Using Advanced e-Systems for Community-Engaged Research

David Bodenhamer
The Polis Center at IUPUI

International Symposium on Grids & Clouds
Academia Sinica, Taipei
March 2017

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A Community-Focused Agenda

- Building community information systems
- Deriving meaning from data to learn about communities
- Providing decision support – consulting, dashboards, other technology systems
- Building capacity in others to use data for decision making

Our approach includes:

- Collaboration
- Community engagement/citizen participation

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Community Information Systems

A range of technologies and methods to organize, manage, and disseminate community data.

Aim is to enhance the capacity of citizens and organizations to participate effectively in decision-making.

Increasingly common in U.S.

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CIS Studies and Trends

National Infrastructure for Community Statistics (NICS)

- Brookings Institution - 2005

Community Indicators Consortium

- Linking community indicators use and performance measurement

General Accounting Office (GAO)

- 2004 and 2011 Studies for the United States Senate to assess the state of the knowledge base in comprehensive indicator systems in the U.S. and internationally

National Neighborhood Indicators Partnership (NNIP)

- A partnership of 35 cities led by the Urban Institute

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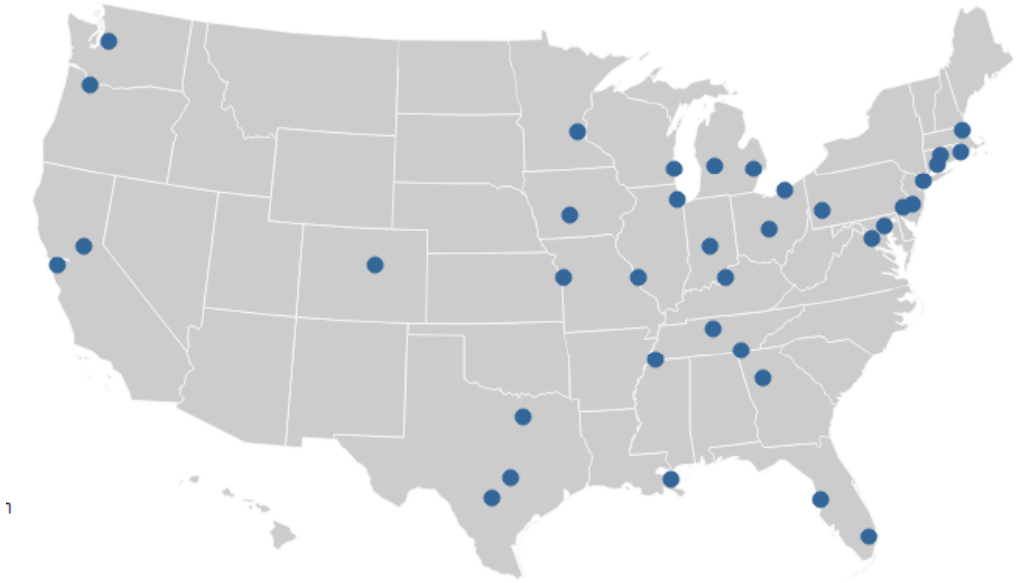
CIS Cities—U.S.

35 Cities in National Neighborhood Indicators Partnership



Click on partner city to view profile

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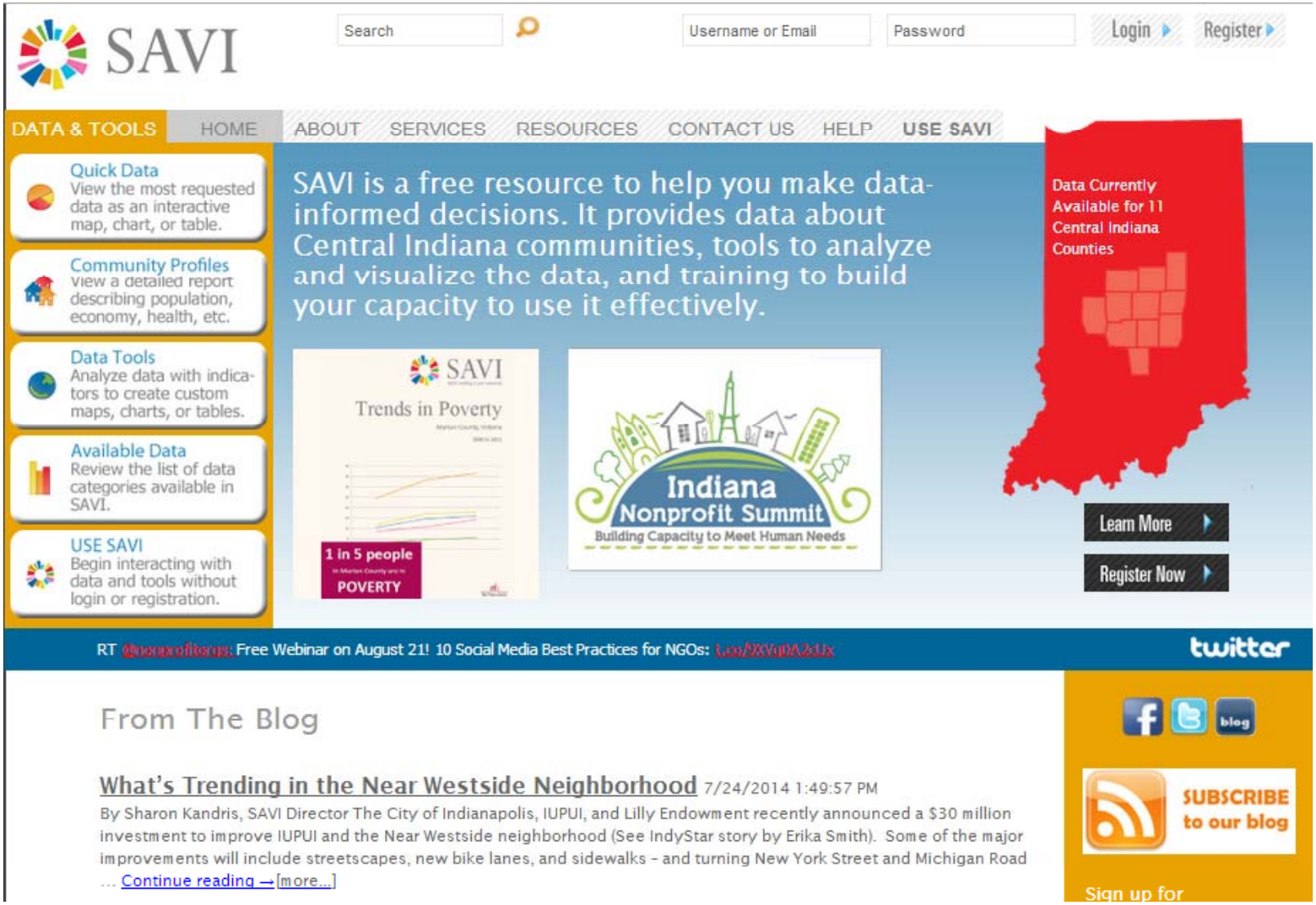

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www.sav

http://savi.org

SAVI is a CIS for Central Indiana. Established in 1995, it provides organizations and individuals with:

- Reliable data
- Actionable information
- Analysis and visualization tools
- Collaboration and capacity-building strategies

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SAVI Infrastructure

	GIS to geo-enable the data	Database for cleaning, standardizing, masking confidential data, and processing indicators	GUI to publish data for public consumption	GUI application
1995-1996		MS Access	Overhead Transparencies	n/a
~1997-2000	Arc/Info	Oracle	ArcView Desktop at Community Access Sites	Avenue
1999-2004	Arc/Info	Oracle	ESRI Map Objects IMS	HTML/asp web applications
2005-2009	ArcGIS	Oracle	ESRI ArcIMS	HTML/ASP .Net web application
2010+	ArcGIS/Arc Server	Oracle	Google and ESRI ArcMap Server	HTML/ASP .Net 2.0 web application
2014	PostGIS	PostgreSQL	N/A	Flex and Java

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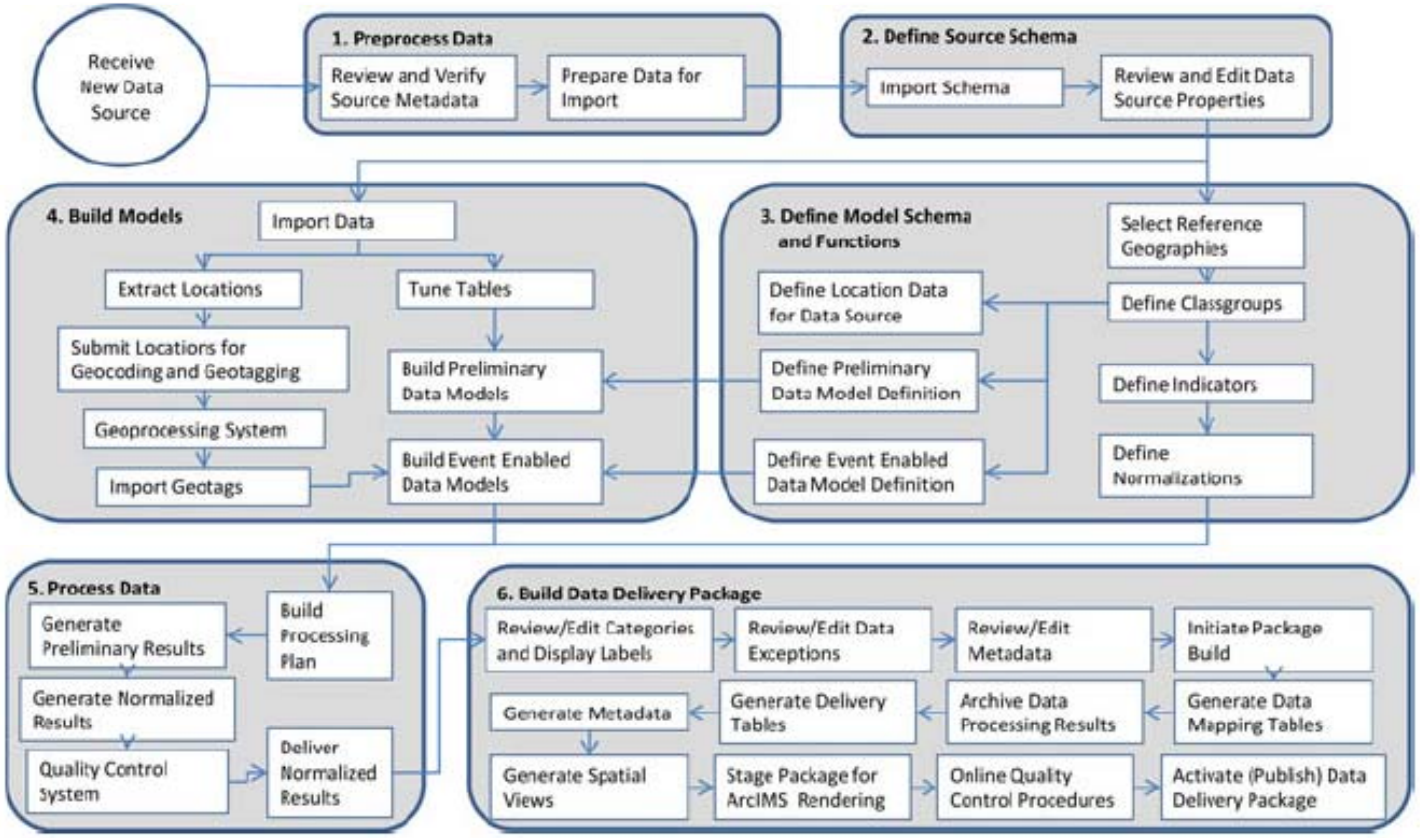
SAVI Data Processing



