

A Tour of ArcGIS Online Basemaps

At the 2011 GeoDesign Summit, Bern Szukalski presents a tour of ArcGIS Online Basemaps.

<http://video.esri.com/watch/173/a-tour-of-arcgis-online-basemaps>

Video Transcription

00:01 Bernie's going to share a little bit about what it's like in the future, the new modality.

00:05 Not so much in the future, but, well, Bernie, take it over.

00:10 Okay, thanks, Jack. It's a pleasure for me to be here.

00:13 I'll have to admit that I'm not a geodesigner, but I do know a good map when I see one.

00:19 And that's what I'm going to talk a little bit about here this morning.

00:22 Now I think all of us work with maps. All of us appreciate a good map. Pardon me.

00:28 And a map represents for us not only the substrate upon which we do our work, but also the way that we can share our work.

00:35 And I think that's very important in geodesign. And maps are becoming more powerful.

00:39 They're not only a way to look at things but they're also a way to capture our knowledge and also our tradecraft.

00:46 And I'm going to touch upon just a couple of those.

00:49 But to begin with, we need a good starting point for a map, and a good map often starts with a great basemap...

00:56 ...and what I'd like to do is just give you a little tour of the ArcGIS Online basemaps that are available for you to begin your work.

01:03 These are multiresolution basemaps. I'm going to start with the ArcGIS Online World Imagery basemap.

01:09 So this covers the entire world, high-resolution basemap that covers the entire world.

01:14 I'm focused on the United States here, but it does cover the entire world.

01:19 It's one-meter resolution or better in the entire US...

01:23 ...and that's been accomplished by gathering together sources of information...

01:27 ...from the federal, from the state, and from local government sources...

01:31 ...as well as compiling that with information with data with content from commercial providers.

01:38 Now even though we include this data from commercial providers...

01:41 ...it's free for anybody to use for noncommercial use. So these are great substrait.

01:47 Another great basemap is this one here. This is the World Streets basemap.

01:51 This again is a multiresolution basemap.

01:54 As we zoom in here, we can see more detailed streets, and as we zoom in a little bit further...

01:59 ...we can see building footprints and parcels.

02:02 Again, a very excellent substrait to begin doing your geodesign work.

02:07 This next one is the World Topographic basemap and this is a very, very special basemap.

02:12 This is a very unique basemap. It's unique not only because it's a detailed world topographic basemap...

02:19 ...but it's unique because it's a true GIS community basemap that's been compiled from authoritative GIS sources.

02:27 So the sources that have contributed content to this map include the USGS...

02:33 ...pardon me, the EPA, and the Park Service.

02:36 For example, here we are in Yosemite Valley and as I zoom in just a little bit further in Yosemite...

02:41 ...you'll see some additional detail. And at this level, we're seeing content that's been contributed by Yosemite National Park.

02:48 So that's an example of a park contribution.

02:52 But there's many other different kinds of contributors.

02:54 There's state governments, like the state of Arkansas here.

02:57 There's the city and county of San Francisco.

02:59 This is one of my favorites just because when I zoom in you can see the rich level of detail that's been made possible....

03:08 ...through the contributions from the GIS databases of the City and County of San Francisco.

03:14 But it doesn't just include large cities. It includes many small- and medium-sized cities.

03:20 Virginia Beach here, is one of the newer additions to the World Topographic basemap...

03:25 ...and they became a contributor about a month ago. It's a very dynamic and continually evolving basemap.

03:32 And here's the city of Houston, which we'll take another look at in just a moment.

03:37 Now these additions occur frequently and they're made possible through a program that we

call the Community Maps program.

03:43 And I'm just going to click on this little green flashing dot as a reminder for me to open up this website.

03:49 Now this website shows the current and ongoing contributors to the Community Maps program.

03:56 So these dots represent either those users that have already published their data...

04:02 ...or that are currently in production, or that are in the queue, and if we...

04:07 ...let's just zoom in to the Eastern Seaboard here, I can click on any of these and here's Hanover County.

04:12 They're registered, so they're in the queue to contribute their content.

04:16 So this represents the best possible data from the authoritative sources...

04:21 ...and it's all been compiled and brought together into a seamless worldwide basemap.

04:26 And that's been made possible through the use of templates, which are also downloadable.

