2nd Annual EPA Office of Compliance Grant Conference:

Showcasing Enforcement and Compliance Assurance Results and Sharing Lessons Learned

April 15-16, 2004
Westin Embassy Row Hotel
Washington, DC

GROUP #3: BODY SHOP/AUTO SALVAGE PROJECTS

Presented by
Christine Eppstein, ECOS (moderator)
Bernie Penner & Gerald Gietka, Maryland DEP
Aaron Green & Matthew Deaner, Indiana DEM

Disclaimer
U.S. Environmental Protection Agency (U.S. EPA) neither endorses nor assumes responsibility for the accuracy and completeness of non-EPA materials contained herein. EPA does not necessarily endorse the policies or views of the presenters, and does not endorse the purchase or sale of any commercial services or products mentioned in this presentation.

Co-sponsored by the U.S. EPA and the Environmental Council of the States (ECOS)

Park Heights Initiative An ERP Pilot Project MDE

Bernie Penner and Gerald Gietka
Maryland Department of Environmental Protection

Park Heights Initiative
An ERP Pilot Project
MDE

Project Manager: Bernie Penner

Project Planner: Jerry Gietka

Intellectual Property of MDE Office of Enforcement and Compliance

Updated 4/07/2004

Notes

Jerry Gietka, Project Planner, MD Dept of Environment. In 10 years at MDE, he has worked with 14 different environmental programs. He has also been an Adjunct Assistant Professor at University of Maryland Graduate School of Engineering and Management since 1995. Before that, he had 10 years of experience in industry.

Bernie Penner was the Project Manager on this grant.

Overview Project Goal:

Conduct an Environmental Results Project

- **increase the compliance rate of the regulated facilities**
- **use scientific analysis and statistical methods to measure**
  - **a change in their behavior**
  - **the effectiveness of the MDE intervention**
  - **the benefit to the community**

Intellectual Property of MDE Office of Enforcement and Compliance

Updated 4/7/2004

Notes

MDE partnered with many different groups to get this done.

They hoped they could make a difference to the regulated entities

They chose a small regulated community, small businesses (60 facilities)

The Park Heights section had many different problems and came to the state for help. There are a lot of auto body shops in a small area.

Where are we now?
End of Phase 2

- Gannt Chart
- Workbook
- Facility Self Assessment/Certification
- Inspections
- Kickoff, Training & Compliance Assistance
- Community Survey

Intellectual Property of MDE Office of Enforcement and Compliance

Updated 4/8/2004

Notes

They have just finished Phase 2, the follow-up inspections, and finished bringing in the data from the 'community perception survey'. This will only measure perceptions, nothing quantitative.

They have not finished working with the data from Phase 2. Workbook is the intervention tool that would bring the regulations to the small businesses in an understandable way. They did not succeed because the regulated community wants to be told directly what to do. Every time they talked to the regulated community, they were told, "Just tell us what you want."

Where are we now? Begin phase 3 Analysis and Evaluation

- Baseline measures
- Intervention
- Follow Up measures

Intellectual Property of MDE Office of Enforcement and Compliance
Updated 4/8/2004

Notes

This was a voluntary self-certification. EPA inspectors did two sets of inspections.

Hired a community health association to go door-to-door to conduct the survey.

The analysis is being done now.

Community Perception Survey Community Benefit Measure

- BACKGROUND
- KNOWLEDGE ABOUT AUTO MECHANICS/BODY SHOPS IN THE COMMUNITY
- HEALTH/SANITATION/AESTHETICS
- KNOWLEDGE OF THE ENVIRONMENTAL COMPLIANCE ASSISTANCE PROJECT

Intellectual Property of MDE Office of Enforcement and Compliance
Updated 9/22/2003

Notes

Community perception survey – this was the first time they ever did this.

The community health association asked if the community had heard of this program and what they thought of it. The survey also asked about knowledge of the auto body shops. Initially, 20 out of 150 said yes.

Lessons Learned:

Q23. Do you know about the Park Heights Environmental Compliance Assistance Program? @ 150 households surveyed

- yes 20 baseline
- yes 59 follow up

Intellectual Property of MDE Office of Enforcement and Compliance
Updated 4/7/2004

Notes

They asked 'have you even heard of us?' After follow up, almost 3 times as many people had heard of them.

