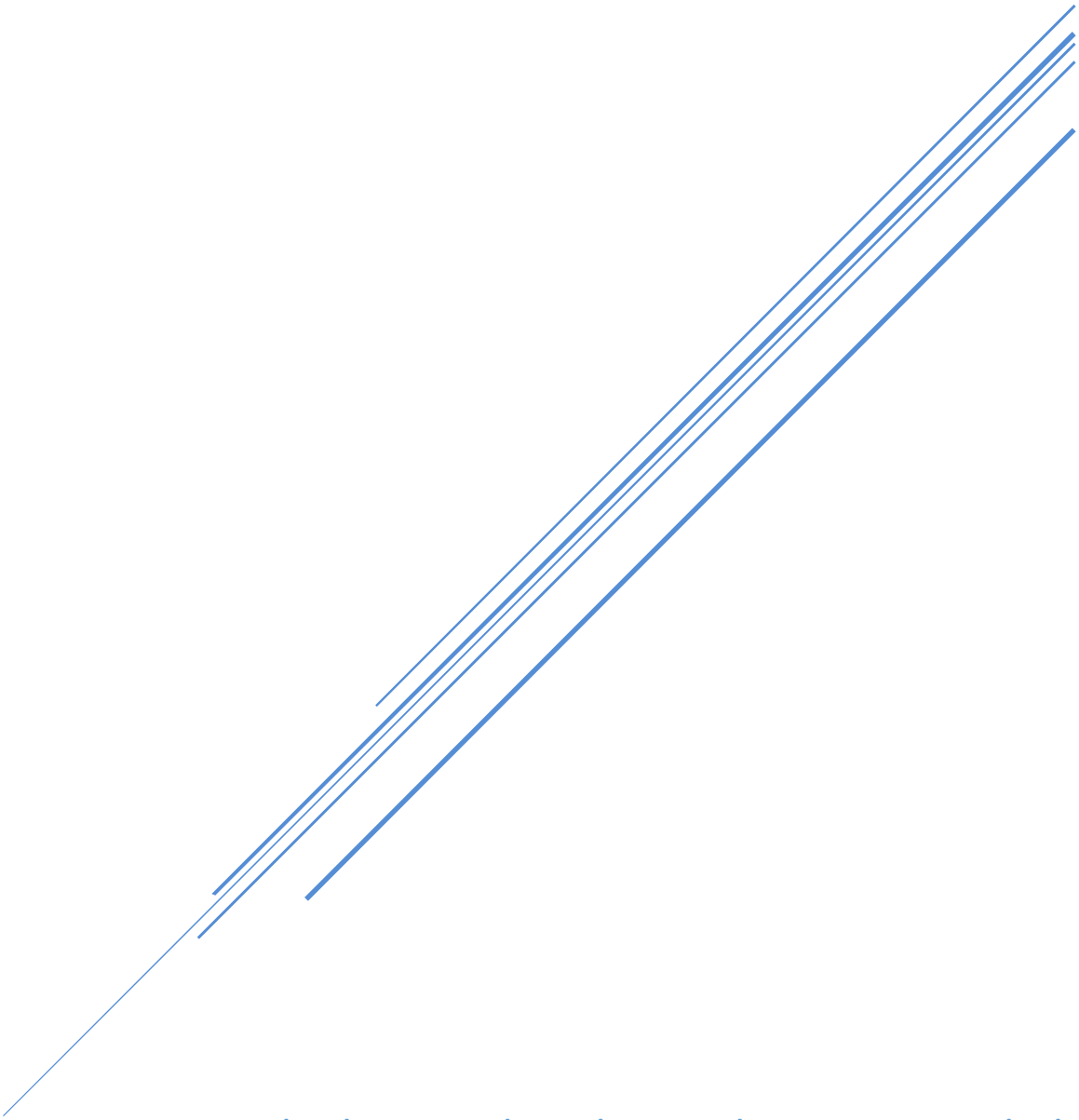
APPENDIX 4H

Data Delivery Digital Files



Lower Charlotte Harbor Flatwoods Strategic Hydrologic Restoration Plan

Lower Charlotte Harbor Flatwoods Strategic Hydrologic Restoration Plan

4H – Data Delivery Digital Files

PREPARED FOR:

