Welcome to the second milestone of your project. Now that you have a plan for what question you want to answer with your project, it's time to start gathering the components that you'll need to complete it. First, it's time to collect and inspect your starting data. This step is important because it tells you the *actual structure of your data* so that you can plan the processing steps that follow. Often, you'll need to do some basic data management - whether selecting records, calculating new fields, merging datasets, or some other function. It will also tell you if a dataset that you think has the information you need actually does - when you look at the data structure and the metadata to make sure that how the data was collected makes it valid for your uses, or that it has the attributes you need for your work, etc.

This process is a form of validation for your project. By obtaining the data and inspecting it, you can determine if your project is truly viable. You may find that the exact analysis you planned to run is impossible because you can't find the necessary data. In some cases, if you have the necessary equipment and the data lends itself to this, you may be able to go and collect the data yourself. In others, you may decide that your question needs revision. This is OK, and you don't need to start over at milestone one. Instead, once you look at the data and determine what portion of your initial question you actually can answer, revise your question or hypothesis and the rest of your Executive Summary to match what you are now investigating. Hopefully your overarching question is still viable even if the specific details you're investigating need adjustment. If you do need a completely new question, however, you should start over at the first milestone, paying additional attention to the available data sources and what they contain.

Developing a model

For this milestone, you will need to complete one of these options:

Option 1: Develop a model that covers at least part of your processing workflow. Aim to include at least 10 tools in your workflow, if possible. The more tools you include, the more you'll be ready for the next milestone where you'll perform your data analysis. The model doesn't need to be fully runnable and tested yet - it's more an outline of your processing workflow and you'll test it and refine it in the next milestone.

Option 2: If creating a model is infeasible for some reason, such as requiring significant user intervention, or imagery classification, then write a summary of your analysis steps as a paragraph - it doesn't need to be much text - just enough to convey that you have a plan for how to process your data.

Regardless of whether you submit a model or a paragraph describing the workflow, you should also write a small paragraph about how this workflow aids in your data processing. Which portion of your analysis does it accomplish? What inputs does it require and what processing occurs afterward, if any? You don't need to be elaborate - keep it under 300 words, and 100 words may be sufficient for many of you. This paragraph is a start on the metadata you will need for your final data product, so if you do include a bit more information, it will aid you later.

What you'll be graded on

You will submit either your actual model as a toolbox or your written paragraph listing your steps, depending which option you do. When reviewing others' models, review how to add a toolbox to ArcToolbox so you can load your peers' models to look at them! You will also submit your paragraph detailing how the processing steps included contribute to your analysis. Finally, you will submit your Executive Summary again. You will be graded in part on how well your submission matches with your project, so the Executive Summary is necessary. You will not be graded on the contents of your Executive Summary though - only how well your workflow and explanation contribute to answering your research question as it's outlined in the Executive Summary.

Expect this milestone to take about a week of time, given the same investment of time as the prior courses required. Some of you will need less time and others will need more depending on how hard it is for you to find your data and how much of your workflow you include in your model.