

# 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*





# 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





# 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.



# 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)

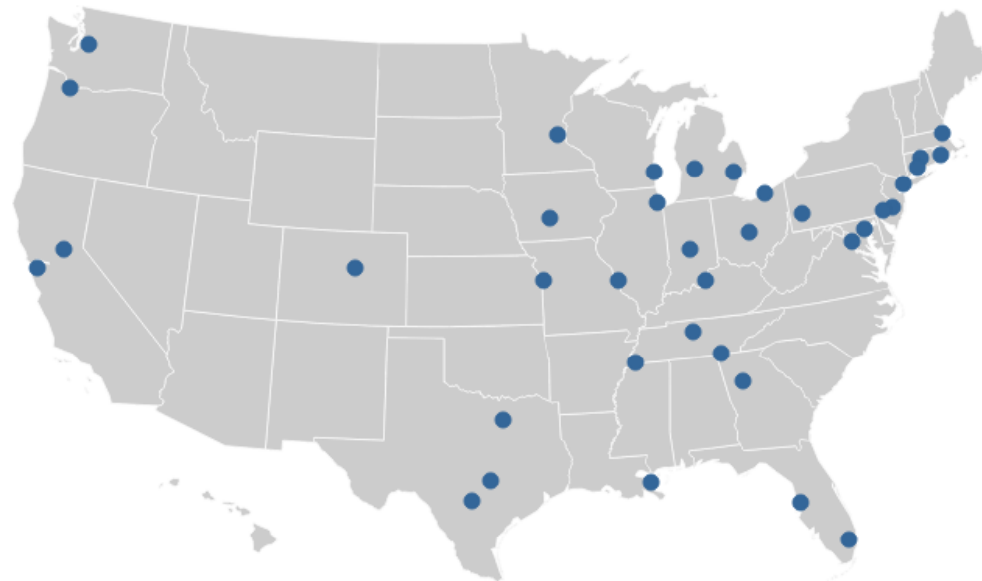
- ✦ A partnership of 35 cities led by the Urban Institute





# CIS Cities—U.S.

## 35 Cities in National Neighborhood Indicators Partnership



1

[Click on partner city to view profile](#)





Search



Username or Email

Password

Login

Register

DATA & TOOLS

HOME

ABOUT

SERVICES

RESOURCES

CONTACT US

HELP

USE SAVI



Quick Data

View the most requested data as an interactive map, chart, or table.



Community Profiles

View a detailed report describing population, economy, health, etc.



Data Tools

Analyze data with indicators to create custom maps, charts, or tables.



Available Data

Review the list of data categories available in SAVI.



USE SAVI

Begin interacting with data and tools without login or registration.

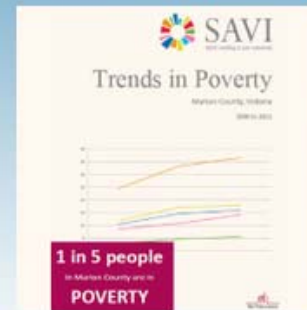
SAVI is a free resource to help you make data-informed decisions. It provides data about Central Indiana communities, tools to analyze and visualize the data, and training to build your capacity to use it effectively.

Data Currently Available for 11 Central Indiana Counties



Learn More

Register Now



RT @wwwofiborg: Free Webinar on August 21! 10 Social Media Best Practices for NGOs: [t.co/XXV0A2dJx](#)

twitter

From The Blog

What's Trending in the Near Westside Neighborhood 7/24/2014 1:49:57 PM

By Sharon Kandris, SAVI Director The City of Indianapolis, IUPUI, and Lilly Endowment recently announced a \$30 million investment to improve IUPUI and the Near Westside neighborhood (See IndyStar story by Erika Smith). Some of the major improvements will include streetscapes, new bike lanes, and sidewalks - and turning New York Street and Michigan Road ... [Continue reading →](#) [more...]



