

November 8, 2019

VIA FEDEX

DOCKET ID NO. CWA-04-2019-9970(b)

PUBLIC NOTICE NO. CWA-04-2019-9970(B)

Regional Hearing Clerk  
United States Environmental Protection Agency  
Atlanta Federal Center  
61 Forsyth Street, S.W.  
Atlanta, Georgia 30303

EPA Docket Center  
Office of Water Docket  
U.S. EPA, Mail Code 28221T  
1200 Pennsylvania Ave. NW  
Washington, D.C. 20460

Re: Notice of Proposed Issuance of Consent Agreement and Final Order  
Docket ID No. CWA-04-2019-9970(b); Public Notice No. CWA-04-2019-  
9970(b)

Dear Clerk:

These comments are submitted on behalf of Gayle Baker, Donald J. Brunelle, Judith A. Brunelle, Jane Fraser, Burke McCall Harrison, Vicki S. Harrison, Judith C. Phillips, Robert W. Williamson, III, and Renee J. Williamson (hereinafter and collectively referred to as the "Commenters") who are owners of real property and who have suffered and will continue to suffer environmental harm caused by Mortgage of America Lenders, LLC (hereinafter "Respondent"). Thank you for the opportunity to review and comment on the proposed Consent Agreement and Final Order ("CAFO") Docket No. CWA-04-2019-9970(b).

The CAFO alleges that Respondent has impacted a discharge area through the unauthorized discharge of dredged and fill material. The Discharge Area is described by EPA as being "approximately 0.25 acres" within the Site, which is defined as the "parcel or parcels of land on

Past Office Box 6010  
Ridgeland, MS 39158-6010

JOHN A. BRUNINI  
601-985-4447  
John.Brunini@butlersnow.com

Suite 1400  
1020 Highland Colony Park  
Ridgeland, Mississippi 39157

T 601.948.5711 • F 601.985.4500 • [www.butlersnow.com](http://www.butlersnow.com)

BUTLER SNOW LLP

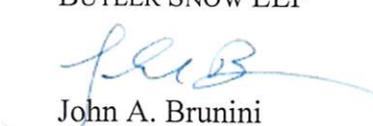
which the Discharge Area is located” on St. Simons Island, Glynn County, Georgia. The CAFO, however, does not indicate the particular area within the Site where the Discharge Area is located, nor does it provide any information on how EPA determined 0.25 acres to be the extent of the violation. The CAFO states that the dredged or fill materials were discharged into waters of the United States during the construction of a residential development (the “Development”) by earth moving equipment. Further, the CAFO notes that the dredged or fill material remains in the waters of the United States to date, but is devoid of any specific information about the affected wetlands and other waters, how those wetlands and other waters have been adversely affected, and where the materials remain at this time.

By way of this comment, the Commenters request that EPA specify the location(s) of direct fill, areas of wetlands and other waters that have been indirectly disturbed, and fully describe the resources affected by the alleged actions of the Respondents. Such information is necessary for the Commenters to fully assess the environmental harms they have suffered due to the Development on St. Simons Island, Glynn County, Georgia. In addition, Commenters have engaged an environmental consultant whose wetland delineation of the area indicated that the Development impacted approximately 1.5 acres of vegetated wetlands and resulted in violations of Nationwide Permits 14 and 18. (See attached letter.) Commenters again respectfully request that EPA provide a more complete description of the location of disturbance and extent of impacts so that Commenters can better evaluate the scope and extent of EPA’s proposed enforcement action.

We appreciate the efforts of EPA to develop the consent agreement regarding violations of the Clean Water Act section 404 and the resulting environmental harms from actions of Mortgage Lenders of America, LLC at the Site. Commenters are willing to meet with your or the relevant Regional staff at your convenience to further discuss our request for additional information about the CAFO.

Sincerely,

BUTLER SNOW LLP



John A. Brunini

September 20, 2019

Charles A. Dorminy, Esq.  
Hall Booth Smith, P.C.  
3528 Darien Highway, Suite 300  
Brunswick, GA 31525

Dargan Scott Cole, Sr., Esq.  
Hall Booth Smith, P.C.  
191 Peachtree Street, Suite 2900  
Atlanta, GA 30303-1775

RE: Notice of Intent to Sue for Violations of Clean Water Act

Dear Mr. Dorminy and Mr. Cole,

This letter is submitted on behalf of the Gayle Baker, Donald J. Brunelle, Judith A. Brunelle, Jane Fraser, Burke McCall Harrison, Vicki S. Harrison, Judith C. Philips, Robert W. Williamson, III and Renee J. Williamson (hereinafter collectively referred to as "Complainants") whom are owners of real property who have and will continue to suffer environmental harm caused by Mortgage of America Lenders, LLC's (hereinafter "Mortgage of America") failure to comply with provisions of the Federal Water Pollution Control Act. This letter serves as a sixty-day notice under the citizen suit provision of the Federal Water Pollution Control Act, 33 U.S.C. § 1365 ("Clean Water Act"). This letter communicates the intent of the Complainants to sue Mortgage of America for violations of Sections 301(a), 401, 402 and 404 of the Clean Water Act related to the construction project known as Captain's Cove Subdivision (hereinafter "Captain's Cove").

## I. INTRODUCTION

Mortgage of America is the owner of Captain's Cove, an 11.26 acre residential subdivision in St. Simons Island, Glynn County, Georgia. Storm water runoff from Captain's Cove flows into wetlands and into a retention pond which the United States Army Corps of Engineers ("USACE") has determined to be waters of the United States.

On March 7, 2017, the USACE authorized Mortgage of America's request to use Nationwide Permits ("NWP") 14 and 18 for impacts to wetlands for construction of Captain's Cove. NWP 14 permitted the construction of the access road and NWP 18 permitted the fill of less than 0.5 acres of wetlands around Detention Pond A for the development of four (4) lots.

Post Office Box 171443  
Memphis, TN 38187-1443

MELODY MCANALLY  
901.680.7322  
melody.mcanally@butlersnow.com

Crescent Center  
6075 Poplar Avenue, Suite 500  
Memphis, TN 38119

T 901.680.7200 • F 901.680.7201 • www.butlersnow.com

BUTLER SNOW LLP

On April 10, 2017, Mortgage of America submitted a Notice of Intent for Coverage under the 2013 Re-Issuance of the State of Georgia's NPDES General Permit to Discharge Storm Water Associated with Construction Activity. On August 14, 2017, Mortgage of America submitted to the Georgia Department of Natural Resources Environmental Protection Division its storm water management report confirming that Detention Pond A was jurisdictional wetlands and therefore waters of the United States. Beginning in January 2018 and continuing throughout the entire year, Mortgage of America's own consultant submitted NPDES Inspection Reports noting the failure of Mortgage of America to protect natural resources areas, such as wetlands, with barriers or other similar BMPs; and failed to adequately install and maintain perimeter controls and sediment barriers. On March 6, 2018, Glynn County issued a Notice to Comply for violations of the Glynn County Erosion and Sediment Control Ordinance. On March 19, 2018, Glynn County issued a Stop Work Order to Mortgage of America stating that the lack of BMPs was an "eminent threat" to waters of the State and the United States. Again on March 29, 2018, Glynn County issued another Stop Work Order to Mortgage of America for violations of the Glynn County Erosion and Sediment Control Ordinance. On April 12, 2018, Glynn County notified Mortgage of America that they were still not in compliance with the Glynn County Erosion and Sediment Control Ordinance.

Mortgage of America's own inspection reports state that they are continuously out of compliance with the NPDES General Permit. (See Collective Attachment A, NPDES Site Inspection Reports dated, June 1, 2018, June 8, 2018, June 15, 2018, October 26, 2018, November 9, 2018, November 16, 2018, November 21, 2018, November 26, 2018 and November 30, 2018).

## **II. VIOLATIONS OF CLEAN WATER ACT**

### **A. Discharge of Pollutants into Waters of the United States Without Permit**

Section 301(a) of the Clean Water Act states: "Except as in compliance with this section and sections 1312, 1316, 1317, 1328, 1342, and 1344 of this title, the discharge of any pollutant by any person shall be unlawful." 33 U.S.C. § 1311(a). Each violation of the permit – and each discharge that is not authorized by the permit – is a violation of the Clean Water Act.

Under the Clean Water Act, the term "pollutant" is broadly defined to include, "dredged spoils, solid waste, incinerator residue, sewage garbage, sewage sludge, munitions, chemical wastes, biological materials, radioactive materials, heat, wrecked or discarded equipment, rock, sand, cellar dirt, and industrial, municipal, and agricultural waste." 33 U.S.C. § 1362(6).

