1.1.2 Case Study Using Smart Phones, Volunteers and Web-Based GIS

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In the current economic climate nearly every municipality is faced with challenging budgetary decisions, as available resources struggle to keep pace with necessary delivery of services to the community. Governments at all levels need to identify creative ways to get the most out of every dollar. This session will present a case study that used smart phones, volunteers and a web-based GIS system to collect and manage assets on a very limited budget. In this example, a city desired to place notices on storm drain inlets that warned citizens that any material dumped in the inlet would outlet into area creeks, and could potentially contaminate drinking water resources. Initially, a small pilot project was performed by volunteers using paper maps and hand written notes. The pilot uncovered that the city's mapping did not include all inlet locations, and that volunteers did not consistently identify the correct location of the missing inlets on the maps.

The project managers sought a more efficient and accurate process than was used in the pilot. First, they identified an ESRI app for smart phones that was appropriate for field data collection, minimizing the cost to the city for GPS data collection hardware, since the volunteers in general carried their own smart phones. The smart phone app allowed the volunteer to collect points (inlet locations) by GPS location or manually on an aerial photograph. Additionally, custom data fields could be added to record inlet characteristics (i.e. drain number, shape, condition) and photographs taken with the smart phone. The final component required the ability to publish the project mapping in a manner that would allow volunteers to edit the data in the field without requiring ESRI ArcGIS Server. The answer - ArcGIS Online.

ArcGIS Online, a free online app for smart phones, allowed the publication of maps to the web that could be accessed in the field. This feature also provided the opportunity for project managers to review the progress of the volunteers with both an online app and with a desktop version of ArcMap. Results: the city was able to direct the inlet notice project and collect inlet location and condition data without purchasing expensive software or data collection hardware. The app for the smart phones and ArcGIS Online are both free. The majority of management time was at the front end of the project to publish the initial maps. Tracking project status overall management was then made highly efficient using these innovative and inexpensive tools. This approach identified efficient data collection and management tools that freed the project team to perform the required tasks within the project budget.