



March 17, 2011

**Chair**  
Judy Clayton

**Vice-Chair**  
Ralph Young

**Board Members**  
John Anderson  
Robert Coleman  
David M. Franklin  
Jonathan Hines  
Mike Kemp  
Shirley Lanier  
Maggie Morgan  
Kevin L. Murphy  
Dianne O'Brien  
Ben Peterson  
Elton Priddy  
Ronnie Rathman  
Alex Roman  
Mark Sullivan  
May Louise Zumwalt

**Student Participant**  
R. Colby Davis

**Board Liaisons**  
Reinhard Knerr  
*DOE DDFO*

Buz Smith  
*DOE Federal Coordinator*

Ed Winner  
*Division of Waste  
Management*

Turpin Ballard  
*Environmental Protection  
Agency*

Mike Hardin  
*Fish and Wildlife Resources*

Stephanie Brock  
*Radiation Health Branch*

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## Agenda for the March Board Meeting

### 6:00

Call to order, introductions  
Review of agenda

### DDFO's Comments

-- 15 minutes

### Federal Coordinator Comments

-- 5 minutes

### Liaison Comments

-- 5 minutes

### Presentations

-- 30 minutes

- KRCEE Update on Future Use Study

### Administrative Issues

- Top Three Issues, Accomplishment, Major Activity

### Subcommittee Chair Comments

-- 10 minutes

### Public Comments

-- 15 minutes

### Final Comments from the Board

-- 5 minutes

### Adjourn



# PADUCAH GASEOUS DIFFUSION PLANT CITIZENS ADVISORY BOARD

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## **Paducah Gaseous Diffusion Plant Citizens Advisory Board Meeting Minutes March 17, 2011**

*The Citizens Advisory Board (CAB) met at the Environmental Information Center (EIC) in Paducah, Kentucky on Thursday, March 17 at 6:00 p.m.*

**Board members present:** Judy Clayton, Chair; Ralph Young, Vice-Chair; John Anderson, David Franklin, Mike Kemp, Shirley Lanier, Ben Peterson, May Louise Zumwalt

**Board members absent:** Robert Coleman, Jonathan Hines, Maggie Morgan, Kevin Murphy, Dianne O'Brien, Elton Priddy, Ronnie Rathman, Alex Roman, Mark Sullivan

**Board Liaisons and related regulatory agency employees:** Gaye Brewer, Todd Mathis, Kentucky Department of Waste Management (KDWM); Tim Kreher, Kentucky Department of Fish and Wildlife (KDFW); Gary Vander Boegh, Commonwealth Environmental Services (CES)

**DOE Manager Portsmouth Paducah Project:** William Murphie

**DOE Deputy Designated Federal Official:** Reinhard Knerr

**DOE Federal Coordinator:** Buz Smith

**Facilitator:** Judy Clayton, Citizens Advisory Board Chair

**U.S. Department of Energy (DOE) related employees:** Larry Newman, Barbara Mazurowski, Bill Franz, Sarah Bynum Roman, Eddie Spraggs, Eddie Magness, Sam Boss, Joe Walker, Janet Miller, LATA Kentucky (LATAKy); Scott Smith, Swift & Staley (SST); Eric Roberts EHI Consultants (EHI); Ted Grossart (UK); Greg Felts; Tony Graham

**Members of the Public:** Evelyn Jeffords, Ricky Ladd, Mark Donham, George Johnson, Corinne Whitehead, Stephanie Brock, Nathan Garner, Jacob Van Winden

### **Introductions**

**Clayton** called the meeting to order. She stated there are only eight Board members present therefore there would be no vote. However, the DDFO will still present and there is a guest presentation. **Clayton** stated there will fifteen minutes allotted for public comment and requested any members of the public wishing to speak to please sign in. **Clayton** then called for round-table introductions.

**Clayton** requested to review the March 17 Agenda, no changes or additions were made. The Agenda was approved as written.

### Deputy Designated Federal Official Comments

**Knerr** introduced **Mazurowski** to present The Cleanup Vision presentation.

All presentations are available on the CAB website at [www.pgdpcab.energy.gov](http://www.pgdpcab.energy.gov)

Question/Comment	Answer
<p><b>Young:</b> What does EPA say about the budgets cuts?</p>	<p><b>Ballard:</b> It is sometimes hard to entertain an argument about cutting costs when DOE and other Federal Agencies make policy decisions that cause costs to go up. FFA has a policy that speaks to budget planning which EPA tries to follow. Has DOE requested enough money to meet its commitments? If the money has been requested and not appropriated, that is good grounds for negotiating priorities.</p> <p><b>Mazurowski:</b> LATA and DOE regulators have agreed to meet the next two weeks as more information becomes available.</p>
<p><b>Young:</b> Are the cuts deeper in Paducah than at other sites?</p>	<p><b>Mazurowski:</b> No, all sites are impacted, as well as all Federal agencies that are making the cuts. We are watching Congress try to avert a government shutdown.</p>

**Knerr** presented overview of the budget process.

All presentations are available on the CAB Website at [www.pgdpcab.energy.gov](http://www.pgdpcab.energy.gov).

Question/Comment	Answer
<p><b>Young:</b> The CERCLA cell is a major project. How does shipping off-site affect this?</p>	<p><b>Knerr:</b> Not in this timeframe, from a regulatory decision making process, we would not be able to make a decision until possibly late FY 2012. At the point when making the decisions, yes, building the cell is a major project that will compete for funds. There has been discussion of possibly trading off with SWMU-4.</p>

	<p><b>Knerr:</b> Things will constantly change and be re-evaluated and reassessed to be efficient and cost effective with the work being done.</p>
<p><b>Kemp:</b> When OMB issues appropriations to DOE, is that site-specific amount or does headquarters get to revise what goes to each facility?</p> <p><b>Young:</b> It sounds like flexibility is going away.</p> <p><b>Young:</b> As the FY 2013 crunch time approaches, I feel that the impact to build a CERCLA cell to save money overrides all other factors.</p>	<p><b>Murphie:</b> In most cases, it is at site-level. There are instances (DUF6) where it is at the total. When it comes to the clean up, Portsmouth and Paducah are split. We have what we call control points and have the ability to move money back and forth between the two. Going forward, however, we may not have the ability to do so. The controls points are moving lower and it is harder for management to move dollars. We can appeal to OMB up until final budget goes to Congress, after that it is locked. After it is finalized we have to do a reprogramming and it is much harder to swap funds around.</p> <p><b>Knerr:</b> Yes everything is getting tighter and tighter. Even harder to switch between PBS accounts. DUF6 is probably the last project that still has flexibility, but not expected to stay that way. We will constantly be re-evaluating the funds allocations.</p> <p><b>Murphie:</b> The budget we have any flexibility with right now is FY 2013, thus we encourage the CAB to move quickly to provide input as we formulate the FY 2013 budget.</p>
<p><b>Zumwalt:</b> What is the deadline for CAB to make a recommendation?</p>	<p><b>Knerr:</b> We are working on an April 15<sup>th</sup> date to get it to headquarters.</p>
<p><b>Ballard:</b> You are not out of compliance if you have asked for the money. The difficulty is trying to move milestones in years where a budget request hasn't been made yet.</p>	<p><b>Murphie:</b> FY 2013 is potentially a year for major non-compliance for DOE. Serious problems are lingering for DOE.</p>

<b>Winner:</b> The State wants DOE to commit to milestones because that puts them at Risk. The real question is how we are going to finish ARRA work. D&D jobs versus more severe environmental damage.	<b>Young:</b> When you look at priorities nationally. Paducah’s highest priority is groundwater, which is third on the National list.
<b>Winner:</b> Are we better finishing Southern sooner? The groundwater will be contaminated for many, many years.	<b>Ballard:</b> We want to get the best bang for our buck while attacking the groundwater at the source.
<b>Kreher:</b> Lots in the news about recreation issues/uses of WKWMA. Department of Fish and Wildlife appreciates the opportunity to create new recreation/bring back suspended recreations.	

