

APPENDIX A – OPERATIONAL STRATEGY

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S-344 CULVERT OPERATION STRATEGY

NORMAL USE AND PROPOSED USE OF S-344

S-344 is normally closed. The normal operational criteria for S-344 is to open it when the available capacity of S-333, S-12D, S-12C, S-12B, and S-12A is insufficient to provide the discharges prescribed by WCA 3A's Rainfall Plan. The combined discharges through S-343A, S-343B, and S- 344 are reduced as required to maintain the Loop Road 1 gauge (LOOP1) below 8.5 feet NGVD29 (closed when LOOP1 above 8.5 feet NGVD29 under normal conditions). When the stage at LOOP1 exceeds 8.5 feet NGVD29, portions of the loop road begin to flood. The proposed criteria is to have full operational flexibility, subject to downstream constraints, to partially or completely open S-344 until July 15, 2016.

OPERATIONAL CRITERIA

Opening Criteria:

The SFWMD as the operator of S-344 has full flexibility in opening S-344 to balance the objectives of efficiently rehabilitating the six approximately 150 feet long plugs in the L-28 borrow canal while providing high water relief to WCA-3A. The following scenario describe the range of operation likely to be required to balance the objectives. The actual number of gates changes and the magnitude of their opening will be determined based on the stage response to S-344 discharges with consideration for the status and pace of repair of the six 150 feet long plugs. The control gates for the two 72-inch culverts at S-344 will be opened as described in the sequencing below:

1. Both gates opened about one to two feet when the first (northern most) plug is fully rehabilitated.
2. Both gates opened about two to four feet when the second plug is fully rehabilitated
3. Both gates opened about three to six feet when the third plug is fully rehabilitated
4. Both gates opened about three to six feet when the fourth plug is fully rehabilitated
5. Both gates opened about three to six feet when the fifth plug is fully rehabilitated
6. Both gates opened about three to six feet when the sixth plug is fully rehabilitated

It is intended that the incremental approach will result in steady and sustainable S-344 openings. However, the S-344 gates openings may be reduced if the flow or stages along the L-28 need to be moderated or reduced.

Structure Closings: S-344 closure will begin when one of the following conditions is met:

1. During the construction phase of the rehabilitation of L-28 plugs, the construction sites experience high water levels that cause the construction sites to be flooded.
2. The Loop Road gauge 1 (LOOP1) exceeds 8.5 feet NGVD.
3. If there is an increase of the water level at the identified sparrow target location (s) that is not caused by rainfall.
4. Regular coordination for ongoing operations results in a request to adjust operations.

There are ten bridges or culverts through Tamiami Trail (State Road 41) from where Loop Road connects to Tamiami Trail to about 4 miles west along Tamiami Trail. There are about six bridges or culverts through Loop Road from where Loop Road connects to Tamiami Trail to about 4 miles west along Loop Road. These bridges and culverts allow some of the flow discharge from S-344 to flow south into the region that contains CSSS Sub-Population A. Flow and stage at the following locations along Tamiami Trail (SR41) will be monitored to provide representative information on the flow south and provide early indication of undesirable flow south towards the Cape Sable Seaside Sparrow (CSSS) Sub-Population A (SP-A).

- The bridge allowing flow through Tamiami Trail which is located about 0.6 miles along Tamiami Trail northwest of S-343A.
- The culvert/bridge allowing flow through Tamiami Trail which is near/across from S-343A.
- The bridge allowing flow through Tamiami Trail which is located about 0.6 miles along Tamiami Trail southeast of S-343A.

The sites would need to be monitored approximately biweekly unless the USGS agrees to monitor more frequently. S-343A tailwater will be used to indicate stage changes. Since there is no existing telemetry (e.g. HW stage, TW stage, or flow) the flow measurements will require individual stream gauging events. The SFWMD will meet regularly (e.g. weekly) with FWS to communicate operations and discuss the system response. It is expected that conditions will change over the duration of this deviation and that FWS will adaptively evolve the criteria. The Miccosukee Tribe will also be included in the communication of the operations system response and operations could be altered to avoid any adverse effects to lands utilized by the Tribe. The SFWMD will respond to operation direction from the FWS or USACE within 72 hours.

In addition, up to weekly flows will need to be monitored at the southernmost degraded section of the L-28 Levee (located about 1.8 miles from the northwestern end of the L-28 Levee or about 0.3 miles from where the L-28 turns west).



Figure 1. S-344 and L-12 Plug Location Map

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