



InSPIRE

Innovation Summit for
Preparedness & Resilience

GIS for Public and Environmental
Health

Meet the presenters



Byron Lobsinger, BS, GaCEM, EMHP
Georgia Dept. of Public Health
Environmental Health Emergency
Planner



Frank Winters, Former
NYS Geographic
Information Officer

Objective

With COVID restrictions and policies expiring, lessons were learned when it comes to fatality management surge, public health and environmental health data analysis.

GIS reporting tools enhanced real time resource awareness using the Morgue Bed Availability Reporting (MBAR) tool to identify potential fatality management surge. However, in some cases, GIS reporting tools showed data aggregation, deduplication, and spatial data analysis in New York.

Agenda

- Covid-19 fatality management at onset
- Morgue Bed Availability Reporting (MBAR) Tool and Fatality Surge Support and Coordination



Byron Lobsinger

- Georgia Department of Public Health
- Environmental Health Emergency Planner
 - Environmental Health Strike Team Program
 - Fatality Management Coordination and Support Planning
 - Geospatial Planning

Statewide Agencies and Organizations

- GBI Body Recovery Team
- GBI Forensics Division
- Georgia Coroners Association
- Georgia Medical Examiners
- Metro Atlanta Mass Fatality Workgroup
- Georgia Emergency Management Agency
- Georgia Dept. of Transportation
- American Red Cross
- Dept. of Behavioral Health & Developmental Disabilities
- Crime Victim Compensation
- Funeral Associations
- Crematory Associations
- Dept. of Public Health
 - Risk Communications
 - Vital Records
 - Environmental Health
- Georgia Hospital Association

COVID-19 Fatality Management Surge

SPECIAL REPORT: HEROES OF THE FRONT LINES



New York City Deploys 45 Mobile Morgues as Virus Strains Funeral Homes

"When you overwhelm the health system, you also overwhelm the death system," one funeral director said.



The medical examiner's office set up a makeshift morgue on East 30th Street in Manhattan. (Greg Vigeland for The New York Times)

By Alan Feuer and Andrea Sciacca

Published April 2, 2020 | Updated April 11, 2020

New York City has already set up 45 new mobile morgues. Local crematories are now allowed to work around the clock. At one Brooklyn hospital, the in-house morgue was filled to capacity on Tuesday. The next day, the nursing staff ran out of body bags.

6:40



THE WALL STREET JOURNAL

CORONAVIRUS
Free Resources

LIVE UPDATES

VIDEO

STATE LOOKUPS

SYMPTOMS

WISHSIRING

TRI-STATE AREA

As Coronavirus Deaths Surge, New York City Allows Cremations 24 Hours a Day

Some crematory operators are handling triple the number of bodies they would on a typical day, a plea for cardboard caskets



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5:57



Iran digs massive trenches to bury coronavirus dead, report says

Louis Casiano | Fox News

Published on March 12, 2020



Iran has dug two football-field-sized trenches in the weeks following its first confirmed coronavirus case, according to satellite images.

The excavation of a new graveyard at the Behesht-e Masoumeh cemetery in Qom, located about 80 miles south of Tehran, began Feb. 21, according to The Washington Post.

Iran announced its first case on Feb.