**Presentation**

**Grossart** presented KRCEE Future Vision Project

All presentations are available on the CAB Website at [www.pgpcab.energy.gov](http://www.pgpcab.energy.gov)

<b>Question/Comment</b>	<b>Answer</b>
<b>O’Brien:</b> Was this survey before the earthquake in Haiti? The Japan earthquake would affect judgments.	<b>Grossart:</b> It was done after the Haiti earthquake. We are looking at how to incorporate that into future meetings.

**Administrative Issues:** None discussed due to not meeting quorum.

**Subcommittee Chair Comments:** None discussed due to not meeting quorum.

**Public Comments:**

**Vander Boegh:** Approaching sick nuclear workers and town hall meetings. If you ignore sick workers, you are not getting the public input. Most DOE workers left after pushing the nuclear buttons. Everyone in this room needs to understand the beryllium. It’s a top secretive issue at Paducah. Health Services website has lots of information on beryllium health issues and data. Future use could be a penitentiary or a research facility.

**Donham:** I served on this CAB for the first 8 years, as chair for six years, environmental activist, and fought to get CAB formed. This is only the second meeting I have attended since resigning. This study in my opinion is not scientific, not transparent and highly manipulative. I was invited to a meeting by Anna Hoover. I attended the meeting and there were only two of us attending myself and a PRS employee (at request of congressional delegation). Then I was stopped at the door and kept from taking the documents that were given to me during the meeting. This study does not represent the public community. This whole meeting was secretive.

**Ladd:** I am a former member of the CAB. The events in Japan has concerned us all, very concerned for the employees trying to control the fallout. I am requesting that the CAB write a recommendation for the PPPO to make a presentation to the CAB concerning the employee concern program, whistle blower program. And in this presentation I would like them to include how the complaints are received, how they are investigated and resolved. Give the data to show how many were dismissed and how many were actually taken under consideration.

**Mazurowski:** Due to the ARRA, work is going to be completed this year. What is not going to be completed is the C-340 and C-410 demolition ready, but the demolitions will not be done due to the budget. Last meeting, I spoke to you about having no future D&D contracts, we were undergoing a restructuring of our work force and we are still in that process. We are working with DOE at the site and headquarters and waiting for approval of the plan, we expect the approval very soon. With that approval, we will be issuing a Ward Act Notice to give 60 days notice if you are in jeopardy of termination at the end of the 60 days. We have been working with DOE on employee benefits, who will be in the reduction of force. PACRO will have a computer lab, job labs, workspace and help with a resumes.

**Jeffords:** My husband worked here and CBD and benefits are not forthcoming and it has been hard. I am 82 years old. I don't know if they are waiting for me to die or what. My husband died working at this plant, this has been proven. I do not know where the benefits are for him. I am very confused and wish they would get things done. Thank you for your time.

There being no further public comments, **Clayton** asked if there were any additional comments from the table.

**Knerr:** Gary brought up some questions on beryllium last meeting and again tonight. One of the things that we did was we ask LATA to take a look at the program, talk to the workforce out there. They had very good dialog with all the workers out in the field. They communicate very routinely with the types of sampling, results of the sampling and what the regulator requirements are. Barbara has confirmed with the USW Leadership that they are satisfied with the efforts of LATA and DOE going thru to insure worker protection that they are compliant with all Federal Regulations governing the handling of beryllium. We also have federal oversight staff who do oversight activities evaluating the programs that we have in place to show that we are compliant with Federal Regulations. Reviews show that LATA does have a robust program and I have also talked with the evening leadership to try to understand independently what their view is of the beryllium protection program that is in place and they

are confident that LATA is doing what they are suppose to in the accordance with Federal Regulations governing work associated with beryllium.

There being no further business, the meeting adjourned.



U.S. DEPARTMENT OF  
**ENERGY**

## Paducah Cleanup Progress



**DDFO Presentation**

**Reinhard Knerr, Site Lead and DDFO  
Paducah Citizens Advisory Board  
March 17, 2011**

# *Presentation Agenda*

- 2019 Cleanup Vision
- Budget Development



# LATA Environmental Services of Kentucky, LLC

## U.S. Department of Energy Environmental Management Paducah Site Office *Cleanup Vision*

**Barbara Mazurowski**  
Project Manager  
LATA Environmental Services  
of Kentucky

# *Environmental Management: A National Responsibility*

*Paducah 2019 Cleanup Vision*

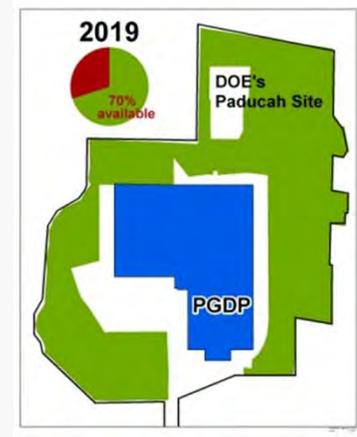
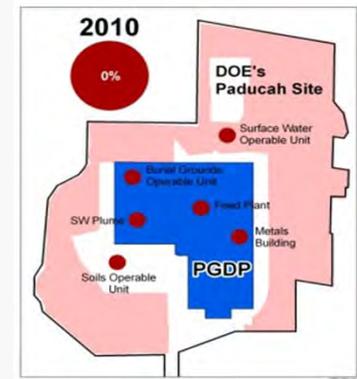
- ✓ We reduce risks and protect our workers, our communities and the environment through cleanup
- ✓ Our work is urgent and essential to the health and economic vitality of our communities and the nation and positions our Sites for future missions and use
- ✓ Our mission is not discretionary—it is a Federal obligation to address the cold war environmental legacy cleanup and honor our regulatory commitments
- ✓ We have demonstrated value for the American Taxpayer by delivering significant progress in the past several years in reducing risks and the overall liability—but our work is not done
- ✓ The Environmental Management portfolio is one of our nation's largest liabilities—we have a responsibility to relieve future generations of this environmental and financial liability
- ✓ Time is not on our side—costs and risks increase over time

