Text for 508 Compliance for Figures

Figure 1. Line chart is entitled "Lake Okeechobee Average Monthly Stages." Horizontal axis is Water Year. Vertical axis is lake stage in feet. The chart shows the average monthly lake stages in Lake Okeechobee from water year 2008 to water year 2017. These years are represented by the dates of May 1, 2007 to April 30, 2017. Green horizontal lines indicate the top and bottom of the original ecological stage envelope and the dashed vertical line represents beginning of year 2013. The average monthly lake stage periodically drops well below the stage envelope in water years 2008 up to water year 2013. However, from water year 2013 through water year 2017 the lake stage is mostly within the stage envelope, only exceeding the top of the envelope for comparatively short amounts of time, primarily in the summer.

Figure 2. Line chart shows the average monthly lake stage for three conditions: 1) the original ecological envelope (i.e., the blue line or highest line in January); 2) for water years 2008-2012 (i.e., the orange line or lowest line in January); and 3) for water years 2013-2017 (i.e., the gray line or middle line in January). The Horizontal axis is months and the Vertical axis is lake stage in feet. From May to October, the gray line crosses above the blue line indicating the average monthly lake stage was highest during the summers of water years 2013 to 2017.

Figure 1. The graphic is shown in two parts. The Horizontal axes are months and the Vertical axes are lake stage in feet. The top panel shows the proposed Normal stage envelope in comparison to the Original stage envelope. Both envelopes have considerable overlap; however, the proposed Normal envelope is approximately 6 inches lower in winter and spring. The bottom panel of the graphic shows the proposed Recovery envelope in comparison to the Original stage envelope. There is considerably less overlap for these two envelopes with little to no overlap in winter and spring because the propose Recovery envelope is approximately 12 to 18 inches lower.

Figure 2. The graphic is entitled "Lake Okeechobee Ecological Zones" and shows the extents of the littoral, near-shore, and pelagic zones. Most of the littoral zone is on the west side of the lake, and the nearshore, transition zone sits between the littoral and pelagic areas.

Figure 5. The graphic shows the ecological communities and effects of lake stages as the ecological premise for this proposed performance measure. The graphic shows the linkages from the seven hypotheses related to Lake Okeechobee for the Comprehensive Everglades Restoration Plan to the monitoring components. These seven hypotheses include: 1) spatial extent of emergent vegetation in the littoral and near-shore zones; 2) shoreline organic berm; 3) spatial extent of submerged aquatic vegetation; 4) zooplankton community; 5) diversity, distribution, and abundance of forage fish, 6) increased use of the lake by wading birds; and 7) quality of sportfish in the lake. The graphic also shows seven monitoring components. They are: 1) littoral zone plant communities; 2) submerged aquatic vegetation; 3) zooplankton; 4) aquatic fauna regional populations; 5) wading bird nesting; 6) foraging, and 7) largemouth bass condition and population structure. These monitoring components link to two key uncertainties and supporting research. These are: 1) aquatic fauna relationships to submerged and emergent plant communities, and 2) fish and wildlife relationships for food abundance and composition, and for plant community, structure and habitat.

Figure 6. The graphic is entitled "Normal Stage Envelope Targets and Penalties" and has an upper and lower panel. The Horizontal axis is month of year and the Vertical axis is the lake stage in feet. On the upper panel, a blue line shows the 2016 lake stage in relation to the proposed normal lake stage envelope and how points are scored based on the magnitude of the deviation above or below the stage envelope. Higher scores indicate a greater deviation from optimal conditions. Scores are

applied by the hundredths of a foot on a daily basis. The graphic in the lower panel shows the daily point accumulation over the 2016 calendar year. Lake stages in 2016 were higher than the proposed normal stage envelope from February through October.