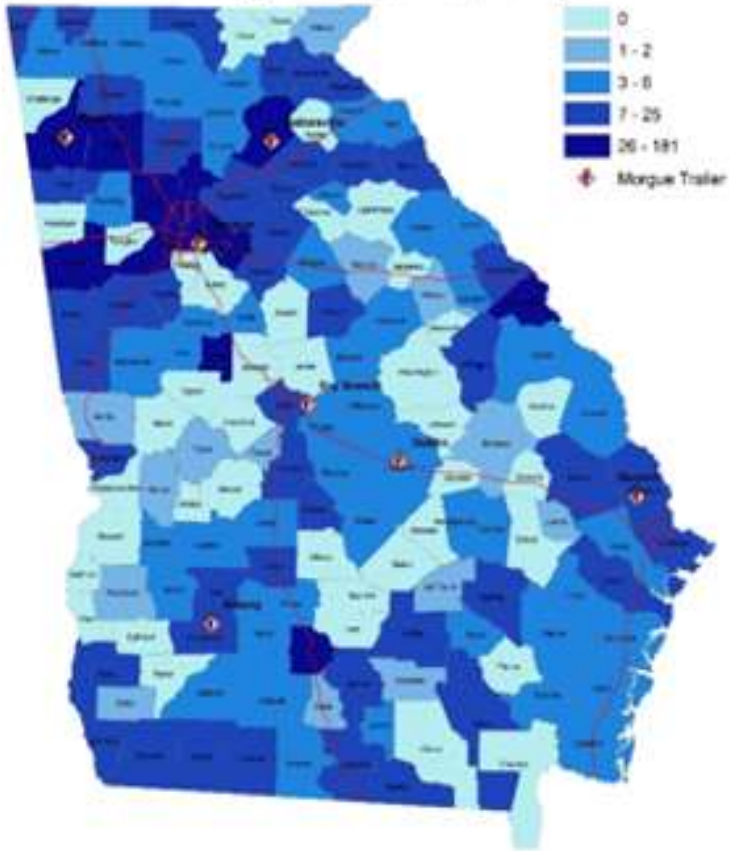
COVID-19 Fatality Management Surge



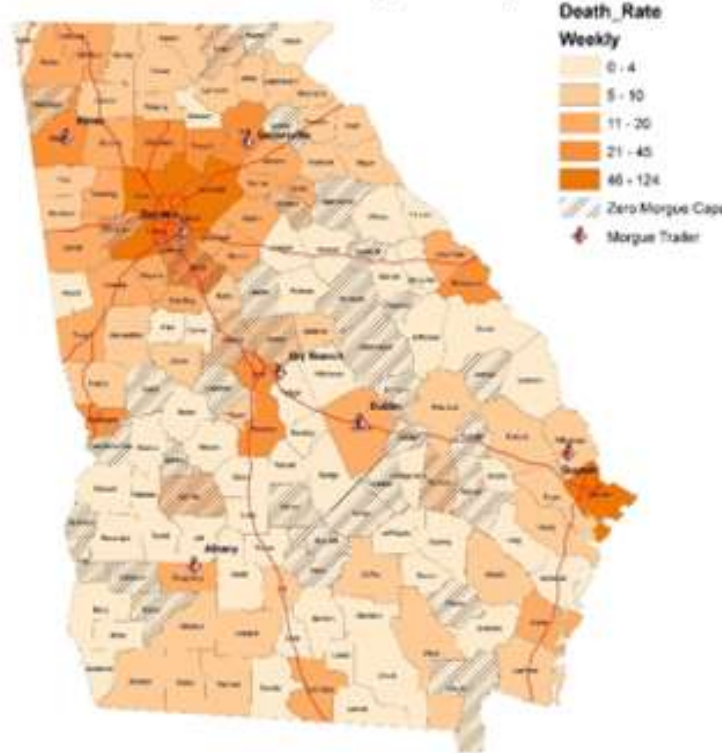
Fatality Projections

Fatality Management Surge

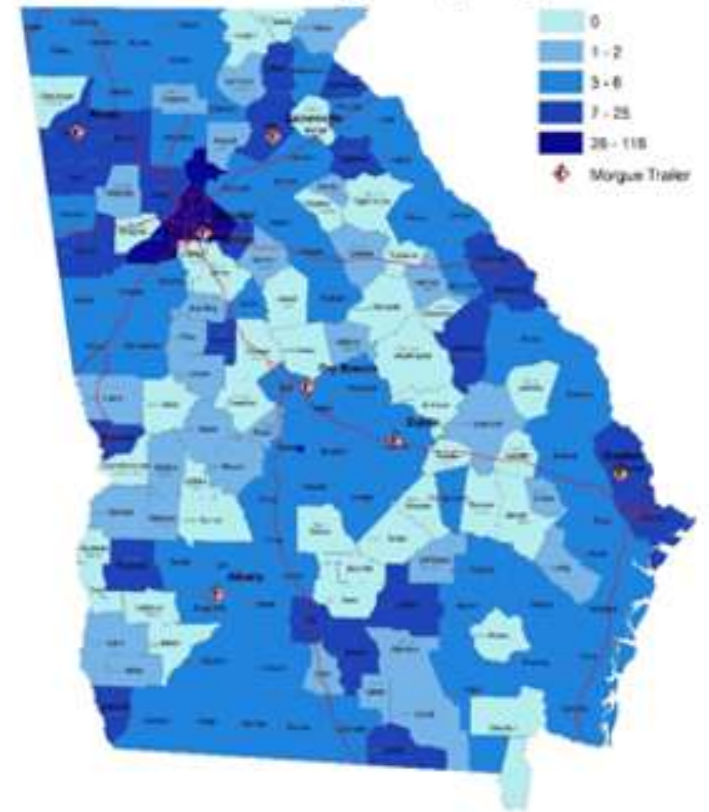
Surge Morgue Capacity



Death Rate and Morgue Capacities



Normal Morgue Capacity



Fatality Management Surge

- **Morgue surge planning**
- Implement surge capacity plan
 - Sister facilities
 - Mortuary Enhanced Remains Cooling (MERC) system
 - Expand capacity: Utilize empty floor space – gurneys, rack with trays
 - Contact Regional Coordinating Hospital (RCH)
 - Cold storage surge support
 - Body Bag surge resources

Fatality Management Surge

- **Morgue surge planning**
- Partner facilities
 - Funeral homes
 - Hospitals
 - County morgue
- Cold storage container vendors
 - Local / Regional

Fatality Management Surge

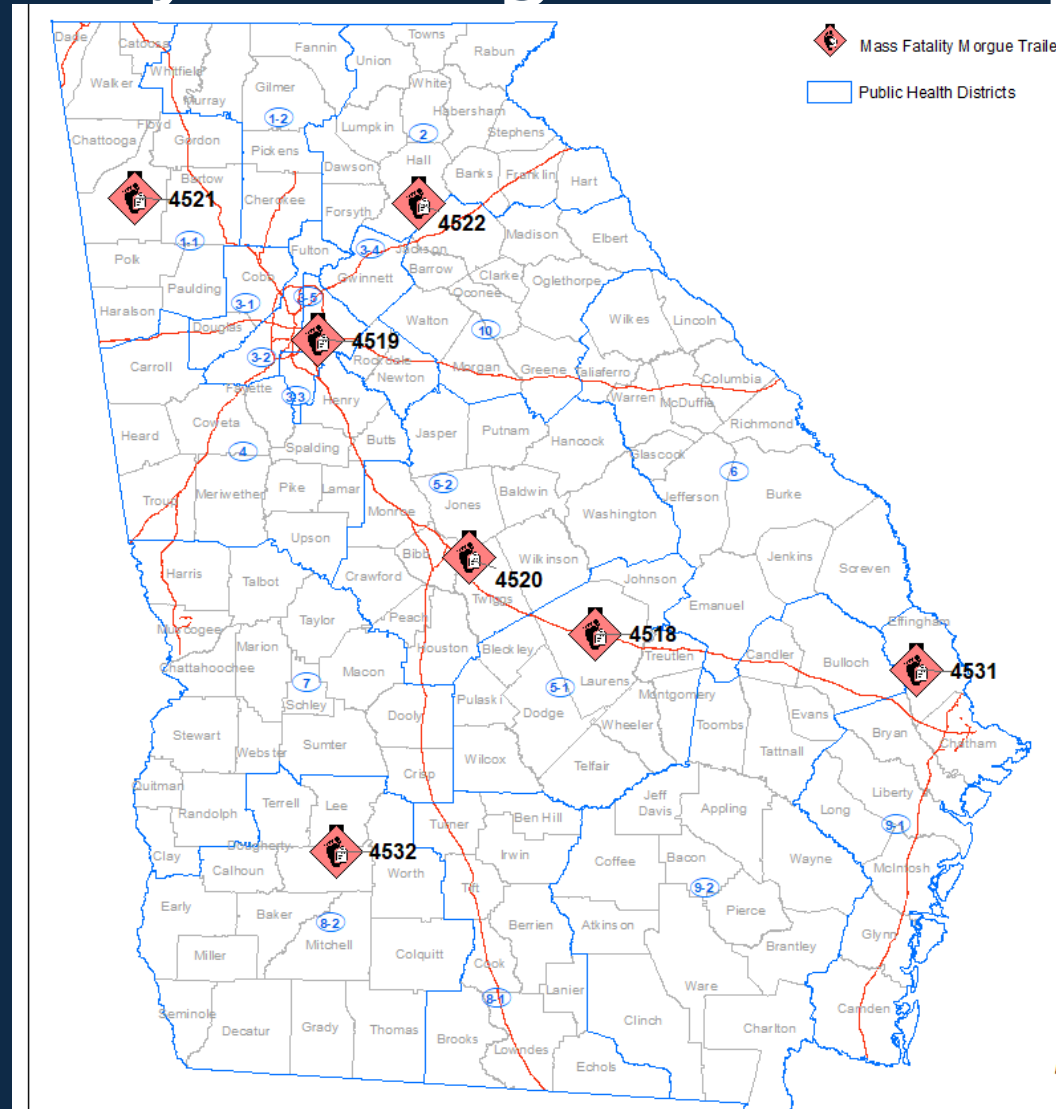
- County EMA
 - Adjacent Counties
 - Resource request to State Operations Center (SOC)
- Georgia Emergency Management Agency (GEMA) SOC
 - Assign to ESF-8

COVID-19 Fatality Management Surge

- Mass Fatality Morgue Trailers – 7
 - Capacity – 20 medium size
 - Strategically staged



Fatality Management Surge



COVID-19 Fatality Management Surge



- Cold storage cargo containers
 - GEMA supported deployment
 - Retro-fitted as temporary morgues
 - Deployed to major metro hospitals - 9
 - National Guard built shelving
 - 20' and 40' Containers Capacity – 24 / 48

