



ESRI ArcGIS API Technology for Survey Research

Jasmine Du

July , 2014

Agenda



Abt SRBI is a full-service survey research organization specializing in primary data collection for public policy research. We provide full in-house data collection and methodological capabilities including questionnaire development, cognitive testing, multivariate analyses, statistical modeling, complex sample design and weighting, focus group discussions, and complete GIS capabilities. In a typical year, the Abt SRBI GIS department supports hundreds of survey research projects with various GIS tasks. Abt SRBI GIS has built several customized mapping applications using ESRI ArcGIS APIs and ArcGIS Server for use by both internal Abt SRBI staff and external clients. The applications were built to use GIS data published from our ArcGIS Server to assist on data sampling, data collection, statistics, spatial analysis and visualization. The presentation will include a demonstration of the applications, system architecture, results, and best practices learned on use of API technology for survey research projects. These ESRI GIS tools have added great value to Abt SRBI survey projects.

Agenda



- § Introduction
- § Survey Research Overview
- § Abt SRBI GIS uses of ESRI
- § ESRI API at Abt SRBI
- § Conclusions
- § Questions

Introduction



§ Jasmine Du, Statistical GIS Analyst I

- § GIS Analyst at Abt SRBI

- § Previously worked at Wharton School, Philadelphia City Council President's Office

- § Master of Urban Spatial Analytics, University of Pennsylvania (2012)

§ Abt SRBI

- § National Leading survey research firm, founded in 1981, 12th largest Research firm in USA (Honomichl List)

- § Headquarters in NYC, with offices in DC, Chicago, Boston, Arizona, North Carolina, Florida, and Ohio

- § Expertise in 16 practice groups, including Transportation, Social Policy, Market Research, Health, Energy, Elections, GIS, etc.

Abt SRBI Introduction



§ Clients Include:

- Amtrak
- Girl Scouts of America
- Southern California Association of Governments (SCAG)
- Port Authority of New York and New Jersey
- USAID
- Yum! Brands
- National Oceanic and Atmospheric Administration (NOAA)
- U.S. Department of Housing & Urban Development (HUD)



Abt SRBI GIS



- § Geographic Information Systems (GIS) Dept. - Formed in 2010
- § Provides GIS support to all Abt SRBI practice groups:
 - Social Policy, Health, Housing, Transportation, Environmental, etc.
- § Clients utilizing Abt SRBI GIS in studies have included:
 - HUD, NOAA, EPA, NYC Economic Development Corporation (NYCEDC), Port Authority of NY & NJ, Southern California Association of Governments (SCAG), Delaware Valley Regional Planning Commission (DVRPC), American National Election Studies (ANES), USAID.
- § Projects / Capacities include:
 - Spatial analysis, Interactive map design, Geographic based statistics, Data visualization, GPS / mobile data collection, and GIS programming / models.
- § **We do GIS and everything GIS every day:**
Demonstrating the value of GIS for survey research industry

Survey Research Overview



Start → *Main Study* → *End*

- § **Proposals**
- § **Sample Plans**
- § **Demographics**
- § **Survey Targets**

*Simple uses
of GIS*

- § **Data Collection**
- § **Geocoding**
- § **Field Surveys**
- § **Reporting**

- § **Quality Checks**
- § **Analysis**
- § **Visualization**
- § **Deliverables**

*Complex uses
of GIS*

Abt SRBI use of ESRI



- § ESRI Desktop 10.2 and Extensions (Network Analyst, Spatial Analyst, and Geostatistical Analyst)
- § ArcGIS Viewer for Flex 3.6
- § ArcGIS for Server 10.2
- § Model Builder
- § Python

