

**EVERGLADES AGRICULTURAL AREA STORAGE RESERVOIRS
RECOVER EVALUATION OF PROJECT-LEVEL PERFORMANCE
MEASURES
(Final 8-14-03)**

1.0 Introduction

The role of RECOVER is to organize and apply scientific and technical information in ways that are most effective in supporting the objectives of the Comprehensive Everglades Restoration Plan (CERP). RECOVER links science and the tools of science to a set of system-wide planning, evaluation and assessment tasks. These links provide RECOVER with the scientific basis for meeting its overall objectives of evaluating and assessing Comprehensive Plan performance and refining and improving the plan during the implementation period. RECOVER fulfills this role by working with the PDTs to help them meet CERP's systemwide goals and objectives. Specifically, RECOVER reviews the performance measures for project-level evaluation of alternatives for consistency with the systemwide evaluation performance measures developed by RECOVER.

The purpose of this performance measures consistency review is: 1) to inform the PDT of the compatibility of proposed project goals and objectives with regional CERP restoration goals and performance expectations, 2) to identify general compatibility of project-level performance measures with applicable system-wide performance measures, and 3) to provide information to decision-makers regarding compatibility of project-level and system-wide performance measures of the Everglades Agricultural Area Storage Reservoirs (EAA Storage Reservoir) project.

RECOVER commends the PDT on an organized and well-conceived set of performance measures. Inclusion of the applicable system-wide performance measures developed by RECOVER in the evaluation hierarchy facilitated the consistency review and will benefit readers of the document in the future. RECOVER recognizes and appreciates the time and effort that went into developing these performance measures. The review comments below are intended to enhance an already quality document.

2.0 Consistency with Objectives of the Comprehensive Plan

The planning objectives developed for the EAA Storage Reservoir project are generally consistent with the objectives of the Comprehensive Plan. The planning objectives developed for this project were developed using both the broad CERP goals and objectives and the refined site-specific restoration objectives. The project objectives developed for the EAA project presented below directly correspond to CERP objective(s) contained in the Central and Southern Florida Project Comprehensive Review Study Final Integrated Feasibility Report and Programmatic Environmental Impact Statement (USACE and SFWMD 1999). In some cases, CERP goals do not directly correspond to project goals (e.g., provide recreational and navigational opportunities; protect cultural and archaeological resources and values; and minimize socioeconomic impacts on the local and regional economics) but are addressed by specific performance measures or evaluation criteria.

RECOVER PM Consistency Review

In addition, some changes to the wording of the project-level goals and objectives are suggested. Namely, “Improve environmental releases through...” could be rewritten to more clearly explain the benefit of the water releases. Perhaps “Improve hydropatterns in the Greater Everglades through delivery water stored...”

	Project Objectives – of the EAA Storage Reservoir Project	Corresponding CERP Objectives
1	Reduction of Lake Okeechobee regulatory releases to the estuaries	Increase habitat and functional quality; improve native plant and animal species abundance and diversity
2	Reduction of backpumping from the EAA into Lake Okeechobee by sending the water to the south and into reservoirs	Increase habitat and functional quality; improve native plant and animal species abundance and diversity
3	Improve environmental releases through the storage of water and release to the Everglades during dry season demand	Increase habitat and functional quality; increase the total spatial extent of natural areas
4	Flow equalization and optimization of treatment performance of the Stormwater Treatment Areas (STAs) by capturing peak storm event discharges within the reservoirs for slow release to the STAs	Increase availability of fresh water for agricultural water supply; reduce flood damages; and improve ecological habitat and functional quality
5	Improve flood control and regional water supply for the agricultural community currently served by the EAA canals	Increase availability of freshwater for agricultural water supply; reduce flood damages

3.0 Consistency with RECOVER System-Wide Evaluation Performance Measures

There is general compatibility between the project-level performance measures developed by the PDT for the EAA Storage Reservoir project and the system-wide evaluation performance measures developed for the Comprehensive Plan by RECOVER. However, RECOVER has suggestions regarding the content, target and appropriate level of evaluation for several performance measures. Furthermore, RECOVER suggests that, when there is no similar system-wide evaluation performance measure, the PDT could use the RECOVER assessment performance measures to adequately address targets in their evaluation criteria sheets (See “Use of Assessment Criteria” section below). This is most applicable for the water quality performance measures. General comments of significance are noted below, while comments on each specific project-level performance measure are presented in Attachment A.

