

**SOURCE: Coastal Estuary Protection Association, Inc.**

**COASTAL ESTUARY PROTECTION ASSOCIATION, INC. OPPOSES  
CH2M HILL & LIBERTY COUNTY INDUSTRIAL AUTHORITY  
ACQUIFER STORAGE AND RECOVERY PLAN**

**BRYAN COUNTY, LIBERTY COUNTY, and SAVANNAH GEORGIA, February 20, 2009** - Allen Davis, President of the Coastal Estuary Protection Association, Inc. (“CEPA”), announced today, as part of its opposition to the Liberty County Industrial Authority’s (“LCIA”) \$30 million wastewater treatment facility planned for Eastern Liberty County, that upon conducting a review of the LCIA’s application for a permit from the Georgia EPD to discharge 3 million gallon per day of wastewater into the Laurel View River, CEPA has discovered, that the LCIA, based upon a recommendation by CH2M Hill, is considering the incorporation of a scheme promoted by CH2M Hill whereby the LCIA would pump effluent from the treatment plant into the Floridan Aquifer, the high quality underground source of fresh water for residents of Coastal Georgia.

Upon conducting further research on the matter, CEPA has discovered that while the use of this type of effluent disposal known as “Aquifer Storage and Recovery” (“ASR”) technology is currently illegal in the State of Georgia, the prohibition expires on December 31, 2009. Further, as CH2M Hill proclaims itself as the “leading supplier of ASR technology,” CEPA is concerned that without immediate action by the Georgia legislature during its 2009 session, the LCIA is positioned to become the first wastewater system operator in the State of Georgia to incorporate this damaging technology as a solution for the discharging of wastewater which could pollute Coastal Georgia fresh water supplies. CEPA is encouraging the State of Georgia House of Representatives and the Senate to address the situation during its 2009 session.

“Once again, we find that the LCIA and CH2M Hill have another agenda other than serving the tax payers and citizens of Liberty County,” said Allen Davis. “In fact,” Davis continued, “the incorporation of ASR technology by the LCIA is the most problematic issue found thus far associated with this project as it could pose serious long term health risks for coastal residents while destroying one of the highest quality underground sources of fresh water in the world. Once the aquifer is destroyed, the cost to coastal residents both financially and in terms of the impact on our quality of life would be impossible to quantify.”

**About Coastal Estuary Protection Association, Inc.**

Coastal Estuary Protection Association, Inc., with over 3,000 members, was organized by citizens concerned with protecting our valuable coastal waters, marsh lands, and estuaries. For more information, contact us at 912-598-9555 or visit [www.coastalepa.org](http://www.coastalepa.org).

A BILL TO BE ENTITLED  
AN ACT

1 To amend Part 3 of Article 3 of Chapter 5 of Title 12 of the Official Code of Georgia  
2 Annotated, relating to water well standards, so as to change certain provisions relating to  
3 standards for wells and boreholes; to change certain provisions relating to bonds and letters  
4 of credit for water well contractors or drillers; to repeal conflicting laws; and for other  
5 purposes.

6 BE IT ENACTED BY THE GENERAL ASSEMBLY OF GEORGIA:

7 **SECTION 1.**

8 Part 3 of Article 3 of Chapter 5 of Title 12 of the Official Code of Georgia Annotated,  
9 relating to water well standards, is amended in Code Section 12-5-134, relating to standards  
10 for wells and boreholes, by deleting "and" at the end of paragraph (5), replacing the period  
11 at the end of paragraph (6) with "; and", and adding a new paragraph (7) to read as follows:

12 "(7) No well or borehole shall be drilled or used for the purpose of injecting any surface  
13 water into the Floridan aquifer in any county governed by the Georgia coastal zone  
14 management program provided by Code Section 12-5-327."