The Clean Water Act defines a "point source" as "any discernible, confined and discrete conveyance, including but not limited to any pipe, ditch, channel, tunnel, conduit, well, discrete fissure, container .... From which pollutants are or may be discharged." 33 U.S.C. § 1362(14); *see also Parker v. Scrap Metal Processors, Inc.*, 386 F.3d 993, 1009 (11th Cir. 2004). In addition, a "point source" need not be the original source of the pollutant; "it need only convey the pollutant to 'navigable waters.'" *S. Fla. Water Mgmt. Dist. v. Miccosukee Tribe of Indians*, 541 U.S. 95, 105 (2004); *accord W. Va. Highlands Conservancy v. Huffman*, 625 F.3d 159, 168 (4<sup>th</sup> Cir. 2010) (permits are required for discharges from point sources that "merely convey

pollutants to navigable waters”). This would also include any unintentional conveyance of pollutants, for example through naturally-formed ditches, gullies or pipes that allowed pollutants to be discharged. *See N.C. Shellfish Growers Ass’n v. Holly Ridge Assocs., LLC*, 278 F. Supp. 2d 654, 678 (E.D. N.C. 2003) (“Notwithstanding that it may result from such natural phenomena as rainfall and gravity, the surface run-off of contaminated waters, once channeled or collected, constitutes discharge by a point source.”)

In Mortgage of America’s September 22, 2015 Storm Water Management Report – Captain’s Cove Subdivision, Section II. 4. titled “Detention Pond Stage VS Storage and Outlet Structure Information,” Mortgage of American defines three (3) distinctive retention ponds to collect and retain storm water; however only one retention pond was actually constructed on site. The storm water from the constructed retention pond is conveyed through a pipe and is discharged directly to wetlands. This unauthorized discharge consists of “pollutants.” The unauthorized discharge include the detention pond’s emergency overflow weirs and pipes which empties without a permit into wetlands that are waters of the United States and of Georgia.

1. ***Unauthorized Discharge from Detention Pond A into Waters of the United States Without a Permit***

As stated in the September 22, 2015 Storm Water Management Report, storm water containing pollutants are being discharged from Detention Pond A, a point source, into Basin 2. The Storm Water Management Report defines Basin 2 to be wetlands and thus waters of the United States.

**Detention Pond A**

Detention Pond A is the largest of the storm water management facilities and is located in **Basin 3** as shown on EXHIBIT C. The outlet structure (OS-H6) consists of a riser box with an 8-inch diameter orifice as the primary flow control device. A one-foot rectangular weir is provided as a back-up flow control device and the riser box is drained by a 12-inch diameter pipe. The pond discharges to **Basin 2** through Pipe System H. Elevation vs outflow data for this flow control device is shown in the following Table.

\* \* \* \* \*

**Basin 2**, consisting of two (2) sub-basins, is tributary to a wetland area located along Frederica Road. This wetland area is drained by an existing conveyance system consisting of a grate inlet and a 24" RCP culvert under Frederica Road where it discharges to an existing drainage ditch. This system continues to drain to the west into a lake system in the Sea Palms West Development.

Storm water runoff from **Sub-Basin 2A** (0.26 acres) sheet flows to the southwest onto lands N/F owned by James M. Wilson, J. A. Jones, Charles E. and Sloan H. Molloy, and Mark V. Starr eventually making its way west into the aforementioned wetland area adjacent to Frederica Road. Elevations range from 14.83 along the ridge lines between **Basins 2 and 3** to 12.94 just off site. *The proposed storm water management system will eliminate this sheet flow discharge.*

Storm water runoff from *Sub-Basin 28* (1.56 acres) sheet flows to the southwest into the aforementioned wet land area adjacent to Frederica Road. Elevations range from approximately 15.39 along the ridge lines between *Basins 1 and 2* to 7.87 in the lowest portion of the wetland area.

(See Attachment A, 9/22/15 Storm Water Management Report at pp. 10-11, 5).

The unauthorized discharge of pollutants from Detention Pond A into wetlands or waters of the United States without a permit is an on-going violation of the Clean Water Act Section 301(a).

**2. *Unauthorized Discharge from Detention Pond A in Violation of Section 301(a) and 302 of Clean Water Act***

In the August 14, 2017 Storm Water Management Report, Mortgage of America modified the design of Detention Pond A to a “no-discharge” pond.

Detention Pond(s) was designed using **Hydrology Studio 2016 V2.0.0.41**. Storage volume will be sufficient to contain the 100-year 24-hour storm event. The pond (converted borrow pit) is a jurisdictional wetland area and supporting calculations indicate no discharge from this pond under post-development conditions assuming an existing water surface elevation of approximately 7.0. Nonetheless, an outlet structure has been provided with an 8-inch orifice set at invert elevation 9.50 as the primary flow control device. This is the starting water surface elevation used in the routing calculations. An emergency overflow weir is provided at elevation 11.00. Any discharge from this outlet structure will be routed to the jurisdictional wetland area to the north in Basin A. Exposed pond bank slopes will have a maximum slope of 3:1.

(See Attachment B, 8/14/17 Storm Water Management Report at p. 9).

The outlet structure was installed with construction equipment and the discharge pipe, an unauthorized point source, allows for the discharge of water and pollutants from the retention pond in violation of the Clean Water Act §§ 301(a), and 302.

**B. *Unauthorized Discharge of Dredge or Fill Material into Waters of the United States By Removing Vegetation From the Retention Pond***

Section 301(a) of the Clean Water Act provides that it shall be unlawful for any person to discharge any pollutant except in compliance with this section and section 1312, 1316, 1317, 1328, 1342 and 1344 of the Clean Water Act. 33 U.S.C. § 1311(a). Specifically, Section 301 of the Clean Water Act generally prohibits the discharge of pollutants into waters of the United States, except in accordance with the requirements of one of the two permitting programs established under the Clean Water Act: Section 404, which regulates the discharge of dredged or fill material; and Section 402, which regulates all other pollutants under the NPDES program. Section 404 is primarily administered by the USACE.

The term "Fill Material" is defined in 33 CFR § 232.2 means "material placed in water of the United States where the material has the effect of: (i) Replacing any portion of a water of the United States with dry land; or (ii) Changing to bottom elevation of any portion of a water of the United States." 33 CFR § 232.2(1). The regulations further provide examples of what constitutes "fill material" to include, but not limited to: "rock, sand, soil, clay, plastics, construction debris, wood chips, overburden from mining or other excavation activities, and materials used to create any structure or infrastructure in the waters of the United States." *Id.* at § 232.2(2).

On December 15, 2016, Mr. Ron Sluder submitted to the USACE a request for a Jurisdictional determination for Captain's Cove. The project was assigned number SAS-2014-00615. Based upon the Jurisdictional Determination by the USACE, the entire 1.530 acres of the Detention Pond A (Borrow Pit) are wetlands. (See Attachment D at page 8). In Storm Water Management Report dated August 14, 2017, Mortgage of America states "The pond (converted borrow pit) is a jurisdictional wetland areas." (See Attachment C, 8/14/17 Storm Water Management Report at page 9). As a result, any discharge of fill material into or from Detention Pond A without a permit would be a violation of Clean Water Act §§ 301(a) and 404.

On July 27, 2018, Mr. James Holland captured the following photos (A and B) of Detention Pond A. The photos clearly show that Detention Pond A has trees and vegetation growing in the pond. However, in picture C dated December 18, 2018, all vegetation and overburden was removed.

