220 million in additional construction money to Florida for water and wastewater projects. In addition to creating jobs, this will improve the environment and public health for all Floridians.

(Sources: FDEP and EPA program memos and other documents)

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as the disturbance of five or more acres. Small construction activity is described as the disturbance of one or more acres of land. If the construction activity is less than one acre but part of a larger plan of development, the large construction application is still required. The permit application fees are \$200 for small construction activity, and \$400 for large construction activity.

Once an SWPPP has been developed, it is necessary to develop an inspection plan for the duration of the project. Inspectors should be certified through the FDEP Stormwater, Erosion, and Sedimentation Control Inspector Training Program. The inspector will check point discharges, disturbed areas that have not been stabilized, material storage, structural controls, and the location where

vehicles enter and exit the site. Inspections should be done once a week and within 24 hours of a one-half inch (or greater) rain event. The inspector will fill out an inspection report provided in the SWPPP. This report includes the names and signatures of the inspector and permittee, the date of inspection, rainfall data, major observations and actions taken, incidents of non-compliance, and a plan that identifies measures for non-stormwater discharge.

A Notice of Termination is required to be completed within 14 days of final stabilization. If the work is not complete within five years, the permittee must re-apply for coverage.

Without control measures, stormwater runoff from construction sites can contaminate our water resources. This runoff can carry pollutants such as concrete

washout, paints, pesticides, and other debris, as well as sediment that can build up over time and clog or redirect waterways. The proactive use of an SWPPP is a tool that reduces the need for more costly remedial activities.

For more information, please contact one of our offices or visit [www.dep.state.fl.us/water/stormwater/npdes/](http://www.dep.state.fl.us/water/stormwater/npdes/) and <http://cfpub.epa.gov/NPDES/>.

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## ANNOUNCEMENT

We're proud to announce that Wilson Bull has successfully completed all requirements and testing to earn the designation of Certified Industrial Hygienist. Wilson will continue to perform his client services including: Indoor Environmental Quality; Asbestos, Lead Based Paint and Radon Hazard Assessment; and more. Congratulations Wilson!

## GOPHER TORTOISE PERMITTING GUIDELINES—UPDATE

By Arthur "Art" D. Wade III, PWS



The Gopher Tortoise Permitting Guidelines (Guidelines) approved by the Fish and Wildlife Conservation Commission (FWC) in April 2008 are now in full effect. The Guidelines implement a new permitting structure, mitigation contribution system, tortoise relocation procedures, and Authorized Agent requirements, in addition to other important elements. Here are some of the key points:

**Incidental Takes** - Taking, pursuing, hunting, capturing, or killing of tortoises is no longer authorized except under special situations (all of which require a permit). This policy was implemented in July 2007, but is reiterated due to its significance. All tortoises must be relocated.

**Authorized Agents** - Authorized Agents are required for many gopher tortoise related activities, such as conducting tortoise surveys, capturing/marketing/transporting tortoises, and collecting blood samples. Agents are approved by the FWC and can conduct only those activities for which they are permitted.

**Permits** - The Standard Relocation, Interim Incidental Take, and Special Tortoise Relocation permits are no longer available and have been replaced by the Conservation, 10 or Fewer Burrows, and Temporary Exclusion permits. Each permit has its own requirements and a full discussion is beyond the scope of this article; however, a brief summary is given:

- Conservation Permit - Projects having 10 or more burrows on the development site. Requires on-site or off-site relocation.
- 10 or Fewer Burrows Permit - Projects having 10 or less burrows on the development site. Requires on-site or off-site relocation.
- Temporary Exclusion Permit - Used specifically for the installation of major linear utility lines. Tortoises are temporarily excluded from the site during construction and allowed to return after construction is complete.

The most current Guidelines can be viewed at: [myfwc.com/docs/LicensesPermits/PW\\_GopherTortoisePermitGuidelines.pdf](http://myfwc.com/docs/LicensesPermits/PW_GopherTortoisePermitGuidelines.pdf)

A summary of the Guidelines was prepared in a previous newsletter article: [www.chastainkillman.com/downloads/articles/Gophers.pdf](http://www.chastainkillman.com/downloads/articles/Gophers.pdf) Please keep in mind, the summary was posted prior to the April 2009 implementation and may contain some out-of-date information.

