

CHASTAIN-SKILLMAN, INC.

ENGINEERS • ARCHITECTS • SCIENTISTS • SURVEYORS

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NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES)

By Thomas J. Moran, EI



The U.S. Environmental Protection Agency (EPA) developed the federal National Pollutant Discharge Elimination System (NPDES) stormwater permitting program in two phases.

Phase I, promulgated in 1990, addresses the following sources: "Large" and "medium" municipal separate storm sewer systems (MS4s) located in incorporated municipalities and counties with populations of 100,000 or more, and 11 categories of industrial activity, one of which is large construction

activity that disturbs 5 or more acres of land.

Phase II, promulgated in 1999, addresses additional sources, including MS4s not regulated under Phase I, and small construction activity disturbing between 1 and 5 acres.

In October 2000, EPA authorized the Florida Department of Environmental Protection (DEP) to implement the NPDES stormwater permitting program in the State of Florida (in all areas except Indian Reservations). The NPDES stormwater program regulates point source discharges of stormwater into surface waters of the State of

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CHASTAIN-SKILLMAN'S ENVIRONMENTAL ENGINEERING DEPARTMENT HAS MOVED TO THE NEW BUILDING AT OUR LAKELAND LOCATION



INTEGRATION OF GIS AND GPS: COMING TO A TOWN NEAR YOU

By Ralph H. Whisler III, PLS



Given the onset of advances in technology, the integration of Geographic Information Systems (GIS) and the surveying profession is inevitable. Generally, surveyors demand exceptionally accurate data which, until recently, the GIS Professional didn't need or provide. When some surveyors hear the term GIS, they tend to think it means "Get It Surveyed". All sarcasm aside, this may be closer to the truth than they think.

GIS initially consists of a Map Base, with high-resolution digital photogrammetry preferred, due to the usual cost and time constraints combined with the level of detail needed. This map

base is then tied to some type of localized grid usually involving the use of state plane coordinates (or latitude and longitude) and surveys showing the location of land corners, geodetic control stations, highway control points and the other monuments referenced to property locations. Once the map base is complete, other features or "layers" can then be added such as land boundaries, utilities, roadways and other infrastructure items of concern. You will notice that all of the above steps are (or could be) functions of the Land Surveyor.

The use of Global Positioning System (GPS) equipment by the surveyor has become the chosen tool for the collection of data necessary to

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Florida from certain municipal, industrial and construction activities. These sources are necessary to be regulated because stormwater runoff from construction activities can have a significant impact on water quality by contributing sediment and other pollutants to water-bodies.

To be in compliance with the NPDES program, the operator of a regulated construction site must obtain an NPDES stormwater permit and implement appropriate pollution prevention techniques to minimize erosion and sedimentation and properly manage stormwater. It is important to keep in mind that the permit required under DEP's NPDES stormwater program is separate from the Environmental Resource Permit (ERP) regulated by the State's Water Management Districts.

Stormwater discharges are generated by runoff from land and impervious areas such as paved streets, parking lots, and building rooftops during rainfall and snow events that often contain pollutants in quantities that could adversely affect water quality. Most stormwater discharges are considered point sources and require coverage by an NPDES permit. The primary method to control stormwater discharges is through the use of best management practices.

In March 2006, the DEP contracted with an independent engineering firm to conduct site inspections of projects in Highlands County which were covered under an NPDES General Permit. The inspecting authority provided approximately two (2) weeks notice prior to the inspection taking place. The inspections encompassed a site visit to determine the installation of all sediment control measures as established by the DEP and as specified in the Storm Water Pollution Prevention Plan (SWPPP). Most projects had few or no discrepancies. However, there were a few items which were found lacking at some sites: These pertained especially to the SWPPP not being available at the site, weekly inspection reports not being on file at the site, weekly inspections not being conducted by a qualified inspector, permits not being displayed on a permit board at the site, and inlets (existing and newly installed) not being provided with adequate protection from siltation and overall site maintenance (cleanliness).