Lessons Learned:

Q23a.Do you believe that the Park Heights Environmental Compliance Assistance Program is helping to improve the environmental conditions in your neighborhood?

- yes 17 baseline
- yes 41 follow up

Intellectual Property of MDE Office of Enforcement and Compliance
Updated 4/7/2004

Notes

More than twice as many answered yes to this question after follow up.

Lessons Learned: SIRNA Checklist Compliance Measurement Tool

S = self reported by facility representative with no attempt at verification inspector observation or verification;

I = inspector observation or verification;

Intellectual Property of MDE Office of Enforcement and Compliance
Updated 4/7/2004

Notes

When they designed the checklist, people came together from all of the environmental programs to ask what businesses need to know. They had to word the questions on the checklist carefully so all inspectors would answer consistently.

Lessons Learned:

11. Has the facility made any changes to affect compliance since the initial visit?
Yes 14 No 24

38 met sample criteria all accounted for

Instruction: <u>S</u> <u>Self Report</u> Accept the representative's response. A reply of "Don't know" equals "NO". <u>If no, skip to Section B</u>.

Intellectual Property of MDE Office of Enforcement and Compliance
Updated 4/7/2004

Notes

Lessons Learned:

12. If yes, were any of the following a factor in the decision to make those changes?

Instruction: S Self Report

a. Possibility of revisit.	**Yes**	**3**
b. Possibility of administrative or civil penalty.	**Yes**	**2**
c. Possibility of losing customers due to violations.	**Yes**	**3**
d. Compliance assistance: workbook.	**Yes**	**4**
e. Compliance assistance: other	**Yes**	**3**
f. Other reasons not listed	**Yes**	**5**

Intellectual Property of MDE Office of Enforcement and Compliance

Updated 4/7/2004

Notes

Lessons Learned:

13. Which of the following, if any, helped you the MOST, to make changes in your practices toward meeting compliance? Instruction: S Self Report Accept the representative's response. Check ONE box ONLY as the answer to the MOST help.

a. Interaction with inspectors. 10
b. MDE Self-audit, self-certification form. 3
c. MDE Guide book. 4
d. MDE training sessions or workshops. 4
e. Other (anything else) 4
f. None of the above helped. 0
g. Inspector did not complete: 24

Intellectual Property of MDE Office of Enforcement and Compliance

Updated 4/7/2004

Notes

Interaction with inspectors was the biggest factor that helped them make changes.

Lessons Learned: Inspectors vs. Data collectors Need More Input

Intellectual Property of MDE Office of Enforcement and Compliance

Updated 4/7/2004

Notes

Inspectors know their job inside and out. Auto shops don't know what they need to do, and want it to be simple. There is currently a 'graying of the workforce' – many inspectors are retiring. Given the time it takes to train someone to that level of expertise, using inspectors as they are used now may not be practical.

It may be better to have uninitiated data collectors go out with the survey. It may be a better use of resources to have a tiered level of personnel: data collectors, then experts (fewer of them). Data collectors may be best first front, so that the data will show what is really going on out there. Both the public and the regulated community have misconceptions about the role of inspectors.

?

Notes

When we got the checklists back, the automation could only record yes/no. Inspectors have a great urge to write comments and teach.

Another unanticipated result is that a trade association emerged. This was voluntary, and they received 38 self-certifications. However, many facilities only filled out their name on the certifications, and the state doesn't know what exactly they did. If this is made into a mandatory program, it could be even more effective.

Expected Outcomes

Notes

This was an area where nothing had been done, but now people are paying attention, including people in local agencies, Baltimore City, and the community. Trade association, community group want to mark the "good neighbor shops ". The industry is also very fluid, and there is a lot of turnover among the shops.

They now have a baseline showing where compliance problems are, so now they can do some enforcement, working with EPA.

Bernie says they've got RCRA down in their notebook to a short 5 pages, which is great. But Jerry says it is still too complicated and better training is needed.

Questions & Answers

Q: How did you pick Park Heights?

A: They had significant problems in lots of areas. They had already put together a community group to address zoning, community, drug, and other problems. They came to the state for help. It was low-hanging fruit - almost anything that they did would have made a difference.

