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Sea Level Rise Toolbox

Zhaohui Jennifer Fu

Florida International University, Fujen@fiu.edu

Dan Mcgillicuddy

Florida International University

Susan Jacobson

Florida International University

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Sea Level Rise Toolbox

A Web/Mobile Application to Project the
Rising Sea in South Florida



Zhaohui Jennifer Fu

Dan Mcgillicuddy, GIS Center, FIU

Susan Jacobson, School of Journalism and

Mass Communication, FIU



Who is involved in development?

- Faculty and Student from [FIU School of Journalism and Mass Communication](#) (the primary originator and user)
- [FIU GIS Center](#) researchers and developers
 1. Peter Harlem, Creator of the Sea Level Rise maps (from 1-6 ft)
 2. Dan McGillicuddy, Developer of the App

Components and Framework


METHODS

- Google Elevation Service, Google Maps API
- Using ArcGIS Server to vis LiDAR by FDEM

- Miami-Dade 311 Flood Reports
- Documenting Eye on the Rise by Students

- Yearly High Tides and Recent Water Levels (NOAA)
- FEMA Flood Insurance Rate Maps (FIRMs)

Elevation and Rise

Community Sourcing

Floods and Tides


FUNCTIONALITY

- Locate and identify the elevation of the location
- Sliding bar to display sea level rise from 1-6 ft
- FEMA flood zones

- Points of 311 flood reports
- Mobile interface for students or public to report flooding (King Tide Day)

- Connecting the current NOAA tidal and water level diagrams and reports to the actual point location
- Visualizing categories of FIRM zones by location

1

Cloud APIs integration

Google APIs, Facebook APIs, Foursquare APIs, Bing Maps APIs, ArcGIS Online

2

ArcGIS Server

Product from ESRI

3

Rich client applications

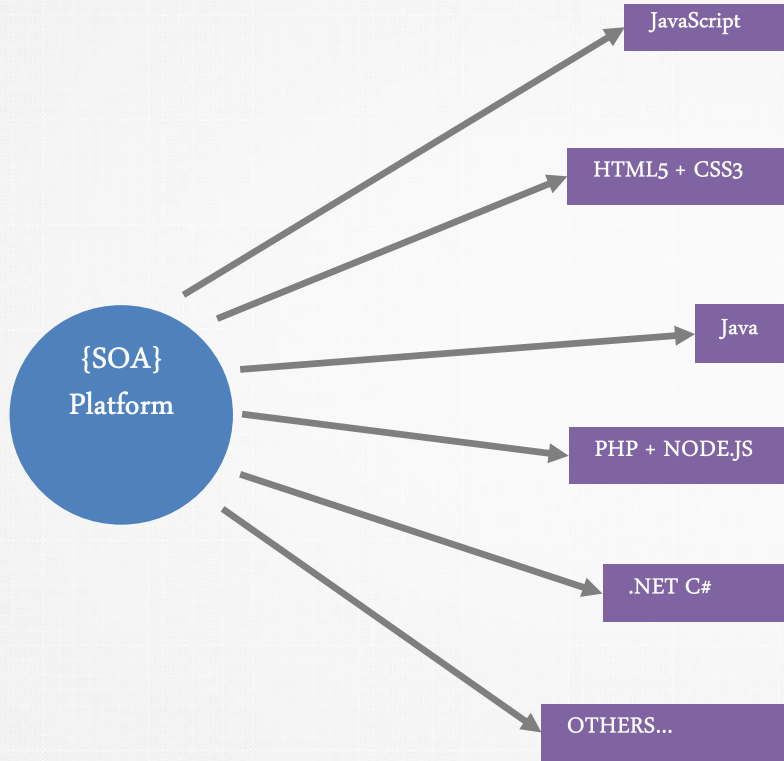
Rich client side logic
AJAX for server side data communication