COVID-19 Fatality Management Surge



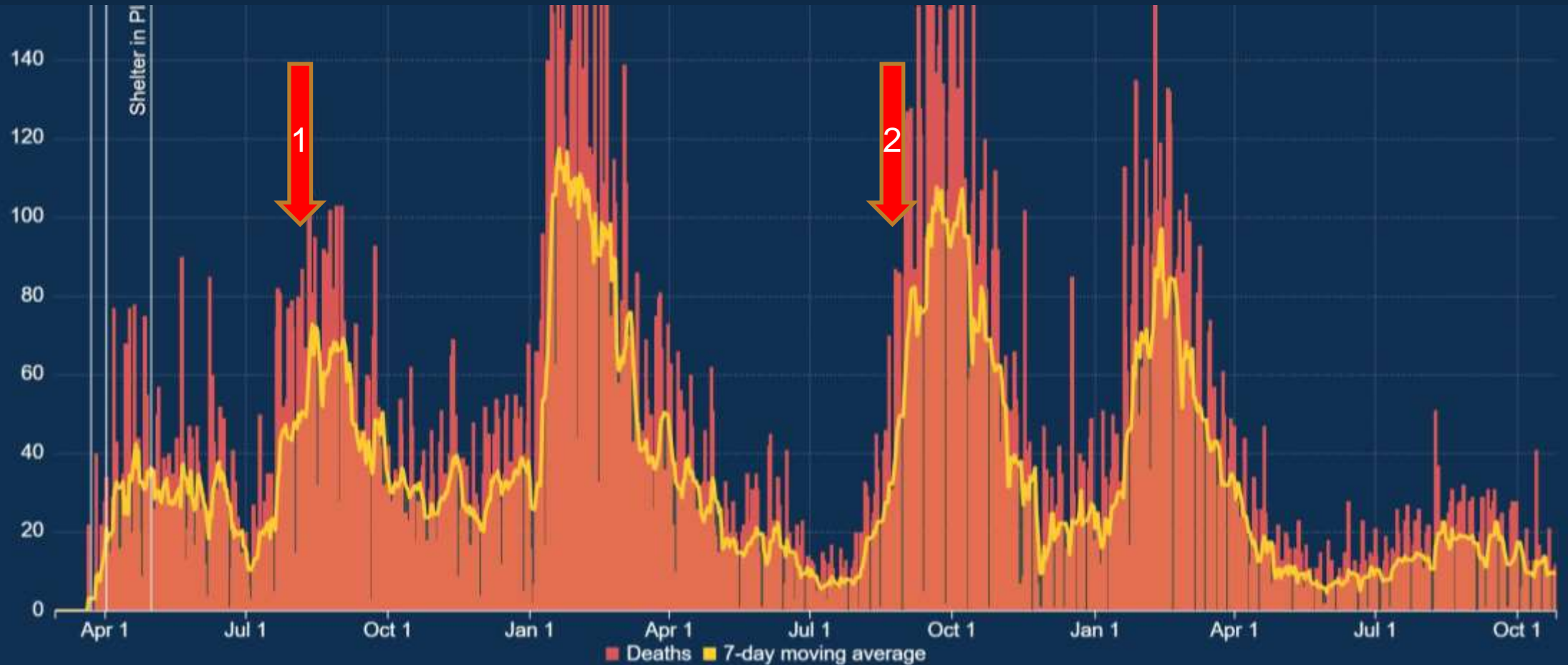
- Locally acquired cold storage units are highly encouraged
- FDA provided sanitation guidance for CS units to return to food grade transport post incident. May 2020
- FDA -Refrigerated Human Remains Storage units back to Food Storage Units
<https://www.fda.gov/regulatory-information/search-fda-guidance-documents/returning-refrigerated-transport-vehicles-and-refrigerated-storage-units-food-uses-after-using-them>

COVID-19 Facility Management Surge

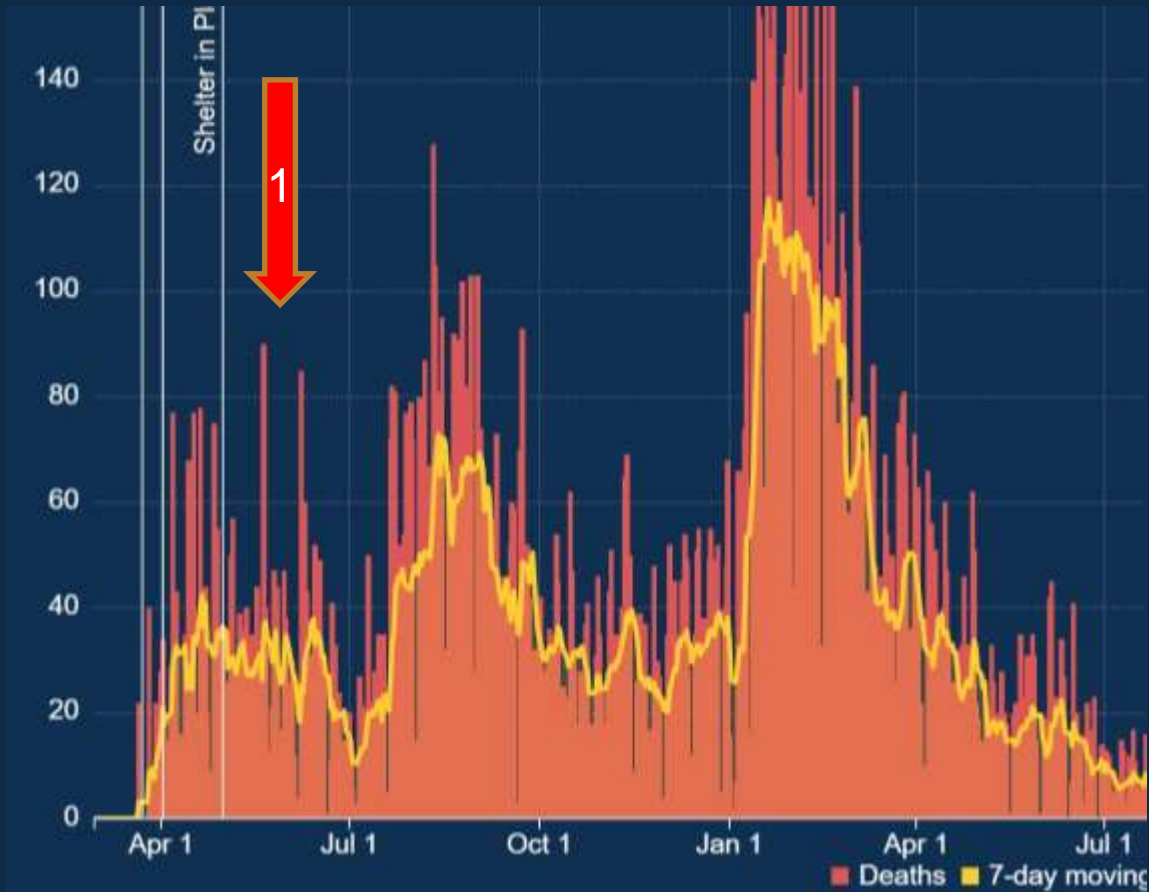


Rural Water Authority Provided Power Support

COVID-19 Deaths Over Time



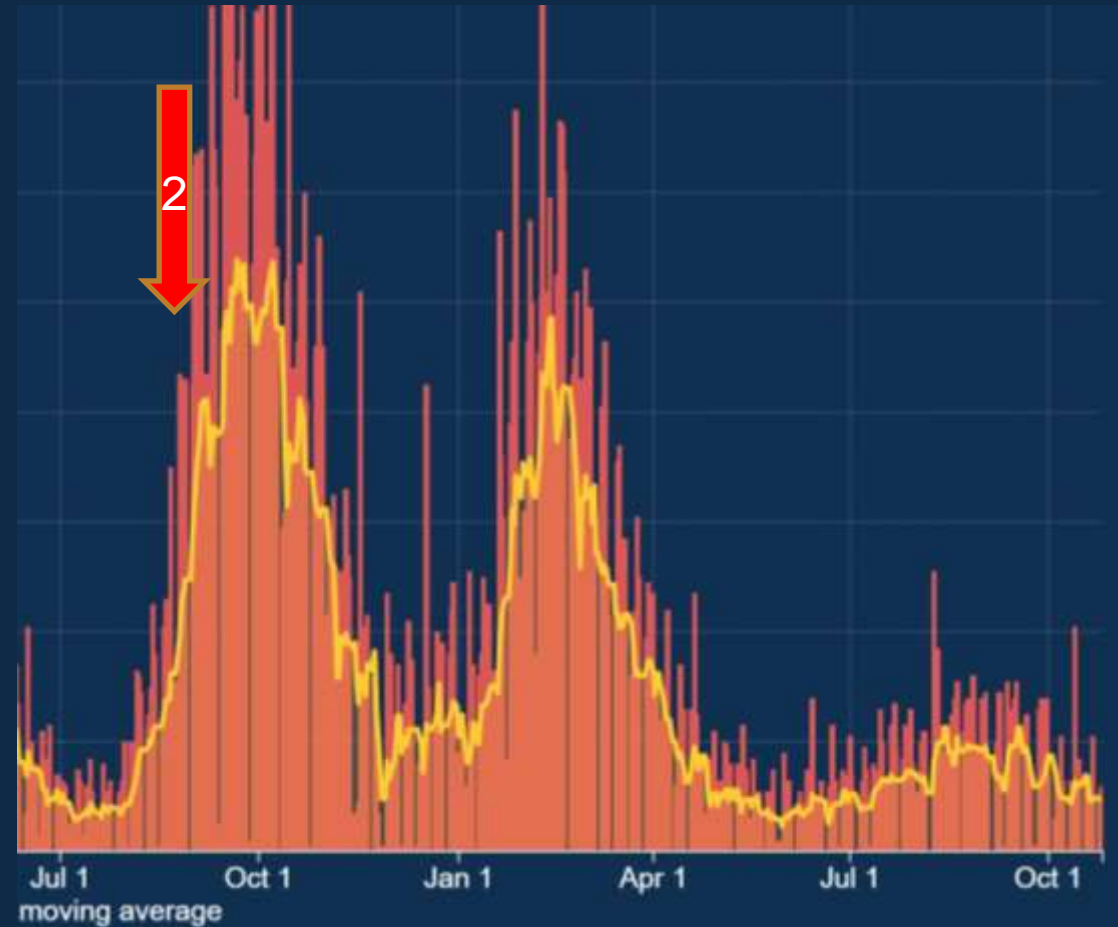
COVID-19 Deaths Over Time



- April 2020
 - Deployed 9 cold storage containers to major hospitals
- July 2020
 - Demobilized six cold storage containers

