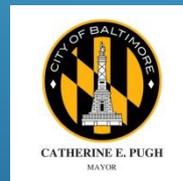
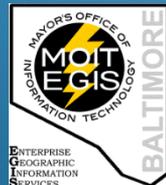


City of Baltimore Election Support

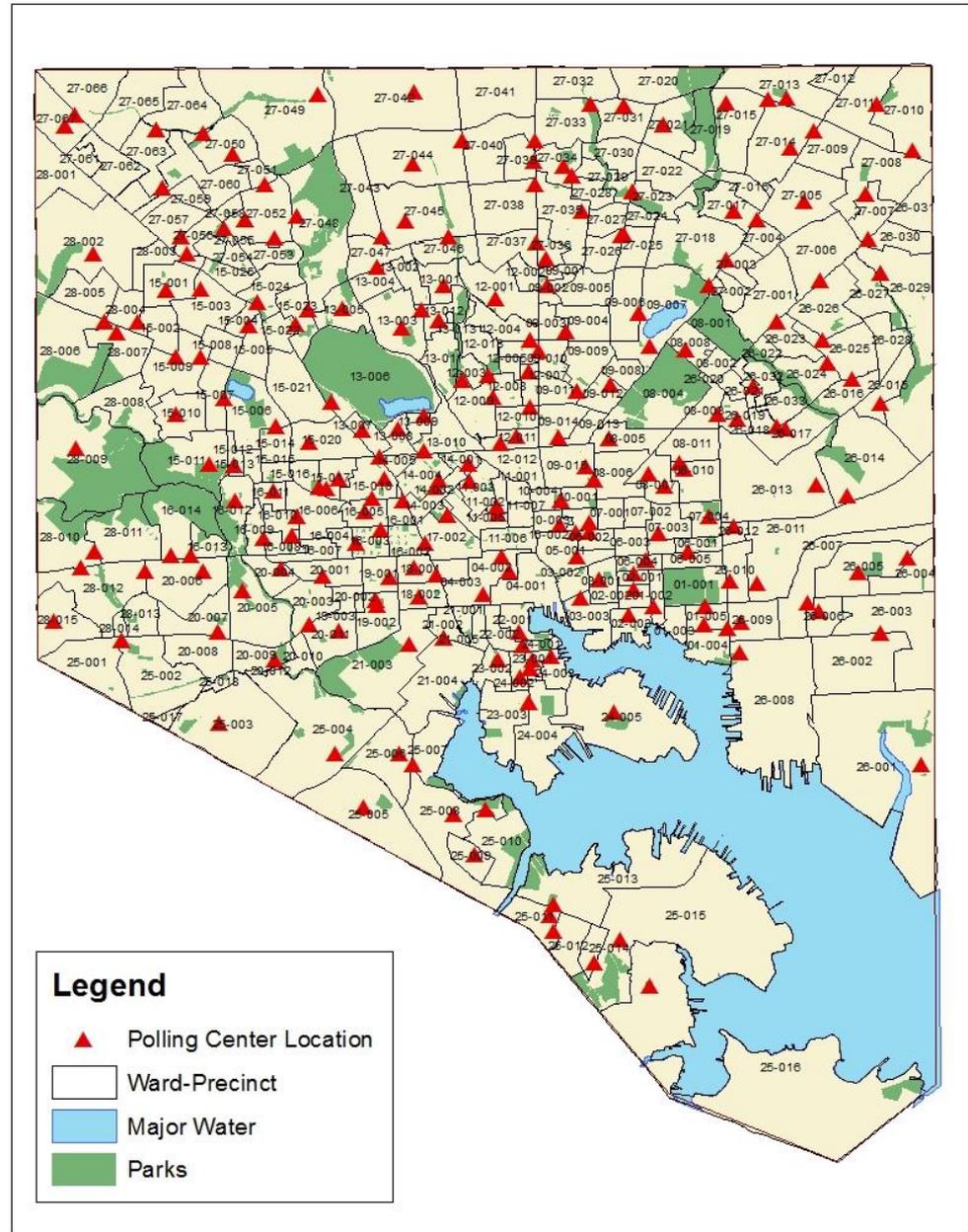
Using ESRI Collector and Dashboard for Polling Center Accountability