4

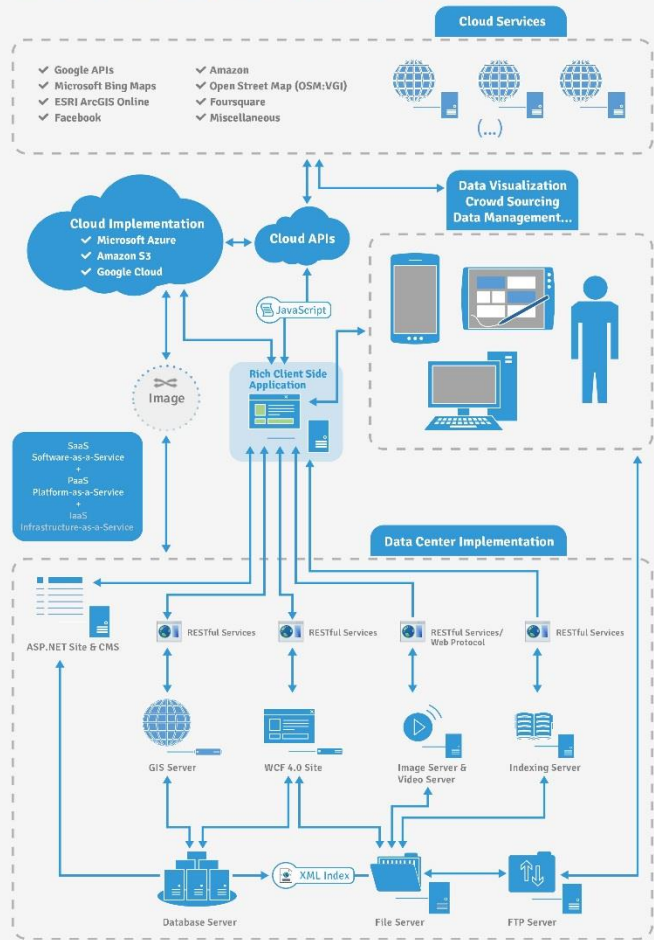
Web Service (WCF 4.0) site

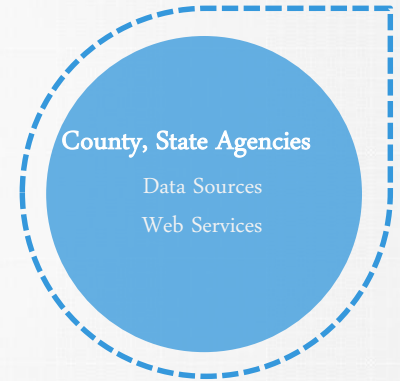
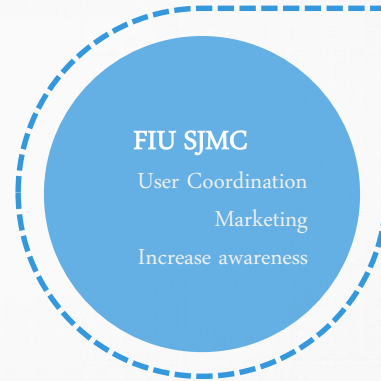
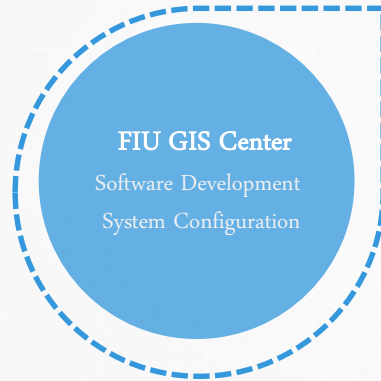
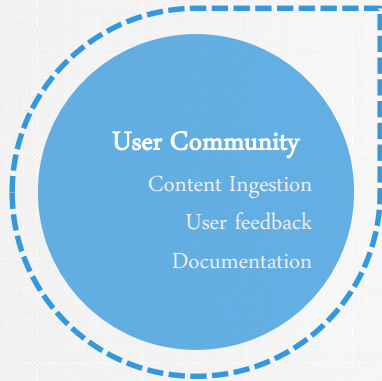
Windows Communication Foundation, from Microsoft.NET framework 4.0, is designed for cross developing platform distributing system

