



Smart Parks

TENNESSEE STATE
PARKS GIS

Smart Parks

*Leveraging Esri Platforms for
Statewide Park Data Management*

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July 2019



Department of
**Environment &
Conservation**



Inspiration: Smart Dubai

“Making Dubai the happiest city on earth using emerging technology”

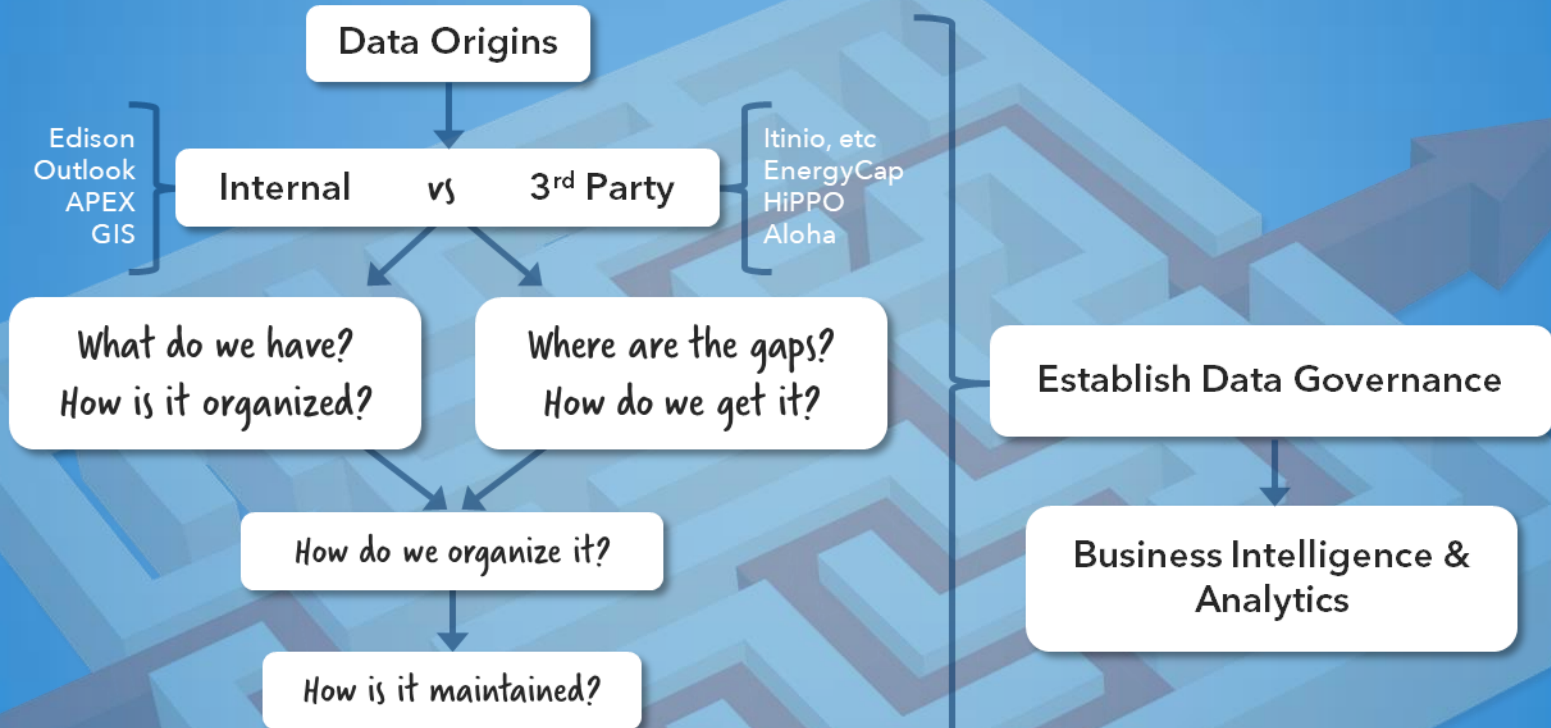
- ◆ 2017 ESRI UC
- ◆ H.E. Dr. Aisha Bin Bishr
- ◆ All assets connected
- ◆ \$1.3 b ROI in 12 yrs
- ◆ \$4.7 b AED