# Paducah Site 2019 Cleanup Vision

**Building on ARRA momentum, the Paducah team will:**

*Paducah 2019 Cleanup Vision*

- ✓ Reduce the cleanup cost to American Taxpayers by \$1.5 billion
- ✓ Complete cleanup of more than two-thirds of the site
  - By 2012, significantly reduce the Paducah Site skyline by razing two seven-story, Cold War-era uranium production facilities together spanning about 260,000 square feet
  - American Recovery and Investment-Act funded demolition work will eliminate the last of 21 large, inactive, contaminated facilities; reduce hazards; and eliminate risk to workers and plant neighbors
- ✓ Turn liabilities into assets
  - Experienced workers
  - Electrical grid
  - Uranium
  - Scrap metal
- ✓ Complete Paducah's high-environmental risk legacy cleanup mission; prepare for plant D&D
  - Treat and eliminate eight off-site groundwater contamination areas
  - Close eight unlined, historical disposal areas; excavate eight acres of waste
  - Remove contamination from two off-site creeks totaling six miles



# Return on American Taxpayers' Investment at Paducah – Key Cleanup Accomplishments

## Paducah 2019 Cleanup Vision

Cleanup Scope	Accomplishments To Date	By FY 2019
DUF <sub>6</sub> conversion	Finished constructing DUF <sub>6</sub> conversion plant; started hot functional testing including phased introduction of hydrogen process gas and phased heating of 1st DUF <sub>6</sub> cylinder	Continue operating DUF <sub>6</sub> conversion facility at full capacity; continue disposition of resultant uranium oxide and hydrofluoric acid
D&D of inactive facilities	Removed 19 of 21 inactive facilities totaling 250,000 ft <sup>2</sup>	In 2012, complete demolition of an additional ~260,000 feet <sup>2</sup> of high-hazard, contaminated nuclear-production facilities inactive for over 30 years
Removal of contaminated surface water and sediment	Disposed 40,000 yds <sup>3</sup> of PCB, radioactive and heavy metal contaminated sediments from effluent ditches; removed >33,000 tons of contaminated scrap metal	Complete remediation of two watersheds including removal of contaminated sediments from 6 miles of creeks accessible to the public
Removal of contaminated soil	Removed ~2,700 yds <sup>3</sup> of contaminated soils from historical site operations; investigated >180 potential soil contamination areas totaling >200 acres	Remove 100,000 yds <sup>3</sup> of contaminated soils; make property potentially available for release to the community for re-industrialization
Cleanup off-site groundwater contamination	Treated ~3 billion gallons of groundwater and captured 2,300 gal of TCE; improved TCE capture in NW plume to nearly 100 percent; used thermal treatment system to recover ~2,500 gallons TCE	Complete remediation of the eight sources of off-site groundwater contamination; implement remedy to address treatment of two off-site dissolved-phase plumes; install long-term monitoring system to ensure protection of public and environment
Legacy waste disposal	Characterized and disposed of >1.3 million ft <sup>3</sup> of contaminated legacy waste	Annually dispose of 26,500 ft <sup>3</sup> of newly generated non-project waste; complete Site Treatment Plan waste treatment five years ahead of schedule
Burial grounds remediation	Installed temporary soil covers on three on-site burial ground disposal areas	Complete remediation of eight unlined historical disposal areas, excavate eight acres of waste; complete evaluation to determine need for on-site CERCLA cell

# *Economic Benefits at Paducah*

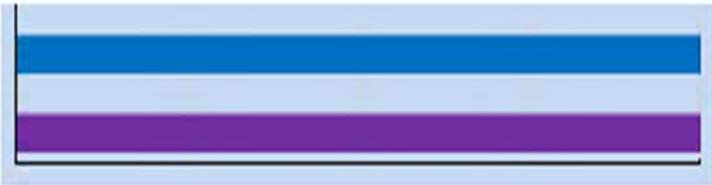
*Paducah 2019 Cleanup Vision*

- ✓ Received \$80M in Recovery Act funds
- ✓ 242 jobs created/saved with Recovery Act funds
- ✓ \$50M of Recovery Act funding paid to date
- ✓ \$79M in Recovery Act prime and subcontracts awarded to small business
- ✓ Approximately \$110M spent on small business Base prime and subcontracts in FY 2010

*Report reflects jobs and small business reporting through the end of FY 2010*

# Recovery Act Performance Metrics at Paducah

Paducah 2019 Cleanup Vision

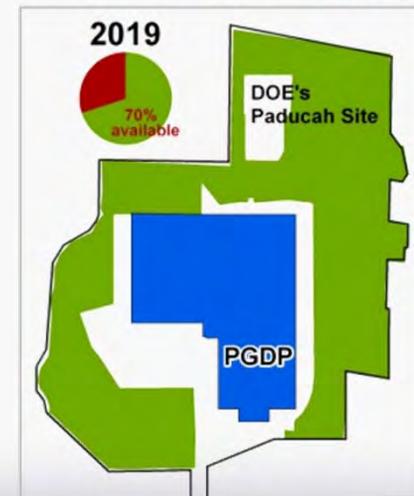
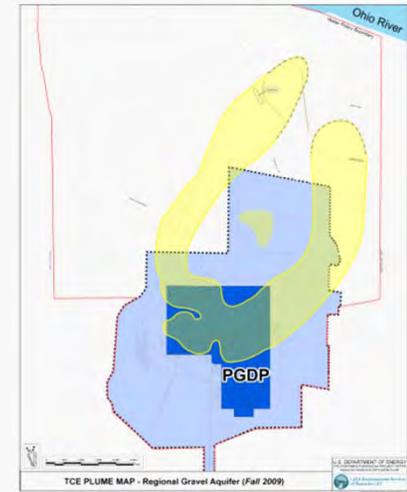
Measure	Actuals to Date	Targets to Date	Total Target	
Facility Square Footage Demolished Gross Square Feet	25,498	0	218,307	
Radioactive Facility Completions Number of Facilities	1	0	1	

Graphic reflects key performance metrics through December 2010

# Paducah is a Sound Investment

- ✓ *Ensure protection of public and environment by completing remediation of:*
  - ✓ *Eight contaminated groundwater sources,*
  - ✓ *Two watersheds including 6 miles of publicly accessible creeks,*
  - ✓ *>200 acres of potentially contaminated soil areas,*
  - ✓ *Eight unlined historical disposal areas, and*
  - ✓ *Installing final treatment systems for two contaminated off-site groundwater plumes.*
- ✓ *Realize \$1.5B lifecycle cost savings*
- ✓ *Alignment with Kentucky and EPA to meet cleanup milestones that protect human health and the environment.*
- ✓ *70% footprint reduction prepares >2/3 of Site for potential reuse as early as 2019, utilizing workforce, land and infrastructure wisely*
- ✓ *Accelerated Environmental Remediation allows liabilities to be turned into assets by recovery of valuable metals from the burial grounds projects, providing immediate benefit to local communities with an emphasis on small business*

## Paducah 2019 Cleanup Vision



# FY 2012 Budget Request to Meet 12088 Requirements

Paducah 2015 Cleanup Vision

PBS	Regulatory Document	Regulatory Requirement	Milestone Date
PA-40	Federal Facility Agreement/Site Management Plan	• Southwest Plume D1 Remedial Design Report	October 18, 2012
PA-40	Federal Facility Agreement/Site Management Plan	• Southwest Plume D1 Remedial Action Work Plan	November 16, 2012
PA-40*	Federal Facility Agreement/Site Management Plan	• 1 Northeast Plume Explanation of Significant Difference	March 30, 2012
PA-40*	Federal Facility Agreement/Site Management Plan	• D1 Northeast Plume Remedial Action Work Plan	March 30, 2012
PA-40	Federal Facility Agreement/Site Management Plan	• D1 Soils Operable Unit Feasibility Study	April 26, 2012
PA-40	Federal Facility Agreement/Site Management Plan	• D1 Burial Grounds Operable Unit Record of Decision	December 16, 2012
PA-40	Federal Facility Agreement/Site Management Plan	• D1 Burial Grounds Remedial Design Work Plan	March 12, 2012
PA-40	Federal Facility Agreement/Site Management Plan	• D1 SWMU 13 Site Evaluation Report	December 7, 2011

\* In FY11 SMP, not approved by EPA and KY yet.

