

FLOOD MITIGATION



CASE STUDY | ORMOND BEACH, FL

BACKGROUND

The City of Ormond Beach, Florida partnered with Opti to maximize flood storage in its five interconnected Central Park Lakes. These lakes are essential flood control infrastructure, diverting runoff away from homes and streets within a 550 acre drainage area. Opti software assists the City's emergency response team and controls the water level in the lakes to protect the local community from flood risk.



Historic flooding after the 2009 storm

CHALLENGE

In 2009, a hurricane unleashed over 27 inches of rain on the Laurel Creek Watershed. The flooding inundated approximately 79 buildings and several critical roads. With the assistance of FEMA and coordination with various City departments, an upgrade project was undertaken to address not only the flooding issues but provide the ability to upgrade utilities within the area, enhance park elements, and bring the existing roadway up to current city standards.

SOLUTION

In an effort to further minimize the risk of flooding and to fully take advantage of the storage potential associated with the five interconnect lakes, the City implemented Opti's forecast based control solution. Opti software predicts stormwater runoff ahead of wet weather and uses that information to create extra storage capacity in the Central Park Lakes. In the 48 hours leading up to storms, Opti can command a pump station to release up to 70 acre-feet of water to prevent the Lakes from overflow into the surrounding neighborhood.

RESULTS & BENEFITS



ECONOMICAL

98% Savings

\$200k vs. \$8M in capital expenditures



RESILIENT

70 ac-ft Active Storage

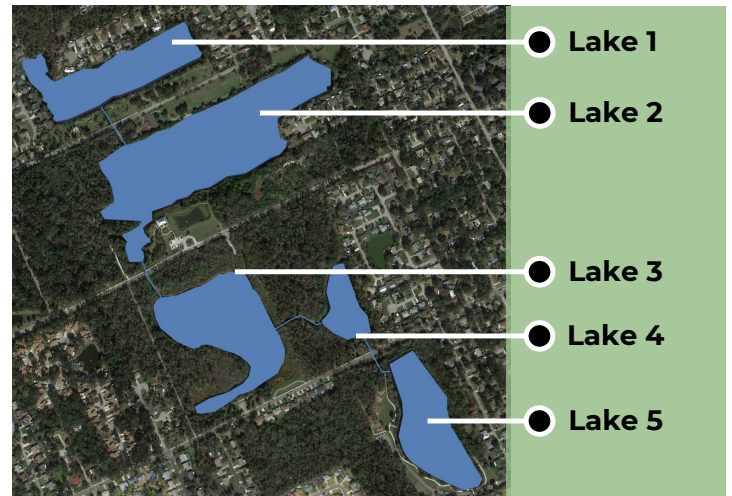
Forecast based pre-event drawdown volume



PEACE OF MIND

Hurricane-Ready

Keeping property, residents, and emergency response workers out of harm's way using remote management



HURRICANE IRMA

Over the course of 3 days in September 2017, Hurricane Irma dropped nearly 9 inches of rain over central and eastern Florida. During this period, the Central Park Lakes received 190 ac-ft of inflow.

With Opti's real-time monitoring and forecast based control solution, the lakes were lowered in anticipation of the Hurricane, protecting residents from flooding.

Water Level During Irma



Flood Elevation: 5 ft

Peak Storm Level: 4 ft

WEB DASHBOARD

Opti's web-based dashboard is a critical tool for the City's emergency management. Information, alarms, and forecast predictions make it easy for City operators to understand and control the level of the Central Park Lakes without putting personnel in harm's way.



" Making information available on demand allows us to make better decisions. "

Shawn Finley
Public Works Director,
City of Ormond Beach

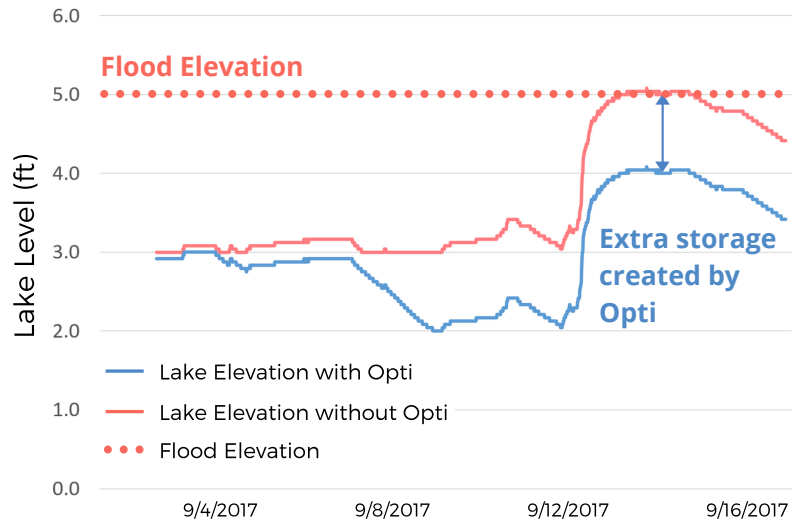
CRISIS RESPONSE

In the days leading up to Hurricane Dorian in 2019, Opti engineers notified the City that one of the pumps at the Laurel Creek Pump Station had malfunctioned. City operators used the Opti dashboard to override the pump failure (shown in orange) and safely prevent an overflow situation during the storm.

ABOUT OPTIRTC, INC.

Opti is the world's largest provider of cloud-based stormwater management. Opti enables communities to continuously improve stormwater management by delivering real-time visibility, adaptively controlling assets, and supporting smart city initiatives. Opti manages over 160 commercial deployments and over 100 million gallons of stormwater storage. Opti's solutions have been approved by regulatory authorities, including the EPA Chesapeake Bay Program and its member states, and the Washington State Department of Ecology TAPE program.

Hurricane Irma - Opti Response



Comparison of forecast based management (blue) vs. traditional pump controls (red)

Opti Operation Mode
Auto
Manual Override



Water Level
Measured Lake Level
Opti's Target Water Level



Opti performance during Hurricane Dorian



Optimizing Stormwater Management

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