Figure 7. The graphic is entitled "Recovery Stage Envelope Targets and Penalties" and has an upper and lower panel. The Horizontal axis is month of year and the Vertical axis is the lake stage in feet. On the upper panel, a red line shows the 2019 lake stage in relation to the proposed recovery lake stage envelope and how points are scored based on the magnitude of the deviation above or below the stage envelope. Higher scores indicate a greater deviation from optimal conditions. Scores are applied by the hundredths of a foot on a daily basis. The graphic in the lower panel shows the daily point accumulation over the 2019 calendar year. Lake stages in 2019 were generally within or very close to the proposed recovery stage envelope with the exception of January, February, November and December, which were lower than the envelope.

Appendix Figures

Figure A-1. The bar graph is entitled "Macroalgae (*Chara* species) Coverage." The Horizontal axis is year of sampling, but is not chronological and covers the years from 2001 to 2019. The Vertical axis is acres. The years with the greatest spatial extent of Chara (2001, 2008, 2007, and 2011) are depicted on the left side of the graphic and gradually decrease to the years with the lowest spatial extent (2010, 2013, 2003, 2016, 2006, 2005, and 2018) on the right side. The four years of highest spatial extent occurred when the lake stage was less than 11 feet for a minimum of 30 days during the period of June 1 to July 31. The seven years of lowest spatial extent had lake stages greater than 13 feet during the June to July window or had adverse effects from hurricanes. Specifically, 2006 and 2018 did not have high summer stages but had extremely turbid water due to hurricanes the year prior.

Figure A-2. The line graphic shows the sigmoidal curve fit to estimated *Chara* coverage relative to the 30-day minimum stage from June 1 through July 31. The Horizontal axis is lake stage in feet and the Vertical axis is *Chara* coverage in acres. *Chara* spatial extent was generally greater with lower minimum lake stages (8 to 11 feet) than it was with higher minimum lake stages (greater than 13 feet) in June to July. The R-square value was 0.79 and the Root Mean Square Error was 4501.

Figure A-3. The line graphic shows annual lake stages for eight years in relation to the proposed Normal stage envelope. The Horizontal axis is month and the Vertical axis is lake elevation in feet. The eight years were selected from Figure A-1 that represented the four years with greatest spatial extent of *Chara* and four years with lowest spatial extent of *Chara*. In late June and early July these two grouping are separated by approximately 4 feet of lake stage.

Figure A-4. The graphic shows the location of the 10 submerged aquatic vegetation monitoring transects in the near-shore zone on the western side of Lake Okeechobee.

Figure A-5. The graphic shows the biomass of submerged aquatic vegetation collected from the Lake Okeechobee transects. The graphic is split with the top panel showing the data for Fall 2018 and bottom panel showing the data for Fall 2019. The Horizontal axis is minimum summer water depth in feet and the Vertical axis is the log of wet weight biomass of vascular vegetation in grams. The graphic shows a flat line for Fall 2018 indicating very little submerged vegetation was found that year. In 2019, more plant biomass was collected, and a smoothing spline (lambda 0.2) was fit to the data to yield an R square value of 0.45. Biomasses showed a bell-shape curve, increasing from sample areas with minimum depths of less than 2 feet, and peaking in samples of minimum depth of around 0.5 feet or zero, meaning sites that

nearly went dry. Biomasses decrease in sites that went dry, with no samples collected from areas that were one foot above minimum summer lake stages. The drier minimum summer water depth was responsible for vegetation biomass recovery after the Fall of 2018.

Figure A-6. The graphic is entitled "Total Submerged Nearshore Vegetation: 2018 = 5,187 acres and 2019 = 25,935 acres, Preliminary." The graphic shows the locations of the nearshore vegetation sampling grid cells (one square kilometer) within Lake Okeechobee and where the vegetation was either lost, gained, or no difference between August 2018 and August 2019. Grids cells that lost vegetation are present in the south end of the lake (9 grids), in Fisheating Bay (9 grids), and near the north end of the lake (2 grids). Grids cells that gained vegetation occurred along the south and southwestern nearshore area (86 grids), and the western nearshore area (20 grids). Only one grid had vegetation in both years (in Fisheating Bay).