

GOVLOOP TRAINING

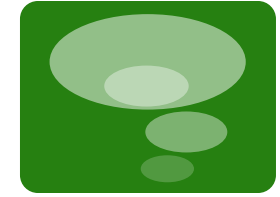
Building Healthy Communities

August 13, 2015

Helping you do your job better:

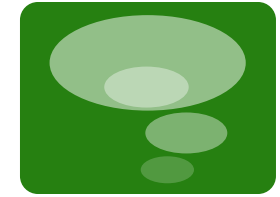


Housekeeping



- **Tweet with us:** Follow @govloop and use #gltrain to share what you learn.
- **Get answers:** Submit your questions using the "Ask a question" box on the console. Our experts will take your questions at the end.
- **Need help:** If you have any technical difficulties during the training click on the "Help" button located below the slide window.
- **Learn more:** Check out the Resources Section for additional information (including this slide deck) on GIS.
- **On-Demand:** We will email you a link to the on-demand version of this training so you can view it again or share with a colleague. Plus your GovLoop training certificate.
- **Be a VIP:** By attending the live training you've earned 1 credit towards GovLoop's VIP program. Get to 5 and we'll send you awesome swag.
- **Take our survey:** Help us, help you! Take our brief evaluation to let us know what you liked about this training.

Today's Speakers



Dawn Wright
District Epidemiologist
Portsmouth Health
Department, VA



Angelica Baltazar
Health & Human Services
Industry Specialist
Esri



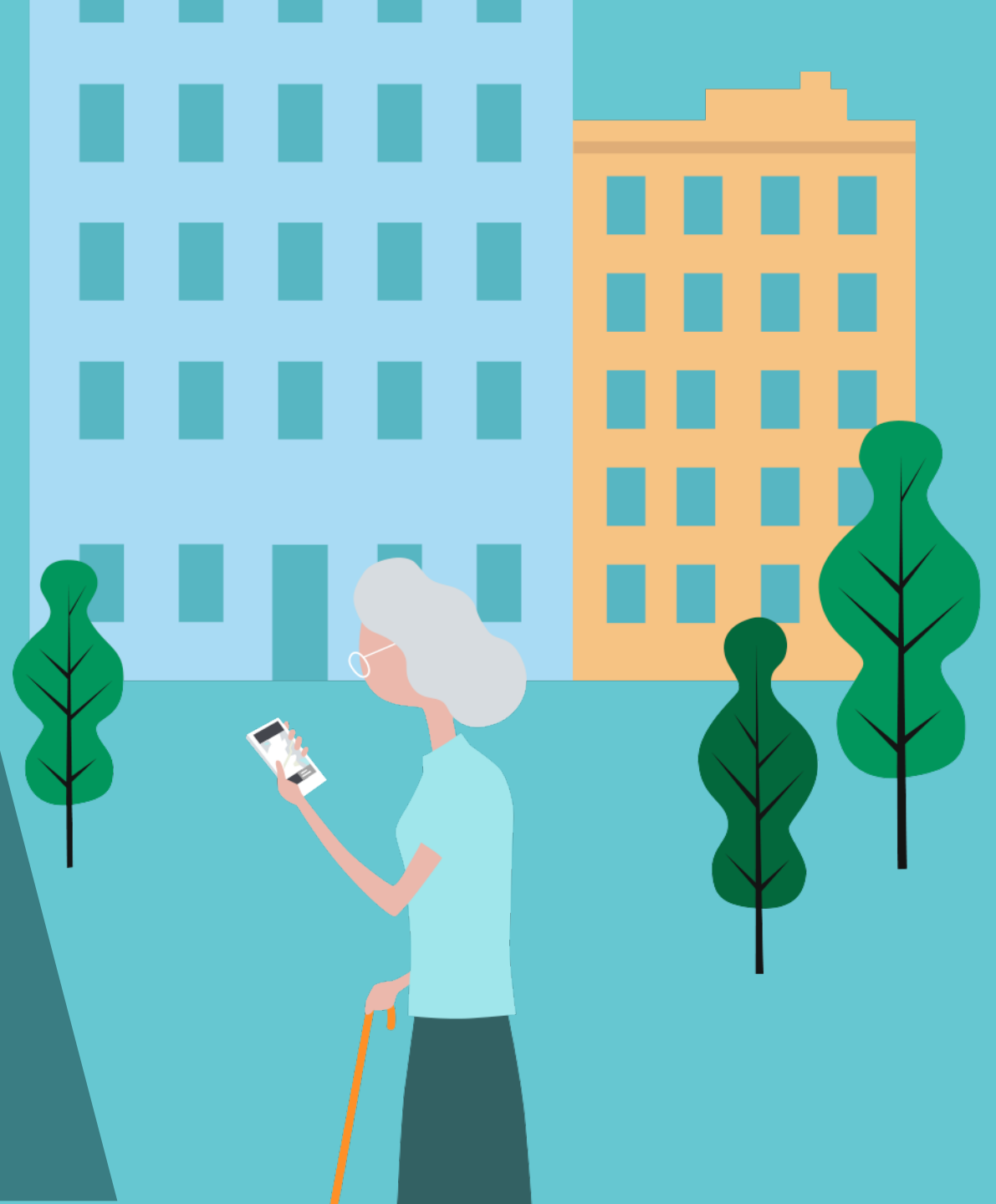
Jared Shoultz
Health Technology
Specialist
Esri



HEALTH AND HUMAN SERVICES

Building Healthy Communities Making a Difference with GIS

Health and Human Services

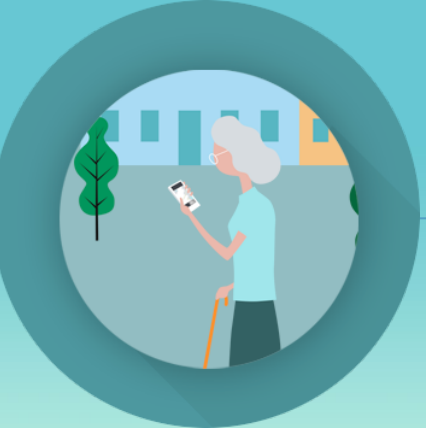


What is GIS?

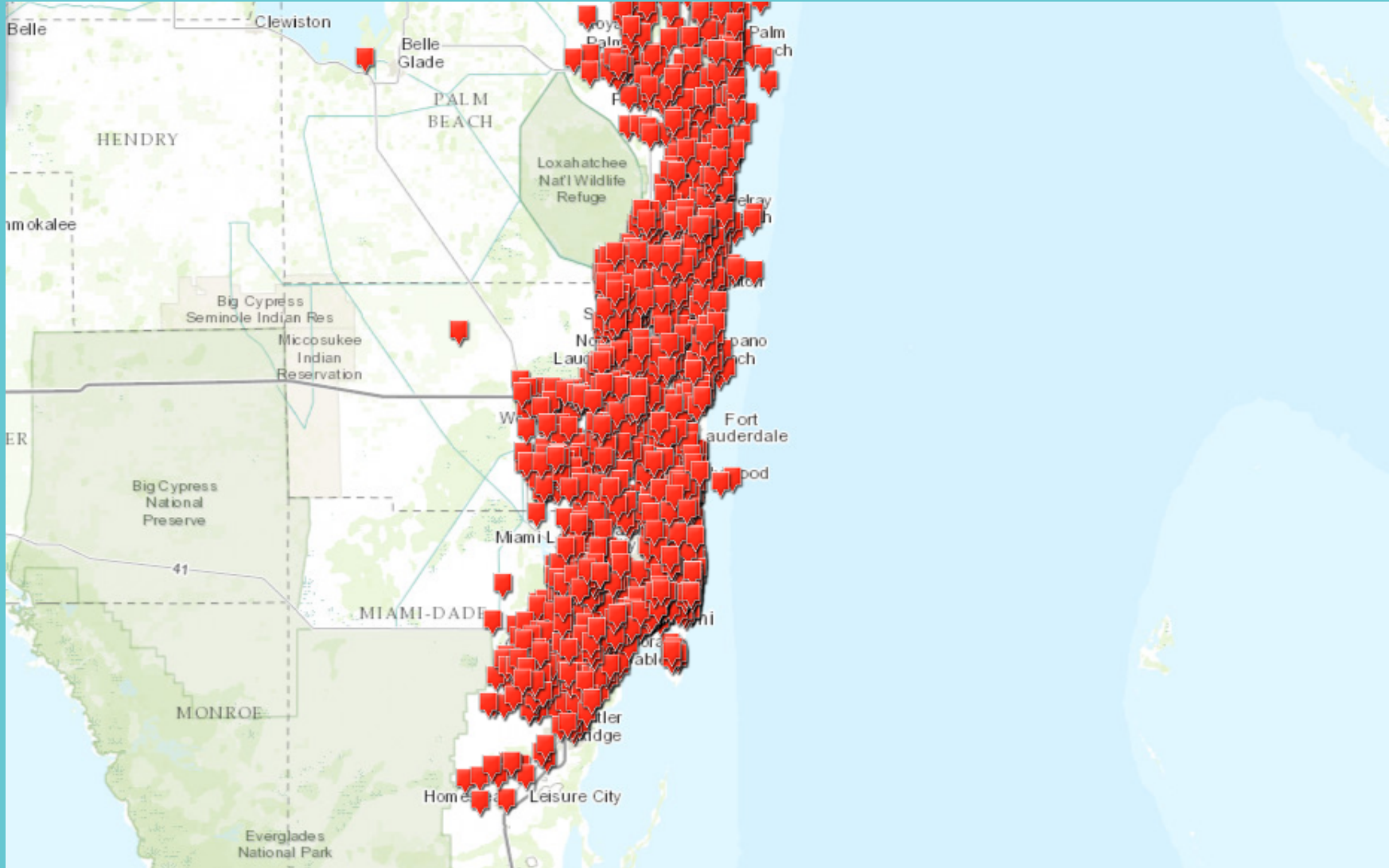
A geographic information system (GIS) lets us visualize, question, analyze, and interpret data to understand relationships, patterns and trends relevant to our neighborhoods and communities.



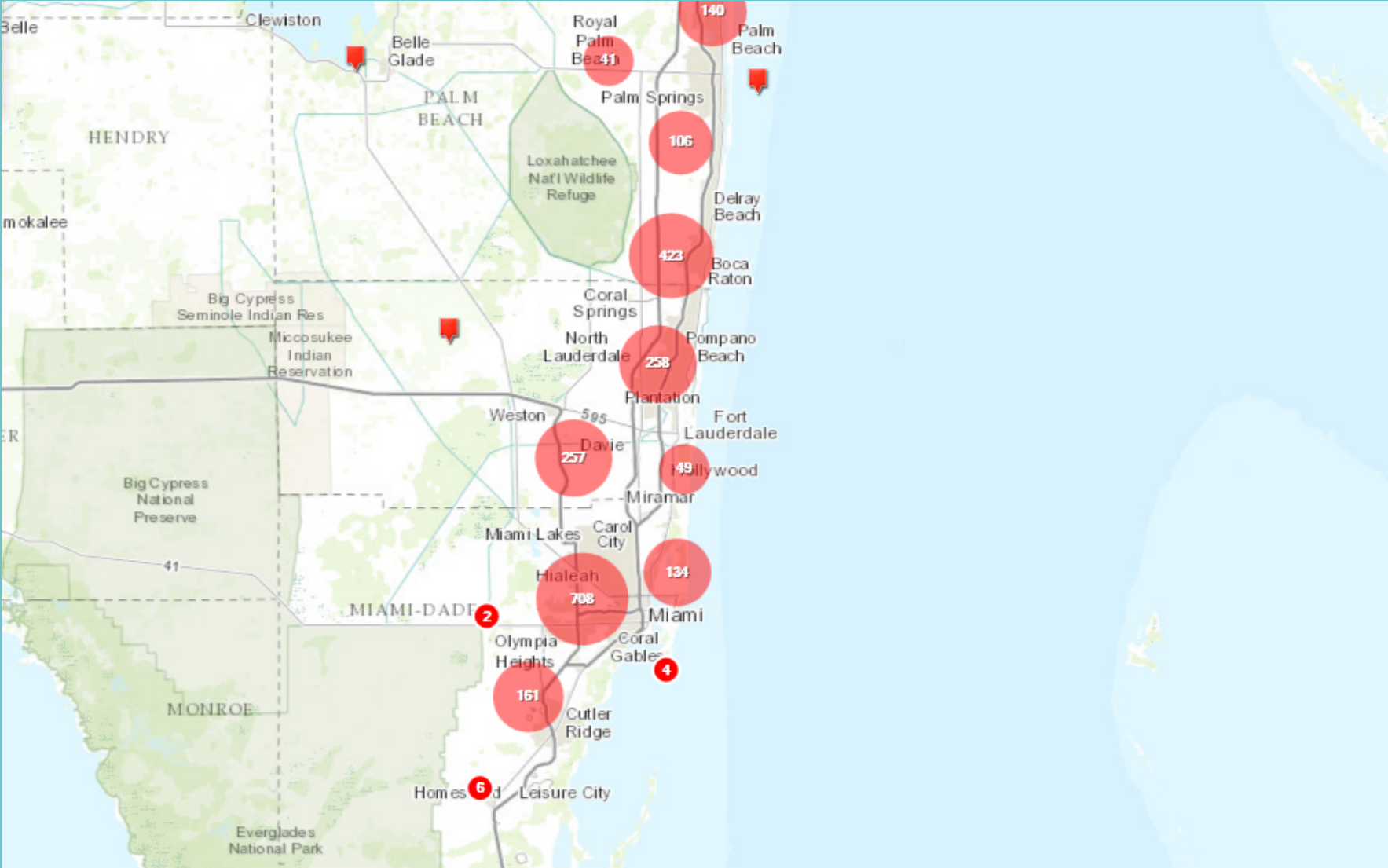
Place Matters to Health and Human Services



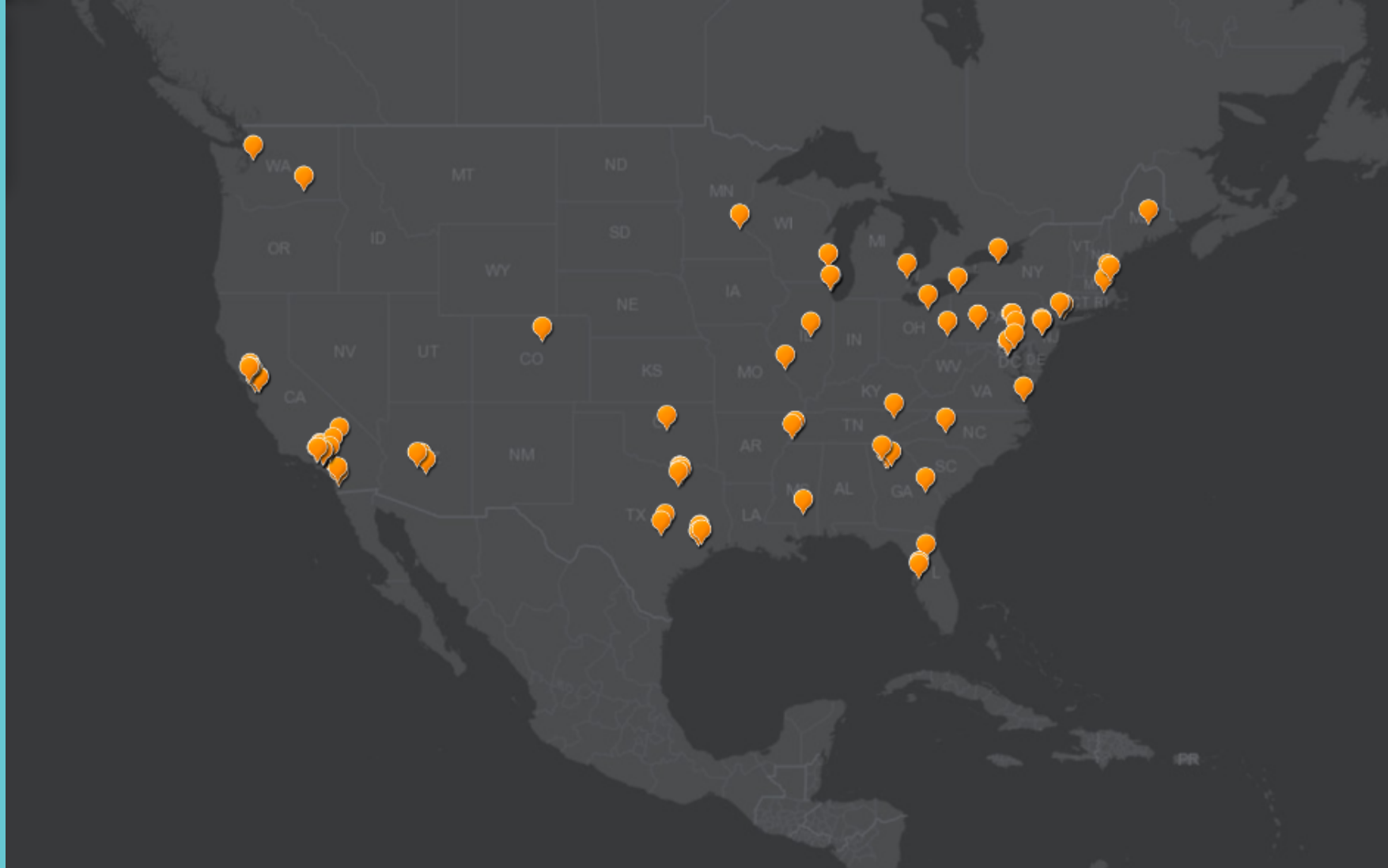
Large Volumes of Data – Map Measles



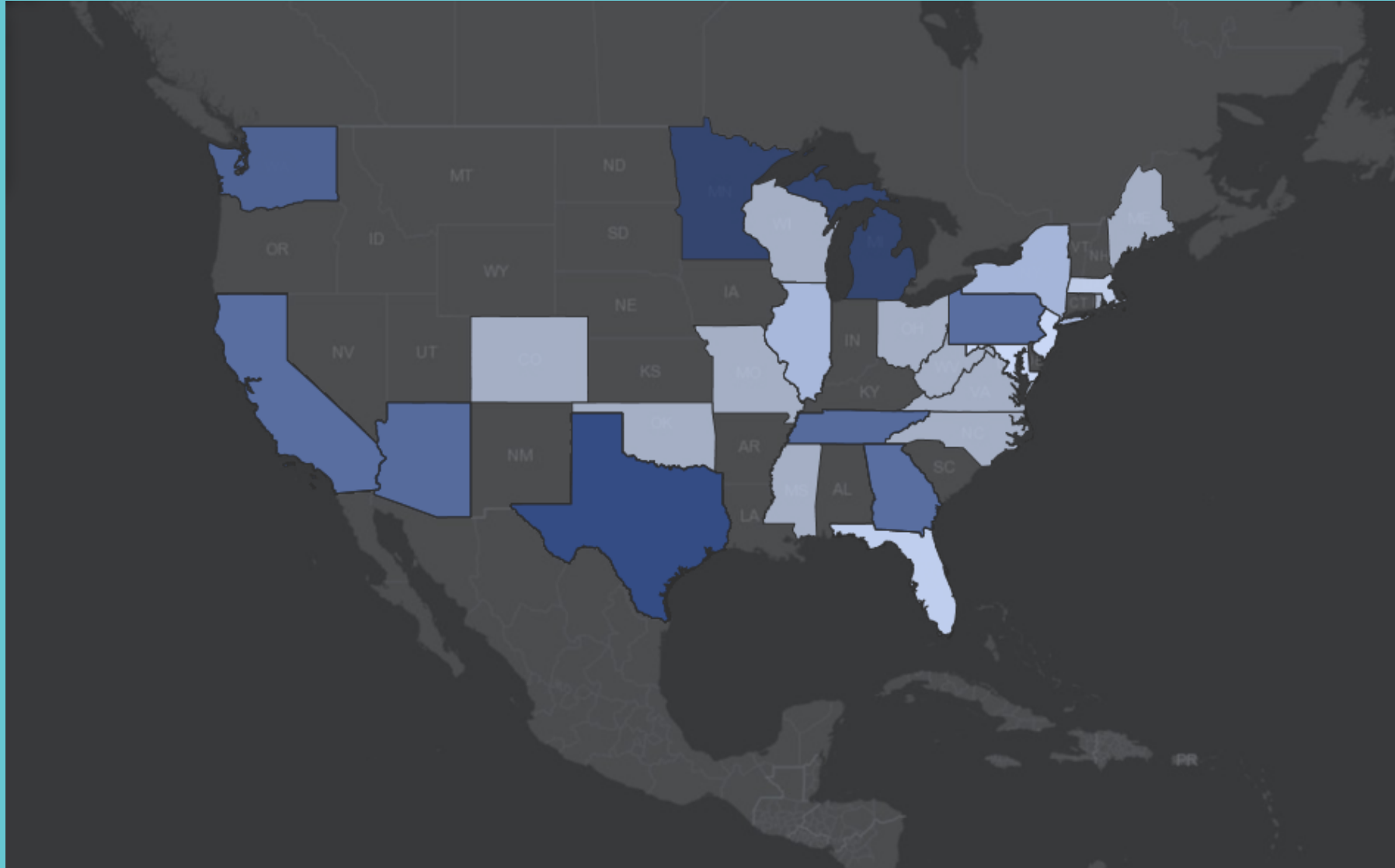
Eliminate Map Measles



Map to Regions – Like Postcodes



Map to Regions



Map to Your Regions - Not just administrative areas

1	NAME	COUNTY	STREET_ADDR	CITY	STATE	ZIP	PHONE	ANNL_SALES_EST	EMPS_EST	SIZE_EST
2	HONEYBAKED HAM	BURLINGTON	898 ROUTE 73 N	MARLTON	NJ	08053	856-985-4777	376000	2	1 - 2,499 sqft
3	HONEYBAKED HAM	MERCER	3371 US HIGHWAY 1 #159	LAWRENCEVILLE	NJ	08648	609-452-1011	1504000	8	2,500 - 9,999 sqft
4	HONEYBAKED HAM	SOMERSET	1549 US HIGHWAY 22	WATCHUNG	NJ	07069	908-755-2200	940000	5	1 - 2,499 sqft
5	HONEYBAKED HAM	MIDDLESEX	1197 AMBOY AVE #1	EDISON	NJ	08837	732-452-0039	1128000	6	1 - 2,499 sqft
6	HONEYBAKED HAM	MONMOUTH	500 STATE ROUTE 35	RED BANK	NJ	07701	732-842-1115	564000	3	1 - 2,499 sqft

