



Issue 4—October 1, 2004

## K-12 Teachers Use SAVI as an Educational Tool

Welcome to SAVI Connections, the bi-monthly electronic newsletter regarding the SAVI system! SAVI Connections provides news about SAVI, demonstrates various ways in which SAVI can benefit your organization, announces release of new data, showcases new tools, highlights a variety of SAVI users, and lists user support and training options. The Polis staff encourages your ideas and feedback. Please address comments to: [skandris@iupui.edu](mailto:skandris@iupui.edu).

SAVI is a state-of-the-art planning tool for human service agencies, but it also is much more. Just ask teachers at George Washington Community School (GWCS). Thanks to a grant from the U.S. Department of Education, they are using SAVI to help students learn basic skills while simultaneously learning about their Westside community.

Last year The Polis Center at IUPUI, in partnership with GWCS, received a grant to establish a Community Technology Center. The goal was to use technology to raise the basic skill level of students and to link community and school in support of education.

## What's New?

SAVI Interactive has new Data! Check them out at [www.savi.org](http://www.savi.org).

- Quarter 1, 2004 Uniform Crime Report data for Marion County
- Home Mortgage Disclosure Act Data (1992-2002)
- Licensed Day Cares, Licensed Home Day Cares, Registered Day Care Ministries
- Hospitals
- Community Health Centers
- Women, Infants, and Children Clinics
- Ambulatory Surgery Centers
- Parks
- Recreation Trails



Recent research has demonstrated that students learn best when lessons relate directly to their own experiences. For project organizers, SAVI offered an ideal platform to tie basic skill development in geography, math, and language arts, among other subjects, to the community where most students lived. And because the school already had strong support from residents, this learning could take place within a supportive environment.

Over this past summer teachers attended a week-long workshop at Polis to develop a set of classroom lessons and exercises based on

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## SAVI People: *Jim Bronkema*

When special education teacher Jim Bronkema viewed a SAVI demonstration, he instantly knew it was a powerful teaching tool for George Washington Community School educators.

“Many of our students have never been outside of their neighborhoods, let alone the city,” he noted.

“They are expected to extrapolate concepts from books showcasing issues from far away places that don’t possess



any personal relevance to them. SAVI literally helps them make sense of these same issues and uses data specific to Indianapolis and the neighborhood most familiar to our students.”

Having a personal interest in data applications and technology, Jim worked this summer with a group of colleagues to show how SAVI could easily work in the classroom setting. Jim showed teachers from various disciplines how to query SAVI to find and map data with specific subject-related information. Next he worked with them to create lesson plans based on appropriate state standards. As a result, teachers who want to use SAVI have three comprehensive Power Point lecture presentations in each discipline and a set of accompanying worksheets designed to test and reinforce student skills and knowledge.

“Knowing how to locate elements on a map, learning how to analyze data displayed in graphs and charts, understanding coordinate systems are all skills that can be taught through SAVI. Proficiency in these skills combined with real information relevant to our students is a strong motivator. George Washington students possessing these skills and knowledge are then empowered to take actions that benefit themselves, their families and their communities,” Bronkema said.

SAVI, with all lesson plans linked to state learning standards. No one knew quite what to expect as they translated a creative idea into practice, but the results far exceeded what anyone had imagined. Teachers in language arts, biology, chemistry, physics, history, geography, math, health, foreign language, and music/visual arts developed approximately 20 lesson plans from SAVI. One teacher will teach students how to record specific locations with high concentrations of lead in the water and soil supply by using SAVI’s GPS and geocoding tools ([click here](#)). Another will have students find GWCS and learn about its community by taking advantage of SAVI’s query and mapping tools.

Most important was the way the project plans to involve students with the WESCO community. Teachers wanted students to explore their own neighborhoods, so they asked Polis to create a way students could link photographs to SAVI. The SAVI technical team suggested using GPS to record locations of features and digital cameras to take pictures that could be uploaded to SAVI and saved in separate workspaces or be made part of the Community Profiles space. This fall the students are using this technology to record where high concentrations of lead exist, thus creating a map that will be valuable to the community.

Thanks to the GWCS project, SAVI soon will have new capabilities to use GPS. Thanks to some creative teachers, an Indianapolis neighborhood will have motivated students who can use SAVI to benefit their community.

## National Funding Expands SAVI Capabilities to GPS

Anyone who has purchased or rented a new car lately has noticed the increased availability of navigation systems to guide you to a destination. These systems use GPS, or global positioning systems, with satellite-to-ground signals to pinpoint locations on a map. Now SAVI has this capability, thanks to a grant from the U.S. Department of Education.

The DOE-funded project created a GPS connection to SAVI, allowing students at George Washington Community School to map features in their neighborhood. Its success prompted the SAVI team to open the link to a larger audience and make it a permanent part of SAVI.

