Getting Started with Editing in ArcMap

Key editing concepts, such as starting/stopping an edit session; edit sketch; edit tasks; and snapping, digitizing, and editing shapefiles and geodatabase feature classes, will all be discussed in this session. Editing attribute values for features and tables associated with domains and using subtypes for efficient editing will also be covered. Attendees will leave this session with a solid understanding of a proper editing workflow using ArcMap.

http://video.esri.com/watch/89/getting-started-with-editing-in-arcmap

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Video Transcription

00:01 Well, I'd like to welcome you to Getting Started with Editing in ArcMap 10.

00:04 My name is John Thieling.

00:06 I'm an Esri instructor based out of the Minneapolis office.

00:10 I've been a longtime Desktop instructor as well as a geodatabase and Server instructor.

00:17 And I'm being joined today by my colleague here, Ken Smith.

00:21 Speak to everybody.

00:22 Ken is also an instructor out of the San Antonio office.

00:28 So, as the name of this implies, we are going to take an introductory level look at editing in ArcMap 10.

00:38 Now if you were at the Plenary yesterday, you saw that there are some changes to how we edit or at least to our editing workflow at 10.

00:46 So I just want to kind of quick take a survey of the audience here to find out kind of what your general experience level is.

00:53 So, because obviously this is geared towards the new user but I suspect that we may pick up a few folks that are just interested in, OK, what...what is changing?

01:04 What am I...what is this new workflow that I'm going to have to learn?

01:10 So I just want to see a quick show of hands.

01:12 How many people would consider themselves a new user or a novice editor?

01:17 Somebody that hasn't really done it that much or that often yet.

01:22 All right, excellent.

01:23 So that seems like largely our target audience.

01:26 OK, and then just I guess for our curiosity, how many folks in here would consider themselves more of a proficient editor?

01:33 Somebody that's edited with, you know, 9.x or the 8.x tools part of this?

01:39 All right. So almost just as many.

01:41 Excellent.

01:42 OK, well I think there's going to be something for both groups in this, in this presentation.

01:50 So, let's without further ado kind of go over what we're going to be discussing.

01:59 So I'm going to start off here right off the bat just kind of taking a look at a few basic things...

02:03 ...like what can you edit, what can you edit with, how do we do it.

02:07 And then I'm going to kind of go over briefly what is changing at 10.

02:12 And then Ken and I both feel the best way to show you the workflow is to show you the workflow.

02:17 So I'm going to turn it over to Ken who's going to do a demo on getting started creating features in ArcMap.

02:25 After Ken's demo, we may have a few moments to take a couple of quick questions then we're going to move on.

02:31 And I'm going to talk some more about some of the key editing concepts for ArcMap 10, kind of reviewing a couple of things that you'll see in Ken's first demo.

02:41 And at that point, I'm going to turn it back over to Ken so that he can do another demo on getting started with editing existing features.

02:56 All right, so the first thing I want to talk about is what can we edit with ArcMap.

03:02 There are several different data formats that are editable in ArcMap.

03:07 Of course, the geodatabase being the primary.

03:10 The geodatabase is the native data format for ArcGIS.

03:14 So we can edit all forms of the geodatabase.

03:17 And as well as shapefiles, the predecessor to the geodatabase, and several tabular formats.

03:23 The other thing that we should talk about is what level of ArcMap do you need in order to edit.

03:29 And the good news here is any level.

03:31 Whether you've got an ArcView license, ArcEditor, ArcInfo, they all share the same common editing platform.

03:38 There might be some differences in the tools and as far as what you can edit, but they are all

editors.

03:44 I know for some new users sometimes that term ArcView might be a little bit misleading.

03:50 It kind of implies that it's a viewing software, but that's not the case.

03:55 With ArcView, you have full editing capability over file geodatabases, personal geodatabases as well as shapefiles and some tabular formats.

04:05 And with ArcEditor and ArcInfo, you have full editing capability over those ArcSDE based geodatabases as well.

04:14 So a desktop, workgroup, or an enterprise geodatabase.

04:20 Now, for those of you that raised your hand saying you were new users, I've...new ArcMap editors, I've got some good news for you.

04:31 Because this is really the best time to be a new user to the editing environment, ArcMap 10.

04:39 At 10, we now have what we're calling a layer-based workflow that's going to help improve the usability as well as your efficiency.

04:48 So for those of you that raised your hands saying you had a little bit more experience level...

04:52 ...I kind of want to put your mind at ease if you're kind of thinking, oh, man, I've got to...I've just gotten proficient with the old tools...

04:59 ...now you're telling me I'm going to have to learn something new or a new workflow.

05:03 And as a longtime editor myself, I kind of wondered the same thing.

05:07 But I can attest that we've made things much more efficient.

05:12 The same powerful tools are still there.

05:14 They're just now much easier to get at when you need them.

05:19 And I think it's going to make...

05:21 ...ultimately, once you've spent some time with it, I think you'll find it to be a more efficient workflow.

05:27 OK, So why, why is this?

05:29 Why is 10 going to be easier and more efficient?

05:35 Well, as I mentioned, I mentioned something called a layer-based workflow.

05:39 So at 10, we now have a layer-based editing that is going to honor the layer properties that you've perhaps already established in your map.

05:50 So you...let's say you've opened up ArcMap, you've added a few layers, you've built a map, or you've gone in and set all of your symbology and layer properties.

05:59 Well with prior releases, our, our, our editing was more feature based.

06:07 You set properties that were stored with the feature in the data source.

06:11 Now we're storing those properties through the layer.

06:14 So things like symbology, field aliases, those are all going to be available to you while you're editing.

06:23 And part of that is made possible through something called a feature template.

06:27 Feature templates are going to help define the type of feature that you want to edit.

06:32 Where previously you had to go in and select an editing tool, you then went and selected an editing task...

06:38 ...and you then had to choose the layer that you were wanting to edit, so the target layer...

06:42 ...we now just select a template and start digitizing.

06:47 So that process of going from opening ArcMap, starting an edit session, and actually editing I think has gotten much more efficient.

06:57 All right, and one of the other efficiencies you're going to find is that we now have more direct access to the editing functionality.

07:04 Now one of the things that often made it challenging for a new editor to get proficient was just getting familiar with where the tools were located.

