

Bucknell University

Bucknell Digital Commons

Coal Region Field Station Student Projects

Coal Region Field Station

Spring 5-2017

Inventorying Blighted Properties in Mount Carmel, PA: Presenting ArcCollector, An Online Spatial Management System

Danielle Baer

Samuel Mackie

Maureen Maclean

Greg Miller

Follow this and additional works at: <https://digitalcommons.bucknell.edu/coal-region-student>

Inventorying Blighted Properties in Mount Carmel, PA

Presenting:

ArcCollector: An Online Spatial Management System



Photo courtesy of Sarah Desantis and Newsitem Staff, 2017

To: The Borough of Mount Carmel, PA
From: Danielle Baer, Samuel Mackie, Maureen Maclean, and Greg Miller

Presented on Wednesday, May 3, 2017

I. Introduction:

Dear Mount Carmel Borough Officials,

First and foremost, we thank you very much for the opportunity to work with your borough officials this semester, and in turn, we are quite enthusiastic about presenting to you our deliverable. We anticipate that you will not only be able to fluidly grasp the functionality of this product, but that you will also be eager to directly apply it within your community. We hope to be as transparent and available to you as possible, and if you have questions regarding the tool we are presenting to you today, please do not hesitate to contact us at:

Professor Vanessa Massaro (v.a.massaro@bucknell.edu)

Maureen Maclean (mdm033@bucknell.edu)

Greg Miller (glrm001@bucknell.edu)

Danielle Baer (dabo54@bucknell.edu)

Sam Mackie (ssm017@bucknell.edu)

II. Motivation

The Borough of Mount Carmel, PA currently suffers from an increasingly inflammatory blighted housing problem. As highlighted by Sarah Desantis in her recent New Item article from April 17th, 2017, twenty six properties are noted as condemned, collapsing, or burned out. The dilapidated state of these homes have a laundry list of social and economic implications for the borough of Mount Carmel including but not limited to: plummeting property values, the cultivation of an illegal drug culture, crime, and a loss of a rich legacy associated with a once thriving coal town. To fight blight, one must recognize it as a dynamic issue, in that the status of a blighted home is constantly in flux based on a wide array of factors including but not limited to: property ownership, severity of blight, rental status, etc. In addition to an abundance of factual information, the borough also manages a large body of various documentation on these homes. Currently however, there is no system or framework in place for maintaining all of the aforementioned information and data. The goal of our team was to fill this demand with online entry system, eventually identified as ArcCollector, which is a spatial management program that has specifically been tailored to the discussed needs of the borough of Mount Carmel.







III. Why ArcCollector?

- **Among the best current practices for spatial inventory:** ArcCollector has recently been used for a wide variety of applications, by local governments, planning agencies, and community organizations alike around the world. From documenting snow conditions during blizzards in Maryland, to tracking agricultural crop success in southeast Africa, to mapping sewage pipelines in Georgia, ArcCollector at its core, is a platform for collecting and organizing data with with a spatial component (i.e housing).
- **Information Storage Capability:** ArcCollector not only has the ability to store lots of information, but it also can store a wide variety of information. The fields that are established as relevant by the party collecting data can always be customized as drop down menus, free response input, or even photos and documents.
- **Operates flexibly everywhere you go:** ArcCollector can be modified at any time or location using a computer, or on the go with a smartphone or iPad/tablet. Additionally, ArcCollector provides easy-to-use, map driven forms that prompt the user to fill out the pre-determined characterizations of the property. Given the rapid pace at which conversational local information is exchanged regarding blighted housing, this system naturally acts as a way to be constantly collecting/updating information on properties.
- **User Friendly:** ArcCollector is designed to be intuitively simple to operate regardless of a user's past experience with technology. While we will provide a full tutorial in the pages to come, the program functions smoothly and similarly to a platform such as Google Maps.

How It's Used

From damage reports and service requests to inventory and inspection of asset data, create and edit accurate data in the field.

-  Collect and update information in the field and log your current location.
-  Use Collector for ArcGIS online or offline – regardless of your network availability.
-  Works on iOS, Android, and Windows.
-  Supports external receivers for improved spatial accuracy.

IV. Abridged Methodology

Step 1: Field Identification

Our team had several conversations with Borough Manager Sam Schiccatano in the presence of additional borough officials and contractors. During these discussions, we sought to brainstorm the different types of data that could be collected regarding a blighted property. The following table summarizes the results of our dialogue, as well as the format in which these information are displayed in ArcCollector. All of these decisions can of course be changed and edited in the future.