## Outyear Enforceable Milestones

PBS	Regulatory Document	Regulatory Requirement	Milestone Date
PA-40	Federal Facility Agreement/Site Management Plan	• Dissolved Phase Plumes D1 Remedial Action Completion Report	March 31, 2019
PA-40	Federal Facility Agreement/Site Management Plan	• D&D OU D1 Removal Action Completion Notification	September 30, 2017
PA-40	Federal Facility Agreement/Site Management Plan	• Surface Water D1 Remedial Action Completion Report	December 13, 2017
PA-40	Federal Facility Agreement/Site Management Plan	• Soils OU D1 Remedial Action Completion Report	March 22, 2016
PA-40	Federal Facility Agreement/Site Management Plan	• Burial Grounds OU D1 Remedial Action Completion Report	September 30, 2019

# Paducah's Accomplishments by Year

## Paducah 2019 Cleanup Vision

Cleanup Scope	Accomplished prior to 2011	2011	2012	2015	2019	Status (total)
<b>DUF<sub>6</sub> conversion</b>	Finished constructing DUF <sub>6</sub> conversion plant; started hot functional testing including phased introduction of hydrogen process gas and phased heating of 1st DUF <sub>6</sub> cylinder	Complete hot functional testing	Operate DUF <sub>6</sub> conversion facility at full capacity; treat, package and dispose of 18,000 metric tons of depleted uranium and continue disposition of newly generated waste	Continue operating at full capacity	Continue operating at full capacity	Continue operating DUF <sub>6</sub> conversion facility at full capacity; continue disposition of resultant uranium oxide and hydrofluoric acid
<b>D&amp;D of inactive facilities</b>	Removed 19 of 21 inactive facilities totaling 250,000 ft <sup>2</sup>	Remove 60,000 ft <sup>2</sup> of inactive facilities	Complete D&D of two industrial facilities totaling ~260,000 feet <sup>2</sup> ; dispose of all demolition waste, and complete site restoration activities			In 2012, complete demolition of an additional ~260,000 feet <sup>2</sup> of high-hazard, contaminated nuclear-production facilities inactive for over 30 years
<b>Removal of contaminated surface water and sediment</b>	Disposed 40,000 yds <sup>3</sup> of PCB, radioactive and heavy metal contaminated sediments from effluent ditches; removed >33,000 tons of contaminated scrap metal				Complete remediation of 6 miles of creeks, including disposal of 183,000 ft <sup>2</sup> of contaminated sediment	Complete remediation of two watersheds including removal of contaminated sediments from 6 miles of creeks accessible to the public
<b>Removal of contaminated soil</b>	Removed ~2,700 yds <sup>3</sup> of contaminated soils from historical site operations; investigated >180 potential soil contamination areas totaling >200 acres				Remove 100,000 yds <sup>3</sup> of contaminated soils	Remove 100,000 yds <sup>3</sup> of contaminated soils; make property potentially available for release to the community for reindustrialization
<b>Cleanup off-site groundwater contamination</b>	Treated ~3 billion gallons of groundwater and captured 2,300 gal of TCE; improved TCE capture in NW plume to nearly 100 percent; used thermal treatment system to recover 2,500 gallons of TCE	Complete NW plume pump and treat optimization	Treat one of eight TCE sources; complete construction of SW Plume pump and treat system, and initiate operations	Complete NE plume pump and treat optimization; treat three more TCE sources	Operate final dissolved-phase plume remedy; treat two more TCE sources	Complete remediation of the eight sources of off-site groundwater contamination; implement remedy to address treatment of two off-site dissolved-phase plumes; install long-term monitoring system to ensure protection of public and environment
<b>Legacy waste disposal</b>	Characterized and disposed of >1.3 million ft <sup>3</sup> of contaminated legacy waste	Complete Site Treatment Plan waste treatment				Annually dispose of 26,500 ft <sup>3</sup> of newly generated non-project waste; complete Site Treatment Plan waste treatment five years ahead of schedule
<b>Burial grounds remediation</b>	Installed temporary soil covers on three on-site burial ground disposal areas			Complete remediation of six acres of unlined historical disposal areas	Complete remediation of 60 acres of unlined disposal areas	Complete remediation of eight unlined historical disposal areas, excavate eight acres of waste; complete evaluation to determine need for on-site CERCLA cell

# Protect the Public, Environment, and the Vital Missions of the Paducah Site

Maintaining the 2019 investment strategy for Paducah could result in up to 70% of EM's total liability at Paducah being made available for reuse/reindustrialization.

## Paducah 2019 Cleanup Vision



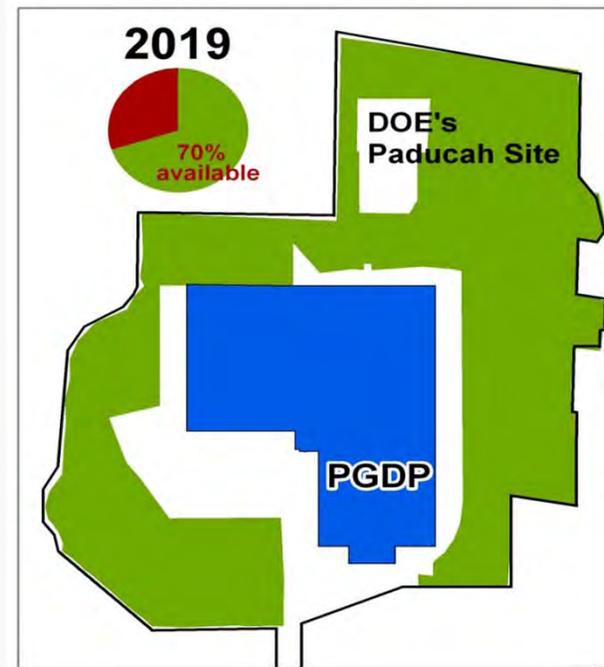
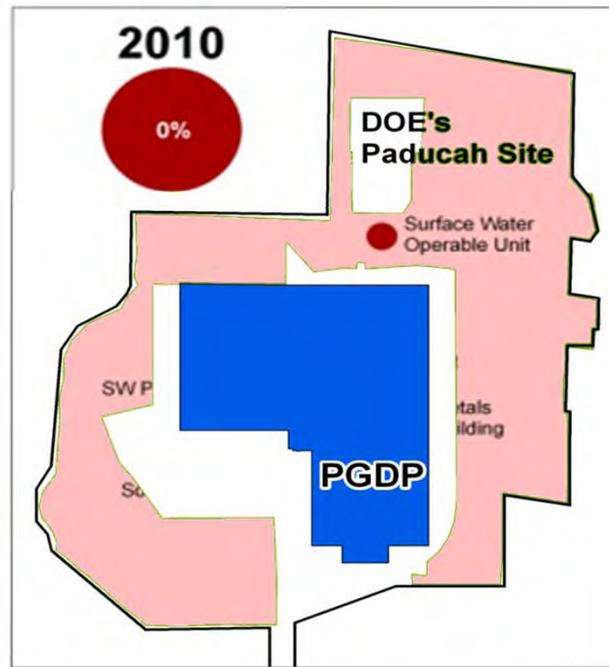
Complete Cleanup