COVID-19 Deaths Over Time

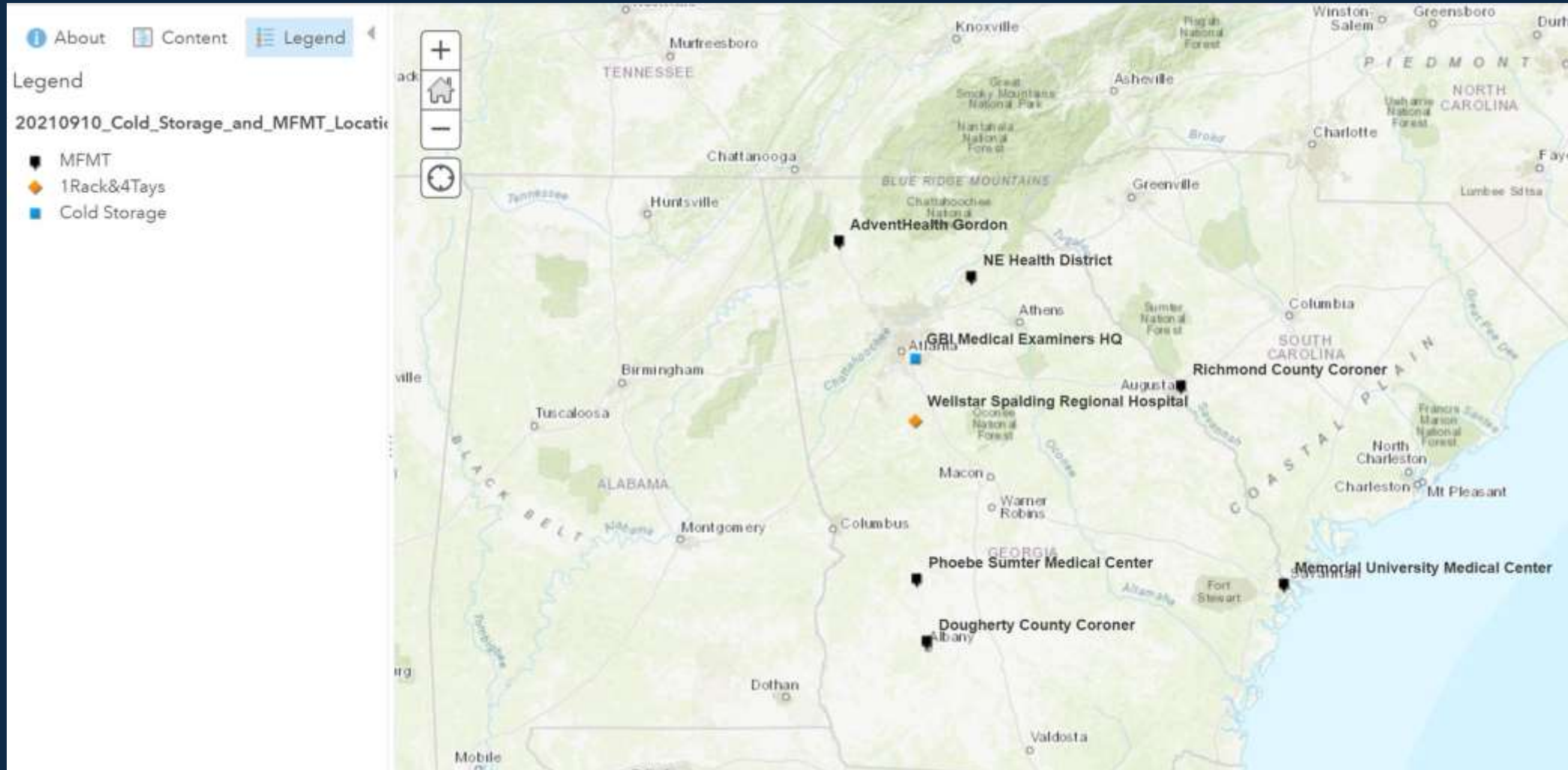
- Three cold storage containers remained active until August 2021
 - Shoreline connected to power
 - GBI HQ purchased the container
 - Remains in use today



COVID-19 in Georgia (as of 9-13-2021)

- Over 20,000 fatalities
- Cold storage units were demobilized from hospitals
- Hospitalized with Covid: 5952 / Vents: 1112
- Mass fatality morgue trailer (MFMT) deployed - 6
- Rack with 4 trays deployed - 1
- Body bag surge support ongoing as needed

COVID-19 Deaths Over Time



MBAR Tool

2/21/23, 12:14 PM Morgue Beds Availability Report

Reset Saved

Morgue Beds Availability Report

County*
Start typing the county name and select from the drop down list

Facility Type*
Start typing the facility type and use the drop down listing

Coroner Crematory Funeral Establishment Hospital
 Medical Examiner Other

<https://survey123.arcgis.com/share/a0b9eb9e39ff4d90ba90532332af720d> 1/4

2/21/23, 12:14 PM Morgue Beds Availability Report


Reset Saved

Facility Name*
Start typing the facility name or select the from the drop down menu or use Other if it's not listed

Facility Address

Morgue Location*
Click the locate me icon if you are at the facility on a device with location services turned on or Type in the address, city, zip, then press the search icon or move the map crosshairs over the facility
Then click on the check mark at the bottom right

Find address or place



Earthstar Geographics Powered by Esri

Lat: Lon:

First and last name

Emergency Contact Phone Number*
Very Important, A cell phone number is preferred

<https://survey123.arcgis.com/share/a0b9eb9e39ff4d90ba90532332af720d> 2/4

MBAR Tool

2/21/23, 12:14 PM Morgue Beds Availability Report

[Reset](#) [Saved](#)

Email
An email would be helpful to enhance communications during a disaster

Morgue Beds Available*
The number of bodies that can be added to the morgue

Normal morgue capacity
Total normal daily capacity, without cold storage surge equipment

Morgue SURGE capacity
If no additional surge capacity, this is the same as normal capacity

Mobile Morgue capacity
If the facility has it's own mobile morgue trailer or cold storage unit, how many bodies can it hold

MERC capacity
Mortuary Enhance Remains Cooling (MERC) unit body capacity (4, 8, 16, 24); if you do not have it, no entry needed

2/21/23, 12:14 PM Morgue Beds Availability Report

[Reset](#) [Saved](#)

Date Submitted

Important notes to report
Such as if the facility or county has no capacity, what adjacent county(s) are used

Morgue Bed Availability Reporting (MBAR) Tool

Survey 123 Connect template

Minimize selections

- 159 Counties
- Facility Type
 - Coroner
 - Crematory
 - Funeral_Establishment
 - Hospital
 - Medical_Examiner
 - Other

type	name	label	appearance
note	Logo		
select_one County	County	County	autocomplete

type	name	label	required	required_message	appearance
select_one Facility_Type	Facility_Type	Facility Type	yes	Select the Facility Type or other	compact