Photo A – Dated July 27, 2018



Photo B – Dated July 27, 2018

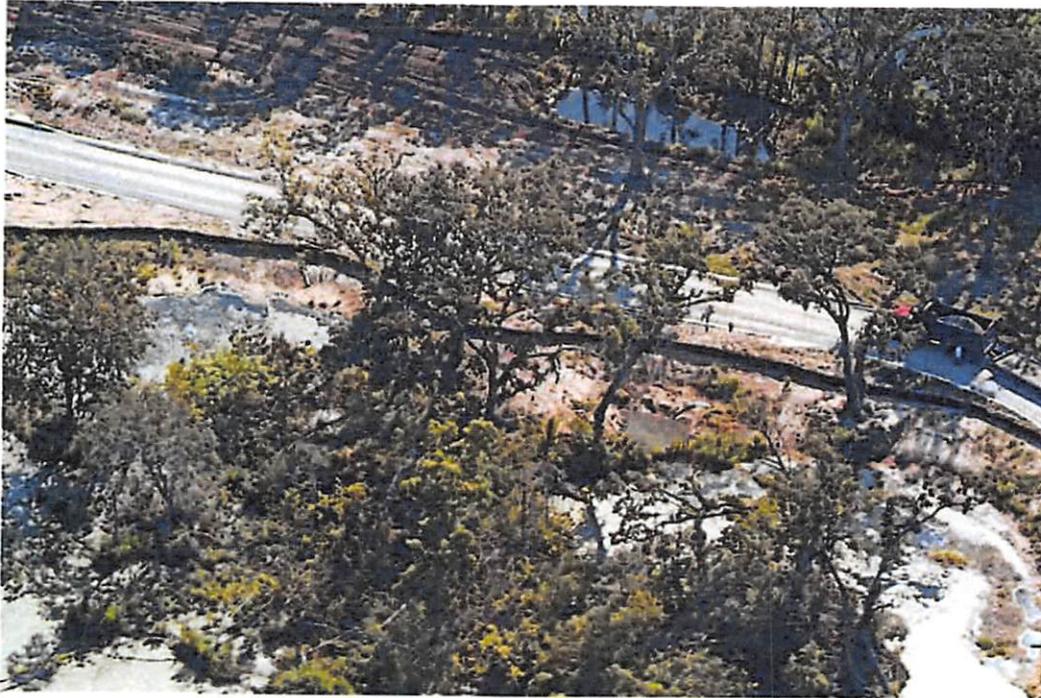
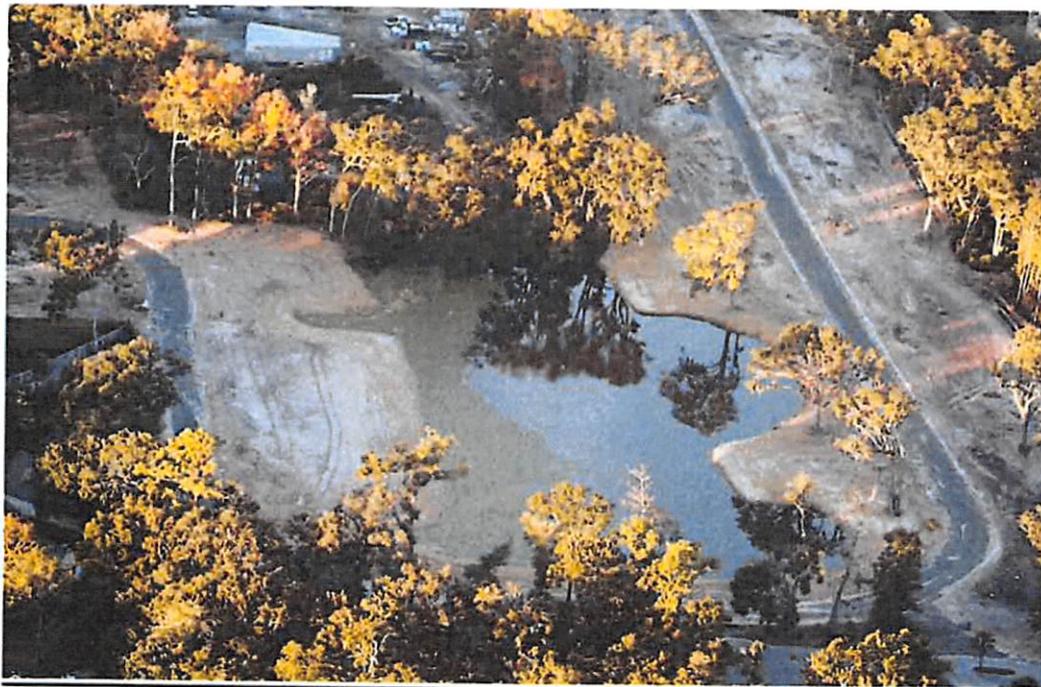


Photo C – Dated December 18, 2018



Mortgage of America admits in the August 14, 2017 Storm Water Management Report that Detention Pond A (converted borrow pit) is a jurisdictional wetland. In addition, the Storm Water Management Report states that the depth of the pond is seven (7) feet and that the exposed pond bank slopes will have a maximum slope of 3:1; thereby acknowledging that overburden was removed from waters of the United States and that construction activities occurred within waters of the United States outside of the permitted work under NWP 18.

Moreover, on September 11, 2018, Mr. Stacy Culbreath, the Assistant County Engineer for Glynn County, sent an email to Mr. Ron Sluder with the caption of "Captions Cove". In the email, Mr. Culbreath states:

We were wanting to know if there was any way you could get into the detention pond for captains cove and clean it out. It is our understanding that it will be a detention pond/amenity for the subdivision and would love for it to cleaned out.

It is our understanding that this may be waters of the state and the Corps of Engineers may have authority over the pond and if that is the case, then they will have to give final sign off on cleaning out the pond.

(See Attachment D, 9/11/18 email from Stacy Culbreath).

Based upon the dates of the photos above, it was not until after the email from Glynn County that Mortgage of America "cleaned out" or removed the overburden within Detention Pond A. At this time, Mortgage of America knew or should have known that the entire area of Detention Pond A were jurisdictional waters of the United States and that a permit from the USACE was required prior to conducting any work in Detention Pond A. Mortgage of America, without authorization or a permit from the USACE, removed the vegetation and overburden from Detention Pond A in violation of the Clean Water Act. In addition, Mortgage of America filled waters of the United States in violation of the Clean Water Act by changing the bottom elevation of waters of the United States. This is a continuing and on-going violation.

**C. Unauthorized Discharge of Fill Material into Waters of the United States By Construction of the Weir.**

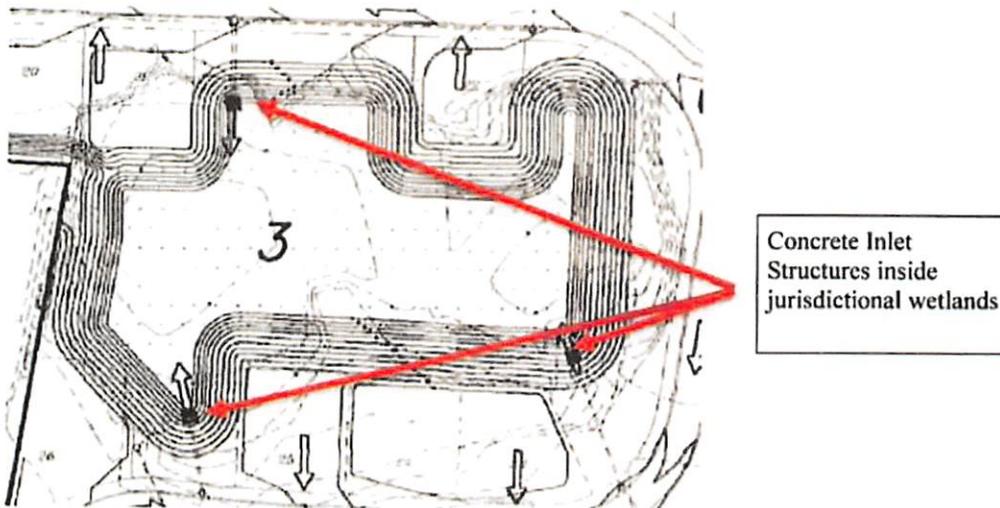
Section 404 of the Clean Water Act allows an applicant to obtain a permit to dredge and fill waters of the United States. 33 U.S.C. § 1344. "Compliance with a permit issued under [Section 404] . . . shall be deemed compliance, for purposes of [Citizen Suits under Section 505(a)], with [Section 301(a) of the Clean Water Act]. 33 U.S.C. § 1344(p). The construction of an emergency weir within Detention Pond A is a violation of the Clean Water Action Sections 301(a), 401, 402 and 404.

**1. Construction of Storm Water Drainage Structures in Jurisdictional Wetland Without a Permit**

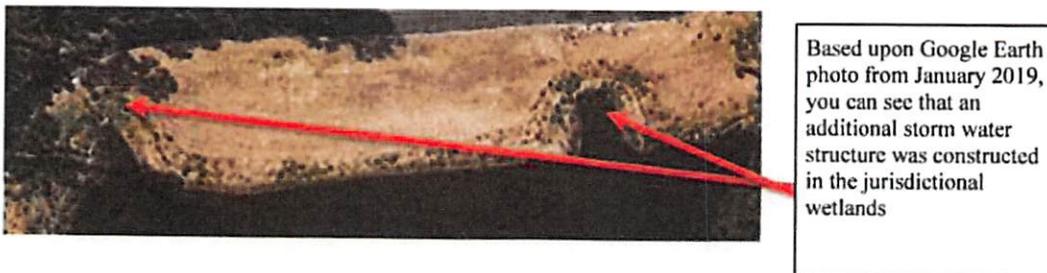
On March 7, 2017, the USACE issued a letter to Mr. Ron Sluder, Mortgage of America, authorizing the proposed construction activities at Captain's Cove under NWP 14 Linear Transportation Projects and NWP 18 Minor Discharges. The USAC conditioned approval upon several provisions, including:

*e. You shall install and maintain erosion and sediment control measures in upland areas of the project site.... The permit does not authorize installation of check-dams, weirs, riprap, bulkheads or other erosion control measures in streams, wetlands or other waters of the United States. Authorization would be required from the U.S. Army Corps of Engineers prior to installing any erosion control measures in waters of the United States.*

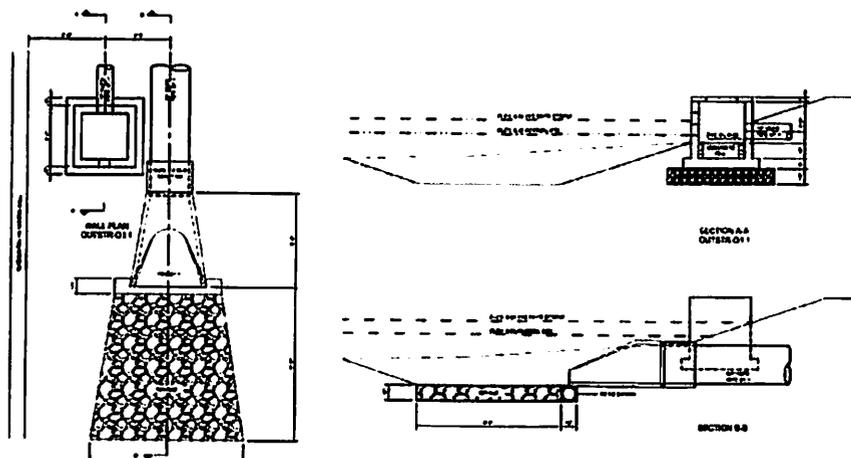
(See Attachment C, 3/7/17 letter from USACE (emphasis added)).