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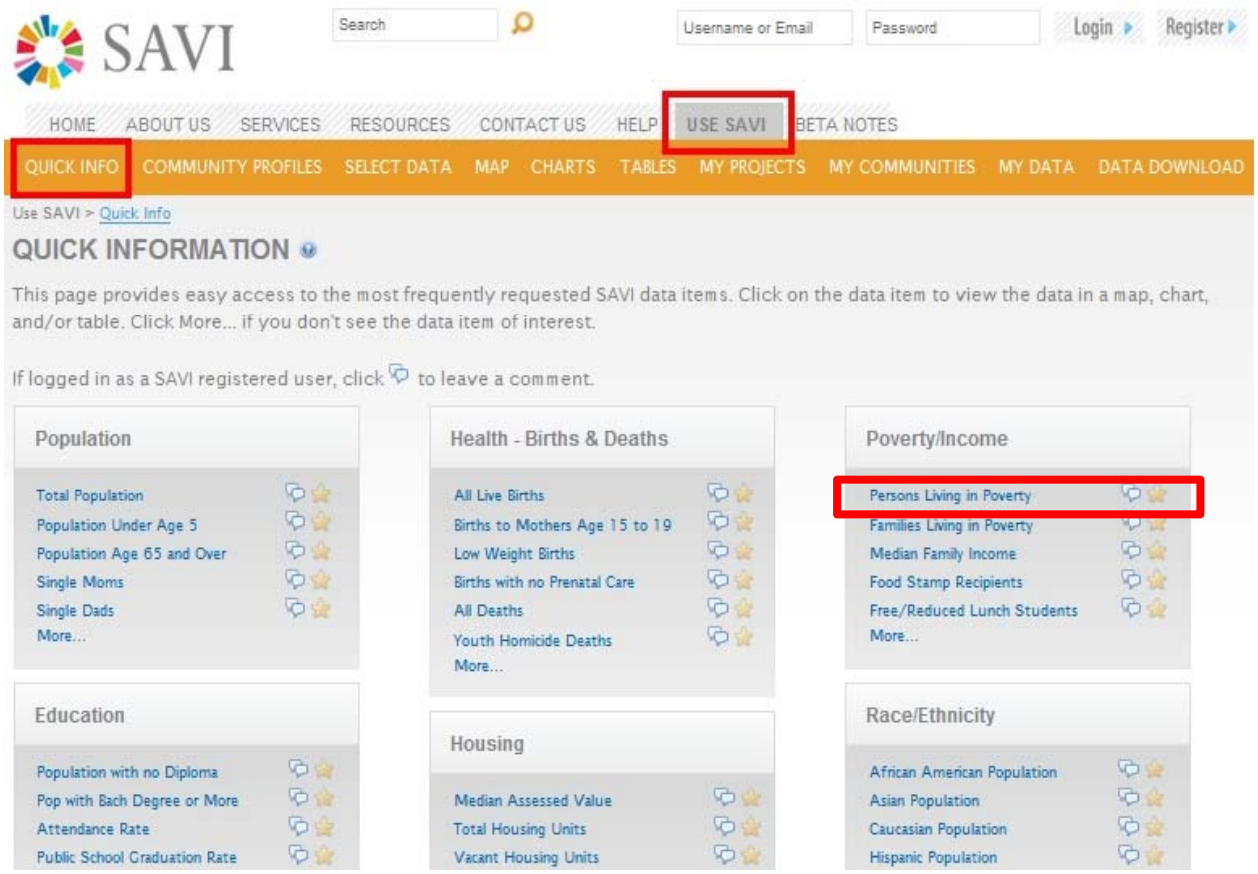

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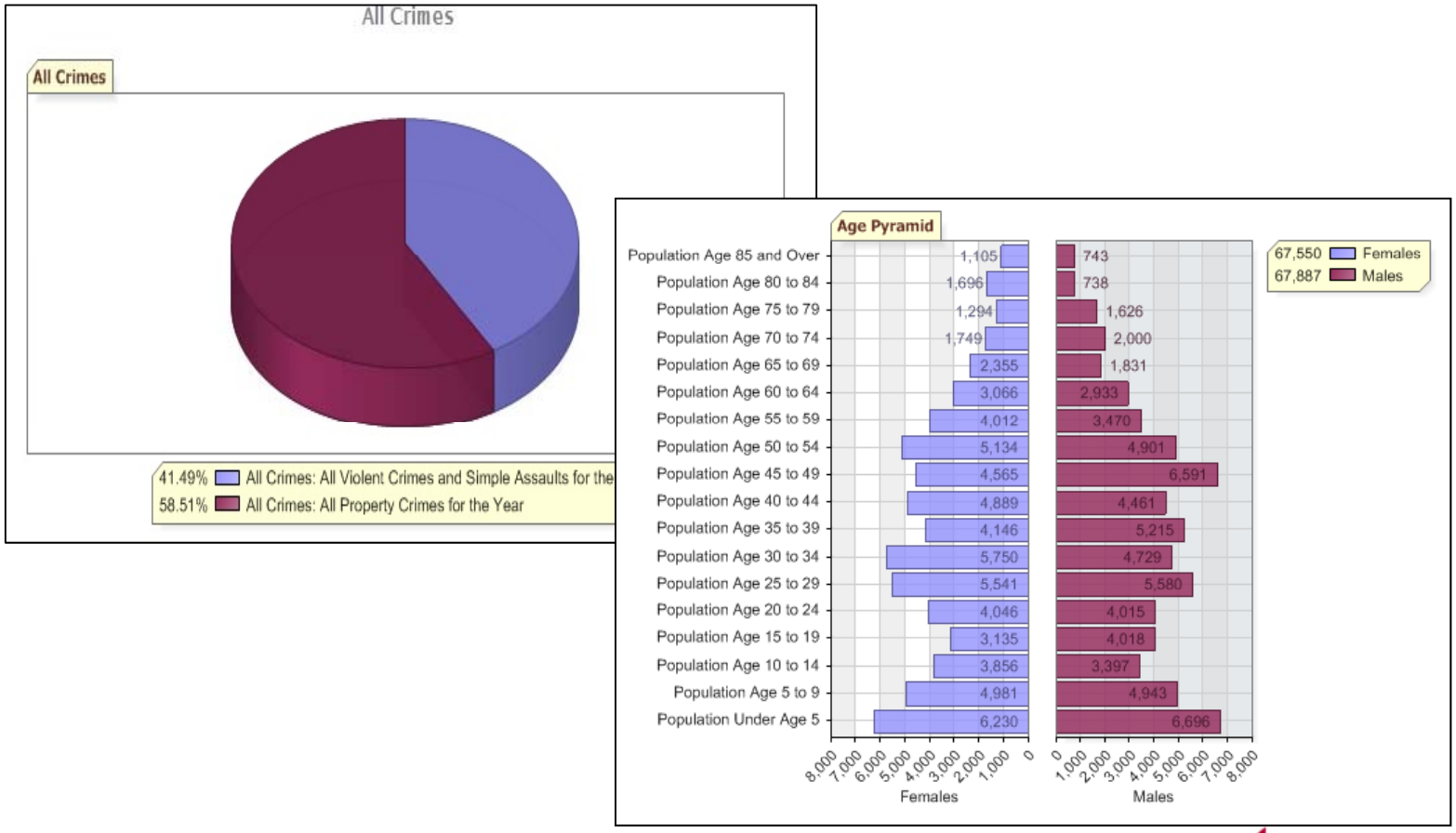
Community Profiles



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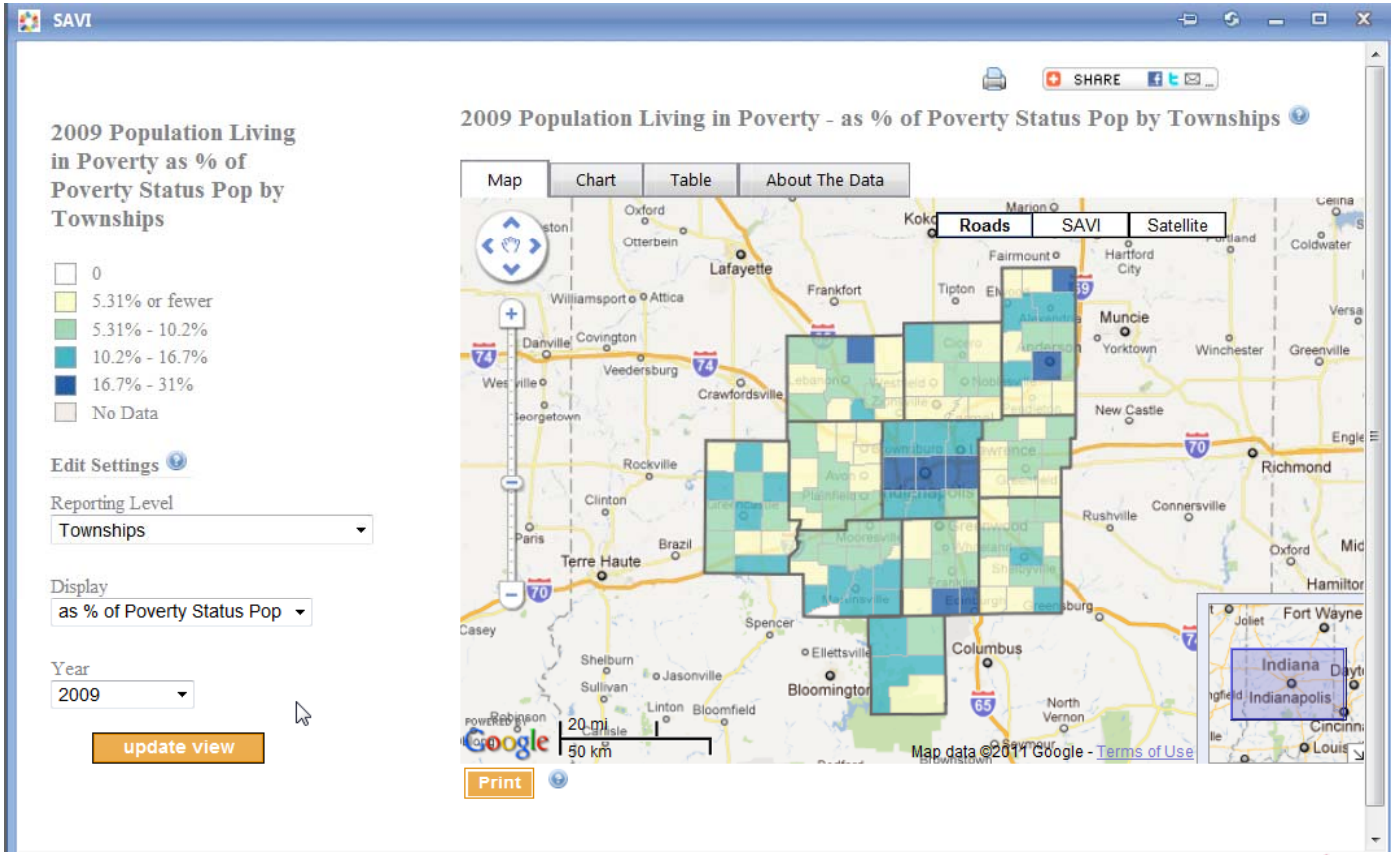