07:12 You know, what...what the tasks were and the task menu, where...what context menus held the functionality you were looking for.

07:20 Now a lot of that has been promoted up onto the Editor toolbar.

07:25 And there's also a series of mini toolbars which are going to help put that functionality at your fingertips when you need it...

07:34 ...and disappear when you no longer need it.

07:36 So they're going to...you'll see an example of that in Ken's demo.

07:43 We've also greatly simplified the snapping environment.

07:46 Snapping now is going to be enabled by default for all of the layers in the map.

07:51 So we're getting away from having to go in and set snapping at a layer-by-layer level.

07:56 It's now going to be on automatically.

07:58 And you'll control that snapping environment from a nice small little Snapping toolbar.

08:08 All right.

08:09 Now there's much more to this, this story at 10.

08:12 But, again, like I said, Ken and I feel the best way to really show you this workflow is through a demo.

08:18 So I'm going to turn it over now so that Ken can show you some examples of getting started creating features in ArcMap.

08:26 All right.

08:29 So working with Windows 7.

08:31 I'm going to just use this.

08:33 Kind of neat.

08:34 We have some tools here.

08:35 I think it'll be a little bit easier to both navigate through your editing session.

08:40 It's not critical that you have Windows 7 to work with ArcGIS 10, but it doesn't hurt.

08:46 Works very well.

08:47 So any of you might be thinking, do I need to stay on XP or should I go to Windows 7?

08:53 If you have the opportunity and still want to do editing and other types of things with ArcMap, ArcCatalog, it's fully supported.

09:05 All right, so, I've got a little map here.

09:07 And we can see that we've got several layers on here.

09:10 This is for Zion National Forest and I've got ranger stations.

09:14 I've got a few roads.

09:17 Got a layer here for tracts.

09:19 Got a park boundary.

09:21 And, of course, we've got a little bit of background data.

09:25 So let's see here.

09:27 I've got an area that has been recently developed.

09:31 And my scenario here is that I need to put in a new ranger station.

09:36 So we've got ranger stations here and we've got bookmarks, just like we always have.

09:42 So you can zoom right in to it.

09:45 But I'd like to start editing.

09:47 Now, as we mentioned, we do have Editor toolbar.

09:51 It's still out there.

09:52 It's still available.

09:54 And it looks much the same as always has.

09:57 So it's still the comfort level for those of you who are already currently editing.

10:03 You can start editing.

10:04 You can set snapping environments.

10:06 You can go in and change other options, but you don't have to.

10:13 John mentioned that we do have layer-based editing.

10:16 So if I was just coming under here on ranger stations, and right-click, we can simply come over here and...

10:23 ...selecting Edit Features, Start Editing.

10:26 Now, what do we have here?

10:28 We have what are called feature templates.

10:31 These help define the symbology, default properties, and other types of maybe attributes you're storing for your features...

10:41 ...but at the layer level.

10:45 So this is kind of nice.

10:46 We don't really have to go in, go outside of ArcMap to set everything up in order to be able to work.

10:52 So I'd like to create a new ranger station.

10:54 So I've got this little menu here.

10:57 Let's go ahead and bring it back out again.

10:59 Pick a ranger station.

11:01 Just click on it and I'll place my ranger station.

11:05 That's...that's all there is to it.

11:07 So I now have a ranger station here.

11:10 Are there attributes?

11:11 Sure.

11:13 We've still got attributes.

11:14 So I'm going to go over here to the Attributes window, and we've got one field here.

11:20 Very inventive.

11:21 Well, I'll go ahead and put in a visitors' station.

11:23 And watch what happens over here in the attributes window at the top.

11:33 I hit Enter.

11:34 It automatically populates it for me.

11:37 If I wanted to, and I was always creating a lot of visitor stations, I could actually change the properties for that template.

11:45 Let's just go ahead and for now let's let it autohide.

11:48 Come back to Create Features and take a look at that.

11:53 So for certain types of default values and the types of tools you might use to create them, we can go right to the template properties.

12:02 All I simply did was double-click.

12:05 So here's a name.

12:06 We could include a description and also maybe some tags.

12:11 For example, I have points and I might want to have ranger stations.

12:18 That's useful when I'm searching for a tool.

12:21 There are some keywords within the search dialog.

12:25 Also, notice that that was set, that field was set to Null, but I could put in a value if that was a value that was encountered a lot of times.

12:35 So for example here, if I used visitor station and clicked OK, clicked OK.

12:44 Now I picked up and placed another ranger station.

12:48 We go look at the attributes.

12:50 It's already filled in.

12:53 So if you have that type situation, you want to speed up your editing process...

12:57 ...and you're creating a lot of a certain type of feature, this is a very good tool to have.

13:03 OK.

13:05 That's just a real easy way to add new features.

13:10 So let's go ahead, let this thing close again.

13:12 And look at some other types of things we might decide to create.

13:17 I've got over here roads, different types of roads.

13:21 But I would really, one of the things I need to do is make sure that we have appropriate access to the ranger station.

13:28 So I'm going to do some heads-up digitizing off of my background, but I'm going to do something like...

13:36 ...use the default snapping that's available.

13:40 Now snapping is turned on automatically for us when we are both working in ArcMap and also editing.

13:50 So you can snap to the endpoints of lines or you can snap to vertices and also anywhere along an edge if you want.

13:59 So they could really help us out.

14:01 Here's an example right here.

14:02 You see where it says roads vertex?

14:05 I know I've got a vertex right there and if I needed to start creating the feature at that location, I know that I've snapped to it.

14:15 How do you turn on snapping?

14:16 Well, there's couple of different places.

14:19 Under the Editor toolbar, we do have the Snapping toolbar.

14:23 If I click it, up comes the Snapping toolbar.

14:26 It's not a very big tool here.

14:28 I'll bring it over here so we can look at it.

14:30 And we do have some options to turn on and off snapping.

14:35 If you don't need it, you can disable it.

14:39 There's also intersection snapping, midpoint, and tangent snapping.

14:43 We'll look at those a little bit more here in a minute.

14:46 And also something that can be very useful if you need to make sure that a part of your creation...

14:53 ...of the features with your sketch snaps to that sketch.

14:58 Might be, for example, where I have a line coming up.

