Virginia Association of Counties

ACHIEVEMENT AWARDS

APPLICATION FORM

All applications must include the following information. Separate applications must be submitted for each eligible program. **Deadline: June 1, 2016.** Please include this application form with electronic entry.

PROGRAM INFORMATION

County: Albemarle County

Program Title: Using ArcGIS Collector to Collect Data for Fire Rescue Preplan Information

Program Category: Information Technology

CONTACT INFORMATION

Name: Damon Pettitt

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SIGNATURE OF COUNTY ADMINISTRATOR OR CHIEF ADMINISTRATIVE OFFICER

Name: Thomas C. Foley

Title: County Executive

Signature: Thomas C. Foley

FULL PROGRAM REVIEW

State the problem, challenge or situation faced by the locality and how the program fulfilled the awards criteria (innovation, partnering or collaboration and a model for other localities). Tell how the program was carried out, including financing and staffing, and the program's results.

Using ArcGIS Collector to Collect Data for Fire Rescue Preplan Information

Challenge Facing Albemarle County – Needed Mobile Data Collection for Fire Rescue

In recent years, various Albemarle County staff have needed mobile technology solutions for in-the-field data capture. To meet this need, a couple of departments acquired expensive, submeter handheld GPS units, but the cost of the units, complexity of their use, and the limited ability to integrate with other business systems restricted their use to only a few individuals and workflows.

Other staff turned to various apps on their mobile phones and while these solutions were usually free, they too generally did not integrate with existing County business systems, nor were they readily supported by County IT if a problem with the app arose.

The County needed something that:

- Would be easy to use
- Could work on any device
- Would be able to function in an "offline" mode due to a large County with pockets of no network availability
- Could be supported
- Could integrate with other County systems
- Would be low cost

Figure 1 - Fire Rescue needed to capture various data layers associated with their preplans. Knox Boxes (actual device and mapping symbol shown here) were just one of several layers needing to be collected.

Why did we go with ArcGIS Collector?

For many years, the County has used ESRI's ArcGIS suite of products, but never took advantage of some of the mobile utilities (e.g. ArcPad) because of cost and applicability. Recently though, ESRI introduced an app-based, mobile data collection utility called ArcGIS Collector. Collector is free to download to your iOS/Android phone and interfaces with ESRI's cloud-based ArcGIS Online system. Through software maintenance with ESRI, the County had an account in ArcGIS Online, so was able to pilot the use of this platform in a Fire Rescue smoke detector census program. The pilot and eventual production was completed at no cost to the County as it required no assistance from ESRI or a consultant and it did not require additional licensing.

The pilot showed that this platform had real value in its ability to work on any device, organize the information into a centrally located repository, and be available in an offline environment if necessary. Also, it was discovered that using additional, existing tools in ESRI's suite of products, we could tie the data gathering directly into our production GIS, making the field collected data instantly available for other GIS uses as well as other value-added utilities like SQL Server Reporting Services to run reports on the data attributes that are being collected (e.g. show on a map all Fire Knox Boxes that were installed before a certain date).

Furthermore, staff can use internet browsers on traditional computers to maintain the data layers, so the data is directly updatable by office staff as well without the use of costly licenses of GIS Desktop software. And since Collector is provided by the County's existing GIS vendor, the entire platform is supported by ESRI Technical Support.

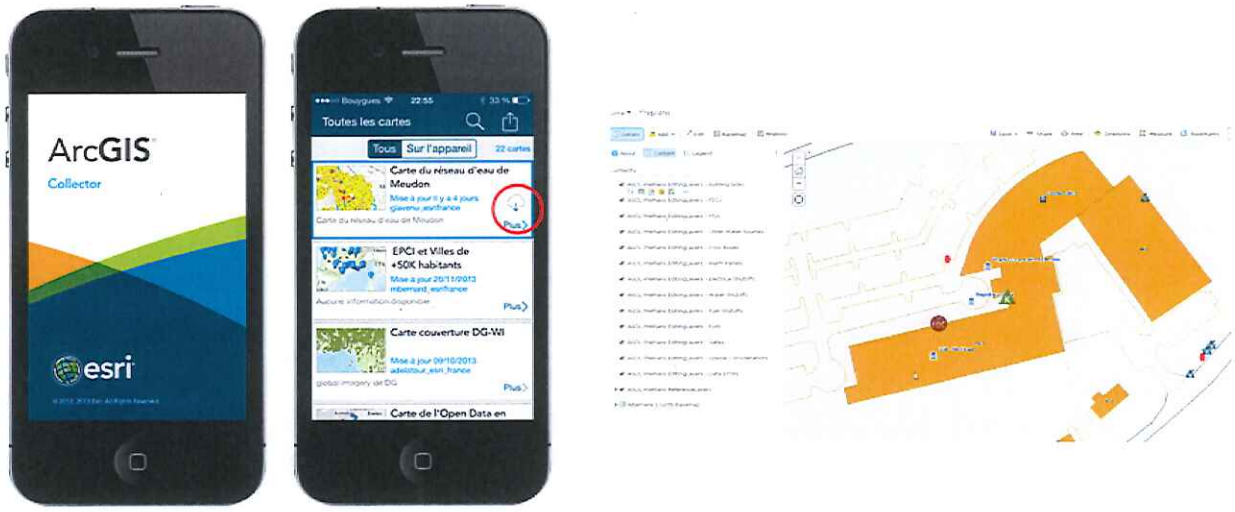

Figure 2 – On the left side, an example of what the Collector App looks like on a phone. On the right, an example showing the interface you can use to update the data from a desktop machine in the office.