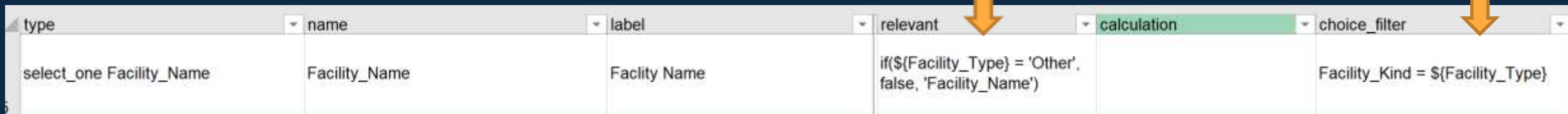
MBAR Tool

Survey 123 Connect template

Minimize selections

- Facility Name (936 to select from)
- Relevant – used the Other filter
- Choice_filter- by the Facility_Type
- Autocomplete

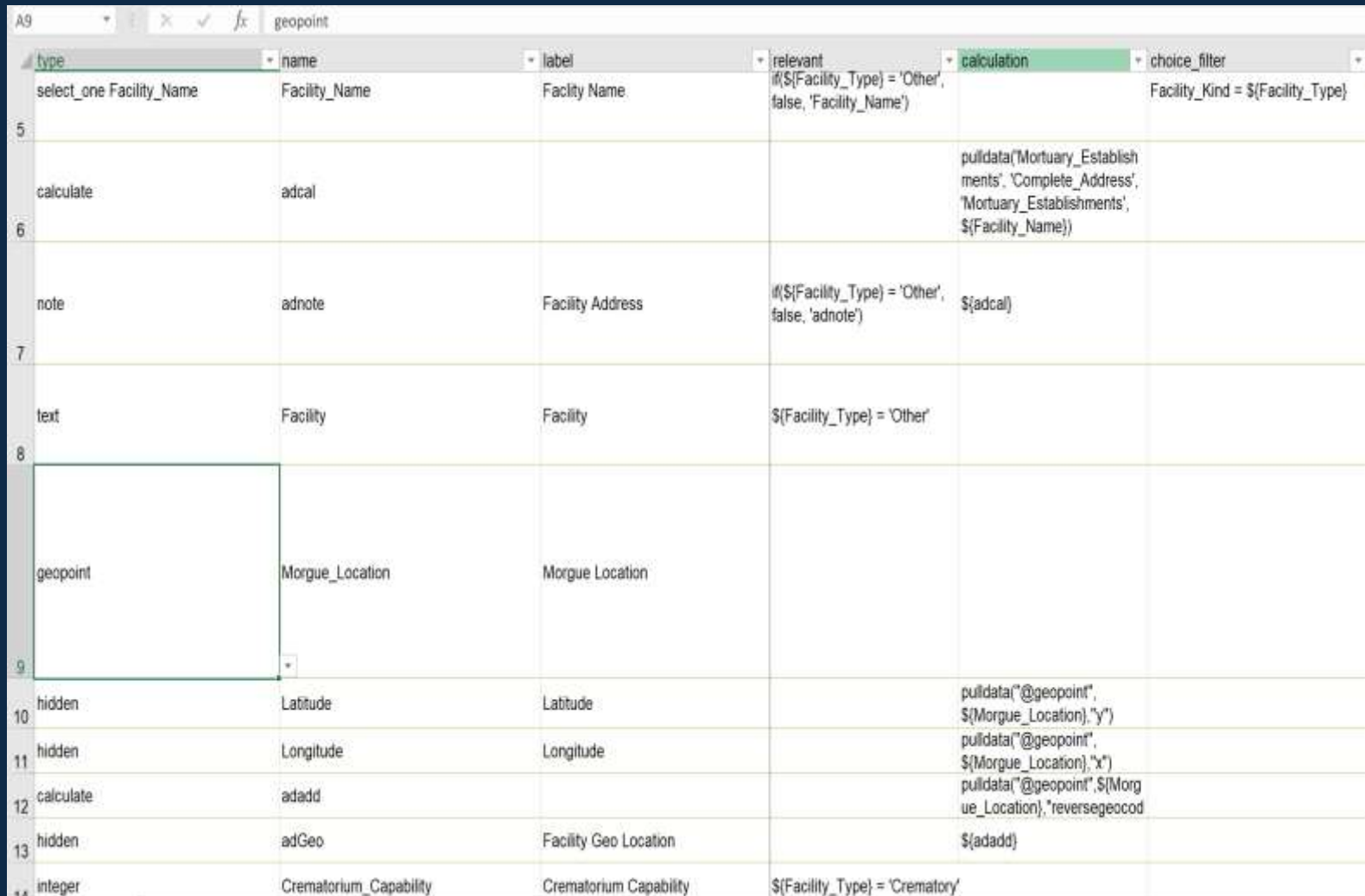
type	name	label	relevant	calculation	choice_filter
select_one	Facility_Name	Facility Name	if(\${Facility_Type} = 'Other', false, 'Facility_Name')		Facility_Kind = \${Facility_Type}



MBAR Tool

list_name	name	label	Facility_Kind
Facility_Type	Coroner	Coroner	
Facility_Type	Crematory	Crematory	
Facility_Type	Funeral_Establishment	Funeral Establishment	
Facility_Type	Hospital	Hospital	
Facility_Type	Medical_Examiner	Medical Examiner	
Facility_Type	Other	Other	
Facility_Name	Other	Other	Other
Facility_Name	Advent_Health_Gordon	Advent_Health_Gordon	Hospital
Facility_Name	Advent_Health_Murray	Advent_Health_Murray	Hospital
Facility_Name	Appling_Healthcare	Appling_Healthcare	Hospital
Facility_Name	Augusta_University_Medical_Center	Augusta_University_Medical_Center	Hospital
Facility_Name	Bacon_County_Hospital	Bacon_County_Hospital	Hospital
Facility_Name	Bleckley_Memorial_Hospital	Bleckley_Memorial_Hospital	Hospital
Facility_Name	Brooks_County_Hospital	Brooks_County_Hospital	Hospital
Facility_Name	Burke_Medical_Center	Burke_Medical_Center	Hospital
Facility_Name	Candler_County_Hospital__Metter	Candler_County_Hospital__Metter	Hospital
Facility_Name	Cartersville_Medical_Ctr	Cartersville_Medical_Ctr	Hospital
Facility_Name	Chatuge_Regional_Hospital	Chatuge_Regional_Hospital	Hospital
Facility_Name	CHI_Memorial_GA	CHI_Memorial_GA	Hospital
Facility_Name	CHOA__Egleston	CHOA__Egleston	Hospital
Facility_Name	CHOA__Hughes_Spalding	CHOA__Hughes_Spalding	Hospital
Facility_Name	CHOA__Scottish_Rite	CHOA__Scottish_Rite	Hospital
Facility_Name	Clinch_Memorial_Hospital	Clinch_Memorial_Hospital	Hospital
Facility_Name	Coffee_Regional_Medical_Center	Coffee_Regional_Medical_Center	Hospital
Facility_Name	Coliseum_Medical_Center	Coliseum_Medical_Center	Hospital
Facility_Name	Coliseum_Northside_Hospital	Coliseum_Northside_Hospital	Hospital
Facility_Name	Colquitt_Regional_Regional_Medical_Center	Colquitt_Regional_Regional_Medical_Center	Hospital
Facility_Name	Crisp_Regional_Hospital	Crisp_Regional_Hospital	Hospital
Facility_Name	Doctors_Hospital	Doctors_Hospital	Hospital
Facility_Name	Dodge_County_Hospital	Dodge_County_Hospital	Hospital
Facility_Name	Donalsonville_Hospital	Donalsonville_Hospital	Hospital
Facility_Name	Dorminy_Medical_Center	Dominy_Medical_Center	Hospital
Facility_Name	East_Georgia_Regional_Medical_Center	East_Georgia_Regional_Medical_Center	Hospital

