**System Wide Trail Assessment: A Spatial Data Driven Approach**

**Learning Objectives:**

* Participants will leave knowing how to create and plan their own system wide trail assessment using modern technology.
* Participants will gain the ability to analyze collected trail assessment data so that it best benefits their system
* Participants will discuss different difficulties that their unique trail system has in assessment and maintenance.

**So What is Our Problem?**

Trails need to be assessed for various reasons: Evaluating maintenance needs, checking for safety concerns, monitoring travel patterns, controlling improper use, etc. Unfortunately many of our trail systems are quite large and complex. Because of this we can often encounter many problems when trying to effectively assess our trails. Problems such as:

* Limited workforce
* Large geographic distances
* Effective transfer of recorded information
* Lack of data quality

With these problems in mind we can move forward in developing a system to fit the needs at hand while avoiding these common issues.

**Crafting the Assessment Methodology**

There are a variety of ways to collect trail data, the eldest of all being handwritten information on paper sheets. But as we all know those come with many issues of their own. **What are some of these issues?** There are also problems with assessments on the other end of the timeline such as the UTAP and HETAP. For our purposes these more intensive assessments would have been expensive and overly time consuming. In our searching and research, 3 mobile apps were discovered that would allow us to assess trails without using a pen and paper but were not overly intensive for our purposes. **Which do you need?**

  

 Survey 123 – (ESRI License) Collector – (ESRI License) Avenza

 Great for taking points Great for taking lines and points Great for taking lines and points

 Can create fillable survey forms Can create fillable forms from GDB. Does not support fillable forms

 Add photos to data point Add photos to data point Add photos to data point

 Very user friendly to end users Can be user friendly with experience Can be user friendly with experience

Automatic Upload to database Automatic upload to database Must be manually entered to database

  **WINNER**

**So what data are we collecting?**

 For our Assessment we collected 4 types of trail data points:

* Trail Heads
* Trail Bridges
* Trail Signs
* Trail Problems

The first three types of data points are very straight forward as they are easily identifiable and each type of measurement has a pretty set type of data that needs to be collected. The “Trail Problems” category is the most subjective and requires the most flexibility. This final category, in our assessment, was also the most important as we knew that we had many trail maintenance issues that needed to be recorded and addressed. **What types of information are you trying to collect with your assessment?**

**How did the data get collected?**

After choosing Survey 123 from ESRI, we went down the rabbit hole of creating our own survey to suit our needs. This is done by using XLS language in their premade Excel spreadsheet. At first this can be very tedious, but you quickly get the hang of it and there are plenty of resources on the web to make it easier. During this phase you get to choose everything that your survey asks, how it asks, what geospatial data it collects, picture collection, etc. When survey is created, it can be published and sent to anyone with a smartphone and the Survey 123 app.

Once the final survey is ready and has been tested it can be pushed out to field staff. Keep in mind that field staff will need to be trained on how to use the app and how to measure problems. Your assessment is only as good as the data that is collected. You want consistent objective data to be collected so that it can all be analyzed in the end.

**So now we have the data, what do we do with it?**