Operation and Maintenance Plan

for

Dove Pond Regional Stormwater Management Facility

Parcel ID: 11-14-20-405-000-0

October 11, 2021
MBC Project Nos. T0297.0082 and T0297/0084

I. Location

This facility is located within the Canopy Planned Unit Development (PUD), immediately north of the Miccosukee Greenway.

II. Facility Description

The Dove Pond Stormwater Management Facility was constructed in the location of an existing natural pond and depression known as Dove Pond. The contributing drainage area to this facility is approximately 930 acres. Historically, this pond would occasionally pop-off and flow south across the Miccosukee Greenway and Miccosukee Road after severe rainfall events or high cumulative rainfall periods contributing to downstream flooding particularly in the Lafayette Oaks closed basin.

A dam, approximately 20 feet in height, was constructed at the southeast end of Dove Pond near the greenway, which impounds the stormwater runoff from the surrounding basin area. The inside (northwest) side of the dam embankment is constructed with 3:1 side slopes, while the outside, (southwest) side of the dam embankment is constructed with 5:1 side slopes.

This facility is designed to retain stormwater runoff from the 930-acre drainage area based on design parameters described in the Dove Pond Environmental Management Permit, TEM180090. There is no designed outfall for this pond other than the emergency spillway. Stormwater recovery occurs via evaporation or infiltration into the ground.

The dam is equipped with a 24-inch diameter, ductile iron, outfall pipe. This pipe is equipped with a 24-inch gate valve to release water under highwater conditions if emergency repairs need to be made to the dam. The emergency spillway is located on the west end of the dam. A float valve system that allows a small amount of water to be released through the 24-inch pipe to hydrate downstream wetlands is also installed on the 24-inch outfall pipe.

A grass and mulched pedestrian trail system is designed as an integral part of the Dove Pond Regional Stormwater Facility.

Planted wetland mitigation areas are also part this permitted facility and shall be maintained in accordance with the Florida Department of Environmental Protection Wetland Resource Permit No. 37-0291977-002-DF.

III. Emergency Action Plan and Other Documents Required for Operation & Maintenance

An Emergency Action Plan (EAP) has been prepared for the Dove Pond Dam. This document has been distributed to the City, Northwest Florida Water Management District, Leon County Publics Works, Leon County Sheriff's Department, and other agencies.

The EAP shall be reviewed annually by maintenance personnel with the CDD in order to remain familiar with its requirements.

By reference herein, the Dove Pond EAP, is incorporated into this Operation and Maintenance Plan (O&M Plan). Any requirements set forth in the EAP, shall also be considered requirements of this O&M Plan, including annual updates and periodic training.

The *RECOMMENDATIONS FOR ROUTINE MAINTENANCE OF THE CANOPY POND DAM &TREATMENT FACILITY EARTH EMBANKMENTS AND STRUCTURES* (referred to throughout this document as the Ardaman report), prepared by Ardaman & Associates, Inc., dated October 3, 2012, is also incorporated into this O&M Plan by reference.

In addition, the following documents are incorporated into this O&M Plan by reference:

- CONSTRUCTION PLANS FOR GRADING AND DRAINAGE FOR **DOVE POND REGIONAL STORMWATER FACILITY DAM AT CANOPY PUD,** prepared by Moore Bass Consulting, Inc., dated September 27, 2012. City of Tallahassee Environmental Permit No. TEM160152.

- PLANS FOR GRADING AND DRAINAGE FOR **DOVE POND REGIONAL STORMWATER MANAGEMENT FACILITY AT CANOPY PUD,** prepared by Moore Bass Consulting, Inc., dated April 5, 2019. City of Tallahassee Environmental Permit No. TEM180090.

- Florida Department of Environmental Protection (FDEP) Wetland Resource Permit No. 37-0291977-002-DF, dated December 6, 2012.

- As-built Survey, prepared by Moore Bass Consulting, Inc., dated November 25, 2019

- Record drawings prepared RS&H, dated November 5, 2019

IV. Maintenance Responsibility and Inspection and Reporting Requirements

The Canopy Community Development District (CDD) shall be the maintenance entity for the Dove Pond dam and regional stormwater management facility but may subcontract all or portions of this work as appropriate. Maintenance and operation will be financed by fees or assessments collected from property owners within the CDD.

The CDD shall maintain records of required inspections outlined in section V, and maintenance, operation, and repair activities outlined in sections VI and VII. These records shall document the dates that inspections, repairs, or maintenance was performed as well as the findings or details of each activity. Copies of these records shall be submitted to the City of Tallahassee Department of Growth Management by January 30 of each year.