"Smart Parks" Concept



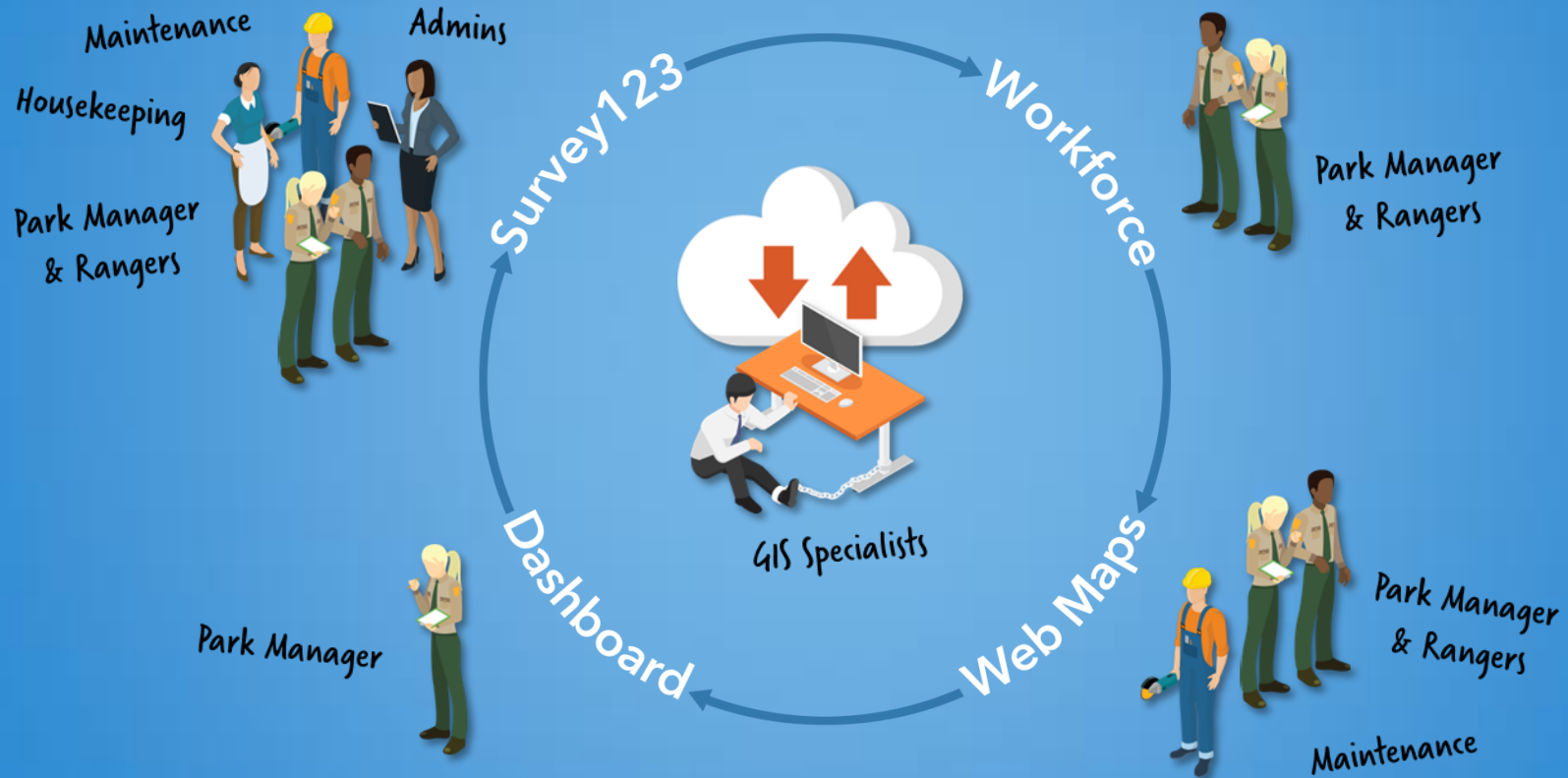
"Smart Parks" Road Map



Talk is Cheap...



