

**Miami-Dade County Aviation Department
Civil Environmental Engineering Division
Miami International Airport Manatee Protection Plan**

Miami-Dade Aviation Department (MDAD) has implemented a Manatee Protection Plan at Miami International Airport (MIA) to protect these creatures by preventing the occurrence of manatee intrusion onto airport drainage system. This plan has been developed in conjunction with the Department of Environmental Resources Management (DERM), Florida Fish and Wildlife Conservation Commission (FWC), South Florida Water Management District (SFWMD) and other environmental agencies since 1989.

The Miami International Airport stormwater drainage system discharges the runoff via five (5) outfalls (refer to attached map) into major local drainage canals, which are known habitats for South Florida's manatees. After performing manatee habitat and migration investigations, analysis of physical configuration and location of each outfall structure, manatee barrier evaluations and underwater inspections, the following conclusions and control measures were implemented:

- **Outfall No. 1.** Due to the physical configuration and location of this outfall structure, there is no possibility of a manatee entering the airport drainage system through it; therefore, no control measure was required at this location.
- **Outfall No. 2.** The first manatee barrier at MIA was built at this location in 1989. In 2000, MDAD replaced the barrier to address continuous erosion of the riprap at the bottom of the canal. The new barrier was composed of sheet piles driven into the canal bottom overlapping the gates. It was similar to the barrier built at Outfall No. 3 in 1995. In 2005, the Florida Department of Transportation (FDOT) removed the manatee barrier due to construction conflicts with the project "MIC/MIA Interchange". However, the contractor installed temporary manatee gates at the outfall pipes to prevent manatees from entering the airport drainage systems during construction phases. The temporary gates are being maintained by the FDOT. Future FDOT projects include dredging of the canal and construction of a new manatee barrier.
- **Outfall No. 3.** A manatee barrier, specially designed to prevent manatee intrusion without creating hazardous flooding in aircraft operation areas, was built in 1995.
- **Outfall No. 4.** A permanent manatee screen specially designed for this outfall structure was attached to the headwall in 1998.
- **Outfall No. 5.** Even though the possibility of a manatee entering the airport drainage system through this outfall is unlikely, MDAD built a manatee screen across the concrete v-notch weir in 1996 to guarantee total protection.

MDAD currently performs quarterly underwater inspections at the manatee barriers and submits the corresponding report to DERM and FWC following requirements of the Miami-Dade County Manatee Protection Plan.