Samantha Luckhardt, GIS Supervisor
City of Baltimore



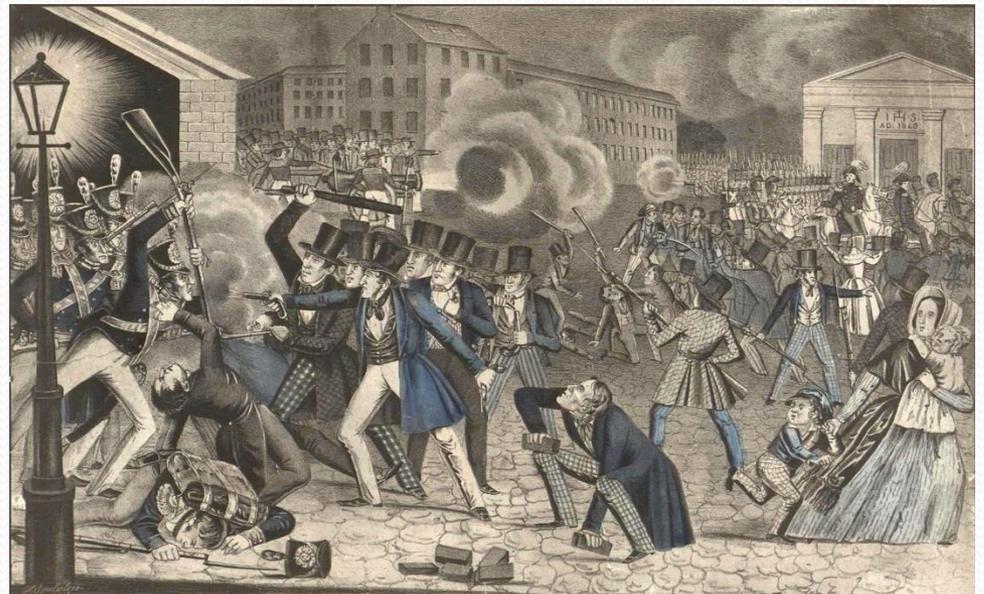
Voter Geography

- 302 polling precincts
- 291 individual voting locations
- There can be multiple precincts voting in a single location
- Voting is managed by the Board of Elections
 - Partner with the Police Department



Voting History

- In the middle decades of the nineteenth century 89 Americans were killed at the polls during Election Day riots. A large number of these deaths occurred in the City of Baltimore
 - Baltimorean's took their politics very seriously and elections, in particular, arouse to a state of such feverish excitement as to produce violence and disorder.
 - Riots, brawls, and other disturbances were quite common; especially during the Presidential election held in 1856.
 - On the day of the election, bloodshed and terror were rampant
 - There were hundreds of stabbings and in one battle artillery was actually used



Voting History

- In 1860, the Police Department was reorganized and placed under state control and were directed to restore law and order during election day
- Today, the City of Baltimore is the only jurisdiction in the State of Maryland that still employs police officers during the voting cycle



Modern Day Problems

- **When it began.....2006 Primary Election**
 - Only 75% of locations opened on time.
 - 119 polling centers experienced some sort of problem
 - 180 judges didn't show up.
 - Citizens called 911/311 complaining that they could not vote
 - Lawsuits were filed against the BOE
 - Bad Press
 - City Hall was blamed for the problem

Project History

- **Primary Mitigation Steps:**

- CitiStat, the Mayor's accountability agency, worked with EGIS, Election Board, and Baltimore Police to set up a new process to start tracking polling center opening operations which included:
 - Recruit and train volunteers from the Mayor's office to act as data entry support
 - Use the radio's given to designated officers at each polling place to communicate information to their respective precinct
 - Create forms to capture and relay information between data entry and police personnel
 - Develop an online spreadsheet-based tracking system to monitor and report any potential issues for each location.

Project History

- Officers provided readiness information from each precinct based on a questionnaire style form.
- This information was recorded on a paper form and was then given to the volunteer data entry clerk at each police district headquarters.
- Volunteers would enter this information into a web-based database application

Address <https://www.bcapps.org/BaltElec/PrecinctDetails.aspx>

BALTIMORE CITY POLLING PLACE MONITOR

Poll Name MERVO TECH HIGH SCH #410
Address 3500 Hillen Road, Gymnasium
Baltimore, MD 21218

District NORTHEASTERN
Ward-Precinct 09- 005

First Call 0615 hours

1.) All Election JUDGES are present. false

2a) Number of REPUBLICAN JUDGES present.