V. Inspections

A. General

Routine inspections may be performed by ordinary maintenance personnel, but at least once every six (6) months for the first two (2) years and once every year thereafter, a professional civil or geotechnical engineer licensed in the state of Florida with an expertise in drainage and dam design, construction, and maintenance should perform a thorough inspection of the dam and appurtenances as outlined below and to ensure continued conformance with the permitted design and construction documents for the facility. References to professional engineers in this document shall mean a professional engineer meeting the requirements of this section. The professional engineer may consult other licensed professionals as needed, e.g., a structural engineer to examine retaining walls or spillway, or a geotechnical engineer to examine soils, or areas of seepage, etc.

Special inspections by a professional engineer should also be performed immediately after the occurrence of any sinkhole or seismic activity in the area or any discharge over the spillway.

Parameters for routine inspections are outlined as follows.

B. Frequency

The facility should be inspected immediately after any single rainfall event of 2 inches or greater or cumulative rainfall of 2 inches or more in a one (1) week time period, but no less than once per month. During hurricane season, inspections should be performed at a frequency of no less than once every two weeks and if a named storm or tropical depression has formed that could track toward this region, an inspection should be performed as soon as possible in advance of the storm's arrival. If the water level in Dove Pond rises to within 3 vertical feet of the spillway, inspections should be increased to once every two (2) weeks or after every rainfall event until the water level falls below three (3) feet.

Areas to be inspected should include inflow pipes and the outfall pipe, including the float valve and the 24-inch gate valve, the outfall control structure, the crest and side slopes of the dam, along the fences, and along the concrete retaining wall and concrete spillway, and particularly where the edges of concrete spillway or retaining wall border non-paved areas. Close inspection should be performed along the toe of the dam to check for evidence of seepage through the dam, around the spillway, and in or around the outfall pipe.

The ductile iron outfall pipe shall be inspected internally by camera equipment designed for that purpose, every five (5) years.

C. What to Look For

On the crest and side slopes of the dam look for eroded areas, animal burrows, trees or woody shrubs that have taken root, subsidence or sloughing-off of soil, or cracks in the soil. Check for debris that may have lodged on the fence, around the inflow pipe, or along the upper edge of the spillway on the inside of the pond.

Note any bare spots or areas of dead vegetation, including the wetland mitigation areas, that may indicate disease or pest infestation.

Look for an any subsidence or new depressions in the soil near the toe of the slope. This may be indicative of sinkhole formation.

On the crest of the dam, look for dips or sunken areas that could indicate subsidence, especially over or around the outfall pipe. Ensure that the top of the dam is level and uniform along its entire length.

At the 24-inch outfall pipe, ensure that no flow is discharging from the pipe. If flow is discharging from the pipe, ensure that the 24-inch gate valve at the outfall structure is completely closed off. Note any seepage around the outside of the pipe. Note any deposition of sediments along the toe of slope or around the outfall pipe. If the water level in Dove Pond is between elevation 84.0 and 86.0, discharge should be observed via operation of the float valve which allows for hydration of downstream wetlands. This flow occurs by design and does not pose a hazard to the dam or downstream areas. If water level is between elevation 84.0 and 86.0 and no flow is occurring, check the float valve to ensure operation if not impeded by debris or other detritus.

Inspect the inside of the outfall structure and note any seepage or flow into the structure.

Inspect the retaining wall and concrete spillway for cracking, uplift, undermining, subsidence, or tilting. Note any significant seepage from the weep holes in the spillway or wall.

Note any indication of rapidly dropping water levels in Dove Pond, or vortexes or whirlpools on the water surface. This could be an indication of sinkhole activity.

Note any erosion more that six (6) inches in depth over the City of Tallahassee Electric Transmission Line.

VI. Routine Operation and Maintenance

All routine maintenance shall be performed monthly, unless otherwise indicated in this section.

A. Grass and Landscaping

Cover any bare spots with topsoil and sod.

Water and fertilize as necessary to maintain healthy grass surface and landscaping, including wetland mitigation areas. Inspect for pests or diseased areas vegetation and treat as required with pesticides, fungicides, or other appropriate means. Consult a horticulturist, biologist, or other landscape professional as needed for problems with specific pests or diseases or for wetland mitigation areas.

Invasive, exotic species in the wetland and adjacent upland areas shall be removed.

Removal shall be coordinated with the biologist responsible for monitoring the wetland mitigation areas and shall be accomplished in a manner that complies with the FDEP Wetland Resource Permit No. 37-0291977-002-DF, noted above.