15:01 It comes across, back down, and then right back to the edge of that existing line as part of

creating the sketch.

15:08 I can still snap to that, if I'd like.

15:11 There are some options that are very useful.

15:14 These are not too much different than what we've seen in the past. Snapping tolerance.

15:20 Pixels.

15:21 Now you don't pick pixels or units anymore.

15:24 There's just strictly pixels.

15:26 And you can set the symbol for the color, the font, all that type of thing and also how you want to show your SnapTips.

15:35 OK.

15:36 Where else can you turn this on?

15:38 Well under ArcGIS 10, all toolbars are located under Customize.

15:44 So under Customize, Toolbars, we can come down over to Snapping and turn it on.

15:50 OK.

15:51 So I've got point snapping, end snapping, vertex snapping, and also edge snapping enabled.

16:00 If you'd like to turn one of those off, just simply click on it, and it'll change its shade.

16:06 So, for example, for point snapping, I no longer have point snapping turned on as soon as I click in it.

16:11 So it tries to make it a little bit easier for you when you're digitizing.

16:15 All right, so I need to create a new line.

16:18 That was my scenario.

16:19 I need to create a new road that's going to go up to the area around the ranger station from a different direction.

16:28 Well under Create Features, we do also have our roads.

16:32 So I got freeways, major roads, local roads, and unpaved roads.

16:36 Well it turns out it's a local road.

16:38 OK, so I'll click that.

16:40 I'm going to zoom to a different bookmark where I have digitizing roads.

16:43 So let's let this go away.

16:45 Sometimes they be, they're a little obstinate.

16:48 And I'm going to digitize from here, kind of follow the line up and over to this location here.

16:56 So using snapping, let's simply start and like anybody who's ever created features before, you simply click...

17:04 ...and indicate the vertices for each one of the segments of the line that we're creating.

17:13 And I finish.

17:15 Now anybody who has currently done sketching?

17:20 How do you finish a sketch?

17:21 Anybody want to offer a suggestion to me?

17:23 You could right-click.

17:25 You could right-click, OK.

17:26 Whoops.

17:27 Let's get away from an existing tool here.

17:30 We can right-click and...finish sketch, right.

17:33 Do you also notice that there's a shortcut there?

17:36 You have two, right?

17:38 Yeah, so that's another way.

17:39 What's a third way?

17:41 Double-click, yeah.

17:42 Okay, we got some good editors in here.

17:45 So I'll just go ahead and escape out of this thing and press F2 to finish my sketch.

17:50 So I do have attributes available here.

17:52 Name and automatically get the link, all that type of thing.

17:55 So I'll make this a visitor entrance...whoops...entrance road. And we're done with that sketch.

18:08 OK, so snapping can make it a lot easier...

18:11 ...to make sure that you are actually creating new sketches based on the existing features or based on your own exact sketch.

18:23 Let's take and examine these feature templates a little more.

18:26 [Audience question.]

18:28 Pardon?

18:29 [Audience question.]

18:34 Oh, that's an excellent question.

18:35 She was asking about snapping hierarchy.

18:38 Let's see if it's still out there.

18:39 Look at our options, not here.

18:42 We look under snapping.

18:45 We also...We don't have a hierarchy.

18:48 It's, go to the Editor.

18:52 Editor.

18:53 Editor options.

18:54 Oh, Options, OK.

18:55 There's a way to go back and do...

18:58 So we call it classic.

19:00 Classic snapping.

19:02 So now at...now at 10, snapping is automatically enabled for all of the layers, but if you do want to go back to a layer-by-layer-based snapping, there is...

19:10 Let's set that up.

19:11 It is...

19:12 It's right here in the General tab and it's called Use Classic Snapping.

19:16 I think I'm going to go ahead and click OK and now under the snapping...

19:24 It always is...

19:26 I forget where to go to it to do it.

19:29 [Audience comment.]

19:30 Snapping...open up that Snapping window there.

19:32 Snapping window.

19:33 There we go.

19:34 I just had to open the window up again.

19:36 Just had to let them know.

19:37 OK, so there's our standard snapping environment.

19:40 It is docked so I'll just go ahead and pull it away so we can take a closer look at it.

19:46 And so if you have the vertex edging in and yeah, you can still move them around as you'd like.

19:53 Can you do multiple points now, snapping?

19:57 [Audience question] I know one of the problems you had [inaudible] series of points, like snapping them to a line.

20:04 So you wanted to, to group all those points together?

20:06 He's going to grab a few points that are GPS...

20:09 Oh, yeah, OK.

20:10 [Audience question]...snap to a water line, do you still have to [inaudible] snap it to the nearest edge?

20:16 [Audience question] You can do that [inaudible]

20:17 Well you should be able to do that based on selection and just move them.

20:21 One at a time.

20:22 Yeah, one at a time, yes.

20:24 OK, so you're saying like to the edge of the roads, OK?

20:29 [Inaudible audience comment]

20:30 Um-mm, OK.

20:31 Yeah, I've got some points I'm going to create and they're not snapped in, right?

20:36 Let me turn on my, let's go back to, whoops, under Editor Options, turn off the Classic Snapping and click OK.

20:45 And I'll digitize up a few more ranger stations, what do you think?

20:49 Let's put them along here, OK.

20:54 And now that I have that, switch back, and now select all of them.

21:00 All right, so I got the road too, don't I?

21:03 So let's go to the Selection tab here and unselect that road.

21:10 I should be able to take those now and snap them too, with the Edit tool be able to move them all over and snap to the road.

21:17 Just like that.

21:21 How do I know?

21:24 If they're all lined up together...

21:25 They're...they're...working as a group right now.

21:27 So the operation I am is making the exact same change to all of them.

21:33 So if you had a whole set of mile markers that were offset by 5 or 10 feet, and you selected those...

21:40 ...and moved them down, they would...could all snap to the line at the same time.

21:45 [Inaudible audience comment]

21:51 Ken, Ken, there's a GP tool...

21:54 A GP tool.

21:55 ...snapping involved... That's what you would use for this.

21:58 And we have, we have a...shall we introduce him?

22:02 I'm Larry Young, the product manager.

22:03 The product manager, yes.

22:05 So, he's another good authority to ask questions of.

22:09 So, yes.

22:10 [Inaudible audience comment]

22:12 OK. [Audience comment.]