These inspections also provided a review of the SWPPP. Some of the items missing from the plan were: allowance for non-stormwater discharge from sources such as hydrant flushing, the

latitude and longitude of the site discharge point and the identification of the receiving water not being listed, use of the wrong weekly inspection report form (DEP has a standard form for weekly inspections) and provisions for portable fuel tanks.

While some fines were levied (most were minor, < \$1,500), the inspections were most helpful in fine-tuning the template used for generating the SWPPP for individual projects. The inspectors provided a copy of the inspection report to the client or his representative at the site and a copy was forwarded to DEP. This report was utilized by the FDEP to determine the overall "potential for harm" and to assess the extent of the deviations. The following matrix is used in determining the amount of the fines.

		EXTENT OF DEVIATION		
		MAJOR	MODERATE	MINOR
POTENTIAL FOR HARM	MAJOR	\$10,000 to \$8,000	\$7,999 to \$6,000	\$5,999 to \$4,600
	MODERATE	\$4,599 to \$3,200	\$3,199 to \$2,000	\$1,999 to \$1,200
	MINOR	\$1,199 to \$600	\$599 to \$200	\$199 to \$100

PENALTY ASSESSMENT MATRIX

It seems that the inspection of projects in Highlands County was an attempt by the State to educate developers, contractors and engineers with the NPDES program and the serious nature of the State in this regard. While most in Highlands County have changed their attitudes regarding the NPDES program and the need for compliance, I have found the same attitude of complacency by our counterparts in many surrounding counties. As consulting engineers, it is important to keep our clients abreast of the significance of the NPDES program and to offer assistance with compliance issues. Tom Moran in the Sebring Office is now a State Certified NPDES inspector and can answer any questions that you might have.

Tom Moran is an Engineering Intern in the Civil Engineering Department at the Sebring office. He earned a Bachelor's Degree in Civil Engineering at the University of South Florida. He is also a DEP qualified stormwater management inspector. He can be reached at (863) 382-4160 or tmoran@chastainskillman.com.

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build an accurate GIS model. While most municipalities and governmental agencies may not have a need for the precision provided by GPS, surveyors find that the use of GPS and GIS together can be an invaluable tool in the location of land boundaries and other topographic features. The combination of the two will provide the sur-

veyor with the ability to "join" distant projects into a common database, together with the storage of control points without duplication. One use of this combination that is sometimes overlooked is the record of the relationship between points and features prior to their removal by construction, or more recently, catastrophe.

It can be seen that the integration of GIS and GPS-based surveying is upon us and

the uses for the combination of the two are endless. All we need now is a good software package that is compatible to both, but we'll save that for another article.

Ralph Whisler III serves as Senior Project Manager in Chastain-Skillman's Sebring office and has over 23 years of local surveying experience. He can be reached at (863) 382-4160 or rawhisler@chastainskillman.com.

PLEASE JOIN US AS WE WELCOME OUR NEW HIRES ...

Lakeland's Environmental Engineering department welcomes **Cyrus McKinnie** to our team in the position of Project Construction Representative. A Cum Laude graduate of Florida A&M University, Cyrus brings several years of experience as a Field/Office Engineer for various construction companies throughout the United States.

Lakeland's Civil Engineering department welcomes **Tim Dear, David Kleine, and Tom Kaenrath**. Tim's 22+ years of CAD drafting experience include not only producing drawings and plan sheets, plan and profile drawings, permit and related drawings, but he has also written custom programs, established drafting standards within a firm, and has taught his craft to others. David's 8 years of experience include design and drafting of large commercial land development and residential subdivision projects, including grading for parking, roadways, and retention ponds. Tom brings to the firm many years of site design experience in most facets of both residential and commercial land development projects.

Lakeland's Survey department welcomes Leslie "Les" Dean as a Survey Crew Supervisor/Assistant Project Manager.