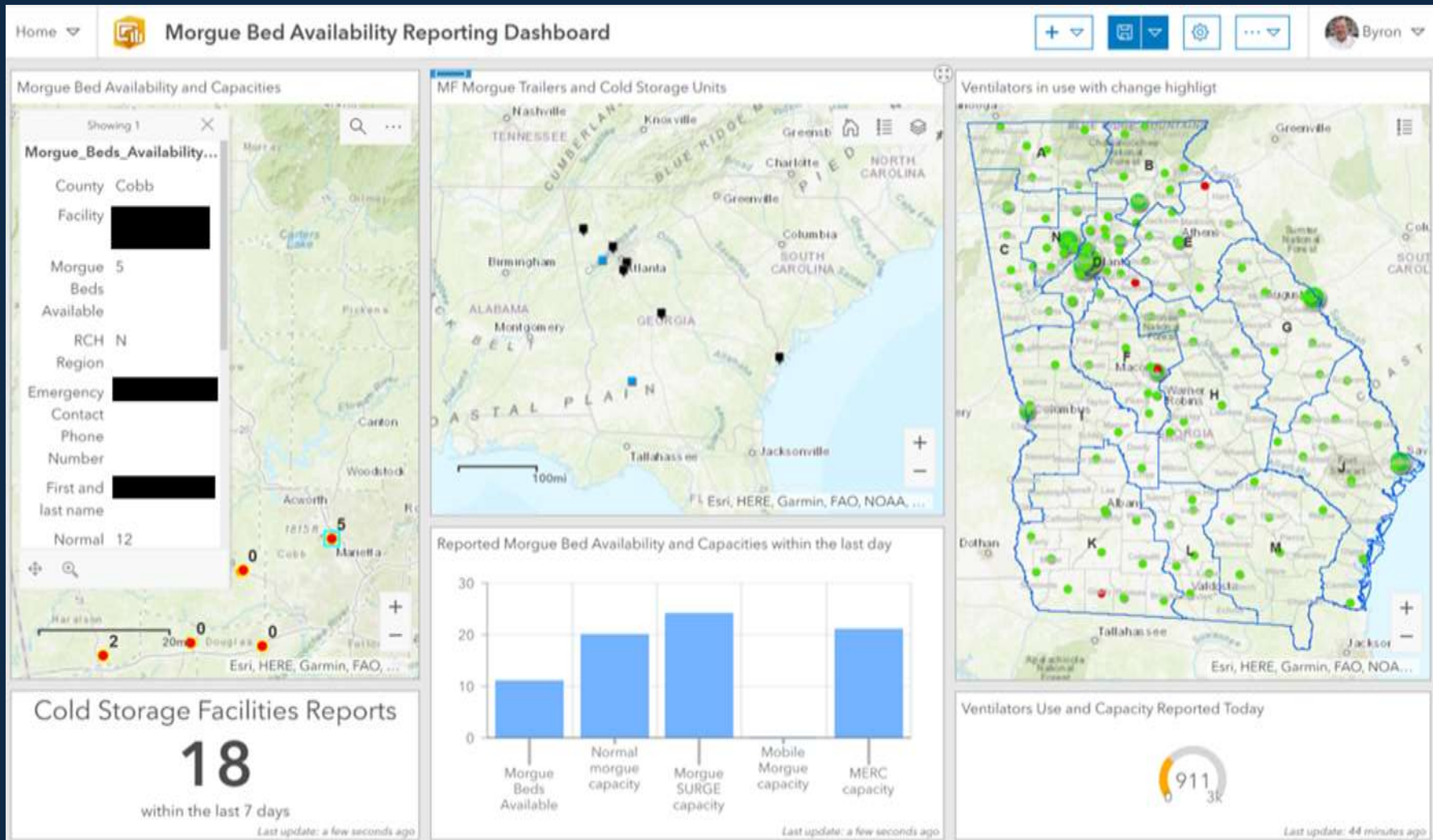
MBAR Tool



The screenshot shows the MBAR Tool interface with a table of data elements. The table has columns for type, name, label, relevant, calculation, and choice_filter. The rows represent different data elements in the form, including a select one, calculate, note, text, geopoint, hidden, and integer.

type	name	label	relevant	calculation	choice_filter
select_one	Facility_Name	Facility Name	if({Facility_Type} = 'Other', false, 'Facility_Name')		Facility_Kind = \${Facility_Type}
calculate	adcal			pulldata('Mortuary_Establishments', 'Complete_Address', 'Mortuary_Establishments', \${Facility_Name})	
note	adnote	Facility Address	if({Facility_Type} = 'Other', false, 'adnote')	\${adcal}	
text	Facility	Facility	\${Facility_Type} = 'Other'		
geopoint	Morgue_Location	Morgue Location			
hidden	Latitude	Latitude		pulldata("@geopoint", \${Morgue_Location}, "y")	
hidden	Longitude	Longitude		pulldata("@geopoint", \${Morgue_Location}, "x")	
calculate	adadd			pulldata("@geopoint", \${Morgue_Location}, "reversegeocod")	
hidden	adGeo	Facility Geo Location		\${adadd}	
integer	Crematorium_Capability	Crematorium Capability	\${Facility_Type} = 'Crematory'		

MBAR Tool



MBAR Tool

- Challenges
 - Data input was good
 - Not mandated
 - Another report
 - Secure view sharing
- Improvement planning
 - Hub secure view access (in progress)
 - Promotes secure local/regional use
 - Encourage local/regional use during exercises
 - Enhances tool familiarity
 - Training as requested

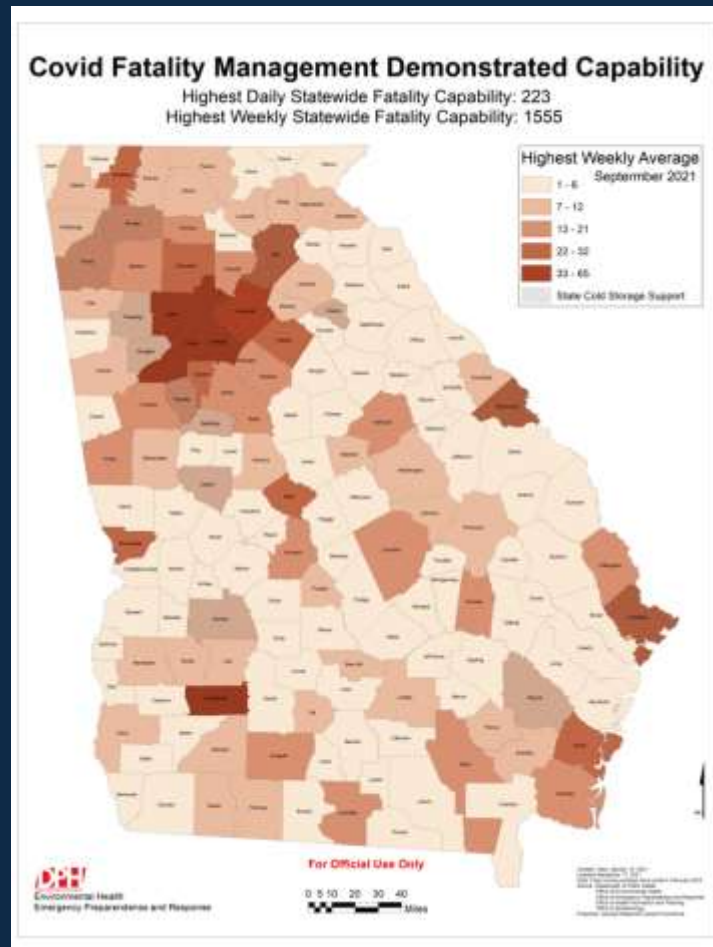
COVID-19 Fatality Management Surge

- Body transport and preparation
 - Body bags
 - Two for safety
- PPE shortages
- Timely pickup was good
- Final service challenges
 - Social distancing
 - Limited capacity

- Unexpected decisions
 - Financial
 - Interment
 - Cremation
 - Burial



COVID-19 Fatality Management Surge



- Highest Demonstrated Capability *
 - Onset through Dec. 2020
 - Daily: 223/day
 - Weekly: 1555