15 **SECTION 2.**

16 Said part is further amended by revising subsection (i) of Code Section 12-5-135, relating  
17 to bonds and letters of credit for water well contractors or drillers, as follows:

18 ~~"(i) No bond or irrevocable letter of credit provided for in this Code section shall be~~  
19 ~~accepted by the director from any water well contractor or driller who shall drill any well~~  
20 ~~or borehole for the purpose of injecting any surface water into the floridan aquifer in any~~  
21 ~~county governed by the Georgia coastal zone management program provided by Code~~  
22 ~~Section 12-5-327 after July 1, 2003, and before December 31, 2009 Reserved."~~

23 **SECTION 3.**

24 All laws and parts of laws in conflict with this Act are repealed.

**CH2M HILL CONSIDERS USING  
AQUIFER STORAGE AND RECOVERY (ASR)  
FOR DISPOSAL OF WASTEWATER IN LIBERTY COUNTY**

**"Three disposal options have been reviewed: land application; surface water discharge; and aquifer storage and recovery."**

**"Aquifer storage and recovery (ASR) is not currently allowed in the State of Georgia but is being considered in the master plan as a long-term (5-10 years) option."**

**"SBRs and MBRs are the two treatment options receiving the most attention due to LCDA'S...understanding of the importance of ASR to the long-term sustainable management of coastal Georgia's groundwater resources"**

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*Complete text of the excerpted sections from letter dated September 15, 2006 on cover page and September 13, 2006 on inside pages, from CH2M HILL project manager Wayne D. Murphy, P.E. to Samuel J. Shepherd of Georgia EPD:*

LCDA understands the importance of protecting the natural environment within Liberty County and has requested that CH2M HILL evaluate several wastewater treatment and disposal options. Three disposal options have been reviewed: land application; surface water discharge; and aquifer storage and recovery.

Aquifer storage and recovery (ASR) is not currently allowed in the State of Georgia but is being considered in the master plan as a long-term (5-10 years) option. Therefore, surface water discharge is the only viable long-term disposal option.

From a treatment standpoint, CH2M HILL is evaluating the following treatment systems:

- Suspended Growth Systems
- Aerated Lagoon Systems
- Fixed Growth Systems
- Sequencing Batch Reactor (SBR) Systems
- Membrane Bioreactor (MBR) Systems

SBRs and MBRs are the two treatment options receiving the most attention due to LCDA'S need for a surface water discharge, their long-term desire to provide reclaimed water for irrigation throughout their service area, and their understanding of the importance of ASR to the long-term sustainable management of coastal Georgia's groundwater resources. We have initially assumed that the treatment levels for the effluent used for irrigation would be consistent with the existing urban reuse standards and that the surface water discharge will meet the limits set by GA DNR in the renewed WLA.

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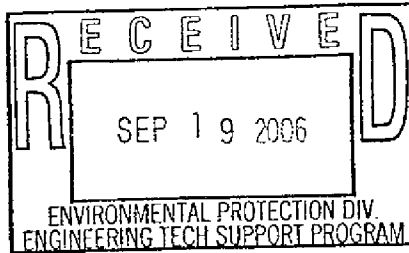
*CH2M HILL is a global project delivery firm providing strategically integrated services to public and private clients in the fields of water, environment, transport, industrial facilities, communications and related infrastructure. We provide a full range of management, technical and support services needed to move projects from concept to successful completion and operation.*

*Time and again, CH2M HILL's innovative technical approaches have solved complex client problems. The firm's pioneering development and implementation of Aquifer Storage Recovery (ASR) has revolutionized the water resources management field. By using aquifers as a medium for storing large volumes of water, aquifer recharge is now widely applied throughout the world to resolve water resource and environmental issues including seasonal water supply deficits, emergency storage, ground subsidence, and saline intrusion.*

*As the leading supplier of ASR technology and aquifer recharge in the United States, Canada, Europe, and Asia, CH2M HILL has considerable experience in aquifer recharge project development and operation. We invite you to explore our capabilities and how they can meet your needs...*

CH2MHILL offers aquifer recharge services in:

