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Technical Memorandum

To: Mac Hatcher, PM Collier County

From: Moris Cabezas, PBS&J
Ed Cronyn, PBS&J

Date: February 22, 2011

Re: Watershed Model Update and Plan Development
Contract 08-5122, PO 4500106318
Element 4, Task 1, Identification of Potential Projects and Policies
Wetland Mitigation Within the Golden Gate – Naples Bay Watershed

1.0 Objective

Filling or dredging of wetlands requires state and federal permits, which often allow mitigation to occur outside of the functional watershed. Collier County and most other local governments have little direct authority to regulate wetland mitigation decisions. Therefore, non-regulatory incentives will be necessary in order to achieve wetland mitigation that is compatible with Collier County's objective to mitigate wetland impacts within the same functional watershed. This memorandum proposes mechanisms to incentivize mitigation of wetland impacts within the same functional watershed as the impacts.

2.0 Introduction

Currently, regulations allow wetland impacts to be mitigated either on-site, at a permitted mitigation bank or at an authorized "regional offsite mitigation area" (ROMA). Mitigation banks are large (usually at least a square mile), privately-managed tracts of land that are awarded mitigation credits by restoring or enhancing wetlands on the site. ROMAs are generally government-operated mitigation sites, usually to generate mitigation credits needed either by the land-owning agency itself or by single-family homeowners. Mitigation service areas (the geographic limits within which impacts can be offset by purchasing credits at the bank or ROMA) for mitigation banks and ROMAs generally extend well beyond the functional watershed. This process allows permit applicants to select mitigation far away from the impact site. As a collective result of many individual impacts being mitigated far off-site, the wetland functions within a functional watershed, as defined for the Watershed Management Plan, could potentially be significantly diminished.



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2.1 Wetland Permitting Programs

Two primary regulatory programs govern the issuance of wetland impact permits: the Environmental Resource Permit (ERP) program administered by the water management districts (WMD) and Florida Department of Environmental Protection (FDEP), and the Section 404 “dredge and fill” program of the federal Clean Water Act, administered by the U.S. Army Corps of Engineers (USACE). ERP permits are required for many types of activities beyond wetland impacts, including water quality and quantity for upland developments as well; however, for the purposes of this memorandum, only wetland regulations are covered herein.

ERP responsibility is divided between FDEP and each WMD in accordance with an operating agreement. The FDEP-SFWMD operating agreement gives FDEP the responsibility to review and issue ERP permits for several categories including solid waste, wastewater, hazardous waste, and potable water facilities; marina, seaport and docking facilities (other than those associated with land-based commercial and residential projects regulated by SFWMD); projects constructed, operated or maintained by SFWMD; navigational dredging by governmental entities; mining, and single-owner residential development up to 3 parcels, as long as each parcel contains only one dwelling unit (single-family home through quadruplex). SFWMD has the responsibility to review and issue ERP permits for all other regulated activities, including residential subdivisions, commercial developments, roads, and certain agricultural activities.

ERP rules exclude (by way of specific exemption or a noticed or no-noticed general permit) several types of activities from wetland impact and mitigation requirements, notably impacts to isolated wetlands smaller than ½ acre; unavoidable filling of up to 4,000 square feet and clearing up to 6,000 square feet of a wetland for the purpose of constructing a single-family home; many agricultural and silvicultural activities; and most maintenance and repair activities, subject to certain BMP’s.

On the federal side, USACE permits are required only for projects that deposit dredged or fill materials into non-isolated wetlands (i.e., wetlands not connected to navigable waters by way of other wetlands, ditches, flow-ways, streams, or canals). USACE rules provide similar exclusions from typical impact and mitigation criteria, except that the nationwide permit for single-family homes allows filling of up to ½ acre of non-tidal wetlands without mitigation (rather than the 4,000 square-foot limit in the ERP Noticed General Permit).

The general process and approach to proposed wetland impacts and mitigation is similar for all three regulatory agencies. An applicant, oftentimes with the assistance of a consultant, submits an application identifying the wetland location(s), along with quantification of the area and functional value of wetland impacts and mitigation. The functional value of a proposed wetland impact or mitigation plan is determined through the Uniform Mitigation Assessment Method (UMAM). UMAM quantifies the ecological value of a wetland based on its location (connectivity to other wetlands and natural resources), hydrology, water quality, vegetative composition, and acreage. Within the original application or subsequent submittals, the applicant must demonstrate that the proposed wetland impacts are permissible (i.e., low-quality, or unavoidable if higher-quality) and that the proposed mitigation offsets the proposed impact.

The regulatory agency reviews proposed mitigation to determine whether it is the appropriate amount (i.e., UMAM value of the mitigation is equal to or greater than the UMAM value of the impact), type (e.g., a freshwater herbaceous impact generally must be offset by freshwater herbaceous mitigation), location, and has long-term assurance of success.