Clear the Decks



Make Land Available



■ Potential for reuse    
 ■ Excluded from reuse

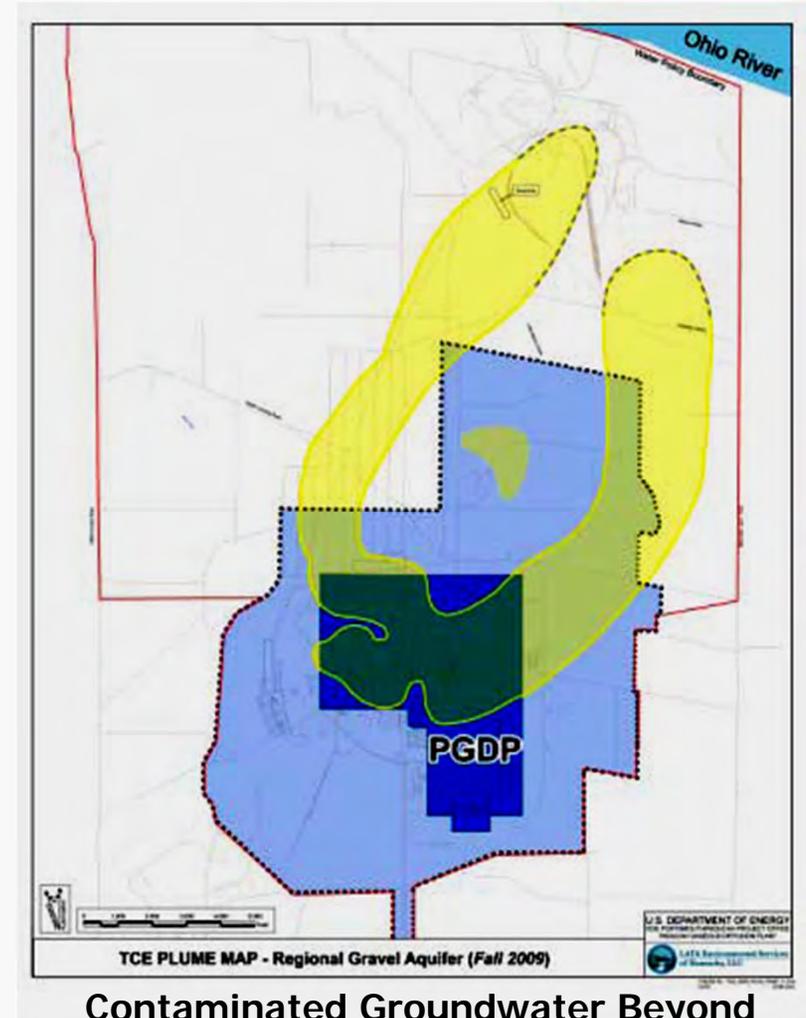
\*Does not include locations of proposed CERCLA cell

# Paducah Site 2019 Cleanup Vision

## Core issue

***Paducah Site is a Superfund site with multiple, complex cleanup issues.***

- Environmental cleanup must move forward to address groundwater and soils contamination.
- Based on the President's directive for flat-line funding, Paducah will not meet its FY 2019 regulatory obligations and commitments.
- Paducah Site needs \$26 million more in both FY 2012 and in FY 2013 to meet our commitment, peaking at an added \$139 million in FY 2016.



**Contaminated Groundwater Beyond DOE Boundary**

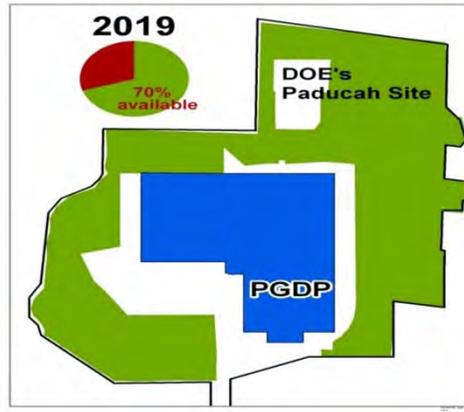
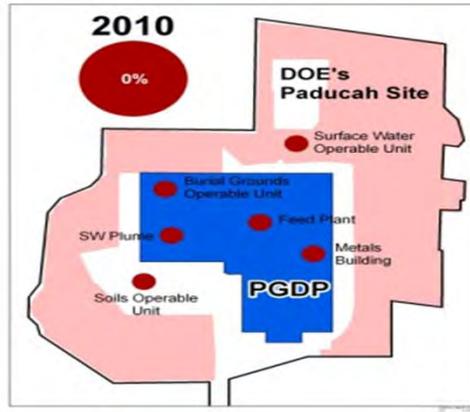
# What's at stake?

***President's directive for flat funding would result in a \$360 million shortfall in FY 2012-2016.***

- Projected Paducah shortfalls: \$26 million in FY 2012 and \$26 million in FY 2013. The additional funding is needed to finish work by FY 2019 to meet regulatory cleanup commitments.
- Protects public by addressing DOE's two largest offsite groundwater plumes and their sources.
- Reuses assets such as uranium sales and recycled scrap metal to mitigate funding shortfall, achieve results and reduce taxpayer liability.
- Prepares Site for reindustrialization and makes infrastructure assets, such as electrical grid and water treatment plant, available.