C: One of the outcomes was that people were pouring oil down the sewers, and this was an environmental problem. This was a lesson in going to a part of the community they were not used to going to, of mostly foreigners with a language barrier, How to address environmental problems in a distinct EJ community with distinct EJ issues was a learning experience. Anything would be progress.

C: The water section of the survey started out complicated, but boiled down to "do you keep your drains sealed?"

Questions & Answers

Q: For the 20 cases in which you saw a change in behavior, what motivated them to change?

A: It is an ongoing process. Initially it was the community, and telling them when they self-certify they would keep the inspectors from coming and from being prosecuted. The second step was that when people came around, they started asking for clarification on the rules. Lastly, it was blessed by one shop that had been around for a long time and advised the other shops. Ultimately they learned to let the government help them, and asked them for the help.

IDEM Auto Salvage Facility Sector Project: Data Handling and GIS Data Analysis

Aaron Green and Matthew Deaner

Indiana Department of Environmental Management

Notes

Aaron Green & Matthew Deaner, Indiana DEM

The OECA grant for the Indiana Department of Environmental Management facility sector project runs from July 2000 to August 2004. OECA was interested in developing a prototype for specific sectors for compliance and enforcement

IDEM selected auto salvage, because of a history of non-compliance and complaints.

There are two primary phases to this project: Compliance Assistance and Inspection/Enforcement. They are currently in the second phase.

Project Overview & Goals

- Universe establishment
- Database
  - Front-end designed for internal use
  - Available online for public use (at http://www.in.gov/idem/autosalvage/)
- Manual (with stakeholder input)
- Compliance Assistance Outreach Efforts
- Targeted Inspections
- Enforcement (where appropriate)

Notes

The first objective was to establish a "universe" of auto salvage facilities. Auto salvage facilities are required to register, so they had a list to work from. They next put it into a database for IEM and for the public

They developed a manual to go on the website. The manual has a multi media approach – air, water, and waste rules. They tried to make it user-friendly.

They held 7 workshops in the regions of the state. The workshops covered the air, waste and water regulations. The project also included an inspection and enforcement phase - inspections were targeted using GIS.

Sector Specific Goals

- Increase compliance rates of facilities in this sector
- Address fluids management issues that have resulted in potential historical and ongoing contamination
- Encourage recycling and use of Best Management Practices in order to prevent future contamination
- Address difficult clean up issues
  - Fluids mgmt.
  - Waste tires

Notes

The goals for the auto salvage sector were to increase compliance rates, address fluids management issues, encourage recycling, and address clean up issues.

There are 1100 facilities, 88 of which had submitted their stormwater paperwork, and only 40 of which were actually in compliance.

Mixed fluids are often deposited on the ground and need to be cleaned up.

Accomplished to date

- Compliance assistance
  - Workshops
  - Manual
  - Individual
- Heightened awareness
  - Regulated community
  - Local law enforcement
  - Town officials
- Inspections
  - Targeting
    - "Maverick" facilities
    - Facilities near sensitive areas or populations
    - Flyovers
  - Multimedia inspections
    - 11 of 50 to date

This presentation will focus on the targeting phase.

Notes

There are one or two facilities that have asked IDEM to do a facility walk-through to help them with compliance. There is increased awareness of the sector, and the police come to the inspections.

Many of the issues are zoning, and have to be referred to the proper authority.

Approximately 4 of the 11 inspected have had significant issues.

How did we target?

5 Steps:

1. Obtaining Data
2. Deciding on Tools
3. Spatial Analysis
4. Scoring
5. Corroborating list

Notes

The targeting phase of this project is essential. They were limited in the number of inspections and site flyovers under the grant, so they had to make choices wisely.

They obtained data from a lot of sources - a list of 1100 facilities from Department of Motor Vehicles. The Department of Health helped identify some facilities that did not register with the DMV.

They also used GIS data from DNR and other agencies. They chose zones and areas of environmental interest and found shops in these zones.

1. Obtaining Data

- Getting the data
  - Bureau of Motor Vehicles tabular list
  - Referrals internally
  - Referrals from local law enforcement
  - County health departments
- Preparing the data
  - Address matching (when needed)
  - "Lookin' for a Fender" phone calls
  - Preliminary mail-out
  - Importing data into Access
  - Adding fields to use for GIS spatial analysis phase

Notes

Some records had GIS data so they could identify the exact location of the facility; others had to be tracked down.