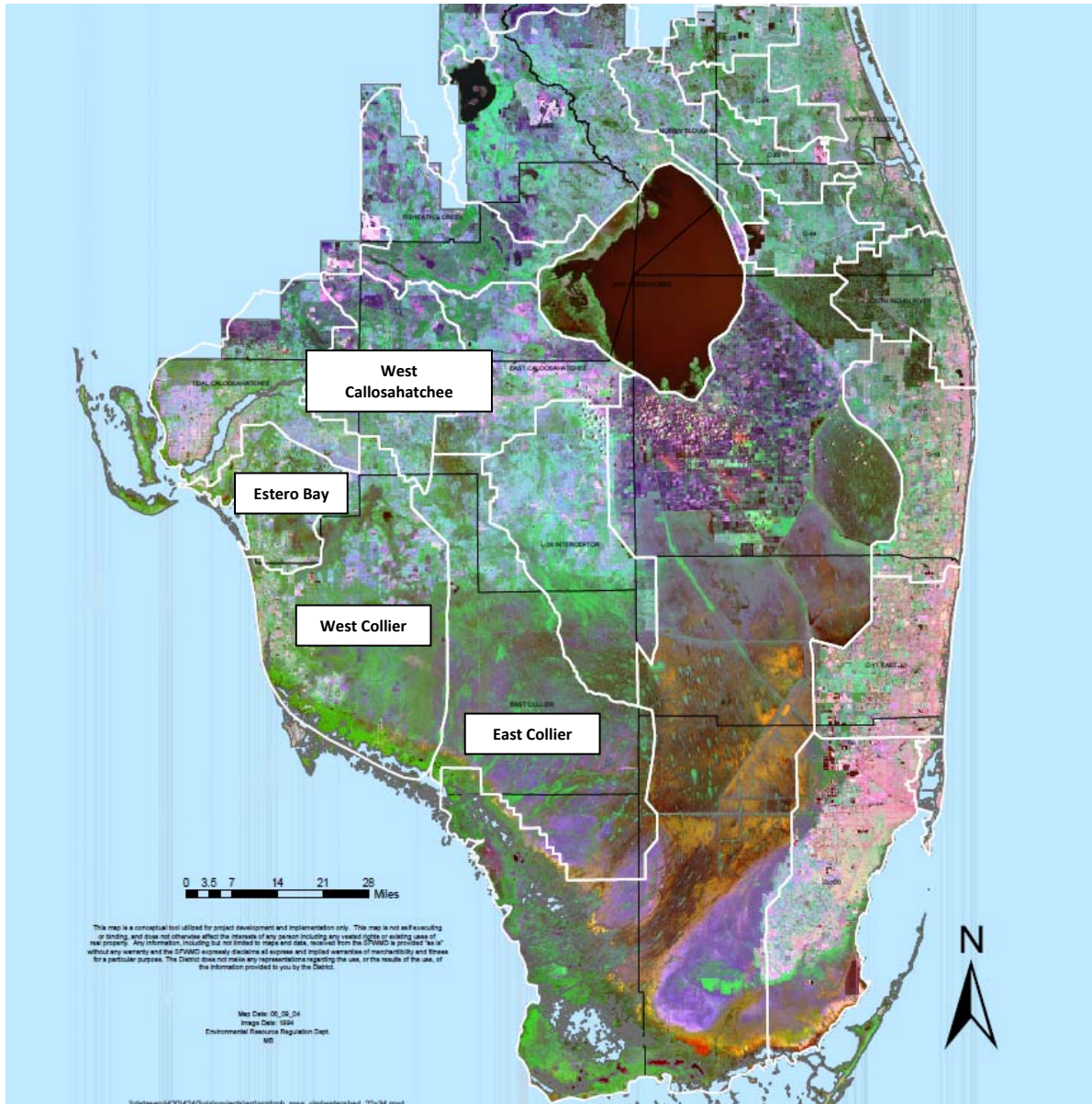
Agency rules and practices, particularly federal mitigation criteria, provide a general preference for mitigation via the purchase of mitigation credits at a permitted mitigation bank or use of a ROMA whose mitigation service area includes the area of impact. In some circumstances, on-site wetland mitigation is permitted, due primarily to financial circumstances for single-family home owners and/or the high ecological value of an on-site wetland.

2.2 Wetland Mitigation Criteria and Practice in Collier County

Four mitigation areas are commonly used to offset impacts in Collier County: the Big Cypress Mitigation Bank located in southern Hendry County, Panther Island Mitigation Bank located in northern Collier County, Corkscrew Regional Mitigation Bank located in Lee County, and the Northern Golden Gate Estates ROMA located in the Picayune Strand State Forest. The mitigation service area for a mitigation bank or ROMA generally is comprised of one or more of the regional drainage basins shown in **Figure 1**. The mitigation service areas for Big Cypress and Panther Island are identical: the entirety of Estero Bay, West Collier and East Collier regional drainage basins. The mitigation service area for the Corkscrew Regional Mitigation Bank consists of the West Collier, Estero Bay, and West Caloosahatchee regional drainage basins. The service area for the Northern Golden Gate Estates ROMA is single-family residential development within NGGE (note that this service area is defined both geographically and by type of wetland impact project).