# Footprint Reduction



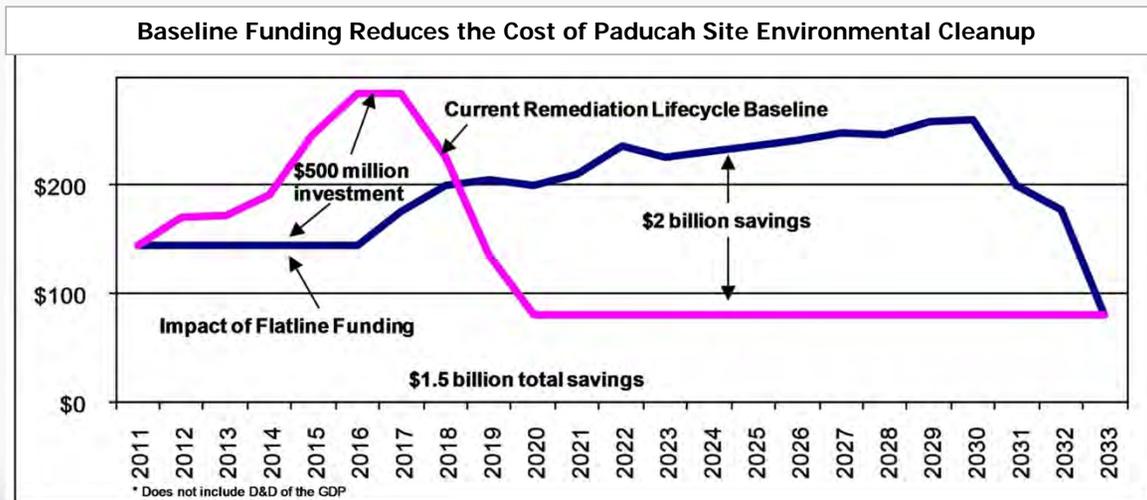
■ Potential for reuse      ■ Excluded from reuse  
 \*Does not include locations of proposed CERCLA cell

Maintaining the 2019 investment strategy for Paducah could result in up to 70% of EM's total liability at Paducah being made available for reuse/redindustrialization

### Return on Taxpayer Investment

Short-term Investment \$ 500 million  
Taxpayer Savings: \$ 1.5 billion

- Avoids 13-year delay to complete clean-up
- Meets existing Regulatory Milestones
- Uses workforce, land and infrastructure wisely