Phase I: Maintenance Tracking Pilot Program



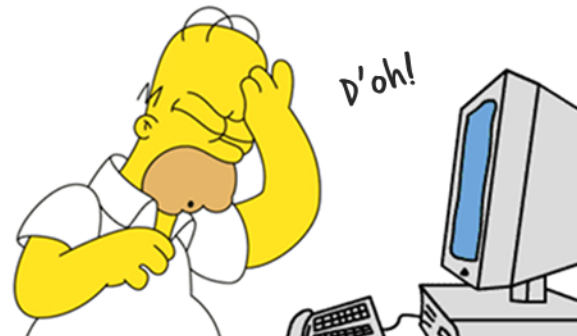
Phase I: Lessons Learned

Pros

- Free(ish)
- Autonomous
- Easy to stand up
- All staff engaged
- Works offline
- Easy communication

Cons

- Four applications
- No custom fields
- Scheduling maintenance
- Cost tracking



Phase I: Lessons Learned

We did not...

- ◆ Fully integrate with Collector for ArcGIS
 - ◆ Additional metrics
 - ◆ More complex schemas
- ◆ Integrate a 3rd party CMMS
- ◆ Leverage additional tech support

Phase I: Lessons Learned

We did...

- ◆ Learn a lot about ArcGIS Online
- ◆ Learn a lot about internal limitations
- ◆ Pique interest in the technology
- ◆ Learned about underlying facilities data

Phase I: Lessons Learned

This got us the buy-in to...

- ◆ Purchase additional AGOL licensing
- ◆ Develop data collection solutions to fill the gaps
- ◆ Develop a solution for a new "Hazardous Trees" policy