Sign up for



The Polis Center



<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

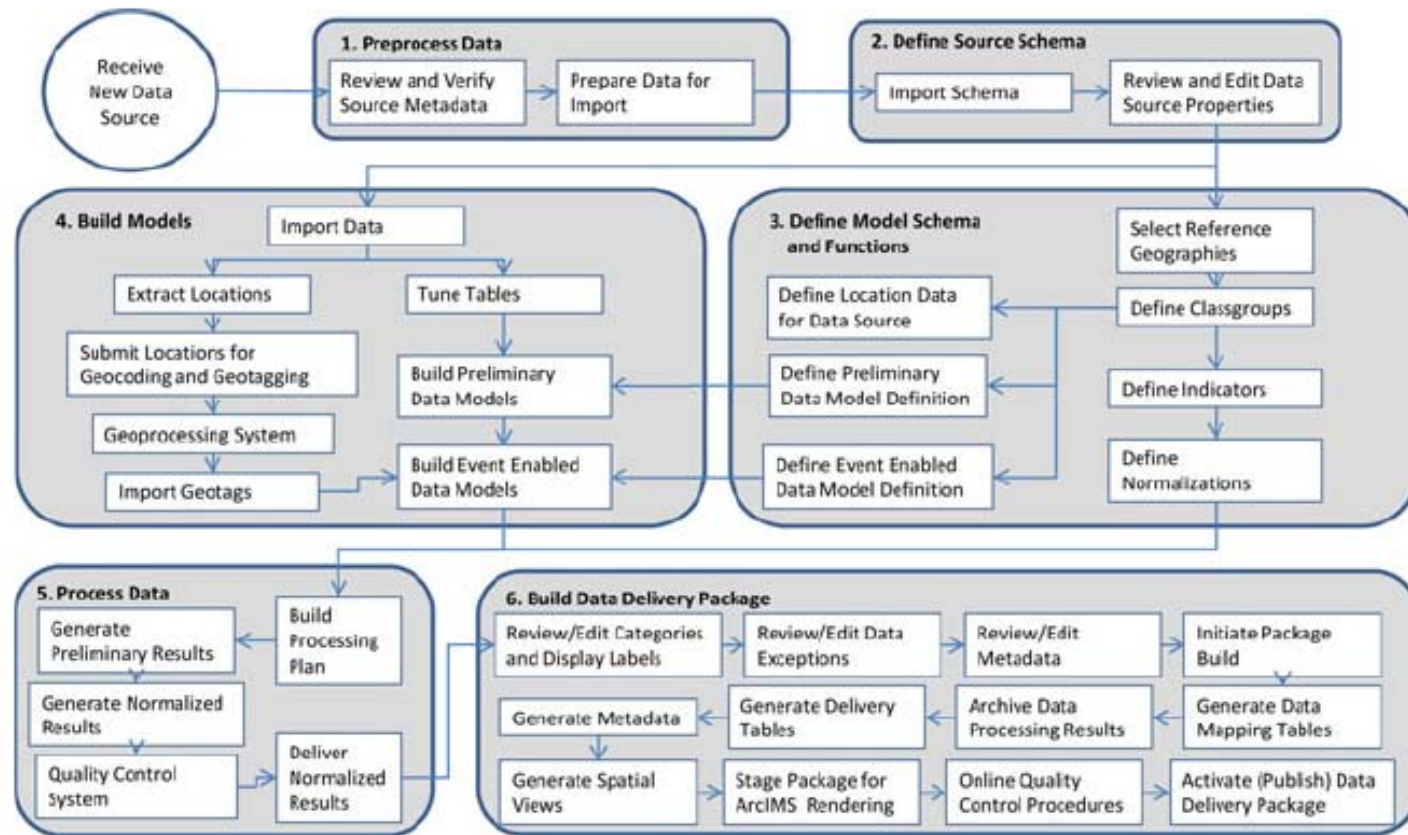


# SAVI Infrastructure

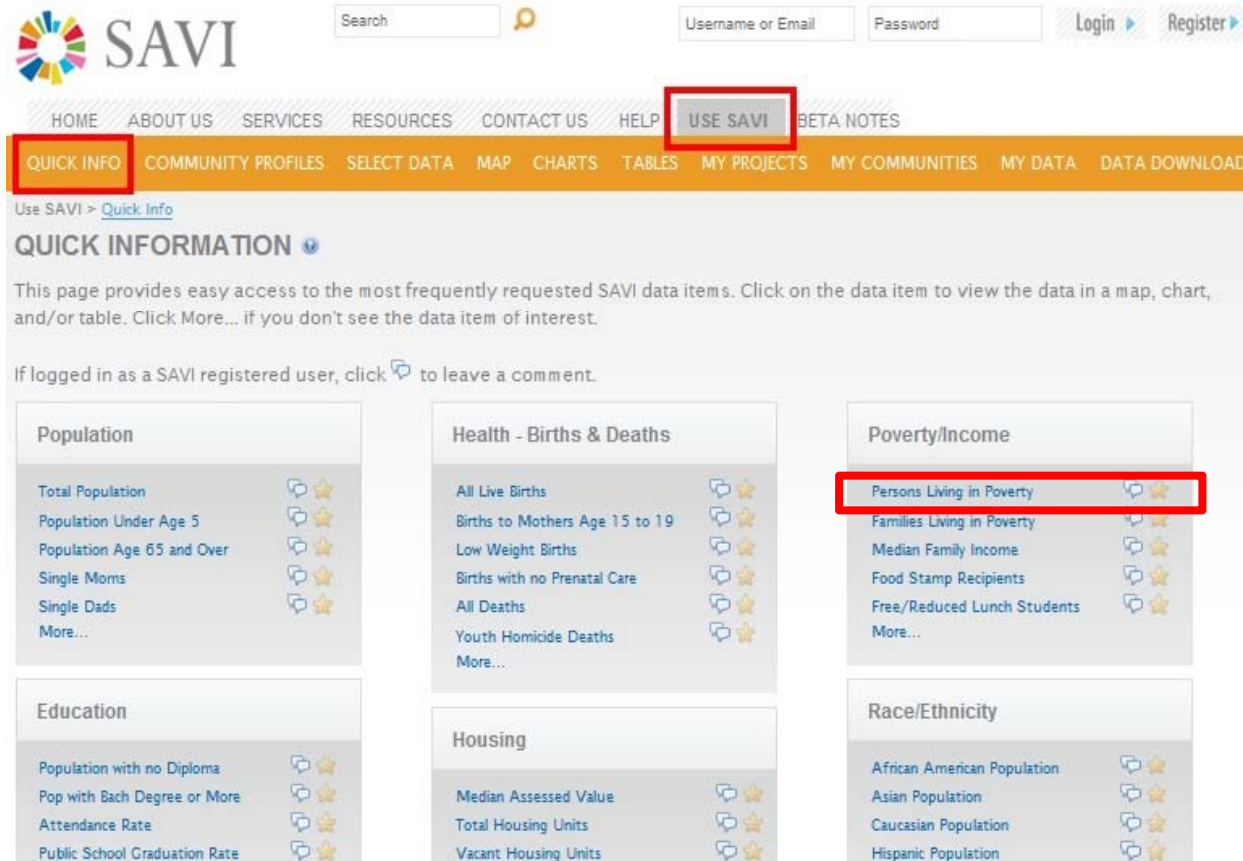
	GIS to geo-enable the data	Database for cleaning, standardizing, masking confidential data, and processing indicators	GUI to publish data for public consumption	GUI application
1995-1996		MS Access	Overhead Transparencies	n/a
~1997-2000	Arc/Info	Oracle	ArcView Desktop at Community Access Sites	Avenue
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



# SAVI Data Processing



# Quick Info



The screenshot shows the SAVI website interface. At the top left is the SAVI logo. To its right is a search bar and a login/register section with fields for 'Username or Email' and 'Password', and buttons for 'Login' and 'Register'. Below this is a navigation menu with items: HOME, ABOUT US, SERVICES, RESOURCES, CONTACT US, HELP, USE SAVI (highlighted with a red box), and BETA NOTES. A secondary orange navigation bar contains: QUICK INFO (highlighted with a red box), COMMUNITY PROFILES, SELECT DATA, MAP, CHARTS, TABLES, MY PROJECTS, MY COMMUNITIES, MY DATA, and DATA DOWNLOAD. The main content area is titled 'QUICK INFORMATION' and includes a brief description of the page's purpose. Below this, there are several categorized lists of data items, each with a comment icon and a star icon. The 'Poverty/Income' category has 'Persons Living in Poverty' highlighted with a red box. Other categories include Population, Health - Births & Deaths, Education, Housing, and Race/Ethnicity.

SAVI

Search

Username or Email Password Login Register


HOME ABOUT US SERVICES RESOURCES CONTACT US HELP USE SAVI BETA NOTES

































QUICK INFO COMMUNITY PROFILES SELECT DATA MAP CHARTS TABLES MY PROJECTS MY COMMUNITIES MY DATA DATA DOWNLOAD























Use SAVI > [Quick Info](#)

### QUICK INFORMATION

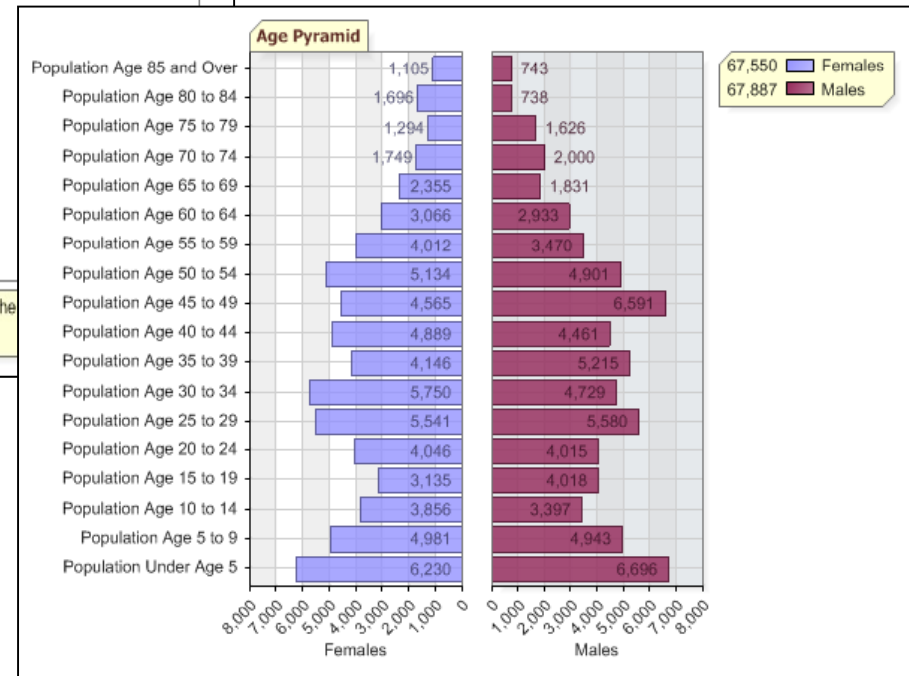
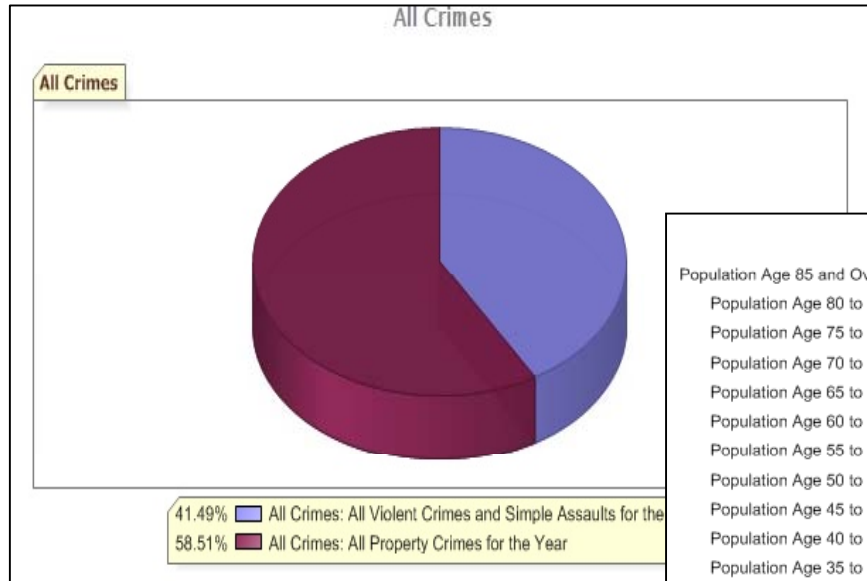
This page provides easy access to the most frequently requested SAVI data items. Click on the data item to view the data in a map, chart, and/or table. Click More... if you don't see the data item of interest.

If logged in as a SAVI registered user, click  to leave a comment.