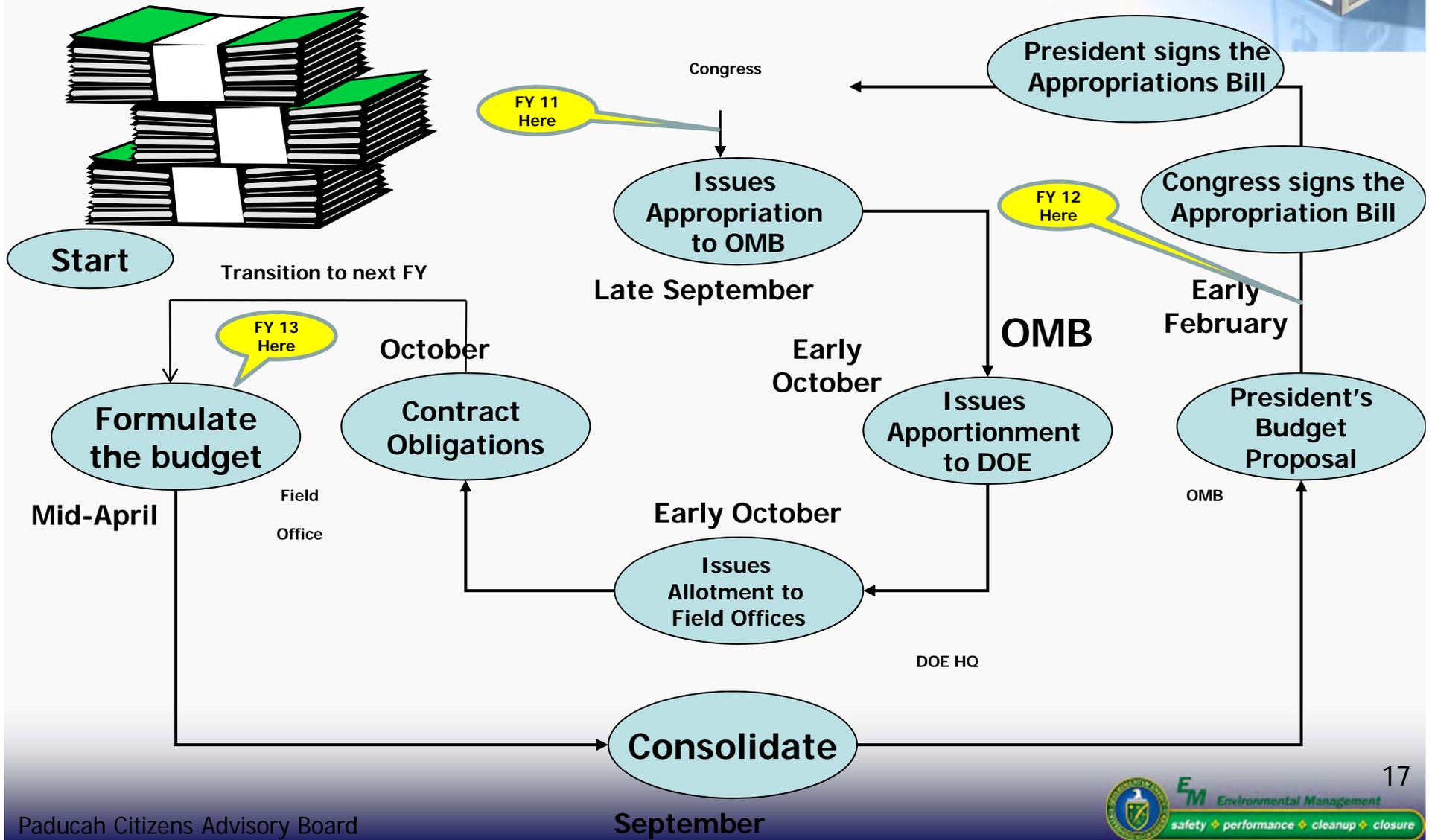
**FY 2013**

**DOE EM Budget Development  
Paducah Gaseous Diffusion  
Plant**

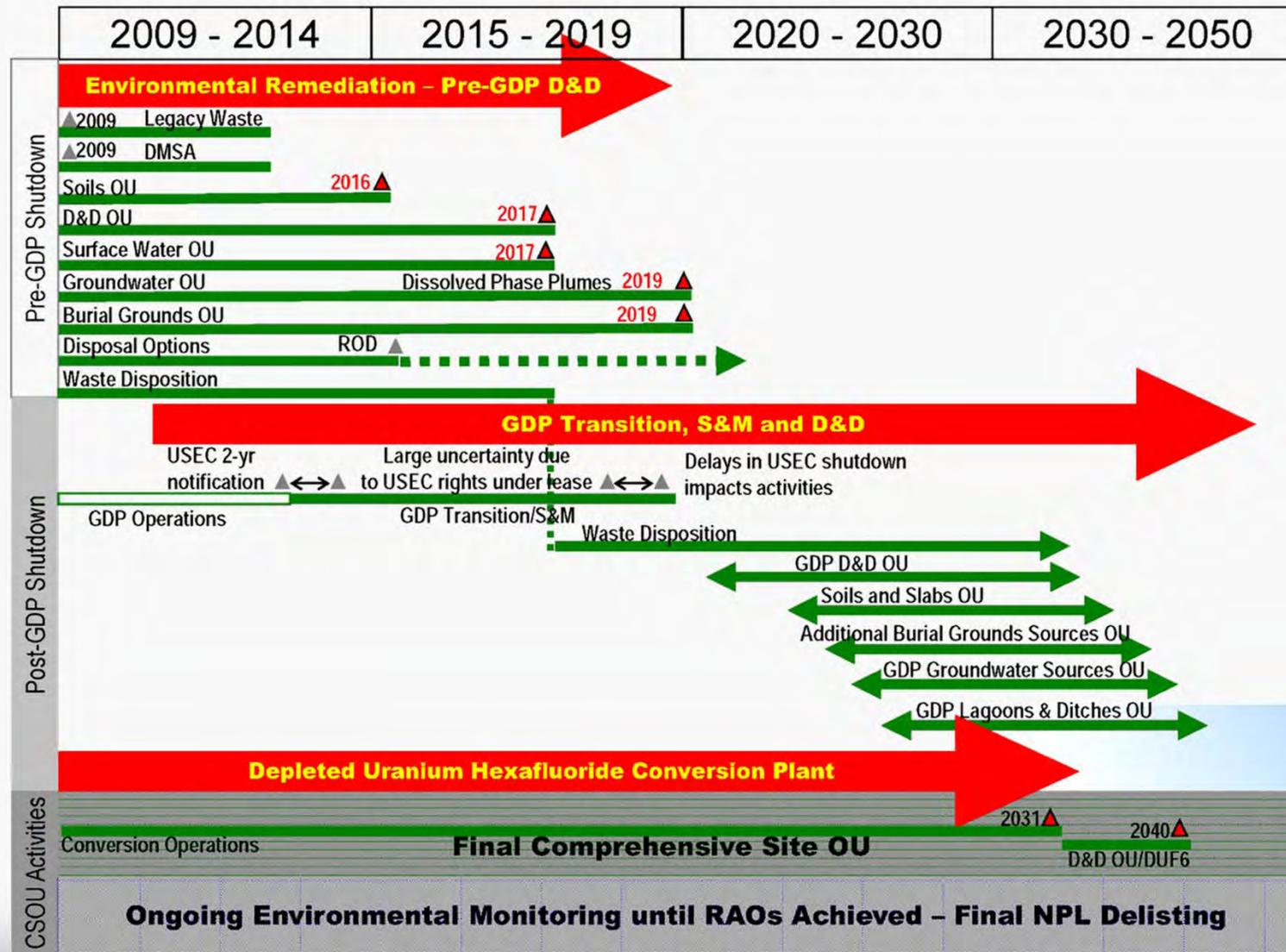
Reinhard Knerr



# Fiscal Year Budget Process



# Paducah Cleanup Schedule



# Target Funding Levels<sup>1</sup>

PBS	FY 10	FY 11	FY 12 <sup>2</sup>	FY 13 <sup>3</sup>	FY 14 <sup>3</sup>	FY 15 <sup>3</sup>	FY 16 <sup>3</sup>
PA-0013 - Waste Management	13,218	7,746	7,115	6,983	7,877	8,181	8,303
PA-0040 - Cleanup and S&M	99,045	72,156	70,665	70,375	67,851	66,299	64,450
EM Cleanup - Project Level Subtotal	112,263	79,902	77,780	77,358	75,728	74,480	72,753
PA-0011 - Uranium Enrichment (PCBs)	248	2,476	1,369	1,392	1,415	1,439	1,466
PA-0020 - Safeguards and Security	8,190	8,496	9,435	8,909	9,124	9,342	9,566
PA-0102 - DOE Directs	1,536	1,531	1,534	904	901	476	486
PA-0103 - CAB and AIP	2,647	2,580	2,580	3,891	3,972	4,057	4,143
EM Cleanup Operations LOE Subtotal	12,621	15,083	14,918	15,096	15,412	15,314	15,661
PA-0011X - DUF6	47,243	50,015	51,071	52,546	53,860	55,206	56,586
Total Projected Funding	172,127	145,000	143,769	145,000	145,000	145,000	145,000

<sup>1</sup> FY 2012 – 2016 Budget Formulation Guidance

<sup>2</sup> President's request

<sup>3</sup> Consistent with flat line funding based upon President's request

# Summary Level Scope/Budget Breakdown

## PADUCAH INTEGRATED PRIORITY LIST

1. IMMINENT THREATS		
FY 11 - \$0	FY 12 - \$0	FY 13 - \$0
• No activities at Paducah currently are identified in this category	• No activities at Paducah currently are identified in this category	• No activities at Paducah currently are identified in this category
2. BASE OPERATIONS		
FY 11 - \$115,093K	FY 12 - \$122,000K	FY 13 - \$120,076K
• Security	• Security	• Security
• UF <sub>6</sub> Cylinder Maintenance	• UF <sub>6</sub> Cylinder Maintenance	• UF <sub>6</sub> Cylinder Maintenance
• DUF <sub>6</sub> Conversion Facility	• DUF <sub>6</sub> Conversion Facility	• DUF <sub>6</sub> Conversion Facility
• Surveillance and Maintenance	• Surveillance and Maintenance	• Surveillance and Maintenance
• Waste Operation	• Waste Operation	• Waste Operation
• DOE Directs	• DOE Directs	• DOE Directs
• CAB and AIP	• CAB and AIP	• CAB and AIP
3. ENFORCEABLE COMMITMENTS		
FY 11 - \$29,152K	FY 12 - \$21,769K	FY 13 - \$24,924K - \$76,859K
<b>3.1 Federal Facilities Agreement</b>	<b>3.1 Federal Facilities Agreement</b>	<b>3.1 Federal Facilities Agreement</b>
• C-400 Action	• C-400 Action	• C-400 Action
• Burial Grounds	• Southwest Plume Sources	• C-340 D&D
• Surface Water Operable Unit (On-site)	• CERCLA Waste Disposal	• C-410 D&D
• C-410 D&D	• Burial Grounds	• C-410 D&D
• Inactive Facilities	• Groundwater Northeast Plume Optimization	• CERCLA Waste Disposal
• Southwest Plume Investigation	• Dissolved Phase Plumes	• Southwest Plume Sources
• Surface Soil Operable Unit	• Soils Remedial	• Groundwater Northeast Plume Optimization
	• Surface Water Remedial	• Burial Grounds
	• C-410 D&D	• Dissolved-Phase Plumes
	• C-340 D&D	• Surface Water Remedial
		• Soils Remedial
<b>3.2 Site Treatment Plan</b>	<b>3.2 Site Treatment Plan</b>	<b>3.2 Site Treatment Plan</b>
• TRU Waste		
<b>3.3 TSCA FFCA Wastes</b>	<b>3.3 TSCA FFCA Wastes</b>	<b>3.3 TSCA FFCA Wastes</b>
4 Remaining Work		
FY 11 - \$755K	FY 12 - \$0	FY 12 - \$0
• CERCLA Waste Disposal Evaluation		



Note: FY 12 Integrated Priority Lists aligns with the FY 12 President's request



**DOE Portsmouth/Paducah Project Office**

# PGDP Future Vision Project



[www.uky.edu/krcee/project23.html](http://www.uky.edu/krcee/project23.html)