*If all fatalities equally distributed across the state

Contact Information

Byron Lobsinger

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Environmental Health Emergency Planner
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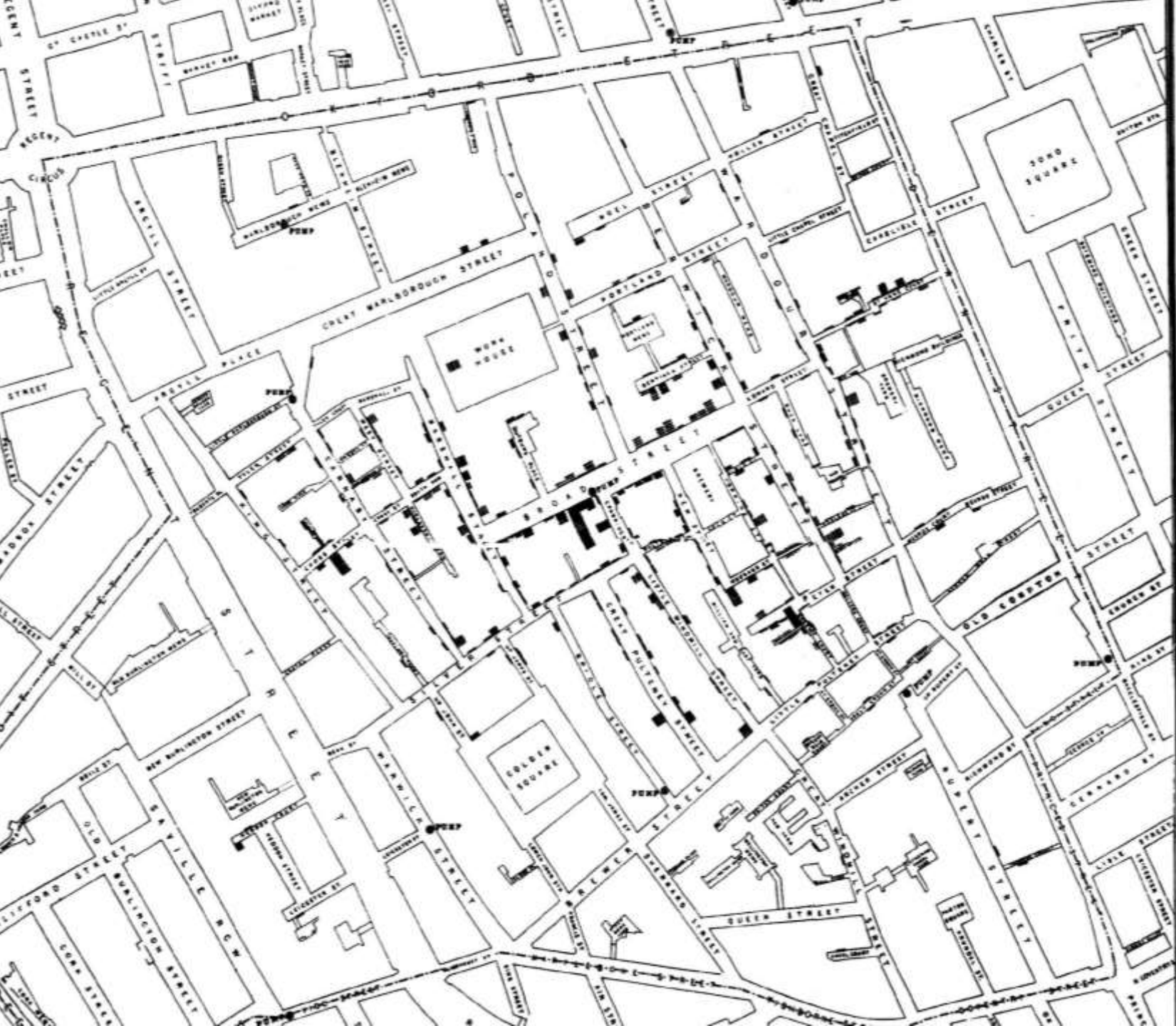
Spatial Data Policy

Data in the hands of the
right people to provide
deep insight

Frank Winters – retired
NYS GIO



INSPIRE



Joint Statement on the Value of GIS in the Pandemic

<https://nsgic.memberclicks.net/joint-statement-on-the-value-of-gis-in-the-pandemic>

11 orgs co-signed

You may need to create a free account.



**NSGIC GIS 101: Public Health and
Geospatial Communities Collaborate with
Frank Winters | May 3, 2023**

https://www.youtube.com/watch?v=v4A_I2TCXoY

You may need to create a free
account.



National Pandemic GIS Task Force

<https://www.napsgfoundation.org/pandemic-gis-task-force/>



NACCHO
National Association of County & City Health Officials

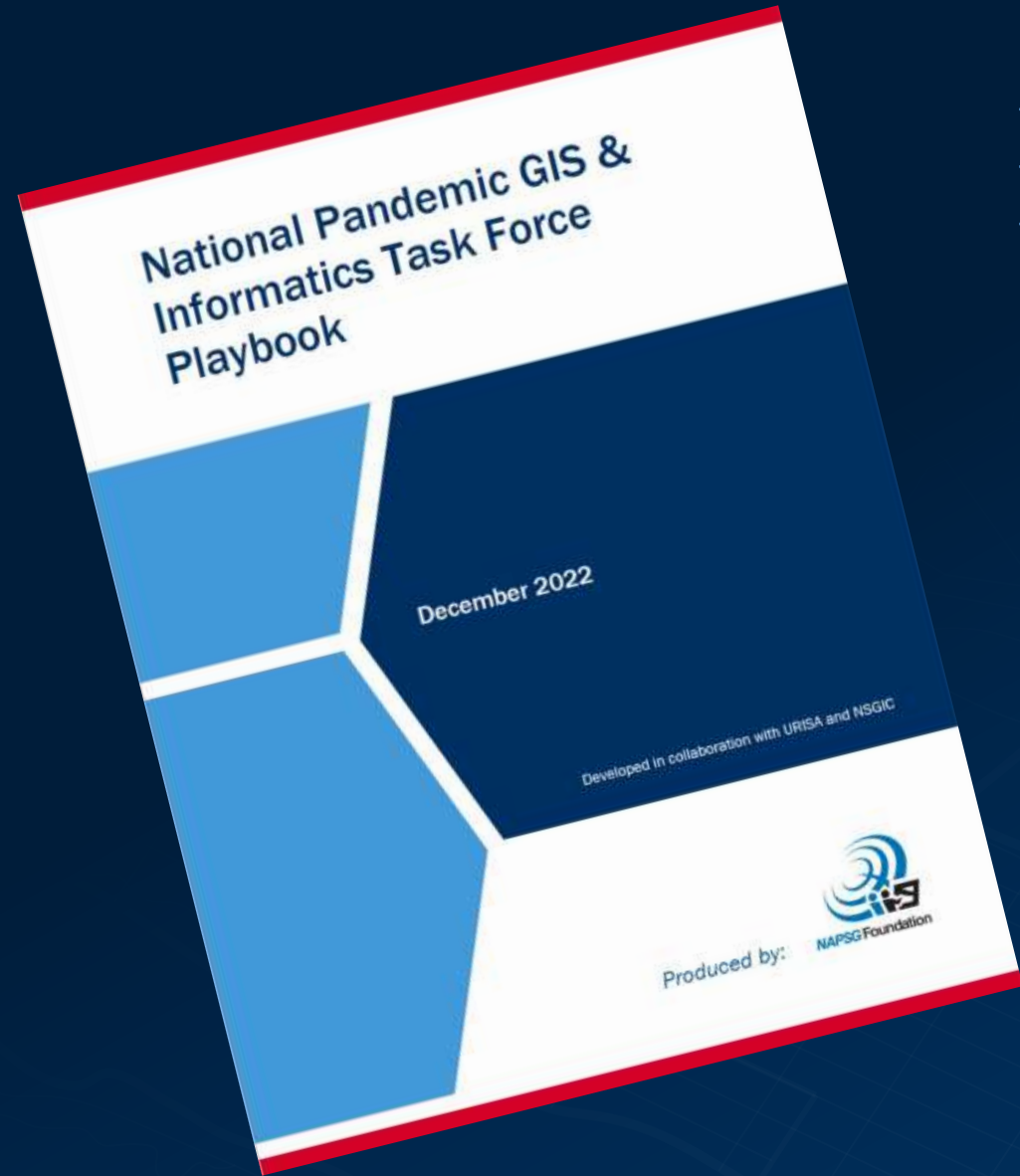
 **NSGIC**
National States Geographic Information Council