2b) Number of DEMOCRATIC JUDGES present.

3) A TECHNICIAN is present. false

4) NO PROBLEMS WITH VOTING EQUIPMENT false

5) NO FACILITY OR OTHER PROBLEMS false

Problem Description

Second Call 0700 hours

6) A vote has been successfully recorded.

7) The poll was open to accept voters at 0700.

8a) How many more Democratic Judges are Needed?

8b) How many more Republican Judges are Needed?

Last Edited: Last Edited By:

History

The entered information would appear onto a spreadsheet and displayed at the command center. Each row, representing a district, would be colored according to their readiness.

Color	Status	Description
Red	"Can NOT Open"	Precinct has problems that will prevent it from opening.
Green	"Can Open"	Precinct is ready to open. There are no problems reported that would prevent opening.
Yellow	"Open" OR "Can Open"	Precinct can open OR is already open, but there are problems that may need to be addressed, such as missing technicians or the need for additional judges.
Blue	"Open" OR "Can Open"	Precinct is open. No unresolved problems have been reported.
White	"Report Not In"	No information has been received.

As a result, polling place readiness improved from:

- **75%** (2006 Primaries)
- to:
- **94%** (2006 General Election)

2016 Elections: Time to Modernize

- The web application was 10 years old, and no longer supported.
- Since 2006, mobile technology has emerged as a game changer for quickly capturing information out in the field and displayed for managers to review “real time”
- As a result, it was suggested to leverage mobile technology for entering the polling place data directly at the polling place
- Eliminate steps, reduce number of involved staff, and add a spatial element to quickly identify and mobilize staff/resources to problem areas.

Application Requirements

- Eliminate City Hall's direct involvement in managing the election day activities
- Create an application that was Android/iPhone compatible
- Create an application for non-tech savvy end users
- Officer location would be geo-located based on current GPS location.
- Reduced the need to query or search through 206 locations
- Create domains/drop down lists for the answers for ease/standardization of replies
- Create a map for viewing the data as well as tables that could be viewed/exported to analyze data

The Solution

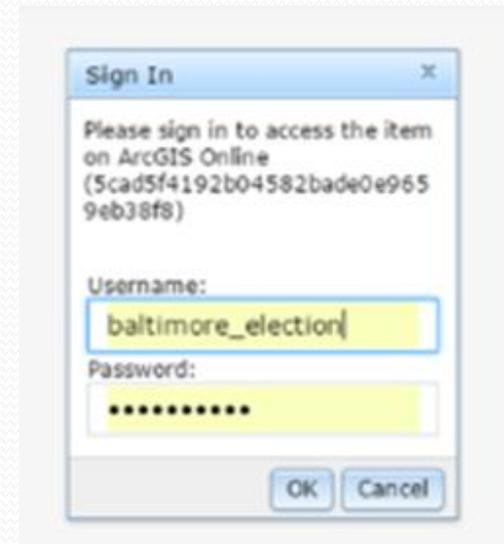
- A lot of thought and time and effort was involved in choosing the most appropriate mobile solution
- ESRI Collector provided the ease of use that was needed for this project
- We could use ArcGIS online to publish form data as a service that would automatically refresh the map
- ESRI's Dashboard gave managers a means visualize and track the data and also provided a means for viewing it in tabular form that could be exported for later analysis

Training and Implementation

- The apps were installed on the phones and tested.
- EGIS trained managers and supervisory staff, who would in turn, train the field personnel.
- On the day of the Primary Elections, all of the assigned officers were able to enter their data through the mobile application

Application Overview

- Smart phone users launch the Collector app by clicking on the icon and logging in.
- Locations were filtered by districts so that users would only see the information for their respective district
- GPS locating allowed the officer to just click the point of their responsible polling location