Tested some addresses by sending out an inquiry card on a totally unrelated subject

2. Tools

- GIS Layers
- ArcGIS
- Databases
  - CARS
  - Targeting database
- Online tools
  - Terrafly
  - Yahoo

Notes

The state of Indiana has access to a lot of GIS-related information.

One reason they have a lot of layers is that Indiana has a Data Sharing Committee that oversees data sharing across state agencies. They share layers with and can use data from several national and statewide departments and agencies.

Tools (cont.)

GIS Layers

- Sensitive Areas
  - Public Water Supplies
  - Wellhead Protection Areas
  - Surface Water Intakes
  - Streams
  - Wetlands
  - Exceptional Use Areas
- Raster
  - Topographical Map of Indiana
  - High-resolution aerials
- Sensitive Populations
  - Schools
  - Hospitals
  - Environmental Justice areas
- Impaired Areas
  - Waste tire sites
  - Impaired Waterways
  - Open Dumping Sites
  - LUST

Notes

This is a categorized list of the layers that were relevant to the targeting efforts – only some of these criteria were used in the final targeting.

The "Sensitive Areas" data and "Impaired Areas" data were obtained internally.

The Environmental Justice data was prepared internally as part of an EJ grant that ended in 2001.

The Schools and Hospitals layers were from ISDH.

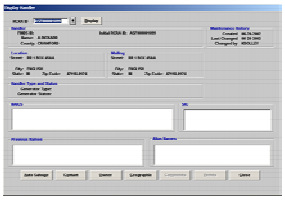
They also had topographical maps and high-resolution aerials from USGS. These raster layers used a map background.

Tools (cont.)

Databases

Compliance **A**ctivity **R**eporting **S**ystem (CARS)

- Web-accessible
- Central data source
- Stores:
  - Address information
  - Contact information
  - Inspection actions



Notes

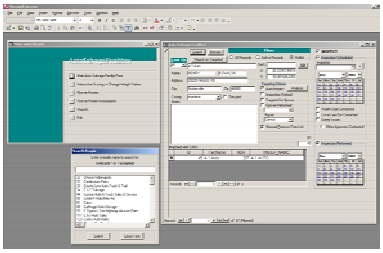
CARS is an Oracle database that has all our facility names and addresses and contact information. We provide some of this info to the public on the web.

The problem with this is flexibility; it didn't allow for on-the-fly adding of fields, and would have been difficult, if not impossible, to manage with ARCGIS and/or do any geographic analysis that required writing to it.

This is a screenshot of the CARS database, the advantage is that it's web-accessible so others can verify it.

Tools (cont.)
Databases

Auto Salvage Targeting
- GIS repository
- Results of targeting
- Weighted Scoring
- Flyover information
- Reporting
- Targeting status
- Inspection tracking and scheduling



Notes

They built a second database, integrated with CARS. This is a separate application in MS Access. They used this system to do geographic analysis, reporting, arrangement of "flyovers", weighted scoring, and inspection status. The main advantage of using this separate application was flexibility.

Tools (cont.)
Online Tools

- Terrafly
  http://www.terrafly.com/
- Yahoo Yellow Pages
  http://yp.yahoo.com/
- Lat/Long Converter
  http://63.111.27.3/geo/latLongConverter.php

Notes

Terrafly – a USGS source. It can be used to look up lat/long coordinates based on an address.

Lat/long converter from an obscure location on the Internet. Don't know the source. It was very accurate.

Yahoo Yellow Pages – was useful for filling address gaps, verifying address-matched data, and establishing or verifying contact information.

3. Spatial Analysis

Steps

1. **Choosing Criteria**
2. **Layer Preparation**
   …set up buffered layers
3. **Geospatial analysis**
   …determine which facilities fall within buffered areas
4. **Take score!**

Notes

The analysis was a three step process, with the fourth step being scoring the results. They started by pulling together a GIS map with all the layers mentioned on slide 8. They built three additional layers utilizing merged buffers, then moved on to identify facilities that fell within each buffered area. In the end, they were left with 84 facilities, pared down considerably from the 1200 or so we started with. The fourth step was scoring them.

Spatial Analysis (cont.)