System Architecture



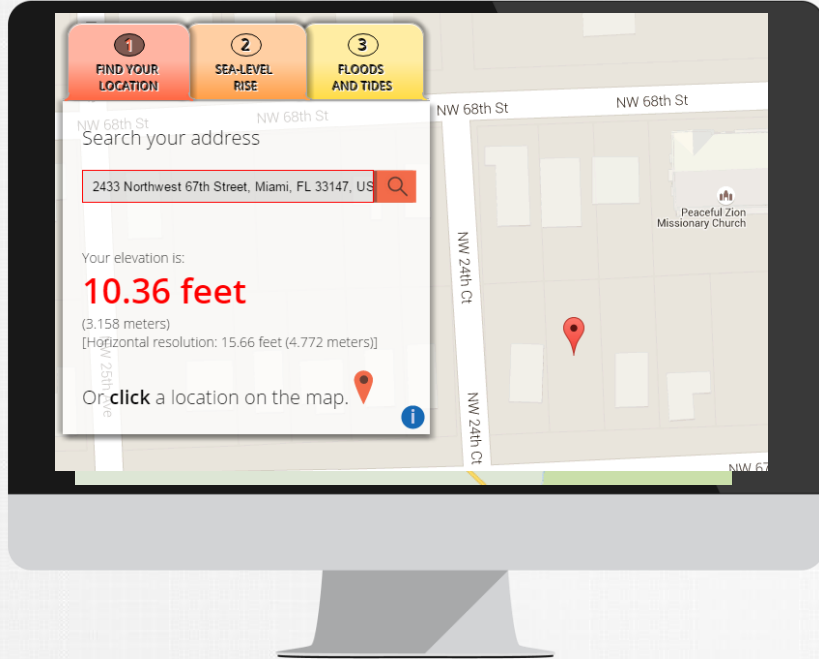
dPanter Conceptual Technical Architecture V2.0