Table 1: ArcCollector Fields

Fields	Description	Type of Response
Address	Address of the building	Free Response
Parcel Location	Address of building parcel	Free Response
Zoning Code	Zoning code	Drop down: <ul style="list-style-type: none"> • R1 (Residential 6000sq. ft) • R2 (Residential 2500sq. ft) • M1 (Manufacturing) • S1 (Special Use) • C1 (Local Business) • C2 (Central Business District)
Owner Contact	Owner first and last name	Free Response
Owner Phone Number	Owner phone number	Free Response
Owner Address	Owner address, 1st line	Free Response
Owner Address 1	Owner address, 2nd line	Free Response
Owner Address 2	Owner address, 3rd line	Free Response
Previous Owner Contact	Previous owner first and last name	Free Response
Previous Owner Phone Number	Previous owner phone number	Free Response
Previous Owner Address	Previous owner address, 1st line	Free Response
Previous Owner Address 1	Previous owner address, 2nd line	Free Response
Previous Owner Address 2	Previous owner address, 3rd line	Free Response
Property Manager Contact	Property manager first and last name	Free Response
Renter Contact	Renter first and last name	Free Response
Past Issues/Violations	Issues and/or code violations	Free Response

Date of Condemnation	Date of condemnation	Choose date from calendar
Blight Level	Severity of property blight	Drop down: <ol style="list-style-type: none"> 1. Danger to other properties, Eminent danger of collapse; danger to other properties 2. Properties with code violations; structural inefficiencies 3. Abandoned, worn down
Post-Blight Use	Condition of a building post-Blight	Drop down <ul style="list-style-type: none"> • Vacant (Building is gone) • Refurbished (Building was fixed/ renovated) • Structure (Structure/ remnants of building visible)
Blight/Problems Notes	Notes regarding problems relating to blight	Free Response
Notes	Notes about the structure or anything else that doesn't fit in a category	Free Response
Last Editor	Name of editor	Free response
Last Update	Date of last update	Choose date from calendar
Attachments	Photos and documents relating to the property	Photos and documents

Step 2: Map Configuration

After considering the list of information necessary to assess blight, we then proceeded to construct a map that would allow for a meaningful way to visualize and store all the above information. In attempt to keep the platform as simple as possible, we added just two layers to the map within ArcCollector:

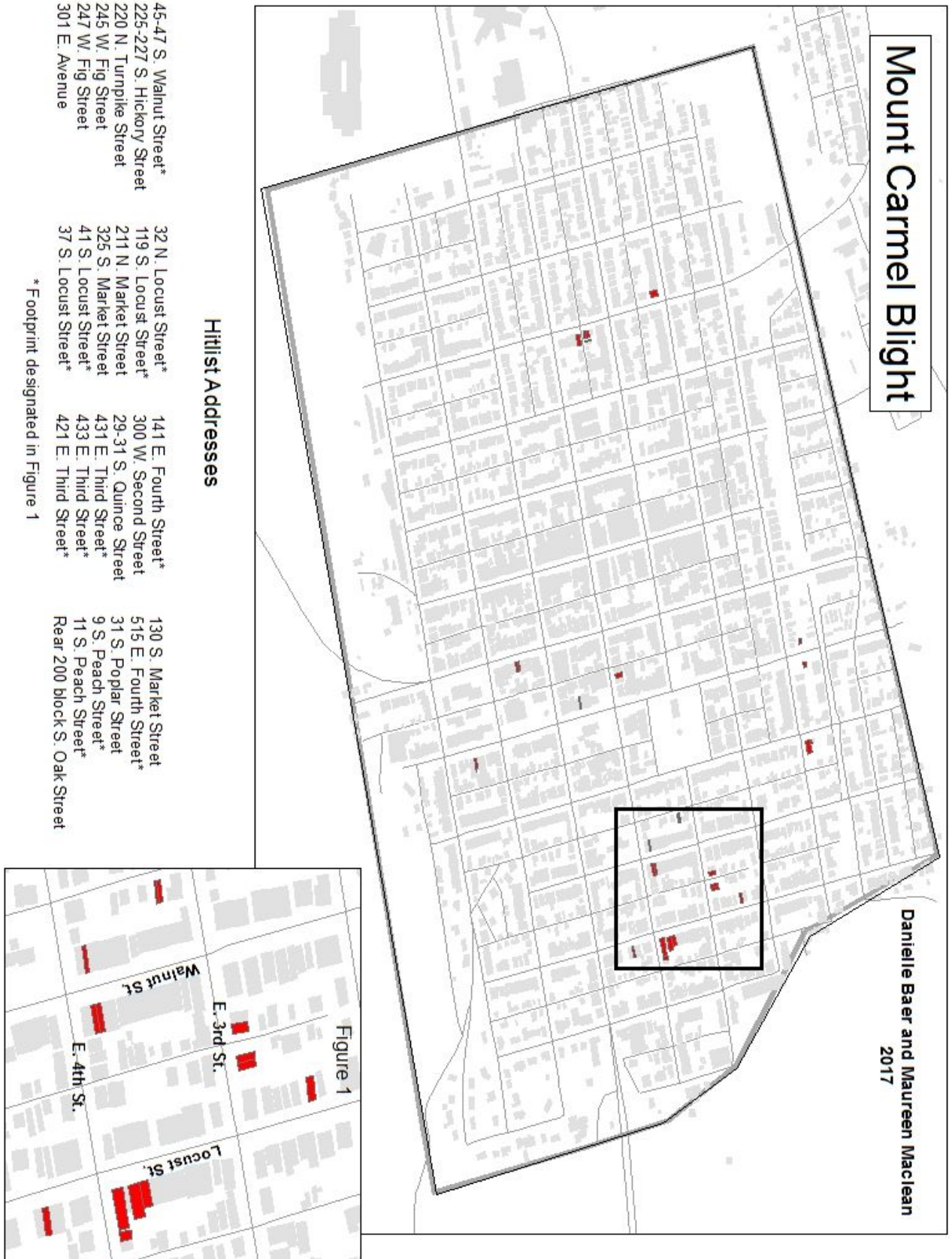
- 1) Mount Carmel Borough property footprints (from Northumberland County GIS)
- 2) An established basemap containing street names and address labels