Map 1

Custom boundary added to map and data are grouped (classified) by total annual sales in the color-coded map

Esri Maps

Map Contents Search

- Table1
 - Not Grouped
 - 376000 - 376000
 - 376001 - 564000
 - 564001 - 940000
 - 940001 - 1128000

Style Configuration

Style Grouping

Do you want to group your data: Yes No

Choose the column to group: Sum of ANNL_SALES_EST

Group column values by: Number Ranges

Classification Method: Natural Breaks

Number of Groups: 5

Color Ramp: [Color Ramp]

Reverse Colors

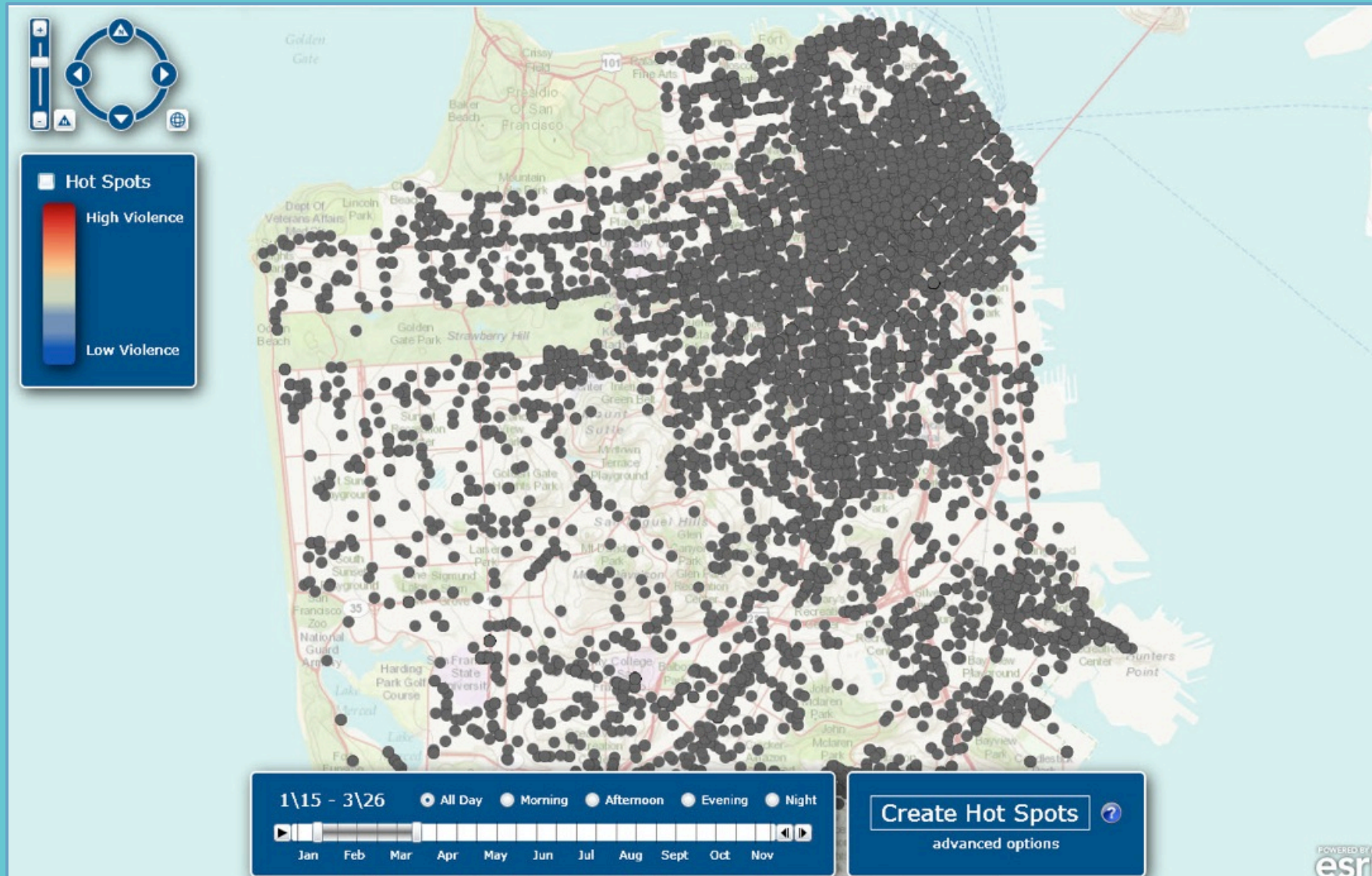
Sheet1 Esri Pivot Table 1

READY

100%

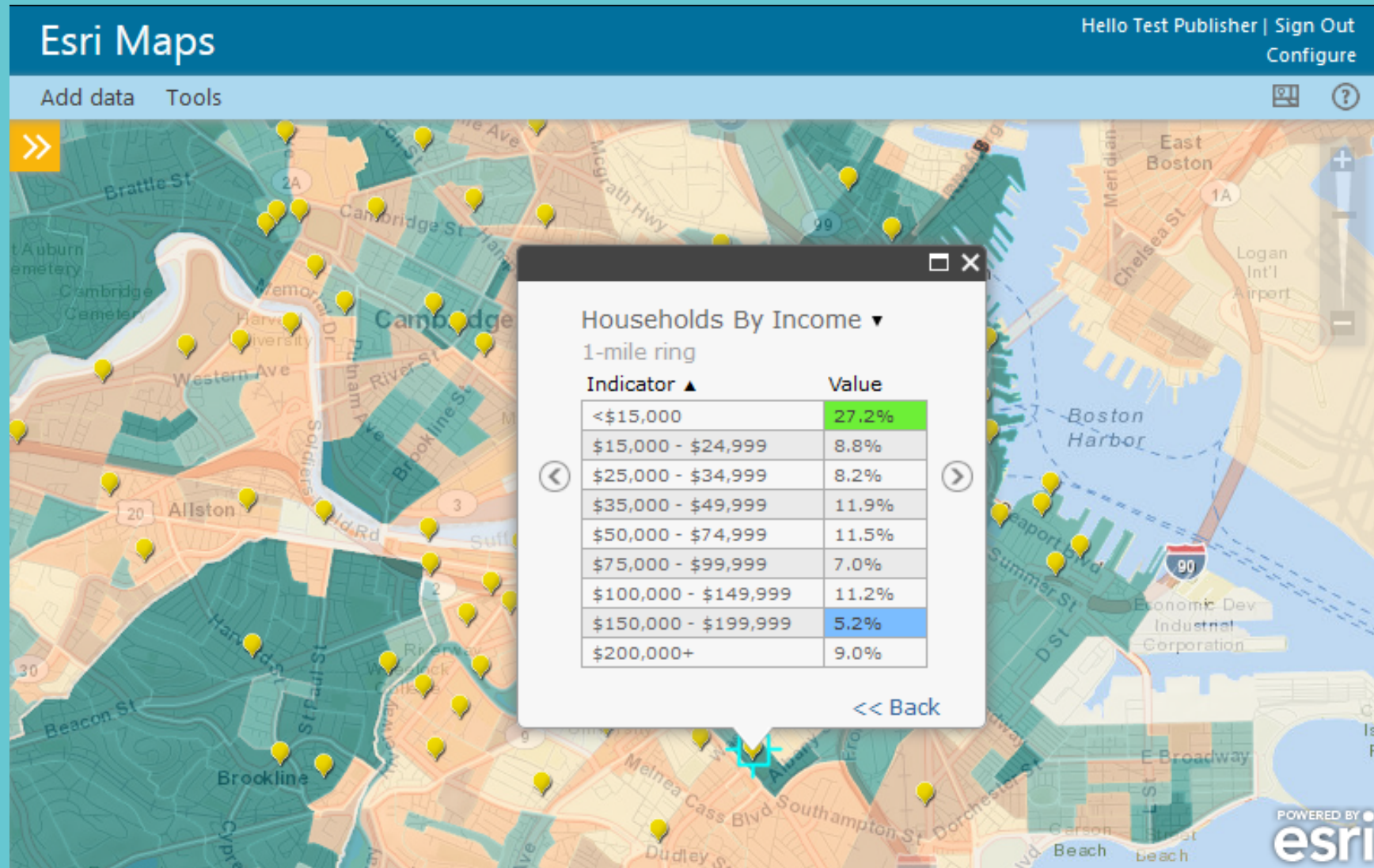
Heat Maps & Hot Spots

See What's Statistically Significant



Instant Insight to What's Going On Where

In the geographic areas that are important to you



Proven Investment when location is applied to Government Problems

Increased Access

Cost Avoidance

Increase Efficiency

Increase accuracy

Increase Communication & Collaboration

Support Decision Making

Save Time

Automate Workflows

Aid in Budgeting

Build Information

Esri Health and Human Services: Benefits

Serve

Make the most of your limited resources and better reach the most vulnerable constituents you serve.

Safeguard

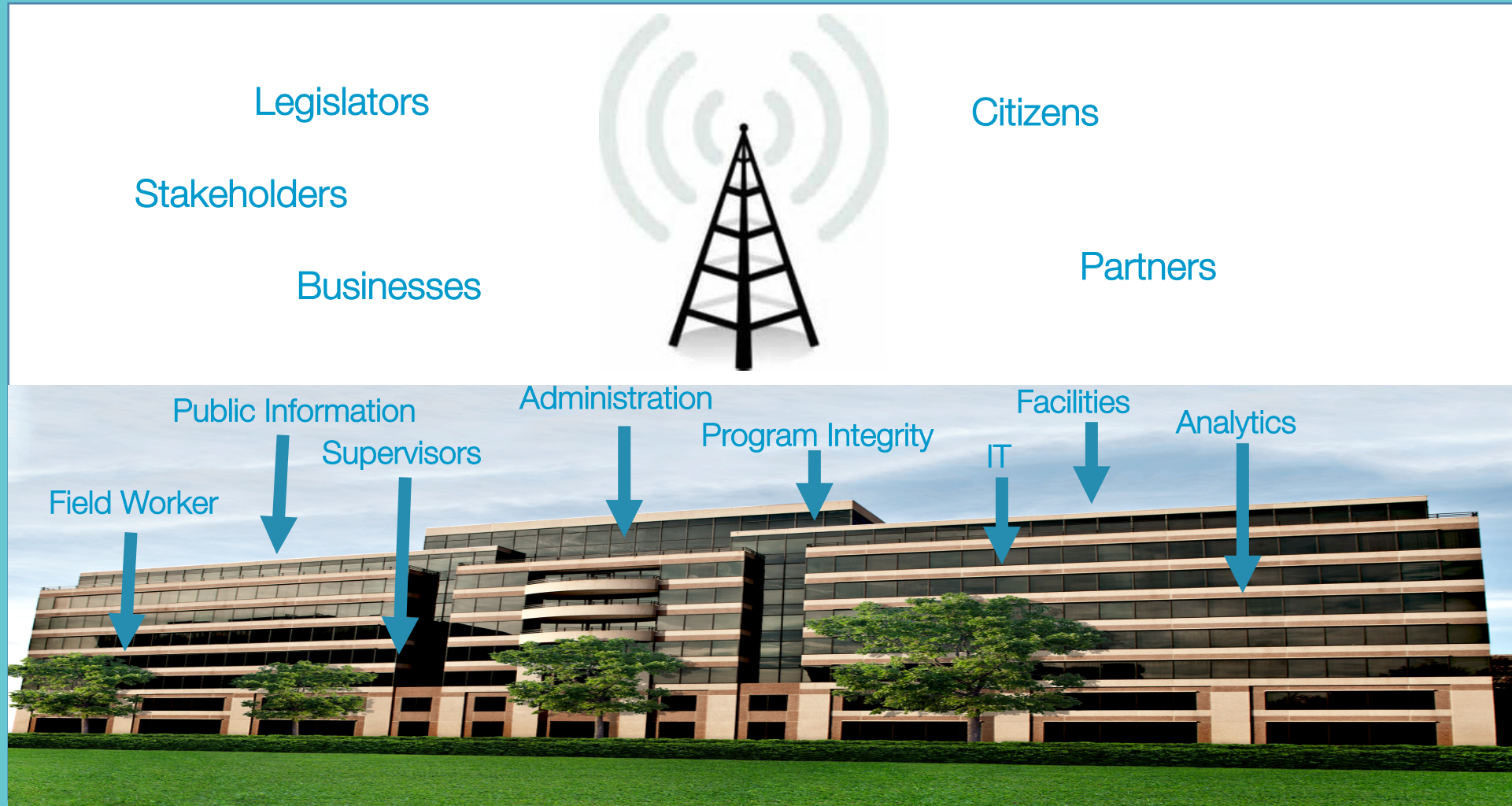
Maintain the integrity of your programs and uncover potential fraud and abuse through spatial analysis.

Collaborate

Share your program data with public and private partners to grow awareness of community issues.



GIS is a **modern platform** approach for a healthy community



GIS Applied Across your Organization helps you to reach your communities

Healthy Communities

Components

- Healthy environments
- Equal access to prosperity grid
- Reduction of negative health outcomes
- Citizen & stakeholder engagement
- Family & community partnerships



Healthy Communities



Case Study Number One

Answer the Knock!

Michelle Winz, Epidemiologist
Virginia Department of Health

Based upon CASPER (Community Assessment for Public Health Emergency Response) methodology

Provides baseline data for Community Health Improvement Plan:

Physical Activity
Obesity
Tobacco Use
Heart Disease
Diabetes
Mental Health
Maternal and Child




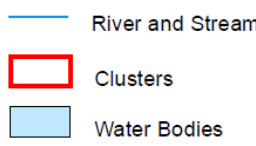

Health

Sampling Method

- Sampling Frame: All households within the City of Portsmouth
- Two stage probability sampling
 - Stage 1: divide the city into 35 clusters or known number of housing units using U.S. Census blocks
 - Stage 2: pick at random 7 households from each cluster



Example - Map of 1 Portsmouth Cluster

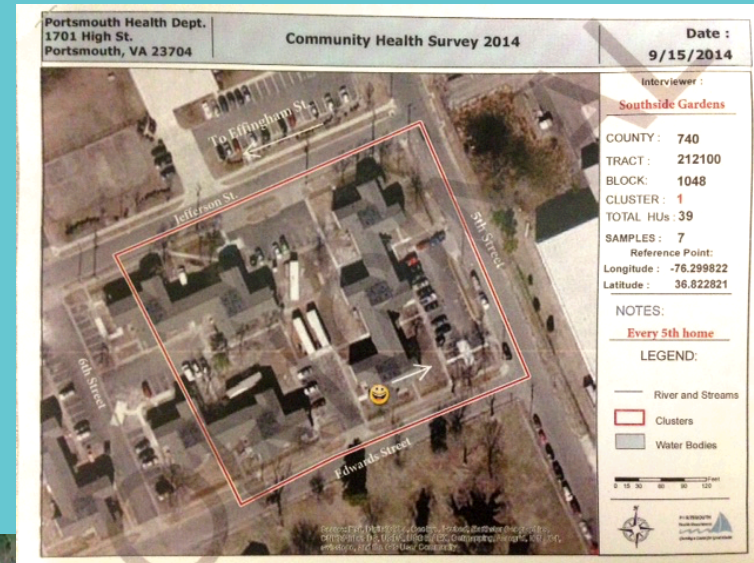
Portsmouth Health Dept. 1701 High St. Portsmouth, VA 23704	Community Health Survey 2014	Date : 9/15/2014
		
Interviewer :		
COUNTY : 740 TRACT : 211100 BLOCK : 1025 CLUSTER : 38 TOTAL HUs : 34 SAMPLES : 7 Reference Point: Longitude : -76.311899 Latitude : 36.831495		
NOTES:		
LEGEND:  0 20 40 80 120 160 Feet		
		

Source: Esri, DigitalGlobe, GeoEye, iSat, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community