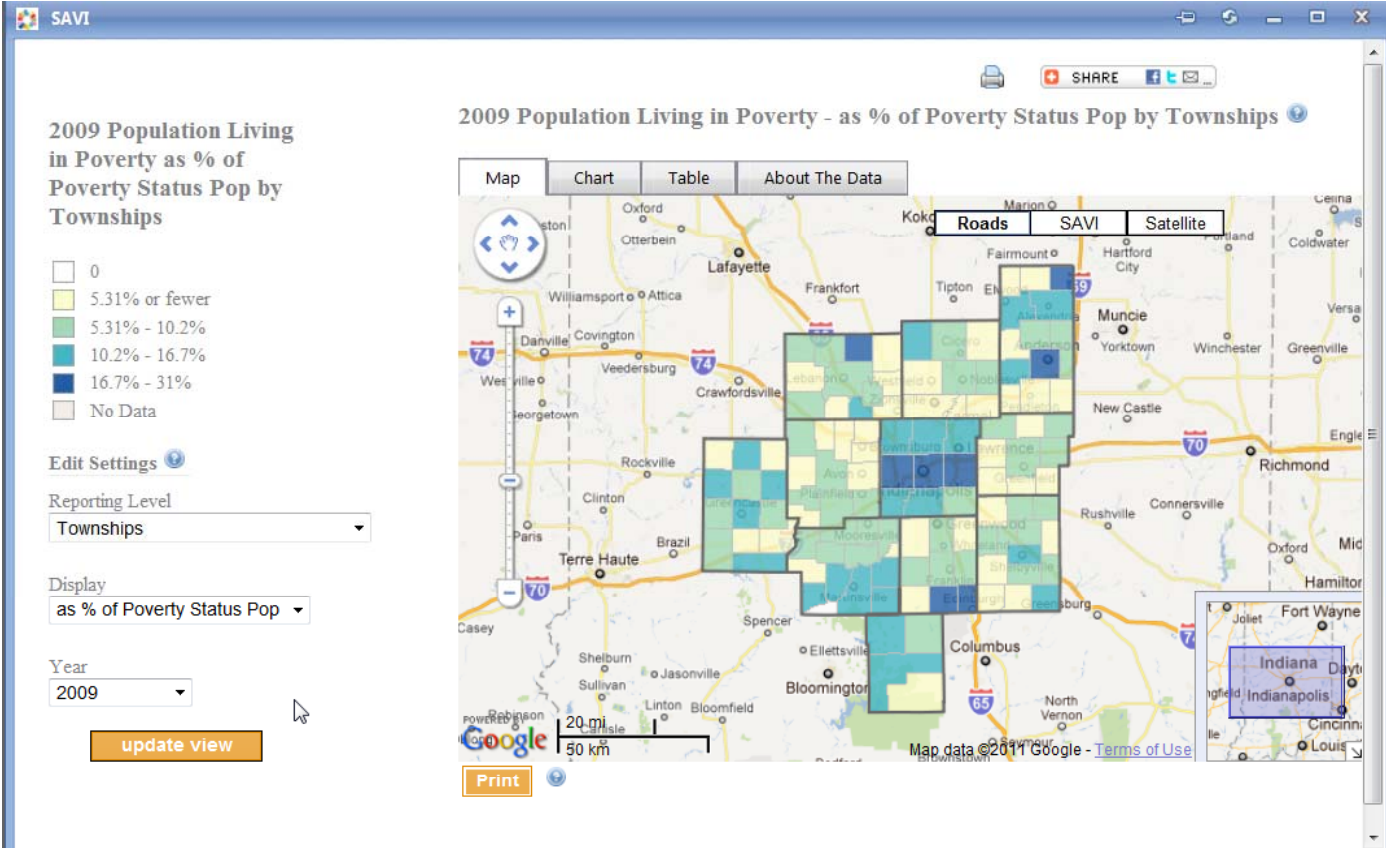
Population	Health - Births & Deaths	Poverty/Income
Total Population  	All Live Births  	<b>Persons Living in Poverty</b>  
Population Under Age 5  	Births to Mothers Age 15 to 19  	Families Living in Poverty  
Population Age 65 and Over  	Low Weight Births  	Median Family Income  
Single Moms  	Births with no Prenatal Care  	Food Stamp Recipients  
Single Dads  	All Deaths  	Free/Reduced Lunch Students  
More...	Youth Homicide Deaths  	More...

Education	Housing	Race/Ethnicity
Population with no Diploma  	Median Assessed Value  	African American Population  
Pop with Bach Degree or More  	Total Housing Units  	Asian Population  
Attendance Rate  	Vacant Housing Units  	Caucasian Population  
Public School Graduation Rate  		Hispanic Population  