Regulatory agencies and local governments have little authority to deny the use of one of these mitigation banks or ROMAs based on location of the impact, so long as the impact is within the same regional drainage basin and service area. Mitigation can also occur at a mitigation bank in a different regional drainage basin within the mitigation service area, if the impact is to a lower-quality wetland (e.g., an impact to a melaleuca-infested wetland in the Estero Bay basin could be offset via the purchase of credits at the Panther Island Mitigation Bank located in the West Collier basin, since the Panther Island service area includes the Estero Bay basin). Wetland functions in areas with impacts are therefore transferred to other functional watersheds and regional drainage basins where mitigation banks are located. This conflicts with the extent of the functional watersheds as defined in the Watershed Management Plan. For example, impacts in the Rookery Bay functional watershed can be offset at the Panther Island Mitigation Bank located in the Cocohatchee-Corkscrew functional watershed, as both are contained within the larger West Collier regional drainage basin and the Panther Island Mitigation Bank service area defined by SFWMD.

Figure 1. SFWMD Regional Drainage Basins



3.0 Recommended Mitigation Strategy for the NGGE

The Northern Golden Gate Estates (NGGE) has been identified by several stakeholders as an area of particular interest, in regards to wetland impact and mitigation practices. These stakeholders have expressed a desire for mitigation within the functional Golden Gate-Naples Bay watershed, and more specifically within or adjacent to NGGE. Development of the single-family lots that dominate NGGE often requires no wetland mitigation because this type of development generally fills less than 4,000 square feet in wetlands. For those wetland lots that

require more than 4,000 square feet of fill, on-site mitigation is generally not available or is insufficient. As a result, off-site mitigation is generally required through the purchase of mitigation bank credits at Big Cypress or Panther Island Mitigation Bank, or through funding or participation in ecological restoration activities at the NGGE ROMA. Consequently, NGGE is losing wetland ecological functions, including opportunities for stormwater retention and treatment.

3.1 In-Watershed NGGE Mitigation

No regulatory mechanisms exist that would require mitigation of NGGE impacts within the Golden Gate – Naples Bay watershed. Further, no ROMA or mitigation bank is currently available within NGGE to offset wetland impacts. Additional incentives and opportunities must therefore be developed, if wetland mitigation is to occur within NGGE. Encouragement of mitigation within NGGE (and more broadly for other areas desiring in-watershed mitigation) requires several key elements: identification of site(s) that are available and can be restored to provide increased ecological value; development of restoration plans that meet state and federal criteria for permissible regional mitigation; and analysis of costs to determine how mitigation credits could be sold at a lower cost than currently available via existing mitigation options.

Ecological review, engineering assessment, UMAM analysis and land-ownership review would be necessary to determine the extent to which one or more wetland-restoration projects in this area can provide mitigation value by acquiring land, filling ditches, removing roads, restoring former hydrological connections, and/or managing vegetation. The ROMA would be established by permit and/or interagency agreements, including a detailed plan providing assurance to the regulatory agencies (FDEP and/or SFWMD and/or USACE) that the necessary parcels will be acquired, projects will be constructed, and the land and projects will be managed in perpetuity. Credits would be released in accordance with a schedule, tied to accomplishment of project goals (acquisition of lands/easements, construction of projects, eradication of exotic vegetation, planting of native vegetation, achievement of hydrological criteria, etc.).

Regulatory approval of a ROMA within NGGE is not a likely impediment, to the extent that the mitigation would be designated for single-family residential development, similar to the current NGGE ROMA at Picayune Strand approved by FDEP. In fact, based on discussion with FDEP staff, it is possible for FDEP to develop a special “Noticed General Permit” specifically for NGGE that would provide for expedited review and approval of single-family wetland impacts mitigated within NGGE. Under this scenario, wetland restoration at the ROMA would ideally be funded by a mitigation fee required by FDEP and collected by the County or Soil and Water Conservation District. Alternative mechanisms to acquire parcels and/or construct projects within this phase could include transfer of development rights or in-kind services provided by permit applicants. If the mitigation would be used only for single-family residential projects, these costs could be subsidized if necessary.