The above picture from the Captain's Cove Storm Water Report regarding Site Construction Plans Phases 1 and II show three (3) concrete inlet structures to allow storm water from the surrounding area to drain into Detention Pond A.



In addition the below picture shows the construction plans for the storm outlet structures constructed within Detention Pond A. The construction drawings show a concrete structure with pipe and rip-rap being installed within the jurisdictional wetlands. This violates the Clean Water Act.



**2. Construction of Emergency Overflow System in Jurisdictional Wetlands without a Permit**

The construction of the emergency overflow system violates the Clean Water Act by placing pollutants into waters of the United States without acquiring both a 401 or 404 permit prior to construction. The associated piping are constructed of concrete, sand, rock, metal and/or plastic, all of which are considered pollutants under the Clean Water Act, thereby violating Sections 301(a), 401 and 404 of the Clean Water Act. Second, the construction of the emergency overflow systems constitutes a placement of dredged or fill materials in waters of the United States by replacing a portion of a water of the United States with dry land and/or raising the bottom elevation of that water, thereby violating Section 301(a), 401 and 404 of the Clean Water Act. The discharge from the emergency overflow weir constitutes a violation of the Clean Water Act for failing to obtain a NPDES discharge permit or 401 or 404 permits. Finally, the construction of the weir violates provisions of the NWP issued by the USACE.

As stated above, the USACE's March 7, 2017 letter authorizing the proposed construction activities at Captain's Cove under NWP 14 Linear Transportation Projects and NWP 18 Minor Discharges conditioned approval as follows:

*e. You shall install and maintain erosion and sediment control measures in upland areas of the project site.... The permit does not authorize installation of check-dams, weirs, riprap, bulkheads or other erosion control measures in streams, wetlands or other waters of the United States. Authorization would be required from the U.S. Army Corps of Engineers prior to installing any erosion control measures in waters of the United States.*

(See Attachment C (emphasis added)).

In the August 14, 2017 Storm Water Management Report, Mortgage of American states that an emergency overflow weir was constructed within Detention Pond A.

approximately 7.0. Nonetheless, an outlet structure has been provided with an 8-inch orifice set at invert elevation 9.50 as the primary flow control device. This is the starting water surface elevation used in the routing calculations. An emergency overflow weir is provided at elevation 11.00. Any discharge from this outlet structure will be routed to the jurisdictional wetland area to the north in Basin A. Exposed pond bank slopes will have a maximum slope of 3:1.

(See Attachment B at p. 9).

The construction of a weir within jurisdictional waters of the United States is an ongoing and continuous violation of the NWP 18 provision (e) and is also a violation of the Clean Water Act §§ 301(a), and 404 for the discharge of pollutants without a permit.

**D. Violation of the Clean Water Act Section 402**

Section 402 of the Clean Water Act prohibits the discharge of any pollutant to waters of the United States from a point source unless the discharge is authorized by a National Pollutant Discharge Elimination System (NPDES) permit or 404 permit. The State of Georgia has delegated authority from the United States Environmental Protection Agency ("USEPA") to issue NPDES permits for the State of Georgia. See O.C.G.A. §§ 12-5-29 and 12-5-30. The State of Georgia issued General NPDES Permits No. GAR 100001, No. GAR100002 and No. GAR 100003 as general permits for stand-alone, infrastructure and common development construction sites. These permits allow developers to discharge storm water under certain permitted conditions.

**1. *Discharge of Storm Water and Pollutants from a No-Discharge System***

Mortgage of America applied for coverage under the State of Georgia general storm water permit for the construction of Captain's Cove. However, the storm water plan submitted by Mortgage of America states that Detention Pond A is designed as a "no-discharge" system.

#### **4. DETENTION POND STAGE VS STORAGE AND OUTLET STRUCTURE INFORMATION**

Detention Pond(s) was designed using Hydrology Studio 2016 V2.0.0.41. Storage volume will be sufficient to contain the 100-year 24-hour storm event. The pond (converted borrow pit) is a jurisdictional wetland area and supporting calculations indicate no discharge from this pond under post-development conditions assuming an existing water surface elevation of approximately 7.0. Nonetheless, an outlet structure has been provided with an 8-inch orifice set at invert elevation 9.50 as the primary flow control device. This is the starting water surface elevation used in the routing calculations. An emergency overflow weir is provided at elevation 11.00. Any discharge from this outlet structure will be routed to the jurisdictional wetland area to the north in Basin A. Exposed pond bank slopes will have a maximum slope of 3:1.

#### **6. EMERGENCY OVERFLOW CALCULATIONS**

In as much as the ponds contain the 100-year storm event, no overflow calculations are required.

(See Attachment B).

Mortgage of America has not and currently is not operating the retention pond as a “no-discharge” system as stated in the storm water management report. The water level in the pond is routinely over the top of the emergency weir; thereby creating a continuous discharge of storm water and pollutants into waters of the United States in violation of the NPDES permit.

#### **2. Failure to Protect Wetland**

The NPDES Site Inspection Reports for Captain’s Cove dated June 1, 2018 and June 4, 2018 show that Mortgage of America failed to properly implement or maintain Best Management Practices (“BMPs”) to prevent or minimize erosion and sedimentation run-off from the subdivision. (See Collective Attachment E, NPDES Site Inspection Reports dated, June 1, 2018, June 8, 2018, June 15, 2018, October 26, 2018, November 9, 2018, November 16, 2018, November 21, 2018, November 26, 2018 and November 30, 2018). The NPDES Site Inspection Reports dated November 9, 2018, November 16, 2018, November 21, 2018, November 26, 2018 and November 30, 2018 show that Mortgage of America failed to properly protect natural resource areas, such as wetlands, with adequate BMPs. (*Id.*) The failure of Mortgage of America to properly install BMPs resulted in pollutants being discharged into waters of the United States in violation of the Clean Water Act. These pollutants, including dirt, soil, rocks, debris and sand remain in waters of the United States and until properly remediated continue to be a violation of the Clean Water Act Section 402 and 404.

#### **E. Violation of the Clean Water Act Section 404**

As previously stated, Section 404 of the Clean Water Act allows an applicant to obtain a permit to discharge dredged and fill materials into waters of the United States. 33 U.S.C. § 1344. “Compliance with a permit issued under [Section 404] . . . shall be deemed compliance, for

purposes of [Citizen Suits under Section 505(a)], with [Section 301(a) of the Clean Water Act]. 33 U.S.C. § 1344(p).

The USACE's letter to Mortgage of America authorizing the proposed construction activities at Captain's Cove under NWP 14 Linear Transportation Projects and NWP 18 Minor Discharges expressly conditioned these Permits upon several provisions, including:

c. You shall obtain and comply with all appropriate federal, state and local authorizations required for this type of activity.

d. All work conducted under this permit shall be located, outlined, designed, constructed, and operated in accordance with the minimal requirements of the Georgia Erosion and Sedimentation Control Act of 1975, as amended.

(See Attachment C at p. 2).

**1. *Violation of provision "c" of NWP 14 and 18***

Mortgage of America continues to violate the Glynn County Erosion and Sedimentation Control Ordinance, thereby violating provisions of the Clean Water Act. On March 19, 2018, Glynn County issued a Stop Work Order to Mortgage of America for violation of the Glynn County Erosion and Sedimentation Control Ordinance. (See Attachment F, 3/19/18 Stop Work Order). Specifically, the Stop Work Order noted deficient BMPs regarding silt fencing. In addition, Mortgage of America constructed erosion and sedimentation control devices within waters of the United States. Mortgage of America continues to violate the Glynn County Erosion and Sedimentation Control Ordinance by failing to properly maintain erosion and sedimentation control devices throughout Captain's Cove.