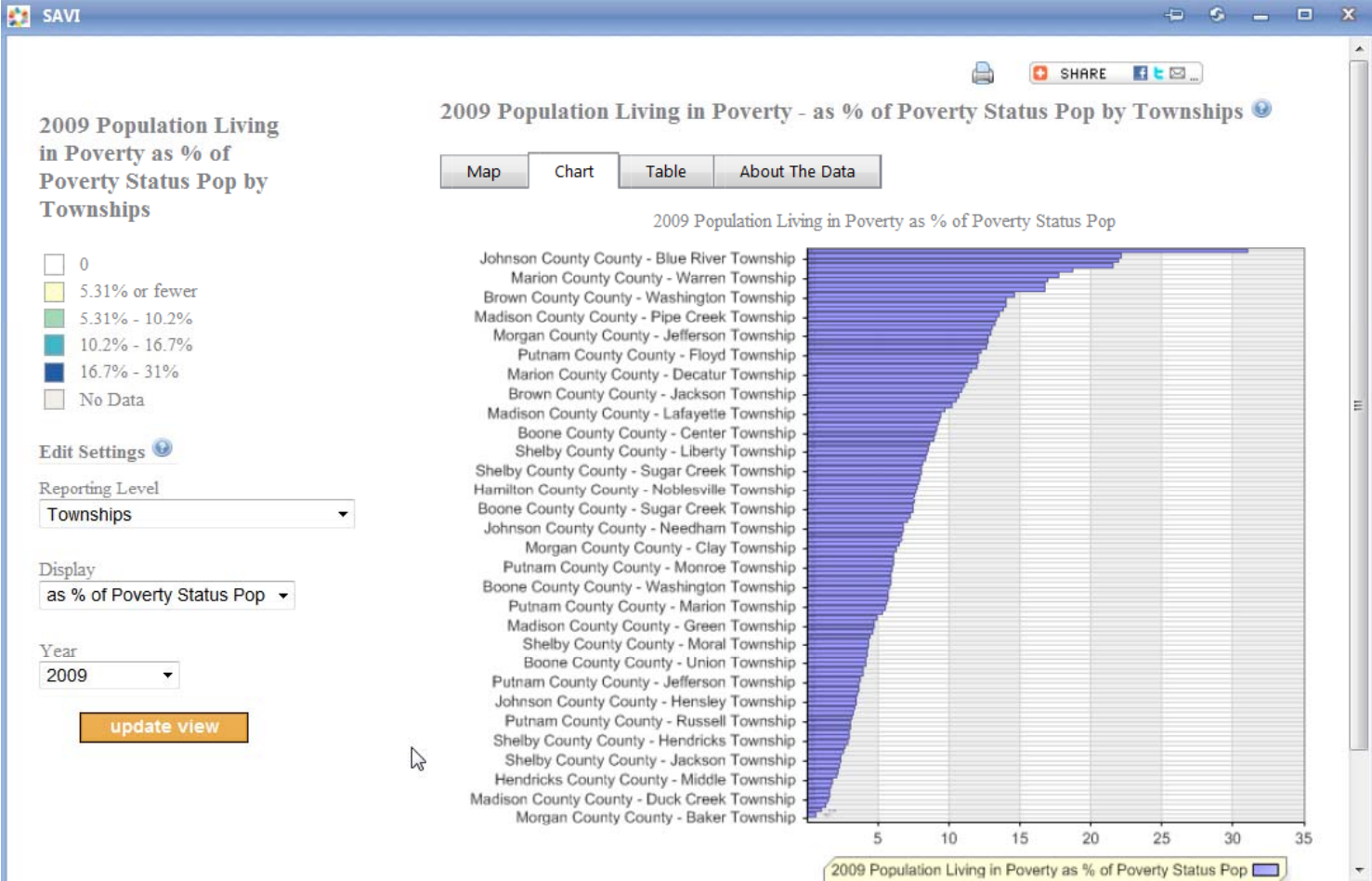
# Community Profiles



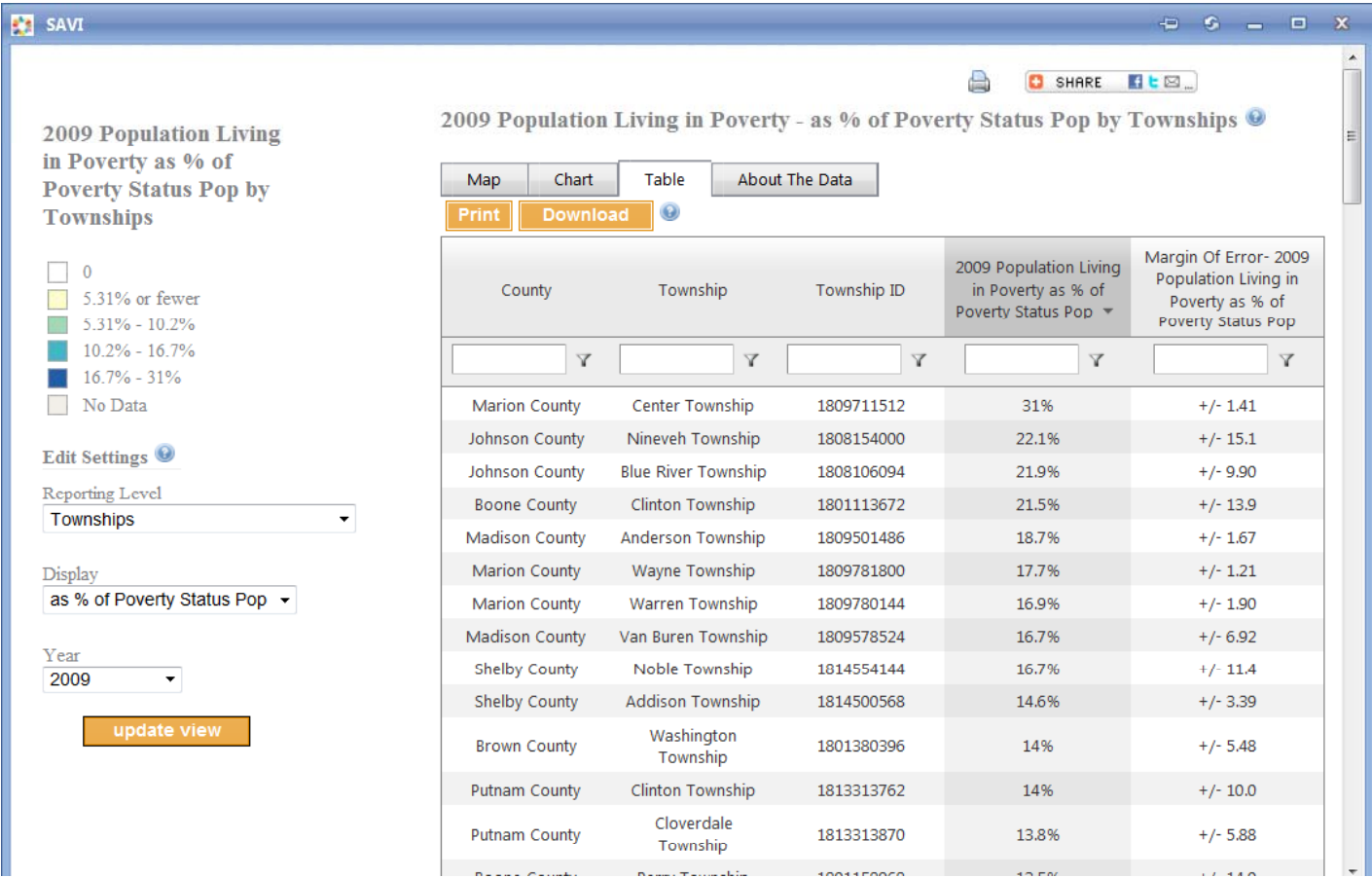
# Quick Info



# Quick Info



# Quick Info



# Interactive Mapping

zoom to   add items +   download   print   help

**Data Items**

- 2008 Public High School Graduation Rate Reported By School Corporations  
Percent  
[Bar chart icon] [Table icon]

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

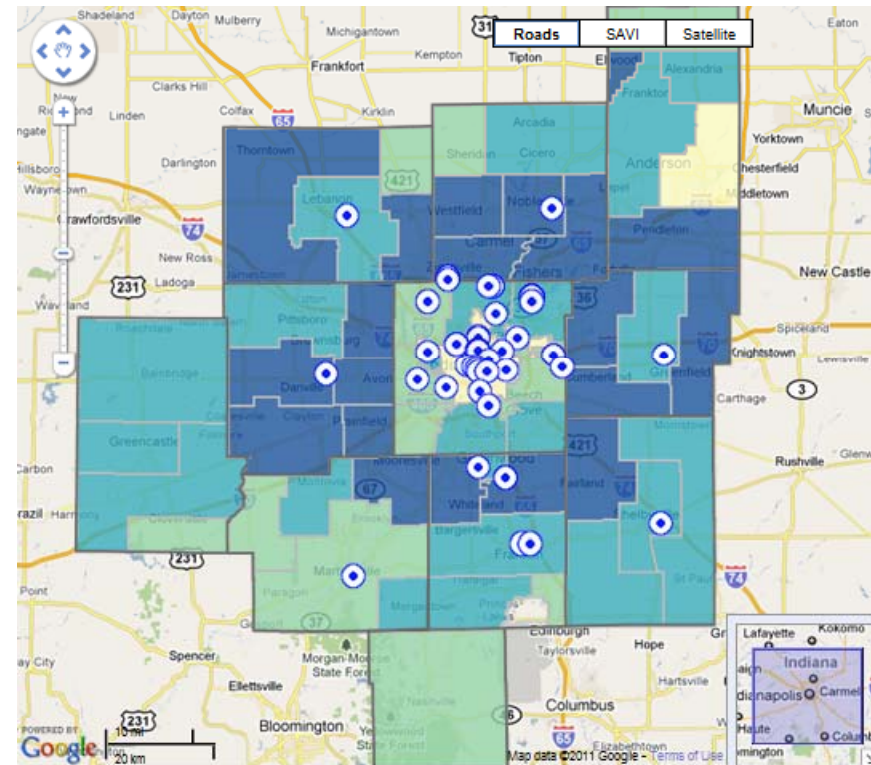
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**Sites, Programs, & Agencies**

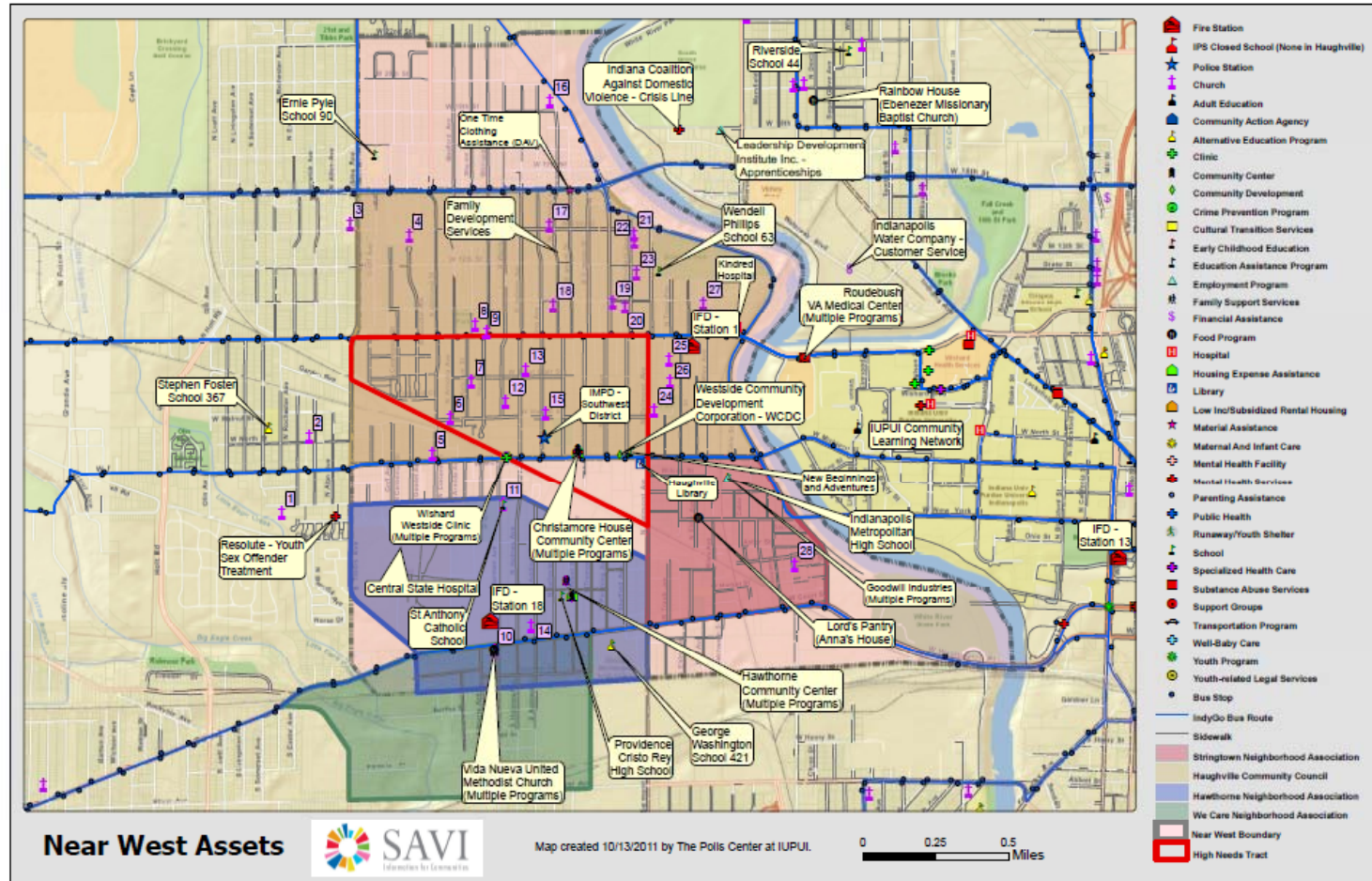
- 2010 Adult Continuing Education  
[Location pin icon] [Bar chart icon] [Table icon]

