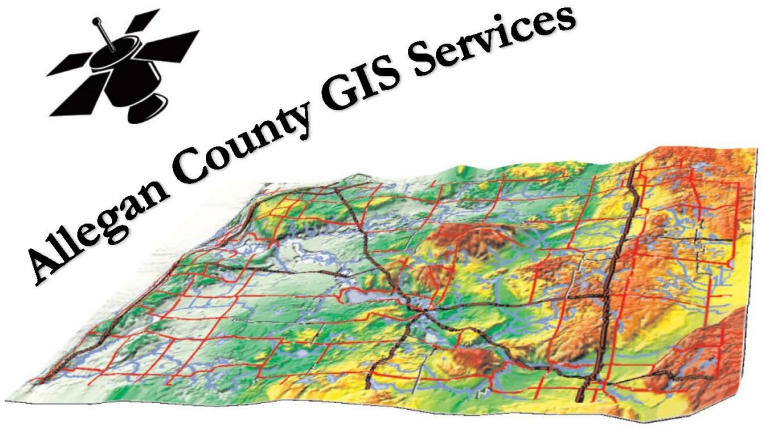


Forfeiture Data Collection

Mobile App with Collector for ArcGIS

Allegan County GIS
www.allegancounty.org/gis

August 14, 2018

Contents

0.1 Forfeiture Data Collection

0.1.1 Problem and Analysis

Background Treasurer department has an annual responsibility to properly document the tax forfeiture process. The LIS Department built an application in MS Access and MapInfo that consumed a daily export from BSA and was deployed to the field on a laptop. A digital camera was used for site photos and later imported into the laptop.

Statement of Problem Current Tax Forfeiture workflow is built on MapInfo software which has been replaced by ESRI software. The Forfeiture data collection application must be recreated in the ESRI framework.

Analysis Tax Forfeiture Application will facilitate:

- Mobile data collection on handheld device via Collector for ArcGIS configured with Allegan County GIS Portal (**device app**)
  - Device app will:
    - Synchronize with data in the office (online)
    - Navigate to forfeiture sites (offline)
    - Collect data and photos of forfeiture sites (offline)
    - Synchronize the collected data with data in the office (online)
- Daily form production and printing for each site visited with required data and images.

0.1.2 Design

Overview The Forfeiture Data Collection Application uses BSA, ArcGIS Desktop, ArcGIS Collector for Android, and ArcGIS Portal web maps and apps to enable forfeiture data collection. A daily routine is supported that maintains forfeiture parcel data through the notification period.

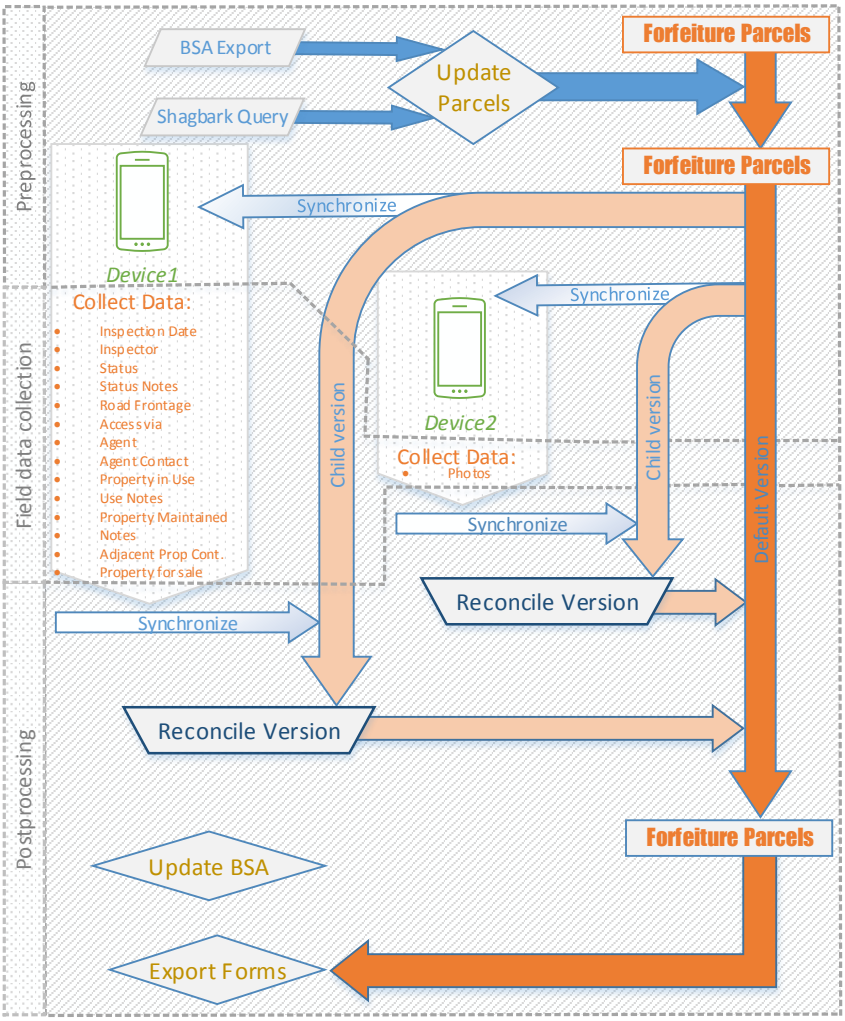


Figure 1: Project Design

The workflow is designed in three stages: Preprocessing, Field Collection, and Postprocessing. The key dataset, Forfeiture Parcels, is a map feature class that is exposed through the internal network or externally via an internet map