04:30 So we've been able to seam all these together into worldwide coverage...

04:34 ...from all these different sources, at all these different scales, by using these templates.

04:40 Now beyond that, we also offer lots of other content, which is useful in geodesign.

04:44 We've got lots of thematic information, demographics...sorry about that...soils, geology...

04:55 ...all sorts of different layers that you can use to build your maps and that add value to your work.

05:00 On top of that, we also offer other sources.

05:03 Lots of users still like the old "classic," shall we say, USGS Topo maps...

05:08 ...so these are available in seamless form across the entire United States.

05:13 And we also include content from other providers, like Bing.

05:16 These are the Bing Map streets, and we also have the Bing Maps aeriels and hybrid, and we also include OpenStreetMap...

05:23 ...which is especially useful in other parts of the world outside the US where content is very difficult to get.

05:29 But in general, these basemaps represent a great starting point for you to begin your work.

05:36 Now I've used an application that's free that is called ArcGIS Explorer Online.

05:42 So you can access this, and you can connect to any of those basemaps that you want just by choosing from a gallery.

05:48 Those of you that are using ArcGIS Desktop and have a...the 10 version or higher...

05:55 ...you'll note that this basemap gallery is also included in there.

05:59 So all of this online content is built in to your user experience now, which makes it very easy for you to access.

06:07 So let's leave this for a moment and we'll come back to that in just a bit, and let's go to this site.

06:12 This is a new website. It's called arcgis.com. But it's a special kind of website. It's not just a website like esri.com.

06:20 It is a component of the ArcGIS system...

06:24 ...and I just mentioned that ArcGIS Online is built into ArcGIS...

06:29 ...so ArcGIS is inherently an online system.

06:32 This is a website that's part of the system that provides access to that same content.

06:37 So I can begin my online GIS experience by looking at a gallery of featured maps and applications.

06:45 If I find something interesting, here's a supermarket access map, I can hover over it and learn more about it.

06:51 I can learn a little bit more about who contributed this map by clicking on the user profile.

06:57 So again, this is about authoritative sources and sources that we trust.

07:01 Jim is one of my colleagues here and has been creating some very wonderful maps.

07:06 So we can browse this gallery of maps and applications and learn more.

07:09 I can also look at web applications. Let's take a look there.

07:14 I can sort these by the highest rated or I can sort these by the one that's been added the most recently.

07:21 Or I can choose to look at ones that have been implemented using certain languages, like JavaScript, or Flex, or Silverlight.

07:30 So I can sort through this content and learn more about it and begin browsing and using it.

07:35 Now, of course, one of the things that we can do at this site is to make a map.

07:40 And I'll click the Make a Map button. We bring up that World Topographic basemap by default...

07:45 ...but again, I can choose from any of the other ones.

07:49 Let's just stick with this topographic basemap for a moment. Let's begin building...

07:54 ...and I'm going to be building a map by pulling in content that I discover online.

07:58 And I'm interested in population. New year, new census. Let's take a look at some population information.

08:06 So I type in a keyword and I'm searching ArcGIS Online and these are the matches.

08:11 I could also search the open web or I could connect to a specific GIS server to search for content. But let's stick with online.

08:19 So let's look at population density. I can preview that, I can just go ahead and add that to my map.

08:26 Now you'll notice that population density here is a series of solid polygons, which have been added to my map.

08:32 I can do some adjustments to make a better map by adjusting the transparencies so I can see the underlying basemap...

08:40 ...or we have special kinds of basemaps, which enable me to insert my own layers.

08:45 We can think of this as a sort of a map sandwich, so I've switched to a different basemap. You've seen the text labels pop up.

08:53 What this basemap does is it automatically inserts my layer of interest, population in this case...

08:59 ...it puts it on top of the terrain and it puts that world reference layer with all the labels right on top.

09:05 So we've created a very nice map, very, very easily.

09:09 Let's turn that off for just a moment and let's go to Houston...

09:13 ...since I promised we would visit there, and well, let's go to the University of Houston.

09:21 Well, let's just stay here at Houston for a moment...

09:22 ...'cause what I want to do is I want to search for other content that others may have contributed.

09:26 So now, instead of searching for population, I'll just type in "Houston," and I see a number of matches here.