Already this new functionality is expanding the potential of SAVI. Discussions are underway to use GPS to mark the location of all public art in Indianapolis. This information will become a new layer in SAVI. When users click on a point denoting a piece of public art, they will call up pictures of the object itself and can determine the best public transportation route to take them to the site.

SAVI was the asset that attracted a major national grant. And thanks to these external funds, SAVI now has significant new capabilities to benefit its Central Indiana audience.

## Did You Know?

### School Corporation Expenditures per Student:

- Metro Avg: \$8,458
- Highest: \$11,563, M S D Warren Township (Marion Co)
- Lowest: \$6,940, Alexandria Community School Corporation (Madison Co)

### College Graduates (Percent of Age 25+ with Bachelor's Degree or More) (2000)

- Metro Area: 25.5%
- Highest: 48.9%, Hamilton County
- Lowest: 12.6%, Morgan County

### Population Age 25+ with No High School Diploma (2000):

- Metro Area: 16.1%
- Highest: 20.2%, Shelby County
- Lowest: 5.8%, Hamilton County

### ISTEP - Percent Students Passing Both English and Math (2003-04)

- Metro Area: 62%
  - Highest: 88%, Zionsville Community Schools
  - Lowest: 34%, Indianapolis Public Schools
- (Click [here](#) for map)

Source: [www.savi.org](http://www.savi.org) (US Census Bureau and Indiana Department of Education); Metropolitan Indianapolis is defined as Boone, Brown, Hamilton, Hancock, Hendricks, Johnson, Madison, Marion, Morgan, Putnam, and Shelby Counties.



**SAVI is a community information system** administered and maintained by The Polis Center at IUPUI. SAVI is supported financially by the following organizations: Nina Mason Pulliam Charitable Trust; Richard M. Fairbanks Foundation, Inc.; Health Foundation of Greater Indianapolis, Inc.; Annie E. Casey Foundation; Lilly Endowment, Inc.; United Way of Central Indiana; City of Indianapolis, Department of Metropolitan Development; Marion County Health and Hospital Corporation; Indiana University-Purdue University at Indianapolis (IUPUI).

For more information about SAVI, please visit the website at [www.savi.org](http://www.savi.org).

# **Lead (pH) Potentials in Household Water Pipes and Terrestrial Soil Samples Measured for Contamination**

**By: Craig Brosius & Melissa Jones**

**Date: July 2, 2004**

**School: George Washington Community School**

**City, State: Indianapolis, IN**

- **Estimated Sessions: 5 – 7 days**
- **Grade Level: 10 – 11**

**Purpose:** Teach students measurement in parts per million, scientific collection methods, data inquisition, and Ph measurements.

## **Standards:**

- GEOG Standard 1:** How to use maps and other geographic tools  
And technology to acquire, process, and report information  
from spatial perspective
- Standard 2:** Using mental maps to organize information  
About people, places, and environments in a spatial contrast
- Standard 14:** How human actions modify the physical  
environment.

## **Objectives:**

Students will accomplish a three-phase laboratory experiment in data collection in the areas of GPS data collection site, location, using hydrological samples, and terrestrial samples at predetermined locations.

## **Background:**

- Know how to use the GPS system
- Know how to use the SAVI system
- Know how to use the necessary lab equipment

## **Materials:**

- Hach Water Sampling Kits
- Lamott Soil Testing Kits
- GPS
- Water and soil samples
- Graduated cylinders
- Maps of neighborhoods (Indianapolis)
- Pencil
- Paper
- Graph paper

## **Procedures:**

- Step 1:** The first phase will allow students to determine the Exact location of their house using GPS technology
1. Teach students how to find exact location of their house using the GPS systems
  2. Write down data
  3. After all data collected, put points onto a map printed out on SAVI
- Step 2:** The second phase will allow the students to make a

Collection of a hydrological sample to be returned to the lab for analysis of selected chemicals and chemical compounds measure in ppH, ppt, on pH using HACH.

1. Collect a water sample for your house
2. Test the water using the HACH test
3. Record the results
4. Place on another map provided by SAVI

**Step 3:**

The third phase will allow students to make a

Collection of a terrestrial sample taken at ground level and six inches depth and returned to the lab for analysis of selected chemicals and chemical compounds measured in ppH, ppT, or pH using the Lamott system

1. Dig a hole in the ground 6 in. deep
2. Take out a soil sample to bring to school
3. Test the soil using the Lamott test kits
4. Record finding on a table and then map using SAVI by location of your house.

**Assessment:**

Student will prepare a lab write up that will include the collection data and All information gathered in an overall class composite analysis.

**Adaptation/Extensions:**

- Graph samples by      Type  
                                         Neighborhood  
                                         Age of house
- Have maps already printed
- Use SAVI to check incomes, poverty levels, Medicaid recipients, etc.
- Draw your own map using GPS points
- What is in your neighborhood that could cause these results?

**Resources:**

- HACH test kit
- Lamott test kit
- SAVI.org
- GPS system instructions

