

Considerations for Designing Effective Web Maps

Transcript

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Hello, and welcome to the ESRI Instructional Series Podcasts. This broadcast is entitled *Considerations for Designing Effective Web Maps*.

I am Danielle Hopkins and I am an instructor with Educational Services at ESRI in Redlands, California, and I specialize in ArcGIS Server and ArcGIS Desktop applications.

Today I will be talking about Web maps, what they are, and how we can think about them as we design for usability and performance. This is the first in a series of podcasts relating to creating effective Web maps.

Web maps are designed and used to accomplish focused, meaningful tasks. These tasks might range from displaying a map of recent crime in an area, retrieving property information, land-use planning, all the way to tracking the spread of wildfires or disease. Interactive Web maps aid in the communication of information through display and query, and they bring GIS services together in an application.

Both our own expectations and those of our customers continue to grow. Our Web maps should be task focused and designed for the person who will be using them. We have the opportunity to use excellent cartography to communicate our messages, and advanced technology to create charts, reports, and display data as it is recorded.

An example of this is an application created for a water utility company in Florida. Along with display and navigational tools, they also have functionality for displaying and reporting customer calls, potential pipe leaks, and project charts, among others.

Users not only expect data display and functionality, but they also expect something that is *fast* and easy to use. In order to meet these expectations, we as GIS professionals must *plan* and *design* our maps especially for this purpose.

Decisions about technology and design are influenced greatly by the purpose and the user the application is being developed for. Are these experienced map users or beginners? Are they in their offices with a fast Internet connection, or in more remote forest locations, for example, using hand-held devices? Thinking about the data that will be incorporated is also key. What is required for the focus of your application and how often will it be updated? Can this same information be used in other applications you might be developing?

One of the first steps and fundamental tasks in creating and designing a fast Web map is the organization of your data. There are essentially two categories: basemap and operational.

Basemap data is used to provide a geographic frame of reference for the user. These maps contain vector and raster data that does not change frequently, and are generally cached for best performance. Careful design will allow these maps to be used in multiple applications, providing consistency and efficiency for both users and developers.

For basemaps, you can author and publish your own authoritative data, or you can use existing resources hosted by ArcGIS Online, Google Maps, or Virtual Earth, for example. It is possible that you want to provide more than one basemap for your application. Perhaps satellite imagery and land base infrastructure would provide good options for your users, depending on what they are working on.

Operational layers show a focused item of interest to the user, such as a report, a customer call, maybe an animal sighting, and these are displayed on top of that basemap. Really, these layers relate to the subject or topic of the application. The content in the operational layers is usually dynamic, in the sense that they are changing regularly. Examples might include incident reports, sensor feeds, and the results of a query or calculation. Perhaps information is being returned from a geoprocessing operation to calculate the buildings that might be affected by inundation.

It is often the needs of the application that can drive whether a layer falls into the basemap or operational category. For example, in one case I might consider parcel lines to be context or reference data for house hunters, but in another application that's designed for tax assessors, the parcel data is operational.

In this podcast we discussed some of the goals and expectations we must work to in designing fast, effective Web maps. We looked at how we can organize our data into the basemap or operational data category. This planning and design will help us to publish cached or dynamic map services for optimal performance.

For further resources on creating effective Web maps, please visit www.esri.com/webmaps.

For further training resources, please check out our instructor-led training courses at www.esri.com/training and our free training online seminars at the same location.

Please stay tuned for further podcasts in the next few weeks focusing on the subject of effective Web maps, and the new tools and techniques available to us with ArcGIS 9.3.1.