



City of Austin

Serving floodplain information, data, and maps to improve access to information and comply with FEMA requirements

Located in Central Texas, on the eastern edge of the American Southwest, Austin is the state's capital. With an estimated population of over 967,000 in 2018, it is the fastest growing "large city" in the United States.

About the City of Austin

The City of Austin's Watershed Protection Department (WPD) protects lives, property, and the environment by reducing the impacts of flood, erosion, and water pollution. It inspects and maintains approximately 2,000 miles of creeks and storm drain pipes in addition to 20,000 acres of floodplain.

The WPD employs approximately 15 GIS-related staff who, among other duties, support three external facing Watershed Protection-specific Geocortex applications (*FloodPro*, *Drainage Charge*, and *Floodplain Buyouts*). GIS is tightly woven into the fabric of the City of Austin: outside of the enterprise-level GIS group, each City department (including Police, Fire,

Transportation, Planning, Parks, and Water) has a smaller group of dedicated GIS staff. Together, they manage over 350 SDE layers, and approximately 20 internal and external web viewer applications (<http://www.austintexas.gov/departments/gis-and-maps>).

The Challenge

FEMA's 2005 Floodplain Map Modernization Program was a major federal effort to improve the quality and accuracy of floodplain information. The City was an active participant in this process, and created an extensive set of GIS-based floodplain models and maps. With the improved data, requests from both City staff and the public for information



“ Geocortex affords us the ability to rapidly adapt to future technological needs. In this case, we were able to use it to address a change in technology (the rise of the cell phone and the downfall of browser plug-ins) that was not foreseen during the original project. ”

Karl McArthur, PE, *Supervising Engineer – Floodplain Office and Flood Early Warning*

increased significantly. The years preceding the completion of the Map Modernization Program saw a sharp spike in floodplain-related requests. In 2008, the City reached a crossroads: either hire more staff or build a public-facing web application to automate the distribution of floodplain-related information. Unfortunately, technology moved faster than the speed of the project, and by the time the original Silverlight version of FloodPro was completed, Microsoft announced their decision to retire the language. The City spent the next few years searching for a new solution, and in 2011 found Geocortex.

The City needed a powerful, easy-to-use solution they could be certain would be stable and well supported for the foreseeable future. It needed to be HTML5/JavaScript-based and allow for viewing on mobile devices. They also required the solution to be operating system- and browser neutral, have an easy-to-use interface, and allow them to reuse custom C# code for various features. Lastly, they wanted a solution they could program themselves, leveraging existing in-house hardware and software.

The Solution

FloodPro is a public-facing application that allows the general public to retrieve property-specific floodplain information and download the supporting floodplain models through an FTP link sent to an email address specified by the user. It also allows for property-specific maps and reports to be printed for information purposes, or for inclusion with building permit applications.

One of the City's favorite things about their Geocortex solution is that it provides the option for multiple “I want to” activities, on one website that serves three different user types:

- *Homeowners*: FloodPro gives citizens access to floodplain-related information that was previously accessible only by City staff. The type of information ranges from official FEMA information to local development data to answering simple questions (i.e. “Am I in the floodplain?”).
- *Developers*: Having on-demand access to the latest version of the City's floodplain models and supporting data helps developers design their projects quicker and ensure they are using the best available data.
- *Real Estate Agents*: The mobile version of FloodPro allows real estate agents to look up a property's floodplain status while showing that property to a client to ensure all parties are aware of potential flood risks.

The Results

The robust FloodPro web application is operating system agnostic and is built on a platform that will be well-supported long into the future. WPD tracks the number of floodplain information reports generated and floodplain models downloaded; they've reported that FloodPro averages approximately 2,000 to 3,000 of these activities per month. Using the application, WPD has been able to free up a staff time equivalent of 1.5 full time employees, and reassign time for work on other important projects.

Going forward, WPD plans to make FloodPro their one-stop-shop for floodplain and storm drainage system model and data distribution. They have already expanded upon the original solution to add visualization tools for a major upcoming change to floodplain mapping, and are adding functionality that will provide models and associated information for the storm drainage system.