Terminology - In the introductory text and throughout the EAA Storage Reservoir evaluation criteria hierarchy, there is some confusion related to terminology used by the project and RECOVER in describing performance measures (e.g., Evaluation Criteria, Performance Measures, Screening Criteria, Assessment Performance Measures and Evaluation Performance Measures). For consistency with the terminology used by RECOVER and other CERP projects, it is suggested these definitions be clarified. Clarification in Section 6.1 of the evaluation criteria report would solve this confusion.

Availability of Freshwater in the EAA – The EAA Storage Reservoir project currently lists availability of freshwater to the EAA as a RECOVER system-wide performance measure (R-11). RECOVER does not have an evaluation performance measure to evaluate the availability of freshwater in the EAA. This issue should be addressed in a project-level evaluation criterion.

Environmental Deliveries Evaluation Criterion- The EAA Storage Reservoir project currently lists environmental deliveries to the Water Conservation Areas as a RECOVER system-wide performance measure. The system-wide “Environmental Water Deliveries” performance measure (R-12) should be removed from the hierarchy because RECOVER does not have a system-wide performance measures directly related to water volume delivered to the Greater Everglades Area. RECOVER will evaluate downstream influences and benefits of timely water deliveries including improvements to hydropatterns in the Everglades through a series of performance measures (GE-E1 through GE-E5).

RECOVER suggests that a project-level evaluation criterion be developed to evaluate water deliveries to meet downstream needs when no system-wide evaluation of their downstream effects is available. This situation may occur when only the sub-regional or project level models are applied. In addition, the water deliveries for Holey Land and Rotenberger Wildlife Management Areas from STA 5 should be considered when determining environmental water demands.

Water Storage Evaluation Criterion - The Comprehensive Plan intended the EAA project to store 360,000 acre-feet of water to provide freshwater deliveries to the EAA and natural systems and to minimize wide fluctuations in freshwater discharges to the Northern estuaries. RECOVER suggests the issue of maximizing water storage capabilities in the storage reservoirs during: 1) periods of high lake level when the chance of regulatory release to the estuaries is high and 2) periods of low lake level when the chance of water shortage to the Lake Okeechobee Service Area (LOSA) is high be captured in the creation of additional evaluation criteria. RECOVER suggests creating two evaluation criteria to address these conditions as outlined in Attachment A.

Additionally, RECOVER suggests that the PDT elaborate within the fact sheets how the goal of providing water to supply downstream needs and reducing high Lake Okeechobee water levels through water storage will be balanced with other project performance measures to minimize dry-out in the reservoirs and the STAs and maximize deep-water refugia in the reservoirs or, at least, acknowledge that this potential conflict or tradeoff exists.

STAs By-pass Performance Measures - RECOVER suggests this performance measure be identified as a system-wide performance measure referencing GE-E10. The project performance measure objective should read: "Minimize bypass of STAs

during high water-volume events by providing sufficient storage capacities and optimized operations in the EAA Storage Reservoirs."

Nutrients – RECOVER is commenting on project-level evaluation criteria and performance measures related to nutrient concentration to ensure that water quality of receiving waters is maintained to system-wide targets. Several evaluation criteria and performance measures address nutrient levels but neglect to include appropriate nutrient concentration targets. RECOVER suggests reviewing system-wide evaluation performance measures GE-E7 and GE-E8 for general consistency. Specific comments and evaluation performance measures are contained in Attachment A.

Backpumping from the 298 Districts – The PDT should be aware that the project may affect the ability of the 298 drainage districts to divert water to the reservoirs rather than backpumping into Lake Okeechobee. The FDEP 298 Drainage Diversion projects were designed to divert 80% of their Lake Okeechobee discharge to the south for treatment in the STAs. This limited diversion (80%) was due to a lack of capacity in the EAA Canal system. Apparently, Restudy modeling results for water budgets indicated only a 40% diversion. The EAA Reservoir Storage Project should examine this potential problem and address it. One method to address may be to develop a performance measure to evaluate the diversion of untreated 298 District lake discharges.

Overland Flow in Greater Everglades - It should be noted that the RECOVER performance measures include several indicator regions to evaluate improvements to hydro patterns in this area. These improvements will result from EAA Storage Reservoir and other CERP projects providing more water for environmental deliveries. However, there are no transects currently located in this area to evaluate overland flows in northern WCA-3A. RECOVER's Regional Evaluation Team will consider adding an overland flow transect to its set of systemwide performance measures.

Fact Sheets - Fact sheets for system-wide RECOVER performance measures should be updated to reflect the latest version of RECOVER's Evaluation Performance Measures. RECOVER Performance Measure fact sheets are available on http://www.evergladesplan.org/pm/recover/ret_perf_measures.cfm. An option is to reference RECOVER's draft *Performance Measure Documentation Report*, which will be available this fall.