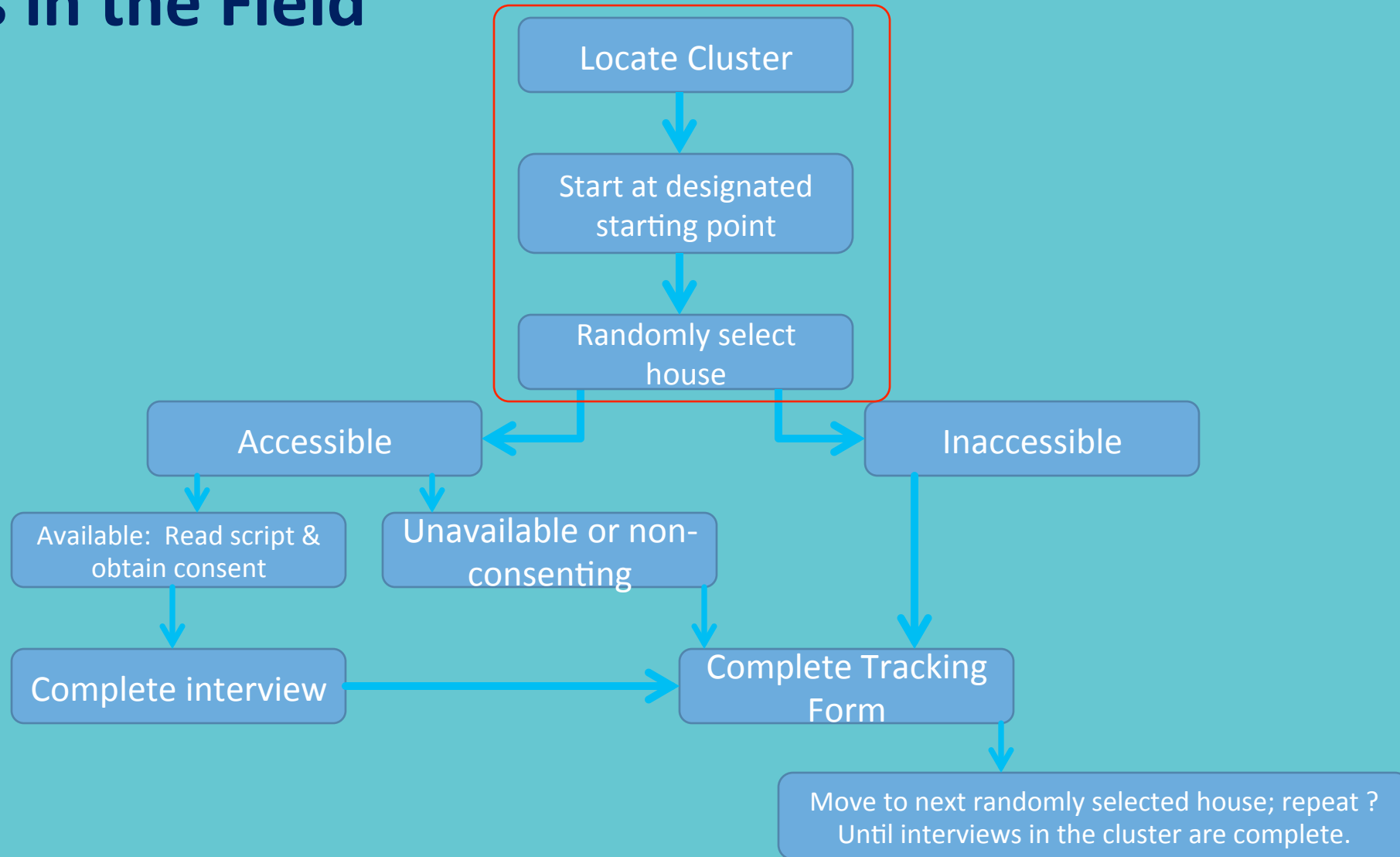
Randomly Selecting a House

❖ *This will be done by YOU in the field*

- Review your cluster map
- Start at smiley face
- Go in the direction of the arrow
- Visit every n'th house on one side of the street
- Repeat as needed until 7 interviews are completed



Steps in the Field



Methodology

- Survey was compiled into digital form with a backup paper copy
- Surveyors used iOS and Android devices with Collector for ArcGIS to input survey responses and mark locations
- Survey Coordinator tracked progress via an Operational Dashboard
- Post survey data was analyzed using Geostatistical Analysis to extrapolate results city wide.

Survey Geodatabase

Domains used for all answers and coded numerically for data analysis post survey

Field Aliases were used to notate the survey question

Database was loaded as a service into ArcGIS Online

Using Collector in the Field

Collector was loaded onto iOS and Android devices

Each team had a mobile device and a paper survey

One team member read the paper survey while the other inputted answers into Collector

Teams were instructed not to add a point until they have crossed the property line on the app, as some clusters shared a street border.



Benefits

No additional cost

Used technology we already had

Users found the app easy to use

Drop down menus allowed for quick data entry in the field

Minimized data entry after field teams returned

Ability to do further data analysis



Issues

iOS vs Android interface

iOS would truncate aliases to 50 characters

Android users had to choose a specific number for a range field as opposed to a custom input

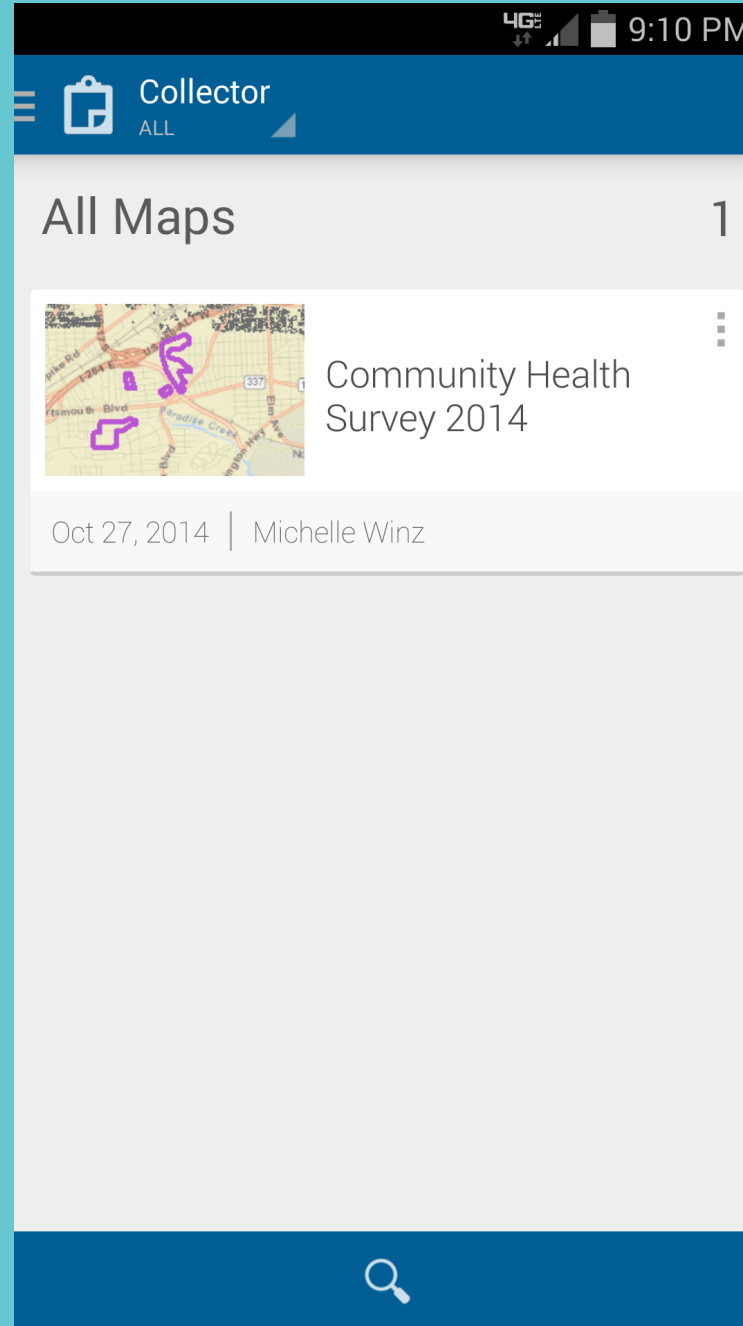
Some users could not properly sync or load the app upon initial use

Survey Tool

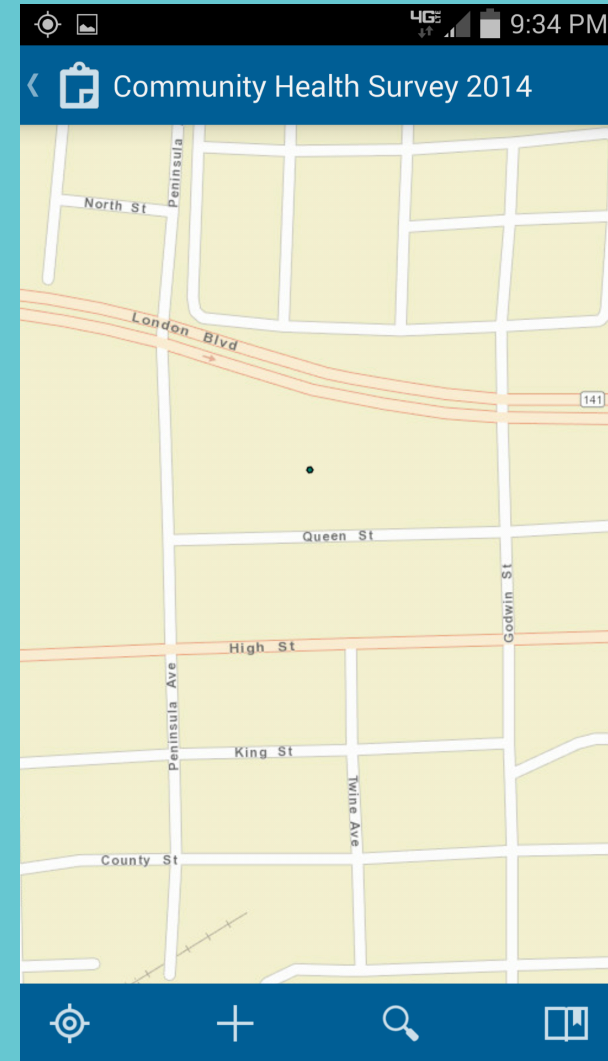
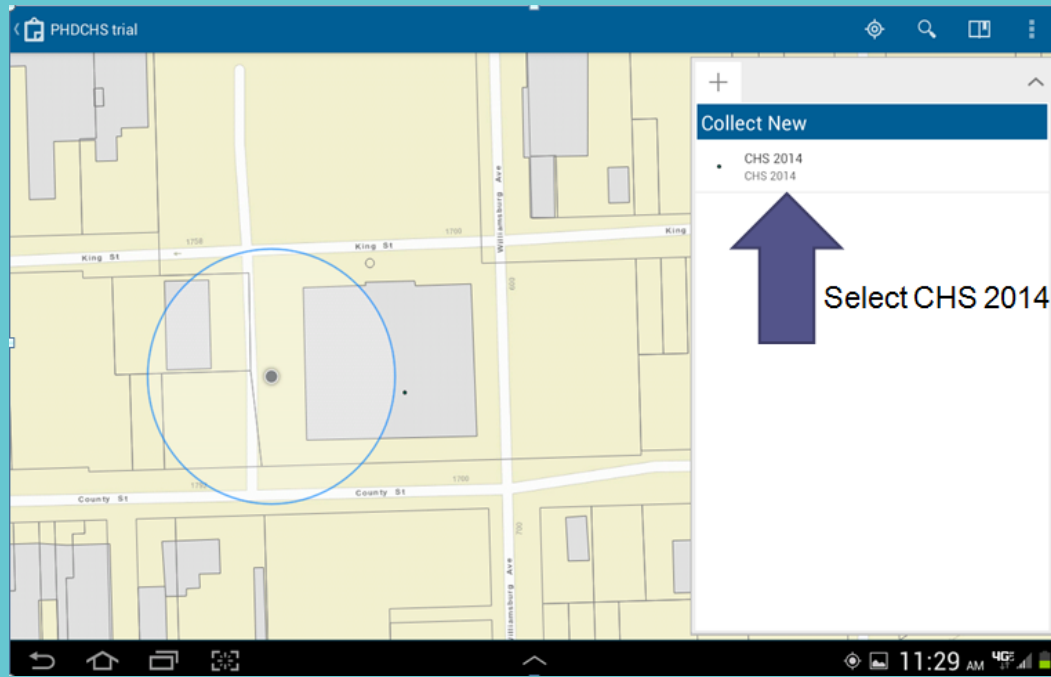
Q1. Interview Date (MM/DD/YY): _____		Q3. Cluster Number: _____		Q5. Team Number: _____	
Q2. County Name: _____		Q4. Survey Number: _____		Q6. Interview Initials: _____	
Q7. Type of structure <input type="checkbox"/> Single family <input type="checkbox"/> Multiple unit <input type="checkbox"/> Mobile home <input type="checkbox"/> Other _____					
Q8. Indicate sex of respondent. (Ask only if necessary.) <input type="checkbox"/> Male <input type="checkbox"/> Female		Q9. What is your age? _____		Q10. Is English the primary language spoken in the household? <input type="checkbox"/> Yes <input type="checkbox"/> No	
Q11. How many people live in your household? _____		Q12. What is your main mode of transportation to get to leisure activities (such as going to get food, shopping, go to the park)? <input type="checkbox"/> Walk <input type="checkbox"/> Bike <input type="checkbox"/> Bus <input type="checkbox"/> Your Own Car <input type="checkbox"/> A Friend's Car			
Health Status: Now I am going to ask some questions about your health, health insurance, and access to care					
Q13. Have you EVER been told by a doctor, nurse or other health professional that you have had any of the following?		13a. Heart Attack, Angina, or Coronary Artery Disease <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> DK			
		13b. High Blood Pressure <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> DK			
		13c. High Blood Cholesterol <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> DK			
		13d. Cancer <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> DK			
		13e. Stroke <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> DK			
		13f. Asthma <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> DK			
		13g. COPD, Emphysema, or Chronic Bronchitis <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> DK			
		13h. Diabetes <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> DK			
IF YES → Q14. Is your diabetes under control (A1c <9)? <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> DK <input type="checkbox"/> N/A					
Q15. Has anyone in your household ever been told they have diabetes only during pregnancy? <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> DK					
Q16. Have you ever been told by a doctor, nurse, or other health professional that you have pre-diabetes or borderline diabetes? <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> DK		IF YES → Q16b. Did you get any additional information from a health professional, make any lifestyle changes, or both? <input type="checkbox"/> Additional Information <input type="checkbox"/> Lifestyle Changes <input type="checkbox"/> Both			
Q17. Do you have one person you think of as your personal doctor or health care provider? <input type="checkbox"/> Yes <input type="checkbox"/> No		IF NO → Q17b. Is there more than one, or is there no person who you think of as your personal doctor or health care provider? <input type="checkbox"/> More than one <input type="checkbox"/> No person			
Q18. Has anyone in your household ever needed medical care but was not been able to get it? <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> DK		Q19. Was there a time in the past 12 months when you needed to see a doctor but could not because of cost? <input type="checkbox"/> Yes <input type="checkbox"/> No			
Q20. Do you have health insurance of any kind? <input type="checkbox"/> Yes		Q21. In the past year, have you visited... _____		Q21a. A dentist or dental hygienist? <input type="checkbox"/> Yes <input type="checkbox"/> No	
				Q21b. A doctor for a check-up? <input type="checkbox"/> Yes <input type="checkbox"/> No	
Q22. Would you say that in general your health is—? <input type="checkbox"/> Excellent <input type="checkbox"/> Very good <input type="checkbox"/> Good <input type="checkbox"/> Fair <input type="checkbox"/> Poor					
Q23. How tall are you? _____		Q23b. How much do you weigh? _____		Q24. Is there a place to walk/exercise in your neighborhood? <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> DK	
Q25. What prevents your household members from getting regular activity? <input type="checkbox"/> Safety <input type="checkbox"/> No time <input type="checkbox"/> Cannot afford a gym <input type="checkbox"/> Do not have transportation to a gym <input type="checkbox"/> No sidewalks/parks in the area <input type="checkbox"/> Don't want to <input type="checkbox"/> Don't know how to <input type="checkbox"/> Health reasons <input type="checkbox"/> N/A					
Q26. Of the past 14 days, how many days ...		Q26a. Did you get at least 30 minutes of physical activity (such as walking, running, basketball, fast bicycling, swimming, fast dancing)? _____			
		Q26b. Did you stop at a convenience store to purchase food? _____			
		Q26c. Did you eat at a fast food restaurant (e.g., McDonald's, Taco Bell, KFC)? _____			
		Q26d. Did someone in your household cook dinner? _____			
		Q26e. Did you smell cigarette, cigar, or pipe tobacco smoke in your home that came from a neighboring condo, apartment, or hallway? _____			
		Q26f. Was your mental health not good (includes stress, depression, and problems with emotions)? _____			
		Q26g. Did you feel nervous or anxious? _____			
		Q26h. Did poor mental health keep you from doing your usual activities, such as self-care, work, or _____			
Q27. Of the past 7 days, how many days did you...		Q27a. Eat fruit, not including juice (Cout fresh, frozen, or canned fruit)? _____			
		Q27b. Eat colorful vegetables that were not fried (Do not include rice or other grains)? _____			
		Q27c. Drink at least one sugary drink (Sodas, flavored waters/teas, sports drinks, energy drinks)? _____			
Q28. Has anyone in your household ever been to the farmers market in Portsmouth? <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> DK					
Q29. Do you now smoke ... every day, some days, or not at all?		Q29a. Cigarettes <input type="checkbox"/> Every day <input type="checkbox"/> Some days <input type="checkbox"/> Not at all		Q29b. Electronic cigarettes <input type="checkbox"/> Every day <input type="checkbox"/> Some days <input type="checkbox"/> Not at all	
Q30. Do you or anyone else smoke ...?		Q30a. Inside your home? <input type="checkbox"/> Yes, I do <input type="checkbox"/> Yes, Someone else does <input type="checkbox"/> No one smokes		Q30b. When you ride in a car? <input type="checkbox"/> Yes, I do <input type="checkbox"/> Yes, Someone else does <input type="checkbox"/> No one smokes	
Q31. In the past year would you say you were worried or stressed about having enough money to pay vital expenses like your rent, mortgage, or food? <input type="checkbox"/> Yes <input type="checkbox"/> No					
Q32. Is anyone in your household now taking medicine or receiving treatment from a doctor or other health professional for any type of mental health condition or emotional problem? <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> DK					
Q33. Has anyone in your household ever needed substance abuse or other addiction treatment services? <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> DK		IF YES → Q33b. Were they able to get the services they needed? <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Never sought services <input type="checkbox"/> Didn't know where to get services <input type="checkbox"/> DK			
Q34. How much sleep do you usually get at night on weekdays or workdays? _____		Q35. Have you ever been told by a doctor or other health professional that you have a sleep disorder? <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> DK			
Q36. Is anyone in your house currently pregnant or been pregnant in the past 5 years? <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A		IF YES → Q36a. Did they seek pre-natal care? <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> DK		IF YES → Q36ab. How far along in their pregnancy did they receive prenatal care? <input type="checkbox"/> First Trimester <input type="checkbox"/> Second Trimester <input type="checkbox"/> Third Trimester <input type="checkbox"/> No care	
		IF YES → Q36b. Did they use WIC services during the pregnancy? <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> DK			
		IF YES → Q36c. Were they educated about safe sleep practices (ABCs)? <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> DK			
Q37. How many children less than 18 years of age live in your household? _____ (If 0 skip to Q42)					
Q38. In the past five years, if there was an infant under the age of one in your household, was that infant exclusively breast-fed, exclusively formula-fed, or fed through a combination of both? <input type="checkbox"/> Breast-fed <input type="checkbox"/> Formula-fed <input type="checkbox"/> Both <input type="checkbox"/> DK <input type="checkbox"/> N/A					
Q39. How many hours of TV does your child/children watch in a typical day? _____		Q40. How many hours does your child/children use a computer/tablet in a typical day? _____			
Q41. Do you have a teen between the ages of 12 and 19 currently living at home? <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A		IF YES → Q41b. On a scale of 1-5, with 1 being not at all comfortable and 5 being very comfortable, how comfortable are you with talking to your teen about sex and pregnancy prevention? <input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> 5		IF 3-5 → Q41ab. How often do you talk to your teen about sex and pregnancy prevention? At least... <input type="checkbox"/> Once a week <input type="checkbox"/> Once a month <input type="checkbox"/> Once every 6 months <input type="checkbox"/> Once a year	
Q42. On a scale of 1 to 5, with 1 being no knowledge and 5 being receiving professional		Q42a. How knowledgeable are you about mental health? <input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> 5		Q42b. How knowledgeable are you about mental health resources in Portsmouth? <input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> 5	
Q43. On a scale of 1-5, with 1 being not at all likely and 5 being very likely, how likely would you eat at a restaurant that offered more healthy options? <input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> 5					
Demographics: Now I am going to ask you a few demographic questions					
Q44. Which one or more of the following would you say is your race? <input type="checkbox"/> White <input type="checkbox"/> Black or African American <input type="checkbox"/> American Indian or Alaska Native <input type="checkbox"/> Asian <input type="checkbox"/> Pacific Islander <input type="checkbox"/> Other <input type="checkbox"/> DK					
Q45. Are you Hispanic, Latino, or Spanish origin? <input type="checkbox"/> Yes <input type="checkbox"/> No		Q46. Are you ...? <input type="checkbox"/> Married <input type="checkbox"/> Divorced <input type="checkbox"/> Widowed <input type="checkbox"/> Separated <input type="checkbox"/> Never Married <input type="checkbox"/> A member of an unmarried couple			
Q47. What is the highest level of education completed by anyone in your household? <input type="checkbox"/> Never attended school or only attended kindergarten <input type="checkbox"/> Grades 1 through 8 (Elementary) <input type="checkbox"/> Grades 9 through 11 (Some high school) <input type="checkbox"/> Grade 12 or GED (High school graduate) <input type="checkbox"/> College 1 year to 3 years (Some college or technical school) <input type="checkbox"/> College 4 years or more (College graduate)					
Q48. What is your annual household income from all sources? <input type="checkbox"/> Less than \$25,000 <input type="checkbox"/> \$25,000-\$50,000 <input type="checkbox"/> \$50,000-\$75,000 <input type="checkbox"/> More than \$75,000 <input type="checkbox"/> DK		Q49. Are you currently? <input type="checkbox"/> Employed for wages <input type="checkbox"/> Self-employed <input type="checkbox"/> Out of work for 1 year or more <input type="checkbox"/> Out of work for less than 1 year <input type="checkbox"/> A Homemaker <input type="checkbox"/> A Student <input type="checkbox"/> Retired <input type="checkbox"/> Unable to work			
Q50. About how many hours do you work per week at all of your jobs and businesses combined? _____					
Q51. Have you ever served on active duty in the United States Armed Forces? <input type="checkbox"/> Yes <input type="checkbox"/> No (Read if necessary: either in the regular military or in a National Guard or military reserve unit. Active duty does not include training for the Reserves or National Guard, but DOES include activation, for example, for the Persian Gulf War).					
Q52. Would you support or oppose...		Q52a. The public use of Portsmouth school property for physical activity? <input type="checkbox"/> Support <input type="checkbox"/> Oppose <input type="checkbox"/> DK		Q52b. A ban on smoking in apartments and multi-family buildings in Portsmouth? <input type="checkbox"/> Support <input type="checkbox"/> Oppose <input type="checkbox"/> DK	
		Q52c. A ban on smoking on city property, such as parks, or around libraries and city buildings, in Portsmouth? <input type="checkbox"/> Support <input type="checkbox"/> Oppose <input type="checkbox"/> DK			
		Q52d. Expanding sexual education in schools beyond abstinence only education—to include healthy sexual behaviors and methods of contraception? <input type="checkbox"/> Support <input type="checkbox"/> Oppose <input type="checkbox"/> DK			