22:16 What's the name of the...

22:18 Ah, snapping.

22:24 Thanks, Larry. Shall we find...shall we find a tool that's called Snapping?

22:27 Let's move on, we'll come back to it.

22:28 OK, let's continue on, yeah. We'll come back to it.

22:31 So, yeah, snapping is a good thing, good thing to have, right?

22:34 And it is built right in.

22:36 OK, so I've got...I need to...part of my thing is to also create a new tract, and I want to create a new tract in another location.

22:46 So let's go back to the table of contents, bookmarks, and go to tracts.

22:51 So this...this one here is going to be based off of some existing features.

22:56 And if I come over here to my Create Features window, I don't have anything for tracts.

23:05 So what I need to do is I need to go into the dialog here to Organize Templates.

23:12 And I have all the layers that are on my map available to me but I don't have one for tracts.

23:18 So I'll show you how hard this is creating new templates, so then I can then create new features.

23:24 That's it.

23:25 So I've got my template all set up and ready to go.

23:29 There's maybe some additional properties for it that I'd like to set such as maybe some descriptive information...

23:37 ...what default tool I would like to use to create new tracts.

23:41 You can set all that.

23:43 And also, maybe set some default values.

23:51 OK, we'll click OK here, and we have a typo there but let's go ahead and take off and create a new feature using the tracts.

24:01 So Create Feature, Tracts, and I'll use the Polygon tool first and I'm going to come off and create one...

24:11 ...that it's going to use the midpoint of one of the segments of the existing polygon.

24:16 I'm going to click from here to here.

24:19 And now I am going to come over and change...

24:23 ...the type of tool that I'd like to use, using this little mini toolbar.

24:28 This little toolbar's been following me around.

24:30 So I don't have to go up to the Editor toolbar, find my tool, and then come back to my sketch.

24:37 I can just interact with it directly.

24:40 So I'm going to create my Midpoint tool, click, come across, and now I've got that midpoint set.

24:48 To finish it off, I'm going to use this square and Finish and now I've got my polygon all set and completed.

24:58 There's some other things you can do, too, using some of the other tools.

25:01 I've been using that standard Polygon On Point tool, but on Create Features, maybe you might like to create a rectangle.

25:09 There are some shortcut keys that come with these different tools that can help you, assist

you creating features.

25:15 So my task here is based off of this existing tract that's sitting over here in the middle left.

25:22 We create a new rectangle that is 800 meters wide by 400 meters high.

25:29 Sound reasonable?

25:30 And I'm going to use the existing angle of that segment.

25:34 We do still have available to you the ability to sketch off it.

25:39 But let me go ahead and just take off from here.

25:42 And I'm going to specify the...whoop...now I'm using the wrong tool.

25:48 Should be using the rectangle.

25:49 OK, there we go.

25:50 So I'm going to come off of here, specify the width of 800 and the height...let's go over to the height.

26:04 Let me change...specify the height and notice the direction I went.

26:07 See how you can specify different directions easily?

26:11 And the width and the depth, yeah.

26:16 Direction, yeah, 180, go. And then, I've forgotten my tools.

26:26 Parallel 800 foot.

26:27 Well let's go ahead and just set it up like this and make the tool.

26:32 But what I need to also do, too, is complete that gap and fill in that gap.

26:39 So under Create Features, come down to my Autocomplete Polygon tool.

26:44 So these are easily accessible and available.

26:47 Click here.

26:49 Click Finish My Sketch, and now I've got my new set of tracts.

26:54 So while we've had tools available to us always available on the Editor toolbar, they're still there available to you.

27:05 On the Create Features window, we also have some additional tools, we help you construct features.

27:13 All righty.

27:14 So that pretty much finishes the creation of tools.

27:16 OK, cool.

27:17 It's kind of like a starting view of that.

27:20 I'm going to go back to our presentation.

27:23 I have a question. [Inaudible audience question]

27:24 Sure. We have a question.

27:25 [Inaudible audience question]

27:38 Excellent question.

27:39 So the question was, you didn't select the pointer when you were digitzing the road.

27:40 Should we go back?

27:45 That's because we had a basic line feature construction tool set up as the default tool for that feature template for roads.

27:54 So all you have to do now is go to the feature template window, click on that template, and it'll, it'll have the default tool already set for you.

28:04 Yeah, so it was a good observation.

28:07 If you want, I could show them.

28:08 Yeah, so...Ken will show that again for you real quick here.

28:12 'Cause it was kind of easy to miss.

28:15 So for, for example, the local roads?

28:17 You wanted to know which was my standard tool I was using.

28:20 Just double-click it, and the default tool here is set up for you.

28:25 It can be any one of a number of different types of tools that you have access to.

28:29 And how does...the template editor you showed, how did you get there?

28:33 Oh, yeah, let's go back to the template editor.

28:35 I want to create...I want to create something new, right, the tracts?

28:39 It's up here at the very top here, Organize Templates.

28:41 Awesome.

28:42 And you just click here, and now you have the ability to define everything you need to create new features, OK.

28:49 We've got a moment for one more question.

28:51 [Inaudible audience question]

28:59 Very good question.

29:00 So the question is, the templates, are they automatically generated or do you have to generate them before you start editing?

29:07 An example is they'll be automatically generated for you when you start the edit session.

29:12 And I'll actually going to talk more to that now.

29:15 Can you bring the presentation back up?

29:18 In just a second.

29:21 All right, so you all are very observant, you picked up on a couple of key things.

29:27 So you've seen that we edit from these feature templates.

29:31 So those feature templates are going to define again the information for creating a feature.

29:37 So that feature template sets the target layer.

29:41 Ultimately, you're going over to that Create Features window and you're selecting the template which is based on the layers in the map.

29:48 So that also means the symbol used, well, the symbol used for drawing that feature will be used to draw it in the map.

29:55 Like in the case of, of roads, we've got that symbolized by attribute.

30:01 In this case, there isn't necessarily a subtype even set up for that.

30:07 But I can now go and create that type of road right off of the Create Features window.

30:14 So easier access to target layers and symbology.

30:18 You also saw how Ken can set some default attribute values.

30:22 So if you are creating a lot of features and they're going to have the same attributes, they'll automatically populate those attributes.

30:29 And you saw the default tool, so...