- ◆ Feasibility studies, including site identification and assessment, hydrogeological investigations, groundwater, and geochemical modelling
- ◆ Organized study tours
- ◆ Permitting/regulatory assistance
- ◆ Environmental impact assessments
- ◆ Aquifer recharge system design
- ◆ Water treatment design
- ◆ Water reuse scheme design and implementation
- ◆ Pilot scheme design, construction management, and commissioning
- ◆ Cycle testing and well development
- ◆ Water treatability studies
- ◆ Well field development and rehabilitation
- ◆ Construction supervision and management
- ◆ Operations and maintenance
- ◆ Training



SJS → Anita/copy to Kevin 26-530

CH2M HILL  
115 Perimeter Center Place NE  
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Atlanta, GA  
30346-1278  
Tel 770.604.9095  
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September 15, 2006

Mr. Samuel J. Shepherd, Manager  
Engineering Unit  
Engineering & Technical Support Program  
Georgia Department of Natural Resources  
Environmental Protection Division, Water Protection Branch  
4220 International Parkway, Suite 101  
Atlanta, Georgia 30354

ETSP Liberty County

Correspondence  
 Engineering  
 Sewer  
 Other

Subject: Liberty County Development Authority Waste Load Allocation Approval  
Dated May 3, 2004; Coastal Business Park; EPD #22-650; Liberty County

Dear Mr. Shepherd:

On May 3, 2004, the Liberty County Development Authority (LCDA) received the above-referenced Waste Load Allocation (WLA) approval from the Georgia Department of Natural Resources (GA DNR) (Attachment A). Unfortunately, this approval has expired. However, LCDA has been actively pursuing related matters over that past 16 months. CH2M HILL has been working with LCDA to develop a water, sewer, and stormwater utility master plan for the Trade Port East and Trade Port West Industrial Parks; formerly known as the Coastal Business Park; which lie within LCDA's proposed service area (Figure 1).

Several months after work began on developing the water and sewer sections of the master plan, the draft Coastal Georgia Water Resources Sound Science Initiative 2000, commonly referred to as the draft CAP Rule, was released. Due to the impact this rule would have on Liberty County, LCDA's and CH2M HILL's efforts were redirected from the master plan to the draft CAP Rule. This included working with the cities in Liberty County, the County itself, LCDA, Fort Stewart, and the other major stakeholders in the area to investigate the feasibility of developing a Regional Water and Sewer Service Area for Liberty County. It became evident early in the process that Liberty County should be divided into two regional service areas: West Liberty County and East Liberty County. Since LCDA's proposed service area falls within the East Liberty County Regional Service Area, CH2M HILL focused attention on the feasibility of creating a regional service area for this section of the county.

There are three GA DNR permitted water and sewer providers in east Liberty County; LCDA and the Cities of Midway and Riceboro. The City of Riceboro has a relatively new wastewater treatment plant (WWTP) with a permitted capacity of 100,000 gallons per day (gpd) expandable to 300,000 gpd and an permitted water withdrawal capacity of 525,000 gpd from the Floridan aquifer.

The City of Midway's WWTP has a permitted capacity of 500,000 gpd, of which 200,000 gpd has been allocated to LCDA through a local agreement. Their permitted water withdrawal capacity is 300,000 gpd from the Floridan aquifer.

LCDA has a wastewater treatment capacity of 100,000 gpd and an agreement with the City of Midway to treat 200,000 gpd of flow generated from the Trade Port East Industrial Park. LCDA has a permitted water withdrawal capacity of 1.1 million gallons per day (mgd) from the Floridan aquifer and 0.3 mgd from the Miocene aquifer.

LCDA and the City of Midway agreed to look into developing a regional service area (Figure 2) due to the proximity of the City of Midway WWTP and LCDA's WWTP, and the facts that (1) the City of Midway cannot grow without additional water withdrawal capacity and (2) LCDA's Industrial Parks cannot grow without additional sewer capacity.