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## FLORIDA'S WATER QUALITY: PROGRESS BEING MADE...BILL TO COME

By James R. Chastain, Jr., PhD, PE, MPH



Much of Florida's allure is associated with the state's plentiful water bodies. The lakes, rivers and estuaries not only provide beautiful and relaxing landscapes, they also are widely used for fishing and recreational activities. At the heart of it, though, these water bodies are a key component of the state ecosystem that is increasingly bearing the burden of a growing state. As the population grows along with the concomitant increase in commercial and industrial activity, the water environment is showing signs of fatigue. Nutrient loading is a significant form of contamination that results from a wide variety of human activities and contributes to eutrophication of water bodies. This results in a decrease in water clarity, increase in algae growth and reduction in diversity of the fish population.

Control of nutrient loading is a complex undertaking. Federal and state regulations in the past have focused almost exclusively on managing water quality parameters of discharges from wastewater treatment facilities. This was a logical first step because wastewater systems present a concentrated waste stream and, left untreated, pose a significant environmental and public health hazard. While these regulations were a necessary action, it has been long recognized that wastewater sources comprise only a portion of the nutrient load. Wastewater plants are commonly referred to as "point sources" because they collect water and characteristically discharge out of a pipe (point) when treatment is complete. Many studies, though, have shown that non-point sources can contribute more nutrients than point sources. The term "non-point" source is used to indicate that the discharge event is not collected through a single pipe or point, but rather enters that water course through overland flow or a diffuse network of independent sources. Specific instances of this type of source loading could be from agricultural runoff, municipal stormwater systems, irrigation of residential lawns, ranchland runoff and the like. This makes management, treatment and regulation challenging.

Nonetheless, when Congress enacted the Clean Water Act amendments in 1987 and 1990, it mandated that the United States Environmental Protection Agency (EPA) promulgate regulations to address the issue of non-point sources. Incremental progress has been made over the years, but the fact that it has taken almost 20 years to develop the framework and approach to address the problem is a testament to its complexity. A major hurdle in developing practicable regulations is that very few low-cost options exist to remedy the situation. Given the pervasiveness of the issue, the cost (and thus the implementation) of many institutional options are not particularly palatable.

As a side note, this is another example of the "Tragedy of the Commons" as outlined by Professor Garrett Hardin in a 1968 paper published in Science magazine. Briefly, this influential paper identified an economic tendency for multiple individual entities, acting in their own self-interest, to over-utilize the carrying capacity of common (public) resources to the point that the resources are eventually being depleted or degraded even though it is clearly not in anyone's long-term best interest for this to

occur. This analogy is applicable here in the sense that, as community growth increased, the resulting wastewater and stormwater depended on the assimilative capacity of our water bodies to allow lower treatment levels and thus reduce community infrastructure costs. Each water body has a finite assimilative capacity to absorb nitrogen or other pollutants without causing significant degradation. Contributors discharge the stormwater, wastewater and even air deposition to the water body without fully bearing the cost of cleaning the water because the water body can assimilate it. However, once the assimilative capacity is reached or exceeded, the formerly unrecognized cost of treatment must be imposed if the water is to recover. It is almost always more expensive and difficult to retrofit a solution than to construct it initially.

Currently, the regulatory framework in Florida is addressing the issue through the Water Management Districts (WMD) and the Florida Department of Environmental Protection (FDEP). While the WMDs are directed to focus on non-point sources (stormwater issues), the FDEP is directed to consider point source contributors (which can include stormwater as well as wastewater). This results in an overlap of agency review with the FDEP having a broader scope to manage.

The focus of the WMDs with regard to the stormwater effects on water quality is stipulated in Chapter 62-40.431 FAC. This establishes the goal of the WMDs to reduce unacceptable pollutant loadings from stormwater managements systems. In order to accomplish this, the WMDs were directed to develop Pollutant Load Reduction Goals (PLRG) for Surface Water Improvement and Management (SWIM) designated water bodies. The SWIM program was established by the state back in 1987 to restore and protect threatened surface water bodies. The PLRGs focus on pollutant loads in stormwater but they need to estimate the assimilative capacity in order to determine the reduction needed. Assimilative capacity means the capacity of a body of water or soil-plant system to receive wastewater effluents or sludges without violating the provisions of the state's water quality criteria. If a surface water body meets all the stipulated parameters, it is classified as a "preservation water" and the PLRG is zero.