4.0 Consistency Between Project and RECOVER Evaluation Strategies

Use of Assessment Criteria – The PDT should use RECOVER Assessment Performance Measures for water quality as a guide to refine their evaluation criteria. The RECOVER Assessment Performance Measures include the desired direction or target for the system. The specific RECOVER Assessment Performance Measures to be considered are noted on the attached table of evaluation criteria.

Structure of Performance Measures - In general, some evaluation methods sections are inconsistent with the goals defined in the descriptions and the targets. The evaluation methods section should describe how the predictive models output would be quantified, relate it directly to the performance measure description and target, and the justification should incorporate some level of actual (baseline) data if available. In addition, the level of detail should be consistent throughout the fact sheets to the extent

possible. Some require additional detail and expansion of the target and evaluation methods sections. For example, targets for reduction of nutrient loading should specify target concentrations or loads.

5.0 Conclusions

RECOVER commends the PDT on an organized and well-conceived set of performance measures. Inclusion of the applicable system-wide performance measures developed by RECOVER in the evaluation hierarchy facilitated the consistency review and will benefit readers of the document in the future. There is general compatibility between the project-level performance measures developed for the EAA Storage Reservoir project and the system-wide performance measures of the Comprehensive Plan. Some revisions are suggested. First, two project-level evaluation criteria could be added to address regulatory releases to the estuaries and LOSA water shortages. Second, a project-level evaluation criterion could be added to evaluate the benefits of improved deliveries to meet downstream water needs. Third, overlap exists between the project-level performance measure and the system-wide performance measure dealing with water by-pass around the STAs, and RECOVER suggests this be maintained as a system-wide performance measure. Additionally, RECOVER suggests that the targets for several of the performance measures be developed and tied to predictive modeling output.

**Everglades Agricultural Area Storage Reservoir Project (EAA SR)
Project-Level Performance Measure and Evaluation Criteria Consistency Review
Attachment A**

Evaluation Criteria	Project Performance Measure Objective	Project Performance Measure Target	Applicable RECOVER System-wide Performance Measure and Comments
EC 1.1.1.1 Phosphorus in Reservoirs	Reduce the amount of P discharged from the reservoirs to the STAs and canals in order to meet state water quality standards.	1) The reservoir should maximize the reduction of P load and concentration, i.e., outflow TP concentrations less than inflow TP concentration. 2) The reservoir should not cause or contribute to violation of state water quality standards for P. 3) The reservoirs should not cause the STA discharges to be in non-compliance with state water quality standards for Phosphorus.	LO-E6, LO-A14, GE-E7 RECOVER is commenting on this evaluation criteria to ensure that water quality of receiving waters is maintained to system-wide targets. An additional target should be added to indicate that the reservoir should not cause or contribute to increasing the phosphorus concentration trend in receiving waters. Additionally, the "description" section should read: "... EAA canals must meet state water quality standards for phosphorus."
EC 1.1.1.2 Mercury/Sulfur Species in water, fish, and soils in Reservoirs	Reduce the amount of methylated mercury in the water, fish, and soil of the EAA area.	Pre-startup: soil lechate less than Class III numerical water quality standards (12 ng/L unfiltered total Hg or avg soil total Hg or methylmercury) and average mosquitofish concentration in a soil bioconcentration study below the 90th percentile upperbound concentration for that waterbody type and basin.	GE-A16 Although there is no specific RECOVER PM for mercury contamination, RECOVER is developing a system-wide performance measure for mercury contamination. At this time, the nature of the EC is unclear with regards to whether it is an assessment (monitoring), evaluation (modeling), or screening criteria. Ensure consistency with draft CGM for Toxic Substances Screening process -Mercury and pesticides. Contact. Larry Fink lfink@sfwmd.gov, Darren Rumbold drumbol@sfwmd.gov, or Richard Pfeuffer rpfeuff@sfwmd.gov.
EC 1.1.1.3 Other Water Quality Parameters for Reservoirs	Maintain EAA reservoir water quality so as not to cause or contribute to violation of state water quality standards.	No violation of state water quality standards.	GE-A17
PM 1.1.1.4 Minimize Frequency of Dryout in the Reservoirs	Reduce dryout occurrences to decrease releases of P and methylmercury to the water column. Minimizing releases will increase ecological health by increasing native wildlife diversity and abundance.	Zero dry-out events. A dry-out event is defined as an event where water level within a reservoir is equal to or less than the average ground surface elevation.	ADDED BY PDT RECOVER is commenting on this performance measure because of its focus on system-wide water quality. Dryout is only one source of nutrient and contaminants in the EAA. Since reservoir water quality is not specified as an EAA project goals and objectives, this performance measure should be made an evaluation criteria. EC 1.1.1.1 and EC 1.1.1.2 will include the effects of dryout on nutrient release. Additionally, RECOVER suggests that the target of this EC should address how minimizing the frequency of dryouts will be affected by the project goal to maximize water delivery to meet downstream needs by storing water in the reservoirs.
PM 1.1.1.5 Minimize Duration of Dryout in the Reservoirs	Reduce dryout occurrences to decrease releases of P and methylmercury to the water column. Minimizing releases will increase ecological health by increasing native wildlife diversity and abundance.	Minimize the number of consecutive days of dry-out events. A dry-out event is defined as an event where water level within a reservoir is equal to or less than the average ground surface elevation for one day. Consecutive day events could be defined as "greater than 2 consecutive days"	ADDED BY PDT RECOVER is commenting on this performance measure because of its focus on system-wide water quality. Dryout is only one source of nutrient and contaminants in the EAA. Since reservoir water quality is not specified as an EAA project goals and objectives, this performance measure should be made an evaluation criteria. EC 1.1.1.1 and EC 1.1.1.2 will include the effects of dryout on nutrient release. Additionally, RECOVER suggests that the target of this EC should address how minimizing the frequency of dryouts will be affected by the project goal to maximize water delivery to meet downstream needs by storing water in the reservoirs.