It should be noted that all of the above information outlined in Table 1 for a given property can be accessed in the map by selecting an individual building footprint.

Step 3: Data Collection

Finally, once a list of relevant fields is identified, one can begin to fill out the information. The Borough of Mount Carmel provided us with a list of twenty six blighted properties, which can be visualized below in Figure 1. In addition to the property address, the owner address, and blight problem descriptions are filled into the system to provide an example of how the system can be filled.

Figure 1: "Hit list" of Blighted Properties in Mount Carmel, PA



V. Selected Demonstration: Online and Mobile Platforms

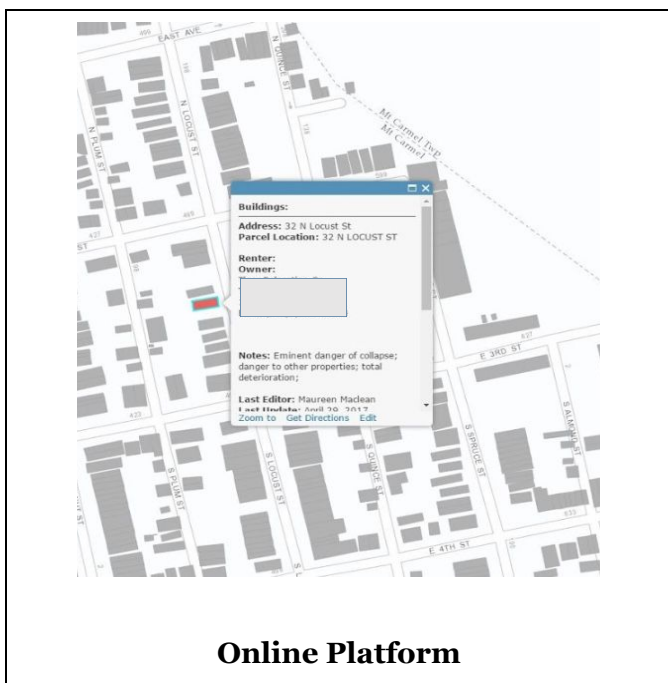
For a full in depth explanation regarding the functionality of ArcCollector please see:

<http://arcg.is/2oWDoBK>

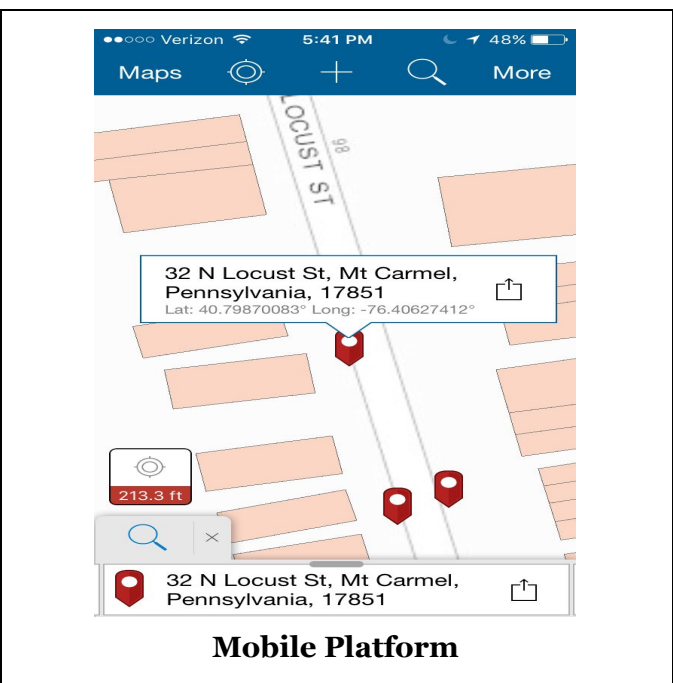
- 1.) **Overview:** Upon opening ArcCollector (either online or on your mobile device), this is the first view of the map you will see. To focus on certain areas or properties within Mt. Carmel, you are able to zoom in as you wish.