Step 2

Select Community Health Survey 2014



Step 3



Step 4 – Begin The Survey

The screenshot displays a mobile application interface for data collection. On the left, a map shows a street grid with labels for King St, County St, and Williamsburg Ave. A blue circle on the map indicates the current location. On the right, a 'Collect New' form is open, titled 'CHS 2014 Interview Questions' with coordinates long:-76.320383 lat:36.834032. The form contains several fields: ACCESS (No value), ANSWER (No value), INTERVIEW (No value), Q1. INTERVIEW DATE (No value), Q2. COUNTY (Portsmouth), Q3. CLUSTER NAME (0), and Q4. SURVEY NUMBER. A blue bracket on the right side of the map points to the form, with the text 'Same info as on Tracking Form' overlaid on it. The top of the screen has a 'DONE' button and navigation icons. The bottom of the screen shows a standard Android navigation bar with a clock showing 11:30 AM and 4G LTE signal.

Collect New

CHS 2014 Interview Questions
long:-76.320383 lat:36.834032

ACCESS
<No value>

ANSWER
<No value>

INTERVIEW
<No value>

Q1. INTERVIEW DATE
<No value>

Q2. COUNTY
Portsmouth

Q3. CLUSTER NAME
0

Q4. SURVEY NUMBER

Same info as on Tracking Form

Step 4 – Begin The Survey

The screenshot displays a mobile application interface for data collection. At the top, a dark blue header contains a checkmark and the word "DONE" on the left, and icons for location, back, and settings on the right. The main area is a map showing a street grid with labels for "King St", "County St", and "Williamsburg Ave". A grey building footprint is highlighted on the map, with a blue circle and the text "Drop Down Menus" pointing to it. A blue arrow also points from this text to the "ACCESS" field in the form. The form, titled "Collect New", contains the following fields:

- CHS 2014 Interview Questions**
long:-76.320383 lat:36.834032
- ACCESS**
<No value>
- House is Accessible** (dropdown menu)
- House is Inaccessible** (dropdown menu)
- <No value>
- Q1. INTERVIEW DATE**
<No value>
- Q2. COUNTY**
Portsmouth
- Q3. CLUSTER NAME**
0
- Q4. SURVEY NUMBER**

A "Copied to clipboard" notification is visible at the bottom of the map area. The bottom of the screen shows a standard Android navigation bar with icons for back, home, recent apps, and search, along with a status bar at the very bottom indicating "Saving screenshot" and "Screenshot is being saved".

Step 4 – Begin The Survey

The screenshot displays a mobile application interface for a survey. On the left, a map shows a street grid with labels for Yorktown Ave, King St, High St, Peninsula Ave, County St, Williamsburg Ave, Twine Ave, Queen St, and Barbour Dr. A blue circle is drawn on the map, centered around the intersection of King St and Williamsburg Ave. The top of the app has a dark header with a checkmark and the word "DONE", and icons for location, back, and settings. On the right, a white panel titled "Collect New" contains survey questions. The first question is partially visible. Below it, a question asks for the main mode of transportation to get to leisure activities, with a dropdown menu showing "<No value>". The next question asks if the user has ever been told by a doctor, nurse, or other health professional that they have had any of the following: heart attack, angina, or coronary artery disease. A dropdown menu for this question shows options: "No", "Yes", "DK", and "<No value>". The final question is "Q13E. STROKE" with a dropdown menu showing "<No value>". The bottom of the screen shows a standard Android navigation bar with icons for back, home, recent apps, and search, along with a status bar showing the time as 1:35 PM, 4G LTE signal, and battery level.

Collect New

Q11. HOW MANY PEOPLE LIVE IN YOUR HOUSEHOLD?

0

Q12. WHAT IS YOUR MAIN MODE OF TRANSPORTATION TO GET TO LEISURE ACTIVITIES (SUCH AS GOING TO GET FOOD, SHOPPING, GO TO THE PARK)

<No value>

Q13A. HAVE YOU EVER BEEN TOLD BY A DOCTOR, NURSE OR OTHER HEALTH PROFESSIONAL THAT YOU HAVE HAD ANY OF THE FOLLOWING: HEART ATTACK, ANGINA, OR CORONARY ARTERY DISEASE?

<No value>

No

Yes

DK

<No value>

<No value>

Q13E. STROKE

<No value>

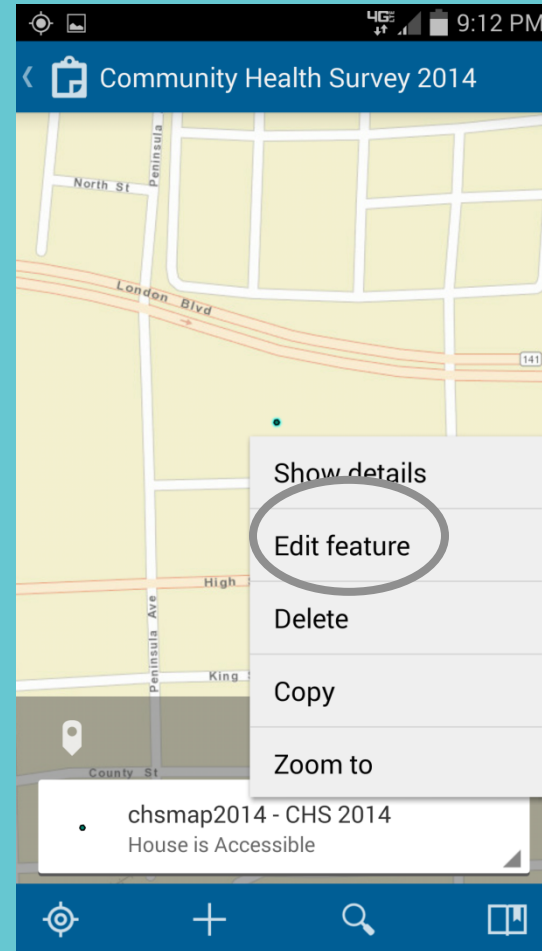
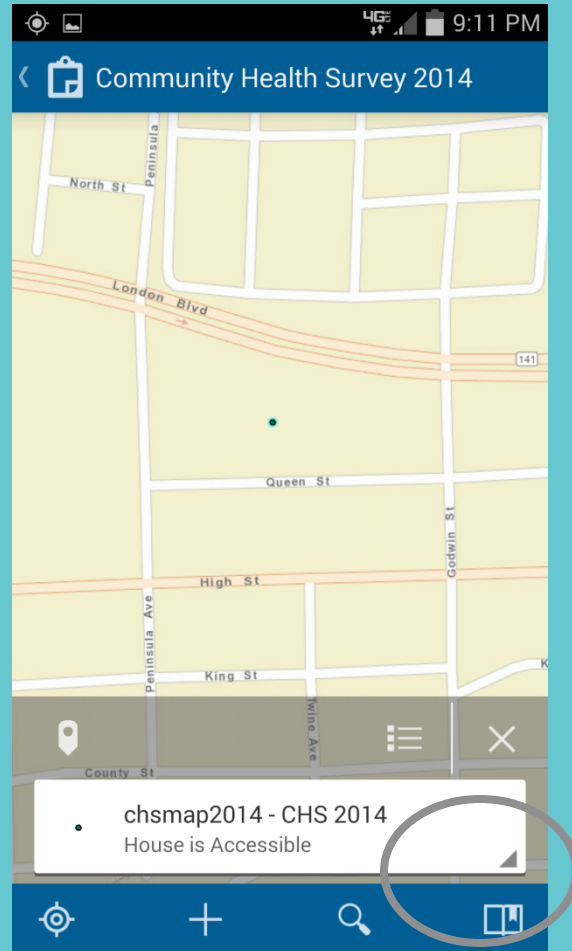
Step 5 – Finished? Click Done.

The screenshot displays a mobile application interface for data collection. On the left, a map shows a street grid with labels such as High St, King St, County St, and Williamsburg Ave. A large blue arrow points from the map towards the form on the right. The form is titled "Collect New" and contains several input fields with the following labels and values:

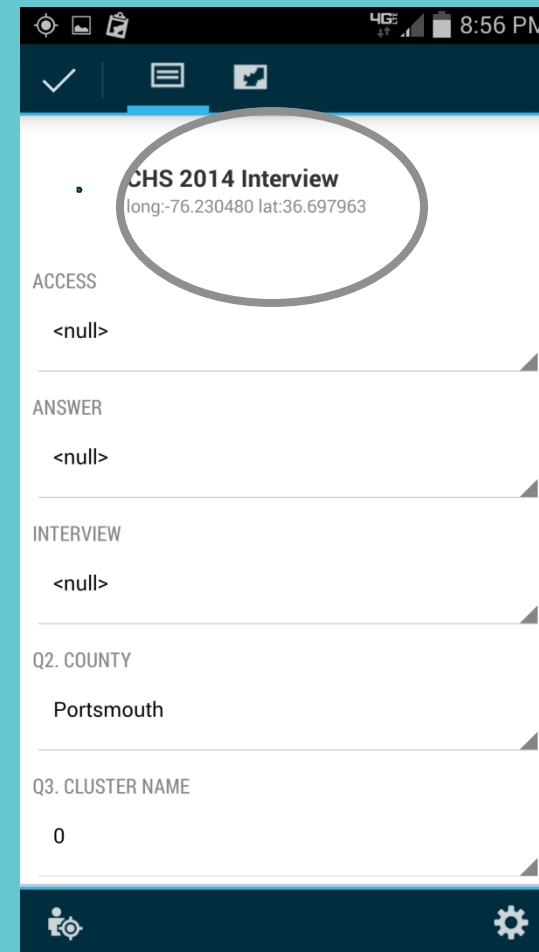
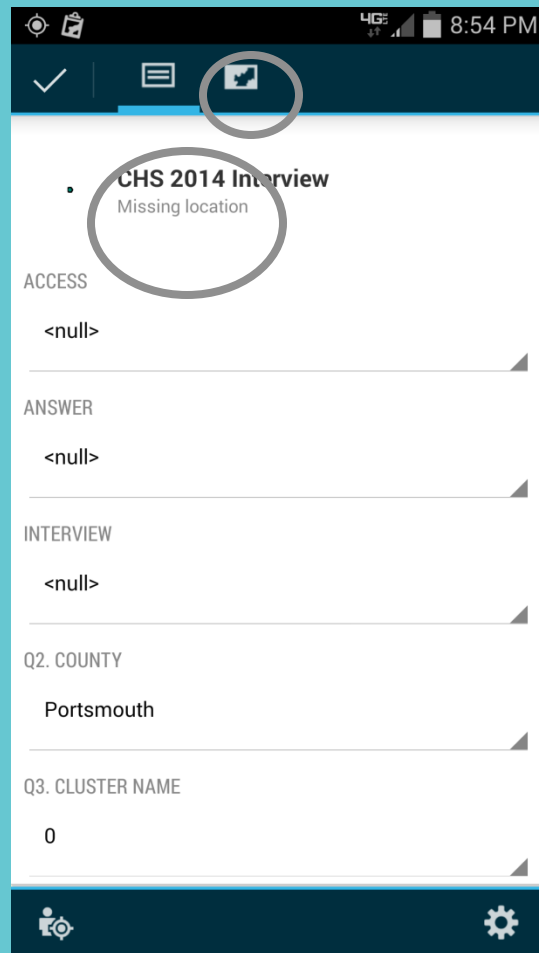
- 0
- Q12. WHAT IS YOUR MAIN MODE OF TRANSPORTATION FOR LEISURE ACTIVITIES (SUCH AS GOING TO THE PARK)
<No value>
- ACCESS
<null>
- Q13A. HAVE YOU EVER BEEN TOLD BY A HEALTH PROFESSIONAL THAT YOU HAVE HEART ATTACK, ANGINA, OR CORONARY ARTERY DISEASE?
<No value>
- ANSWER
<null>
- INTERVIEW
<null>
- Q2. COUNTY
Portsmouth
- Q3. CLUSTER NAME
0

The application's status bar at the top shows the time as 8:56 PM and 4G connectivity. The bottom navigation bar includes icons for home, back, and settings. A "DONE" button with a checkmark is visible in the top left corner of the map area.