30:33 Like here, I have freeways currently selected in the Create Features window.

30:38 You'll also notice that the line tool is also highlighted.

30:42 That's the default tool that I specified for creating highways.

30:48 All right; and as the question that was asked a moment ago, how do I set these up?

30:53 Is it something that you have to prepare ahead of time?

30:56 And the answer is no.

30:58 The process can be as simple as this, add a layer to your map, start the edit session.

31:04 That starting of the edit session will automatically create the feature template for you.

31:09 Now, of course, you can go in ahead of time and establish more of the properties like set up the symbology, set field aliases on attributes, and things like that.

31:18 But it doesn't have to be that complicated.

31:20 It can be as simple as starting the edit session.

31:24 So all the feature templates get created the first time you start an edit session.

31:30 Now let's say you want to go back and change some of those properties.

31:35 We can go back in and create them, modify them, create new ones manually.

31:41 So if you did add a layer to your map after you've started that first edit session in that map document...

31:48 ...you can go back to that Manage Feature Template window that Ken showed you and establish a new feature template.

31:57 Or you can delete, delete one and start over again as well.

32:01 Question. [Inaudible audience question.]

32:07 So the question is, can you share them then with other users in your organization?

32:11 A very good question because it leads me into my next, next bullet point here.

32:16 Those feature templates are saved in the map document that they were created in.

32:21 But you can also save them, they'll also be saved within a layer file.

32:26 So if you...it's part of this being layer-based editing.

32:29 If I save that layer file, that template is saved within it, so now I can hand it over to one of my coworkers.

32:37 And it'll also be saved in map and layer packages that you establish as well.

32:44 So which is just simply saving anything that's within the map document.

32:51 All right, then of course we get at the feature template through the Create Features window.

32:56 So that was the window that Ken keeps going back to that is on the right side of the map screen.

33:02 Of course it can be docked and moved anywhere, it's one of the new floating windows.

33:07 So on the top part of that is where you simply click to start creating that type of feature.

33:13 So you saw how Ken just has to click on the ranger stations to click a point feature.

33:18 Where before, I would have to go to the Editor toolbar.

33:21 I'd have to pick my construction tool, pick my edit task, and then set my target layer.

33:27 Here I just select the feature template and start digitizing, start editing.

33:32 So we've removed several steps from that process.

33:36 And then down at the bottom, I showed this a moment ago, but I see for my freeway road type...

33:44 ...I've set a default construction tool of the line tool.

33:48 So you have a tool right there to start editing with.

33:52 And then, just kind of as a reminder, back up at the top, there's the button to manage those feature templates where...

33:59 ...again, you can go back in and change the properties, delete them, create new ones, et cetera.

34:07 Oops, OK, but that's not the only way you can get at tools.

34:13 As Ken showed, and I mentioned before, we've also propagated some of our most commonly used functions...

34:20 ...to be buttons on the Editor toolbar.

34:24 So hopefully, again, saving you several mouse clicks in order to find the tool that you're looking for.

34:31 So as an example, the Trace tool which used to be part of the edit sketch tools tool palette...

34:36 ...has now been...now becomes the default tool in that palette.

34:41 The endpoint arc segment, which also used to be part of that tool palette, has been pulled out and added right to the toolbar.

34:48 And then you've got several feature modification tools, the tools for editing vertices, reshaping a feature, cut polygons.

34:58 Those all used to be tasks within the task list and so you had to know where that task was.

35:03 It's now just simply a button on the Editor toolbar.

35:08 And then something else that you saw when Ken was editing are the new mini toolbars.

35:17 So when you go and select that feature template, you're going to be editing with a default tool.

35:21 But in order to give you an easy opportunity to change that tool, the one on the left here, the Feature Construction Tool...

35:29 ...will come into view, giving you an opportunity to quickly select another tool and then it will go into the background...

35:37 ...and move out of the way as you're editing.

35:39 So it's functionality that's there when you need it and disappears when you don't.

35:44 Also another common editing task is modifying the vertices of a feature.

35:50 The vertices are kind of the changes in direction of a line or a polygon feature or a single vertice that defines a point feature.

35:59 When you're modifying or going to edit features, the Edit Vertices mini toolbar, the one on the right...

36:06 ...comes into view to help you select the vertices as well as add new vertices, delete vertices...

36:16 ...and then when you're done with that task, that toolbar again disappears.

36:19 OK, and if you're editing geometry, the other important thing with editing is updating or editing the attribute values.

36:25 And just like before, we've got two ways that you can do that or two places you can edit attributes.

36:31 You can edit it from, directly from the attribute table or you can edit it from the attributes window...

36:36 ...that you access from a button on the Editor toolbar.

36:40 But now in both cases, and with that...along...showing here the attribute window, they tie in to your layer properties.

36:49 Again, we're working on a layer-based workflow.

36:52 And from those layer properties, you can set things like field visibility.

36:57 So let's say you've got one of those feature classes that has, you know, dozens and dozens of different attribute columns...

37:03 ...and perhaps you're not interested in most of those while you're editing.

37:07 Well I can go into the layer properties and turn off some of those layers that I'm not interested in...

37:14 ...or that my editors are not going to be interested in.

37:17 And kind of along that same bend, I can also highlight the fields that are most important to me.

37:23 I don't know if you can see on this slide, but I have this ownership field highlighted in yellow.

37:27 So it's drawing the editor's focus to that particular field, drawing the attention to the field that they're most interested in.

37:39 Also, I can set certain fields to be read-only.

37:43 You'll notice the bottom two fields in this screen shot are grayed out.

37:47 That means they are not available for editing.

37:49 Again, this is set at the layer properties.

37:52 So if you want to ensure that you're not accidentally selecting the wrong field and...and editing the wrong column...

37:59 ...you can set the fields that aren't to be edited as read-only.

38:03 They'll still show up so that you can see that they're there, but they'll be grayed out.

38:09 Field aliases are also honored here.

38:11 So if you've got some complex field names that don't really mean much to you, you can go in and set field aliases.

38:18 And then you can also create something here called a display expression.

38:23 In this particular example, I've got a road feature selected when I open this tool.

38:30 I also have two tracts, and I've selected the first tract.

38:35 Now underneath where it says Tracts at the top there, it'll just simply list the feature with whatever the primary display field is.