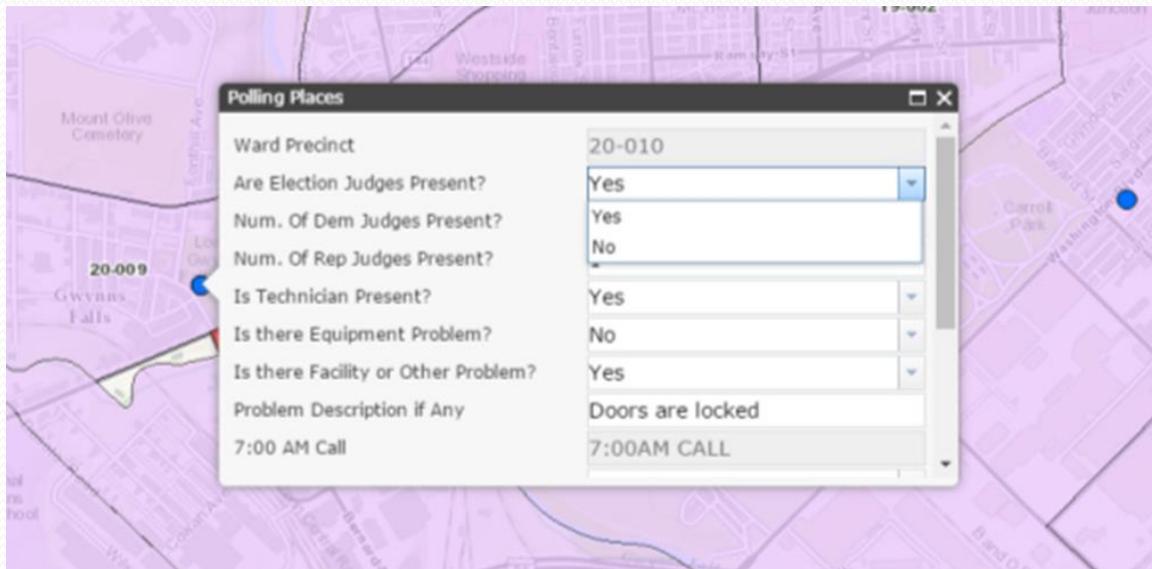


Demo

- <http://gis.baltimorecity.gov/pollingplacetracker/>

Application Overview

- The field person enters information at 6am to report readiness, and at 7am to report open status.
- This information is immediately reflected on the map being monitored at the Watch Center
- The questionnaire form shown below is based off a layer created in ArcMap and published as a service for ArcGIS Online.

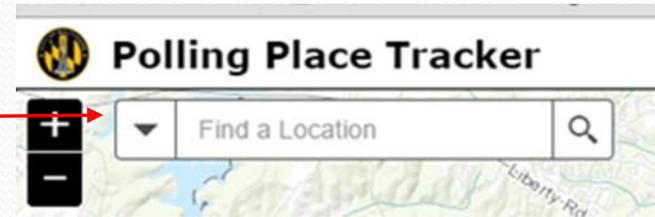
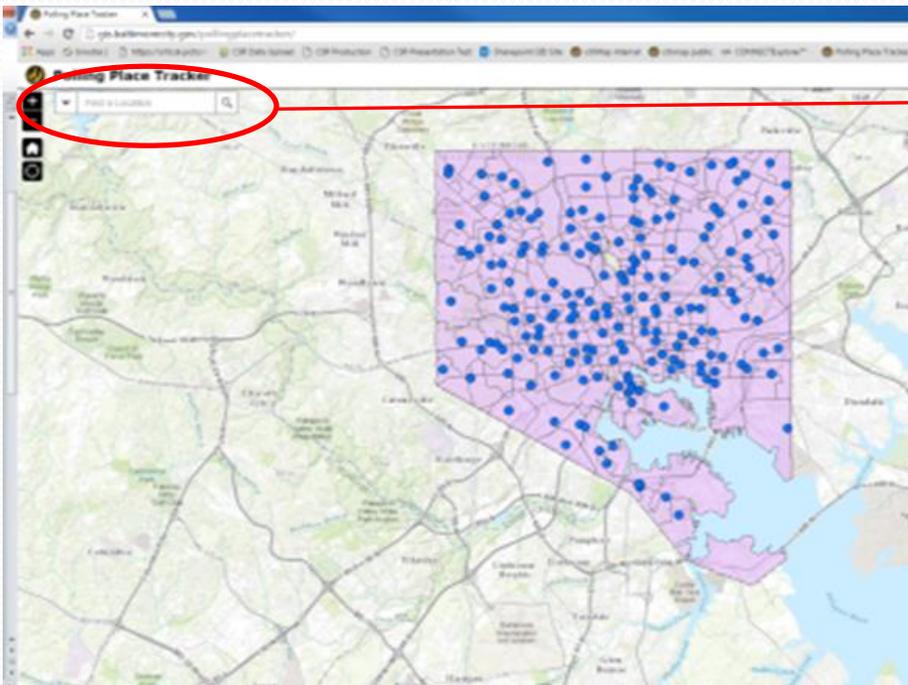