**Boundaries**

**Reference Layers**

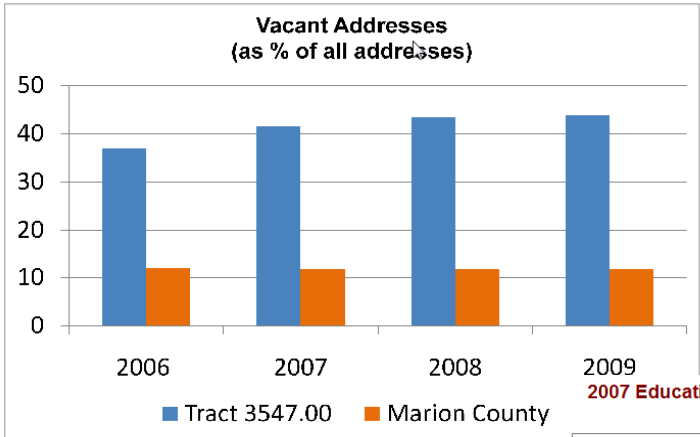


# Asset Mapping

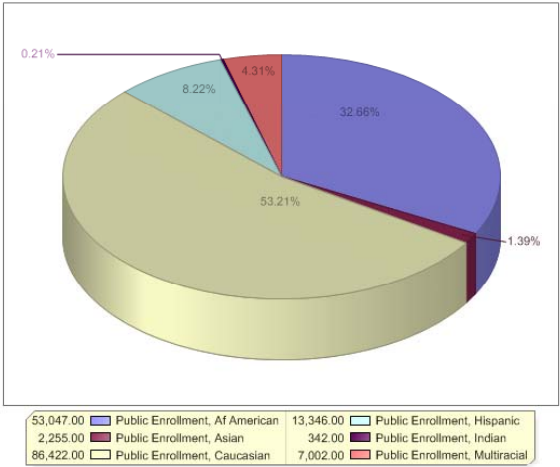




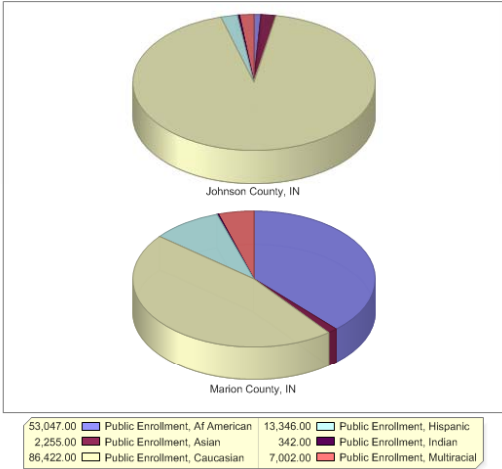
# Custom Charts



**2007 Education - Public Enrollment by Race/Ethnicity**  
(Johnson County, Marion County)

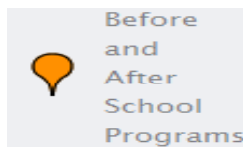
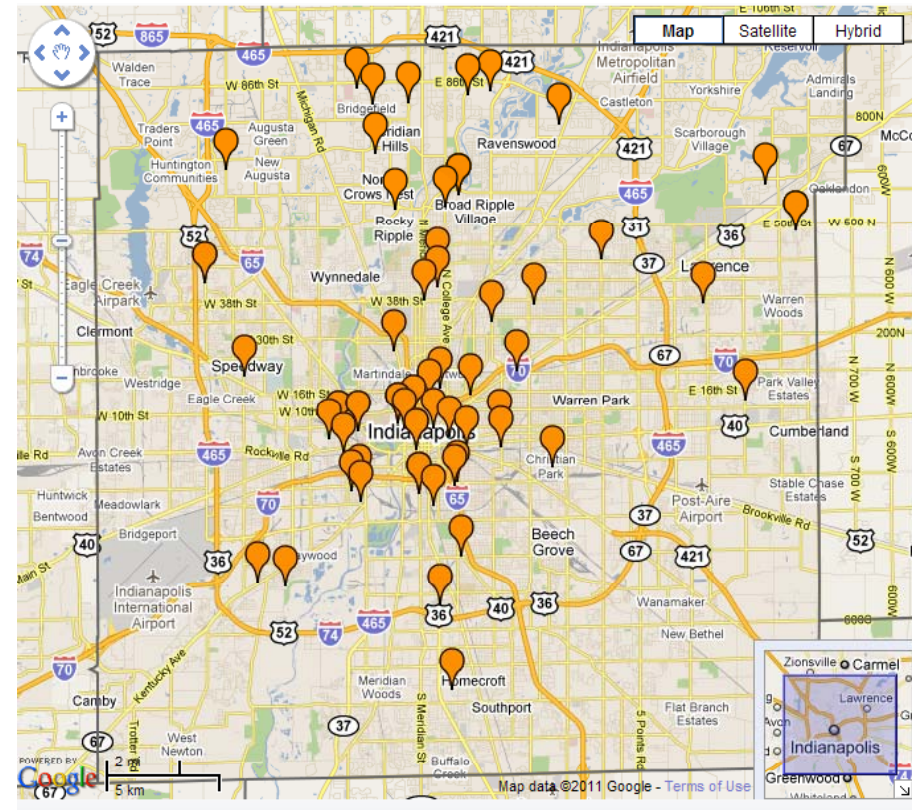


**2007 Education - Public Enrollment by Race/Ethnicity**  
(Johnson County, Marion County)



# 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



Community Quality and Safety

**All Part 1 Crimes by Type**

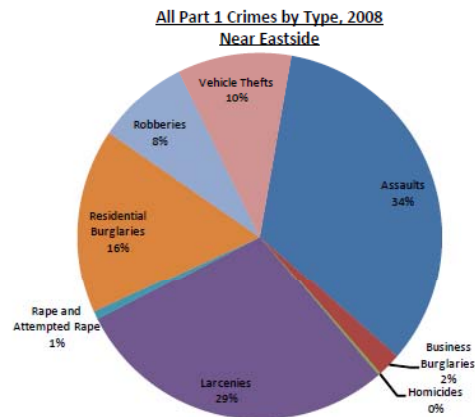
Looking at the types of crimes in more detail reveals the specific nature and location of the criminal activity in the Near Eastside.

*Interpreting the Data:*

The pie chart shows:

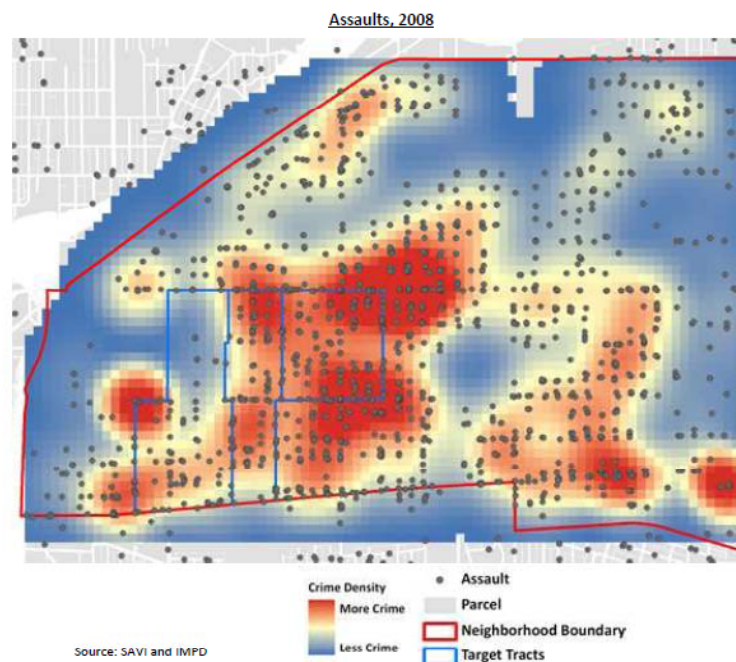
- The majority of the crimes reported in the Near Eastside are assaults\* (34%), followed closely by larcenies (29%).
- Although the number of assaults is high, the number of more severe crimes against persons (rape, attempted rape, and homicide) is low (1%).
- Of the crimes committed in the Near Eastside, 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.