1050 Loveland Boulevard
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PREPARED BY:

IN CONJUNCTION WITH:

Lower Charlotte Harbor Flatwoods Hydrologic Modeling/Planning Project

Data Delivery Digital Files – Task 4h

To: Jennifer Hecker, Nicole Iadevaia, Sarina Weiss
From: Roger Copp and Kirk Martin, P.G., Water Science Associates
Date January 24, 2022

BACKGROUND

Water Science Associates was contracted by the Coastal & Heartland National Estuary Partnership (CHNEP) to develop a hydrologic restoration plan for the Lower Charlotte Harbor Flatwoods that will promote sheet flow enhancement and restore wetland hydroperiods in Babcock Webb and Yucca Pens Wildlife Management Area (WMA) and improve the timing and magnitude of flows to tidal creeks west of Yucca Pens WMA.
Project tasks include:

1. Compilation of existing hydrologic data,
2. Installation and of new surface and groundwater monitoring stations and rain gages,
3. Evaluation of vegetation indicators of wetland health,
4. Maintenance of the monitoring stations and downloading measured data,
5. Development of an existing conditions hydrologic model of the study area,
6. Evaluation of alternative management scenarios, and
7. Development of a Lower Charlotte Harbor Flatwoods Strategic Hydrological Restoration Planning Tool and Report.

This memorandum summarizes completion of Task 4h as described below.

DESCRIPTION OF DELIVERABLE REQUIREMENTS

The Scope of Work requirements for Task 4H are to provide data collected at monitoring stations installed as part of the project and a technical memo describing the digital files. The memo should differentiate data outputs between stations in each Water Management District. Data from stations paid for by SWFWMD will be in the format required for entry into the SWFWMD hydrologic database.

DOCUMENTATION

Groundwater Monitoring Stations and Existing Staff Gages

Twenty-four groundwater monitoring stations were installed as part of this project at the locations shown below in **Figure 1**. In addition, water level data loggers were installed at eight existing staff gage locations (also shown in **Figure 1**) in Babcock Webb Wildlife Management Area. The stations were installed in April and May, 2020, and data loggers have been recording water levels continuously since May, 2020. Data was downloaded quarterly starting in August, 2021, with the final data download in mid-November, 2021. The stations remain operational except for BW-10, which was damaged by an off-road vehicle just prior to the final data download. Stations BW-1 through BW-11 are stations that were installed using funds from SWFWMD.

Data loggers at the eight staff gage locations were also installed in April and May, 2020, and all of those stations remain operational. The monitoring station at the North Prong of Alligator Creek (SP-5) was vandalized in the early summer of 2020, and the data logger was re-installed on September 11, 2020. As previously described in technical memos 4a through 4f, data issues that arose were rectified as to maintain data sufficiency.

The complete data sets were described in the 6th data download memorandum (Task 4f Data Collection: Flow Rating Curves, Station Maintenance, and Data Downloading, draft report December 13, 2021), and graphs of the data were included in that memorandum. Files associated with that final data download have been prepared for data upload into the CHNEP Water Atlas (BW-1 through BW-20, YP-3 through YP-6, SR-2, and SP-4 through SP-8), and data for stations BW-1 through BW-11 have also been provided in the data format required by SWFWMD.

Rainfall Stations

Three rain gages were installed as part of this project (SP-5_R, BW-18_R, and SR-7_R shown in **Figure 2**), and data collected by those rain gages are provided in an attached excel file.

Flow Monitoring Stations

Flow monitoring stations were installed at seven freshwater creeks and at one tidal creek, as shown in **Figure 3**. Water levels were recorded at monitoring stations installed at each creek, and flows were measured at a range of hydrologic conditions. A rating curve (flow vs stage) was developed at the freshwater stations, and flows were estimated based on the developed flow rating curve. The flow estimation process was described in Memorandum 4g (Task 4G Data Collection: Flow Rating Curves, draft report January 7, 2022). Stage and flow data for the freshwater stations and flow and velocity data for the tidal creek station are also provided in excel format as attachments to this memorandum.