A Demo

Public URL: <http://eyesontherise.org/app/>



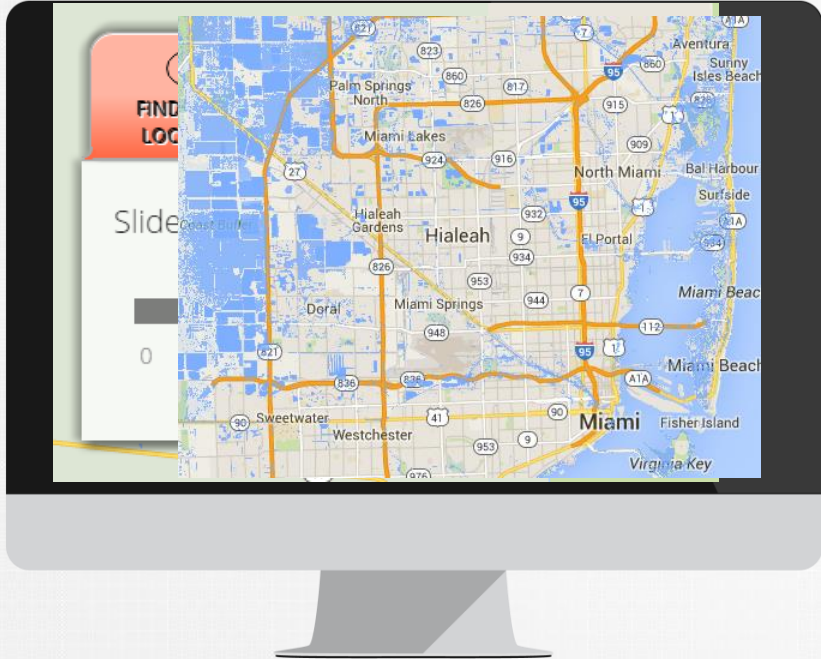
- Location



- Google Map APIs
- Google Elevation Services

A Demo

Public URL: <http://eyesontherise.org/app/>



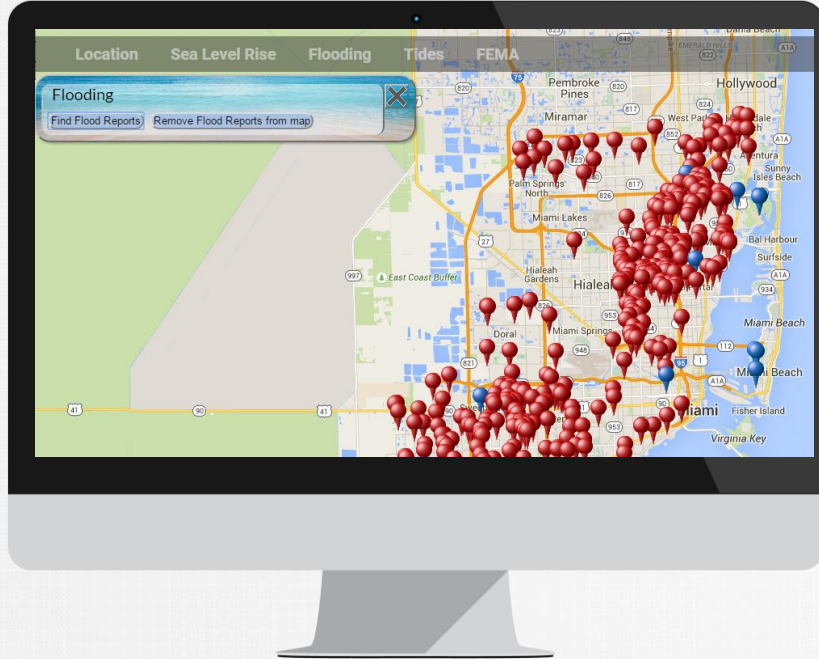
- Sliding Bar
- Sea Level Visualization



- Google Map APIs
- ArcGIS Server
- State of Florida Division of Emergency Management LiDAR ProjectLAS Dataset

A Demo

Development URL: <http://digir.fiu.edu/sealevelrise/>



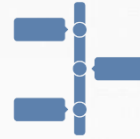
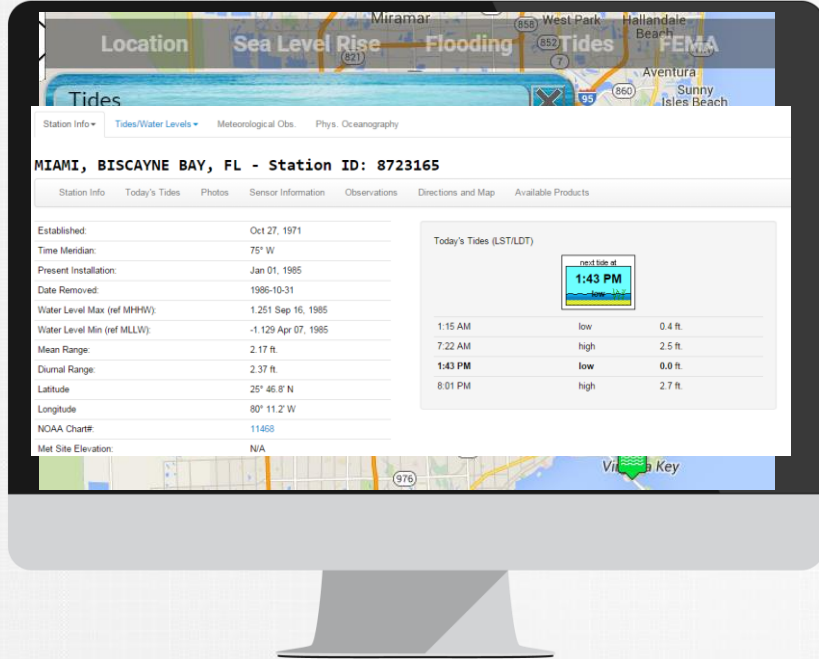
- Find Flood Reports
- Remove Flood Reports



- Google Map APIs
- ArcGIS Server
- Miami-Dade 311 Flood Reports
- Crowd-Sourced Eye on the Rise Flood Documents