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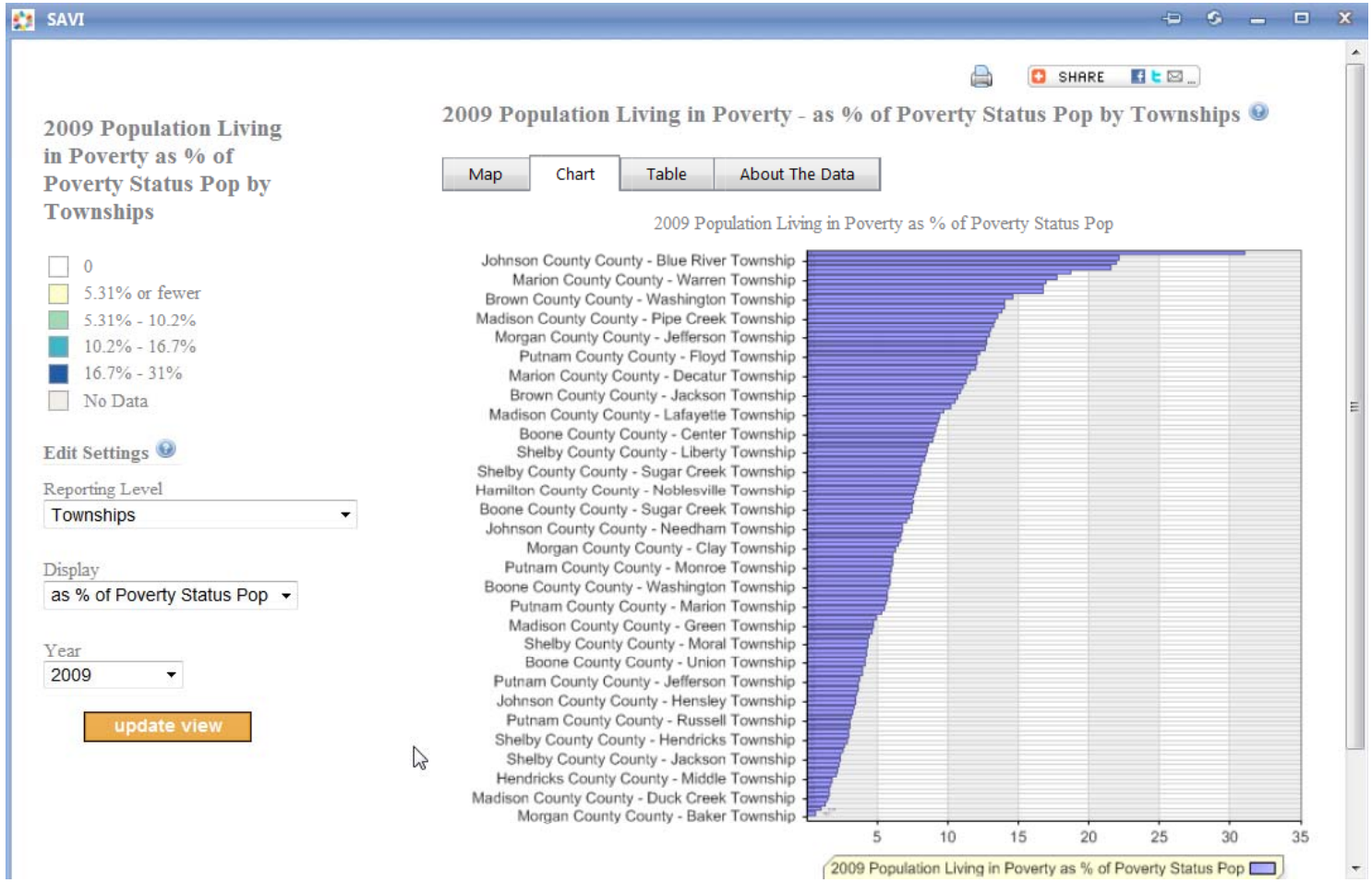

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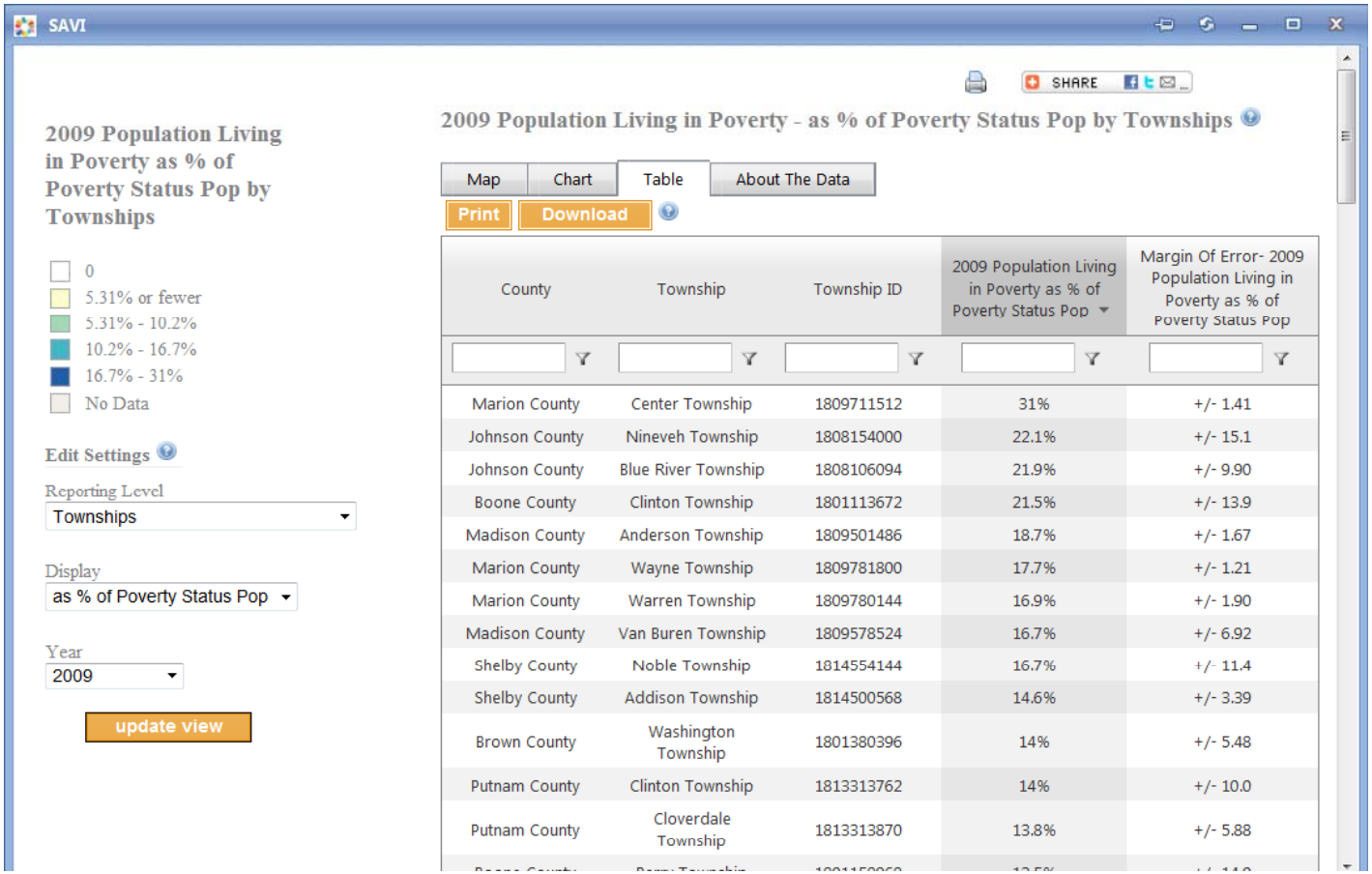

County	Township	Township ID	2009 Population Living in Poverty as % of Poverty Status Pop	Margin Of Error- 2009 Population Living in Poverty as % of Poverty Status Pop
Marion County	Center Township	1809711512	31%	+/- 1.41
Johnson County	Nineveh Township	1808154000	22.1%	+/- 15.1
Johnson County	Blue River Township	1808106094	21.9%	+/- 9.90
Boone County	Clinton Township	1801113672	21.5%	+/- 13.9
Madison County	Anderson Township	1809501486	18.7%	+/- 1.67
Marion County	Wayne Township	1809781800	17.7%	+/- 1.21
Marion County	Warren Township	1809780144	16.9%	+/- 1.90
Madison County	Van Buren Township	1809578524	16.7%	+/- 6.92
Shelby County	Noble Township	1814554144	16.7%	+/- 11.4
Shelby County	Addison Township	1814500568	14.6%	+/- 3.39
Brown County	Washington Township	1801380396	14%	+/- 5.48
Putnam County	Clinton Township	1813313762	14%	+/- 10.0
Putnam County	Cloverdale Township	1813313870	13.8%	+/- 5.88