Data from the Yucca Pens tidal flow monitoring station are available on-line on a real-time basis at http://data.locherenv.com/vdv/. The login is: **yuccapens**, and the password is: **yp051820.**

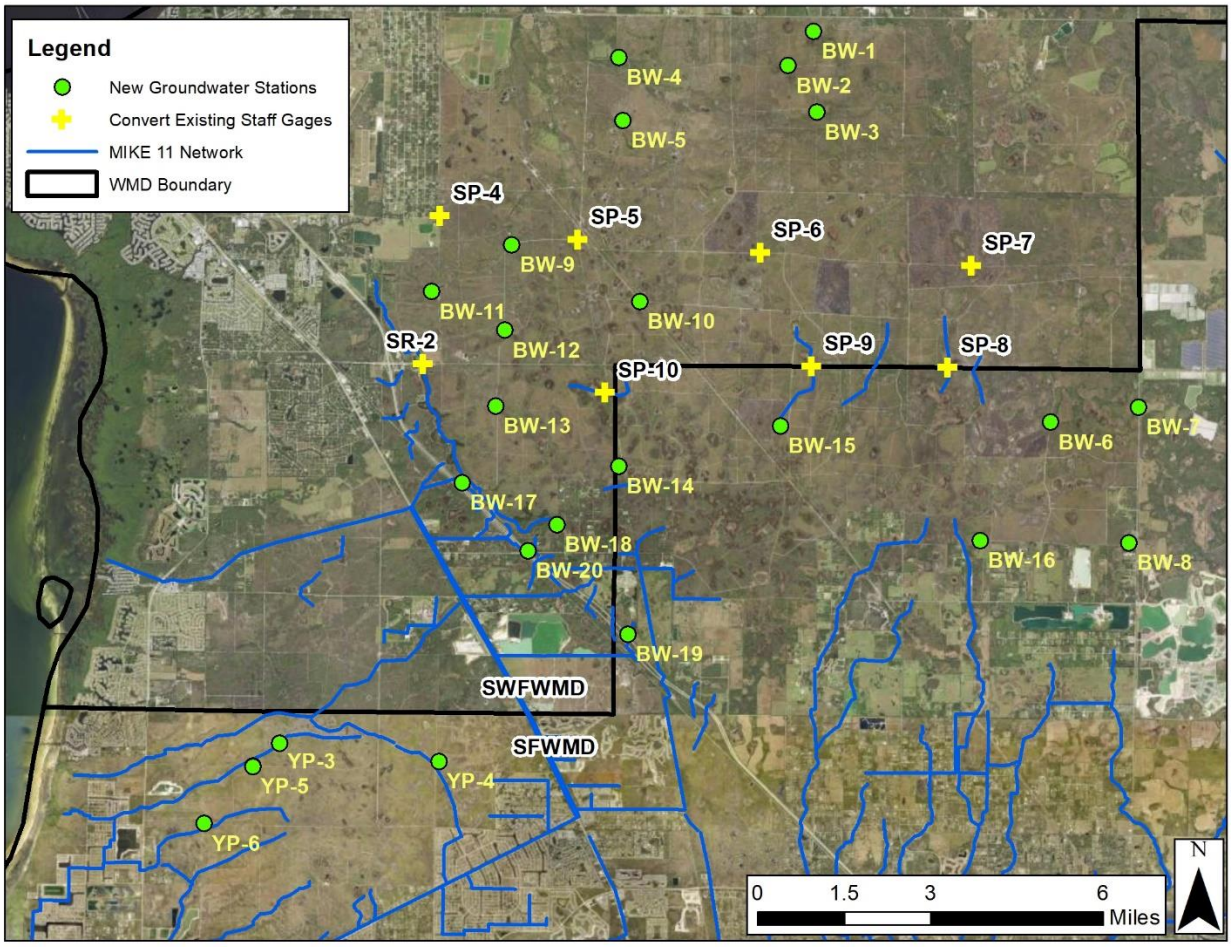

Figure 1 – Map of Surveyed Groundwater Monitoring Stations and Existing Staff Gaging Station Upgrades