The FDEP was tasked by federal and state legislation to establish Total Maximum Daily Loads (TMDL) for state waters, including bays and estuaries. TMDLs can include such parameters as sediment, pathogens, nutrients, metals, dissolved oxygen, temperature, pH, and pesticides which can inhibit the full functioning of an aquatic ecosystem. The TMDL considers all of the loads (point and non-point) that enter a water body and determines any limits on these loads due to the assimilative capacity of the water body. The FDEP reviewed the PLRG work performed by the WMDs, with special attention to the assimilative capacity. By and large, they felt that the WMDs had done a good job of developing the assimilative capacities and typically have adopted them as they focused on the TMDL process and the development of Basin Management Action Plans (BMAP) to renew and protect the state waters.

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*(Water Quality—Continued from page 6)*

One of the model programs in addressing these issues in a complex water system is the Tampa Bay Estuary Program (TBEP). This organization was one of the 28 estuary programs established by the Clean Water Act and was established in 1991. In 1998 the initial stakeholders included Hillsborough, Pinellas, and Manatee Counties, the cities of Tampa, St. Petersburg and Clearwater, the FDEP, the Southwest Florida WMD and the EPA. These stakeholders signed an inter-local agreement pledging to achieve the goals outlined in the conservation and management plan. As the research and programs of the TBEP have proceeded, many of the issues that affect the bay have been identified. One of the key programs that TBEP has developed is the Nitrogen Management Consortium (NMC).

When TBEP research revealed that the Tampa Bay ecosystem health could be related to seagrass acreage and that nitrogen was a significant contaminant factor, efforts were made to form a group to address the sources of nitrogen contribution. In addition to the initial stakeholders, the NMC includes other local governments, electric utilities, agricultural interests and local phosphate firms. This group began operating in 1998 and collectively accepts responsibility for meeting nitrogen reduction goals.

Over the years the sources and loads have been monitored and modeled going upstream. A system for establishing the allocations of both point and non-point sources has been developed and thoroughly discussed from a technical, regulatory and legal perspective. The NMC

is entering the final phase of their deliberations in July of this year and it will be interesting to see if all of the stakeholders officially agree to the allocation and monitoring process. If so, each entity's FDEP permit will be correlated to the TBEP allocation criteria for nitrogen. At stake will be the potential for significant structural or operational changes to comply with the various limits. This could



Healthy Florida seagrass—public domain photo by Heather Dine | NOAA Image Library

include such things as water conservation programs, stormwater treatment systems, wastewater treatment upgrades and subsequent reuse, wetlands management areas and the like.

The federally-recognized nitrogen load limits for the Tampa Bay estuary are dependent upon the location in the bay. The four main bay segments of Tampa Bay include Old Tampa Bay, Hillsborough Bay, Middle Tampa Bay, and Lower Tampa Bay. The nitrogen load limits vary from about 350 tons per year in Lower Tampa Bay to 1450 tons per year in Hillsborough Bay. These were established as the nitrogen loads to maintain appropriate light conditions in each bay segment for seagrass.

Some progress has already been made through improvements made by some of the stakeholders. Significant water quality problems existed in the 1970s and,

through a host of pollution reduction projects, regulations, and financial commitments, the Tampa Bay estuary water quality has improved. As a result of improving water quality, the seagrasses seem to be responding. Acreage estimates of seagrass have steadily increased since the 1980s and Tampa Bay has been slowly approaching its goal of restoring seagrass growth to their 1950s extent.

This improvement has occurred despite the continuing increases in population within the watershed surrounding Tampa Bay. Tampa Bay is one of the few places in the world where this has occurred.

With significant deliberation, cooperation and risk analysis, this program has moved to the approval phase.

If it all of the constituents approve the agreement, this could become a model for others to follow to protect Florida's waters in a negotiated framework as opposed to a strict regulatory system. Of course, in either case, the next task will be to identify the projects to meet the criteria and then how to pay for them.

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## ANNOUNCEMENT

Please join us as we congratulate Sal Albustami who has recently passed his Professional Engineer Exam. We look forward to the expanded capacity this allows Chastain-Skillman to provide for our clients.

*This newsletter is provided solely for informational purposes and presents only highly condensed summaries relating to the topics presented. Therefore, it should not be relied upon as a complete record for purposes of regulatory compliance, nor is it intended to furnish advice adequate to any particular circumstances. For additional information on any of the topics in this newsletter, please contact the author, or Allan Duhm, (863) 646-1402, or e-mail us.*

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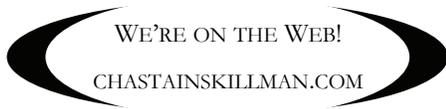
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