Editing Questionnaire

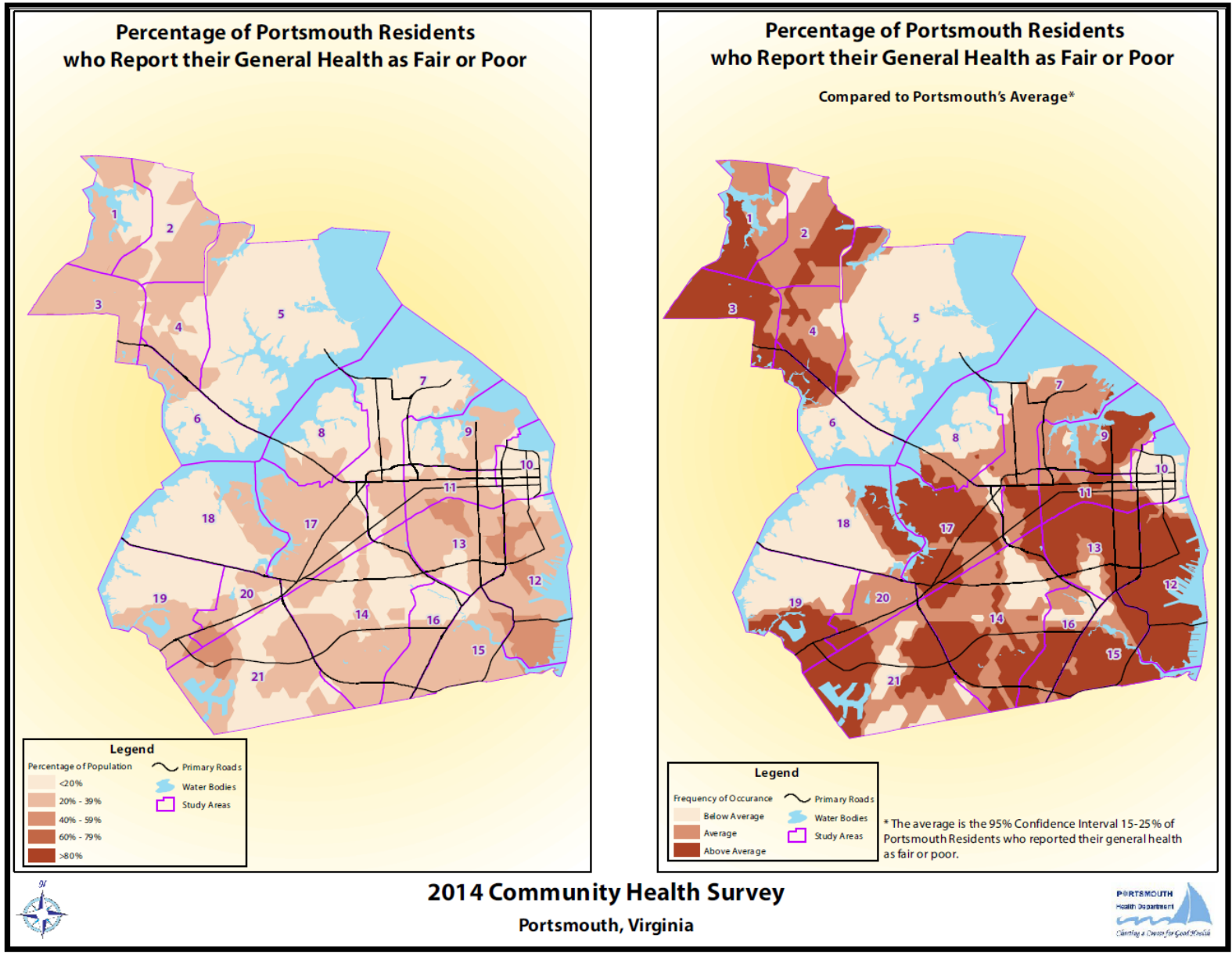


Inside a building/no GPS

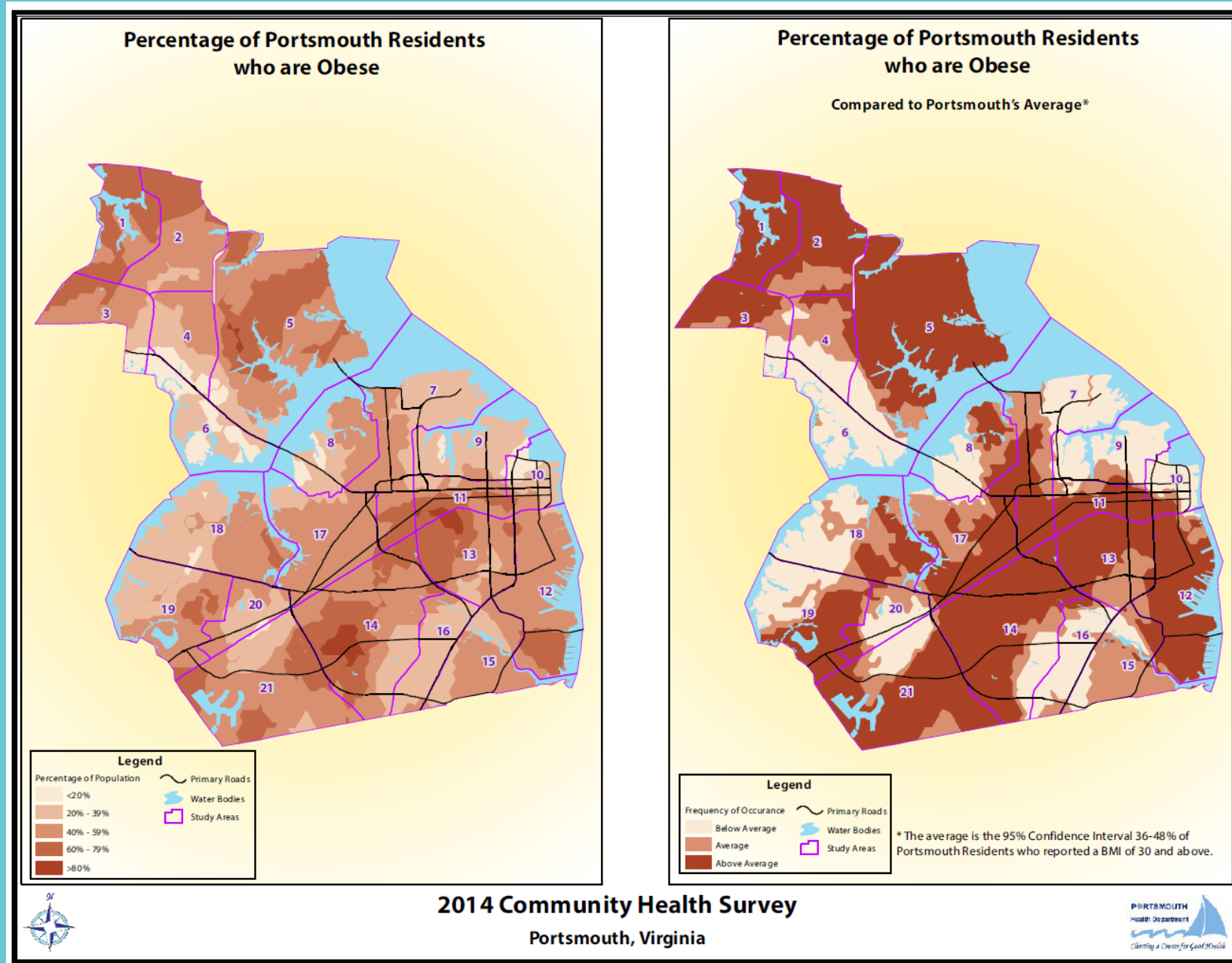


Characteristic	Frequency (n=198)	% of households	Projected number of Households	Weighted %	Weighted 95% CI
General health					
Excellent	7	4	1750	4	1-8
Very Good	34	18	7856	20	13-26
Good	61	32	13494	34	27-41
Fair	58	30	11189	28	21-36
Poor	33	17	5520	14	8-20
BMI					
30 and above (obese)	74	38	16283	41	33-49
25.0-29.9 (overweight)	52	27	10158	26	18-33
18.5-24.9 (normal)	56	29	10376	26	17-35
Below 18.5 (Underweight)	8	4	2948	7	3-12
Did you get at least 30 minutes of physical activity					
None	35	17	8989	22	14-30
1-4 (some days)	37	19	7448	18	12-24
5-9 (every other day)	44	22	9558	23	17-30
10-13 (most days)	26	5	4845	12	6-18
Everyday	56	28	9966	24	17-32
Eat Fruit					
None	25	13	5024	12	7-18
1-3 (some days)	52	26	10276	25	18-32
4-6 (most days)	45	23	9423	23	17-29
Everyday	76	38	16083	39	29-47
Eat Vegetables					
None	11	6	2252	6	2-9
1-3 (some days)	43	22	9872	24	17-32
4-6 (most days)	48	24	9350	23	17-29
Everyday	96	48	19332	47	38-57
Do you smoke cigarettes?					
Every day	36	18	7783	19	11-27
Some days	8	4	1977	5	1-9
Not at all	152	78	30685	76	68-84

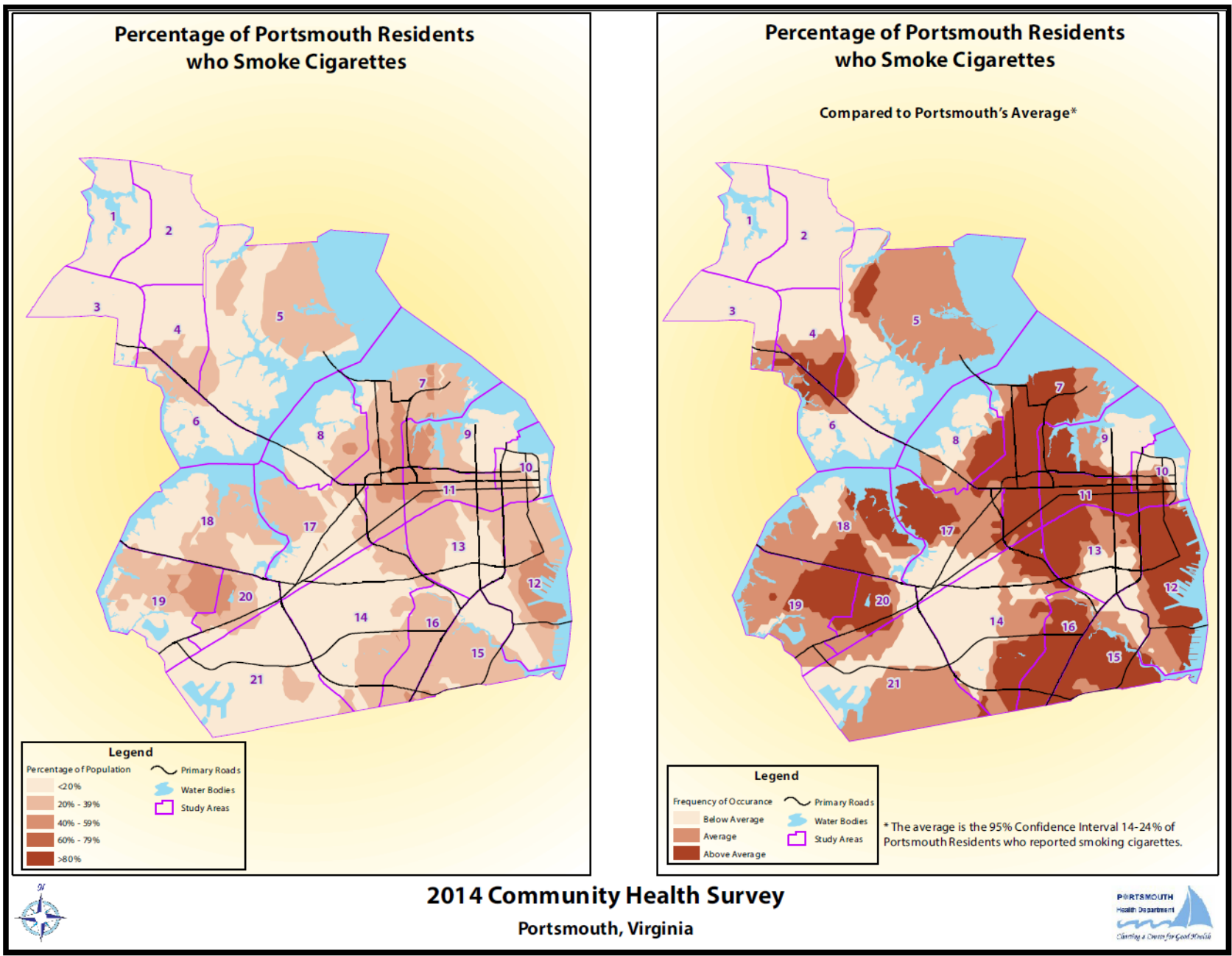
Results



Results

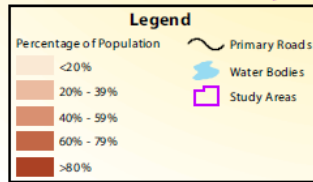
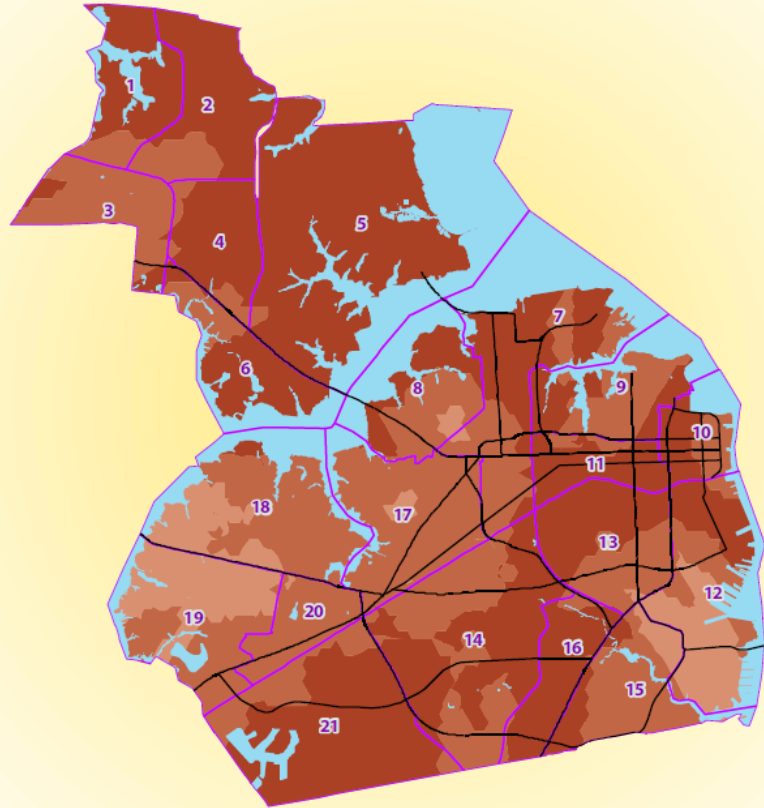


Results



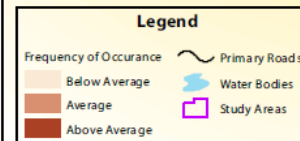
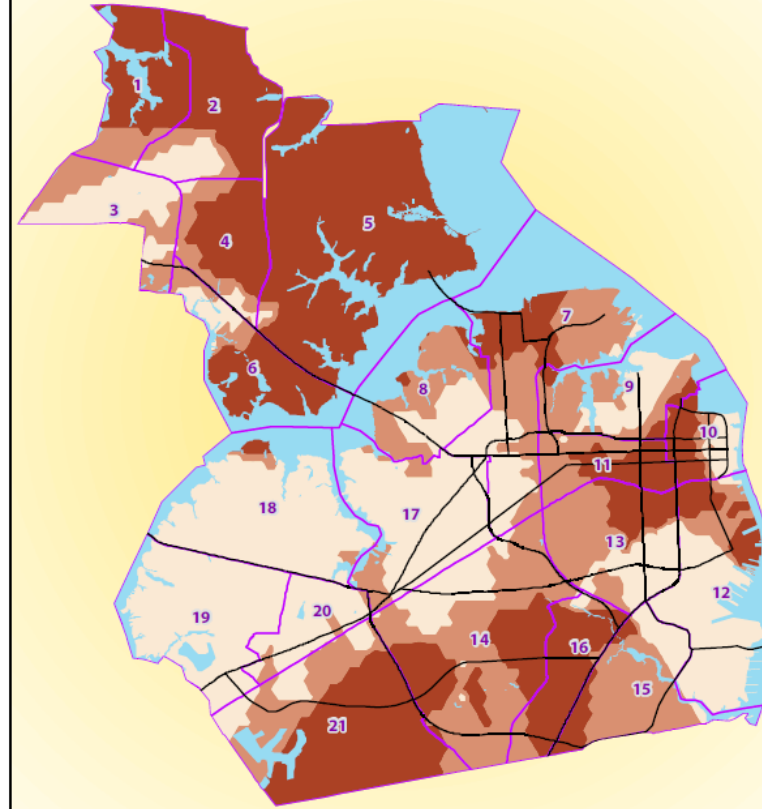
Results

Percentage of Portsmouth Residents whose Mental Health was Not Good



Percentage of Portsmouth Residents whose Mental Health was Not Good

Compared to Portsmouth's Average*



* The average is the 95% Confidence Interval 16-26% of Portsmouth Residents who reported their mental health as not good 5 or more days out of 14 days.

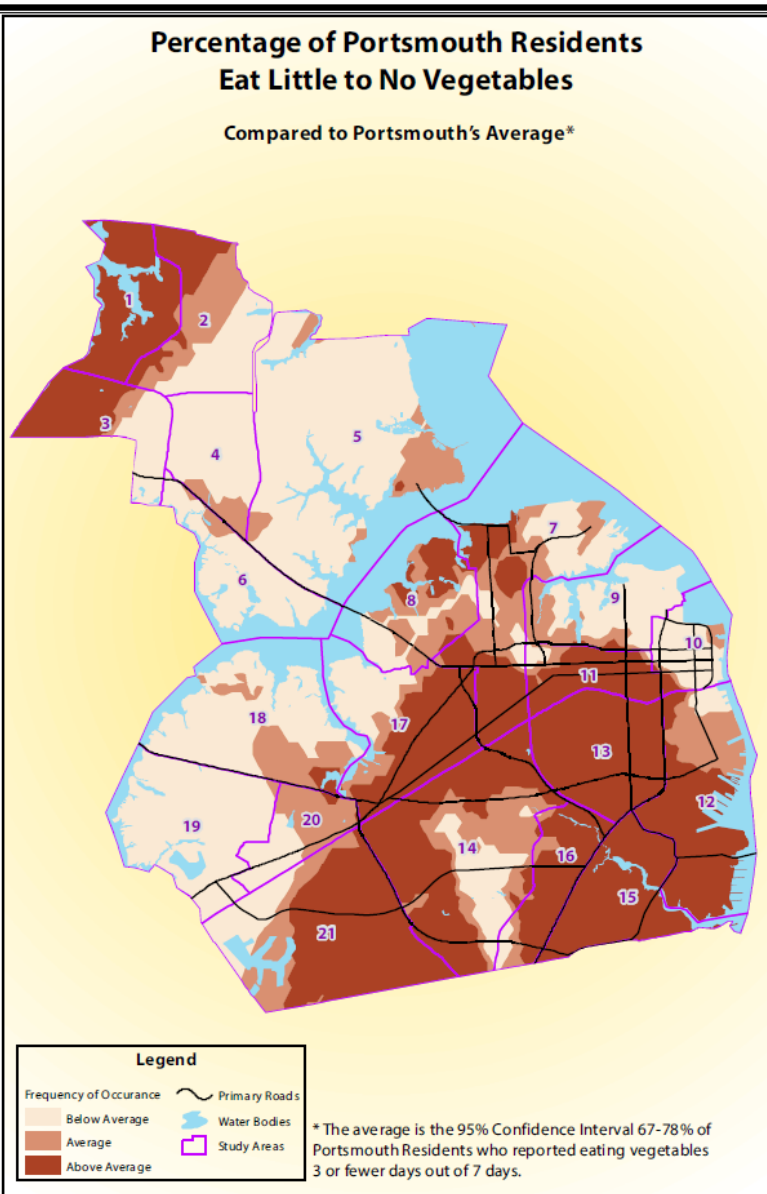
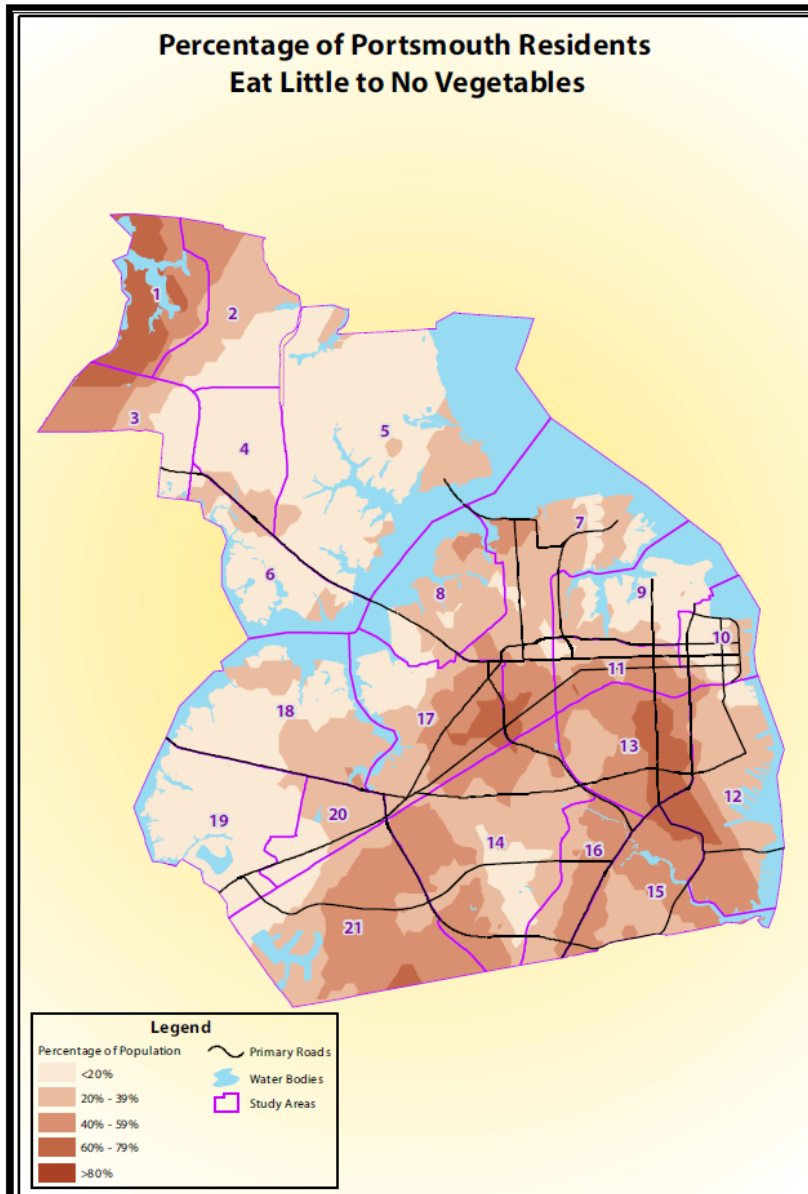