URISA
Fostering Excellence in GIS
www.URISA.org

asthotm

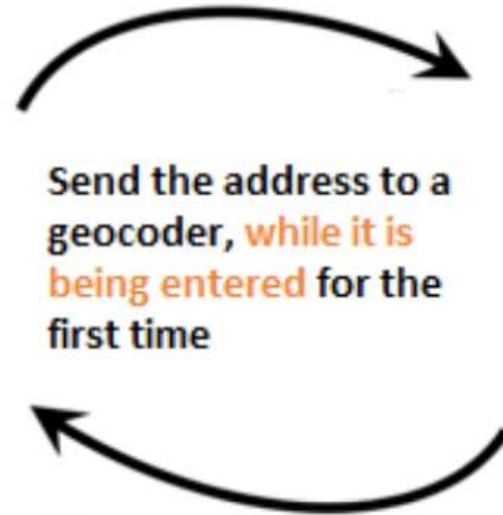
A Collaboration Between

 **NAPSG**
Foundation



<https://www.napsgfoundation.org/wp-content/uploads/2022/12/National-Pandemic-GIS-Informatics-Task-Force-Playbook.pdf>





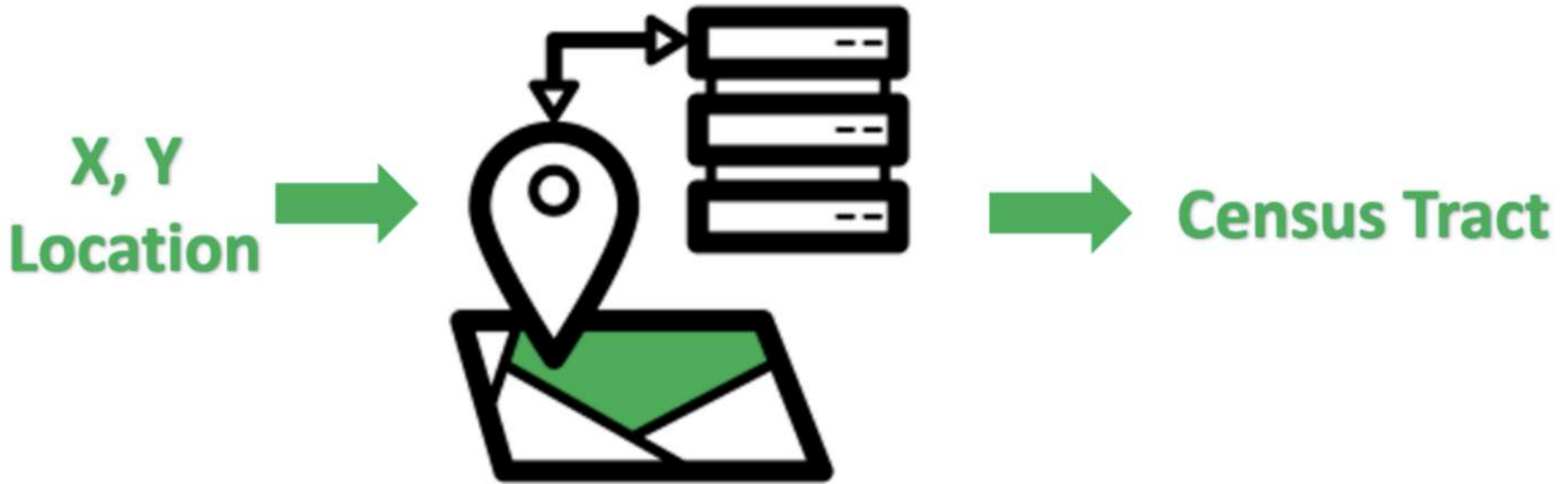
Send the address to a geocoder, **while it is being entered** for the first time



Iterate until a valid location address is entered

- ✓ 123 Main St, Sunny Town, NY 12345
- ✗ P.O. Box 123, Sunny Town, NY 12345

The **geographic coordinates** are then sent to a **GIS web service (API)** to return the **census tract** for that location
Census tract ID can be stored with the address record.





Variable	% Variance explained	Coefficient
Household size	A	V
Income	B	W
Ethnicity	C	X
Cell phone tracks mobility index *	D	Y
Cell phone tracks from tract to tract**	E	Z



National Pandemic GIS & Informatics Task Force Playbook

December 2022

Developed in collaboration with URISA and NSGIC

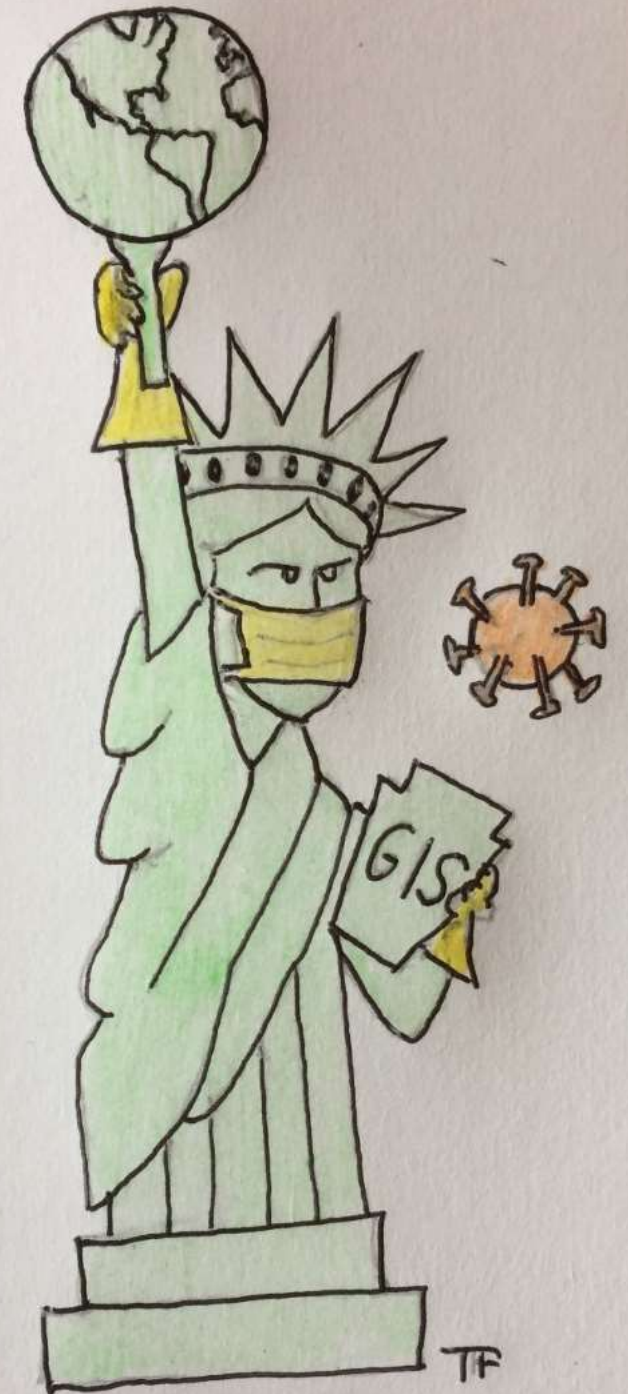
Produced by:



NAPSG Foundation



Thank you.
wintersgeo@gmail.com



Questions?