During review meetings with the Liberty Consolidated Planning Commission Executive Director, Mr. Sonny Timmerman, LCDA and the City of Midway agreed to revise the boundaries of its proposed service area and offer a small section of the service area to the City of Riceboro (Figure 3). The revised service area map was approved by the Liberty Consolidated Planning Commission and was presented to the Liberty County Board of Commissioners for approval. The Liberty County Board of Commissioners tabled the request because the City of Midway would not give its full endorsement of the plan, due to the perceived financial impact it would have on the City. After several months of failed negotiations with the City, LCDA was forced to submit a newly revised service area map to the Liberty County Board of Commissioners for approval (Figure 4). The Liberty County Board of Commissioners approved the revised service area map during their September 13, 2006 meeting.

LCDA's revised service area includes Trade Port East, Trade Port West, Midway Industrial Park, and the future high-end mixed-use development referred to as the Forum Group. As part of the master plan CH2M HILL is developing for LCDA, wastewater flows were estimated for three development phases: Phase 1: 0-7 years, Phase 2: 7-15 years, and Phase 3: 15-25 years. Table 1 shows the projected wastewater flows for each of the development phases.

The flows presented in Table 1 are based on the following assumptions:

1. 100 gpd per person for residential development
2. 3.4 persons per residential unit
3. 350 gpd per acre for "big box" development
4. 1500 gallons per acre for commercial development
5. A peaking factor of 1.25 to determine the max monthly average daily flow (MMADF) from the average daily flow (ADF)
6. LCDA's Midway Industrial Park flows are existing flows

Over the past several months, there has been a great deal of development interest in Trade Ports East and West and the Forum Group property. This development has generated sewer capacity requests totaling 198,850 gpd, which is nearly 100 percent of LCDA's wastewater treatment agreement with the City of Midway (Table 2).

**TABLE 1**  
 Projected Total Wastewater Flows—LCDA Service Area

	Development Phase		
	1 (0-7 years)	2 (7-15 years)	3 (15-25 years)
Total Residential Units	2118	3774	4708
Total Commercial/Office/Other (ac)	470	615	615
Total "Big Box" Commercial (ac)	1100	2467	3001
Residential ADF (gpd)	720,120	1,283,160	1,600,720
Commercial/Office/Other ADF (gpd)	705,000	922,500	922,500
"Big Box" Commercial ADF (gpd)	385,000	863,450	1,050,350
LCDA's Midway Ind. Park ADF (gpd)	30,000	30,000	30,000
Total ADF (gpd)	1,810,120	3,069,110	3,573,570
Total MMADF (gpd)	2,262,650	3,836,388	4,466,963

ADF = average daily flow  
 MMADF = max monthly average daily flow  
 gpd = gallons per day

**TABLE 2**  
 Wastewater Treatment Capacity—LCDA Service Area

Treatment Provider	Treatment Capacity (gpd)	LCDA WWTP Existing Allocations (gpd)	City of Midway WWTP Existing Allocations (gpd)	Remaining Allocation (gpd)
City of Midway	500,000			
City of Midway			300,000 <sup>a</sup>	
LCDA			200,000 <sup>a</sup>	
Total	500,000		500,000	0
LCDA	100,000	100,000	200,000	
	200,000 <sup>b</sup>			
Midway Ind Park		30,000		
Forum Group			78,000	
Trade Port West		50,000		
IDI			105,000	
Tire Rack			850	
Target			15,000	
Total	300,000	80,000	198,850	
Remaining Capacity		20,000	1,150	21,150

<sup>a</sup> Allocated to LCDA

<sup>b</sup> Treatment Provided by Midway

LCDA understands the importance of protecting the natural environment within Liberty County and has requested that CH2M HILL evaluate several wastewater treatment and disposal options. Three disposal options have been reviewed: land application; surface water discharge; and aquifer storage and recovery.

Due to the extensive land area required for land application of the anticipated volume of treated effluent (up to 4.5 mgd MMADF); and the fact that adequate upland parcels of land are no longer available, this alternative has been ruled out as a long-term disposal option (Table 3).

**TABLE 3**  
Required Land Application Site Sizes

Design ADF (mgd)	Required Spray Field Area (acres) <sup>a</sup>
0.25	31.5
0.50	62.9
0.60	75.5
0.80	101
1.20	151
3.10	390
5.47	689

<sup>a</sup> Calculation assumes an infiltration rate of 2.1 inches per week and a total operational, wet weather emergency, and water balance storage of 16 days.