2014 Community Health Survey

Portsmouth, Virginia



Results



2014 Community Health Survey
Portsmouth, Virginia

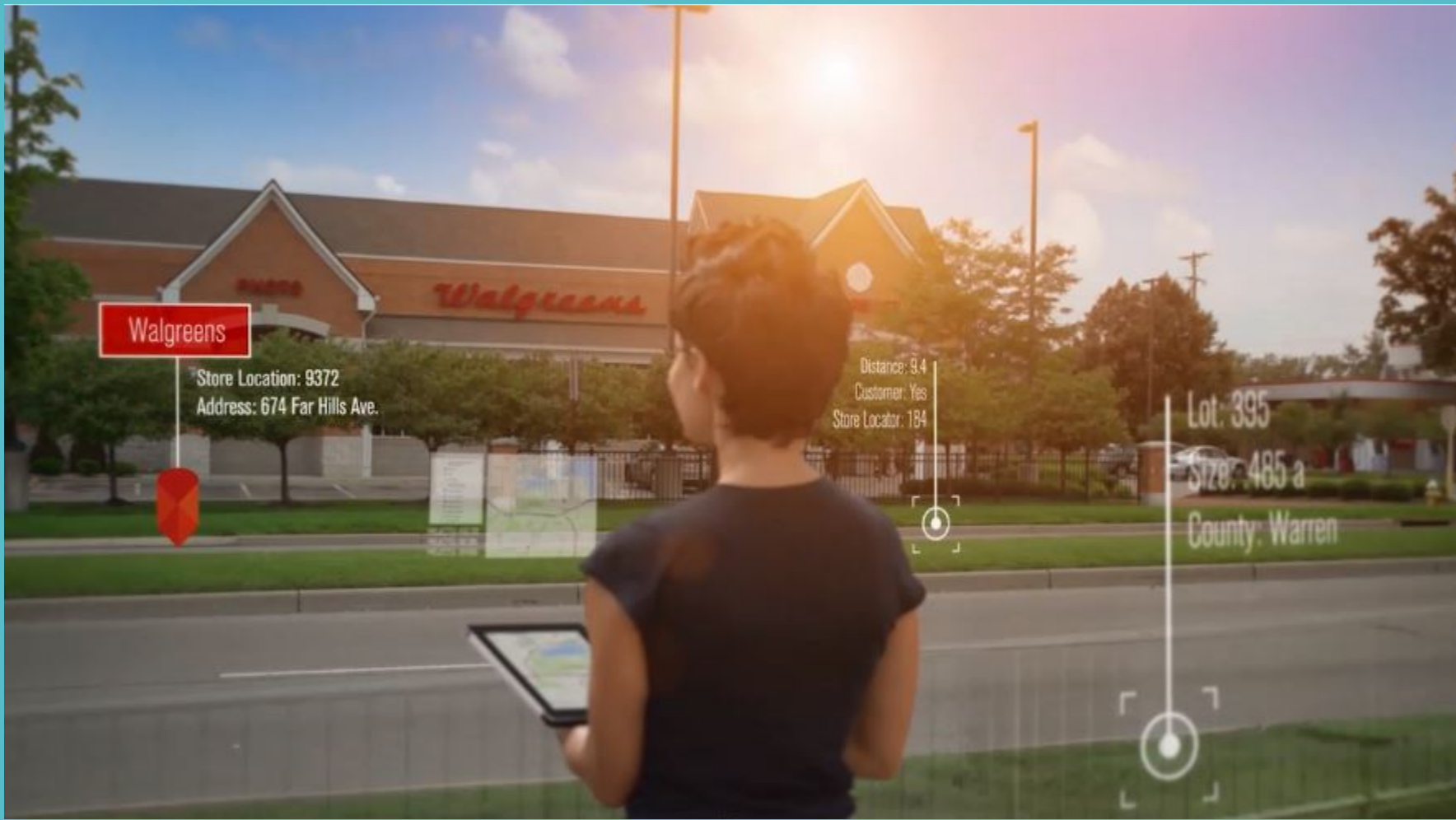


Next Steps

- Create Neighborhood Profiles
- Distribute survey results widely in the community
- Engage key stakeholders
- Track activities related to these Health priorities
- Resurvey in 2 years to track changes in these indicators

Case Study Two

Walgreens



Walgreens

Store Location: 9372
Address: 674 Far Hills Ave.

Distance: 9.4
Customer: Yes
Store Locator: 184

Lot: 395
Size: 485 a
County: Warren

ArcGIS for Healthy Communities



Example Business Units, Workflows & Tools

Key Business Units

- Health Equity
- Healthcare Quality
- Medicaid
- Infectious Disease
- Community Services and Development
- Behavioral and Mental Health
- Children and Family Services
- Chronic Disease and Health Promotion
- Environmental Health
- Children and Family Services
- Preparedness and Planning
- Aging & Adult Services
- Vital Records
- IT/IS

Common Workflows

- Strategic Needs Assessment (Service and Data Gap Analysis)
- Development and Implementation of Strategic Plan
- Reporting and Sharing
- Licensing, Inspection and Certification
- Data Collection and Management
- Response
- Cluster and Pattern Analysis

Tools

- Open Data Site
- Resource Locators
- Story Maps
- Public Information Apps
- GAP Analysis
- Demographic and Community Analysis
- Field Data Collection
- Impact Summaries
- Needs Assessments
- Dashboards
- Crowdsourcing

Health Enterprise Data Flow

A story map



Health Enterprise Data Flow

A typical Health Organization must address a wide range of complex health issues. Many skills are required to understand these issues including the ability to locate and integrate data from diverse internal and external data sources. Once this is done issues can be analyzed and the results shared with stakeholders using a variety of tools and methods. This example demonstrates this standard enterprise health data flow using GIS.

Problem

You understand there is Low Birth Weight problem in the community you serve and it is putting children at risk for additional health problems, straining existing healthcare resources and driving up costs. There are limited resources to address the problem and many possible factors.

Solution

What can you do? You need to understand the extent of the problem and determine the areas most at risk. Then you need to educate stakeholders so targeted intervention strategies can be developed.

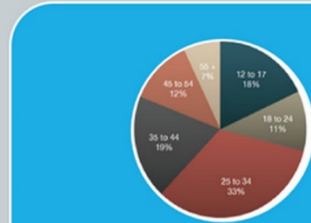
Map Providers and Rates

An initial step in this data flow process is to map your data. Data can be mapped with different tools by both GIS and non-GIS staff. In this example addresses and rates are mapped with Esri Maps for Office.

OBGYN Providers



DETERMINANTS OF LOW BIRTH WEIGHT BABIES



Distal Determinants

Community Size
Family Context
SocioEconomic and Demographic



Proximal Determinants
Chronic Conditions



Health Care (modifiers)
Access Barriers
Health Care Use Patterns

Outcomes – Preterm Birth, Low Birthweight, Complications

[Live Demonstration: http://arcg.is/1rgvjDZ](http://arcg.is/1rgvjDZ)

ArcGIS

An Integrated
Web GIS



Apps

Portal



Access / Identity



Server



Online Content and
Services

Services



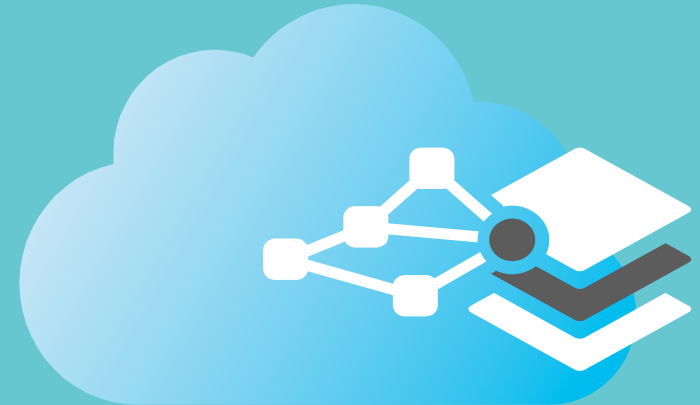
Flexible Deployment Options



On-premises



Public Cloud

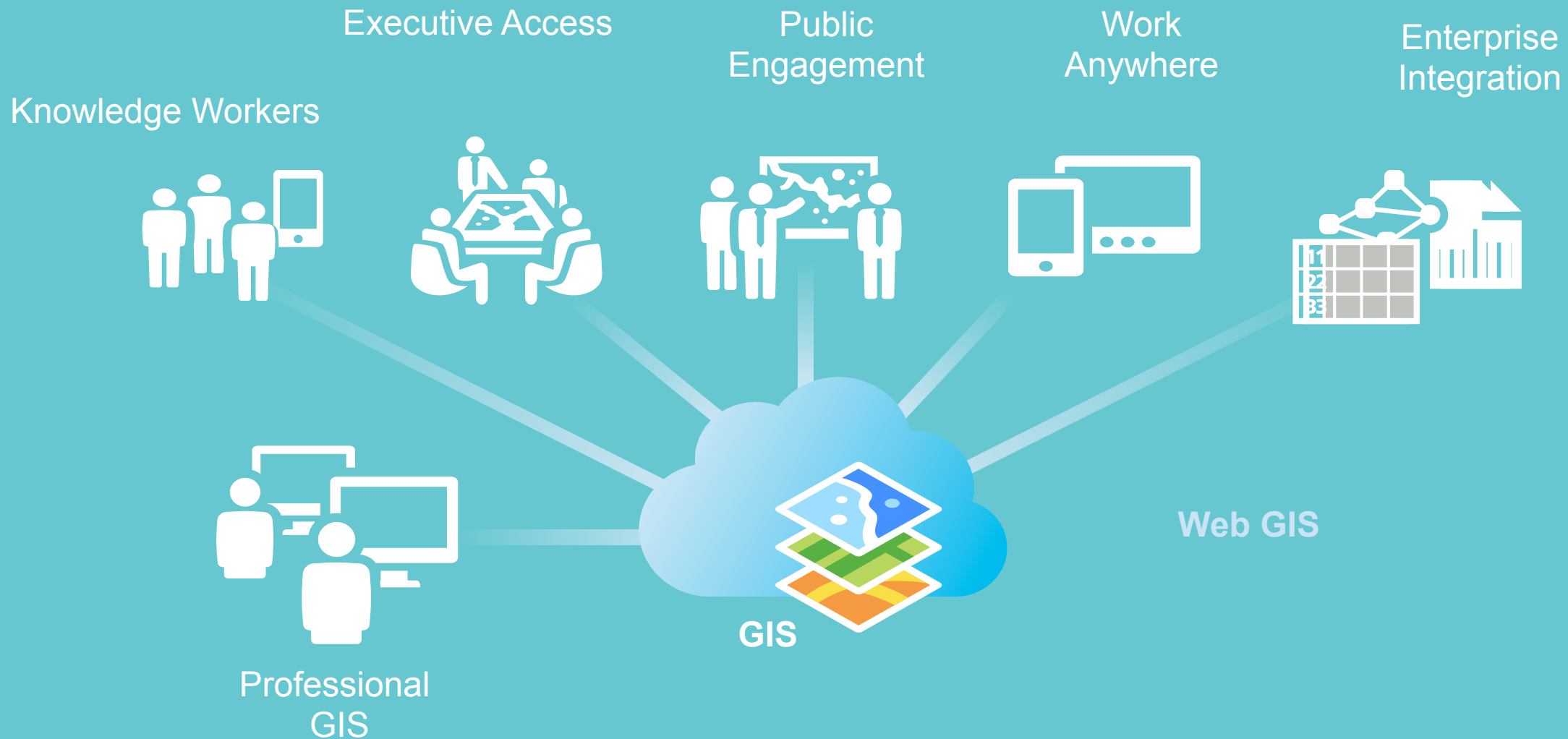


SaaS

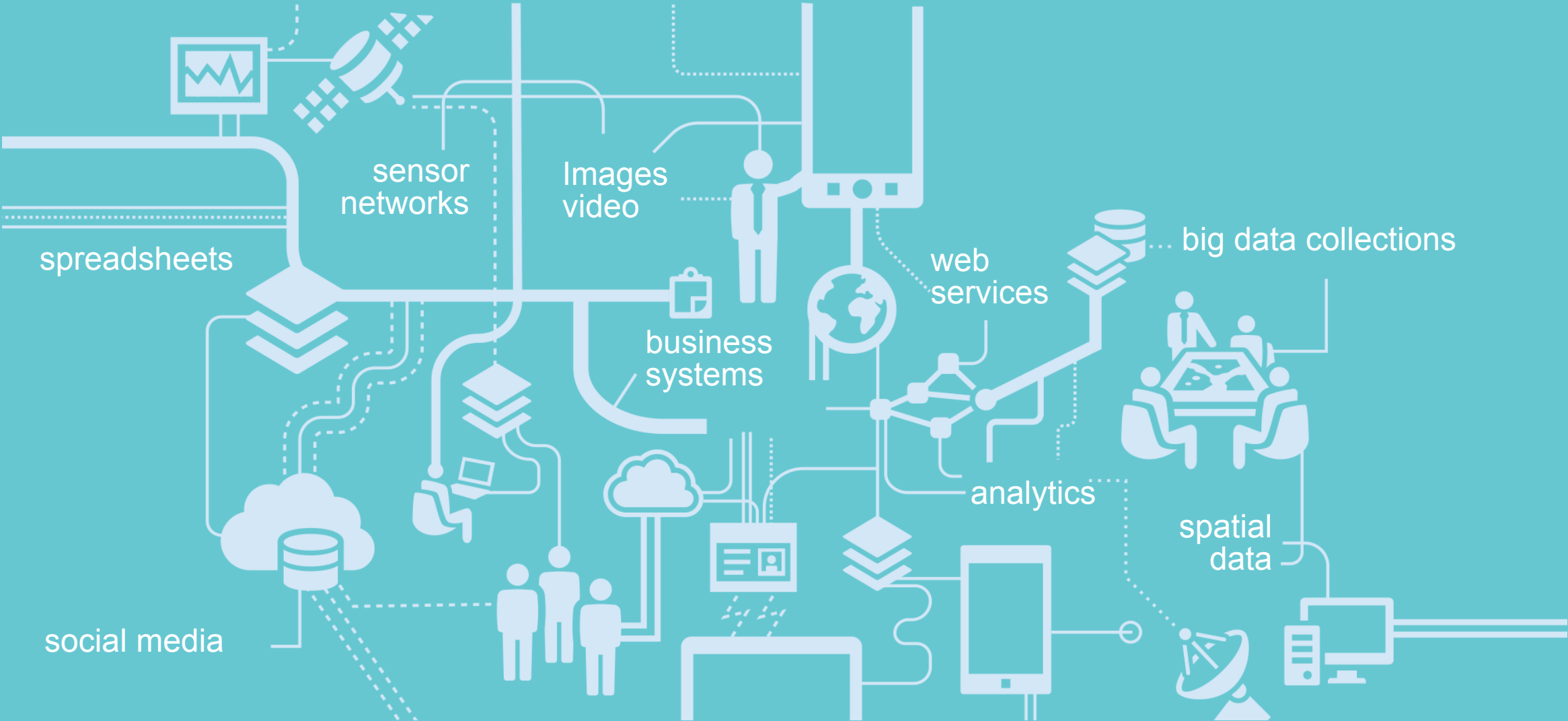


Hybrid Deployments

Accessibility



Data Integration, Display, Analysis & Enrichment



Portal



Esri Model Health Organization

Health and Human Services county and state agencies are tasked with promoting, developing and maintaining Healthy Communities. This requires a high-level of coordination and collaboration between a very diverse group of stakeholders and organizational access to the data and analytical resources needed to ensure every decision is driven by the best available information. The stakeholders required to properly address complex healthy communities issues are both internal and external so it is key that all internal departments have the ability to easily discover and share data, analysis and results with selected audiences. This Model Health Organization serves as an example of how the Esri ArcGIS Platform can be extended in these organizations by using Esri's WebGIS technology as a cloud-based collaborative content management system and public information portal. Many layers, maps and applications are based on modified South Carolina data and should only be used for demonstration purposes.

Group Organization & Sharing

Home Gallery Map Scene **Groups** My Content My Organization Jared






My Groups

[CREATE A GROUP](#)

Show

All My Groups
Owned by Me
Owned by Others
With New Membership Requests

You are a member of 41 groups

-  **Aging and Adult Services**
Central clearinghouse for resources relevant to the Aging and Adult Services business unit and the population they serve
owned by modelhealthorg on March 24, 2014
[Details](#)
-  **Base Maps**
High-quality base maps to use as background layers.
owned by modelhealthorg on March 19, 2014
[Details](#)
-  **Behavioral and Mental Health**
Central clearinghouse for resources relevant to the Behavioral and Mental Health business unit and the population they serve
owned by modelhealthorg on July 14, 2015
[Details](#)
-  **Children and Family Services**
Central clearinghouse for resources relevant to the Children and Family Services business unit and the population they serve
owned by modelhealthorg on July 14, 2015
[Details](#)
-  **Chronic Disease and Health Promotion**
Central clearinghouse for resources relevant to the Chronic Disease and Health Promotion business unit and the population they serve
owned by modelhealthorg on May 1, 2014
[Details](#)

Find...

- The organization's groups
- The organization's groups that are public
- The organization's groups that are designated as Open Data.

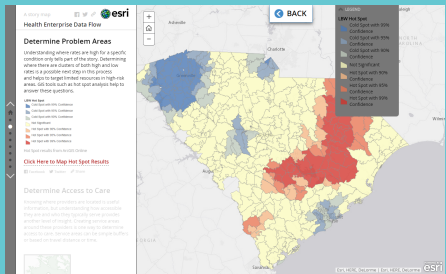
Featured Groups

- National Maps for USA
- Esri Maps and Data
- Community Basemaps
- Landsat Community
- Web Application Templates
- ArcGIS for Local Government