38:44 In this case, our primary display field was the ownership field.

38:48 So what would have displayed there is just simply the...the value for that feature underneath the ownership field.

38:55 So you would have just seen the word private.

38:58 Perhaps private or the field value doesn't mean anything to you.

39:03 So in this case, I went and added a display expression that displays the name of the column that word private comes from.

39:10 So I added ownership, colon, and then it'll be followed...I set it up to be followed by the actual field value.

39:19 This can also come in handy if you have a feature that you...that's name actually comes from several different field values.

39:29 Perhaps you've got street data where the address is actually stored in several different columns...

39:34 ...and you'd like to see...sorry...street wouldn't be a good example there.

39:37 Let's say points that represent addresses and you want to be able to click on a point and see in a display...

39:45 ...the full address that's actually in several different fields.

39:48 Well I can establish a display expression that does that.

39:53 [Inaudible audience comment]

39:56 Oh, listed twice because I actually had two tracts selected when I made the screen shot.

40:02 Sorry.

40:08 All right, and then Ken also showed the improved snapping environment again.

40:13 We've seen here that it's now controlled from that snapping toolbar where snapping, remember...

40:19 ...is enabled by default for all of the layers in the map and point and vertex and end snapping will all be turned on.

40:26 So go to that toolbar to turn it off.

40:28 You also saw where he can go in and set the snapping options.

40:32 I don't know if you picked up on this, but there's also now those snapping tips so you can see what it is you're snapping to.

40:39 So, yes, the snapping is turned on for all of the layers, but you'll be able to see what the feature is actually going to snap to through that tip.

40:46 [Audience question]Did I understand that now that the snapping is on automatically [inaudible] for all layers, there's no way to set the priority on what's snapped other than going back to the old way? 'Cause sometimes the priority of snapping is very important.

41:02 Sure. [Inaudible audience comment]

41:05 Sure.

41:07 Well you're not going back necessarily.

41:08 You know, we call it classic snapping, but what you're essentially doing when you go to that Editor menu and, and...

41:13 ...you go to the Options and you check that box is it's opening up that, that snap, that traditional snapping window that you're used to seeing.

41:22 So, yes, if you're a more advanced user that needs to be able to control that, you can still get to that window and it'll, it'll hide just like the rest of the, rest of the windows.

41:32 [Audience question]The default is...what's the default priority? There got to be a priority to snapping [inaudible]

41:37 Layer order.

41:38 Layer order.

41:39 [Inaudible] layer.

41:40 Layer order.

41:41 OK, I believe.

41:42 Ken is, Ken is telling me that it's...the priority is based on, on layer order.

41:49 Larry, isn't that the...

41:51 Yeah, I mean basically we've got a lot of our classic to simplify the snapping environment, right? People...

41:56 We found that when people had edited, they'd spend a lot of time managing their editing time in turning layers on and off, blah, blah, blah.

42:03 So this is what we came up with to simplify it, and it will do things that the current editing environment won't do.

42:11 For instance, to set a definition query with the current editing environment and some features aren't drawn, in 9.3, 9.3.1, you can snap to those features even though they aren't drawn.

42:21 All right, this environment will pay attention to that type of thing.

42:25 If you're a utility, for instance, working with a geometric network and you have to have your valves snapped to your pipes, you may still want to use the classic environment to be sure of that.

42:35 But for general editing, this is a much easier environment to deal with.

42:39 You'll find you don't spend as much time managing your environment and turning things on and off.

42:44 OK, thank you.

42:46 All right, thank you.

42:50 All right, now before I turn it back over to Ken to show another demonstration, he's going to demo some...some of the functions for modifying existing features.

42:59 There's a couple of other efficiencies that I want to point out that I think is going to make it easier to get started editing.

43:07 One of them is an improved selection experience.

43:10 So if you're trying to select coincidence, coincident features...

43:15 ...with a feature selected, there's a new selection chip that will pop up near your mouse pointer.

43:22 And kind of think of it as a mini toolbar that just has one tool on it.

43:26 Next to that tool will be a pull-down arrow that will allow you to cycle through the different selectable coincident features.

43:34 So I can then select all of the features that are coincident at the feature that is currently selected.

43:41 Now you still have the old way of doing it.

43:43 The End key will still allow you to cycle through the coincident features.

43:47 But this is just giving you a graphical way to be able to do that.

43:51 So you don't have to first know that the End key is there and does that.

43:55 I'll see it through that, that graphical selection chip.

44:02 Also another efficiency.

44:03 You know, one of the common ways to modify an existing feature is to go in and modify the existing vertices.

44:10 Well previously, that kind of meant going to each individual vertex and either moving it, or deleting it, or adding...adding a new one.

44:19 Now at 10, you've got the ability to move multiple vertices in one operation.

44:23 So you take the selection tool.

44:25 You can drag it over several vertices and then move them as a group or you can also delete them as a group.

44:34 All right, and then finally, we also now have the ability to alter a segment type.

44:40 So I can now go quite easily from having a straight segment to a circular arc or a Bézier curve...

44:48 ...or I can go back to a straight segment from a...from a curve.

44:52 So where previously, I would have had to delete that feature and re-create it as a new feature type.

44:57 ...I can now right-click on it and you'll see a Change Segment option.

45:02 So I can change it, take that straight segment and make it a curved segment without having to remove that segment and reestablish it.

45:13 All right, so I can tell here that Ken is getting antsy to show you some more functionality.

45:18 So we're going to...I'm going to turn it back to Ken to show you getting started with editing some existing features.

45:24 And then after that, we'll come back for...for some more question and answers.

45:28 OK, all right.

45:31 I'm going to go to a second...second window here, a window that's more set up for working with existing features.

45:40 And I've got some research areas that are contained within Zion National Forest.

45:46 I'd like to do a little bit of work with them.

45:49 Now, when you have research areas defined with mesas, Goose Creek, Hanging Garden...

45:56 I don't even want to pronounce that.

45:58 Shoon's Creek, Slick Rock, and southeast Pinyon...Pinyon Juniper.

46:03 But, you know, I'd like to also create another research area that's a buffer around some existing features.

46:14 So let's go ahead.

46:15 I come over here and right-click Research Area and go down to my edit features.