A Demo

Development URL: <http://digir.fiu.edu/sealevelrise/>



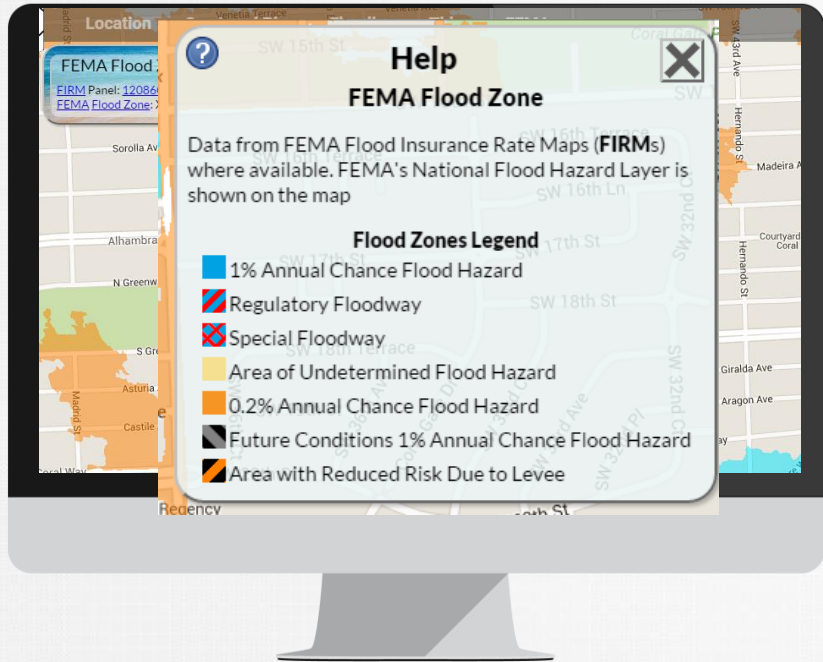
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A Demo

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- Location
- Display of FEMA Flood Zones

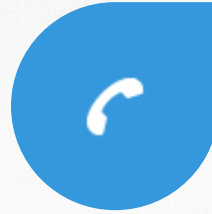
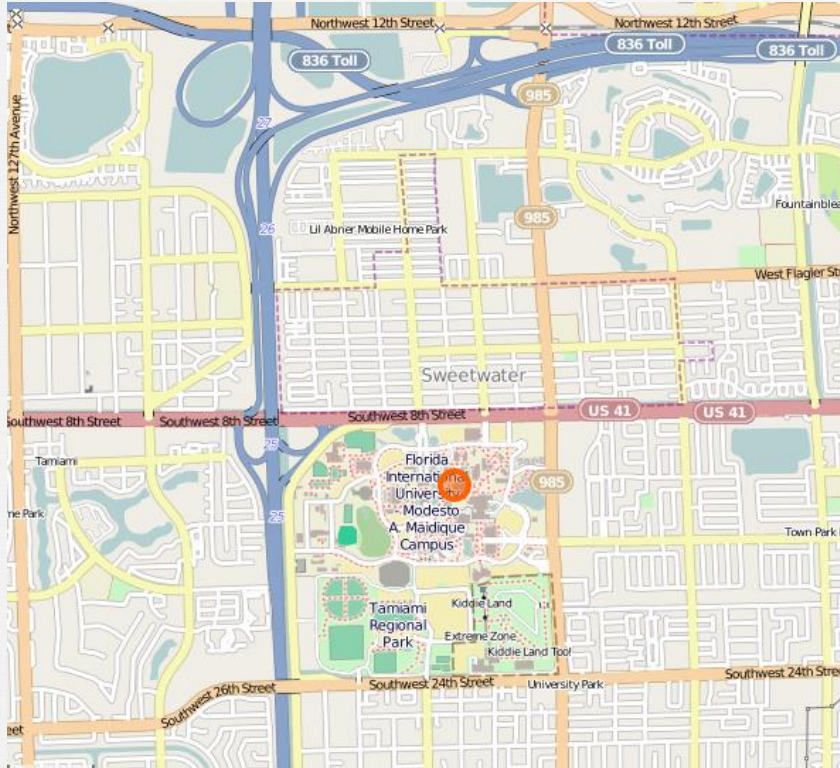


- Google Map APIs
- ArcGIS Server
- FIRMs

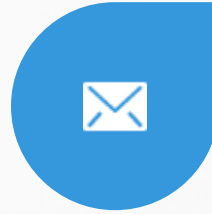


CONTACTINFO

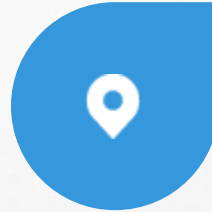
CONTACTINFO



+1 (305) 348 3138



fujen@fiu.edu



Florida International University
11200 Southwest 8th Street
Miami, FL 33174,
United States