Choosing Criteria

Primary Consideration: Public Health

- Proximity to public water supplies
- Focus on urban areas
- Schools with public water supplies
- Surface water intakes

Notes

Focus on urban areas because of higher population density and likelihood of impact. These facilities were also closer to waterbodies and surface water.

The elimination of most rural areas happened "by itself"; Many rural were areas eliminated due to inability to match addresses. And rural areas yielded a low score on other criteria – so elimination was a natural process that happened on its own.

Schools and junkyards are often located close to one another because they both need cheap real estate. Many schools have their own PWS, compounding the siting problems.

Spatial Analysis (cont.)

Layer Preparation

- **Schools & PWS wells**
  PWS wells and schools, buffered 1,000ft, then merged
- **Wellhead Protection Areas**
  Buffer for est. 5 year time of travel merged with fixed 3000ft buffer of a well head protection area
- **Surface water intake within 3,000ft.**

Notes

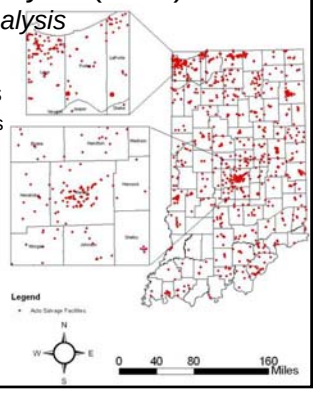
3 different layers they used for their criteria – within 1000 ft of schools and PWS wells, others.

They were concerned with fluids from auto salvage facilities leaching into wellhead protection areas.

Spatial Analysis (cont.)

Analysis

Starting Point:
All registered facilities
- Approx. 1,100 facilities



Notes

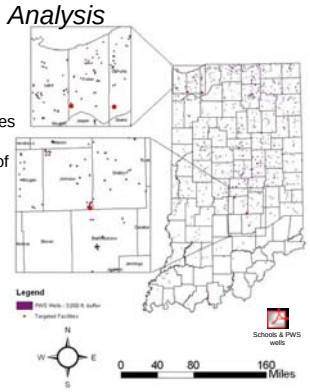
Facilities are clustered in urban locations – there are too many facilities.

Spatial Analysis (cont.)

Analysis

Schools & PWS wells

- Objective: Select facilities within 1,000 ft from schools within 1,000 ft of a PWS well
- Layer(s): Analysis was non-graphical; worked with schools layer and PWS wells layers.
- Result: 4 "hits"



Notes

The objective of this analysis was to determine which auto salvage facilities were sited within 1,000 ft. of a school, when the school had a PWS well within 1,000 ft. They assumed that the public water supply wells in close proximity to any particular school would belong to the school public water supply.

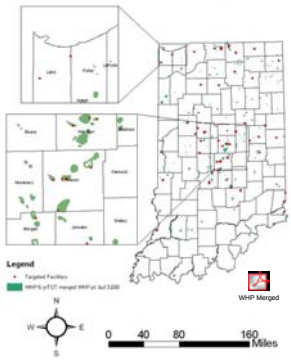
They identified all the schools within 1,000 feet of a PWS well, and then identified salvage yards located within 1,000ft. of these schools. This returned 4 "hits".

Spatial Analysis (cont.)

Analysis

Wellhead Protection Areas

- Objective: Select facilities within 5-year TOT for WHP areas and/or within 3,000 feet from WHP areas
- Layer(s): 5-year TOT, merged with 3,000ft buffer on WHP point data
- Result: 68 "hits"



Notes

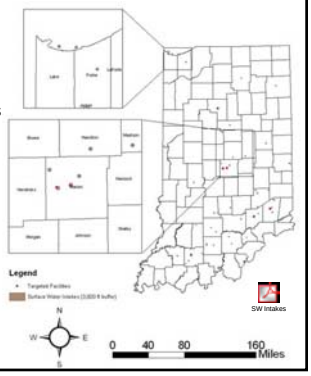
Wellhead Protection Areas are very important selection criteria. This yielded 68 hits.

Spatial Analysis (cont.)

Analysis

Surface water intake within 3,000ft.