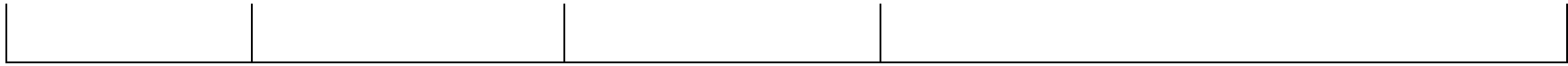
PM 1.1.2.1 Minimize Frequency of Dryout in the Everglades Construction Project (ECP) STAs	Reduce dryout occurrences to decrease releases of P and methylmercury to the water column. Minimizing releases will increase ecological health by increasing native wildlife diversity and abundance.	Zero dry-out events. A dry-out event is defined as an event where water level within an STA is below 6" above the average ground surface elevation.	RECOVER suggests that the target of this PM address how minimizing the frequency of dryouts will be affected by the project goal to maximize water delivery to meet downstream needs by storing water in the reservoirs.
PM 1.1.2.2 Minimize Duration of Dryout in the ECP STAs	Reduce dryout occurrences to decrease releases of P and methylmercury to the water column. Minimizing releases will increase ecological health by increasing native wildlife diversity and abundance.	Minimize the number of consecutive days of dry-out events. A dry-out event is defined as an event where water level within an STA is below 6" above the average ground surface elevation for one day. Consecutive day events could be defined as "greater than 2 consecutive days"	RECOVER is commenting on this performance measure to ensure that the project goal to provide water deliveries to meet downstream needs is adequately addressed. RECOVER suggests that the target of this PM address how minimizing the frequency of dryouts will be affected by the project goal to maximize water delivery to meet downstream needs by storing water in the reservoirs.
PM 1.1.2.3 Minimize ECP STA Bypass Frequency and Volume	Increase detention time improve water quality (increase nutrient removal and reduce TSS) leaving the STAs.	Zero bypass events and minimize total volume of bypasses when they do occur.	GE-E10 RECOVER suggests this PM be identified as a system-wide performance measure referencing GE-E10. The project PM objective should read: "Minimize bypass of STAs during high water-volume events by providing sufficient storage capacities and optimized operations within the EAA reservoirs."
PM 1.1.2.4 Optimize Retention Time of ECP STAs	Increase detention time improve water quality (increase nutrient removal and reduce TSS) leaving the STAs.	Optimize hydraulic retention time for the STAs.	RECOVER is commenting on this performance measure to ensure that the project goal to provide water deliveries to meet downstream needs is adequately addressed. RECOVER suggests that the target of this PM address how optimizing retention time will be affected by the project goal to maximize water delivery to meet downstream needs by storing water in the reservoirs.
PM 1.1.2.5 Phosphorus in ECP STAs	Decrease STA discharge concentrations of P to the water column. Minimizing releases will increase ecological health by increasing native wildlife diversity and abundance.	Minimize P load and concentrations discharged from the STAs	GE-E7, GE-E8, GE-A14 RECOVER Evaluation Performance Measures GE-E7 and GE-E8 contain a flow-weighted mean concentration target of 10ppb for TP and WCA 2 has an additional load target of less than 10 to 15 metric tons TP per year via inflow water control structures . The target for this PM should be revised to "minimize the number of exceedances of the 10 ppb Phosphorus limit, with ultimate target of zero exceedances, and achieve TP loading at WCA 2 less than 15 metric tons TP via inflow water control structures."