Orlando's Environmental Engineering department welcomes **Fernand "Tib" Tiblier, PE** to their staff. Tib has a MS degree in Environmental Engineering from the University of Central Florida, and will be working as a Senior Project Manager.

CSI Supports Engineering Education

Although we pride ourselves on hiring some of the best talent in the engineering field, have you ever wondered how CSI finds our employees? Given the on-going shortage of engineering graduates, CSI works with both local schools and universities to identify and develop potential engineers. For example, we have for many years participated in "job shadowing" programs at both the middle and high school level. We also work with interns, college students who are still pursuing their degree, to provide real-life experience in their chosen profession. Over the past summer, Mark Livesay, a civil engineering student at University of Florida, worked with Dr. Darwish El-Hajji, PE on multiple projects. Currently, there are three interns working with the environmental engineering department. Karla Delgado, a Master's candidate at USF, is working in the Lakeland office, learning about wastewater treatment and permitting. Cassie Hancock, a marketing major at USF, is working with Jay Curtis, PE on a marketing study for residuals from Tallahassee's T.P.Smith WWTP. In our Tampa office, Whitney Bloome, an engineering student at USF, is working with the environmental engineering group on several projects.

Working with interns helps both the students and Chastain-Skillman. Glenn Folsom, a recent graduate of George Tech, interned at CSI for two summers: "I thoroughly enjoyed my time as an intern with Chastain-Skillman. From the start I was given a great deal of responsibility for the projects I worked on and the opportunity to interact directly with clients. While both the work itself and the confidence that the company showed in me were greatly influential in my decision to come to work full-time for Chastain-Skillman, the camaraderie that made me look forward to coming to work every day as an intern is what made the decision easy."

GENERATOR SAFETY ALERT; HURRICANE SEASON IS NOT OVER YET

While we have (thankfully) had a quiet hurricane season thus far, more people than ever before have better prepared for the next such event by purchasing home generators. This spike in generator ownership gives us cause to bring attention to a related significant safety issue. With the rash of hurricane incidents in recent years, a predictable and significant spike in generator purchases has occurred. Unfortunately, generator-related carbon monoxide deaths has risen correspondingly. In an attempt to promote awareness of proper operating techniques with generators, it is important to emphasize proper safety measures.

Operate generators **O.A.D. (Outside, Away and Dry)**. Generators produce deadly (colorless and odorless) carbon monoxide (CO) which can accumulate rapidly in an enclosed area. A generator operating in a garage is NOT SAFE. Fumes can easily seep or be pulled into the home. Here are some preventative steps to follow in generator operation:

- ◆ **NEVER** use a generator indoors, not even in a garage with an open door.
- ◆ Open doors and windows, or using fans **WILL NOT** prevent CO poisoning.
- ◆ **PLACE** generators outside, well away from any windows, doors, openings or air conditioning units which might allow CO to enter or be pulled into the house.
- ◆ **USE** battery operated CO alarms that meet the latest safety standards, following manufacturer's instructions for their use.
- ◆ **TEST** CO alarms frequently.
- ◆ Get **FRESH AIR** immediately if you feel dizzy, sick or weak and call your Poison Control Center 1-800-222-1222.

Plan ahead now for a safe and dry location in which to operate generators. **Remember O.A.D. – Outside, Away and Dry.**

IDSE: A NEW TASK FOR WATER SYSTEM MANAGERS

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



At the beginning of this year the EPA published the Stage 2 Disinfectants and Disinfection Byproducts Rule (DBPR) in the Federal Register (71 FR 388). The DBPR is part of the regulatory body growing out of the Safe Drinking Water Act which was initially enacted in 1974. Stage 2 DBPR builds on previous regulations (primarily Stage 1 DBPR) which require water systems to meet disinfection byproducts maximum contaminant levels (MCL). A key issue is that the regulations require compliance at each monitoring site in the distribution system which may take some additional effort by the water system.