- Objective: Select facilities within 3,000 ft of a major surface water intake
- Layer(s): Analysis was non-graphical; illustrating 3,000 ft buffer applied to surface water intake layer
- Result: 9 "hits"



Notes

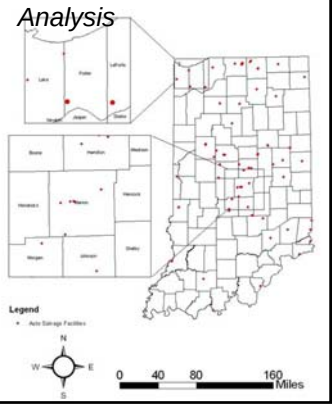
The third analysis was the easiest, and yielded 9 hits.

Spatial Analysis (cont.)

Analysis

"Hits"
- 85 GIS targeted facilities

Criteria
- Surface water intake; 3,000ft.
- Wellhead Protection Areas; 3,000ft / 5-yr TOT
- Schools & PWS wells; 1,000 ft



Notes

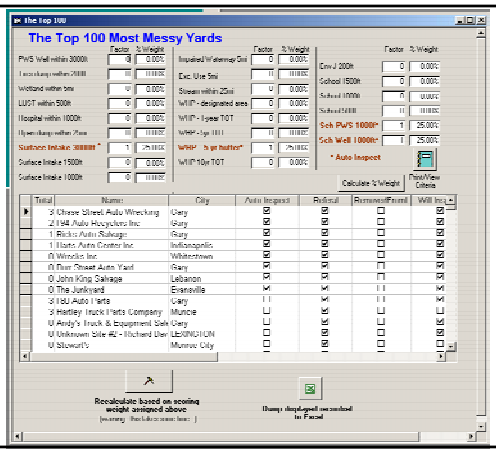
All hits = 85, which is too many, needed to pare this down

4. Scoring

Scoring system requirements:
- User-defined weighting criteria
- Sorted facility list
- % Weight calculation
- Excel export
- Saved results with records

Notes

They decided to do scoring to see which facilities received multiple hits.



Notes

They anticipated that they would get far more than the targeted 50 "hits" using the aforementioned criteria, and would need to weight the results. They built an interactive "scoring" application, where users can plug in "weighting values" into any one of the layers used during the analysis, click a button, and get a list of the top 100 scoring facilities, based on the weighted scoring criteria.

5. Corroborating list

START **85 Facilities**

- More "Lookin' for a Fender" phone calls
  - Some facilities no longer in business
  - Some not salvage yards
- Checking with local officials
  - 10 more facilities added by referral
  - Some facilities removed from list
- Flyovers
  - Two removed, two added

END **55 Facilities**

Notes

They reduced the list of 85 GIS-targeted facilities to the final list of 55 facilities.

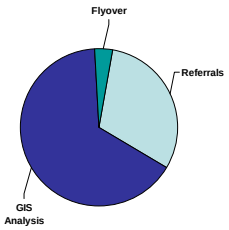
They called facilities, pretending to be looking for car parts, to verify they were in business and they were salvage operations.

Another check with local officials helped to refine the final list, and they added 10 additional facilities from local official referrals and internal referrals.

The flyovers also helped to refine the final targeting list further. The flyovers revealed two sites that needed to be added, and two that needed to be removed.

Result of Targeting

- 17/55 or 31% Based on inspector, town, or local law enforcement referrals
- 36/55 or 65% Based on geospatial proximity to sensitive areas
- 2/55 or 3.6% added after spotting during flyover



Notes

Flyovers

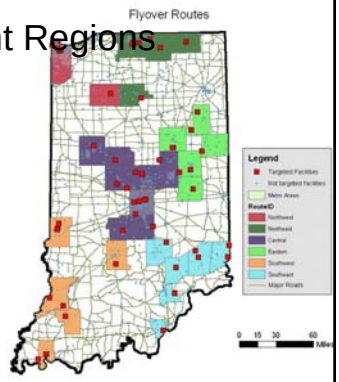
Why?

1) Use during possible legal proceedings
2) Visual confirmation
3) Establish geographical extent
4) Get idea of general “ugliness” of facility
5) Identify gross areas of contamination
6) Visually confirm whether or not area was adjacent to a waterway

Notes

Flight Regions

1) Northwest
2) Northeast
3) Central
4) Eastern
5) Southwest
6) Southeast



Notes

These are regions they picked to do their flyovers

Flyovers

Information Packets

Flyover packets contained

- Report on facility, including coordinates
- Topographical view
- Aerial view
- Road-map view

Later, we added aerial photos

Notes

These packets were provided to the pilots so that they could do the flyover.