ESRI API applications



MAP LOADED
Zoom IN Zoom OUT Zoom to USA

+

-

PSU GPS ZOOM TO CASE

REPLICATES ADDRESS SEARCH STATES

- REPLICATE 1
- REPLICATE 2
- REPLICATE 3
- REPLICATE 4
- REPLICATE 5
- REPLICATE 6
- REPLICATE 7

SELECTED ADDRESS ADDRESS POINTS BLOCKS CRIM BLOCKS

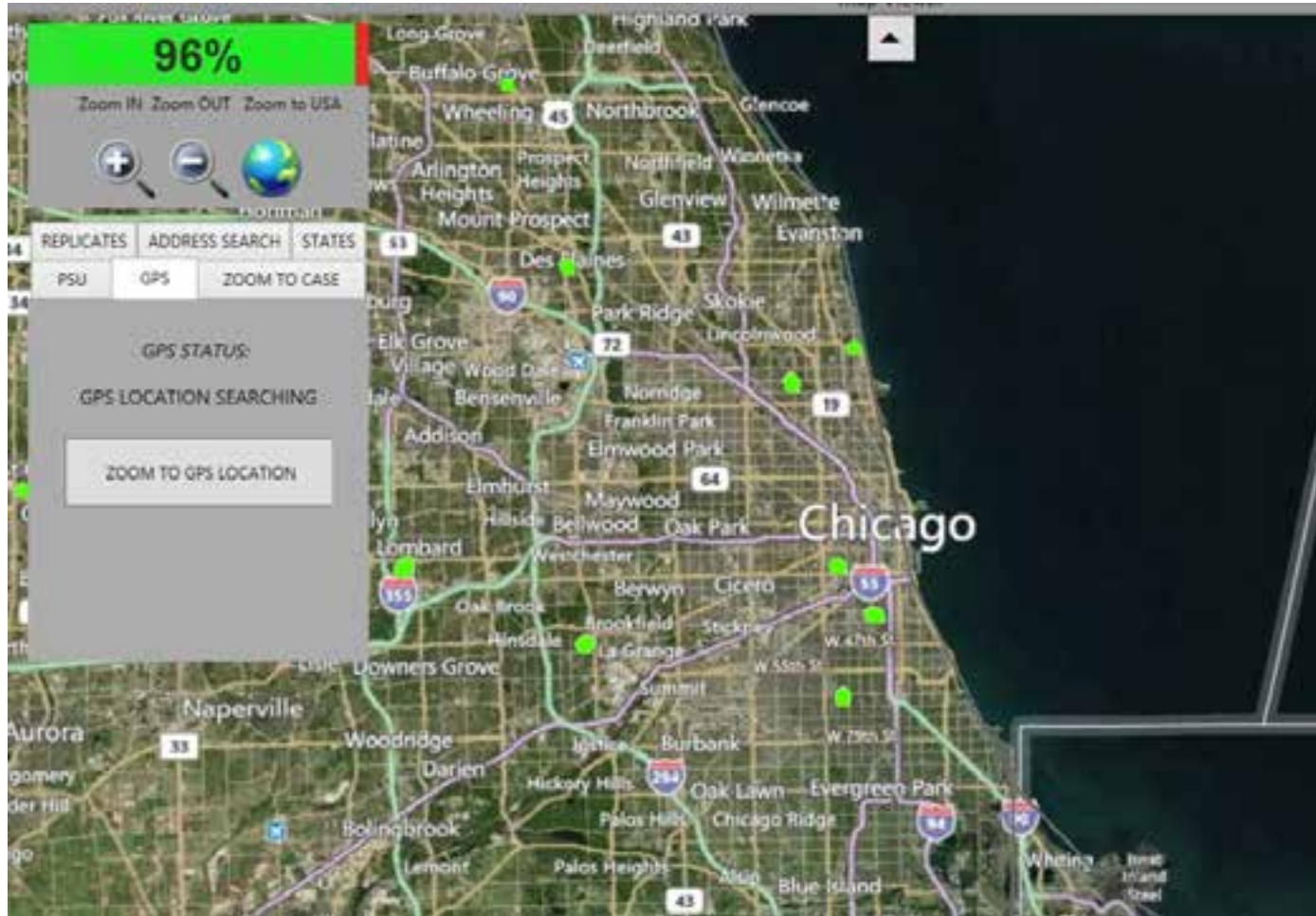