Benefits of a single-family ROMA and Noticed General Permit within NGGE include quick permitting for single-family homeowners, and addressing two issues--loss of wetland functions and flooding-- that are inadequately addressed currently. The greatest impediments include the

logistical effort necessary to assemble a thorough plan of acquisition, construction and management that is acceptable to the regulatory agencies and affected landowners; the potential necessity of County or other governmental subsidy to provide a financially viable option to homeowners; and future projects (e.g., large development planned to the east by Barron Collier or Collier Enterprises) that may restrict the ability of a mitigation project within NGGE to achieve hydrological restoration.

If mitigation is desired for other projects regulated by SFWMD and/or USACE (e.g., County roads and other public works projects), there would be a higher level of requested detail, analysis and certainty of outcomes, including long-term protection and funding. Both SFWMD and USACE require a level of analysis and regulatory assurance for ROMA's that is substantially comparable to private mitigation banks. This would likely include establishment of a long-term funding mechanism (e.g., trust fund dedicated to long-term management and operation, funded by mitigation credit sales, separately from initial construction and restoration), dedication of conservation easements to SFWMD, and extensive analysis to demonstrate the project would achieve the projected ecological restoration goals.

3.2 Recommendation

Based on stakeholder comments and the results of landscape-level functional assessment, the sites most suited to provide regional mitigation within NGGE are Winchester Head, Horsepen Strand, and adjacent connecting wetland areas. These sites consist of current and former wetlands that have been ecologically degraded due to artificial drainage and/or loss of watershed area. A well-designed project would retain ecological functions as well as re-establish drainage patterns such that runoff would flow into these wetlands rather than be diverted into the Golden Gate canal network. Based on review of stakeholder input and other data, an ideal project would include public acquisition of fee simple or conservation and flowage easements over parcels; complete or partial filling of drainage ditches (constrained by the need to maintain existing levels of flood control); removal of roads; and installation of culverts and/or channels to restore watershed flows to these areas.

Due to the different requirements for single-family mitigation and public works mitigation, permitting would be most easily accomplished by separating the project into two phases: one phase permitted by FDEP for mitigation of single-family residential impacts, and the other phase permitted by SFWMD for mitigation of roads and other public works impacts. Funding and acquisition sources for the FDEP-permitted phase could include mitigation credit sales, TDRs, grants, and/or direct County funding.

The second phase, to be permitted by SFWMD to offset impacts associated with County public works projects, would be paid for via the public works projects. On the cost-analysis side, it should be noted that Lee County has determined that mitigation for public works projects on their County-owned lands is significantly less expensive than the purchase of private mitigation bank credits (from the same mitigation banks that currently provide mitigation for Collier County projects). Collier County currently pays wetland mitigation fees, generally via the purchase of wetland mitigation credits from private mitigation banks, at a rate of up to \$90,000 per credit (each credit offsets approximately 2-3 acres of wetland impacts). As with the FDEP

permit, the SFWMD and USACE would require a detailed, supportable plan and measurable restoration in order to award and release mitigation credits.

Factors favoring this second, SFWMD- and ACOE-permitted phase of the ROMA include:

- Internal capture and/or reduction in mitigation costs;
- Dual-purpose regional wetland mitigation and stormwater attenuation;
- Regulatory precedent for wetland mitigation on County lands (the SFWMD has issued several permits to Lee County for this type of project);
- County-owned upland parcels in NGGE that could potentially be “swapped” with privately-owned wetland parcels, in order to acquire lands within the projects’ footprint; and
- Upcoming statewide rules affecting water quality criteria and enabling water quality credit-trading.

Potential impediments include (in addition to the impediments listed for the FDEP phase above, which are also pertinent for this phase): the necessity of a reliable funding source within the County to accomplish the project objectives; potential SFWMD requirement for the County to acquire much of the land up-front; and potential negative reaction by environmentalists concerned by the use of public lands to mitigate (i.e., incentivize) impacts.

4.0 Other Potential Mitigation Concepts

Other concepts to incentivize and fund in-watershed mitigation were also evaluated. These concepts, and rationale for not proposing them at this time, include:

- Offsite regional water quality mitigation banking. In this scenario, a mitigation project could generate water quality “credits”, which would be sold to offset a portion of the water quality impacts for other projects, similar to wetland mitigation. This concept was not deemed feasible due to lack of regulatory guidance at this time. However, upcoming statewide implementation of a pilot water quality trading program by FDEP may provide a market for this type of approach in the future.
- Public-private wetland mitigation bank, located on County lands, with authorization to sell mitigation credits to any entity and a portion of the fees being returned to the County for a long-term management fund. The primary obstacle for this type of project is financial feasibility, due to current market conditions and two existing permitting mitigation banks in this area, which generate a surplus of mitigation credits.
- Adopt local Zoning and/or Comprehensive Plan requirements to retain habitat within the functional watershed. Rules of this nature may encounter significant opposition from developers and mitigation bankers, and would need to be structured in a manner to avoid directly regulating wetland impacts or endangered species’ impacts exceeding local government authority.