Flyovers

Outcomes

- Flyover packets
  - Saved time, and $
  - Use of PDF for packet format allowed adding aerial photos later
  - Accuracy of locational data was outstanding
- Flights
  - Hundreds of photos taken
  - Two facilities added to "hotlist", two removed
  - Photos will be valuable evidence for subsequent legal actions
  - Photos will help inspectors look in the right places

Notes

The flyovers saved time and money.

In fact, they were also able to consolidate the northeast and northwest.

Wrapping Up

- Checklist
- Lessons learned
- Future plans
- Photos
- Contacts
- Questions & Answers

Notes

Checklist

- Establish universe
- Database(s)
- ArcGIS
- GIS layers
  - Facilities
  - Aerial
  - Topographical
  - Areas of environmental sensitivity
- **Most important: Personnel / time**
  - Dedicated IT staff
  - Program manager

Notes

This slide shows what other state agencies need to do to mimic this project

It is important to note that everything with IT was slow, so extra time must be allotted for this work. Also note that the ability to use GIS was essential.

Lessons Learned

- The data will only take you so far…
- Mailing list
- Database development takes time – and is continual
- Develop catalog of layers
- Choose criteria carefully
- A 4-year grant is a must

Notes

The data will only take you so far. They needed to make a lot of phone calls and talk to a lot of people.

With fly-overs , they had 98% accuracy of the data.

Future plans

- Continuance of project dependent on
  - Outcomes
  - Funding / Resources
  - Demonstrated need by
    - Legislature
    - Local and town officials

Notes

The project will end in August. They need continual funding. This is a sector that has been neglected for a long time.

Contacts

- **Program Manager**
  Pam O'Rourke
  Phone: 317/232-4464
  E-mail: POROURKE@dem.state.in.us
- **Inspections**
  Aaron Green
  Phone: 317/234-2833
  E-mail: AGREEN@dem.state.in.us
- **GIS / Data Mgmt.**
  Matthew Deaner
  Phone: 317-233-3187
  E-mail: MDEANER@dem.state.in.us
- **Asst. Program Mgr.**
  Jennifer Fuller
  Phone: 317/233-2370
  E-mail: JFULLER@dem.state.in.us
- **Office of Planning and Assessment Director**
  Paula Smith
  Phone: 317/233-1210
  E-mail: PSMITH@dem.state.in.us
- **IDEM GIS Coordinator**
  E.J. McNaughton
  Phone:317/232-8197
  E-mail: EMCNAUGH@dem.state.in.us

Notes

Questions & Answers

Questions & Answers

Q: I am curious about the use of the fly-over. How did you do it, and how many facilities were confirmed? It doesn't seem very efficient.

A: The fly-overs only resulted in the removal of 2 facilities, and the addition of 2, but they helped determine the geographic extent of the contamination. They also might provide photos for future court cases. You can see a lot from the area in terms of stained soil, etc, which help prioritize the target facilities.

Q: How did you choose auto salvage?

A: IDEM has a history of receiving complaints about these facilities. It was always single-media and did not focus on how they were managing their materials.

Questions & Answers

Q: For a layer regarding sensitive populations, you had EJ data. How did you define an EJ area and where did that data come from?

A: We used census data and looked at income and racial makeup as criteria.

Q: What might happen when you get to the compliance phase of this? Facilities may not care about civil enforcement or other minor penalties. WA state has looked at this to find who can enforce concerns more directly (e.g., police, OSHA, fire marshals)

A: They do plan to address all violations in one single order. Local law enforcement always accompanies them on their visits.

Questions & Answers

Q: Have you thought about working with OSHA?

A: Yes, and also BMV. Local law enforcement comes to the inspections too for inspector safety.

C: NYDEQ in NYC did a junkyard initiative. A NYC police officer noticed something going on at a junkyard and got things started. Once they got started, they got city civil asset forfeiture provision, property and taxation department, and others to get their attention.

NJ is looking into an initiative too. These are small operations; you sometimes need criminal back-up to get compliance. NY went back and did follow-up and found great enforcement.