

## **Reducing Uncertainty in the CERP C-111 Spreader Canal Western Project**

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Decreasing uncertainty within Comprehensive Everglades Restoration Plan (CERP) starts during planning with application of the Applied Science Strategy. For the C-111 Spreader Canal Western project it was incorporated into the project development process during planning, design, construction, monitoring, and operation when initiated around 2004 and continued when project refinements started post-construction in 2012. Incorporation of science gained from implementation, testing, and monitoring were continuously applied to reduce uncertainties and improve project performance. This Applied Science Strategy can be adapted to other restoration projects and has been applied to other CERP projects. Planning depended on the collective efforts of multi-disciplinary, interagency teams applying real world knowledge to develop performance metrics and targets for project specific hydrologic models. These models simulated intended benefits of the CERP Project expected in the Everglades National Park. Design benefited from a value engineering evaluation that recommended additional pump house bays in case future capacity increases were warranted. While construction methods gained advantages learned from the adjacent federal C-111 South Dade Project to increase water conveyance efficiency across the highly transmissive Biscayne aquifer. RECOVER's regional monitoring combined with the project's plan monitor two scales of changes – near field and far field as well as hydrologic focused and salinity coupled with biotic responses. However, it has been difficult to assign improved performance to regional changes or to the project benefits to the Everglades, in general, and to Taylor Slough specifically. Eventually enough data over the past 10 years have been collected by scientists within SFWMD's Applied Science Bureau to confirm project benefits have been achieved consistent with the project's objectives. It supported the decision to modify the project features and operations to increase flows to Taylor Slough and elsewhere including physical and operational adjustments to enhance performance and increase project benefits. The C-111 Spreader Canal Western Project has successfully been implemented and modified to achieve its intended benefits, but changes in regional conditions whether from other restoration projects or sea level rise will dictate future performance of the project.

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