ESRI API applications

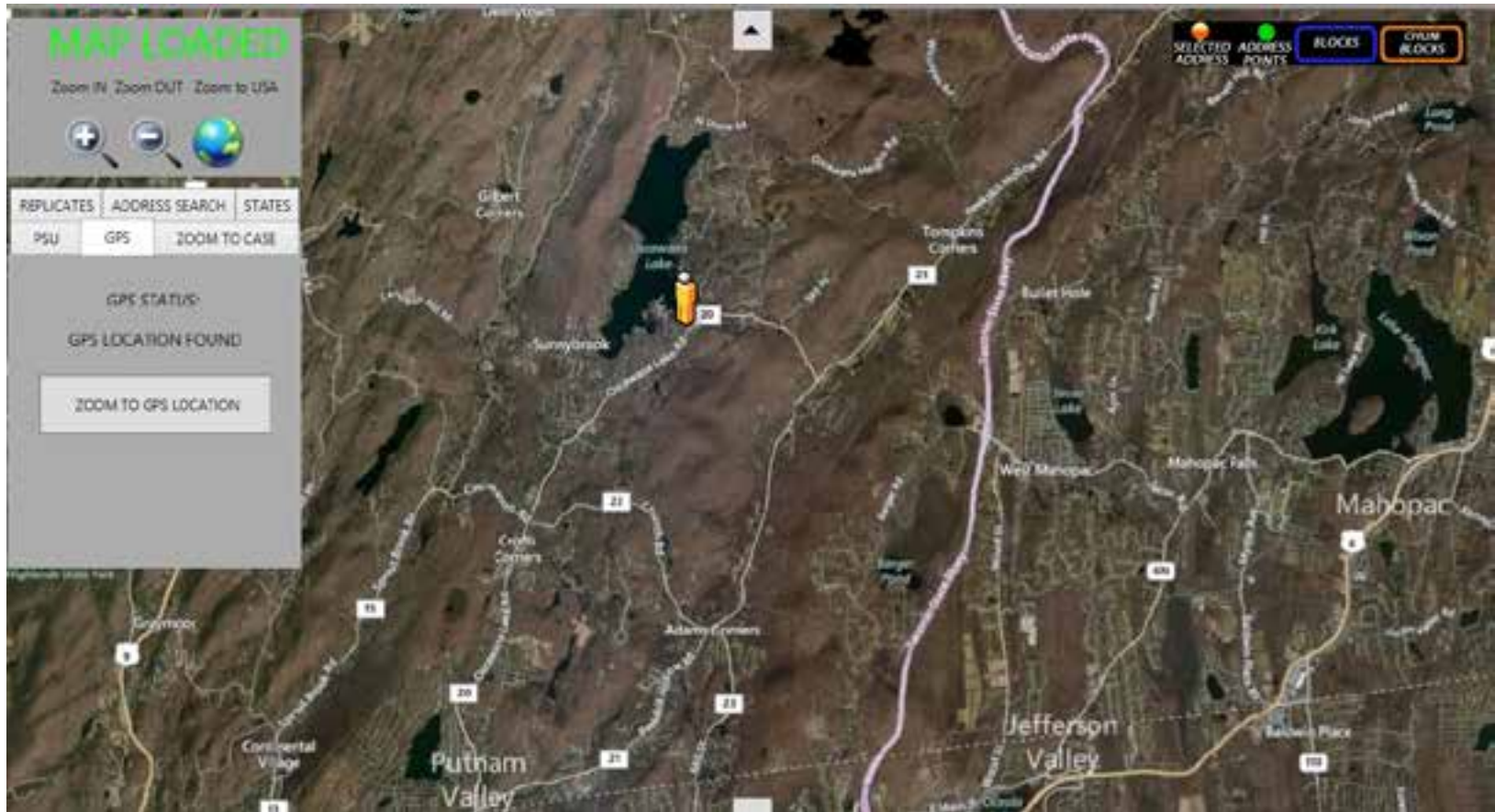


- § Example #1 – Map Viewer
- § **ESRI ArcGIS for WPF**
- § <http://help.arcgis.com/en/webapi/wpf/>
- § Released just in time in June 2012!
- § ***** FREE DOWNLOAD *****
- § Created a customized WPF mapping application
- § Used Visual Studio Express (FREE)
- § Programmed in C#