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Interactive Mapping

zoom to | add items + | download | print | help

Data Items

2008 Public High School Graduation Rate Percent Reported By School Corporations

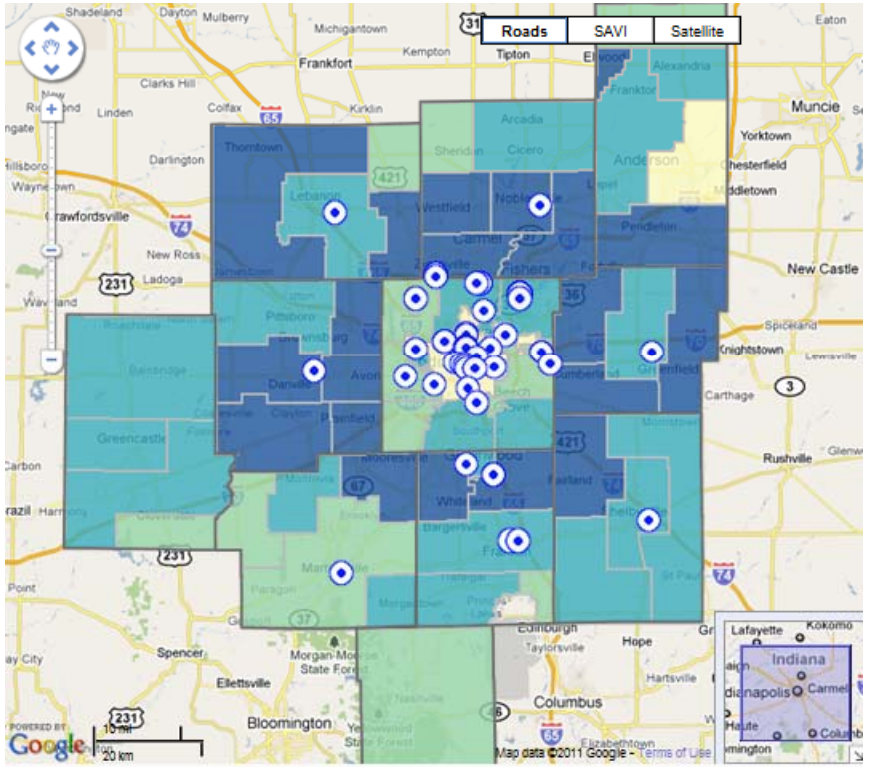
- 0
- 66% or fewer
- 66% - 77%
- 77% - 87%
- 87% - 97%
- No Data

Sites, Programs, & Agencies

2010 Adult Continuing Education

Boundaries

Reference Layers



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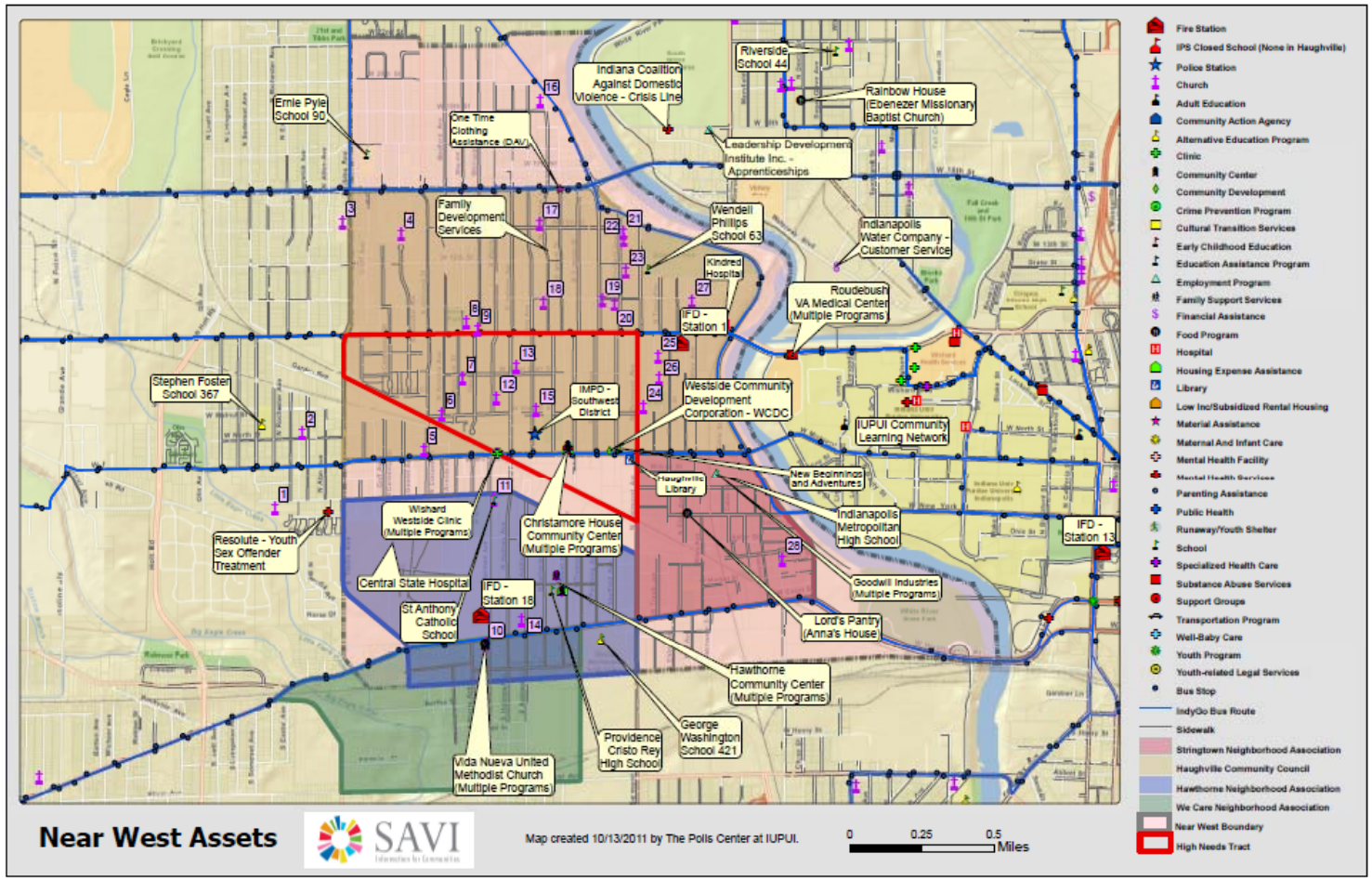
Asset Mapping



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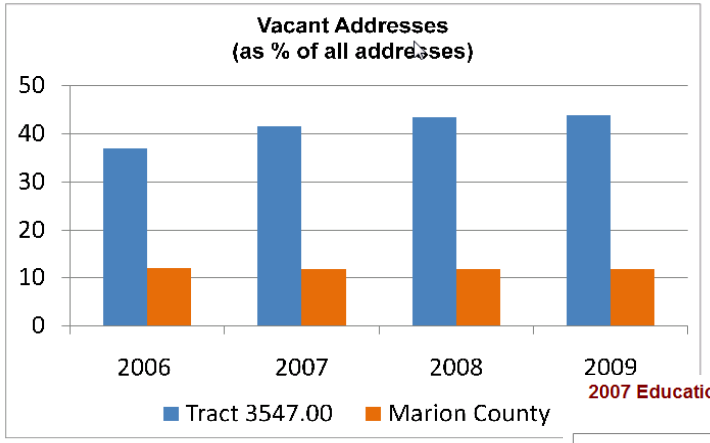
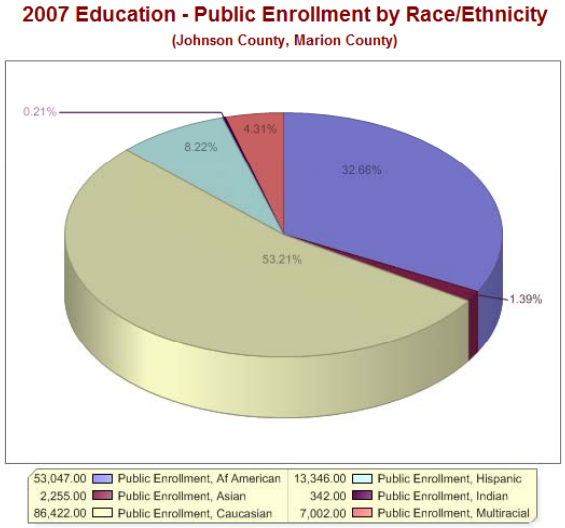
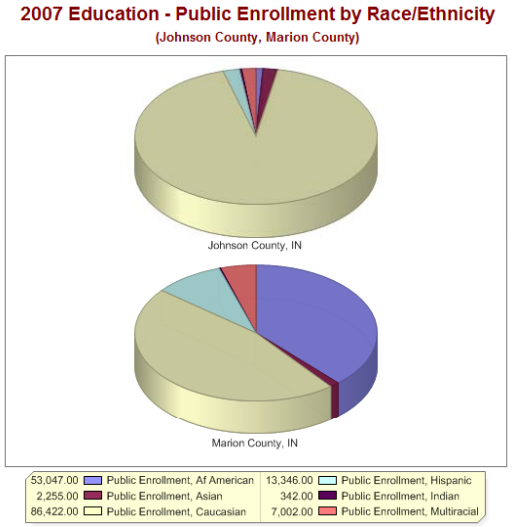
Custom Charts







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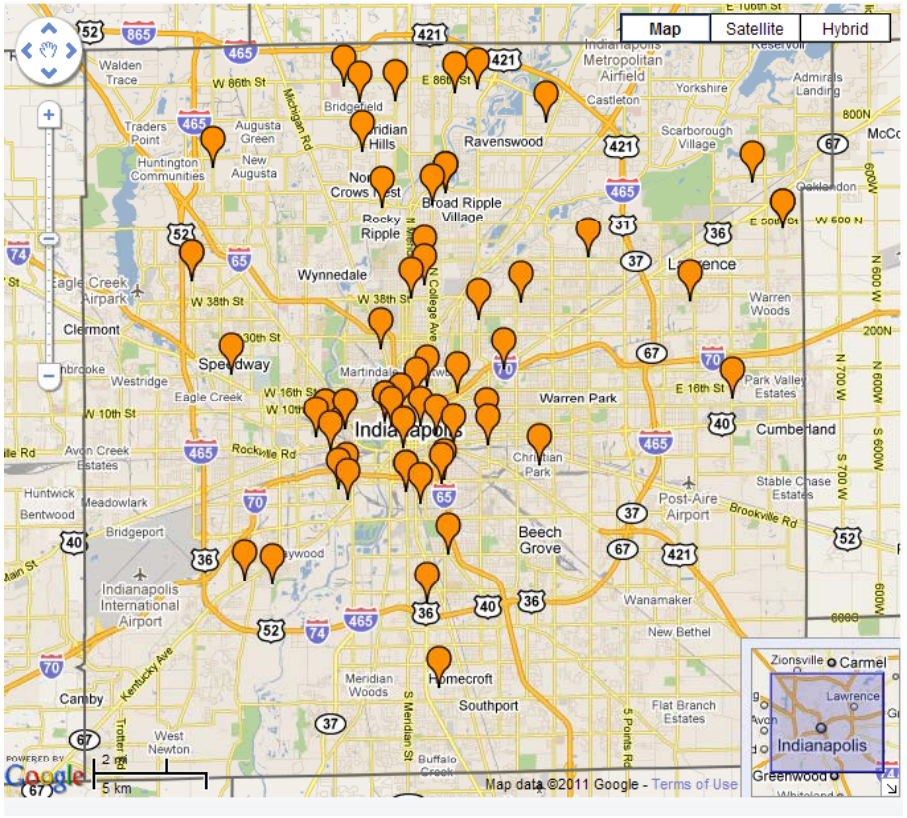
Map Your Own Data

- Allows you to…
  - Upload and map your own address locations
  - Add detailed information to your points
  - View your data on a map



Before and After School Programs

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All Part 1 Crimes by Type

Looking at the types of crimes in more detail reveals the specific nature and location of the criminal activity in the Near Eastside.