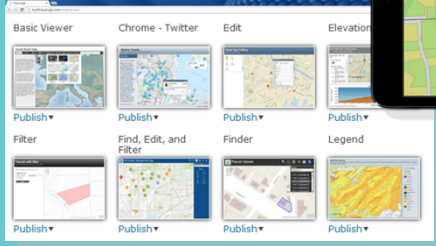


Solutions: GIS Applications

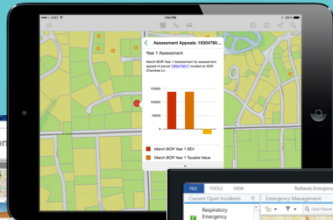
Story Maps



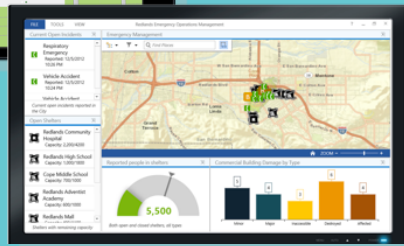
Templates



Explorer



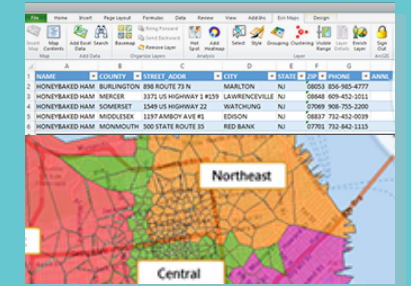
Dashboard



Collector



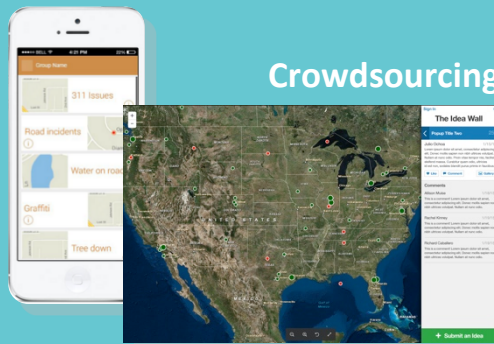
Maps for Office



Web Scene Viewer



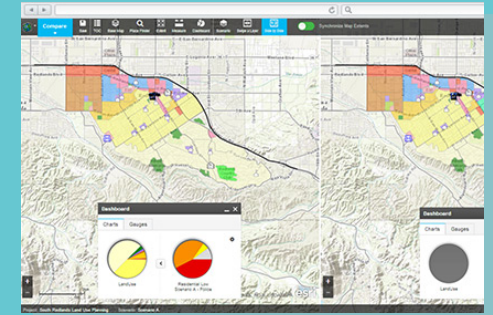
Crowdsourcing



Open Data



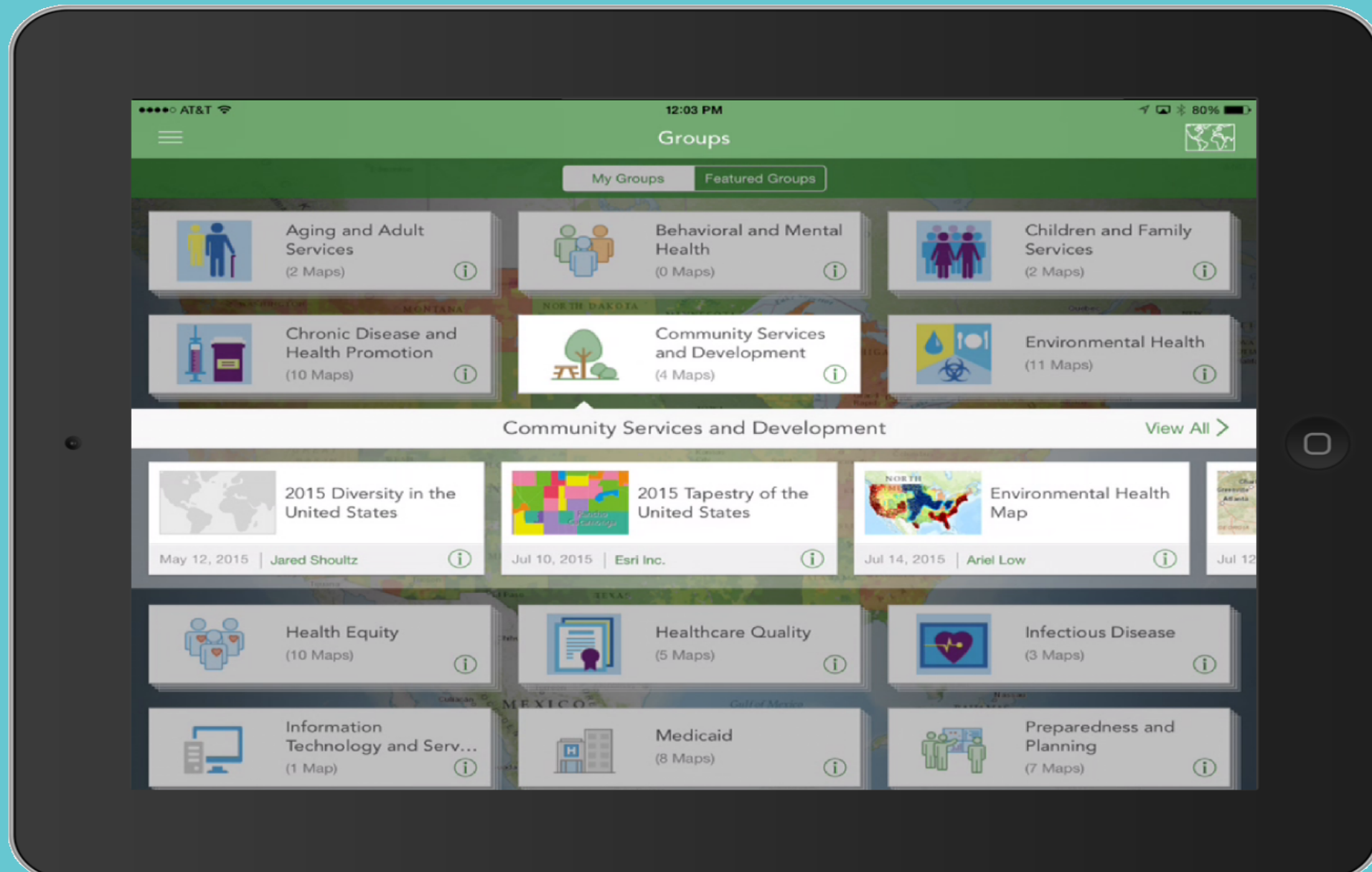
GeoPlanner



Included as Part of Online, Server, and Desktop

Immediately Deployable and Easily Configured

Any Device, Anywhere, Anytime



Community Obesity



Food Environment Index

Fast Food Restaurants

Grocery Stores

Recreation and Fitness Centers

Physical Inactivity

Those who are considered physically inactive are adults who reported that during the last month they did not participate in any physical activity or exercise such as running, calisthenics, golf, gardening, or walking for exercise, other than in the course of their regular job.

Getis Ord Gi* is used to generate the hot and cold spots. This method identifies clusters of points higher in magnitude that is likely to occur by random chance. Hot spots are clusters of higher values than likely to occur by random chance and cold spots are clusters of lower values than likely to occur by chance.






Physical inactivity data was obtained from RWJ County Health Rankings. Recreation and fitness facility data was obtained from the USDA Food Atlas.

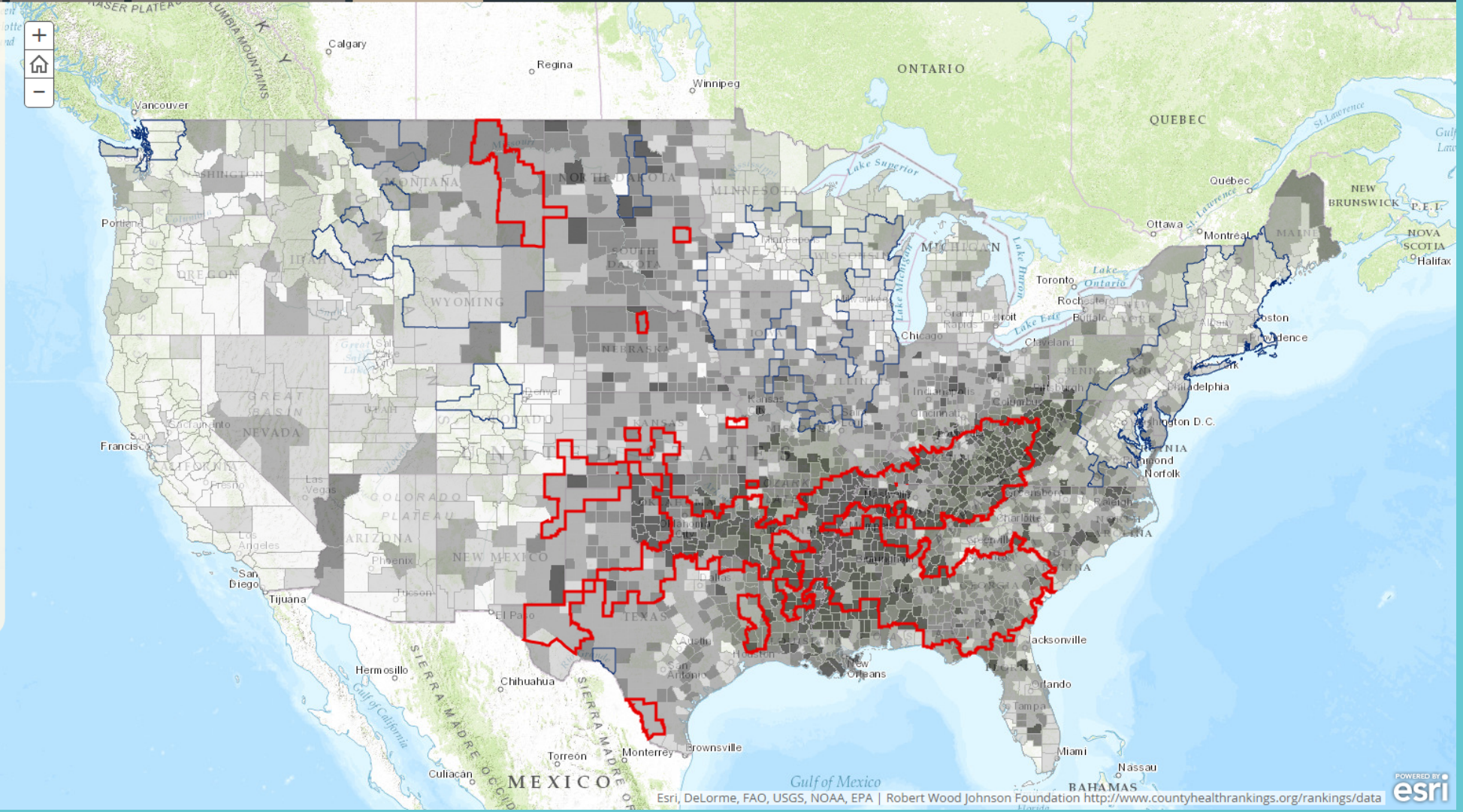
Click on your geographic area of interest for pop-ups with more information.

Recreation and Fitness Facility Scarcity Hot Spots

-  Hot Spot
-  Cold Spot

Percent Physically Inactive

- RWJ Data
-  > 33 to 43
 -  > 28.7 to 33
 -  > 24.7 to 28.7
 -  > 20 to 24.7
 -  9 to 20



Community Environmental Health



- Air Quality
- Air Quality and Asthma
- Water Quality
- Water Quality and Health Outcomes
- Housing Quality
- Housing Quality and Health Outcomes
- Housing Quality and Asthma

Hot and cold spots of the percent of households with severe housing problems are shown over Esri's geodemographic market segmentation system which classifies U.S. neighborhoods into 67 segments based on their socioeconomic and demographic composition. Severe housing problems include overcrowding, high housing costs or lack of kitchen or plumbing facilities.

Housing problems data is from the RWJ County Health Rankings.

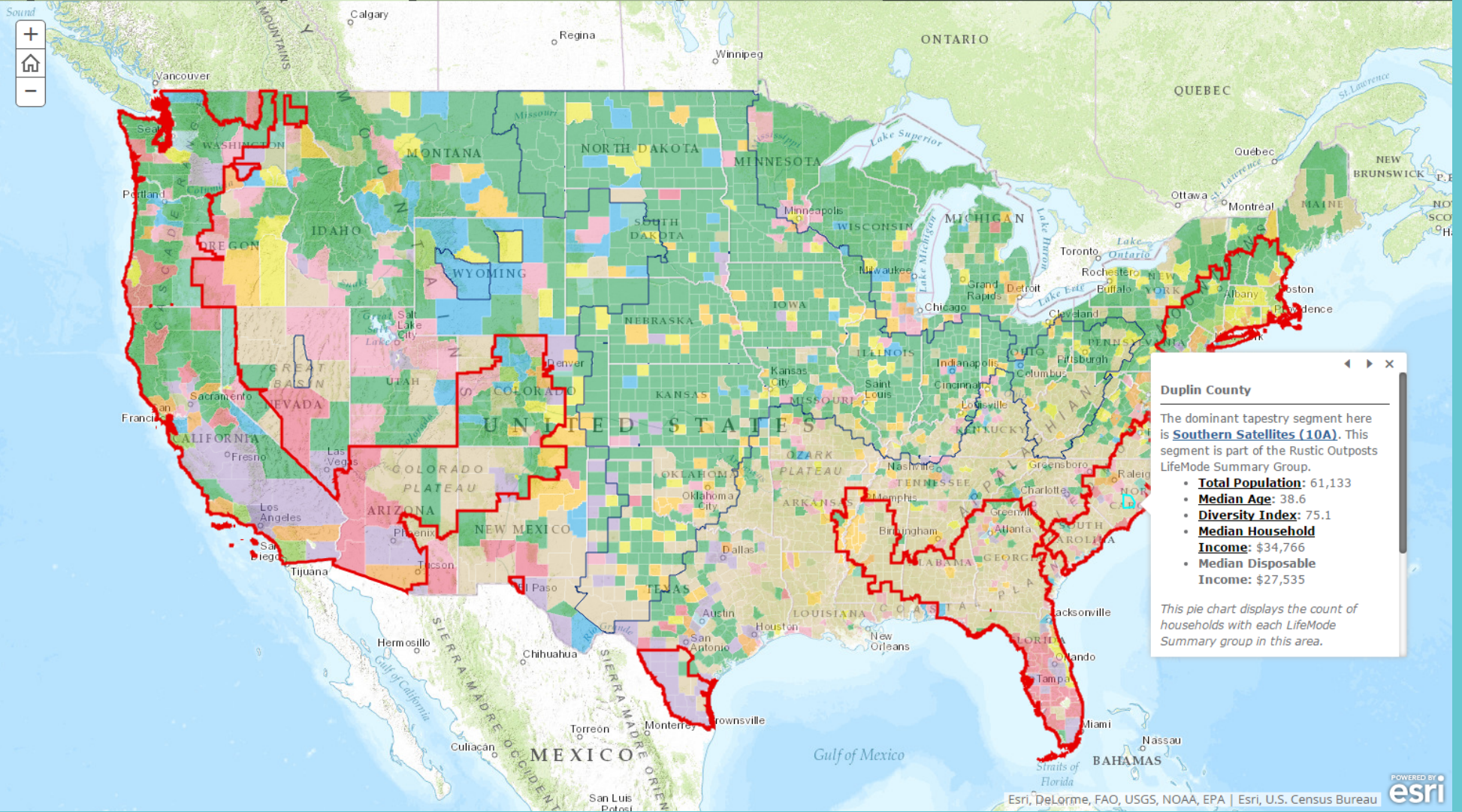
Clicking on your geographic area of interest will provide pop-ups with more information.

Severe Housing Problems Hot Spots

- Hot Spot
- Cold Spot

2015 USA Tapestry Segmentation

- County
- L1: Affluent Estates
 - L2: Upscale Avenues
 - L3: Uptown Individuals
 - L4: Family Landscapes
 - L5: GenXurban
 - L6: Cozy Country Living
 - L7: Ethnic Enclaves
 - L8: Middle Ground
 - L9: Senior Styles
 - L10: Rustic Outposts
 - L11: Midtown Singles
 - L12: Hometown
 - L13: Next Wave
 - L14: Scholars and Patriots
 - Unclassified



Duplin County

The dominant tapestry segment here is **Southern Satellites (10A)**. This segment is part of the Rustic Outposts LifeMode Summary Group.

- Total Population:** 61,133
- Median Age:** 38.6
- Diversity Index:** 75.1
- Median Household Income:** \$34,766
- Median Disposable Income:** \$27,535

This pie chart displays the count of households with each LifeMode Summary group in this area.

Tapestry Segmentation



LifeMode Group: Rustic Outposts Southern Satellites

10A

Households: 3,775,000

Average Household Size: 2.65

Median Age: 39.7

Median Household Income: \$44,000

WHO ARE WE?

Southern Satellites is the second largest market found in rural settlements but within metropolitan areas located primarily in the South. This market is typically nondiverse, slightly older, settled married-couple families, who own their homes. Almost two-thirds of the homes are single-family structures; a third are mobile homes. Median household income and home value are below average. Workers are employed in a variety of industries, such as manufacturing, health care, retail trade, and construction, with higher proportions in mining and agriculture than the US. Residents enjoy country living, preferring outdoor activities and DIY home projects.

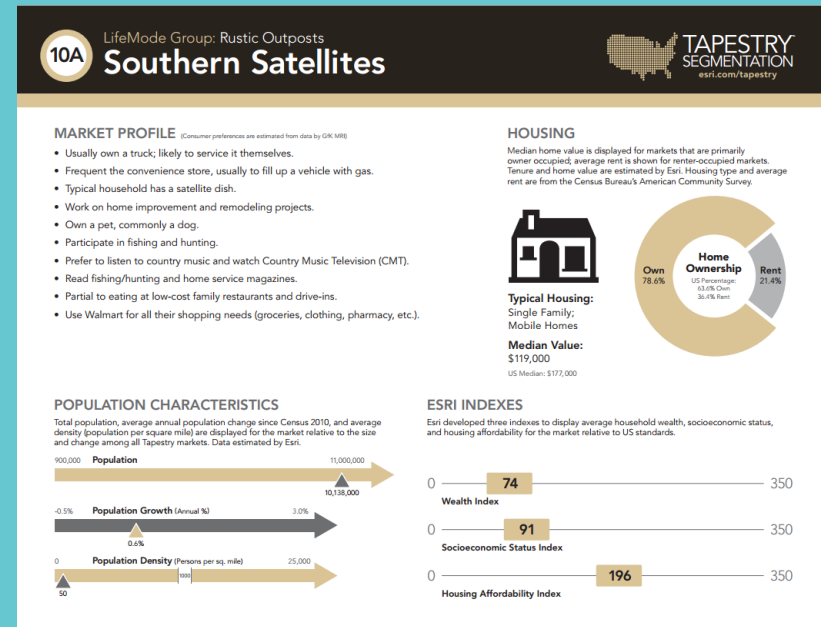
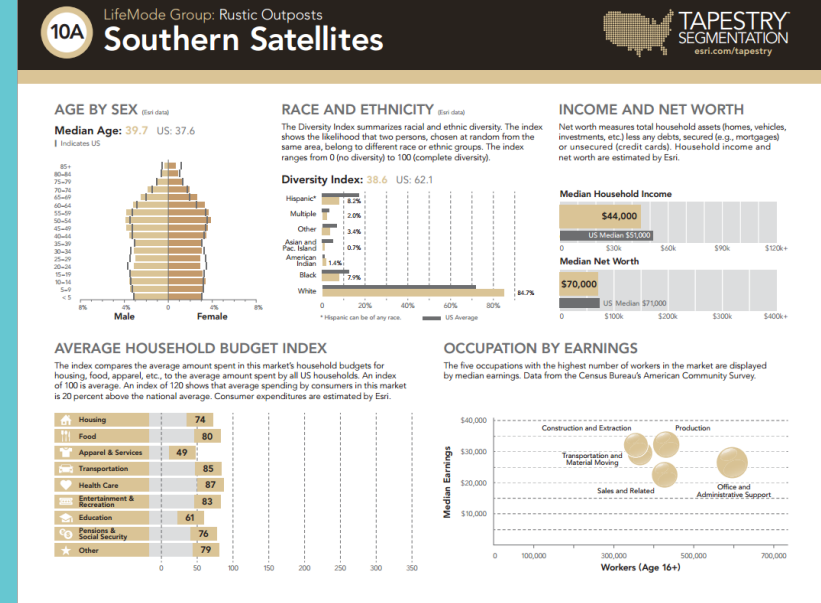
OUR NEIGHBORHOOD

- About 79% of households are owned.
- Married couples with no children are the dominant household type, with a number of multigenerational households (Index 112).
- Most are single-family homes (65%), with a number of mobile homes (Index 523).
- Most housing units were built in 1970 or later.
- Most households own 1 or 2 vehicles, but owning 3+ vehicles is common (Index 146).