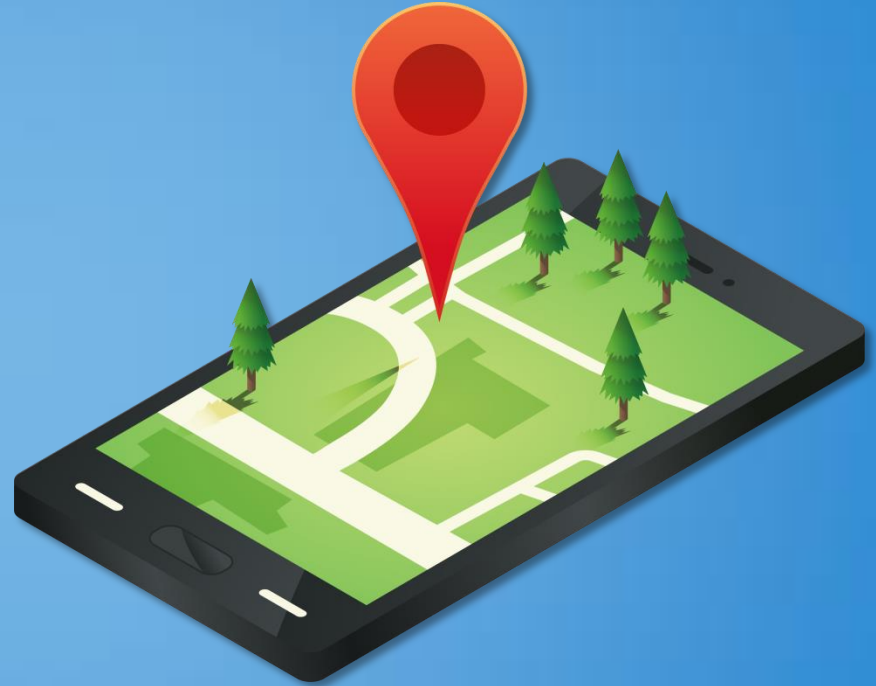
Phase II: Asset Data Collection

Record

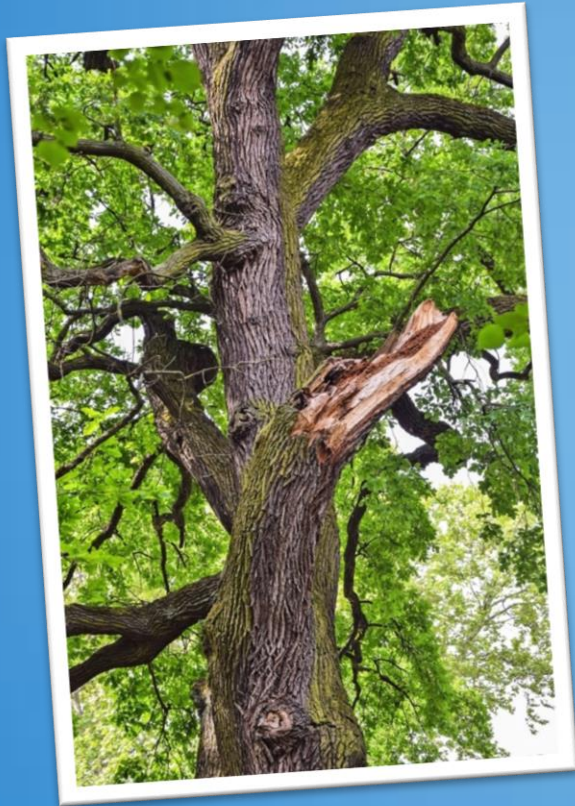
- ◆ New data on assets
- ◆ Updates to existing assets data