There are two components of the new rule of which utility managers should take special note, Subparts U and V. Subpart U outlines the applicability and requirements for performing an **Initial Distribution System Evaluation (IDSE)** while Subpart V discusses the expansion of the Compliance Monitoring associated with Disinfectant/Disinfection Byproducts in the water distribution system. This brief article will outline some of the primary features of the IDSE section, because its compliance tasks are a little different than what is usually part of a monitoring rule.

Recall that the DBPR was initiated because a number of epidemiological studies pointed to a computed increase in chronic health effects from drinking water which contained elevated levels of disinfection byproducts. While these studies indicate only a weak association with the disinfection byproducts and adverse health effects, the fact that roughly 260 million people are exposed to these chemicals in public drinking water makes the potential health risks worthy of attention. Because the vast majority of water systems used gaseous chlorine to disinfect their supplies, attention was focused initially on the reaction products formed when chlorine was mixed with naturally-occurring organic material. The level of byproduct formation is variable through the year and is primarily related to water temperature and pH, seasonal water demand,

amount of disinfectant added, the amount of organic material in the water and configuration of the water system. The primary regulatory parameters of concern here are the Total Trihalomethanes (TTHM) and the Five Haloacetic Acids (HAA5). Chloroform, Bromodichloromethane, Dibromochloromethane, and Bromoform comprise the TTHM list, while the HAA5 group consists of Monochloroacetic acid, Dichloroacetic acid, Trichloroacetic acid, Bromoacetic acid and Dibromoacetic acid. The current MCL for TTHM is 0.080 mg/L and 0.060 for HAA5.

WHO MUST COMPLY WITH THE RULES?

This rule applies to all water systems that are classified as Community Water Systems (CWS) of any size or Non-transient Non-community Water Systems (NTNCWS) serving 10,000 people or more which disinfects by any means other than ultraviolet light. NTNCWS serving less than 10,000 people are exempt from the IDSE although other provisions of the Stage 2 DBPR may apply. Transient Non-community Water Systems or individual water supplies are completely exempt from Stage 2 DBPR requirements. Note that a CWS is a public water system that serves at least 15 service connections or an average of at least 25 residents on a year-around basis. Examples of this type of system would be a city, subdivision, or mobile home park. An NTNCWS is a water system that serves at least 25 of the same people more than six months of the year (but not as a primary residence). Schools, businesses, and day care facilities are examples of an NTNCWS.

WHAT DOES THE RULE REQUIRE?

Under Subpart U of the rule, the utility will conduct an evaluation of their distribution system to identify locations where TTHM and/or HAA5 concentrations that are at their highest levels. This one-time study is known as the Initial Distribution System Evaluation. Once the IDSE is completed, the monitoring sites identified will be used for Stage 2 DBPR compliance monitoring.

Fortunately for system operators, the fact that a particular reading exceeds an MCL does not necessarily mean that the system is out of

compliance. The criteria for measuring against the MCL are not individual readings, but rather an annual running average. The difference with Stage 2 DBPR, however, is that the running annual averages are based on each sampling location as opposed to a pooled running average of all monitoring locations across the system. In other words, the new rules require compliance on a Locational Running Annual Average (LRAA) basis.

Using this data, each system must determine if they have exceeded an operational evaluation level. A system that exceeds these criteria is deemed to be at risk for future violations of the MCL, and thus using this procedure will give the utility the opportunity to address deficiencies or other positive steps to remain in compliance. A state reporting obligation exists to identify actions to be taken which will mitigate the occurrence of future high disinfection byproduct levels, especially those that could cause a violation of the actual MCLs. It should be noted that any time the LRAA exceeds the MCL, prompt action is warranted at that point in time.

HOW DO I COMPLY WITH THE IDSE PORTION OF THE RULE?