<p>PM 1.1.3 Reduce Phosphorus and Other Contaminant Loads to Lake Okeechobee</p>	<p>Minimize pumping events to decrease concentrations of P to Lake Okeechobee. Minimizing P loading will increase ecological health by increasing native wildlife diversity and abundance.</p>	<p>Zero backpumping events into Lake Okeechobee through S-2 and S-3.</p>	<p>LO-A19, LO-E6</p> <p>The objective of this PM is consistent with Assessment Performance Measure LO-A19 and Evaluation Performance measure LO-E6, however RECOVER suggests adding clarification in the "rationale" section of the fact sheet that EAA backpumping water will be captured in the EAA reservoirs and that EAA project features will not backpump into Lake Okeechobee. Additionally, RECOVER suggests expanding this PM to include reduction of other contaminants. The benefits of eliminating backpumping extend beyond phosphorus reduction, but without a performance measure for these other water quality standards the project will not be credited with these water quality benefits.</p> <p>It is also important for the PDT to be aware that the project may affect the ability of the 298 drainage districts to divert water to the reservoirs rather than backpumping into Lake Okeechobee. The FDEP 298 Drainage Diversion projects were designed to divert 80% of their Lake Okeechobee discharge to the south for treatment in the STAs. This limited diversion (80%) was due to a lack of capacity in the EAA Canal system. Model results from the Restudy's water budgets indicated only a 40% diversion was possible. The EAA Reservoir Storage Project should examine this potential problem and address it. One method to address it would be to develop a performance measure to evaluate the diversion of untreated 298 District lake discharges or expand the PM to incorporate other structures in addition to S-2 and S-3.</p>
<p>EC 1.1.4 Soil Contaminants</p>	<p>Remediate sub-surface contaminants to prevent re-release into water column after flooding. Assure that the storage reservoirs and widened canals, when built, meet WQT standards.</p>	<p>Avoid siting or constructing on contaminated land.</p>	<p>Although there is no specific RECOVER PM for soil contamination, RECOVER is concerned with water quality for all receiving bodies of water. At this time, the nature of the EC is unclear with regards to whether it is an assessment (monitoring), evaluation (modeling), or screening criteria. Ensure consistency with draft CGM for Toxic Substances Screening process -Mercury and pesticides. Contact Larry Fink lfink@sfwmd.gov, Darren Rumbold drumbol@sfwmd.gov, or Richard Pfeuffer rpfeuff@sfwmd.gov.</p>
<p>EC 1.2.1 Terrestrial Levees</p>	<p>Increase functional value of the uplands including increased wildlife diversity and abundance, improved water quality, increased groundwater recharge, and improved human interests.</p>	<p>Maximize functional value including connectivity of native and natural uplands for wildlife habitat. The degree to which the target is achieved would be measured based on an increase in functional value of upland habitat below the targeted increase.</p>	<p>While there is no specific RECOVER performance measure relating to the project level EC, RECOVER is concerned about maintaining spatial extent and connectivity of like habitats. For this reason, RECOVER is commenting on this EC. The target for this EC refers to functional value of uplands including connectivity, but the evaluation method is simply estimation of area (i.e. spatial extent) GE-E11 through GE-E18 provide a good example of evaluating both functionality and spatial extent of habitat. If functionality cannot be modeled, RECOVER recommends that the PDT evaluate spatial extent that remains connected to natural uplands or increase in spatial extent only.</p>
<p>EC 1.2.2 Aquatic - Deep Water Refugia</p>	<p>Provide deep water refugia to increase wildlife diversity and abundance and improve water quality through nutrient removal.</p>	<p>Maintain a depth of 4 ft of water below reservoir floor elevation in 10% of the total reservoir area. The degree to which the target is achieved would be measured based on meeting or exceeding the depth and spatial extent target.</p>	<p>RECOVER is concerned that this project criteria may reduce the expected benefits tied to water storage. Information should be included to address how this EC is balanced against the project goal to provide water deliveries to meet downstream needs by storing water in the reservoirs.</p>
<p>EC 1.2.3 Impacts to Existing Wetlands</p>	<p>Increase wetland functionality including increased wildlife diversity and abundance, improved water quality, increased storage capacity, enhanced downstream functions of natural environments, and improved human interests.</p>	<p>Minimize the net loss of wetlands functional values within the project area, with the ultimate goal of increasing wetland functional value, to the extent practicable.</p>	<p>GE-E11</p> <p>There is inconsistency between this project level EC and the RECOVER system-wide evaluation method for wetlands. The target of this PM refers to functional value, but the evaluation method is simply estimation of area (i.e. spatial extent) GE-E11 provides a good example of evaluating both functionality (including water quality) and spatial extent. If functionality (or an indicator characteristic) cannot be modeled, RECOVER recommends that the PDT evaluate spatial extent with regards to hydroperiod.</p>