**2. *Violation of provision "d" of NWP 14 and 18***

- a. Mortgage of America continues to violate provisions of the Georgia Erosion and Sedimentation Control Act by failing to properly maintain erosion and sedimentation control devices throughout the entire subdivision.
- b. Mortgage of America continues to violate Georgia Water Quality Control Act by continually discharging storm water and pollutants from Detention Pond A, which is permitted as a "no-discharge" storm water facility.

**F. Violation of the Clean Water Action Section 401 Permit**

Section 401 of the Clean Water Act requires that any applicant prior to obtaining any federal permit must obtain a water quality certification from the State where the project will be constructed. This is commonly referred to as a Section 401 Water Quality Certification. Section 401(a) of the Clean Water Act specifically states:

(1) Any applicant for a Federal license or permit to conduct any activity including, but not limited to, the construction or operation of facilities, which may result in any discharge into navigable waters, shall provide the licensing or permitting agency a certification from the State in which the discharge originates or will originate, or, if appropriate, from the interstate water pollution control agency having jurisdiction over the navigable waters at the point where the discharge originates or will originate, that any such discharges will comply with the applicable provisions of section 1311, 1312, 1313, 1316, and 1317 of this title.

33 U.S.C. § 1341(a)(1).

Because 401 Water Quality Certification is required prior to the issuance of any permit under the Clean Water Act, each violation of sections 301(a), 402 and 404 are violations of Section 401. As a result, Mortgage of America has and continues to violate Section 401 of the Clean Water Act for the following activities as outlined above and listed again below:

1. ***Failure to obtain a 401 Permit for unauthorized discharges of pollutants from Detention Pond A.***
2. ***Failure to obtain a 401 Permit for unauthorized discharges from Detention Pond A in violation of the "No-Discharge" designation of Detention Pond A.***
3. ***Failure to obtain a 401 permit for the unauthorized fill of material from Detention Pond A by removing overburden and vegetation and by lowering the elevation of Waters of the United States in Detention Pond A.***
4. ***Failure to obtain a 401 permit for the construction of an emergency weir in Waters of the United States, in particular, the construction of storm water inlet weirs in Detention Pond A.***
5. ***Failure to obtain a 401 permit for the construction of an emergency weir in Waters of the United States, in particular, the construction of emergency overflow system in Detention Pond A.***

### **III. POTENTIAL LITIGATION: INTENT TO SUE**

This letter is based on publicly available information. Additional information, including information in Mortgage of America's possession, custody or control may reveal other violations. This letter only addresses publicly identifiable violations related to Mortgage of America's continued failure to comply. This letter does not preclude Complainants from making any additional claims.

Because Complainants intend to sue Mortgage of America under the Clean Water Act, Mortgage of America is legally required to preserve and not to destroy any information, electronically stored information, or documents that are relevant to the allegations set forth above, including, but not limited to, environmental data, construction documents, contract documents, monitoring documents, enforcement documents, regulatory filings, business plans, emails and other electronically stored information, communications, photographs, videos, invoices, bills, and documents sent to or obtained from third parties hired by Mortgage of America. Mortgage of America's documents shall be preserved immediately to avoid spoliation.

#### **IV. IDENTITY AND ADDRESS OF PARTY GIVING NOTICE**

##### **A. The Complainants**

1. Gayle Baker is the owner of real property located at 127 Daufuski Lane and 131 Daufuski Lane, St. Simons Island, Glynn County, Georgia, 31522. Ms. Baker resides at 821 Kings Grant, St. Simons Island, GA 31522.
2. Donald J. Brunelle and Judith A. Brunelle are the owners of real property located at and reside at 251 Villager Dr., St. Simons Island, Glynn County, Georgia, 31522.
3. Jane Fraser is the owner of real property located at 165 North Harrington Road, St. Simons Island, Glynn County, GA 31522. Ms. Fraser resides at 227 W Sixteenth St., Sea Island, GA 31561.
4. Burke McCall Harrison and Vicki S. Harrison are the owners of real property located at and reside at 253 Villager Dr., St. Simons Island, Glynn County, Georgia, 31522.
5. Judith C. Phillips is the owner of real property located at and resides at 115 Daufuski Lane, St. Simons Island, Glynn County, Georgia, 31522.

##### **B. Contact Information**

The Complainants contact information is listed above. Their counsel's contact information is:

Michael I. Less  
Melody McAnally  
Butler Snow, LLP  
6075 Poplar Avenue, 5th Floor  
Memphis, Tennessee 38119  
(901) 680-7200

Michael Caples  
John Brunini  
Butler Snow, LLP  
P.O. Box 6010  
Ridgeland, Mississippi 39158  
(601) 948-5711

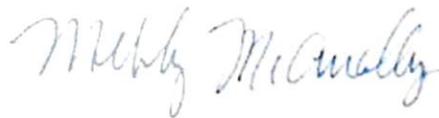
E. Righton Johnson Lewis  
Butler Snow, LLP  
1170 Peachtree Street NE, Suite 1900  
Atlanta, GA 30309  
(678) 515-5000

**V. CONCLUSION**

The Complainants hope Mortgage of America will take prompt action to remedy the violations identified in this notice letter and to come into full compliance with the Clean Water Act. Please direct all communications to the undersigned counsel via the addresses and telephone numbers above.

Sincerely,

BUTLER SNOW LLP



Melody McAnally

cc: Andrew Wheeler  
EPA – Office of Administrator  
USEPA Headquarters  
William Jefferson Clinton Building  
1200 Pennsylvania Ave., NW  
Mail Code 1101A  
Washington, DC 20460

Mary Walker  
Acting Administrator  
U.S. EPA Region 4  
Sam Nunn Atlanta Federal Center  
61 Forsyth Street, SW  
Atlanta, GA 30303

**September 20, 2019**

**Page 16**

**Richard E. Dunn  
Georgia Department of Natural Resources  
Environmental Protection Division  
2 Martin Luther King Jr. Dr.  
Suite 1456, East Tower  
Atlanta, GA 30334**

**Colonel Daniel Hibner  
Savannah District Commander  
U.S. Army Corps of Engineers  
100 W. Oglethorpe Avenue  
Savannah, GA 31401**

**Lieutenant General Todd T. Semonite  
U.S. Army Corps of Engineers  
441 G Street NW  
Washington, DC 20314-1000**

**49383411.v1**

# ATTACHMENT A

# STORM WATER MANAGEMENT REPORT

## CAPTAIN'S COVE SUBDIVISION

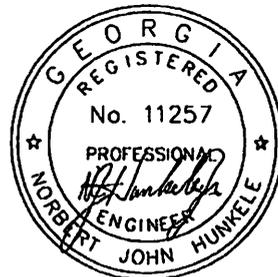
SEPTEMBER 22, 2015

PREPARED FOR

**MORTGAGE OF AMERICA**

**1301 SHILOH ROAD**

**KENNESAW, GEORGIA 31044**



**NOTE:**

***This Storm Water Management Report has been prepared and formatted in accordance with the requirements of the Glynn County Local Design Manual – 27July05 and the Georgia Storm Water Management Manual.***

Coastal Engineering Consultants, Inc.  
P. O. Box 20306  
St. Simons Island, GA 31522

Baker 000538

**I. NARRATIVE**

This section gives general information about the project and the intended method for managing storm water runoff from the project.

**1. NAME OF PROJECT**

Captain's Cove Subdivision Phases I & II

**2. REVISIONS**

No revisions as of this date. This is the first submittal.

**3. CONSTRUCTION DRAWINGS**

The construction plans prepared by Coastal Engineering Consultants, Inc. for this site are included with this initial document submittal and are entitled:

SITE CONSTRUCTION PLANS  
CAPTAIN'S COVE – PHASES I & II  
ST. SIMONS ISLAND  
GLYNN COUNTY GEORGIA  
MORTGAGE OF AMERICA  
SEPTEMBER 1, 2015

**4. DESIGN APPROACH AND METHODOLOGY**

The Rational method, as allowed by the Local Design Manual for sites less than 25 acres in size, was used in the calculation of storm water runoff for storm pipes and detention pond(s).

Storm pipes were designed using **Stormwater Studio v1.0.1.11**. All pipes are designed to accommodate the 25-year peak flowrate with the exception of proposed *Pipe System A* which is designed to accommodate the 50-year peak flowrate. A combination of HDPE and RCP culverts is proposed. Minimum cover of 12-inches is maintained for all RCP culverts. Minimum cover for HDPE culverts shall be in accordance with Table A of the Local Design Manual.

Detention Pond(s) were designed using **Hydrology Studio v1.1.4.14**. Storage volume will be sufficient to contain the 50-year 24-hour storm event. Wet ponds (Pond A) are designed to maintain a minimum 4-foot average normal water depth. Exposed pond bank slopes will have a maximum slope of 4:1. Dry ponds (Ponds B and C) are designed with bottom slope sufficient to drain pond completely with maximum bank slopes of 2:1.