How does ArcGIS Collector work in production?

For production, it was decided that Fire Rescue's preplan data collection would be a good candidate for this new system. Albemarle County has several fire response districts, and within each district there is responsibility for maintaining fire preplan information (e.g. where are fire department connections, knox boxes, gas shutoffs, etc.). Presently, each district collects this information differently, often in hard copy format, and sometimes not at all.

Collector, with its simple interface, can now be used by any fire personnel, volunteer or career, to update this information, even while on calls, so not just during annual inspections. The program is able to replace other pre-plan products and since the interface is accessible from mobile devices, and intuitive, it takes little to no training time for the program to be widely adopted.

The same data available to the mobile users is available through a web interface for office users.

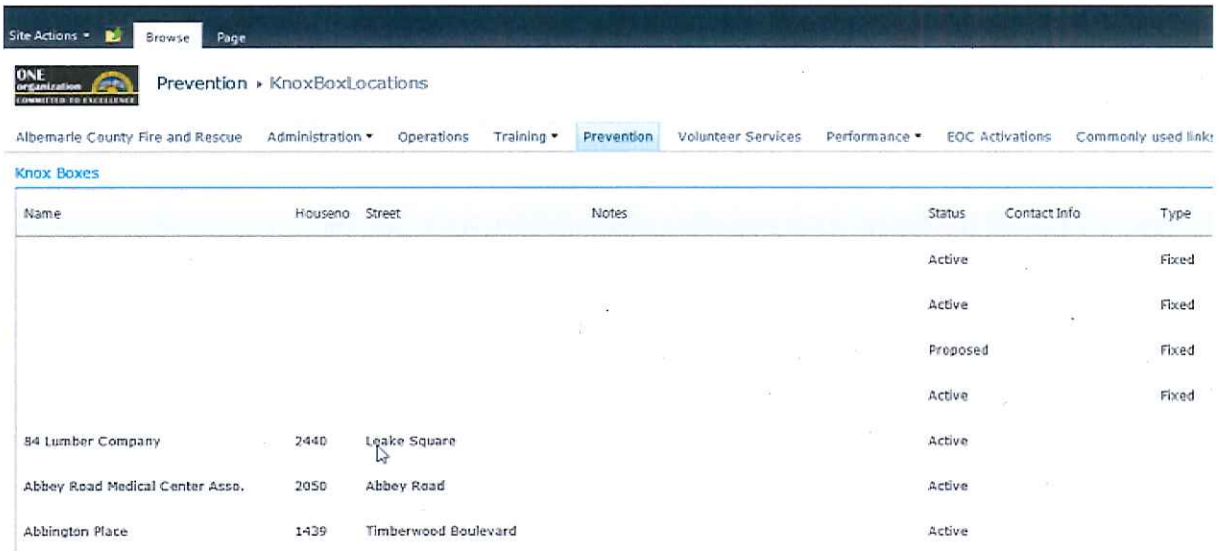

Figure 3 - Information gathered from ArcGIS Collector is stored in SQL Server and can be accessed in various programs, e.g. SharePoint as shown here.

What was the Return on Investment?

Before Collector, much of this preplan information was not shared between fire districts easily, was not updated/maintained readily, or was simply not being captured.

The Collector data collection piece will be part of a larger effort to automate the creation of a digital preplan book that can be available to every fire apparatus in the County. And Collector's ability to serve as the key consolidator of this information is making this possible.

It's important to note that no new funding was necessary for this program, nor was outside consultant assistance necessary. Approximately 80 hours of staff time were used to develop this program.

SHORT OVERVIEW OF PROGRAM

In 2015 Albemarle County funded a dedicated Senior Systems Analyst for Fire Rescue. The person hired brought along broad experience using ESRI ArcGIS. Through collaborative meetings with Fire Rescue staff; a design to allow for mobile data collection was defined.

Since the County already owned ESRI ArcGIS, it was determined that a module of the system could be employed to complete the mobile data collection design. The first step in using ArcGIS Collector with mobile data collection was for mobile data collection of smoke detector data. This showed the promise of the system.

Next, ArcGIS Collector was configured to capture preplan information in a consistent format across all fire districts. Collector, with its simple interface, can now be used by any fire personnel, volunteer or career, to update this information, even while on calls, so not just during annual inspections. The program is able to replace other pre-plan products and since the interface is accessible from mobile devices, and intuitive, it takes little to no training time for the program to be widely adopted.

This is a low cost mobile data collection solution, and the techniques used can be shared with any locality currently using ArcGIS.

BRIEF SUMMARY OF PROGRAM

Using ESRI's mobile data collection app known as ArcGIS Collector, Albemarle County is able to consolidate the disparate collection of fire preplan information into a consolidated, standardized program that empowers both professional and volunteer staff to gather and maintain data without the need for new funding or staff. The delivery of this tool to fire rescue was innovative and a model for other communities; especially for those which already use ESRI ArcGIS.