PROPOSED Maximize the reservoir storage capacity when stages in Lake Okeechobee are high and there is high risk of making estuary regulatory discharges.				The CERP comprehensive plan for the EAA intended this project to reduce regulatory releases to the estuaries. RECOVER is concerned that other project features being planned by the PDT (ie preventing dryout, providing deep water refugia, and maximizing retention time in the STAs) may reduce the expected benefits tied to water storage. High water levels cause ecological damage or cause freshwater to be discharged to tide. In an effort to achieve other objectives, the project should not lose sight of this important Yellow Book goal. An evaluation should be made to ensure that this goal is not reduced. It should be made an evaluation criteria. This evaluation criteria can be easily scored by considering the 30-y hydrograph of Lake Okeechobee stages from the SFWMM, focusing on those times when stage is within 0.5 ft of the bottom of Zone C of the lake regulation schedule. These are times when there is an increased risk of making regulatory discharges to the estuaries. For a given alternative, scoring is done by determining the cumulative amount of reservoir storage that is available at the start of each such period of high stage in the lake. More available storage capacity is better.
PROPOSED Maximize amount of water stored in the reservoir when Lake Okeechobee stages are low and there is a high risk of water shortages in the Lake Okeechobee Service Area				The CERP Comprehensive Plan intended the EAA project to provide water deliveries to meet downstream needs. RECOVER is concerned that other project features being planned by the PDT (ie preventing dryout, providing deep water refugia, and maximizing retention time in the STAs) may reduce the expected benefits tied to water storage. In an effort to achieve other objectives, the project should not lose sight of this objective. An evaluation criterion could be developed to ensure that this objective is met. This evaluation criteria can be easily scored by considering the same 30-y hydrograph of Lake Okeechobee stages from the SFWMM, focusing on those times when stage is below the Supply Side Management (SSM) line. For a given alternative, scoring is done by determining the cumulative amount of water that is stored at the onset of these periods of low stage. More available water is better.
PM 2.1.1 Agricultural Effects	Reduce agricultural flood damage.	Minimize effects of flooding on Agriculture.		
PM 2.1.2 Urban	Reduce urban flood damage.			DELETED BY PDT
EC 2.2.1 Acceptability	Assess likelihood of acceptance by State and local entities and the public.	Maximize acceptability of the project. Each alternative will be ranked as low, moderate, or high in terms of public acceptability		Not reviewed by RECOVER
EC2.2.2.1 Impact on Jobs by Group Population	Assess number of workers displaced as a direct result of the project.	Minimize number of workers from low income and minority populations displaced from their jobs as a direct result of the project.		Not reviewed by RECOVER
EC2.2.2.2 Displace Housing by Group population	Assess number of households forced to relocate as a direct result of the project.	Minimize number of households from low income and minority populations forced to relocate and avoid disproportionate negative impacts on these groups as a direct result of the project.		Not reviewed by RECOVER
EC 2.3.1 Access and Suitability for Boating Activities	Assess whether STAs are suitable for recreational access.			The Master Recreation Planning Team may be able to provide guidance on the recreational evaluation criteria.