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**5. DESIGN CRITERIA AND VALUES USED FOR CALCULATIONS**

**Roughness Coefficients:**

RCP Culverts	0.013
HDPE Culverts	0.010

**Runoff Coefficients:**

Natural Areas	0.30	
Undisturbed Wetlands	0.30	
Wet Ponds	0.95	
Landscaped Areas	0.45	
Impervious Surfaces	0.95	
Developed Lots	0.66	42% Impervious 58% Landscaped
Proposed Right-of-Way	0.74	58% Impervious 42% Landscaped

**Soil Types:**

See Map in Appendix

**Cainhoy Fine Sand (CaB)      2.25 Acres      20.0% of site**

*Properties:*

Excessively Drained		
Hydrologic Soil Group A		
Slope	0 to 5	Percent
Depth to Restrictive Feature	>80	Inches
Depth to Water Table	>80	Inches
Ksat	5.95 to 19.98	Inches/Hour

**Mandarin Fine Sand (Ma)      6.17 Acres      54.8% of site**

*Properties:*

Somewhat Poorly Drained		
Hydrologic Soil Group A		
Slope	0 to 2	Percent
Depth to Restrictive Feature	>80	Inches
Depth to Water Table	18 to 30	Inches
Ksat	1.28 to 19.98	Inches/Hour

**Rutledge Fine Sand (Ru)      2.84 Acres      25.2% of site**

*Properties:*

Very Poorly Drained		
Hydrologic Soil Group A/D		
Slope	0 to 2	Percent
Depth to Restrictive Feature	>80	Inches
Depth to Water Table	0 to 6	Inches
Ksat	5.95 to 19.98	Inches/Hour

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Site Slopes: See Soil Properties Above

Time of Concentration:

Pipe Design	5	Minutes
Detention Calculations	10	Minutes

**6. GENERAL TOPOGRAPHY AND POINTS OF OUTFALL**

The project site, situated east of Frederica Road between North and South Harrington Roads, is 11.26 acres in size and is comprised of 7.64 acres of upland areas and 3.62 acres of wetland areas. There are 3 distinct drainage patterns depicted as Basins 1 through 3 on EXHIBIT A – Pre Development Drainage Patterns and EXHIBIT B – Post Development Drainage Patterns included as Appendices to this report.

The Pre-development Drainage Basins are summarized in the Table below with detailed descriptions following.

<b>PRE-DEVELOPMENT DRAINAGE BASINS</b>				
Basin	Upland Area (Acres)	Wetland Area (Acres)	Total Area (Acres)	Land Use
1-A	2.89	1.71	4.60	Wooded & Wetlands
1-B	1.49	0.00	1.49	Wooded
1-C	0.22	0.00	0.22	Wooded
2-A	0.27	0.00	0.27	Wooded
2-B	1.42	0.14	1.56	Wooded & Wetlands
3	1.35	1.77	3.12	Wooded & Wetlands (Borrow Pit)
<b>Total</b>	<b>7.64</b>	<b>3.62</b>	<b>11.26</b>	

**Basin 1**, consisting of three (3) sub-basins, is tributary to a wetland area which continues both east and west from the site. This wetland drains off site to the northwest across land N/F owned by Darrell P. Horton. This wetland area is ultimately drained by twin 24" RCP culverts under N. Harrington Road. This system continues to drain to the north and eventually enters a drainage ditch located on Musgrove Plantation.

Storm water runoff from **Sub-Basin 1-A** (4.60 acres) sheet flows into the aforementioned wetland area. Elevations range from approximately 13.87 along the ridge lines between **Basins 1 and 3** to 5.82 in the lowest portion of the wetland area.

Storm water runoff from **Sub-Basin 1-B** (1.49 acres) sheet flows to the east onto lands N/F owned by Ursula and Richard Wagner, Village Creek Homeowners Association and Misty Gillette. Elevations range from 13.87 along the ridge lies between **Basins 1 and 3** to 9.89 at the eastern property line. Most of the runoff enters the detention pond for the Village Creek Subdivision eventually making its way north into the aforementioned wetland area.

Storm water runoff from *Sub-Basin 1-C* (0.22 acres) sheet flows to the northeast onto land N/F owned by Brandon Bailey eventually making its way north into the aforementioned wetland area. Elevations range from 15.39 along the ridge lines between *Basins 1 and 2* to 13.09 just off-site. *The proposed storm water management system will eliminate this sheet flow discharge.*

*Basin 2*, consisting of two (2) sub-basins, is tributary to a wetland area located along Frederica Road. This wetland area is drained by an existing conveyance system consisting of a grate inlet and a 24" RCP culvert under Frederica Road where it discharges to an existing drainage ditch. This system continues to drain to the west into a lake system in the Sea Palms West Development.

Storm water runoff from *Sub-Basin 2A* (0.26 acres) sheet flows to the southwest onto lands N/F owned by James M. Wilson, J. A. Jones, Charles E. and Sloan H. Molloy, and Mark V. Starr eventually making its way west into the aforementioned wetland area adjacent to Frederica Road. Elevations range from 14.83 along the ridge lines between *Basins 2 and 3* to 12.94 just off site. *The proposed storm water management system will eliminate this sheet flow discharge.*

Storm water runoff from *Sub-Basin 2B* (1.56 acres) sheet flows to the southwest into the aforementioned wetland area adjacent to Frederica Road. Elevations range from approximately 15.39 along the ridge lines between *Basins 1 and 2* to 7.87 in the lowest portion of the wetland area.

*Basin 3* is 3.12 acres in size and contains 1.77 acres of isolated wetland area which is the site of an abandoned borrow pit. Elevations range from 14.83 along the ridge line between *Basins 2 and 3* to 6.01, the lowest surveyed elevation within the confines of the borrow pit. All storm water runoff from this basin sheet flows into the abandoned borrow pit and there is no discharge from this isolated wetland area.

The Post-development Drainage Basins are summarized in the Table below. Note that *Basins 1, 2 and 3* have changed in size and that *Sub-Basins 1-C, and 2-A* have been eliminated by diverting flow from these areas into *Basin 3*.

POST-DEVELOPMENT DRAINAGE BASINS				
Basin	Upland Area (Acres)	Wetland Area (Acres)	Total Area (Acres)	Land Use
1-A	1.63	1.37	3.00	Developed Lots & RW; Detention; Wetlands
1-B	0.58	0.00	0.58	Developed Lots
1-C	Eliminated			
2-A	Eliminated			
2-B	1.36	0.14	1.50	Developed Lots & RW; Detention; Wetlands
3	4.57	1.61	6.18	Developed Lots & RW; Detention; Wetlands
<b>Total</b>	<b>7.64</b>	<b>3.62</b>	<b>11.26</b>	

**7. KNOWN DRAINAGE CONCERNS**

The large wetland area located in the northern portion of the site receives discharge from the Village Creek detention pond and runoff from properties located immediately east of this site. These storm water flows drain to the north through twin 24-inch RCP culverts (*System 1*) under North Harrington Road. *Basins 1-A, 1-B and 1-C* also contribute flow to this system. The construction of Captain's Cove Way across this wetland and connecting to N. Harrington Road *will require* cross drains of sufficient capacity to match or exceed the capacity of the existing 24-inch RCP culverts.

The wetland area located in the western portion of the site receives runoff from properties along Frederica Road both north and south of the site. These storm flows drain to the west through a single 24-inch RCP culvert (*System 2*) under Frederica Road. *Basins 2-A and 2-B* also contribute flow to this system.

*Systems 1 and 2* are discussed in greater detail in the following paragraph. While CEC is not aware of any reported flooding concerns for these systems, the design of the Captain's Cove storm water management system must ensure that post development runoff is equal to or less than predevelopment conditions so as not to exacerbate any existing problems.

**8. DOWNSTREAM CONVEYANCES**

As mentioned above, there are two downstream conveyance systems of particular concern. *System 1* is a twin RCP culvert system under North Harrington Road that drains the existing wetland area receiving runoff from this development and residential development immediately to the east. *System 2* is a culvert system under Frederica Road that drains an existing wetland area receiving runoff from this development and residential properties immediately to the north and south. These systems were analyzed using Stormwater Studio v1.0.1.11. The pertinent data for these systems is included in the table below.