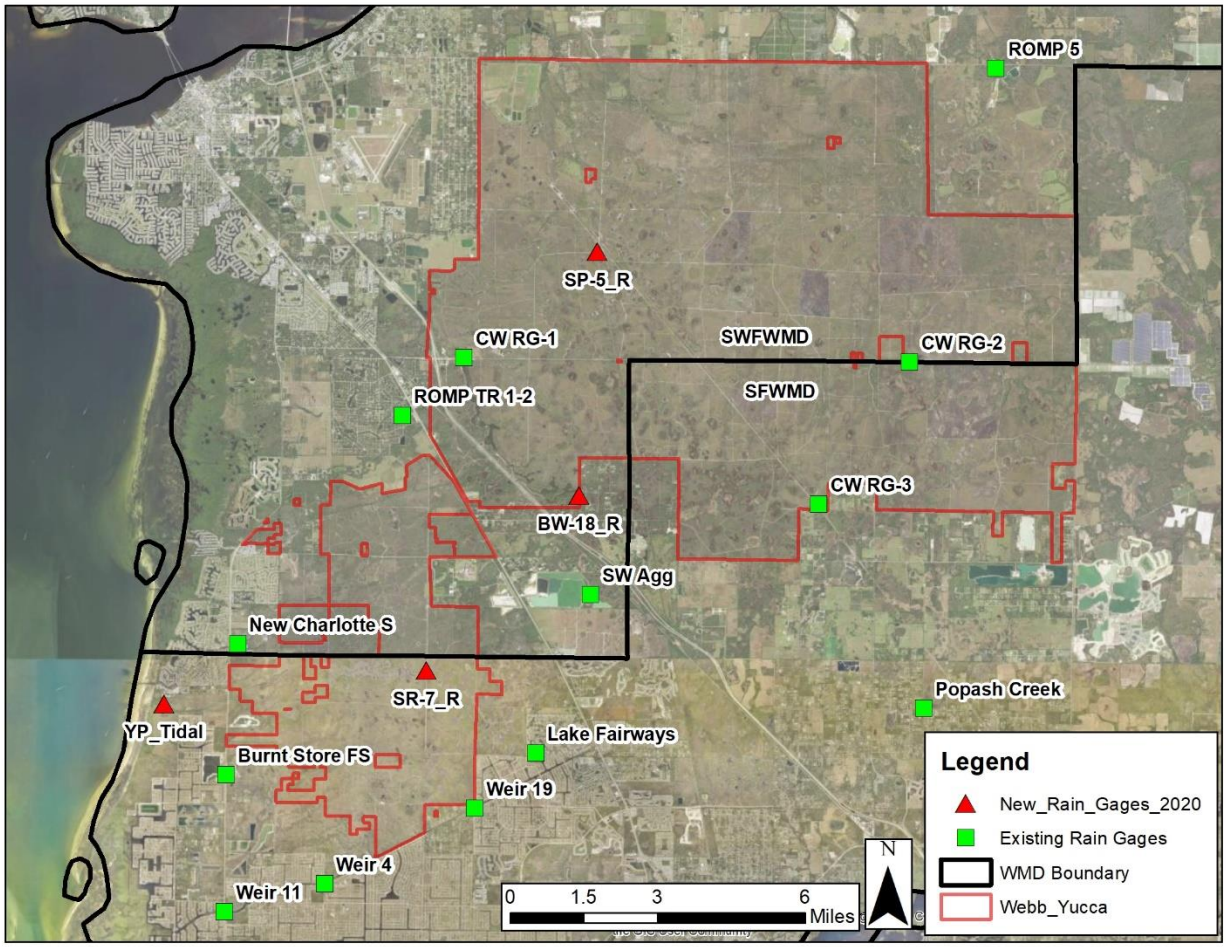

Figure 2 – Map of Installed Rain Gages