EC 2.3.2 Access and Suitability for Hunting	Assess whether STAs are suitable for recreational access.			The Master Recreation Planning Team may be able to provide guidance on the recreational evaluation criteria.
EC 2.3.3 Access and Suitability for Fishing	Assess whether STAs are suitable for recreational access.			The Master Recreation Planning Team may be able to provide guidance on the recreational evaluation criteria.
EC 2.3.4 Access and Suitability for Wildlife Viewing	Assess whether STAs are suitable for recreational access.			The Master Recreation Planning Team may be able to provide guidance on the recreational evaluation criteria.
EC 2.3.5 Access to Natural Areas	Create no impact to public's access to Wildlife Management Areas.	Maintain recreational access to natural areas including the Everglades WMA, Holey Land and Rotenburg WMAs, and Loxahatchee NWR.		Not reviewed by RECOVER
EC 2.4.1 Avoid or Minimize Number of Resources Impacted	Minimize number of disturbance to "significant cultural resources".	Ratio of adversely affected cultural resources versus known resources should be zero.		Not reviewed by RECOVER
EC 2.4.2 Avoid or Minimize Spatial Extent Impacted	Minimize spatial extent of disturbance to "significant cultural resources".	Ratio of acreage impacted within areas identified through predictive modeling to have a high potential for significant cultural resources versus total acreage within areas of high cultural resource sensitivity should be zero.		Not reviewed by RECOVER
EC 2.5.1 Local Government Tax Revenues	Assess the amount of tax revenue lost due to land use changes associated with the EAA reservoir project.	Minimize reduction in local property tax revenues generated, measured in dollars.		Not reviewed by RECOVER
EC 2.5.2 Sales and Earnings	Assess the changes in sales and earnings and economic vitality in the areas directly affected by the EAA reservoir project.	Maximize increases or minimize reductions on sales and earnings in the region, measured in dollars.		Not reviewed by RECOVER
EC 3.1.1 Life Cycle Cost	Asses total costs of the resources utilized to construct, operate and maintain each EAA reservoir alternative through its planned life.			Not reviewed by RECOVER
EC 3.1.2 Section 902	Compare total project cost with Authorized Project Cost.	Total project cost should be maintained at no more than 120% of the authorized project cost.		Not reviewed by RECOVER
EC 3.2.1 Technological	Identify project alternatives that employ technologies that can achieve project goals with the least amount of risk and uncertainty	Alternatives with lower risk of not performing as planned will be preferred.		Not reviewed by RECOVER
EC 3.2.2 Reliability	Identify project alternatives that can achieve project goals with the least amount of potential failure during stress periods.	Alternatives with lower risk of under performing during periods of stress will be preferred.		Not reviewed by RECOVER
EC 3.2.3 Environmental	Identify project alternatives that can achieve project goals with the best ability to meet environmental requirements and regulations.	High level of confidence rating		Not reviewed by RECOVER

EC 3.2.4 Cost	Identify project alternatives that can achieve project goals with the least risk and uncertainty regarding cost.	Alternatives with lower risk that costs will be significantly higher than estimated or the possibility that costs will be significantly reduced will be preferred.	Not reviewed by RECOVER
EC 3.3.1 Cost per acre-foot of storage		No specific target in terms of "dollar per acre-foot".	Not reviewed by RECOVER
EC 3.3.2 Incremental cost per additional acre-foot of storage		No specific target in terms of "dollar per additional acre-foot".	Not reviewed by RECOVER
EC 3.3.3 Cost effectiveness of increased treatment performance of STAs		No specific target in terms of "dollar per ton of phosphorus removed".	Not reviewed by RECOVER
EC 3.3.4 Incremental cost per increased treatment performance of STAs		No specific target in terms of "dollar per additional ton of phosphorus removed".	Not reviewed by RECOVER
R-1 Extreme Low Lake Stage	Prevent low lake stages to stop negative impacts on the system.	No events where lake stage falls below 11 ft NGVD or where stage falls below 12 ft NGVD for more than 12 months duration.	LO-E1 & LO-E2 It is recommended that the PDT review current RECOVER Evaluation Performance Measures to ensure the most recent version is used.
R-2 Extreme High Lake Stage	Prevent high lake stages to stop negative impacts on the system.	No events where lake stage exceeds 17 ft NGVD or where stage exceeds 15 ft NGVD for more than 12 months duration.	LO-E3 & LO-E4 It is recommended that the PDT review current RECOVER Evaluation Performance Measures to ensure the most recent version is used.
R-3 Spring Recession	Establish spring recessions to benefit wading birds and other aspects of the lake's ecosystem.	Have a spring recession in lake stages between 15 and 15.5 ft NGVD in January to near 12 ft NGVD in early June with no reversals of stage greater than 0.5 ft during the event.	LO-E5 It is recommended that the PDT review current RECOVER Evaluation Performance Measures to ensure the most recent version is used.
R-4 Overland Flow in Greater Everglades	Increase overland flow to recreate historic seasonal and annual flow volumes in the southern Everglades while meeting depth and inundation duration targets in the northern part of the system.	The percentage deviation of average monthly, season and annual flow volume computed from flows across selected groups of transects compared to flows predicted by NSM version 4.6 must be less than 10%.	GE-E5 The RECOVER Greater Everglades performance measures address more than overland flows. RECOVER hydrologic performance measures to assess hydrologic improvements include GE-E1, GE-E2, GE-E3, GE-E4 and GE-E5 (Dry Downs in Shark River Slough, Inundation Patterns, Extreme High and Low Events, Seasonal Amplitude and Interannual Variability and Seasonal and Annual Overland Flows). The hierarchy should reflect the numerous performance measures available for systemwide evaluations. While Overland Flow in the Greater Everglades is a RECOVER evaluation PM, the current RECOVER transects evaluate overland flows in southern WCA-3A, but do not currently evaluate flow patterns in the northern portions of the WCAs. The RET will revisit the need to add flow transects in this area. It is also recommended that the PDT review current RECOVER Evaluation Performance Measures to ensure the most recent version is used.
R-5 Total System phosphorus	Decrease TP concentrations in surface water to improve water quality.	Restore soil and water phosphorus concentrations consistent with pre-drainage periphyton and vegetation patterns.	GE-E7 It is recommended that the PDT review current RECOVER Evaluation Performance Measures to ensure the most recent version is used.
PROPOSED GE-E8 Greater Everglades Wetlands Basinwide TP Loading			Add additional RECOVER system wide evaluation criteria. It is recommended that the PDT review current RECOVER Evaluation Performance Measures to ensure the most recent version is used.