46:23 And one of the options I have available to me before I start editing is to define new types of features...

46:29 ...that I can then use for creation of features for that layer.

46:36 So here I'm going to click this and this is going to be called buffer zones.

46:43 I'll create a buffer around some existing features.

46:45 I want to kind of protect those a little bit so that somebody doesn't come in and...

46:50 ...invade my research area without me knowing about it.

46:55 So we'll call them buffer zones and because I'm lazy, I like to copy and paste a lot so I'm going to paste that to the description.

47:05 And we click Next, and specify the value and label the buffer zones.

47:13 At this point, I do have some options, additional options for setting things like the default values.

47:19 In this case, the names Buffer Zone and Comments, any type of default value for the fields.

47:27 Now if I click Finish, I can choose to do more or I can just click No.

47:34 So now if I start creating new features here on research areas, I should now have available to me buffer zones.

47:44 Notice it added it to the table of contents.

47:47 So I'm going to move over to the research-only areas and this particular polygon down here...

47:54 ...the one that's kind of in a...kind of an almost yellow color, is the one that I would like to create a buffer around.

48:00 It's very, very sensitive to any sort of encroachment.

48:04 So I need to buffer out a distance.

48:05 Or maybe what might better is just use an existing editor tool.

48:08 So let's go ahead and do something like that.

48:10 So I'm going to pick up the editor and I can start editing here or I could start editing a layer, whichever you want to work with.

48:18 Because I started editing at the layer last time, we'll start editing here.

48:23 Could not edit the data in the folder or database you selected.

48:27 So the Zion National Park boundary is in a different location.

48:32 It's just a little warning for you so you know that you're not going to be editing in that layer.

48:39 Let's continue on, and now I have the research area buffer zones.

48:45 OK, so I'm going to go ahead and click this.

48:48 But what I'd like to do is use this instead, and use the Editor Buffer tool to actually create a buffer around that.

48:59 So this would be one way to do it, I could trace around this based on a distance around that feature.

49:09 So I'll pick up the Sketch tool, and I'll click this feature right here.

49:13 And under Editor, I'll select Buffer.

49:16 But I want to tell it which one of the templates, feature templates, I'm going to use to do...use, to create that new buffer.

49:25 So what is research area is it?

49:27 Buffer zones.

49:28 So let's go ahead and click Buffer Zones and click OK, specify a distance of 300 map units.

49:35 In this case it's meters, and we'll click OK.

49:38 So there's my meter...my buffer, but it's hiding on top, right?

49:44 Well what I'd really like to do is to clip out the area, the existing research area, from this buffer.

49:56 We can do that with the selection chip.

49:59 So now if I come over here and click in the center, I now have that selection chip.

50:05 Can everybody see that? It's kind of hard to see there.

50:10 I have a little tool I can use to zoom in on it.

50:12 But if you can see that, I could then click the drop-down and pick which one I want.

50:17 I want to select either the isolated mesa or the buffer zones.

50:22 You see how they're switching back and forth?

50:24 We want to select the isolated mesa and based on that, then Editor, Clip.

50:32 Discard the areas that intersects.

50:35 And now I have removed that area, the buffer that intersected the existing thing.

50:44 So a selection chip can make it a little bit easier to perform the operations.

50:47 You don't have to worry about clicking and making sure that everything's just right.

50:53 All right.

50:55 Something else you might decide to do is possibly take and maybe split a polygon in two based upon existing feature.

51:04 That existing feature may be simple or may be fairly complex.

51:08 Let's set up the scenario here.

51:10 I want to take this research area and split it along Goose Creek.

51:16 So to do this, we use combination of some snapping tools options and also the Cut Polygon task tool which is right up here.

51:29 So under the Snapping toolbar, where can I open up that toolbar again?

51:33 Anybody remember?

51:36 Could do it here in Customize, but where else could I open it up?

51:40 Editor. Editor, yeah, exactly.

51:42 So under Snapping, turn on the Snapping toolbar and I'm going to make sure my point snapping is turned on.

51:48 But I'm going to do intersection snapping for the Cut Polygon tool.

51:56 I'll click Intersect, pick up this Cut Polygon tools, and now I can trace along that, that particular tool...

52:07 ...use the Trace tool and then, whoops, doesn't want to follow it, does it?

52:13 Intersection ought to be doing that, let's try that again.

52:18 You know the best demos always work when you don't want them to.

52:22 This is just an option of showing how you could use the Trace tool to create new features.

52:28 But what did I just create?

52:31 A new stream, right?

52:33 Not really what I wanted to do.

52:40 But let's try something else.

52:42 Let's undo, undo, and go back in and select what I want to split.

52:53 Ahhh, all right.

52:54 So now using snapping and intersection snapping, I can use the Cut Polygon tool and trace along that.

53:05 I keep switching it, don't I?

53:10 I'll just let it follow it and when I get to the end, I left a little bit of a gap there.

53:19 And so it told me it couldn't do it.

53:20 So let's try it one more time.

53:25 And now we got two polygons.

53:27 So basically by first selecting what we want to choose, turning on intersection snapping...

53:33 ...so that I make sure I intersect the existing feature, select the tool I want to use, and then set the tool to trace.

53:41 I could then follow along existing features.

53:44 Any questions about that?

53:46 What we've done so far?

53:50 Well, one more thing.

53:51 Ken, there's one question. Yeah, one question.

53:53 Yes, ma'am.

53:54 It seems like it would be easier to split that polygon based on the river line that already exists without having to trace it then. Is there a way to do that?

54:02 Replace Sketch.

54:03 Replace...

54:04 Replace Sketch would be the way to do it.

54:07 So you could actually select both and then Replace Sketch.

54:13 Is Replace Sketch available out there?

54:18 I forgot where Replace Sketch is.

54:23 There's also the Construct Feature tool on the Advanced Editor toolbar.

54:25 Oh, yeah, there's another one that's based upon feature topology.

54:31 We could take and use it to construct features off the Topology toolbar.

54:37 We could construct polygons based on existing features.

54:41 That would be easier.

54:42 And it requires an ArcView license.

54:46 So using the Polygon toolbar which is just another toolbar, you can then open up that toolbar...

54:56 ...and then pick up and select the features that you would like to construct features from.

55:05 So I'm working with just a regular old topology here.