Review

- ◆ View data as it is collected
- ◆ Maintain data



Phase II: Hazardous Tree Policy



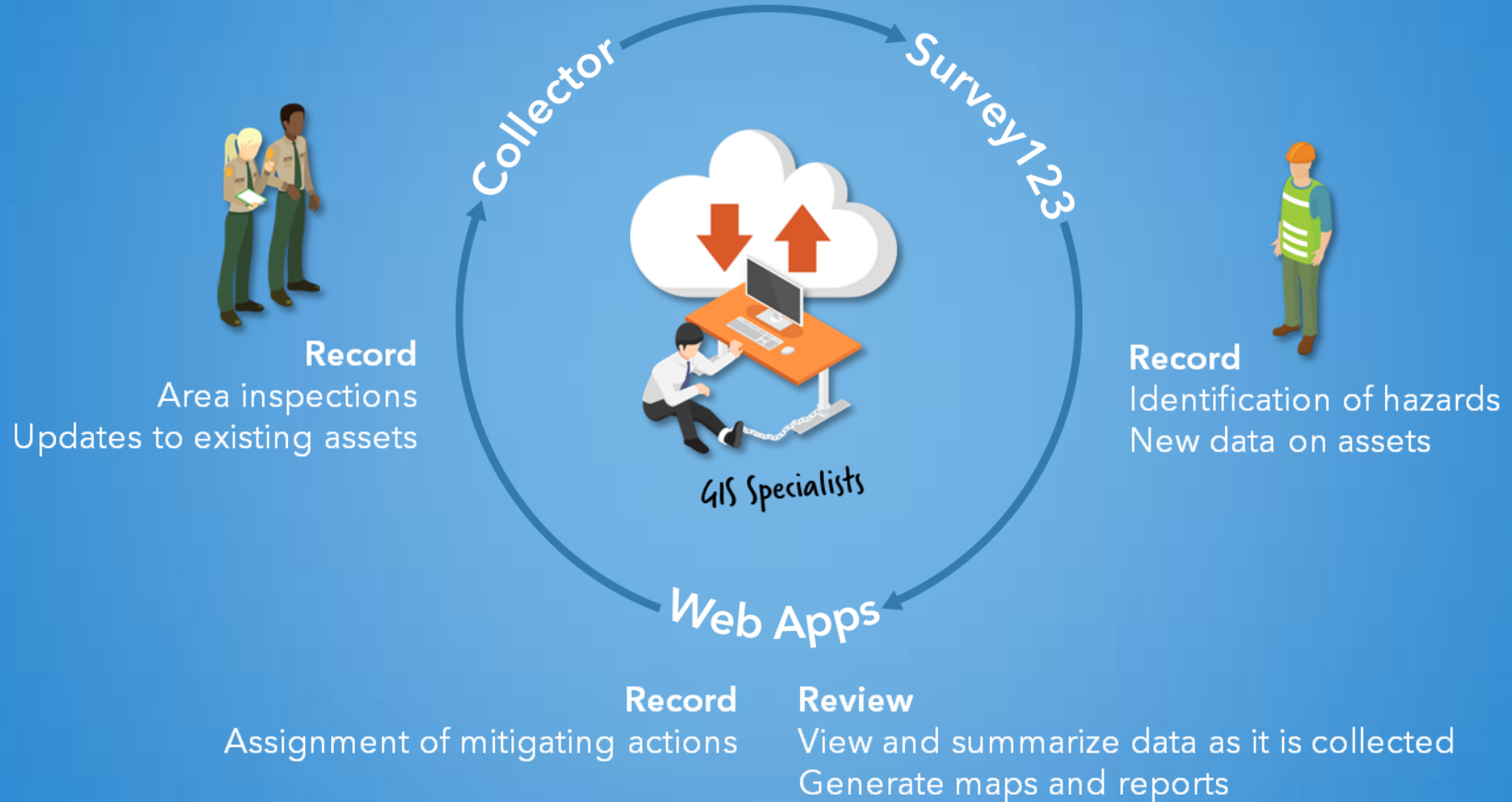
Record

- ◆ Area inspections
- ◆ Identification of hazards
- ◆ Assignment of mitigating actions

Review

- ◆ Generate maps and reports

Phase II Workflow



Phase II: Survey123

Survey123 Connect for Desktop

- ◆ Collect attribute data via conditional form fields
- ◆ Populate query-friendly Boolean fields on the backend based on user input in multiple selection fields

The screenshot displays the Survey123 mobile application interface. At the top, a green header bar contains a close button (X), the title "Water Access Points Survey", and a menu icon (three horizontal lines). Below the header, the form begins with a section titled "Access point location *" in bold. A descriptive instruction reads: "Move the pin on the map to the location of the access point, as close to the water's edge as possible." Below this instruction, a green bar displays the coordinates "36°10'N 86°47'W ± 65 m" and a compass icon. The map itself shows a street grid with a red pin placed on a water feature. Below the map, the form continues with a "Collector *" section, which includes a text input field and a label "First initial and last name of data collector, e.g. 'S. Fleming'". The next section is "Waterway or waterbody name *", with a text input field and a label "Official name of the waterway or waterbody (Start typing a name to narrow down the list.)". Below this is an "Access name" section with a text input field and a label "Official name of the access point". The bottom of the screen features a green bar with a checkmark icon, indicating a successful submission or completion.

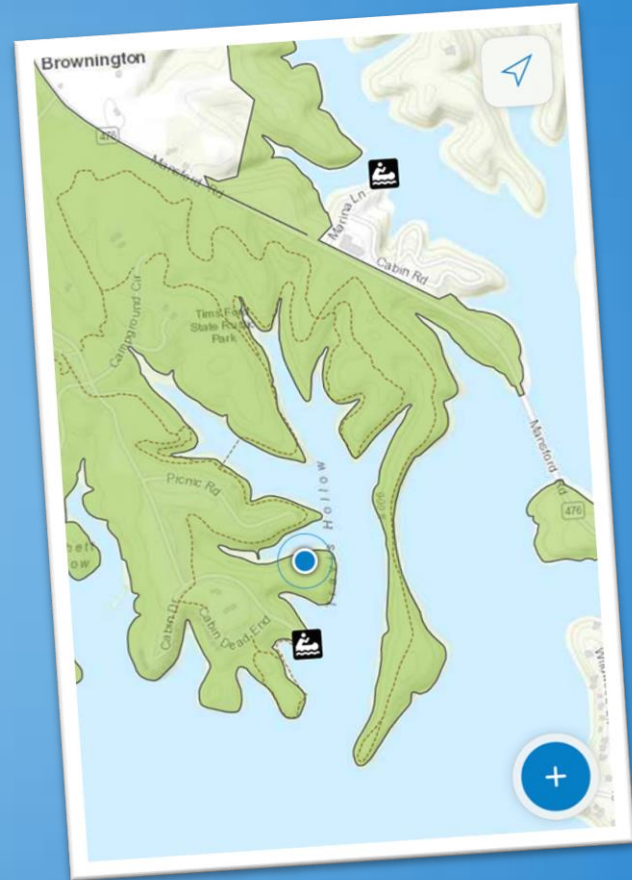
Phase II: Survey123

Type	Field Name	Relevant	Calculation
select_one	Access_Type		
select_multiple	Carry_Surface	selected(\${Access_Type}, 'Carry-in')	
hidden	Carry_Surface_Dirt		if(selected(\${Carry_Surface}, 'Dirt'), 'Yes', 'No')