- 2.) **Selecting a Property:** To view information about a property, simply zoom in and click/touch on your desktop/mobile device the property that you are interested in. Doing so will open up a pop up containing an overview of information regarding the property.

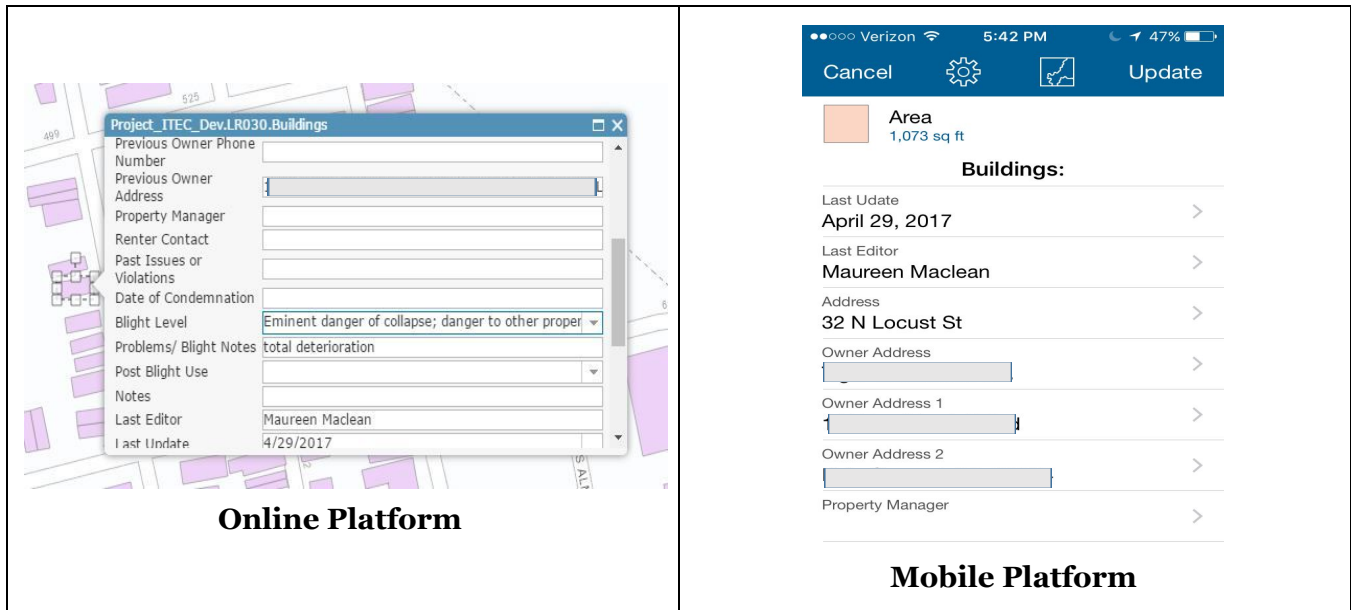


Online Platform



Mobile Platform

- 3.) **Entering property information:** Once a building is selected, to enter information, select the field in which you are interested in filling out, via drop down menu or free response.



VI. Implementation

Everything you have seen today is readily available to use, and is designed to serve the borough as an internal organizational tool. At the moment, what we currently have set up and presented today is a private version of ArcCollector set up under a Bucknell account. In order to allow the borough to make changes to the system, we must either publicize the program or use your license. This may require that you secure a license or work with your county GIS contact. Publication is an immediate option, however. To be clear, by publicize, this does not mean that anyone will be able to view and edit information. Moreover, what this means is those who are provided with a highly unsearchable link to the map, will be able to edit information in ArcCollector. However, the publication of this map would only be necessary if you choose that you want to start using the system right away, right after this presentation. On the contrary, we recognize that Mount Carmel would most likely prefer to use this tool completely independent of the University's account. Such a choice is also absolutely possible and would require continued long term conversation with Professor Vanessa Massaro alongside with Bucknell University GIS specialists.

VII. Conclusion

We again thank you for the opportunity to pitch this proof of concept presentation to you today. If you enjoyed the platform, we have great hope that its implementation will not be far into the future. Ultimately, we hope that ArcCollector helps you keep an organized, up-to-date, inventory of the status of blighted properties in your borough. If you have any questions please do not hesitate to contact the emails provided on page one. It has been a pleasure working with you and your borough and we hope to keep building the relationship between Mount Carmel and Bucknell University. Thank you.