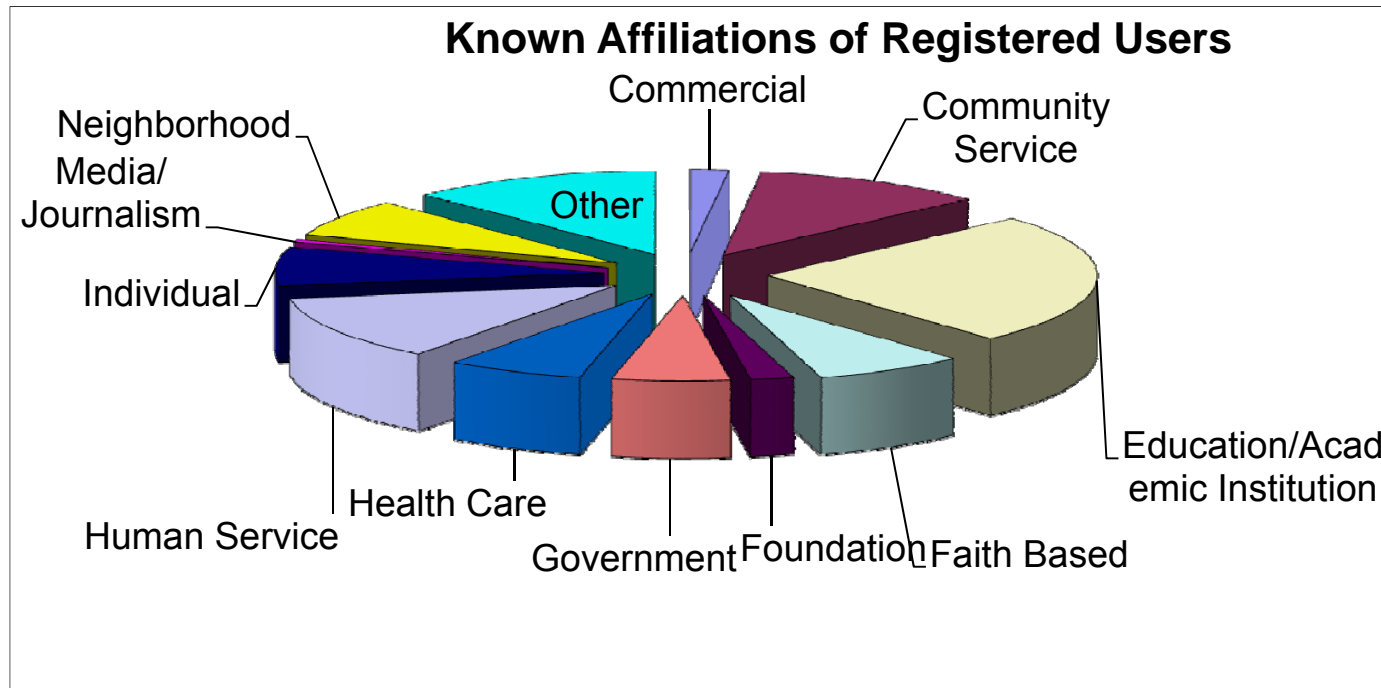


About the Data:

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



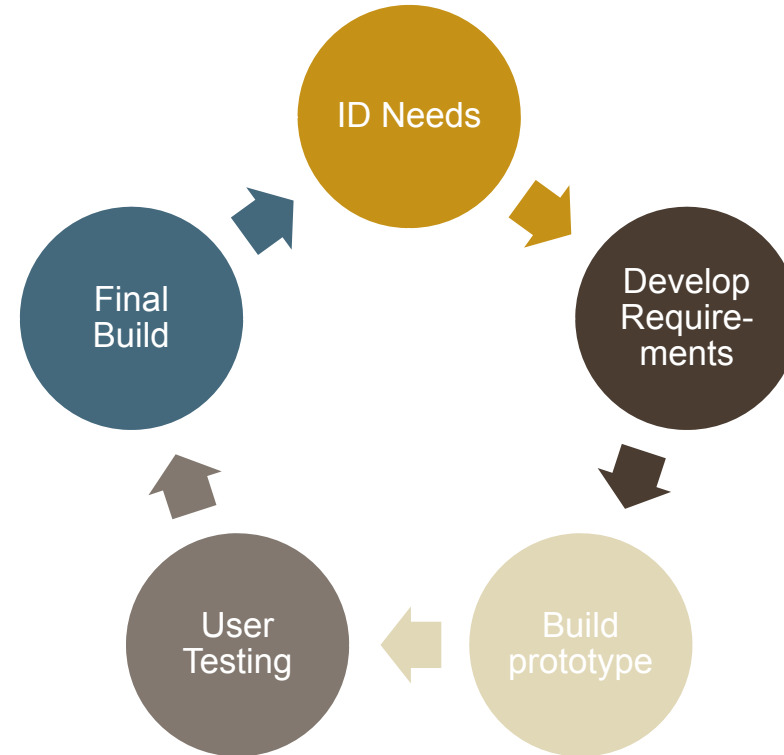
# SAVI User Groups



**Users identifying affiliation = 761**  
**Users not identifying affiliation = 774**

# User-Driven Change

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



# COMMUNITY REPORTER

## Dashboards



## Report Cards



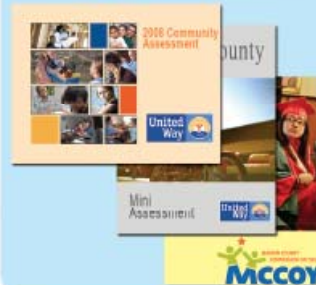
## Health Assessments



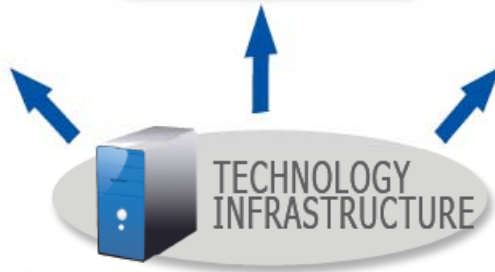
## Neighborhood Monitoring Reports



## Community Assessments



## Other Reports



- Integrates, summarizes and visualizes data
- Creates report templates tailored to your needs
- Allows creation of new, customized reports



**CUSTOM DATA**

**Other national, state, local data**





LIVE UNITED

Indiana Association of United Ways

Get Updates by Email

Email

Zip

[Sign Up](#) ?



## Marion County

Service area data: [United Way of Central Indiana](#)

[Change Locale](#)

[Download All Data](#)

[EXECUTIVE VIEW](#) [VIEW ALL](#)

Better  Worse  Neutral  No Data

[? HELP](#)

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



# ESDA

SAVI advanced

Save Change Dashboard Create SAVI Account Sign In minimize header

(C) 2013 Open Indicators Consortium Waiver

Data Selections Subsets Session Window About

Population (Age 25 and Over) Whose Highest Level of Educational Attainment is a High School Diploma (as % of Pop 25 and Over) (2010)

- 3.387 to < 8.787
- 8.787 to < 14.19
- 14.19 to < 19.59
- 19.59 to < 24.99
- 24.99 to < 30.39
- 30.39 to < 35.79
- 35.79 to < 41.18
- 41.18 to < 46.58
- 46.58 to < 51.98
- 51.98 to 57.384

Map of Population (Age 25 and Over) Whose Highest Level of Educational Attainment is a High School Diploma (as % of Pop 25 and Over) (2010)

Scatter Plot of Population (Age 25 and Over) Whose Highest Level of Educational Attainment is a High School Diploma (People) (2010)

Population (Age 25 and Over) Whose Highest Level of Educational Attainment is a High School Diploma (People) (2010)