09:33 And let's take a look at some of these. Looks like here's land use...

09:38 ...and this has been contributed by the Houston-Galveston Council of Governments.

09:43 So many, many users, those authoritative sources, are contributing their content to this online library...

09:50 ...and I can just browse through it and begin adding it to my map.

09:53 So there's the land use for the Houston area.

09:56 I'll switch my basemap back to the topographic map underneath here...

10:01 ...and for a moment let's go ahead and turn off the land use.

10:06 Let's zoom in a little bit further into Houston, and as I do so, we're crossing some scale thresholds.

10:12 We begin to see some building footprints at this point...

10:15 ...and now we see that very detailed content that's been contributed by the City of Houston to the World Topographic basemap.

10:23 Now I just came back from a series of emergency management seminars and because I have that on my mind...

10:30 ...one of the things that was of interest at that conference was looking for EPA regulated facilities.

10:36 And, indeed, the EPA has published these and they're available to me online.

10:40 I can just connect to those and add those to my map.

10:43 These are facilities which are regulated by the EPA and they've published this service...

10:49 ...which will show these dots on the map, which represent those facilities.

10:54 If I want to learn more about them, I can click to identify.

10:59 This takes me back to the source and I even have a link back to the EPA website...

11:05 ...where I can get the latest and greatest, most up-to-date information about the materials which are located at this facility.

11:12 So, you see, I'm bringing in all this information.

11:15 I'm creating a very powerful map just by easily leveraging what's been published online.

11:22 Now, let's just say at this point I'm happy with my map. I'll go ahead and save that and I'm going to give it a title.

11:28 I've already signed in. I have an account with some storage space so I can go ahead and save this map...

11:33 ...and I'm going to title this my EPA Facilities Map, and I'll copy and paste that...

11:39 ...and add some tags and a summary and we'll save it.

11:43 Now when I save it, I don't copy any data, but what I do is...

11:47 ...I remember the references to all of those services that I've connected to and I've now saved them in my map.

11:54 So now if I look in my content, here's my new EPA Facilities Map.

11:58 Thumbnail has been generated automatically for me...

12:01 ...and perhaps most importantly, here are all the layers that I have used to build this map...

12:07 ...and I can click on these links and go right back to the source server...

12:11 ...and get at the root of the information that describes this content.

12:15 Very important when we're building maps and need to know more about how they've been created...

12:19 ...and when things were updated and so forth.

12:23 Now I can continue to edit this. I might want to add a description and add some more details.

12:27 I'll skip that for now. But what I'd like to do now is, I'd like to share this.

12:31 Right now I've made a map and I can use it, but I'd like to make it more available to others.

12:35 And there's several ways I can do this. I can share it with everyone.

12:39 In other words, it's publicly available. Anybody can find this.

12:42 Or, well, maybe I have a little study group going and I'm not ready to share this. I can just share it within a group.

12:48 And a group is another way for us to organize our content.

12:52 And groups can be public or private and the content within them can be public or private.

12:57 Or, what I'm going to do is, I'm going to use a group as a way to organize the content...

13:01 ...but I'm also going to make it publicly available and now anybody can find and begin to use this map.

13:07 So anybody that visits arcgis.com or anybody that leverages ArcGIS Online through their applications...

13:14 ...can type in those keywords and they'll be able to find my map and here's my USA facilities.

13:20 Actually, is that my map? There it is. Most recent one, and then they can begin to open it and build upon my work.

13:29 Other important things that we need to think about with geodesign, is sharing things...

13:33 ...making them more available and making maps more available in different ways.

13:37 So I can share this map by putting it up on my Facebook site or Tweeting about it...

13:44 ...or copying and pasting this link and including it in an e-mail or an online document.

13:49 More interestingly, I can click this button to generate the HTML...

13:54 ...which I would use to build a custom website, and I have an example here.

13:59 And this website is emergency management themed, but it also could be geodesign themed.

14:05 So this is a map that I saved earlier and as you can see...

14:08 ...we're using that World Topographic basemap and I have the EPA facilities in there.

14:13 So very quickly and easily I can leverage this in some interesting ways.

14:19 Now, another way that I can share this map is by building a custom application.

14:23 And we've recently included a template gallery. So these are templates that I can use to build my own website.

