Wetlands Managed Area (WMA)

Purpose and General Description: These features involve restoration or creation of natural areas or wetlands. These features provide ancillary storage and treatment benefits but are not designed to achieve a specific storage or treatment target. WMAs may be forested wetlands, emergent wetlands, or shallow lakes.

Physical Description: Water depths can vary but are typically shallow (4 feet or less) and are based on water levels appropriate for the type of habitat that is being created or restored. Embankments equal or less than 9 feet with three horizontal to one vertical (3H:1V) side slopes. Features may include inflow pump station or gravity structure, outflow pump station or gravity structure, and seepage canals.

General Description of Operations: These features are not operated to achieve specific storage or treatment benefits. They are operated to improve natural habitat and function within the feature footprint which is anticipated to result in benefits to downstream water bodies. These features vary and may utilize inflow and outflow pump stations or may rely on gravity or a combination of the two. Typically surface water is brought into the feature or rainfall is held within the feature to create preferred hydrology within the feature footprint.

Hydrologic Performance: Wetlands Managed Areas are not designed or operated to achieve specific downstream hydrologic targets. They are designed to achieve preferred hydrology within the project footprint. Since water depths are shallow and can have emergent vegetation, these features can experience higher evapotranspiration (ET) losses than deeper storage features. For the purposes of initial planning efforts, WMAs were allowed to go dry but are actively managed features.

Water Quality Performance: High uncertainty in predicting total phosphorus (TP) water quality performance. Since WMAs come in many shapes and sizes, water quality performance will likely be somewhat site specific. There is insufficient information regarding the level of water quality performance that should be expected with forested wetlands in South Florida. As a result, the current water quality analysis did not assume any phosphorus removal for forested wetlands. Non-forested wetlands, were assumed to be dominated by marsh vegetation, and therefore were assumed to have water quality performance similar to a flow-way. Analysis assumes that non-forested wetlands may not be able to sustain a long-term positive phosphorus removal rate if allowed to go dry. If optimal treatment performance is preferred then non-forested wetlands will have to remain wet. Even if these features are maintained in a wet condition, they are not anticipated to be able to reduce phosphorus concentrations below 25 parts per billion (ppb). Non-forested wetlands that are allowed to go dry are assumed to have no phosphorus removal. Therefore, discharges from WMAs must receive further treatment in a stormwater treatment area (STA) prior to discharge to the Everglades.

Environmental / Ecological Advantages or Benefits: These features involve restoration or creation of natural areas or wetlands. WMAs are intended to expand the spatial extent of habitats and landscapes more consistent with natural conditions and the historic River of Grass. This is in addition to providing benefits to downstream water bodies and habitats.

Environmental / Ecological Impacts or Concerns: Ensuring that WMAs do not interfere or compete with ability to achieve restoration benefits to the existing natural system (e.g., Everglades Protection Area) and to the Everglades. Specifically, need to ensure that providing restoration of farm lands within the Everglades Agricultural Area should not take precedence over the restoration of and the continued viability of the existing natural areas in the Everglades. If WMAs are allowed to go dry, this could impact the ecology and habitats within the footprint. High uncertainty of vegetation types that will grow in areas previously impacted by agricultural production and significant soil subsidence and oxidation. These features will compete with the primary targets of restoration (Everglades, Lake Okeechobee, and estuaries including Florida and Biscayne Bay) for water during drought conditions and, therefore, may reduce the overall hydrologic performance and consequent ecological benefits to these other ecosystems.

Economic / Recreational Advantages or Benefits: WMAs will provide recreational opportunities similar to other wetland habitat.

Economic / Recreational Impacts or Concerns: If these features are allowed to go dry, there may be an impact on the availability and quality of recreational opportunities.

O&M Considerations (if any): Some vegetation management may be required to address exotics and maintain embankments.

Uncertainty Concerns: High uncertainty related to water quality performance. High uncertainty of vegetation types that will grow and habitat types that will develop in areas previously impacted by agricultural production and significant soil subsidence and oxidation.