DOWNSTREAM CONVEYANCE SYSTEMS		
	System 1	System 2
Number of Pipes	2	1
Size of Pipes	24"	24"
Pipe Material	RCP	RCP
Pipe Length	67'	95'
Upper Invert Elevation	7.31	5.80
Lower Invert Elevation	6.88	5.27
Pipe Slope	0.64%	0.56%
Estimated Drainage Area*	19.5 Acres	6.5 Acres
Length of Travel*	1700 Feet	600 Feet
Elevation of Most Remote Point*	16.0	15.0
Time of Concentration	25 Minutes	10 Minutes
Runoff Coefficient	0.30	0.30
25-Year Rainfall Intensity	6.03 Inches/Hour	9.34 Inches/Hour
50-Year Rainfall Intensity	6.71 Inches/Hour	10.38 Inches/Hour
Estimated 25-Year Runoff	35.25 CFS	18.22 CFS
Estimated 50-Year Runoff	39.25 CFS	20.23 CFS
* Data estimated from Glynn County GIS Website		

**A complete Storm Water Studio Report for each of these pipe systems is included in the Appendix. The report includes pipe profiles of these pipe systems with the hydraulic grade line (HGL) superimposed.**

**The data indicates that the existing conveyance systems are adequately sized for the current development conditions. However there is little additional capacity for increased runoff. Post development runoff rates must be controlled.**

II. WATER QUANTITY

This section details the design of the storm water conveyances and storm water management facilities proposed for the project.

1. STORM WATER CONVEYANCES AND MANAGEMENT FACILITIES

Existing drainage patterns will be modified or changed during construction of the proposed subdivision. EXHIBIT C, included as an Appendix to this report, illustrates the proposed storm water conveyances and management facilities.

2. PEAK FLOW CALCULATIONS AND CONVEYANCE CAPACITIES

Storm pipes were designed using Stormwater Studio v1.0.1.11. All pipes are designed to accommodate the 25-year peak flowrate except for *Pipe System A* which accommodates the 50-year peak flowrate. The Rational Formula is used as follows:

$$Q = CIA \quad \text{where } Q = \text{Runoff in cubic feet per second (CFS)}$$

$$C = \text{Runoff Coefficient}$$

$$i = \text{Rainfall Intensity in inches per hour (IN/HR)}$$

$$A = \text{Basin area in acres (Ac)}$$

PROPOSED STORM WATER CONVEYANCES								
Pipe System	Pipe ID	Incremental Drainage Area (Ac)	Total Drainage Area (Ac)	Runoff Coefficient 'C'	Total Q (CFS)	Pipe Size (Inches)	Pipe Slope (%)	Pipe Type
A	A1	0.00	10.79	0.00	23.43	29x45	0.14	Elliptical RCP
	A2	0.37	10.63	0.70	23.12	29x45	0.05	Elliptical RCP
	A3	0.26	10.26	0.72	21.38	29x45	0.04	Elliptical RCP
	A4	10.00	10.00	0.30	20.13	29x45	0.14	Elliptical RCP
	A5	0.08	0.16	0.74	1.50	18	0.12	HDPE
	A6	0.08	0.08	0.74	0.79	15	0.15	HDPE
B	B1	0.15	1.98	0.71	14.78	36	0.10	HDPE
	B2	0.29	0.29	0.69	2.45	15	0.10	HDPE
	B3	0.58	1.19	0.69	9.92	30	0.10	HDPE
	B4	0.61	0.61	0.69	5.11	18	0.10	HDPE
	B5	0.11	0.35	0.74	2.93	15	0.96	HDPE
	B6	0.24	0.24	0.68	1.98	15	0.10	HDPE
E	E1	0.47	0.70	0.69	5.90	18	1.95	HDPE
	E2	0.23	0.23	0.71	1.96	15	0.11	HDPE
F	F1	0.21	0.41	0.71	3.62	18	0.17	HDPE
	F2	0.20	0.20	0.74	1.79	15	0.10	HDPE
G	G1	0.42	0.71	0.70	5.29	15	0.18	HDPE
	G2	0.15	0.29	0.68	2.40	15	1.21	HDPE
	G3	0.14	0.14	0.68	1.15	15	0.11	HDPE
H	H1	0.07	0.13	0.66	1.01	12	0.27	HDPE
	H2	0.06	0.06	0.66	0.64	12	0.27	HDPE
	H3	0.00	0.00	0.00	0.25	12	0.27	HDPE
	H4	0.00	0.00	0.00	0.25	12	0.27	HDPE
	H5	0.00	0.00	0.00	0.25	12	0.27	HDPE

NOTES PIPE SYSTEM H:  
 1. THIS SYSTEM TO BE PRIVATELY OWNED AND MAINTAINED BY THE HOME OWNERS ASSOCIATION  
 2. PIPES H3, H4, AND H5 CONVEY CONTROLLED FLOWS FROM DETENTION POND A

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 St. Simons Island, GA 31522

### 3. DRAINAGE SYSTEM PROGRESSION

The tables below illustrate the procession of flows through the system for storm water conveyance and management facilities that are networked. See also EXHIBIT C in the Appendix.

SYSTEM A	
STRUCTURE	PIPE
Headwall HW-A5	
	A4
Curb Inlet CI-A4	
	A3
Curb Inlet CI-A3	
	A2
Junction Box JB-A2	
	A1
Headwall HW-A1	
Curb Inlet CI-A7	
	A6
Curb Inlet CI-A6	
	A5
Junction Box JB-A2	

SYSTEM B	
STRUCTURE	PIPE
Curb Inlet CI-B3	
	B1
Curb Inlet CI-B2	
	B2
Flared End Section FES-B1	
Curb Inlet CI-B4	
	B4
Curb Inlet CI-B5	
	B3
Curb Inlet CI-B2	
Curb Inlet CI-B6	
	B6
Curb Inlet CI-B7	
	B5
Curb Inlet CI-B2	

SYSTEM E	
STRUCTURE	PIPE
Curb Inlet CI-E3	
	E2
Curb Inlet CI-E2	
	E1
Flared End Section FES-E1	

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SYSTEM F	
STRUCTURE	PIPE
Curb Inlet CI-F3	
	F2
Curb Inlet CI-F2	
	F1
Flared End Section FES-F1	

SYSTEM G	
STRUCTURE	PIPE
Curb Inlet CI-G4	
	G3
Curb Inlet CI-G3	
	G2
Curb Inlet CI-G2	
	G1
Flared End Section FES-G1	

SYSTEM H	
STRUCTURE	PIPE
Outlet Structure OS-H6	
	H5
Junction Box JB-H5	
	H4
Junction Box JB-H4	
	H3
Drop Inlet DI-H3	
	H2
Drop Inlet DI-H2	
	H1
Flared End Section FES-H1	

#### 4. DETENTION POND STAGE VS STORAGE AND OUTLET STRUCTURE INFORMATION

Complete Hydrology Studio reports for the detention pond designs are included in the Appendix.

##### Detention Pond A

Detention Pond A is the largest of the storm water management facilities and is located in *Basin 3* as shown on EXHIBIT C. The outlet structure (OS-H6) consists of a riser box with an 8-inch diameter orifice as the primary flow control device. A one-foot rectangular weir is provided as a back-up flow control device and the riser box is drained by a 12-inch diameter

pipe. The pond discharges to *Basin 2* through Pipe System H. Elevation vs outflow data for this flow control device is shown in the following Table.

Stage (Ft)	Elevation (Ft)	Storage (CF)	Discharge				
			Orifice (CFS)	Weir (CFS)	Riser (CFS)	Culvert (CFS)	Total (CFS)
0.00	8.50	0	0.000	0.000	0.000	0.000	0.000
0.50	9.00	26128	0.628	0.000	0.000	0.628	0.628
1.50	10.00	83003	1.477	1.167	0.000	2.644	2.643
2.50	11.00	147639	0.193	1.145	3.640	4.983	4.978

Detention Pond A is a wet pond with a minimum water surface elevation of 8.50. The bottom elevation is 4.00. The wet volume cannot be used for storage to accommodate the design storm events. Therefore the available storage for storm events is provided above elevation 8.50. The stage vs storage data for Pond A is shown in the following Table.

Stage (Ft)	Elevation (Ft)	Contour Area (SF)	Incremental Storage (CF)	Total Storage (CF)
0.00	8.50	50956	0	0
0.50	9.00	53556	26128	26128
1.50	10.00	60193	56875	83003
2.50	11.00	69079	64636	147639

**Detention Pond B**

Detention Pond B is located in *Basin 2* as shown on EXHIBIT C. The outlet structure consists of a riser box with a 6-inch diameter orifice as the primary flow control device. A three-foot long by 6-inch high rectangular weir is provided on all four side of the riser box for emergency overflow purposes. These weirs do not act as flow control devices. The riser box is drained by a 12-inch diameter pipe. The pond discharges to the adjacent wetland area. Elevation vs outflow data for this flow control structure is shown in the following Table.

Stage (Ft)	Elevation (Ft)	Storage (CF)	Discharge				
			Orifice (CFS)	Weir (CFS)	Riser (CFS)	Culvert (CFS)	Total (CFS)
0.00	8.50	0	0.000	0.000	-	0.000	0.000
0.50	9.00	99	0.406	0.000	-	0.406	0.406
1.50	10.00	592	0.945	0.000	-	0.945	0.945
2.50	11.00	1292	1.303	0.000	-	1.303	1.303

Detention Pond B is a dry pond. The pond bottom slopes from elevation 9.00 at the inlet to elevation 8.50 at the outlet structure. The stage vs storage data for Pond B is shown in the following Table.