service. In preprocessing, the data is updated to match the Treasures data in BSAforfeiture.net and synchronized to two android mobile devices. In field data collection, the two mobile devices are used to collect info required, one for all the attributes, the other for photos. In postprocessing, the mobile devices are syncronized back to the network data and a form is exported for each site visited that day.

BSA data export Details of parcels in the forfeiture process are managed in BSA Delinquent Tax.net. The Treasurer office does a BSA export of the parcels in need of a site visit in the preprocessing.

ArcGIS Desktop tasks Tools are designed to preprocess and postprocess forfeiture parcel data for fieldwork. The user will execute a preprocess script tool that prepares the data for field deployment. After fieldwork, a post process script tool syncronizes data from the fieldwork with the live data on the Allegan County network.

ArcGIS Collector A free mobile application developed and tested on Android is deployed to the field for data collection. The application is configured to work offline(without an internet or cellular connection) by syncronizing before and after fieldwork.

ArcGIS Portal Webmaps and Apps Live data from a publishing enterprise geodatabase(ACPub), running on SQL Server database server (acintsql01) is provided through a feature service (REST service) named TaxReversionParcels. A webmap called the Forfeiture Field Map consumes the TaxReversionParcels feature service, exposing the data to editing. The Forfeiture Field Map is configured to work in the ArcGIS Collector App. The app downloads the webmap, allowing the user to collect the necessary information on each forfeiture parcel in the field disconnected and uploads the changes when reconnected.

Forfeiture Data Collection Three parts of the daily routine:

1. Pre-processing (in the office):
    - Export current forfeiture list from BSA
    - Update webmap layers with results from BSA export
    - Synchronize from webmap layers to field collection devices **(device app)**
2. Field data collection with device app:
    - Navigation to forfeiture sites is aided by users location shown in map
    - A Checklist of data points about the site
    - Attach photos to the site

- Save results for synchronization in post-processing

3. Post-processing (in the office)
    - Synchronize data and images collected in device app to webmap layers

Backend data details

Location of production data

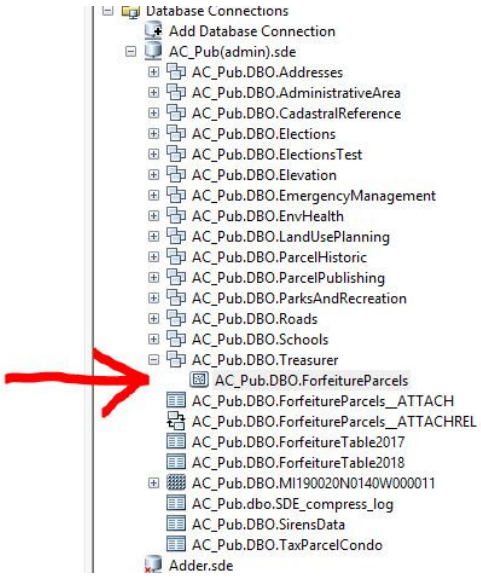


Figure 2: live data

ForfeitureParcels feature class

Collector for ArcGIS

Webmap details

0.1.3 Hard Copy Record

0.1.4 User Manual

Admin Tasks

Setup Users in ArcGIS Users that will run Pre and Post processing scripts must be created and given priviliges on ACPub Treasurer Feature Data Set.

Setup users in Portal for ArcGIS Users that will use the Collector for ArcGIS must have profiles added to and managed in the Allegan County GIS Portal site.

Collector Setup Details

Install Collector for ArcGIS

- Available from the Google Play Store

Configure Collector

- Connect to Allegan County GIS
  - Choose or add the connection:

    `https://gis.allegancounty.org/portal_webadaptor`

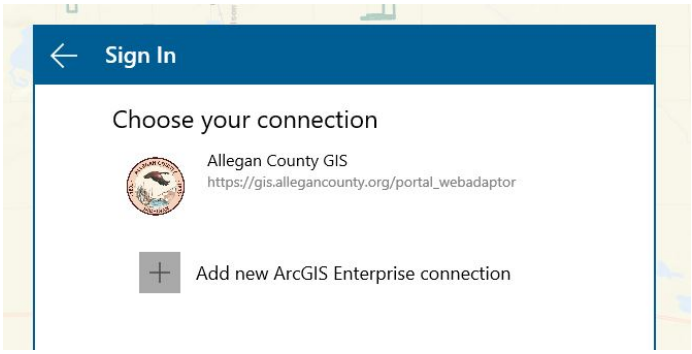


Figure 3: Collector Connection

  - Username is JMorris or CAndress
  - Password: (enter password)
- Find the map Forfeiture Field Map under Treasury Services
- Download the field map
- Select area needed and detail needed and download the webmap

Daily Preprocessing Routine

Execute Preprocessing Script A tool in ArcGIS that:

- Exports current forfeiture list from BSA
- Updates webmap layers with results from BSA export

Synchronize Webmap In Collector for ArcGIS, push the sync button on the Forfeiture Field Map

Forfeiture Data Collection

Navigation Either device can be used to search for parcels and navigate to them.