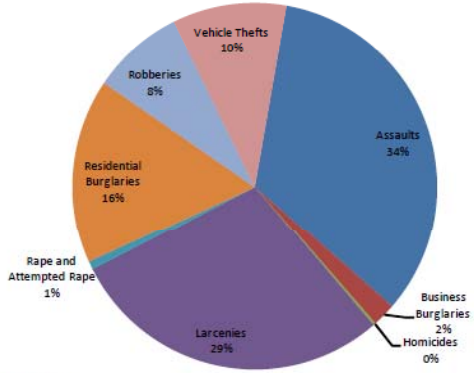
Interpreting the Data:

The pie chart shows:

- The majority of the crimes reported in the Near Eastside are assaults* (34%), followed closely by larcenies (29%).
- Although the number of assaults is high, the number of more severe crimes against persons (rape, attempted rape, and homicide) is low (1%).
- Of the crimes committed in the Near Eastside, 16% are residential burglaries and 2% are business burglaries.
- The proportion of vehicle thefts is high relative to other areas in the county. Five of the 12 census tracts in the Near Eastside are in the top 15% of all census tracts in the county for highest percent of vehicle theft.

The map focuses on the highest crime category, assaults. The red hot spots show where the crime density is greatest, with each dot representing the location of an assault.

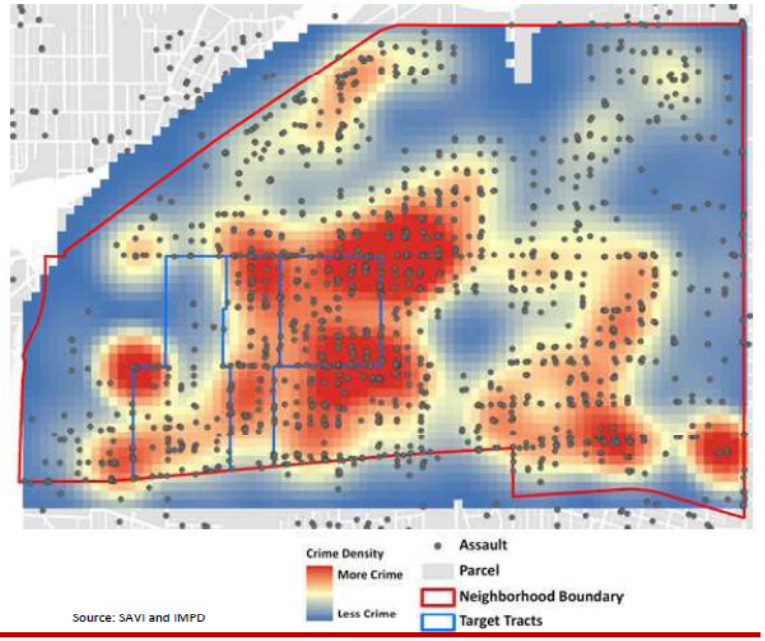
All Part 1 Crimes by Type, 2008
Near Eastside



About the Data:

*Assault: an unlawful attack by one person upon another (Source: US Dept of Justice, FBI).

Assaults, 2008



Source: SAVI and IMPD

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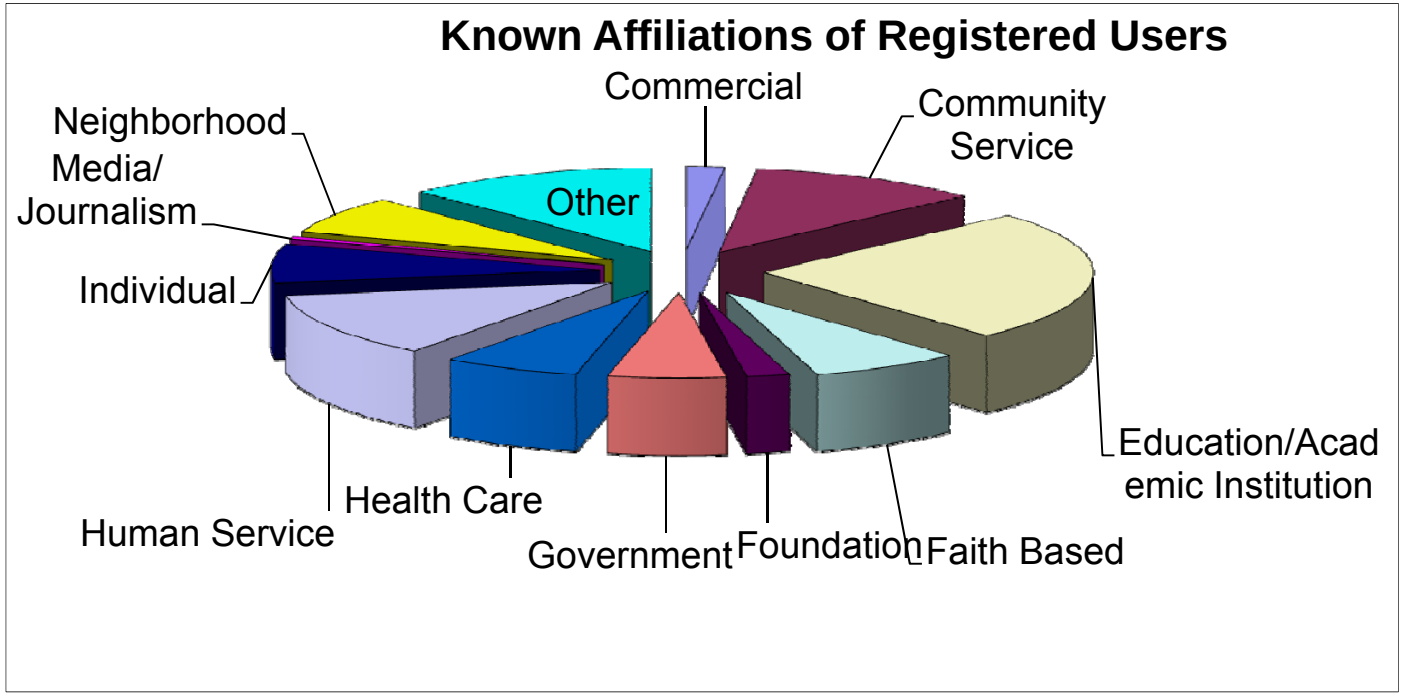
SAVI User Groups



Users identifying affiliation = 761
Users not identifying affiliation = 774

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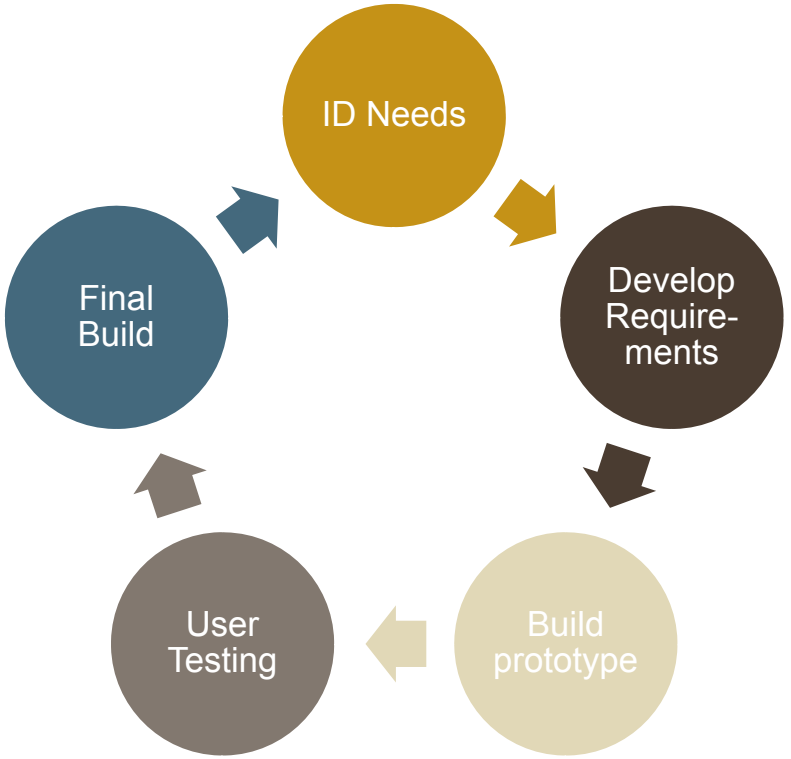
User-Driven Change

- Responsive to the needs of existing and potential users
- Lesson learned: work with the user community regularly
- Continual user feedback