SOCIOECONOMIC TRAITS

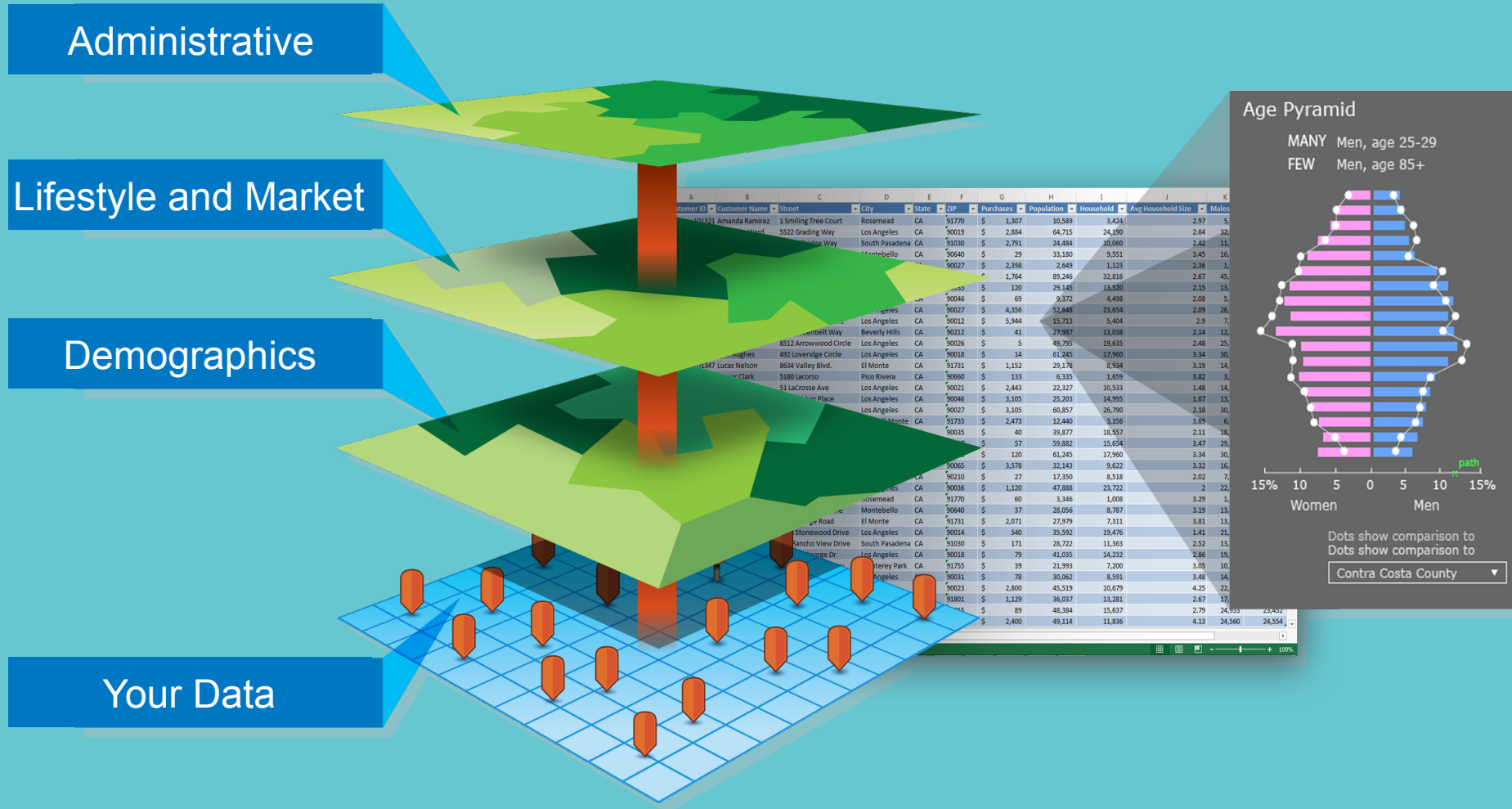
- Education: almost 40% have a high school diploma only (Index 137); 41% have college education (Index 72).
- Unemployment rate is 9.2%, slightly higher than the US rate.
- Labor force participation rate is 59.7%, slightly lower than the US.
- These consumers are more concerned about cost rather than quality or brand loyalty.
- They tend to be somewhat late in adapting to technology.
- They obtain a disproportionate amount of their information from TV, compared to other media.

Note: The Index represents the ratio of the segment rate to the US rate multiplied by 100. Consumer preferences are estimated from data by GRK, MRI.



Geography is the “Glue”

Accessing, Integrating and Understanding



Community Analyst

Esri Community Analyst

Hello, Jared Shultz | Preferences | Help | Support

USA

Home | Maps | Reports

My Content | Create Maps From Data | Define Areas for Reports

Enter an address or location

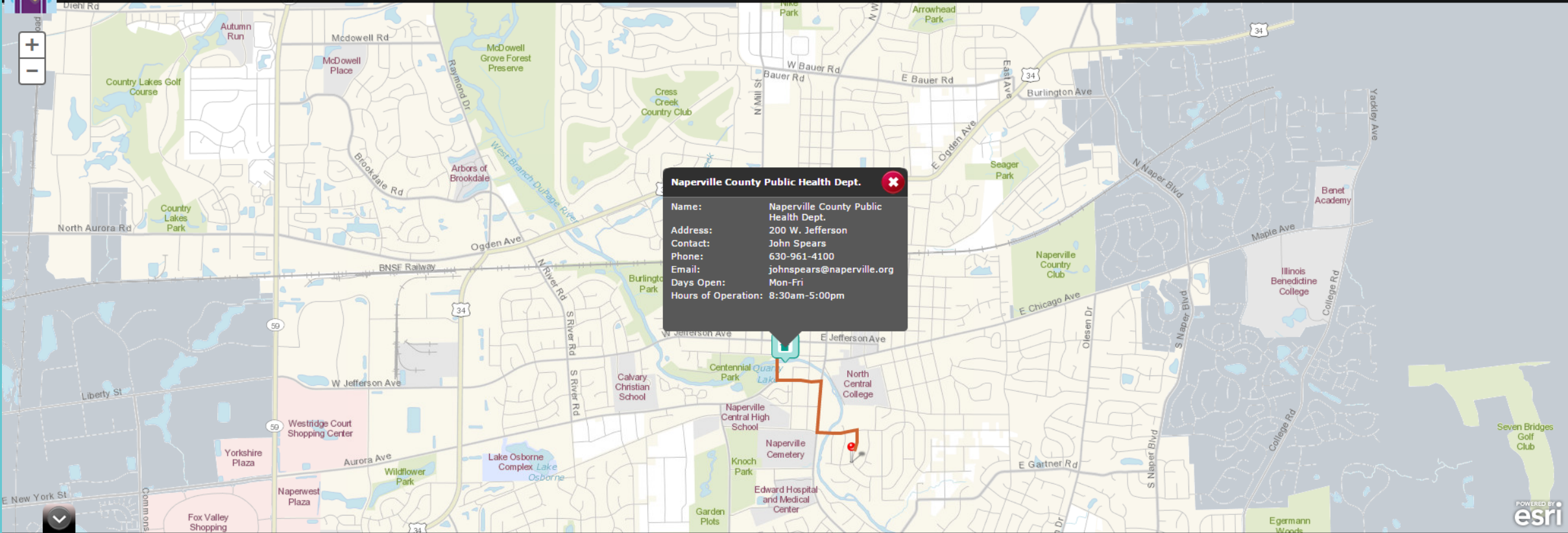
29072 (Lexington) rename
ZIP Code: 29072 (Lexington)
<Back
Select Report: Community Profile
Format: PDF Run Report

Summit Gilbert Lexington Red Bank South Congaree Pineridge Cayce West Columbia Columbia Springdale

3km 2mi

State of North Carolina DOT, Esri, HERE, DeLorme, NGA, USGS

POWERED BY esri



Naperville County Public Health Dept.

Name: Naperville County Public Health Dept.
 Address: 200 W. Jefferson
 Contact: John Spears
 Phone: 630-961-4100
 Email: johnspears@naperville.org
 Days Open: Mon-Fri
 Hours of Operation: 8:30am-5:00pm

<p>Public Health Clinics</p> <p>Naperville Health Clinic (0.74 miles) 5 S Washington St 630-717-2662</p>	<p>Community Resources</p> <p>Directions to Naperville County Public Health Dept. Total Distance: 1.09 mile(s) Duration: 4 minute(s)</p> <ol style="list-style-type: none"> 1.Start at 644 Sunset Dr,Naperville 2.Go north on Sunset Dr toward E Hillside Rd (0.1 miles) 3.Turn left on E Hillside Rd (0.22 miles) 4.Turn right on S Washington St (0.27 miles) 5.Turn left on Aurora Ave (0.23 miles) 6.Turn right on S Eagle St (0.21 miles) 	<p>Homeless Shelters</p> <p>Naperville County Shelter (1.63 miles) 1350 Aurora Ave. 630-420-6666</p>	<p>Birth and Death Certificates</p> <p>Naperville Vital Records (2.61 miles) 180 Fort Hill Dr. 555-555-1212</p>	<p>Cooling Center</p> <p>Naperville County P 1144 W. Ogden Ave 630-420-6142</p> <p>Naperville Cooling C 1803 N.Washington 630-420-6142</p>
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Field Mobility, Data Collection and Operational Awareness

Collector for ArcGIS

- Android or iOS
- Complex workflows
- Security and sharing options
- Connected or disconnected



Operations Dashboard for ArcGIS

- Windows & Browser app
- Real-time operational awareness
- Display widgets



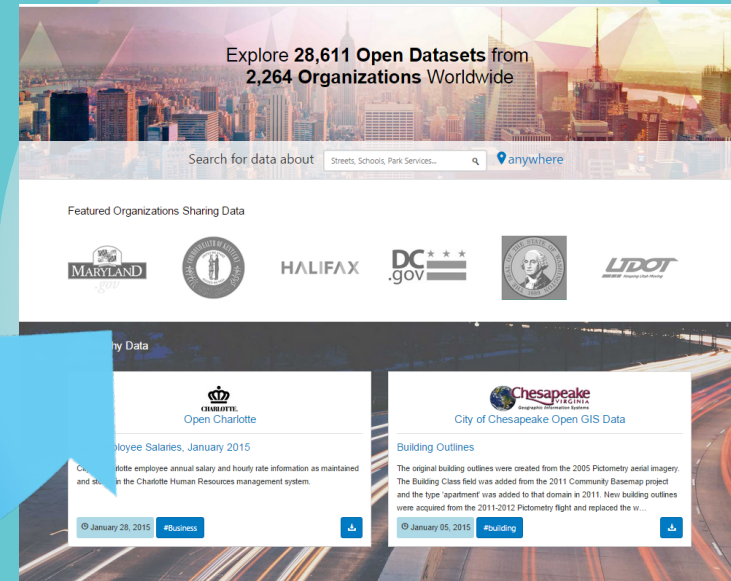
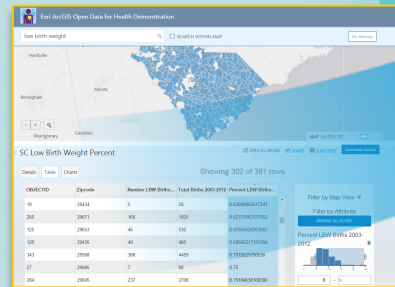
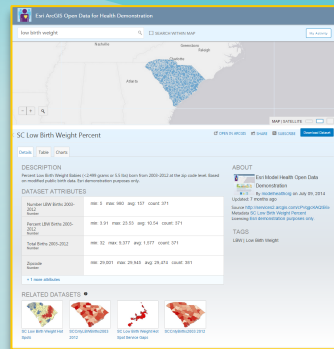
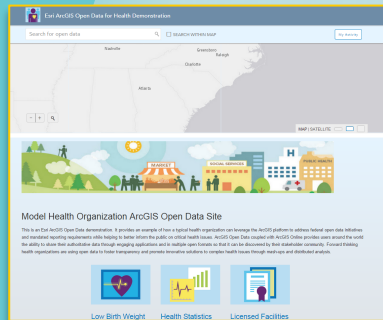


Solutions: ArcGIS Open Data

Integrated Workflows to Share Geospatial and Tabular Data

Portal for All Open Data

Open Data Portals

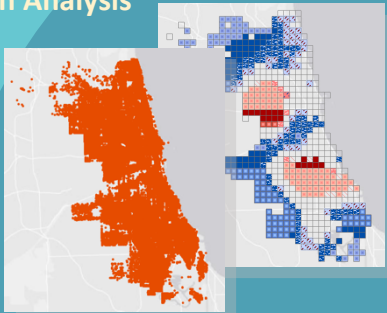


OpenData.ArcGIS.com

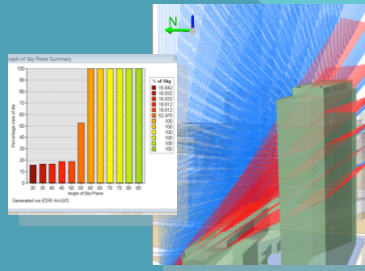
Spatial Analysis

Desktop

Space-Time Pattern Analysis



3D Analysis



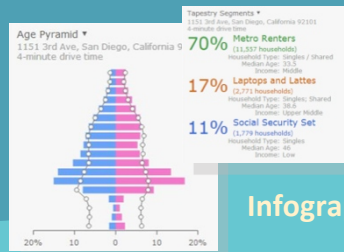
Flow Visualization



Improved Modeling

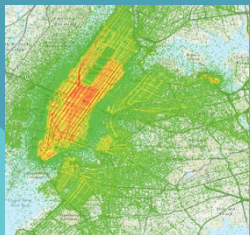


Multidimensional Data



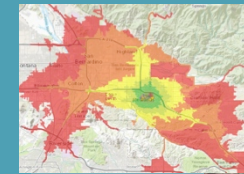
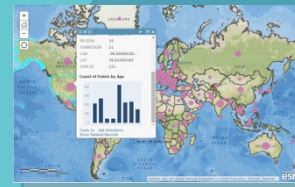
Infographics

Big Data

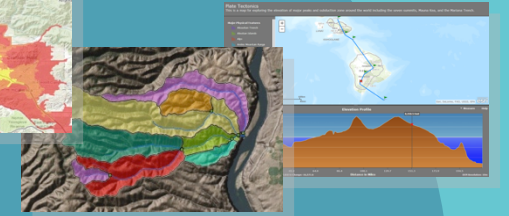


Online

Aggregation



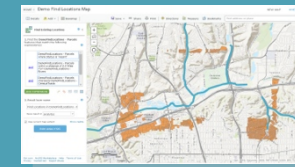
Terrain Analysis



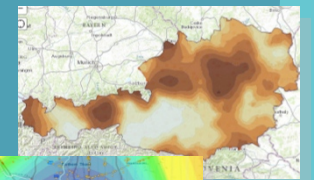
Route Planning



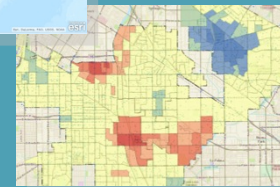
Find Similar



Interpolation

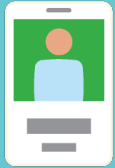


Hot Spots



Target User Specific Needs

Executive



IT



Analyst



Physicians



Clients



Enterprise Approach

Business Systems

GIS

Data

Apps

Web GIS /Location Platform

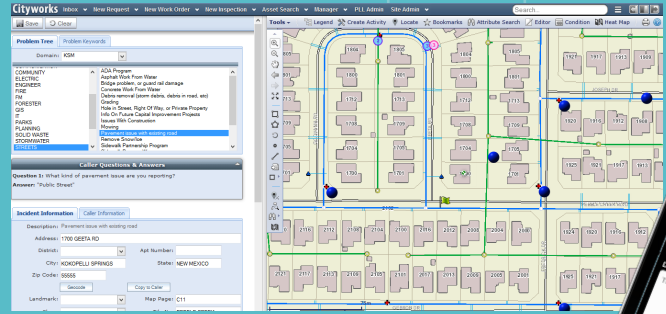
IT Infrastructure

Solutions that Grow with you

Healthy Communities

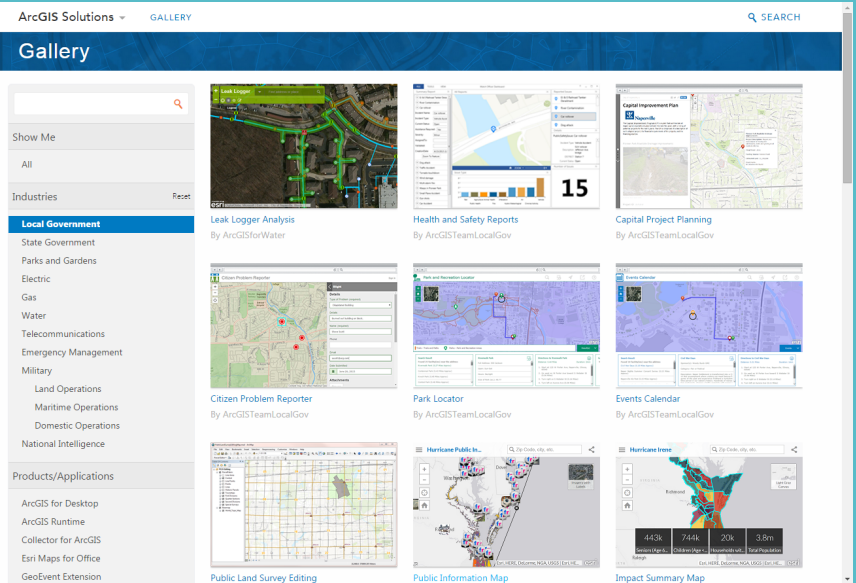
Matures with your organization

CityWorks-Work Order Management



CitySourced- Citizen Engagement

Start with Ready to use Maps and Apps



Configure first, Code second

Resources: Training Support Professional Services Partner Solutions

Next Step

- Experienced ArcGIS users
- New ArcGIS users
- ArcGIS Free Trial

www.esri.com/software/arcgis/free-trial



The screenshot shows the Esri website's 'Free Trial' page. At the top, the Esri logo is on the left, and navigation links for 'Industries', 'Products', 'Support & Services', 'About', and 'Community' are on the right. A search bar is also present. Below the navigation is a blue banner with the 'ArcGIS' logo. Underneath, a menu bar includes 'Main', 'Capabilities', 'What's New', 'Pricing', and 'Free Trial' (which is highlighted with a green underline). The main content area features the heading 'What Do I Get with My Free ArcGIS Trial?' followed by a paragraph: 'With this 60-day free trial, you can experience the entire ArcGIS platform. You will receive'. Below this is a list of benefits, each preceded by a green checkmark: a 60-day trial of ArcGIS for Desktop Advanced (including ArcGIS Pro and ArcMap), a 60-day trial of popular ArcGIS extensions for ArcGIS Pro and ArcMap, a 60-day trial of ArcGIS Online with access for up to five people, a total of 200 ArcGIS Online service credits for data storage, premium data access, or geocoding and analysis, a suite of ready-to-use apps for any device, a Living Atlas of the World with maps and data, access to foundation content from Esri, access to developer tools including APIs and SDKs, and access to free trials of third-party apps and data from the ArcGIS Marketplace. On the right side, there is a 'Sign Up for the ArcGIS Trial' form with input fields for 'First Name', 'Last Name', 'Email Address', and 'Confirm Email Address'. Below these fields is a dropdown menu labeled '--- Select an industry ---' and a blue 'START TRIAL' button. A small note at the bottom of the form says 'We will send you details on how to finalize your account.'

Four Steps

● Create a successful strategy that supports a healthy community:

1

START WITH A WORLD-CLASS GIS PLATFORM

2

BUILD A LOCATION STRATEGY

3

DELIVER REAL SOLUTIONS THAT SERVE
COMMUNITY PRIORITIES

4

DEVELOP STRONG RELATIONSHIPS WITH ESRI
PARTNER NETWORK



“Through understanding our data, we can better appropriate scarce resources to manage and care for unique populations.”

Jefferson McMillan, Medical Informatics Researcher
at Children’s National Health Systems

Join us in Atlanta!

ESRI HEALTH AND HUMAN SERVICES GIS CONFERENCE MAKING PLACE MATTER

September 14 - 16, 2015 | Grand Hyatt Atlanta in Buckhead
Atlanta, Georgia



www.esri.com/events/health



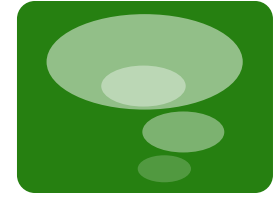
(F)RE(E)SOURCES

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[@esri_health](https://twitter.com/esri_health)



Ask Us Your Questions



Dawn Wright

District Epidemiologist
Portsmouth Health
Department, VA



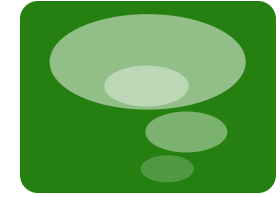
Angelica Baltazar

Health & Human Services
Industry Specialist
Esri



Jared Shoultz

Health Technology
Specialist
Esri



Thanks for Joining

- **Learn more:** Continue learning! Check out the Resources Section for additional information on GIS and smarter communities. All resources are saved on-demand.
- **On-Demand:** We will email you a link to the on-demand version of this training so you can view it again or share with a colleague. Plus your GovLoop training certificate.
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