Actually there are four means by which compliance with the IDSE portion of the rule can be satisfied, although all four options are not available to all systems. Upon confirming that the system uses some form of disinfection other than UV light, there are two variables which determine the general categories for testing and compliance. To select among the options available, a utility manager must classify the system by:

- a) Populations served
- b) Water source type (Surface water or Groundwater)

The population served by the utility is the primary variable which determines the schedule for submission of the IDSE and the level of detail required. The system size and water source type determine the minimum number of samples that are required from the data pool upon which to base the analysis.

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Overview of IDSE Options

There are four options that can be used to comply with the IDSE requirement. Selection among the options will be based on system size, technical resources available, existing monitoring results and manager preference. The following is a brief description of the four options.

Qualify for a Very Small System (VSS) Waiver

For small CWS serving less than 500 people and that have TTHM and HAA5 data, a VSS is automatically granted unless they are notified by the Florida Department of Environmental Regulation (FDEP) or EPA that they must conduct an IDSE. Systems that receive a VSS have no further obligations under the IDSE requirements, although they should continue their Stage 1 Compliance Monitoring until required to begin Stage 2 monitoring per the schedule indicated in the DBPR.

Meet 40/30 Certification requirements

For those systems that can demonstrate that all individual TTHM and HAA5 results for Stage 1 DBPR 2-year compliance monitoring have been equal to or less than 0.040 mg/L and 0.030 mg/L, respectively, further ISDE requirements can be waived. To comply with IDSE regulations, however, a certification letter must be prepared to document this level of operation and must be submitted within the prescribed period. A template for the certification letter is provided in the EPA documentation. Once the certification is submitted, there are no further requirements under the IDSE portion of the rule, but continued compliance monitoring is required in accordance with the Stage 1 and Stage 2 DBPR schedule.

Conduct a System Specific Study (SSS)

A third option for meeting the IDSE requirement is by use of computer hydraulic models of the distribution system, or by using existing monitoring results if they meet certain minimum criteria. These sub-options are typically mutually exclusive. They both require that a plan of study be submitted. Subsequently, a final report is prepared and submitted as the IDSE. However, it is noted that in certain instances if enough data is present, the plan of study and IDSE report can be submitted simultaneously. Systems that have calibrated computer hydraulic or water quality models are able to more easily focus their efforts and scan their systems for optimal monitoring points.