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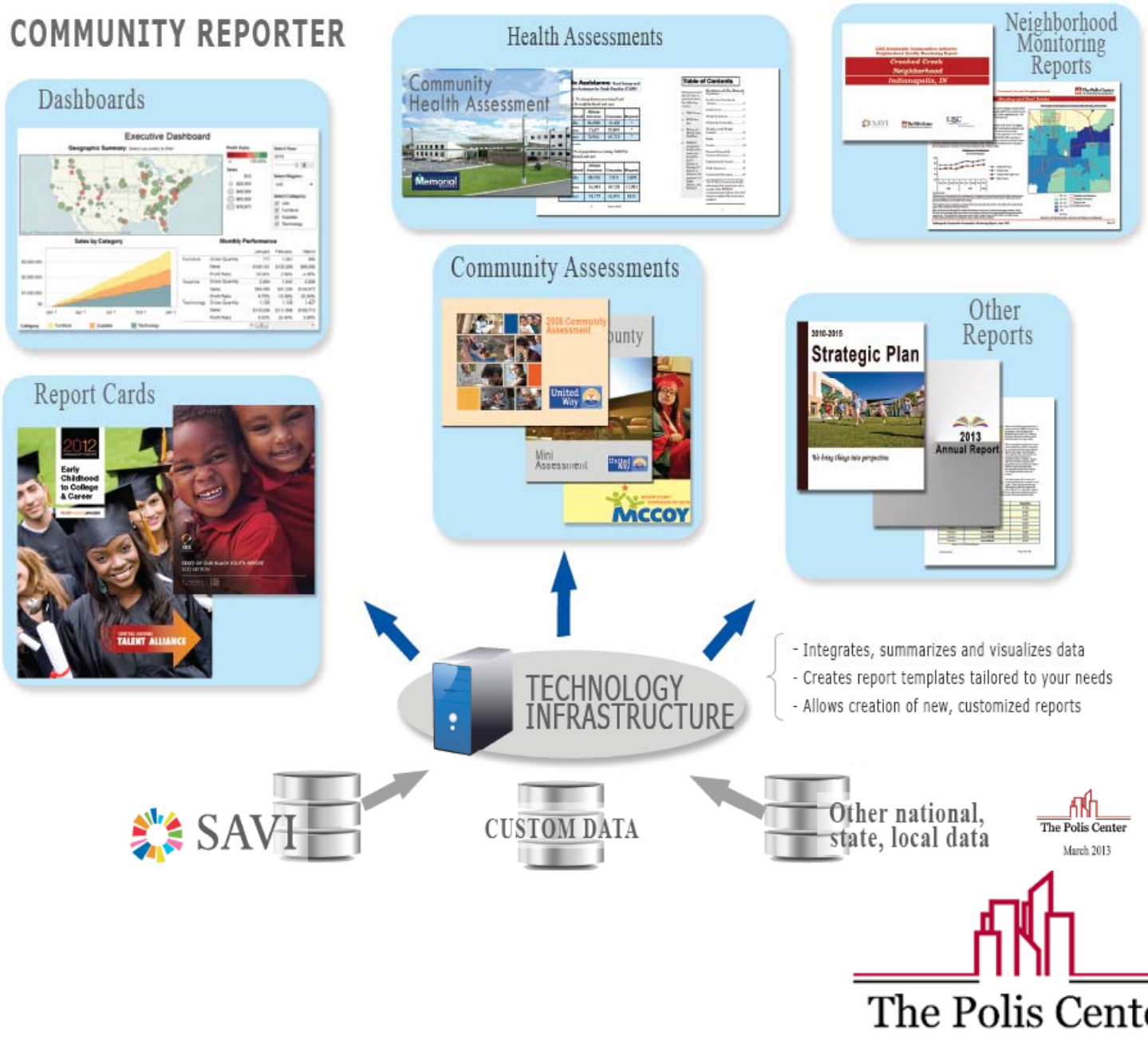
COMMUNITY REPORTER



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March 2013

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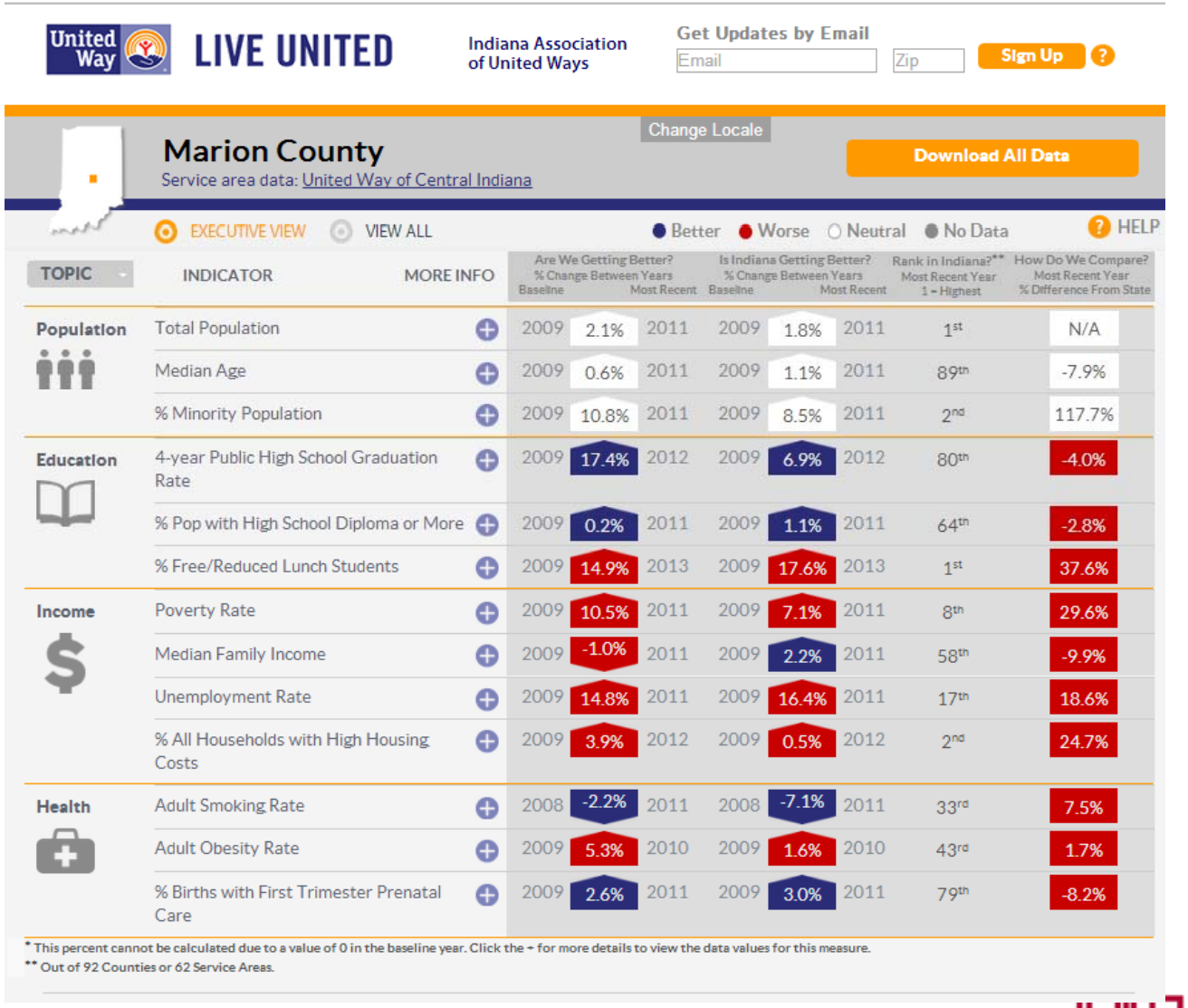

United Way LIVE UNITED

Indiana Association of United Ways

Get Updates by Email

Email | Zip | Sign Up

Change Locale

Marion County

Service area data: United Way of Central Indiana

Download All Data

EXECUTIVE VIEW | VIEW ALL

Better | Worse | Neutral | No Data | HELP

TOPIC	INDICATOR	MORE INFO	Are We Getting Better? % Change Between Years Baseline		Most Recent	Is Indiana Getting Better? % Change Between Years Baseline		Most Recent	Rank in Indiana?** Most Recent Year 1 = Highest	How Do We Compare? Most Recent Year % Difference From State
Population	Total Population		2009	2.1%	2011	2009	1.8%	2011	1st	N/A
	Median Age		2009	0.6%	2011	2009	1.1%	2011	89th	-7.9%
	% Minority Population		2009	10.8%	2011	2009	8.5%	2011	2nd	117.7%
Education	4-year Public High School Graduation Rate		2009	17.4%	2012	2009	6.9%	2012	80th	-4.0%
	% Pop with High School Diploma or More		2009	0.2%	2011	2009	1.1%	2011	64th	-2.8%
	% Free/Reduced Lunch Students		2009	14.9%	2013	2009	17.6%	2013	1st	37.6%
Income	Poverty Rate		2009	10.5%	2011	2009	7.1%	2011	8th	29.6%
	Median Family Income		2009	-1.0%	2011	2009	2.2%	2011	58th	-9.9%
	Unemployment Rate		2009	14.8%	2011	2009	16.4%	2011	17th	18.6%
	% All Households with High Housing Costs		2009	3.9%	2012	2009	0.5%	2012	2nd	24.7%
Health	Adult Smoking Rate		2008	-2.2%	2011	2008	-7.1%	2011	33rd	7.5%
	Adult Obesity Rate		2009	5.3%	2010	2009	1.6%	2010	43rd	1.7%
	% Births with First Trimester Prenatal Care		2009	2.6%	2011	2009	3.0%	2011	79th	-8.2%

* This percent cannot be calculated due to a value of 0 in the baseline year. Click the + for more details to view the data values for this measure.