14:30 I find a template that I like and I can preview it, so this is what my map would look like inside this template.

14:36 The idea is that I would download the template and build my own...

14:39 ...and that's very easy too, because each map now has a unique ID.

14:44 And many of these templates, all that I need to do to build a custom application...

14:49 ...is to copy and paste this unique map ID into the template and off I go.

14:55 Now one of the more interesting ones, one of the popular ones, is this one.

14:59 This is one that allows us to compare maps side by side by side. So here's that EPA Regulated Facilities map.

15:06 I'm looking at the same map three times here.

15:10 But I've also built an example again just by copying and pasting different map IDs that shows three different maps.

15:16 So here's my EPA facilities, and I'm looking at Houston streets and Houston imagery here, and that's kind of handy...

15:23 ...but what's even handier is that I can lock these together by scale and location...

15:29 ...and then when I zoom in one, I can zoom in on another.

15:31 And what a great way to compare some of the design work that you've been doing...

15:35 ...and look at it and visualize it side by side by side.

15:41 All right, let's do something even more interesting.

15:45 I said that these maps will be able to capture our tradecraft...

15:49 ...and a lot of that is published through geoprocessing services and other service-based capabilities.

15:54 What I'm going to do is, I'm experimenting a bit here...

15:56 ...because this functionality hasn't quite been released, but we'll go ahead and try things out

here.

16:01 So I'm going to access a special group that I have. It's my own little labs group, and we have some new types of services.

16:07 These are editable feature services, and what these allow me to do is...

16:11 ...I can extend this application by connecting to these services and I'm able to increase its capabilities.

16:18 Now, it was a little subtle, but what I did when I connected to that service is...

16:23 ...a new button appeared with some new capabilities.

16:25 And I can click on that button and now I have an editing palette, which allows me to digitize things on my map.

16:31 So in this case, it's land-use planning areas, and I can just sort of digitize on the map and I can draw things on there.

16:39 The symbology and the attributes that I can enter are defined by a server-based schema.

16:45 So these aren't ad hoc or willy-nilly. Someone thought about these, designed these...

16:50 ...and then published them from a server that enables everyone to use these capabilities.

16:55 Now this would represent an enterprise-type of capability...

16:58 ...because all of these edits would go back to a centralized server...

17:02 ...where they can be published through other applications and seen immediately.

17:06 What I'd like to show you now is another new application.

17:09 This is actually the new version of ArcGIS Explorer.

17:12 You saw that earlier when I did the tour of the basemaps.

17:15 And this is a new version, which we haven't quite released yet...

17:18 ...but we will be doing soon. This'll be available sometime in February.

17:21 And I've zoomed into the Esri campus and this is, again, that World Topographic basemap.

17:27 One of the things I can do here are I can markup on my map some things.

17:32 I can add some pushpins and I can adjust their size and colors.

17:37 Let's make that a little bit bigger pushpin and maybe let's change the size a little bit.

17:43 And we're going to add some little mark up to this so we're good with that.

17:47 The other things that I can do with this feature, I can edit its content.

17:51 So I can add descriptions, I can add photographs, I can add other things, and hinge it to these

features.

17:57 Other types of features that I can add include, say, things like areas.

18:01 I can digitize an area, maybe a proposed little park or a new type of parking area or whatever...

18:10 ...and I can change the colors and if I come up with a different feature...

18:15 ...I can add that as a new feature in my template by giving it a new name.

18:20 So I'm just going to call this, maybe this is my...that's blue, so we'll make it water.

18:25 And we'll go ahead and add that.

18:26 So now I've added that to my template down in the lower left, so I can expand on these templates.

18:32 These templates...there's many that you can choose from as well.

18:36 So for example, here's a park planning template, and I can add that.

18:40 So here I get a number of specialized symbols that I can drag and drop onto my map...

18:46 ...and here's one that indicates a footpath, so I might want to do my design and add a little footpath...

18:51 ...and let's add a little hiking trail. I mean, I'm doing a terrible job of geodesign, but you get the idea.

18:58 So I think now, more than ever, we have the technology, the maps, and the tools that really facilitate geodesign.

19:07 So as you begin doing your work, check out ArcGIS Online.

19:12 Go to arcgis.com and use these free applications and this free data to help do your work and your activities.

19:20 Thank you.