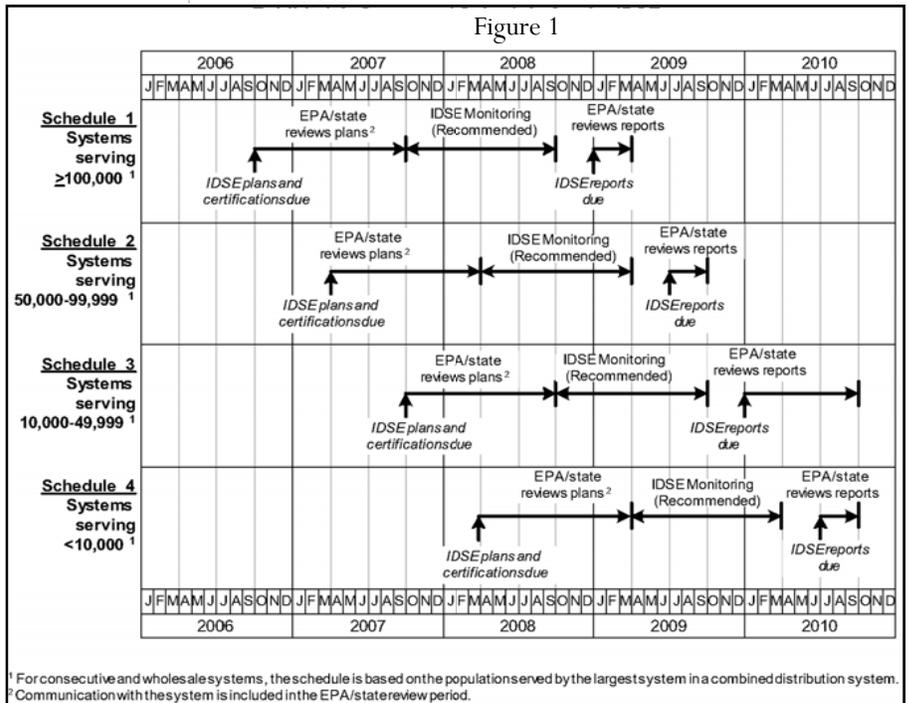
Conduct Standard Monitoring

The standard monitoring plan approach to compliance requires that an additional 1-year of sampling within the distribution system occurs at multiple locations (in addition to Stage 1 sampling). The required frequency and minimum number of samples are stipulated within the regulations and are governed by the population served by the system and the source water type. As would be expected, surface water sup-

plies require more samples than groundwater supplies. A sampling plan is required to document the methodology of the monitoring process. An IDSE report follows the completion of the monitoring effort.

WHEN DOES COMPLIANCE WITH THE IDSE REQUIREMENT NEED TO BE COMPLETED?

The compliance schedule for this program is on a staggered basis, with larger systems filing first and smaller systems given more time. In fact systems serving over 100,000 people are scheduled to submit their IDSE plans or certifications by October 1, 2006. Figure 1 is provided below to give an indication of the schedules associated with different sized systems. As a side note, a record of IDSE documentation must be maintained by the utility for at least 10 years.



WHERE CAN I GO FOR MORE INFORMATION?

For those responsible for managing compliance with these new rules, the EPA has issued a number of guidance documents and summaries. The most comprehensive document to address the IDSE and the compliance requirements is the Initial Distribution System Evaluation Guidance Manual. This and other information resources can be accessed from the EPA's website at <http://www.epa.gov/safewater/disinfection/stage2/compliance.html>. The EPA has also developed an online IDSE compliance tool to help managers determine which compliance option is available to them. Of course, the engineers at Chastain-Skillman, Inc. are also available to help our clients work through this compliance process.

Dr. Jim Chastain is the President of Chastain-Skillman, Inc. He has a Bachelor of Science in Civil Engineering (honors) and Master of Engineering from the University of Florida. He also has a Master of Public Health and Ph.D. from the University of South Florida. He is a registered Professional Engineer with over 30 years of experience and is a Diplomate of the American Academy of Environmental Engineers. He can be reached at (863) 646-1402 or jrchastain@chastainskillman.com.

SHOULD I RUN MY AIR CONDITIONER WHILE I'M AWAY?

By Paul L. Osley, PE, BCEE, CIH, CSP



Nearly all of us at one time or another leave home on an extended trip or have a vacation house/rental property that is unoccupied for extended periods of time. The million dollar question is, "how should I operate the air conditioning system to protect the property from adverse relative humidity (RH) and potential mold/odor impacts?"

The Summer 2006 issue of ASHRAE IAQ Applications (Vol. 7, No. 3) has an excellent article titled "Humidity Control in Vacant Homes" that addresses this very dilemma. The following is a brief synopsis of the information presented. Before implementing one of these methods/strategies, it is recommended that you review the original article for the specific supporting information necessary to make an informed decision.

Resent research in 2004 by the Florida Solar Energy Center, funded by Florida Power and Light Company, looked at the following five

methods and/or strategies: 1) no space conditioning; 2) AC set between 83 and 85°F; 3) AC operation from 3 a.m. to 5 a.m. at 74°F; 4) operate a dehumidifier; and 5) space heating. Two target objectives were used to evaluate these strategies: 1) RH should stay below 70%, essentially all the time, and 2) RH should stay below 65% most of the time.

Based upon the aforementioned evaluation criteria and the test results, indications are that two of the methods/strategies are not recommended for addressing unoccupied indoor space over extended periods of time. They are: 1) no space conditioning at all; and 2) setting the AC system to 83-85°F.