B. Mowing

Mowing should be performed on, at least, a monthly basis during the growing season, roughly from March through October, but more frequently, if necessary, based on rainfall and to control the growth of weeds, trees, and woody shrubs and maintain healthy grass cover. All areas inaccessible to conventional mower equipment shall be cut with hand operated gas string trimmers. Completely remove any trees, shrubs, and other plants that are not grass or designed landscaping on the dam and their root systems. Backfill and repair any holes left by removal of roots in the manner indicated below for repairing eroded areas. No trees or woody shrubs shall be allowed to grow and mature on the dam, or around the spillway, flume, or retaining walls. Only vegetation approved on the environmental management permit shall be allowed to grow on the dam.

Any plants that sprout or grow up through cracks in the concrete or in concrete joints shall be removed or sprayed with herbicide (in accordance with manufacturer's specifications). No plant growth shall be allowed in spillway or flume that could obstruct flow or collect debris.

C. Debris Removal and Erosion Repair

Remove any debris or obstructions along the fence line near the top of the dam, in, on, or near the spillway, flume, and energy dissipator, around pipes and the outfall structure. Any debris floating near the dam, such as fallen trees, limbs, or other trash should be retrieved and removed from the pond.

Areas that have eroded shall be backfilled, compacted, and sodded in accordance with the Ardaman report. Sod shall be Argentine Bahia grass and shall be pinned on 5:1 and steeper slopes to prevent slippage. Remove and relocate any burrowing animals found in the dam and backfill burrows as described in the Ardaman report.

Coordinate with the City of Tallahassee Electric Department for repairs or other work within the Electric Transmission Line Easement.

One time per year, the 24-inch gate valve should be fully opened and then immediately and completely closed to ensure proper functioning when needed. This activity should be monitored by a professional engineer. The CDD shall notify the City of Tallahassee Department of Growth Management, Leon County Public Works, and the City of Tallahassee Electric Department prior to opening the valve. Repair any erosion caused by discharge from the pipe.

D. Inlets, Pipes, Structures, and Spillway

Remove any debris, trash or obstructions in or near pipes and spillway. Inspect pipes, valves, grates, and other metal structures for rust or corrosion. Remove rust or corrosion and restore protective coatings to all metal appurtenances by repainting or reapplication of coating as needed (according to manufacturers' recommendations).

In any areas where undermining has occurred beneath the spillway or flume, backfill with soil, compact, and stabilize as outlined in Ardaman report. If undermined area is too large or deep to backfill with soils, consult a professional engineer for direction.

Seal cracks in concrete spillway and flume to prevent water intrusion.

Check the float valve two times to ensure that the valve is operating properly and has not become stuck in an open or closed position.

E. Pedestrian Trail System

Replace mulch and sod on trail system as needed to maintain a safe pathway. Repair or replace trail signs as needed.

VII. Non-routine Maintenance and Repairs

If any of the following issues are found during inspection a professional engineer shall be consulted to review the issue. The engineer may determine that the issue can be addressed under routine maintenance and provide direction accordingly. If not, the engineer shall develop a specific plan for the repair. The engineer shall also coordinate any required maintenance or repair work with the appropriate regulatory agencies and determine if permitting is required. If the engineer determines that the nature of the work is critical and urgent to the safe function and operation of the dam, work shall commence immediately and permitting may be completed after work begins. The engineer shall maintain detailed records of all work completed prior to permitting and include this information in the final permit documents. As determined by the engineer, as-built surveys shall be performed after work completed under this section to ensure continued conformance to the original design for the facility.

A. Any indication of the formation of a sinkhole in the facility or near the dam.
B. Areas of subsidence in the sideslopes or on the crest larger than 10 square feet or deeper than 6 inches, or any area of subsidence near the toe of slope.
C. Cracks in soils on sideslopes of greater than ½ inch or evidence of soils sloughing off.
D. Rapidly dropping water levels or the presence of vortexes or whirlpools on the water surface.
E. Seepage that appears to be creating scouring or erosion on the outside toe of slope.
F. Tilting of retaining wall or newly formed cracks greater than 1/8 inches.
G. Cracks in spillway or flume greater than ¼ inch, or subsidence in spillway of greater than 1 inch.
H. Uplifted sections of the spillway or flume.
I. Separation of pipe joints, deformation of pipe, or severe corrosion of pipe.
J. Flow through or around pipe when valve is closed.
K. Any other issues which a professional engineer may deem critical to the safe function and operation of the facility.