Technology of the Disaster Planning Survey

An Integrated Data Collection and Analysis Platform

Matthew D. Harris, RPA
June 2017
Problems to solve:

• Large, geographically dispersed, and variable dataset

• Federal and State data sources of variable coverage and quality

• Data collection by multiple teams, in remote areas, with spotty cell coverage, aggregated to an asynchronous data source

• Recordation of precise topographic elevations with no guaranteed access to resource

• Need for efficient analysis and evaluation of resource data in office

• Consolidating information into multiple formats (e.g. report, maps, database, GIS layers)

How we solved them…

An approach that integrated GIS, data science, survey methods, and good old communication!
Scope of Data Set
Data Creation and Management
Data Collection Platform
Elevation Survey
Analysis and Evaluation
Reporting
### How many Historic Resources to expect?

**Scope of initial data set**

<table>
<thead>
<tr>
<th>County</th>
<th>FHZ (sq mi)</th>
<th>Historic Resources*</th>
<th>HR in FHZ</th>
<th>HR near FHZ**</th>
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</thead>
<tbody>
<tr>
<td>Bedford</td>
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<td>5,257</td>
<td>701</td>
<td>2,119</td>
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<tr>
<td>Cameron</td>
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<td>59</td>
<td>35</td>
<td>43</td>
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<tr>
<td>Monroe</td>
<td>50</td>
<td>1,568</td>
<td>232</td>
<td>648</td>
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<tr>
<td>Philadelphia</td>
<td>16</td>
<td>6,522</td>
<td>342</td>
<td>667</td>
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<tr>
<td></td>
<td>148</td>
<td>13,406</td>
<td>1,310</td>
<td>3,477</td>
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</table>

* Counts by County from CRGIS in 2015
** Resources within 100-meters of the FHZ
Technology of the Disaster Planning Survey

Monroe County

Flood Hazard Zone

Historic Resource
Scope of Data Set

Data Creation and Management

Data Collection Platform
Elevation Survey
Analysis and Evaluation
Reporting
PHMC Cultural Resources Survey Data Collection Application (MS Access)
AECOM Cultural Resources Data Collection Platform
Base Flood Elevation (BFE) Creation
Scope of Data Set
Data Creation and Management

**Data Collection Platform**
Elevation Survey
Analysis and Evaluation
Reporting
AECOM Cultural Resources Data Collection Platform – Map View
AECOM Cultural Resources Data Collection Platform – Customize Data Entry
Technology of the Disaster Planning Survey

AECOM Cultural Resources Data Collection Platform – Data Organizing Web App

<table>
<thead>
<tr>
<th>Updated</th>
<th>Project</th>
<th>Assigned</th>
<th>KEYNO</th>
<th>Number of Resources</th>
<th>NR Status</th>
<th>County</th>
<th>Municipality</th>
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AECOM Cultural Resources Data Collection Platform – Resource Specific Viewing
AECOM Cultural Resources Data Collection Platform – Embeddable Real-time Monitoring
Scope of Data Set
Data Creation and Management
Data Collection Platform
**Elevation Survey**
Analysis and Evaluation
Reporting
Some resources are accessible…
Some are not...
Some are not...

TruPulse 200x
Laser Rang Finder

Data Platform
RTK Network
Backup

Arrow 200
GPS - RTK

Tablet & App
Scope of Data Set
Data Creation and Management
Data Collection Platform
Elevation Survey
Analysis and Evaluation
Reporting
Reproducible Data Processing
Scope of Data Set
Data Creation and Management
Data Collection Platform
Elevation Survey
Analysis and Evaluation
Reporting
Technology of the Disaster Planning Survey

Generating PHMC Special Hazard Survey Form

Pennsylvania State Historic Preservation Office
PENNSYLVANIA HISTORICAL AND MUSEUM COMMISSION
Disaster Planning for Historic Properties Initiative (2015-17)
Historic Resources Natural Hazard Vulnerability Survey Form

[Image of PHMC Special Hazard Survey Form]

AECOM, Burlington, NJ
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Survey Date: 2016

AECOM, Burlington, NJ
Page 2 of 2
Survey Date: 2016
Thank you for listening &
Thanks to the team that made this possible!

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