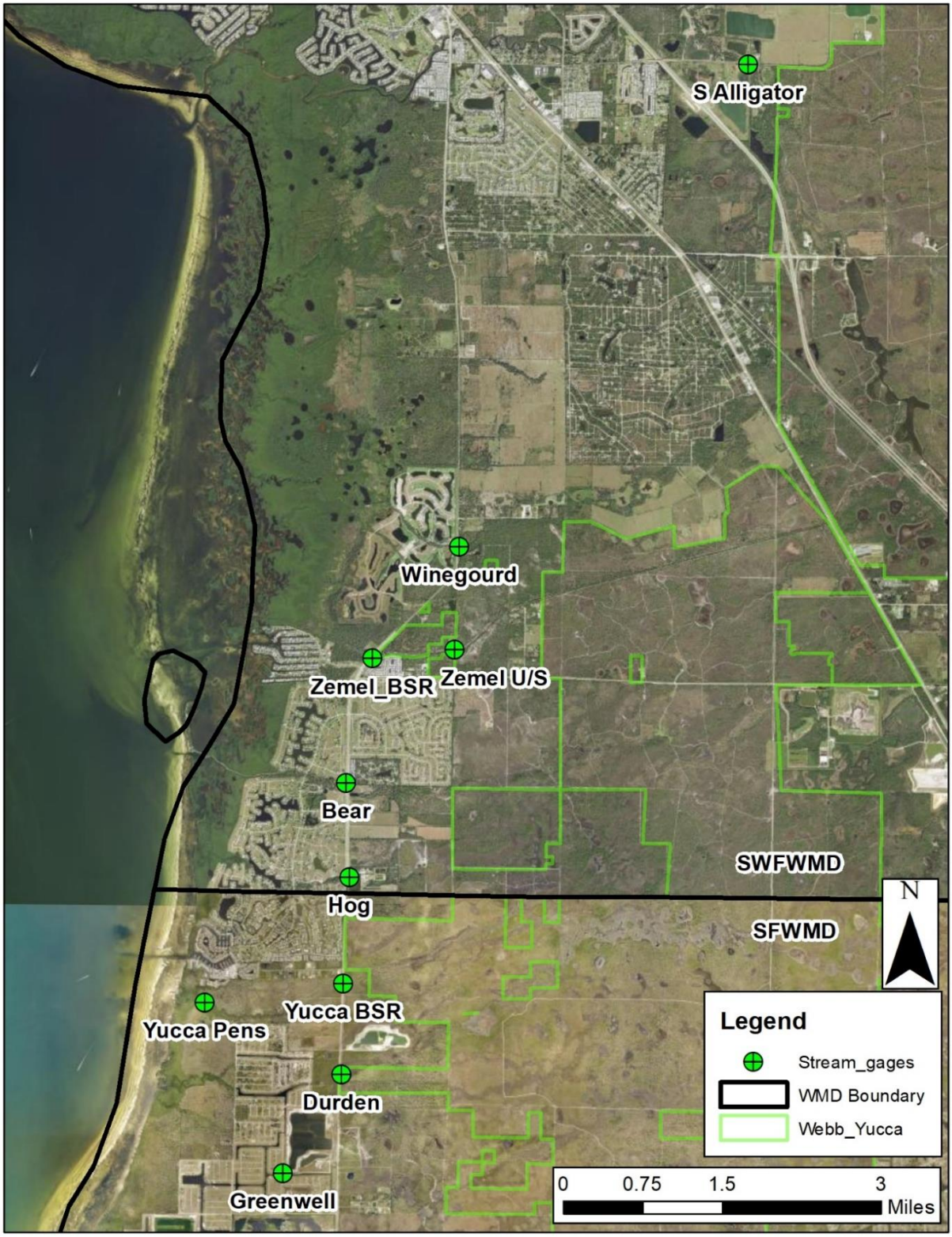

Figure 3– Map of Installed Flow Monitoring Stations