Stage (Ft)	Elevation (Ft)	Contour Area (SF)	Incremental Storage (CF)	Total Storage (CF)
0.00	8.50	0	0	0
0.50	9.00	396	99	99
1.50	10.00	590	493	592
2.50	11.00	810	700	1292
3.50	12.00	1054	932	2224

**Detention Pond C**

Detention Pond B is located in *Basin 1* as shown on EXHIBIT C. The outlet structure consists of a cast in place weir wall with a 4-inch diameter orifice as the primary flow control device. A five-foot long by 18-inch high rectangular weir is provided for emergency overflow purposes. This weir does not act as flow control device. The pond discharges to the adjacent wetland area. Elevation vs outflow data for this flow control structure is shown in the following Table.

Stage (Ft)	Elevation (Ft)	Storage (CF)	Discharge				
			Orifice (CFS)	Weir (CFS)	Riser (CFS)	Culvert (CFS)	Total (CFS)
0.00	8.50	0	0.00	-	-	-	0.000
0.50	9.00	313	0.226	-	-	-	0.226
1.50	10.00	2491	0.459	-	-	-	0.459

Detention Pond C is a dry pond. The pond bottom slopes from elevation 10.00 at the inlet to elevation 8.50 at the outlet structure. The stage vs storage data for Pond C is shown in the following Table.

Stage (Ft)	Elevation (Ft)	Contour Area (SF)	Incremental Storage (CF)	Total Storage (CF)
0.00	8.50	0	0	0
0.50	9.00	1251	313	313
1.50	10.00	3105	2178	2491
2.50	11.00	4858	3982	6472

**5. RESULTS OF THE STORM WATER ROUTING**

The results of the storm water routing for each of the detention ponds are shown in the following tables. The data includes peak inflow rates, peak outflow rates, water surface elevations and volumes required for the 2, 25, 50 and 100 year storm events.

<b>POND A ROUTING RESULTS</b>				
	<b>Storm Event</b>			
	2-Year	25-Year	50-Year	100-Year
Peak Inflow (CFS)	32.130	50.890	56.430	61.94
Peak Outflow (CFS)	0.106	0.253	0.304	0.357
Time to Peak (Hours)	0.17	0.17	0.17	0.17
Hydrograph Volume (CF)	6279	11407	12964	14525
Maximum WS Elevation (Ft)	8.68	8.79	8.82	8.85
Maximum Storage (CF)	9614	15209	16857	18496

<b>POND B ROUTING RESULTS</b>				
	<b>Storm Event</b>			
	2-Year	25-Year	50-Year	100-Year
Peak Inflow (CFS)	3.745	5.933	6.578	7.220
Peak Outflow (CFS)	1.037	1.306	1.361	1.415
Time to Peak (Hours)	0.15	0.15	0.15	0.15
Hydrograph Volume (CF)	1122	1778	1972	2164
Maximum WS Elevation (Ft)	10.24	11.01	11.19	11.37
Maximum Storage (CF)	753	1302	1469	1638

<b>POND C ROUTING RESULTS</b>				
	<b>Storm Event</b>			
	2-Year	25-Year	50-Year	100-Year
Peak Inflow (CFS)	2.069	3.277	3.634	3.988
Peak Outflow (CFS)	0.242	0.279	0.289	0.299
Time to Peak (Hours)	0.13	0.13	0.13	0.13
Hydrograph Volume (CF)	489	779	865	950
Maximum WS Elevation (Ft)	9.06	9.18	9.22	9.26
Maximum Storage (CF)	430	703	785	866

**6. EMERGENCY OVERFLOW CALCULATIONS**

In as much as the ponds contain the 100-year storm event, no overflow calculations are required.

**7. DISCUSSION OF THE ROUTING RESULTS**

Results of the routing indicate that post-development peak discharges from the various ponds are significantly less than the peak inflows and that post development storm water discharges can be adequately controlled. Pond A would appear to be significantly over sized. The developer intends to use the excavated material from this pond for onsite structural fill under

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roadways and building pads. Pond A is also designed as a wet pond for water quality purposes as discussed below and as an amenity for the residents.

### 8. COMPARISON OF PRE-DEVELOPMENT VS POST DEVELOPMENT FLOWS

The pre-development runoff from each of the *Basins 1, 2 and 3* has been calculated using the Rational Method and the results are summarized in the following Table:

Basin	2-Year Peak Q (CFS)	25-Year Peak Q (CFS)	50-Year Peak Q (CFS)	100-Year
				Peak Q (CFS)
1-A	8.063	12.900	14.320	15.740
1-B	3.418	5.414	6.002	6.588
1-C	0.505	0.799	0.886	0.973
<b>Total Basin 1</b>	<b>11.986</b>	<b>19.113</b>	<b>21.208</b>	<b>23.301</b>
2-A	0.619	0.981	1.088	1.194
2-B	3.578	5.668	6.284	6.898
<b>Total Basin 2</b>	<b>4.197</b>	<b>6.649</b>	<b>7.372</b>	<b>8.092</b>
3*	7.156	11.340	12.570	13.800

\* No Discharge from existing borrow pit – values shown represent flow into the borrow pit

The post-development runoff from each of the *Basins 1, 2 and 3* has been calculated using the Rational Method and the results are summarized in the following Table:

Basin	2-Year Peak Q (CFS)	25-Year Peak Q (CFS)	50-Year Peak Q (CFS)	100-Year Peak Q (CFS)
1-A (Uncontrolled)	6.961	11.130	12.360	13.590
1-A (Pond C)	0.249	0.279	0.289	0.299
1-B	2.237	3.577	3.972	4.365
1-C	0.000	0.000	0.000	0.000
<b>Total Basin 1</b>	<b>9.447</b>	<b>14.986</b>	<b>16.621</b>	<b>18.254</b>
2-A	0.000	0.000	0.000	0.000
2-B (Uncontrolled)	3.047	4.872	5.410	5.946
2-B (Pond B)	1.037	1.306	1.361	1.415
3 (Pond A)	0.106	0.253	0.304	0.357
<b>Total Basin 2</b>	<b>4.190</b>	<b>6.431</b>	<b>7.075</b>	<b>7.718</b>
3*				

\* Basin 3 now discharges through Basin 2

### III WATER QUALITY CONSIDERATIONS

This section details the measures planned for the site to accommodate the requirements for storm water quality.

#### 1. REQUIREMENTS

In accordance with the Georgia Storm Water Management Manual (GSWMM) Volume 1 all storm water generated from the site should be adequately treated before discharge. Storm water management systems should be designed to remove 80% of the average annual post-development total suspended solids (TSS) load and be able to meet any other additional watershed or site specific water quality requirements.

It is presumed that a storm water management system complies with this performance standard if

- It is sized to capture and treat the prescribed water quality treatment volume, which is defined as the runoff volume resulting from the first 1.2 inches of rainfall from a site; and
- Appropriate structural storm water controls are selected, designed, constructed and maintained according to the specific criteria of the GSWMM.
- Runoff from hotspot land uses and activities is adequately treated and addressed through the use of appropriate structural storm water controls and pollution prevention practices.

A hotspot is defined as a land use or activity on a site that produces higher concentrations of trace metals, hydrocarbons or other priority pollutants than are normally found in urban storm water runoff. Examples include gas stations, vehicle service and maintenance areas, salvage yards, material storage sites, garbage transfer facilities, and commercial parking lots with high intensity use. This site is not considered a storm water hotspot. Minimum Standards 1, 2, 8, 9, 10 and 11 as defined in the GSWMM Volume 1 apply to this development.

Storm water ponds will be used to achieve the water quality volume (WQv) required to achieve the 80% TSS removal requirement. These are constructed storm water retention basins that have a permanent pool of water. Runoff from each rain event is detained and treated in the pool. The pond design variant used for this site is a wet extended detention pond.

Since the WQv is directly related to the amount of impervious cover, it is calculated using the formula below:

$$WQv = 1.2RvA/12$$

Where WQv = water quality volume (Acre-Feet)  
Rv =  $0.05 + 0.009(I)$  where I is percent impervious cover  
A = site area in acres

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For the developed area tributary to Pond A, the percent of impervious area (Basin 3) is calculated to be 68% and the total area is 6.18 acres. Detention pond water surfaces are considered to be impervious surfaces. There the WQv is calculated as follows:

$$\begin{aligned} \text{WQv} &= [(1.2) \times (0.6620) \times (6.18)] / 12 \\ \text{WQv} &= 0.4091 \text{ Acre-Feet} \end{aligned}$$

The total WQv provided is 166616 CF or 3.8250 Acre-Feet. Adequate WQv is provided.

Other water quality improvements planned for the site consist of the routing of runoff from developed areas which bypass the detention ponds through adjacent storm water wetlands prior to discharge from the site.