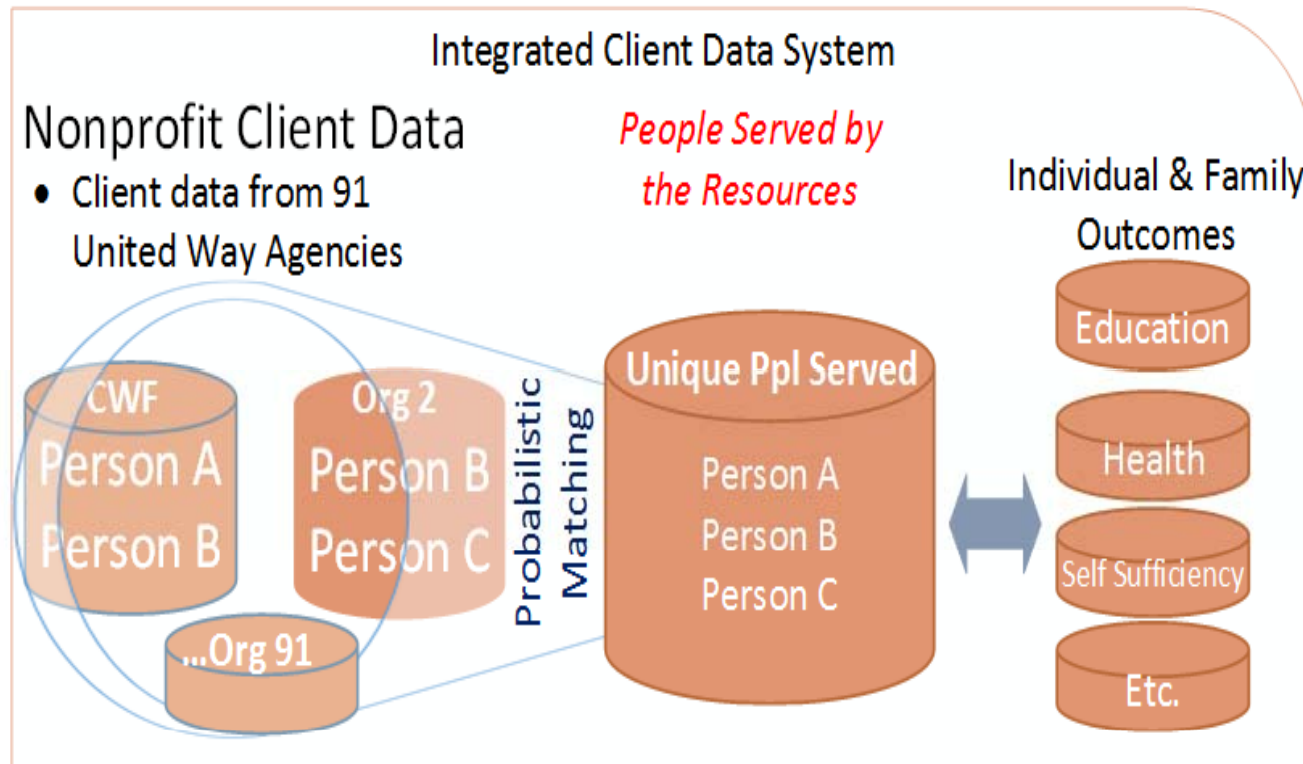
Data Table

GEOLOCID	Name	Population (Age 25 and Over) Whose Highest Level of Educational Attainment is a High School Diploma (as % of Pop 25 and Over) (2010)
18011810100	Boone	42.7
18011810200	Boone	38.318
18011810300	Boone	31.903
18011810400	Boone	41.07
18011810500	Boone	42.402
18011810601	Boone	31.661
18011810603	Boone	9.683
18011810604	Boone	6.942
18011810605	Boone	19.847
18011810700	Boone	45.271
18013974600	Brown	44.142
18013974700	Brown	39.12
18013974800	Brown	37.856
18013974900	Brown	40.063
18057110100	Hamilton	36.989
18057110201	Hamilton	45.071



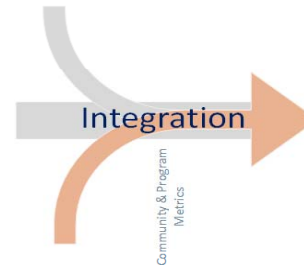
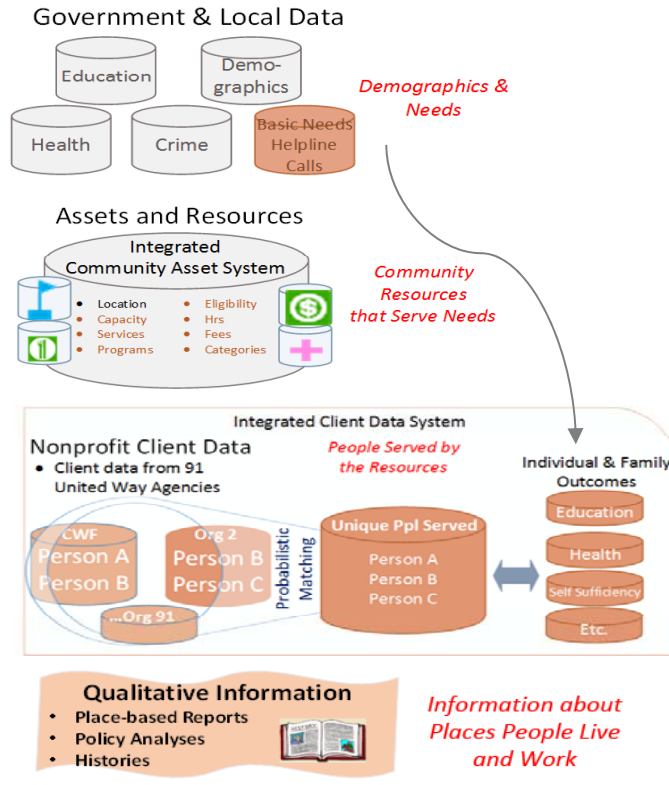


# Client-Level Integrated Data System



# SAVI Community Intelligence System

Decision Support for United Way & Nonprofits

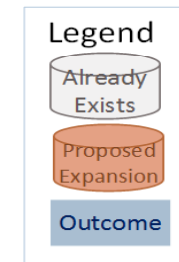


Spatial Decision Support

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

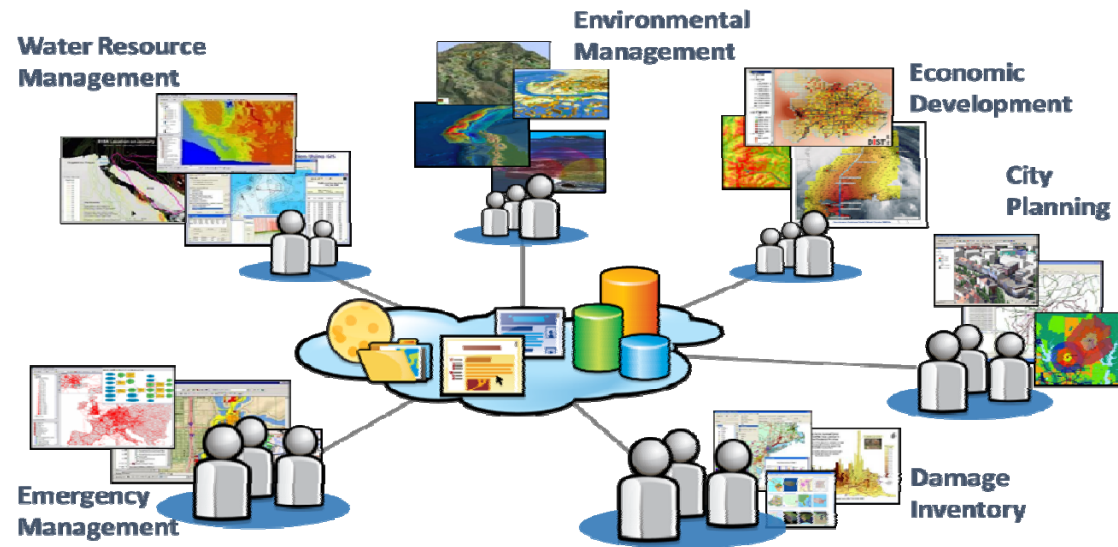


- Return on Investment
- Measure Collective Impact
- Design & evaluate place-based strategies
- Plan & Assess
- Understand social challenges in context of place
- Identify Gaps
- Align Strategies