PROPOSED GE-E9 Areal-based Net TP Loading (Mass/Area)				Add additional RECOVER system wide evaluation criteria. It is recommended that the PDT review current RECOVER Evaluation Performance Measures to ensure the most recent version is used.
PROPOSED GE-E 10 Tracer of Bypass flows				Add additional RECOVER system wide evaluation criteria. It is recommended that the PDT review current RECOVER Evaluation Performance Measures to ensure the most recent version is used.
R-6 Salinity Envelope	Control freshwater inputs to St Lucie Estuary to improve estuarine water quality and enhance estuarine habitat and biota.	Salinity envelope of 23 ppt to 35 ppt and influent flows less than 500 cfs.	NE-E1	RECOVER suggests that the applicability of this system-wide PM and its relationship to the EAA Project be elaborated in the rationale section of this PM.
R-7 Salinity Envelope	Control freshwater inputs to the Lake Worth Lagoon to improve estuarine water quality and enhance estuarine habitat and biota.	Mean monthly flow discharges to the estuary between 0-500 cfs.	NE-E2	The applicability of this system-wide PM to the EAA Project may be remote, unless the project will be delivering water through STA 1 E via C-51 to meet Lake Worth Lagoon environmental water demands. Otherwise, inclusion of this systemwide performance measure may not be appropriate.
R-8 Salinity Envelope	Control freshwater inputs to the Caloosahatchee estuary to improve estuarine water quality and enhance estuarine habitat and biota.	Freshwater discharges to the estuary between 300-2800 cfs.	NE-E3	It is recommended that the PDT review current RECOVER Evaluation Performance Measures to ensure the most recent version is used.
R-9 Frequency of Water Restrictions Within LOSA	Provide at least a 1-in-10 level of service for water supply.	Provide at least a 1-in-10 level of service for water supply.	WS-E1	It is recommended that the PDT review current RECOVER Evaluation Performance Measures to ensure the most recent version is used.
R-10 Potential for High Water Levels in EAA	Prevent water levels high enough to cause crop damage.	Prevent water levels high enough to cause crop damage.		
R-11 Increase Availability of Fresh Water in the EAA				This PM is inconsistent with RECOVER system-wide performance measures. RECOVER does not have an evaluation performance measure to evaluate the availability of freshwater in the EAA. This PM should be a project level PM. RECOVER Currently has PMs to evaluate the frequency of water restrictions in the Lake Okeechobee and Lower East Coast Service Areas. RECOVER suggests the PDT review WS-E1 and WS-E2 to capture some regional benefits.
R-12				

Environmental Deliveries		<p>This PM is inconsistent with RECOVER system-wide performance measures. While RECOVER does not evaluate environmental deliveries, it remains interested in downstream influences and benefits of timely environmental deliveries. This PM should be a project level PM. The EAA SR will be the primary CERP project responsible for ecosystem restoration within Holey Land and Rotenberger WMAs. Since a) the PIR operations manual will have to account for water necessary to meet the STA CUPs, b) the SFWMD has an MOU with FWC for water deliveries to these WMA, c) the SFWMD is developing Rainfall-Driven operations for these WMA, and d) the PDT has the ability to evaluate discharges from the STAs, the PDT should develop an evaluation criterion and, subsequently, performance measures for the evaluation of environmental deliveries to Holey Land and Rotenberger WMA using NSM targets RECOVER currently has PMs to evaluate the creation of functional habitat. These PMs rely upon hydroperiod, which is directly related to environmental deliveries. RECOVER suggests the PDT review GE-E11 through GE-E18 to capture some regional benefits.</p>
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