ESRI API applications



ESRI API Applications

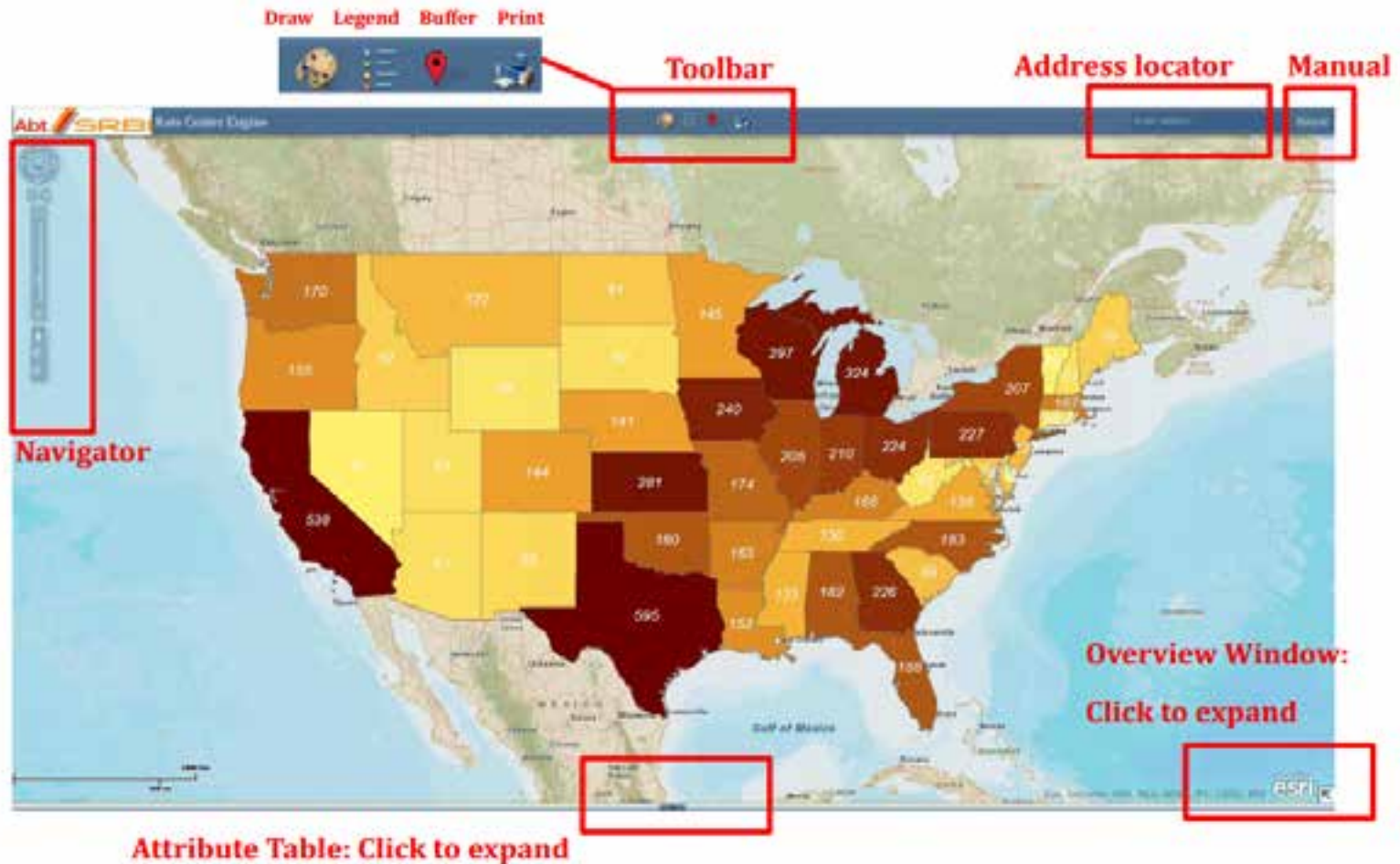


ESRI API applications

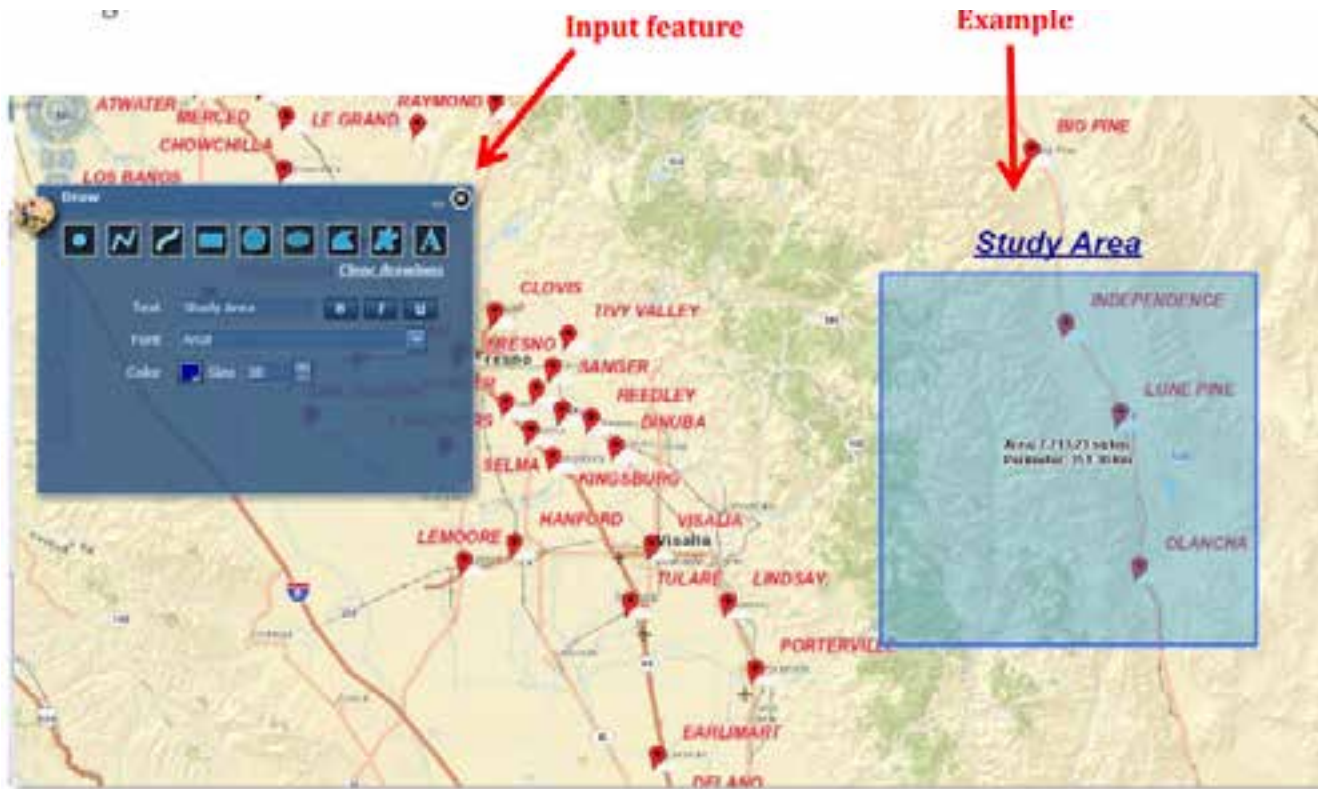


- § Example #2 - Rate Center API
- § <https://gis.srbi.com/viewer/ratecenters/index.html>
- § A web service to query, select and download study area rate centers information. (SSI RATE CENTERS - LAST UPDATED 6/17/2014)
- § Taskbar includes: layer list, legend, draw, buffer, print and export dataset as CSV table.