Phase II: Collector

Collector Aurora

- ◆ Prepackaged offline map areas



Phase II: Collector

Manage Areas

Map Areas

+ Create new area

Bicentennial Capitol Mall

>

Bledsoe Creek

>

Cedars of Lebanon

>

Fall Creek Falls

>

Henry Horton

>

Long Hunter

>

Old Stone Fort

>

Radnor Lake

>

South Cumberland - Fiery Gizzard

>

South Cumberland - Savage Gulf

>

South Cumberland - Sherwood Forest

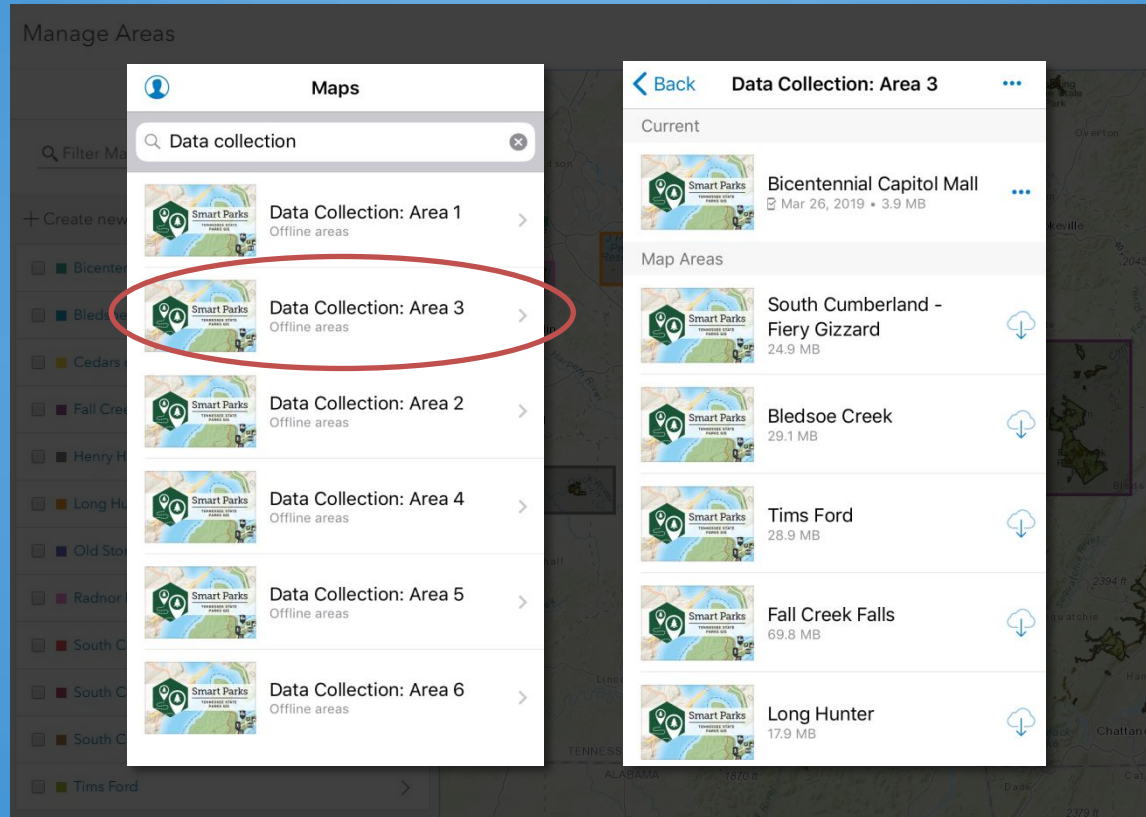
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Tims Ford

