

Airport Drainage Study

Louis Armstrong New Orleans International Airport
Kenner/New Orleans, LA

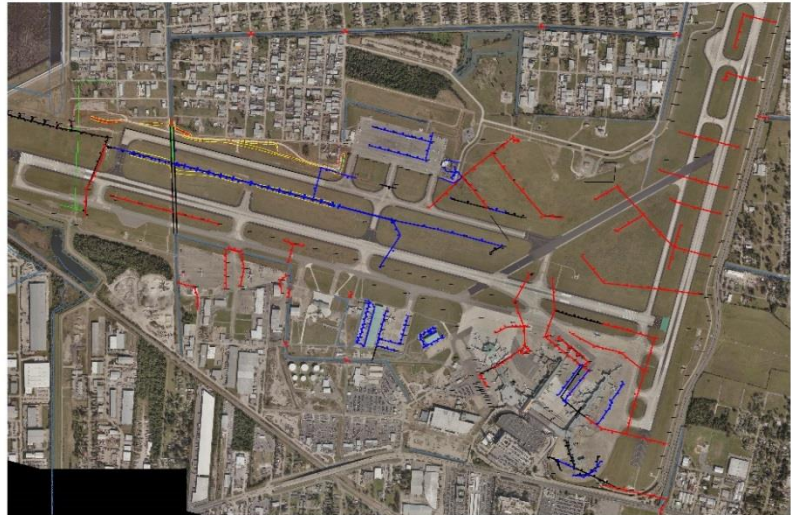
Completed – 2013
\$250,000 total project

Owner New Orleans Aviation Board

Reference Iftikhar Ahmad, Director of Aviation, 504-303-7560

Walter Krygowski, Deputy Director and Chief Operations Officer, 504-303-7551, walterk@flymsy.com

MSMM completed a subsurface drainage project in New Orleans International Airport within 2.5 months, which normally would be done in 9 months. This was possible because of familiarity with urban subsurface drainage systems, and the ability to **cross reference more than 400 as built drawings with GIS shape files, LIDAR data, USGS Quad Maps, aerial photos, survey data and past hydrologic/hydraulic model data (UNET, SWMM, TR-55, HEC-HMS, HEC-RAS)**. MSMM conducted data review, field inspection, hydrologic and hydraulic modeling, cost estimating, report preparation, and presentation in this project as well.



Objectives

- Amount of stormwater discharge from the airport facility in 1992 (Baseline Condition).
- Current (2013) stormwater discharge from the airport facility.
- Incremental stormwater discharge from the airport facility due to improvements completed since 1992
- Performance assessment of apron, taxiway, and runway drainage for compliance with FAA standards.
- Determination of outfall stage necessary to ensure performance assessment
- Determination of supplemental pump capacity necessary to ensure necessary outfall stage.
- Identify pump needs attributable to airport.

Work Elements

- Existing Data Review - All data from the previous 1992 Master Drainage Plan, the 2010 Master Drainage Plan, available As Built drawings of the airport, available surveyed data points, GIS and CAD drawing files, historical and current aerial photographs, historical USGS Quad Maps, and available hydraulic models.
- Field Task – Multiple facility walk-through/windshield survey, inventory and condition assessment of inlets, manholes, storm pipes, ditches, canals, and outfall culverts.
- Data Collection – Acquired field data of high water marks, conducted additional field review of pipe connectivity and condition, conducted additional review of design drawings, and interviewed airport personnel for known flooding issues towards model calibration.
- Prepared photographic log of field inspections
- Hydrology Analysis – HEC-HMS/TR55 analysis for Storm Sewer System for 1992 and 2013 conditions.
- Developed inventory of airport drainage nodes, pipes and sizes from GIS data.
- Hydraulics – HEC-RAS and Capacity Analysis Point Studies for restrictive structures/obstructions in regards to Airport hydraulics and its combination with Jefferson Parish wide hydraulics was conducted.
- Developed and evaluated mitigation measures which included pumping as well as retention/detention ponds.
- Prepared exhibits for progress meetings and draft project report utilizing CAD and GIS; utilized existing information to draft airport drainage network in CAD format.
- Comprehensive Report was prepared with executive summary, summary of hydrologic and hydraulic analysis methodology and results, identification and evaluation of mitigation measures, construction cost estimates and conclusions.
- Attended meetings with and presented methodology and findings to airport administration, City of New Orleans Mayor's Office, and officials from City, Parish and Airport.
- Provided comments on draft presentation.