Source: State of Georgia DNR document *Criteria for Slow Rate Land Treatment and Urban Water Reuse* (March 1992)

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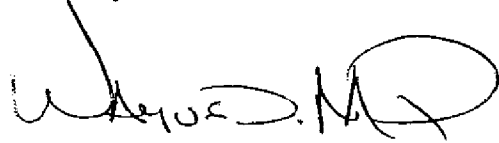
Mr. Samuel J. Shepherd, Manager  
September 13, 2006  
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to the long-term sustainable management of coastal Georgia's groundwater resources. We have initially assumed that the treatment levels for the effluent used for irrigation would be consistent with the existing urban reuse standards and that the surface water discharge will meet the limits set by GA DNR in the renewed WLA.

Therefore, on behalf of LCDA, we are requesting a renewed WLA for a surface discharge of up to 3 mgd (ADF) of treated wastewater (and 3.8-mgd MMADF) into the Laurel View River. This capacity would meet the anticipated wastewater treatment demands through approximately 2020.

If you have any questions, please do not hesitate to give me a call at 770.604.9182, ext. 417 or 404.414.1528.

Sincerely,

A handwritten signature in black ink, appearing to read "Wayne D. Murphy". The signature is fluid and cursive, with a large loop at the end.

Wayne D. Murphy, P.E.  
Project Manager

Ronald Tolley/LCDA  
Carmen Cole/LCDA  
LCDA Board Members

## Resolution

Whereas, the Floridan Aquifer is the primary source of drinking water for coastal Georgia and one of most productive and highest quality underground water systems in world;

Whereas, the practice of pumping treated surface water or wastewater into groundwater aquifers, (sometimes called "ASR", for Aquifer Storage and Recovery) would result in the injection of lower quality water into our high quality aquifer;

Whereas, ASR has been used in other areas for disposal of wastewater and was recently considered as a disposal alternative for the effluent from a proposed wastewater facility in coastal Georgia;

Whereas, there are significant public policy questions regarding the injection of surface water into the aquifer in terms of its potential to transfer water from one basin to another, which could adversely affect downstream communities and unfairly redistribute economic growth;

Whereas, the Floridan Aquifer is remarkably free from man made contaminants, but all surface waters in the nation have been subject to contamination by pharmaceuticals and personal care products and are actively present in all treated wastewater discharges;

Whereas, there are serious concerns about the risks associated with aquifer injection and its potential for degrading groundwater quality, altering the physical structure of the limestone aquifer, and the dangers posed by accidental injection of harmful substances;

Whereas, such risks could result in damage to the aquifer and drinking water supply that has been characterized by a professor of geology as "impossible to correct on a human time scale", with severe negative consequences for coastal Georgia's economy and environment;

Whereas, the Floridan Aquifer in the coastal region of Georgia has been the subject of numerous studies by both the State and Federal scientific community and studies are continuing as part of the statewide water supply management plan;

Whereas, the Floridan Aquifer studies are not complete and a better understanding of the hydrological conditions of the aquifer is prerequisite prior to any use of man made technology to change natural conditions;

Whereas, the Georgia General Assembly has wisely placed a moratorium on the injection of surface water into the Floridan aquifer because of concerns about the economic, environmental, and health risks and the recognition that there has been minimal scientific study assessing or addressing such risks;

Whereas, the state's current moratorium on ASR expires in 2009,

NOW THEREFORE, BE IT RESOLVED THAT the \_\_\_\_\_ urges the General Assembly of Georgia to continue in full force the protection provided by the moratorium on the use of Aquifer Storage and Recovery in coastal Georgia;

AND BE IT FURTHER RESOLVED THAT the \_\_\_\_\_ urges the coastal legislative delegation to sponsor and pass such legislation as may be necessary to enact the continuation of the moratorium.

Duly adopted the \_\_\_\_ day of \_\_\_\_\_, 2009.