** Out of 92 Counties or 62 Service Areas.

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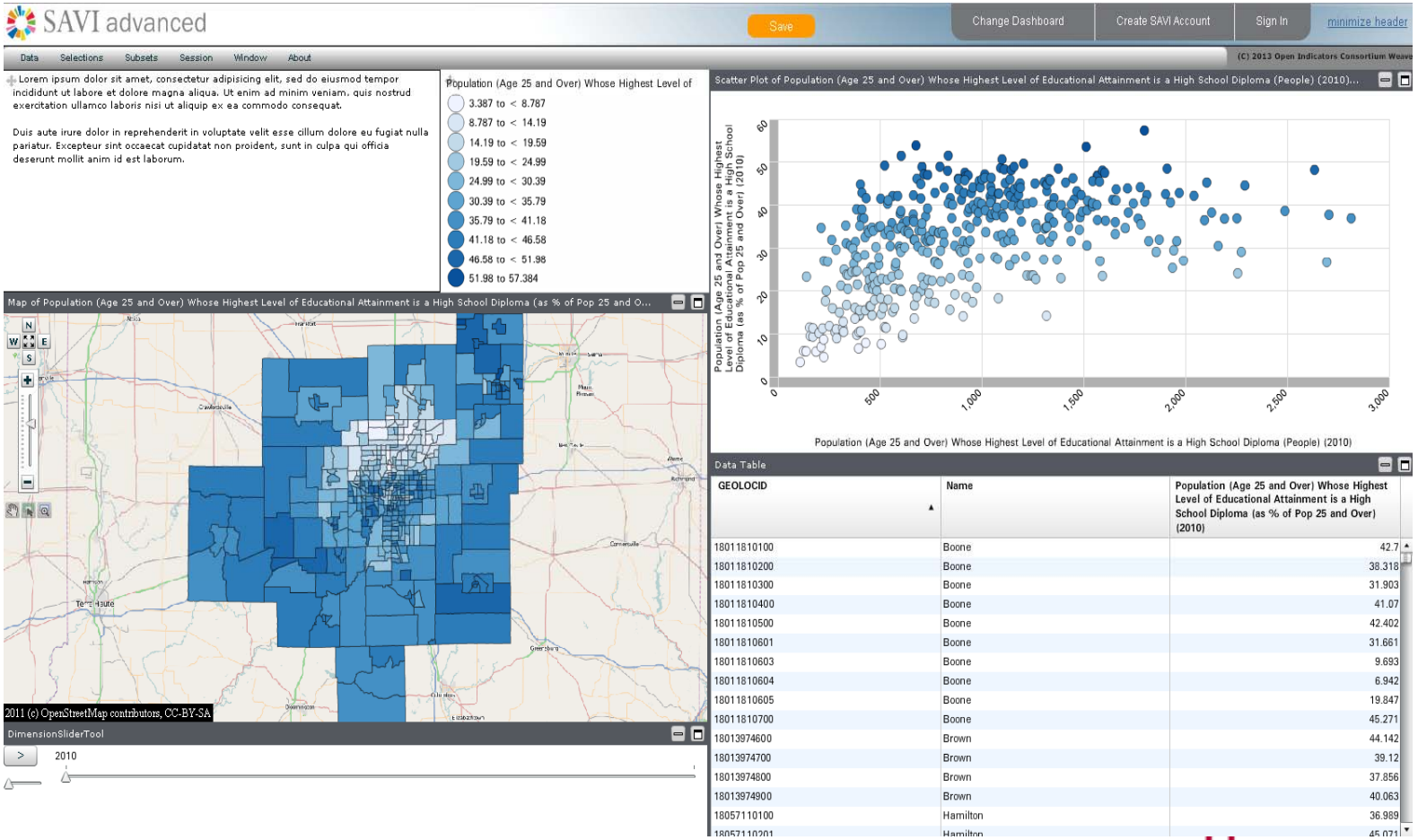
ESDA



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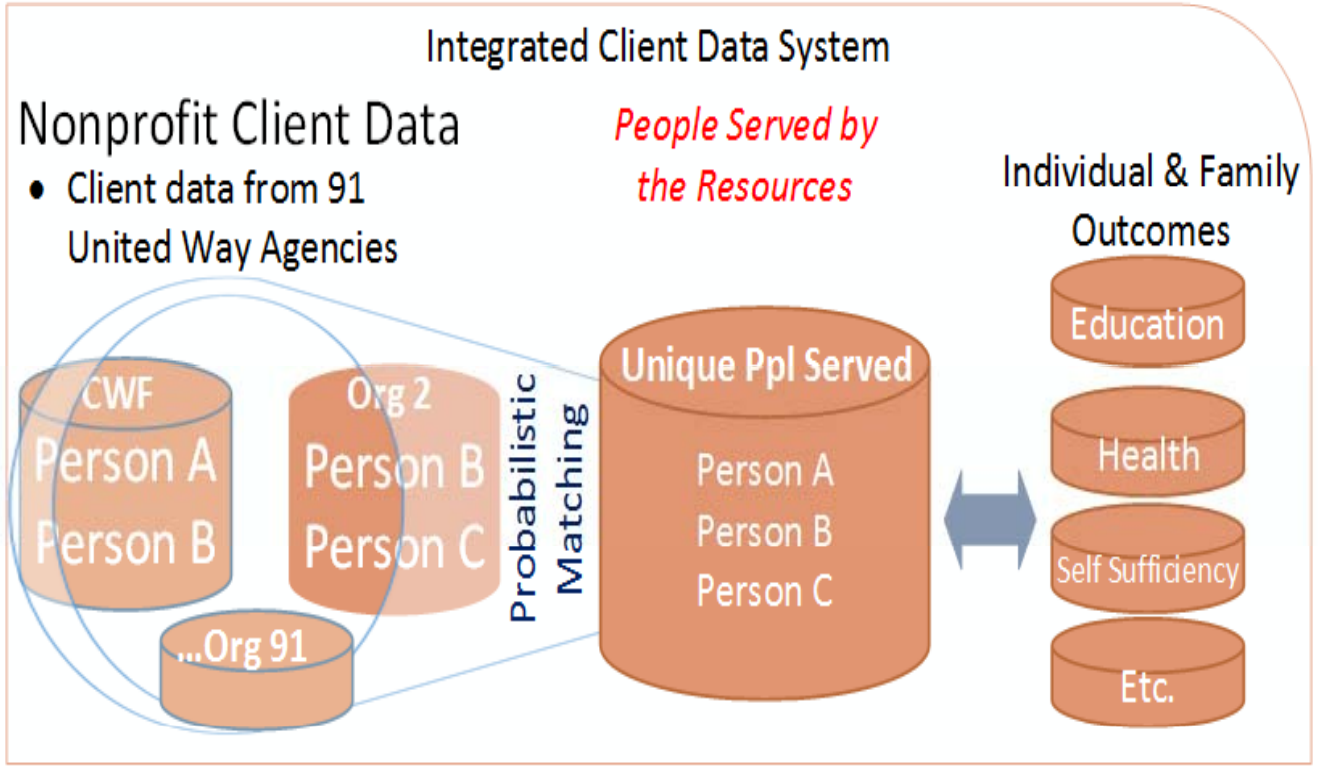
Client-Level Integrated Data System



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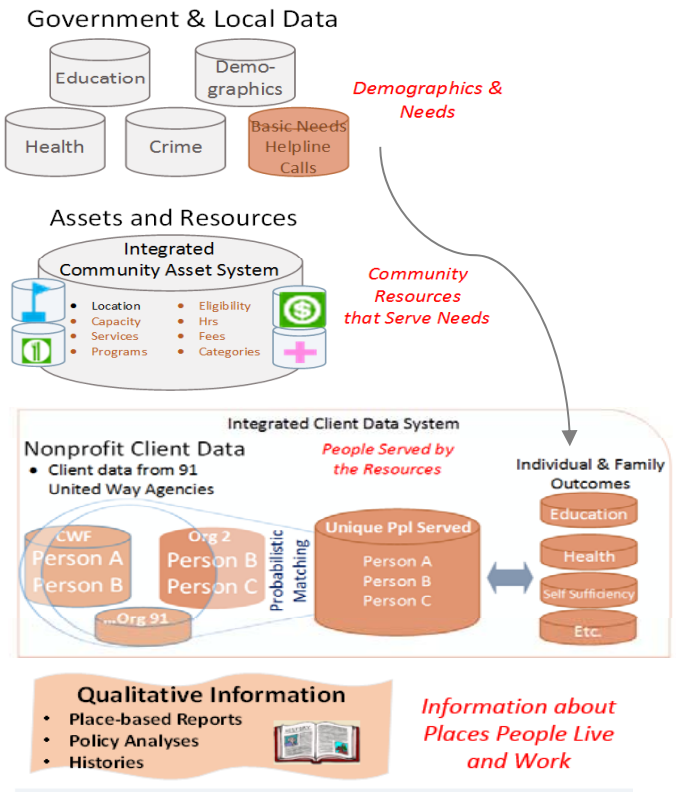
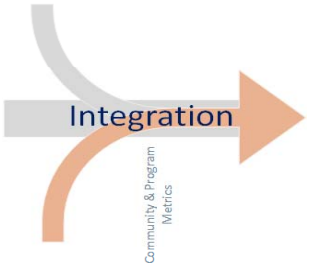
SAVI Community Intelligence System

Decision Support for United Way & Nonprofits

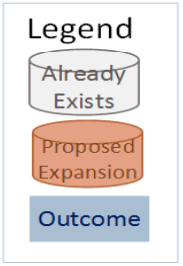




Spatial Decision Support

- Capacity Building
- Place-based Decision Making
- Data Informed Decisions

- Return on Investment
- Measure Collective Impact
- Design & evaluate place-based strategies
- Plan & Assess
- Understand social challenges in context of place
- Identify Gaps
- Align Strategies



Better Decisions, Policies, & Programs

Healthy & Sustainable Families and Communities

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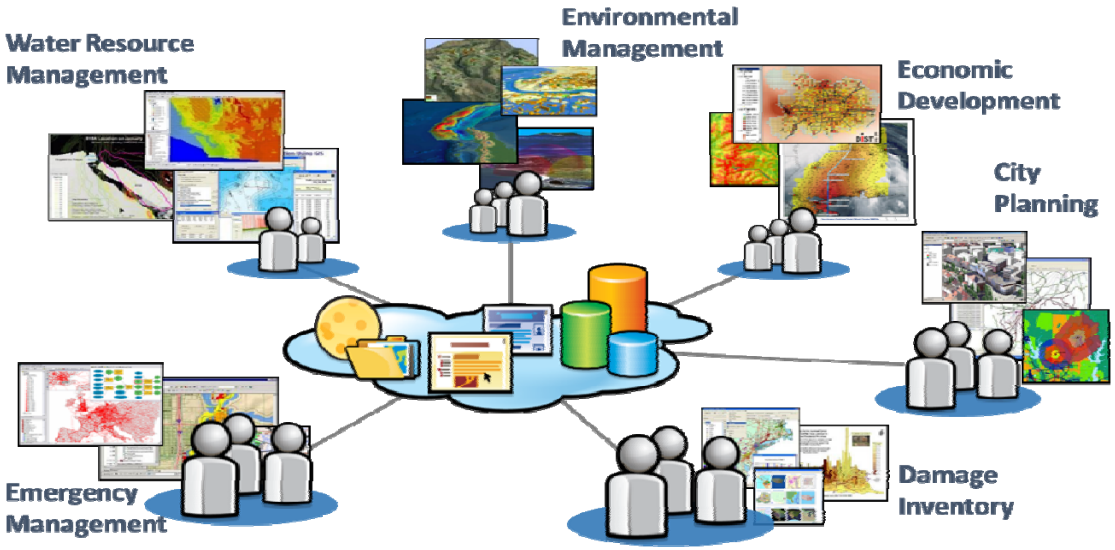
Hazard Mitigation

- A platform for getting information about flood hazard risks in Indiana into the hands of the people who “need to know and act upon”.