Test results confirmed the following three methods/strategies were found to be effective in controlling RH and are recommended based upon your specific circumstances: 3) AC operation from 3 a.m. to 5 a.m.; 4) operating a dehumidifier on a timer system; and 5) heating the house to about 89°F, which lowers indoor RH effectively for

nearly all hours of the summer without removing moisture from the room air.

Please note that each of these three methods/strategies may have specific circumstances or conditions that would make them either more or less effective in your particular situation. Therefore, please refer to the original ASHRAE article for this information.

For a copy of the article, or for further information, contact Paul Osley at Chastain-Skillman's Tampa office.

Paul Osley is a Principal/Director of Environmental & Occupational Health (EOH) in Chastain-Skillman's Tampa Office. In addition, Paul oversees EOH services in the Atlanta and Orlando Offices. His work focuses on EOH, indoor air quality, industrial hygiene, safety, hazardous waste and remedial engineering projects for private and municipal clients. Paul received Bachelor's Degrees in Chemical and Environmental Engineering from the Florida Institute of Technology in 1984 and a Master's Degree in EOH in 1997 from the University of South Florida. He can be reached at (813) 621-9229 or posley@chastainskillman.com.

WATERFRONT DEVELOPMENT AND SUBMERGED LANDS

By Mark K. Addison, PE



Understanding Florida's sovereignty over submerged lands is essential in planning waterfront development activities - whether it is a dock, marina, dredging, or other similar activity. Sovereign submerged lands include all public trust lands beneath navigable waters that Congress transferred to the sovereign State of Florida upon its admission to the Union on March 3, 1845. The limit of sovereignty extends to the mean high water line in tidal waters and the ordinary high water line in navigable, non-tidal waters.

Submerged lands include beaches between the mean high water and mean low water lines, islands within navigable waters, lands beneath lakes and rivers, and lands beneath the Gulf of Mexico (up to 3 marine leagues) and the Atlantic Ocean (up to 3 miles). According to the Florida Department of Environmental Protection (FDEP), sovereign submerged lands comprise an estimated 7.7 million acres of Florida's 37.5 million acres of total area. Certain submerged lands are designated as aquatic preserves due to their unique biological, aesthetic, or scientific value, thereby allowing for additional protective restrictions on their use.

Pursuant to Chapter 253 F.S., title to all submerged lands not previously conveyed by deed or statute is vested in the Board of Trustees of

the Internal Improvement Trust Fund. These lands are held in trust for the use and benefit of the public and cannot be used by the government or private entities without first obtaining permission to conduct activities on submerged lands. The most commonly requested uses include the construction of docking facilities for single-family and multi-family development, marinas, piers, yacht clubs, and dredging activities.

In planning a waterfront activity, it is often advisable to seek a sovereign submerged lands determination from the FDEP's Division of State Lands. This will establish the jurisdictional limit for the project and quantify those activities for which consent is required from the Board of Trustees. The form of proprietary authorization required for a particular project varies depending on the specific nature of the project. Forms of consent to use submerged lands consist of consent by rule, letters of consent, easements, leases, aquaculture leases, management/use agreements, special events authorization, and grandfather structure registration. The requirements for each form of authorization are detailed in Chapter 18-21 F.A.C.

Consent by rule is granted by the Board of Trustees for minor activities that may otherwise be exempt from obtaining a permit pursuant to Chapter 373 F.S. These activities include maintenance of existing

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activities/structures that have a valid Board authorization, such as docks, piers, riprap, bulkheads, seawalls, and outfall/intake structures. In addition, consent by rule allows for the installation and repair of private docks, piers, and recreational docking facilities, or piers and recreational docking facilities of local governments subject to the provisions of Section 403.813(2) F.S.