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12

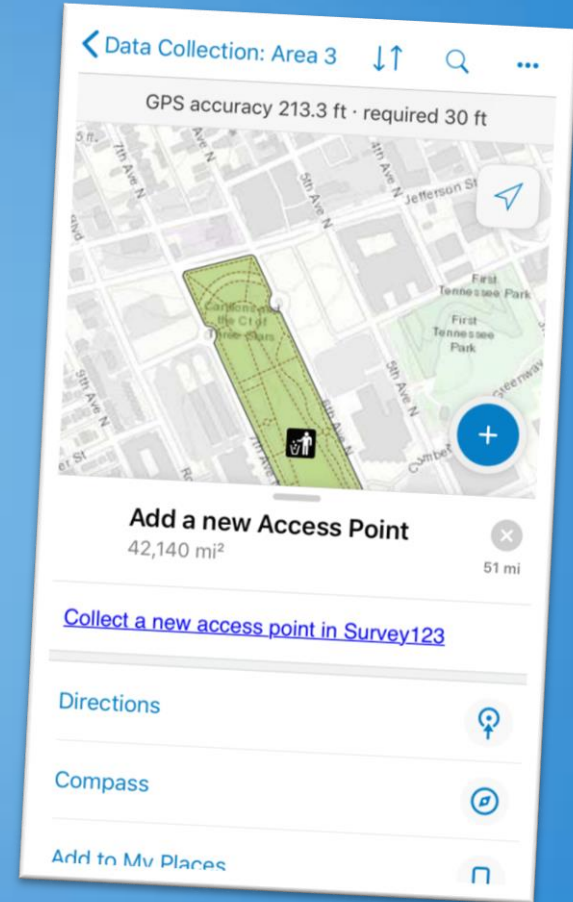
Phase II: Collector



Phase II: Collector/Survey123

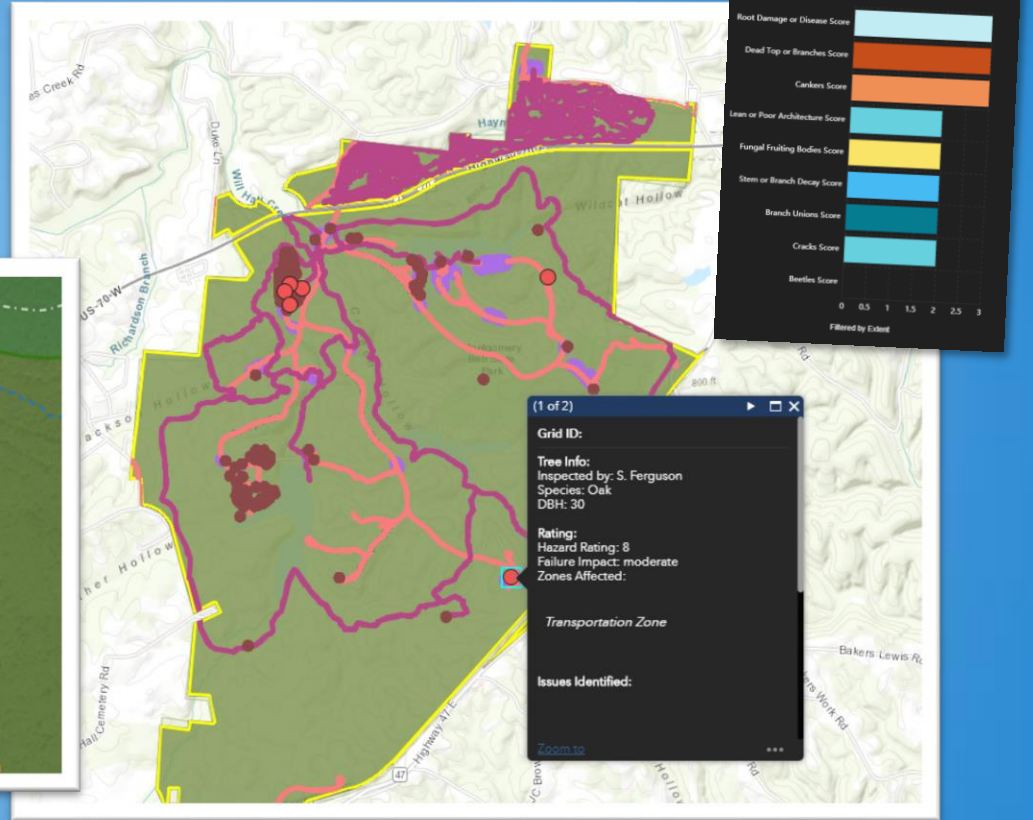
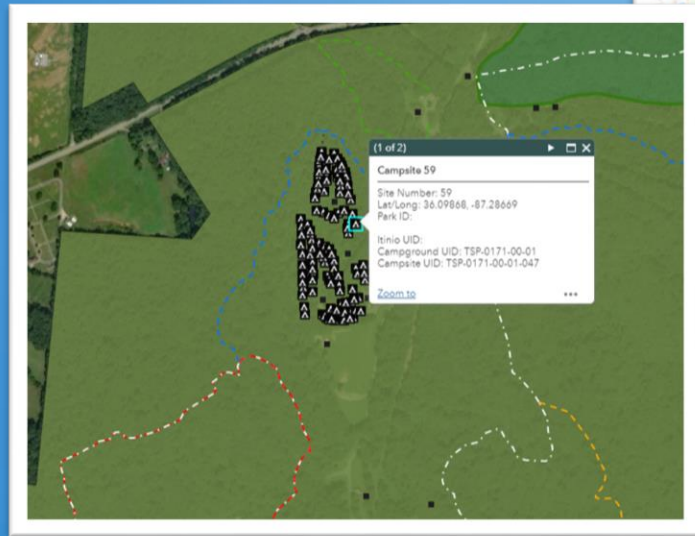
Linking the Apps