55:09 And notice I have the construct polygons and that tool is available because I have both the line and the polygon selected.

55:16 So if I step back out of what I have already, I pick this up, select this, and also select my line.

55:25 Should be able to construct and yup, it's got to intersect.

55:28 It's not intersecting.

55:30 Once that intersects, then I can construct a new polygon from it.

55:35 It's already split.

55:37 Yeah. Right now.

55:38 It's already...Yeah, it's still split.

55:40 That's what my problem is here. But then I could use that tool to do the topological split of it.

55:49 OK, we need one more thing.

55:52 Show them how to change segments.

55:53 How we doing on time?

55:54 I think we're, we're doing OK.

55:55 We got about 15 minutes.

55:56 You got a question?

55:57 Did you already create the buffer template before?

56:02 Did I...had I already created the buffer template?

56:05 Did you set that up before?

56:06 I set that up before I started editing simply by right-clicking my layer and Define New Feature Type.

56:16 [Inaudible audience comment.]

56:17 This case we'll do this here by coming over here in Edit Features, Define New Types of Features.

56:24 Here's where I can set it all up.

56:26 Because I've right-clicked the layer, it knows it's going to create that feature type for that particular layer.

56:34 [Inaudible audience comment]

56:38 No, actually I actually used the edit buffer at that point to do it.

56:44 So I selected my...to actually create the buffer itself, I selected the feature that I wanted to buffer and then went to Edit...

56:54 ...Buffer, and there I could pick my buffer zone for the feature type and specify the distance, click OK, and it just creates it for me.

57:06 OK.

57:08 All right, back to editing, and one last thing to do here is to go to a different...whoop...clicking on trails...

57:19 Oh, I'm going to go over here to Edit Features.

57:21 I'm going to switch data frames.

57:23 Now, we do have a trail out here that is kind of problematic.

57:29 It was sketched in, and if we look at the imagery, it doesn't quite match.

57:36 I'm going to pull some pins here, clean things up a little bit, and zoom in.

57:42 So I zoom in on this area right here.

57:45 You can see that they did a kind of rough-in of this feature.

57:49 So we cleaned it up a little bit.

57:51 What do you think?

57:52 Let's see how many operations it takes.

57:54 So you can come up here and I need to start editing on my features.

58:02 Now, notice this.

58:04 I can't start editing, why is that?

58:06 Anybody ever run across that before with multiple data frames?

58:11 Why is that?

58:12 [Audience comment.]

58:13 I'm still editing in my other data frame.

58:17 So that rule still applies.

58:19 So I'll go ahead and stop editing, make sure I'm not editing anymore.

58:24 So now I can come over here to the other data frame and start editing.

58:33 Hmm, interesting, OK.

58:34 So we do have trails and this is something that I'm going to make some modifications to with existing tools.

58:43 So using the Edit tool, I'm going to click on this feature right here and I want to take and work with the sketch properties.

58:53 So I can double-click it to see the sketch that defines the geometry of this.

58:59 And hovering over that first segment...can you kind of see that first dashed segment right in here?

59:08 I'm going to change its feature type.

59:11 So I'm going to change its segment to a circular arc.

59:16 Now bringing my mouse over here, I can make it better fit what it should look like.

59:23 So we got that one taken care of.

59:26 I've got one, two, three vertices that are kind of causing me issues.

59:31 They really don't need to be there.

59:33 So can we mass delete vertices?

59:35 Yeah, pretty easy.

59:37 I drug a box around them with the Edit tool.

59:40 I just...oops...I don't want to hit the Delete tool, do I?

59:43 I don't think that would work very good.

59:46 So let's make our first change again.

59:48 Let's fix this up here.

59:50 Bring it back.

59:52 Can you specify the radius on that?

59:55 I think so.

59:56 Yeah. Hit R on the keyboard.

59:57 Oh, you want to specify the radius?

59:59 Yeah, so...

1:00:00 Can't remember what type of arc.

1:00:02 Let's see, so I could press the R key.

1:00:06 So if I want it to be exactly 125.

1:00:11 Yeah, I could set it.

1:00:13 Yeah, I clicked away from it and it set it.

1:00:14 Did you notice that?

1:00:15 I had to click away from it to make it, to finalize the sketch.

1:00:19 That applied it right there.

1:00:21 Let's try this again.

1:00:22 I'm going to try to delete these three again.

1:00:25 But this time, I'm going to use the right tool.

1:00:29 So the context menus are still available to you just simply by right-clicking.

1:00:34 And I will delete the vertices here.

1:00:37 That takes care of that and let's fit this last one in here.

1:00:41 So I click in this particular segment.

1:00:45 I want to change the segment to once again to a circular arc and drag it over, and to finish sketch, F2.

1:00:57 All right, so there's my new feature.

1:00:59 So using a couple of context menus, we can switch our segment types, make them better fit what they really should [unintelligible]

1:01:07 To delete multiple vertices or to move multiple vertices, just use the Edit tool, drag those vertices of interest...

1:01:15 ...and either use the Context menu to move them relative, delta, or just move them to a new location or delete them.

1:01:24 All right, that finishes things.

1:01:26 All right, I got a couple of quick things I want to share with you and then I'll open the floor up to any questions.

1:01:31 Can you bring the PowerPoint back up?

1:01:32 Sure thing.

1:01:36 OK, there's a couple of other areas where you can find out more about editing.

1:01:42 During the User Conference, one that...another technical workshop that I'd recommend is the What's New in ArcGIS Desktop 10.

1:01:49 Of course, they're not going to just talk about editing.

1:01:51 They'll talk about a lot of what's new.

1:01:54 If you're a parcel editor, I highly recommend looking into the Editing Parcels with ArcGIS tech workshop.

1:02:01 And then also stop by the Geodatabase Management Software Island.

1:02:06 There's folks in there that you can ask to show you a few things...

1:02:09 ...if there's some specific tool or task you're looking to see.

1:02:13 But also they have a demo theater there with various editing presentations...

1:02:17 and other geodatabase presentations happening over the User Conference.

1:02:21 And one that I would recommend looking into is the Best Practices for Editing in ArcMap 10.

1:02:26 Also, if you want to know what other presentations they are showing, go to the online agenda and do a search on editing.

1:02:39 If you don't get the

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