A letter of consent is required for those activities that are not expressly authorized by rule in accordance with Rule 18-21.005(1) (b) F.A.C. These activities include but are not limited to:

- One minimum-size private residential single-family dock or pier per parcel
- Private single-family or multi-family docks, piers, boat ramps, or other similar activities, provided that they cumulatively preempt no more than 10 square feet of sovereign submerged land for each linear foot of the applicant's riparian shoreline
- A private channel that provides access to an upland single-family or multi-family parcel that measures no more than 10 square feet of sovereign submerged land for each linear foot of the applicant's riparian shoreline
- Construction, replacement, or repair of bulkheads, seawalls, or other shoreline stabilization structures that extend no more than 3 feet waterward of the mean or ordinary high water line
- Placement, replacement, or repair of riprap, groins, breakwaters, or intake and discharge structures no more than 10 feet waterward of the mean or ordinary high water line

A sovereign submerged land easement is required for activities such as utility crossings, road and bridge crossings (including rights of way), oil, gas and other pipelines, spoil disposal sites, public navigation projects, private channels that do not qualify for a letter of consent, and groins, breakwaters and shoreline protection structures, except when constructed as part of a docking facility that requires a lease. A sovereign submerged lands lease is generally required for all activities which do not qualify through the consent by rule, letter of consent, or easement provisions of Chapter 18-21 F.A.C. In addition, leases are required for revenue-generating activities, registered or unregistered grandfather structures, and certain special events. Annual lease fees are charged by the State as set forth in Rule 18-21.011 F.A.C.

All structures that preempt sovereign submerged

lands and were authorized prior to March 10, 1970 for commercial structures, or March 27, 1982 for residential structures, are considered to qualify for registration as a grandfathered structure. These structures were required to be registered with the FDEP by September 30, 1984. Since this registration expired on January 1, 1998, these facilities are now required to obtain a lease.

An unregistered grandfathered structure is any structure that is subject to the leasing provisions of the FDEP and was authorized prior to March 10, 1970, or multi-family residential or other non-revenue generating structure constructed prior to March 27, 1982. Multi-family residential or commercial related structures approved by the Board of Trustees or the Division of State Lands between March 10, 1970 and March 27, 1982 are also considered grandfathered structures provided they were constructed pursuant to a valid Section 404 (dredge and fill) permit or exemption.

It is important to note that the State's title to sovereign submerged lands is limited to those lands waterward of the mean or ordinary high water line as of March 3, 1845. It is generally recognized that gradual, imperceptible changes in the shoreline through erosion or accretion can have the effect of altering the legal boundary between private and sovereign lands. However, when land is gained or lost by avulsion (i.e., a sudden and perceptible loss of shoreline or streambed), the established boundaries between sovereign and private lands do not change. For example, manmade canals or channels constructed after March 3, 1845 would not be considered sovereign submerged lands.

In summary, proprietary control of sovereign submerged lands can have a substantial impact on a planned waterfront development. These issues should be reviewed and addressed during the planning phase of a project and preferably prior to acquisition of waterfront properties. Existing riparian owners should also review the grandfather requirements and the potential impact on any future waterward activities.

Mark Addison is Principal in charge of Chastain-Skillman's Orlando office. Mark has a Bachelor of Science and Master of Science in Civil Engineering from the New Jersey Institute of Technology. He is a registered Professional Engineer with 23 years of experience in civil engineering and environmental engineering, permitting and planning. Mark has served as Chairman of the Osceola County Board of Adjustment since 2004. He can be reached at (407) 851-7177 or maddison@chastainskillman.com.

RECENT PROJECTS AND CONTRACTS OF INTEREST

- Chastain-Skillman was recently selected by **Englewood Water District** to provide professional engineering services in support of the District's water, wastewater and reclaimed water operations.
- The **City of Lakeland** has again selected Chastain-Skillman to provide Professional Municipal Engineering Services on a continuing basis for the following departments: Public Works, Electric, Water and Wastewater, and Water Operations. Services will include planning, reports, studies and design/construction services, as well as general municipal, wastewater and water operations engineering.

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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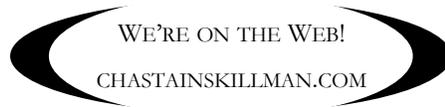
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