Data details

Attributes are of four collection types; prefilled, autofill, dropdown or textbox. In the Forfeiture Field Map, for each site visited, select the desired parcel, push the edit button and collect attributes. The boxes are autofill, select from dropdown or typed.

Attribute List		
Field Name	Entry Type	Note
Property Number	Prefilled	NA
Inspection Date	Autofill or Dropdown	NA
Inspector	Dropdown	NA
Class	Prefilled	NA
Acres	Prefilled	NA
Address	Prefilled	NA
Status	Dropdown	NA
Status Notes	Open entry	254 Char limit
Road Frontage	Dropdown	Yes or No
Access via	Open entry	30 Char Limit
Agent	Open entry	30 Char Limit
Agent Contact	Open entry	30 Char Limit
Property in use	Dropdown	Yes or
Use Notes	Open entry	254 Char limit
Property Maintained	Dropdown	Yes or No
Notes	Dropdown	254 Char limit
Prop Contam	Dropdown	Yes or No
Notes	Open entry	254 Char limit
Adj Prop Contam	Dropdown	NA
Notes	Open entry	254 Char limit
Property for sale	Dropdown	Yes or No
Posted	Prefilled	in Pre and Postproc
InList	Prefilled	in Preproc
PostedInList	Prefilled	in Preproc
Print Today	Dropdown	Yes or No

Device 1 Field Operation In the Forfeiture Field Map, for each site visited, select the desired parcel, push the edit button and then edit attributes.

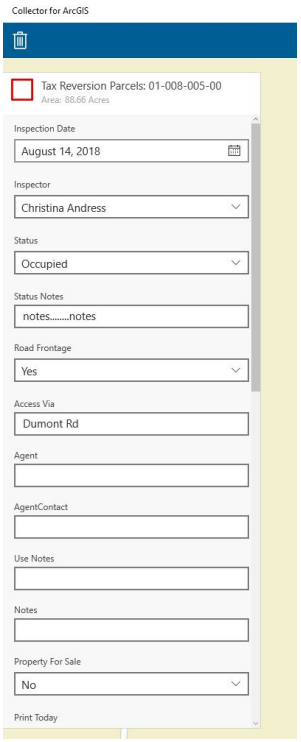
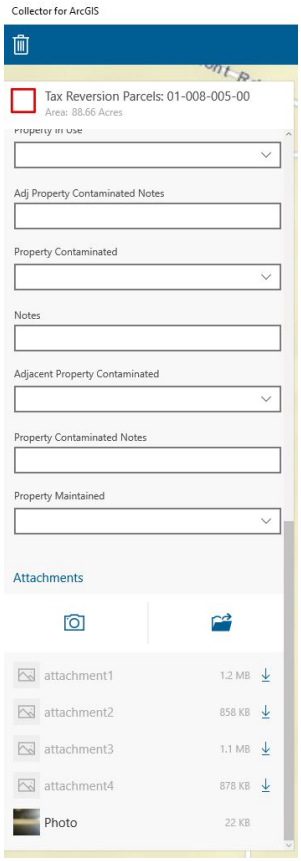


Figure 4: device 1 data entry

The figure to the left shows the data collection interface. Device one will be used to add data to all of the boxes. Touch the boxes to enter text or select a dropdown.

Device 2 Field Operation In the Forfeiture Field Map, for each site visited, select the desired parcel, push the edit button and then the add attachment button. Select photo, and take a photo.



The figure to the left shows the data collection interface. Device two will be used to add photos to a parcel.

Figure 5: device 1 data entry

Daily Postprocessing Routine Back at the office

Sync Edits Lorem ipsum dolor sit amet, consectetuer adipiscing elit. Etiam lobortis facilisis sem. Nullam nec mi et neque pharetra sollicitudin. Praesent imperdiet mi nec ante. Donec ullamcorper, felis non sodales commodo, lectus velit ultrices augue, a dignissim nibh lectus placerat pede. Vivamus nunc nunc, molestie ut, ultricies vel, semper in, velit. Ut porttitor. Praesent in sapien. Lorem ipsum dolor sit amet, consectetuer adipiscing elit. Duis fringilla tristique neque. Sed interdum libero ut metus. Pellentesque placerat. Nam rutrum augue a leo. Morbi sed elit sit amet ante lobortis sollicitudin. Praesent blandit blandit mauris. Praesent lectus tellus, aliquet aliquam, luctus a, egestas a, turpis. Mauris lacinia lorem sit amet ipsum. Nunc quis urna dictum turpis accumsan semper.

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0.1.5 Software

ESRI Licensed Products

ArcDesktop

Enterprise ArcGIS Deployment

Collector for ArcGIS Developed and tested on Android(7.0)