We want to See out Data Supporting a Broad Range of Users & Applications

IFMP Initiative → The Big Picture → IFMP 1.0 Plan

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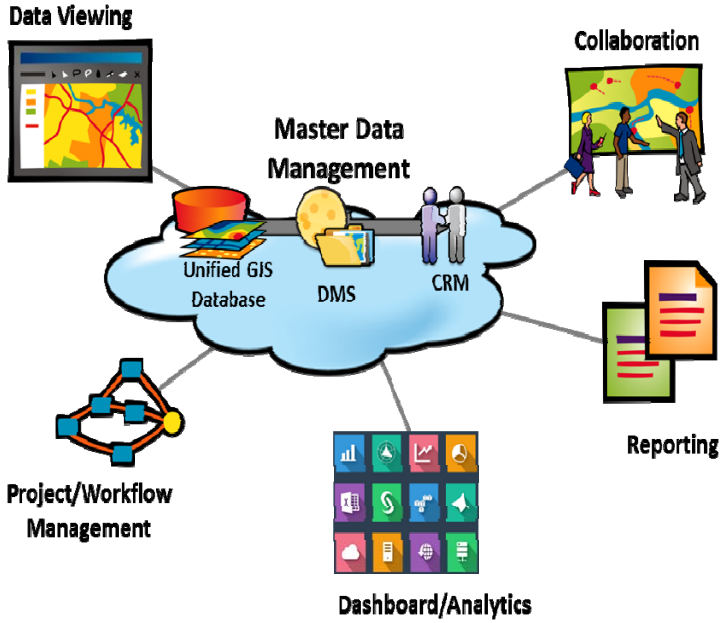
Functions

- Gathering data and services from federal, state and local open data sources
- Encompassing a set of visualization, tracking, document management and analytic tools to transform harvested data into standardized information and indicators that are easily interpretable by non-technical users.



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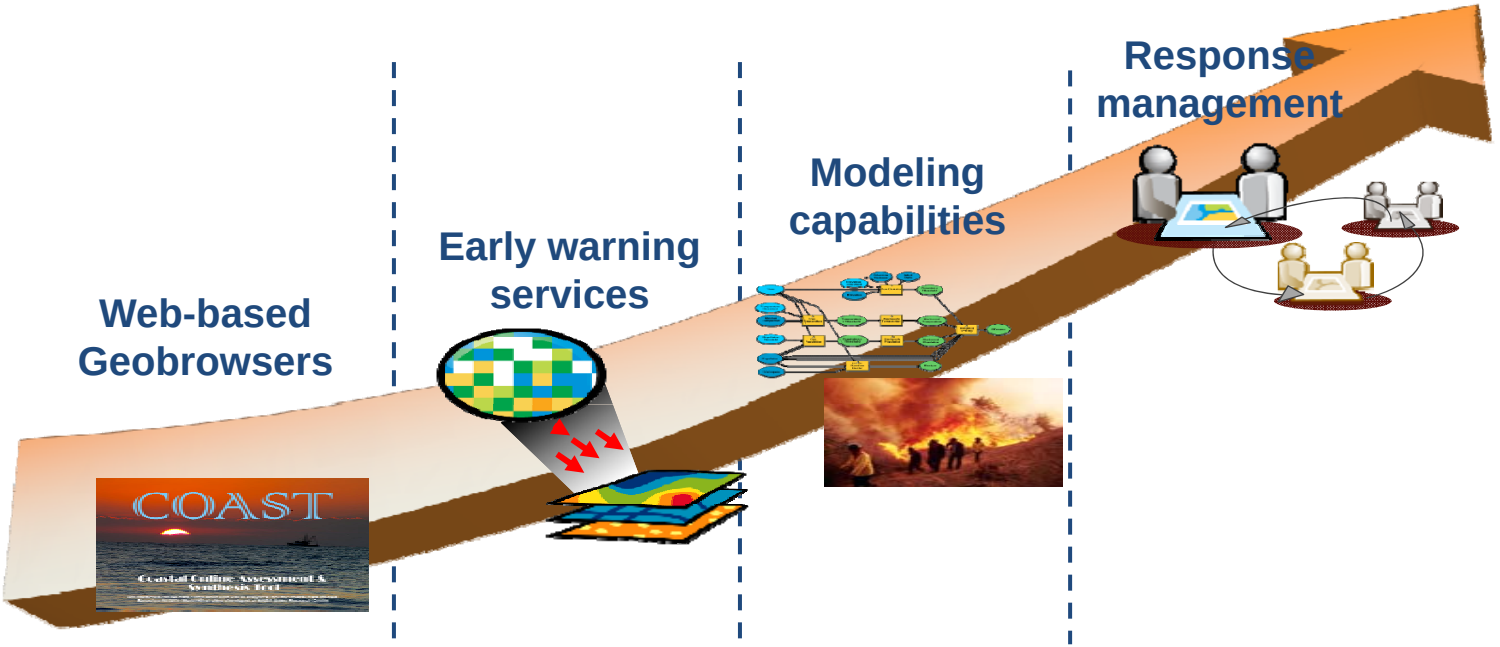
Levels of Technology Support



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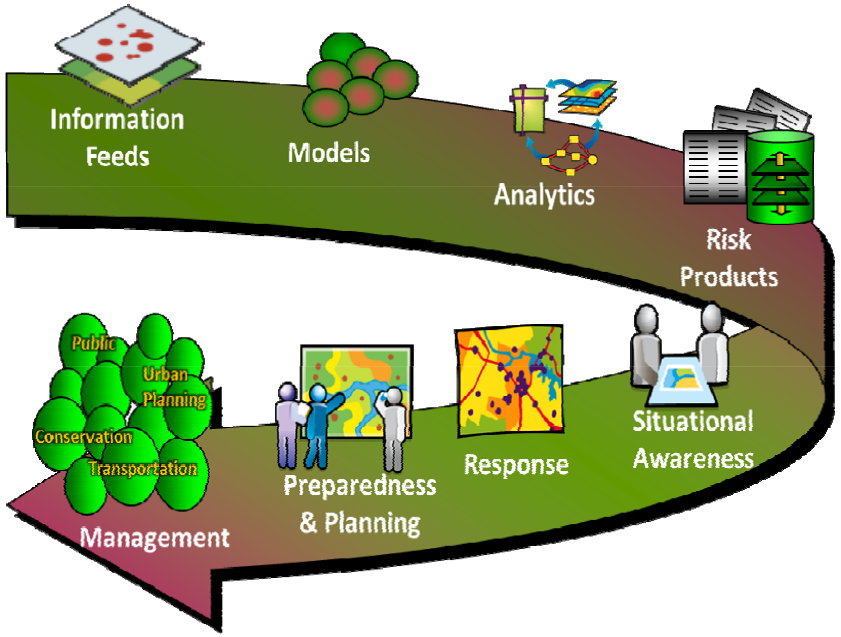
Platforms, Not Portals

- Portals are for visiting, platforms are for building on
- Platforms offer innumerable ways of interacting with the data
- A platform facilitates interaction and offers a means for its user community to share valued information
- Platforms place the seed for future growth



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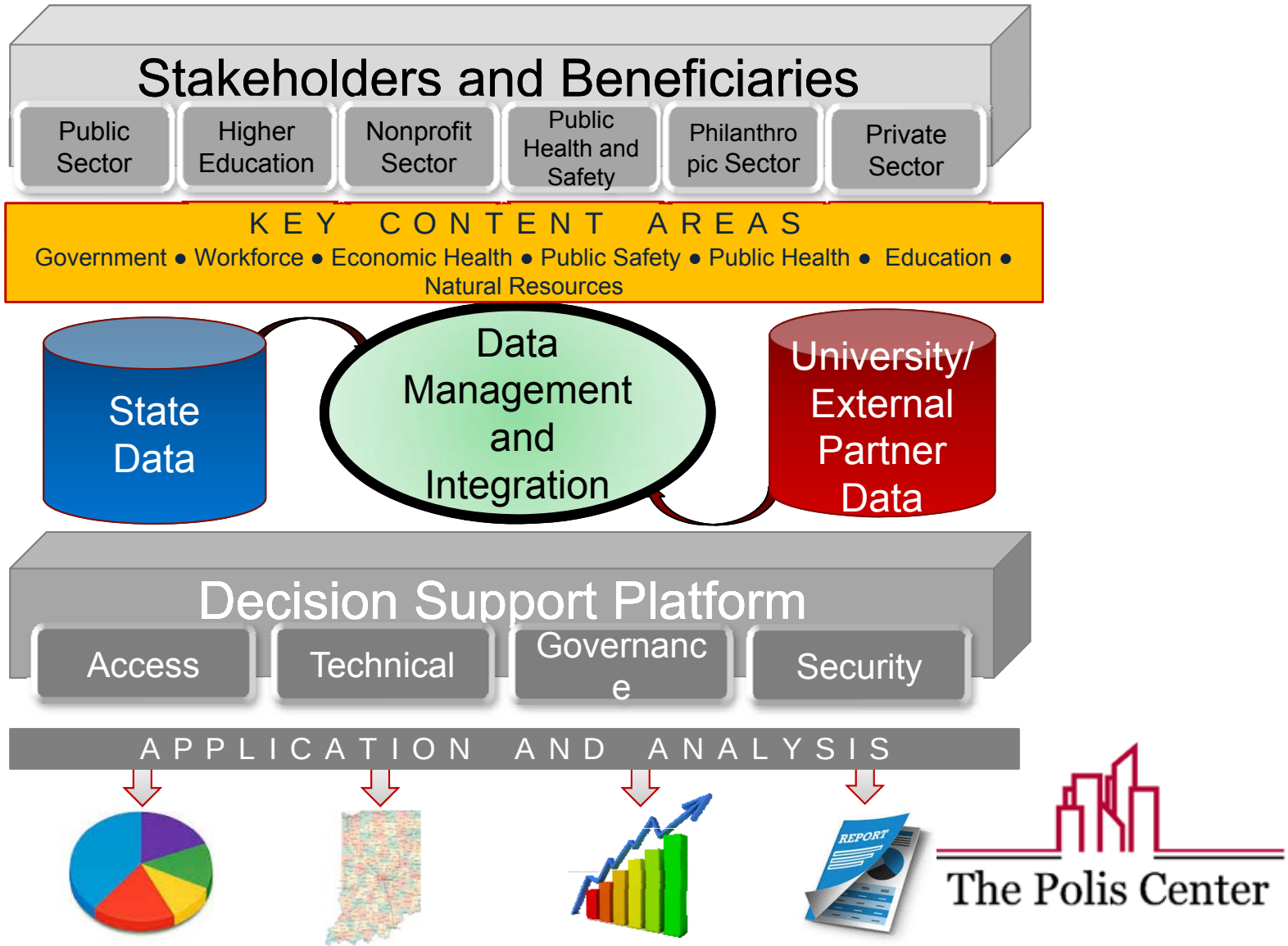
Indiana Data Initiative



Lessons

1. Citizens need information more than they need data.
2. Technology makes it easier to collate and disseminate data but often surpasses the ability of citizens to use data effectively.
3. Collaboration required between citizens and experts to determine what type of information will best serve various constituencies.
4. Translating information to action is also necessary. It too requires collaboration.

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Thank you

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