The screenshot displays a map interface with a popup window titled "Polling Places". The popup contains the following information:

Ward Precinct	20-010
Are Election Judges Present?	Yes
Num. Of Dem Judges Present?	Yes
Num. Of Rep Judges Present?	No
Is Technician Present?	Yes
Is there Equipment Problem?	No
Is there Facility or Other Problem?	Yes
Problem Description if Any	Doors are locked
7:00 AM Call	7:00AM CALL

Application Overview

- At the Watch Center a City-wide map was shown

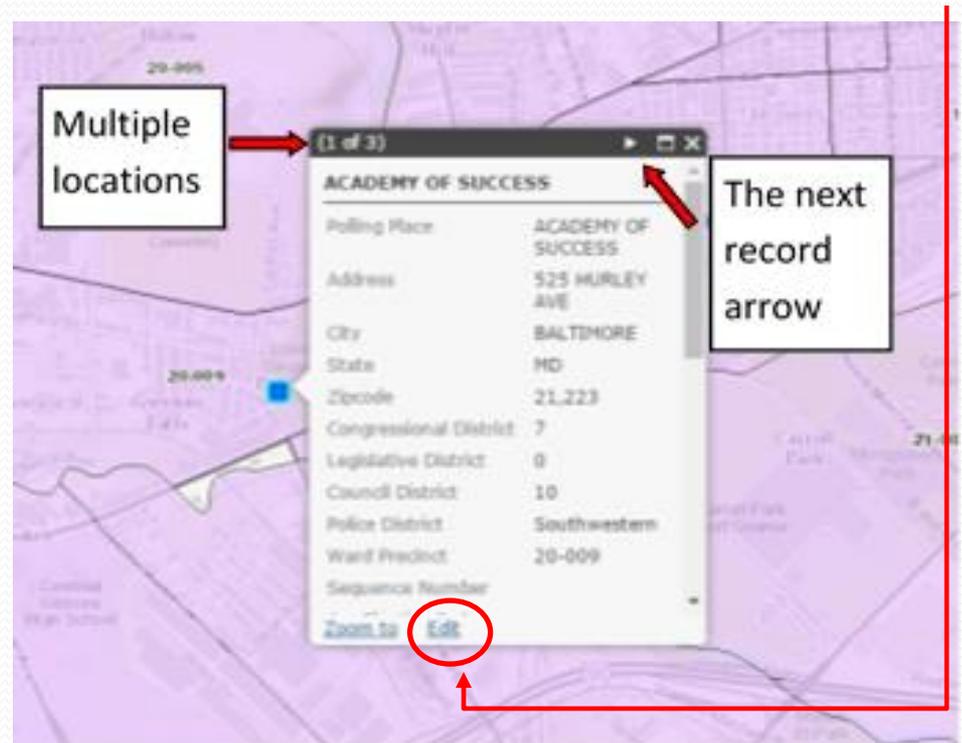


The user can search for a specific polling place location by entering one of the following:

- Ward/Precinct Number
- Polling Location Name
- Address of Polling Place

Application Overview

- By clicking on the dot a pop-up window appears allowing managers to **Edit** the information entered in the table
- This allowed managers to update the information as issues were resolved



Lessons Learned

- First time implementation was overall a success!
- There were some minor changes that needed to be made:
 - Add another point layer for the 7am call. That way the polling place dots will truly reflect the readiness of each place.
 - Create individual, unstacked points for each polling center location
 - Adding an “intermediate” color for those with issues but could still open
 - Confusion as to what elements truly prevented a location from being opened “on-time”

Questions

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