ESRI API applications



ESRI API applications



- § Draw
- § Print
- § Export as CSV Table

ESRI API applications



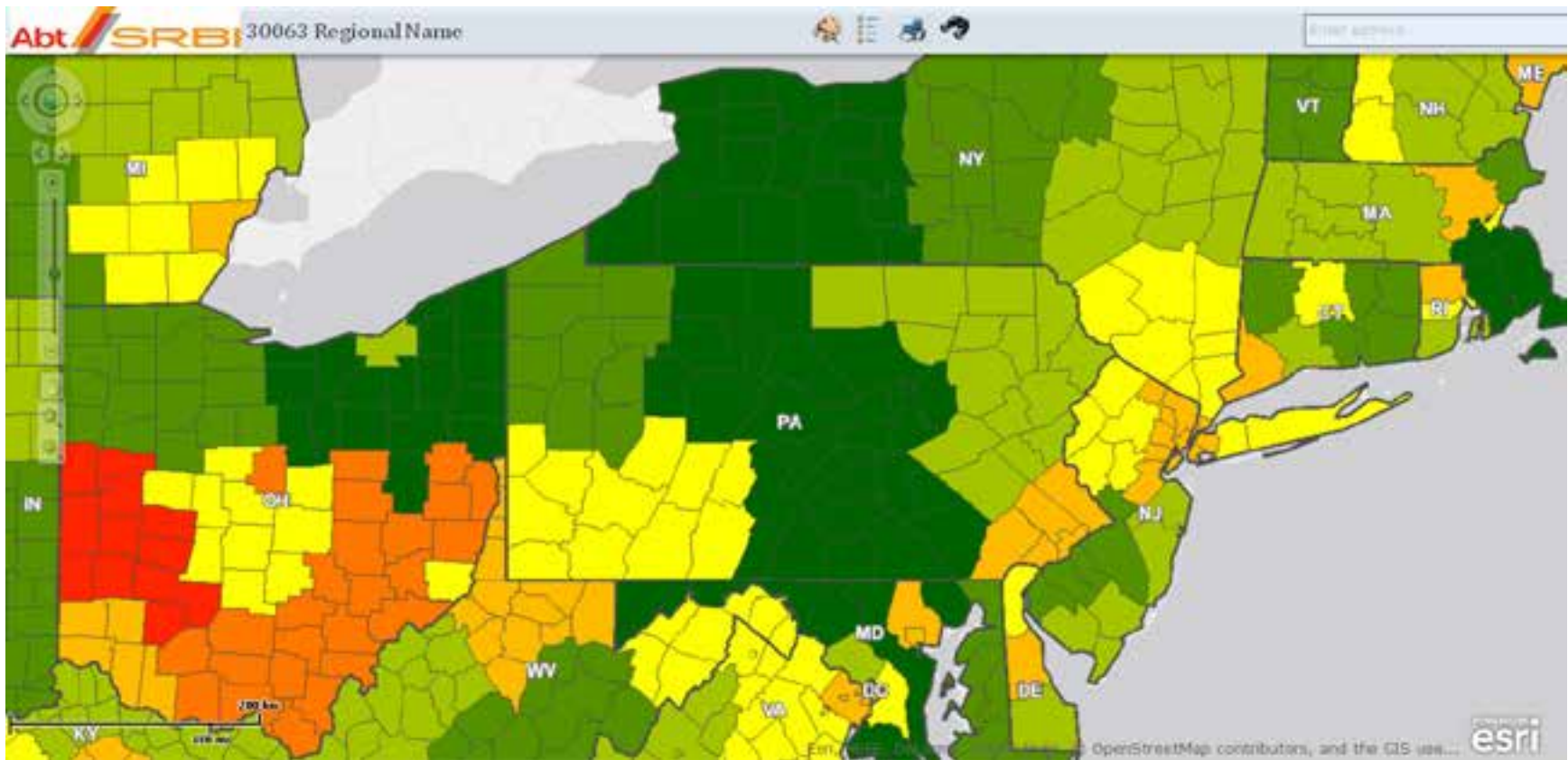
§ Rate Centers within buffered area and export as CSV table.

ESRI API applications



- § Example #3 – Regional Names
- § <https://gis.srbi.com/viewer/30063/index.html>
- § A web service to visualize counties in regions.
- § Taskbar includes: layer list, legend, draw, print and export dataset as CSV table.

ESRI API applications



Thank you!

Jasmine Du

j.du@srbi.com



Timothy Michalowski

t.michalowski@srbi.com



275 Seventh Ave, Suite
2700
New York, NY 10001