- ◆ Populate field with direct link to a specified survey, opening Survey123 app with one tap
- ◆ “Invisible Tennessee” solution
 - ◆ Pop-up title “Add a new Access Point”
 - ◆ Pop-up only shows link to Survey123



Phase II: Web Apps

Hazardous Tree Dashboard “Smart Parks” Data Viewer



Phase II: GIS Resources Hub

	Intranet	TSP Website	Cloud Storage	ArcGIS Hub
Secure	✓	✓	✓	✓
Various Formats	✓	✓	✗	✓
Easy to Update	✗	✓	✓	✓
Cheap/Free	✗	✗	✗	✓

Phase II: GIS Resources Hub

Tennessee State Parks GIS

Rachel



GIS RESOURCES

TENNESSEE STATE PARKS

This platform is provided to TSP staff for the purpose of viewing data, participating in TSP data collection initiatives, implementing workflows and downloading documentation.

GIS WebApps

Below you will find GIS web applications (or "WebApps") including data viewers, status reports, and other dashboards to assist in your workflows.



HAZARDOUS TREES

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Hazardous Tree Survey: Dashboard

This app is for the park managers and/or park safety and security officers. It provides a summary

[Explore](#)



ROADS

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TDEC/TDOT Roads Agreement

This data viewer allows park staff to view the results of the TDOT/TDEC State Parks roads agreement.

[Explore](#)



STATE PARKS DATA VIEWER

Smart Parks

Smart Parks Data Viewer

This application allows park staff to view spatial datasets related to any Tennessee State Park.

[Explore](#)



TRAILS

Smart Parks

Trails Assessment Status Reporter

This application is intended for use by Tennessee State Parks staff for the purpose of reporting fixes to

[Explore](#)

Phase II: Lessons Learned

It's a work in progress...

- ◆ Park rangers will open Collector directly to collect points
 - ◆ Bypasses drop-down menus and conditional fields set up in Survey123
- ◆ Limited licensure upsets workload assignments

Phase II: Lessons Learned

Future directions...

- ◆ Database integration
- ◆ Shift business practices
- ◆ Examine system health
- ◆ Rinse and repeat

Thank You!

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