

PART 2 – WEAVING THE PIECES

Data Gap Analysis

Your community data needs to bring value to the community and allow you to meet its desired level of service. Data is a valuable resource that you can use to monitor the state of your assets, the level of service the assets are providing, and how well the assets are meeting your community's needs. Gathering data can be a time consuming and expensive process, and therefore understanding what data exists and what data is needed is a critical step for communities.

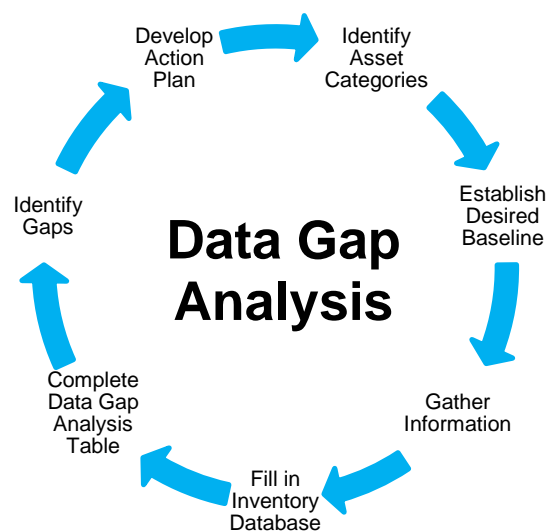
A data gap analysis is a tool that can help your community identify its current and desired data quality level. Going through this process, you should be able to identify where you are today, and where you would like to get to, with regards to data quality. Does your community have enough information right now to make good decisions about its infrastructure to support the services it provides to the community members? If not, you can use this assessment to make a plan for how to get that data.

There are many different types of data that your community manages; however, the following data forms are commonly managed by communities and should be the focus of the data gap analysis:

- Spatial – describes the physical extents or provides a spatial representation of an asset;
- Attribute – provides a description of one aspect of an asset. For asset management, financial, condition, physical and performance attributes are most important;
- Temporal – provides information about changes to an asset or operation of an asset over time;
- Correspondence – emails, letters and other written communication relating to management of utility assets;
- Reports – technical reports prepared by staff and consultants that document analysis and recommendations for utility assets; and
- Metadata – data about data, i.e., when/where/who/how/purpose/methods/limitations on use, etc.

It is important to have data structures that can handle all of the above data types in a consistent fashion across your community. Even if the above information is stored in different locations, an internal indexing system creates a link between this information and allows it to be identified and used to the benefit of your community. This system is reviewed as part of the data management analysis.

The following cyclical process is used to complete a data gap analysis:



Answering the following questions can guide a community through the data gap analysis process:

What is the focus of the analysis? Based on the quantity and complexity of the community's information systems, the analysis can focus on systems such as water system, sanitary sewer, storm drainage, roads, buildings, facilities, housing, recreation, solid waste, cultural, equipment and vehicles.

What level of detail does your community require? Understanding the desired service level, a community wishes to deliver with the data, a preferred level of detail should be established. This could be outlined in official community documents or based off a standard such as ISO 55001.

What information does your community currently have? To answer this question a community will need to identify and gather documents that contain service details. This will be a comprehensive list of any document that provides information on services the community offers. Documents will include the current inventory list, reports, documents, studies, drawings, GIS databases

Where is the information located? Using the template provided, or the community's own inventory system, consolidate all the critical information from the documents identified into a central system.

What is the difference between the current state and the desired state? Using the 5-point scale provided in the template, rate each of the service categories based on the established baseline. Fill in the Data Gap Analysis table with the desired rating for each asset category and trait.

The Data Content tab will evaluate the quality of data that is available. Determine if the needed information is available and accurate.

The Data Management tab will evaluate how the information is stored. This will consider where the data is stored and the ease of gathering the information. This is an evaluation of the Data Management System.

What gaps exist within your community's data? Using the results of the Data Gap Analysis, identify areas where the actual data did not match the baseline. Determine if this data is critical to providing service to the community and if it is, when is it needed?

How will your community address these gaps? Based on the gaps that require action, make a plan to fill these gaps. This can involve an immediate dedicated assessment of the information gap, or it can be a plan to gather the information during routine operations and maintenance activities.

What processes are in place manage the data gap? The Data Gap Analysis is a living document. As new information is collected, it should be updated to keep an up-to-date record of where there are data gaps and what actions are required. The community should establish best practices to ensure that data is properly managed and can be used to offer the desired level of service.