# 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

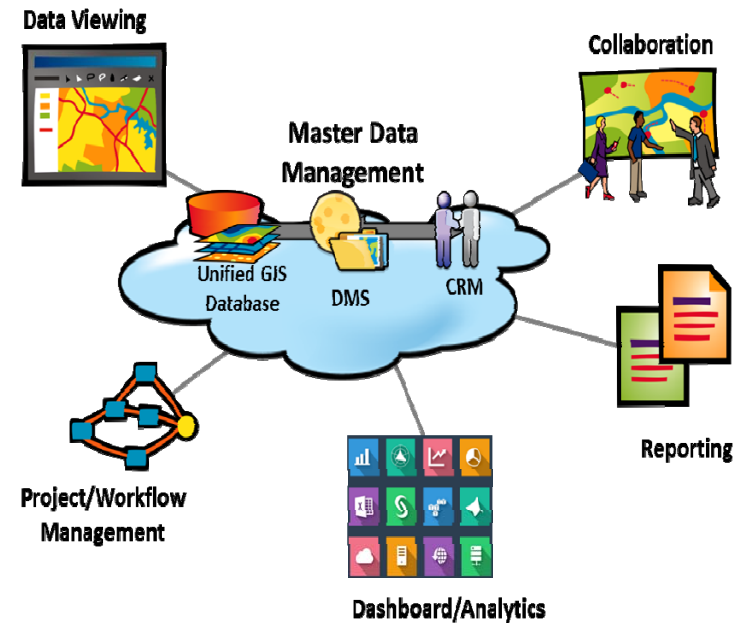
IFMP Initiative

The Big Picture

IFMP 1.0 Plan

# 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.

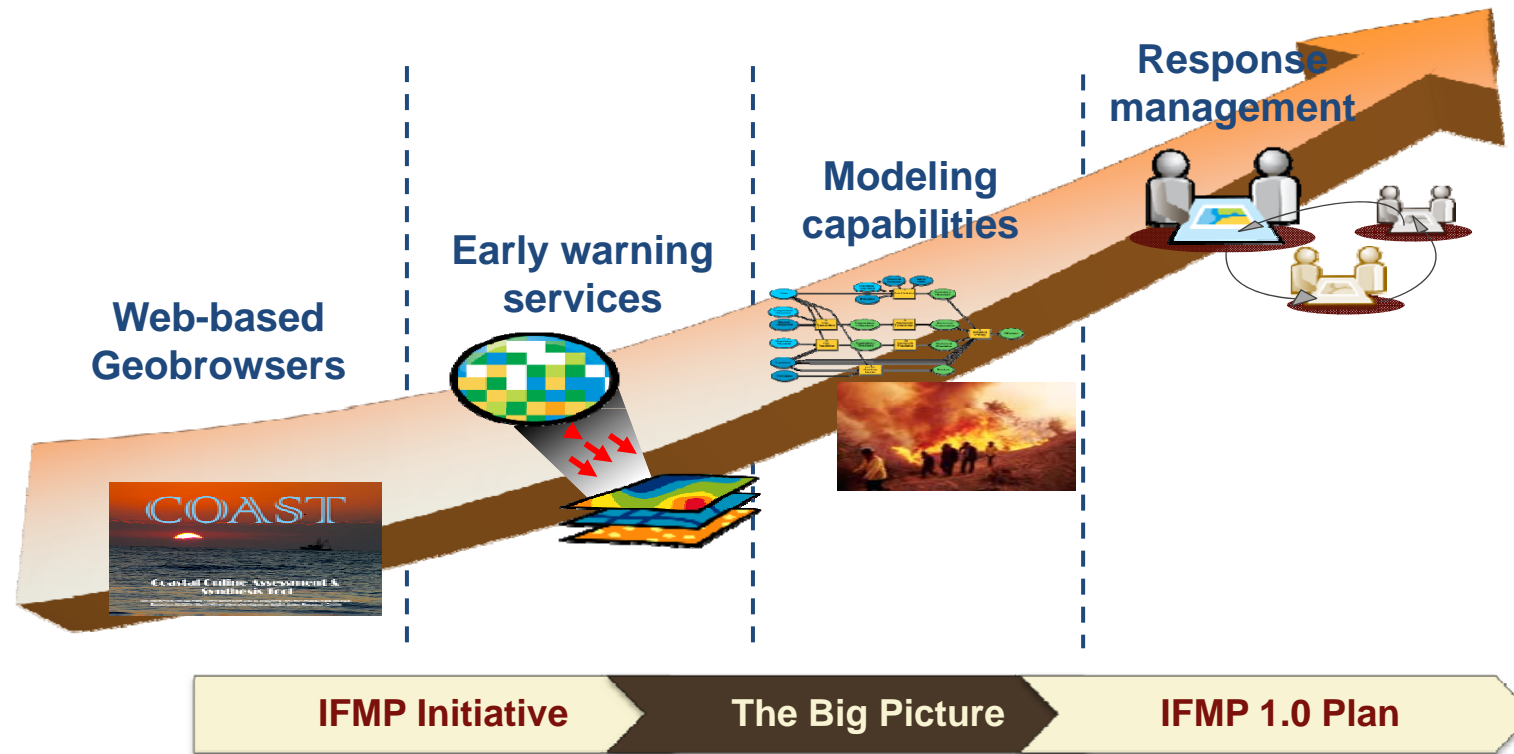


IFMP Initiative

The Big Picture

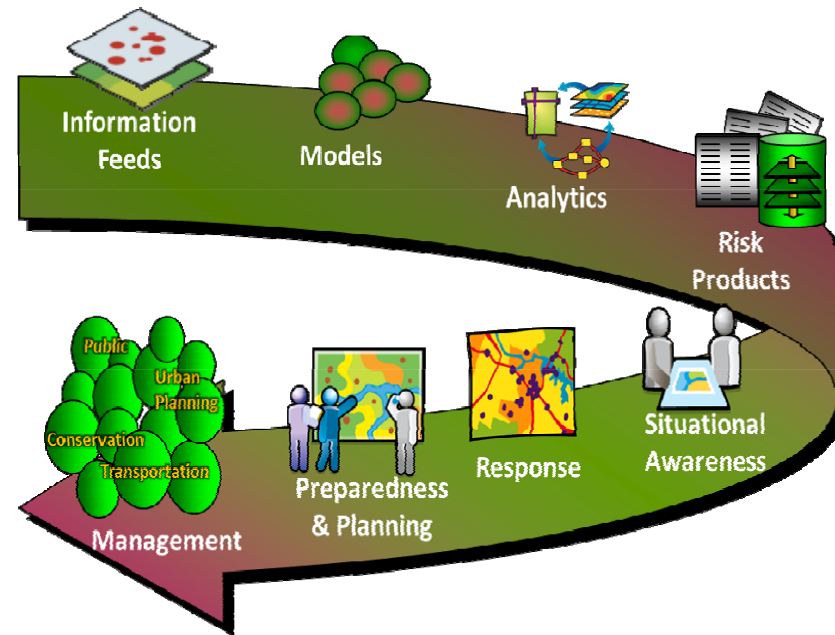
IFMP 1.0 Plan

# Levels of Technology Support



# 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



IFMP Initiative

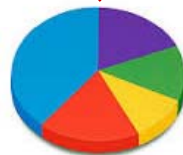
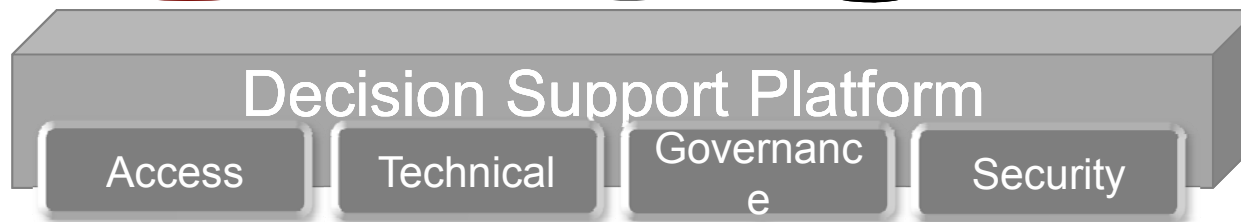
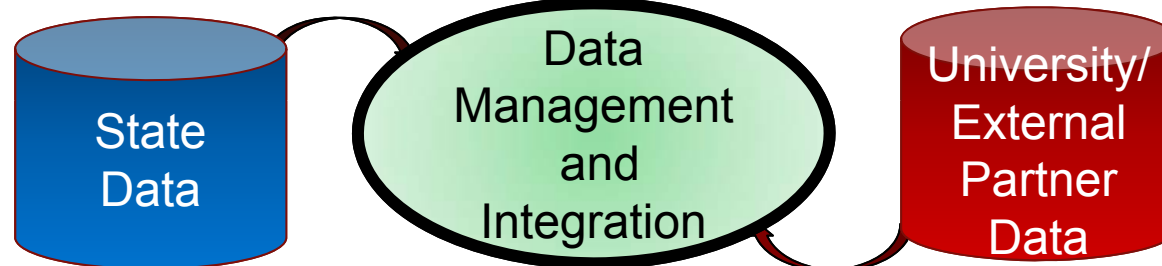
The Big Picture

IFMP 1.0 Plan



The Polis Center

# Indiana Data Initiative



The Polis Center



# 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.



***Thank you***