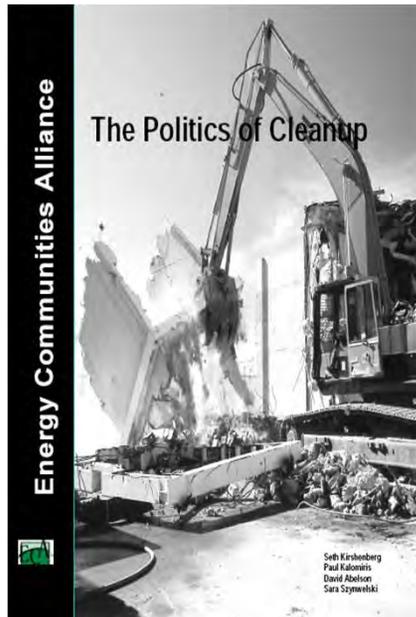
# Project Objectives

1. Provide scoping/facilitation/document support for activities related to developing a publicly acceptable PGDP End State Vision for the PGDP based on "Politics of Cleanup" approaches.
2. Solicit, measure and characterize a reliable understanding of public and stakeholder values and preferences regarding a "PGDP End-State Vision Document."
3. Provide insight, development, and deployment of process methods to accomplish "2".

# Project Team

- DOE Technical Liaison
  - Rich Bonczek (DOE)
- UK Technical Liaison
  - Steve Hampson (University of Kentucky)
- Project Manager
  - Dr. Lindell Ormsbee (University of Kentucky)
- Community-Based Participatory Communication
  - Dr. Chike Anyaegbunam (University of Kentucky)
- Structured Public Involvement
  - Dr. Ted Grossardt (University of Kentucky)
- Casewise Evaluation
  - Dr. Keiron Bailey (University of Arizona)
- Scenario Visualization
  - John Ripy, Ben Blandford (University of Kentucky)
- Facilitation/Logistics/Technical Support
  - Anna Hoover, Mitchael Schwartz, Jason Martin, Chas Hartman

# Process Components



Guiding Principles

## Qualitative Tools

- Listening Tour
- Community-Based Participatory Communication

## Quantitative Tools

- Structured Public Participation
- Casewise Visual Evaluation

Tool Box



Evaluation Metric

# STEP ONE: Background Research and Listening Tour

*April 13, 2009 – August 5, 2009*

## Goals

- Identify Critical Issues
- Discover Previously-Identified Scenarios
- Distinguish Stakeholder Clusters

### *Background Resources*

- 1995 Oak Ridge Study
- DOE RBES
- KRCEE Land Study
- ATSDR Study
- CAB Minutes
- Newspaper Archives
- 2008, 2009 DOE Public Meetings

### *Listening Tour*

- KRCEE-Identified Stakeholders
- *Snowball Sampling*
- Stakeholder-Identified Stakeholders

# STEP TWO: Community-Based Participatory Communication Focus Groups

*August 5, 2009 – May 5, 2010*



## Goals

- Solicit community values
- Discuss perceptions about the plant's future
- Identify information gaps and credible sources

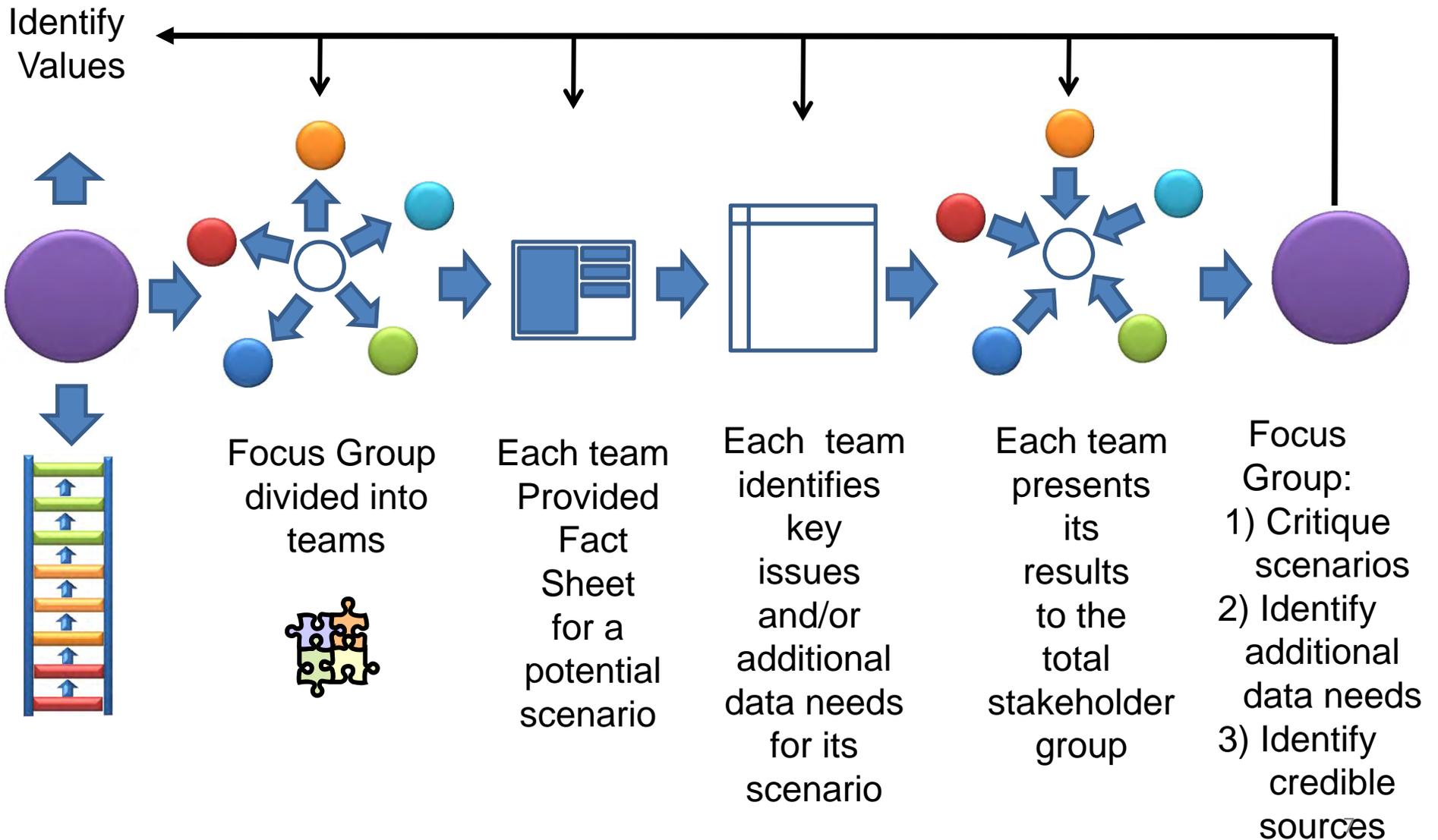
### *Small Group Discussions*

- Blind scenario selection
- Identify scenario-related key issues/data needs
- Present scenario/discussion results to re-assembled group

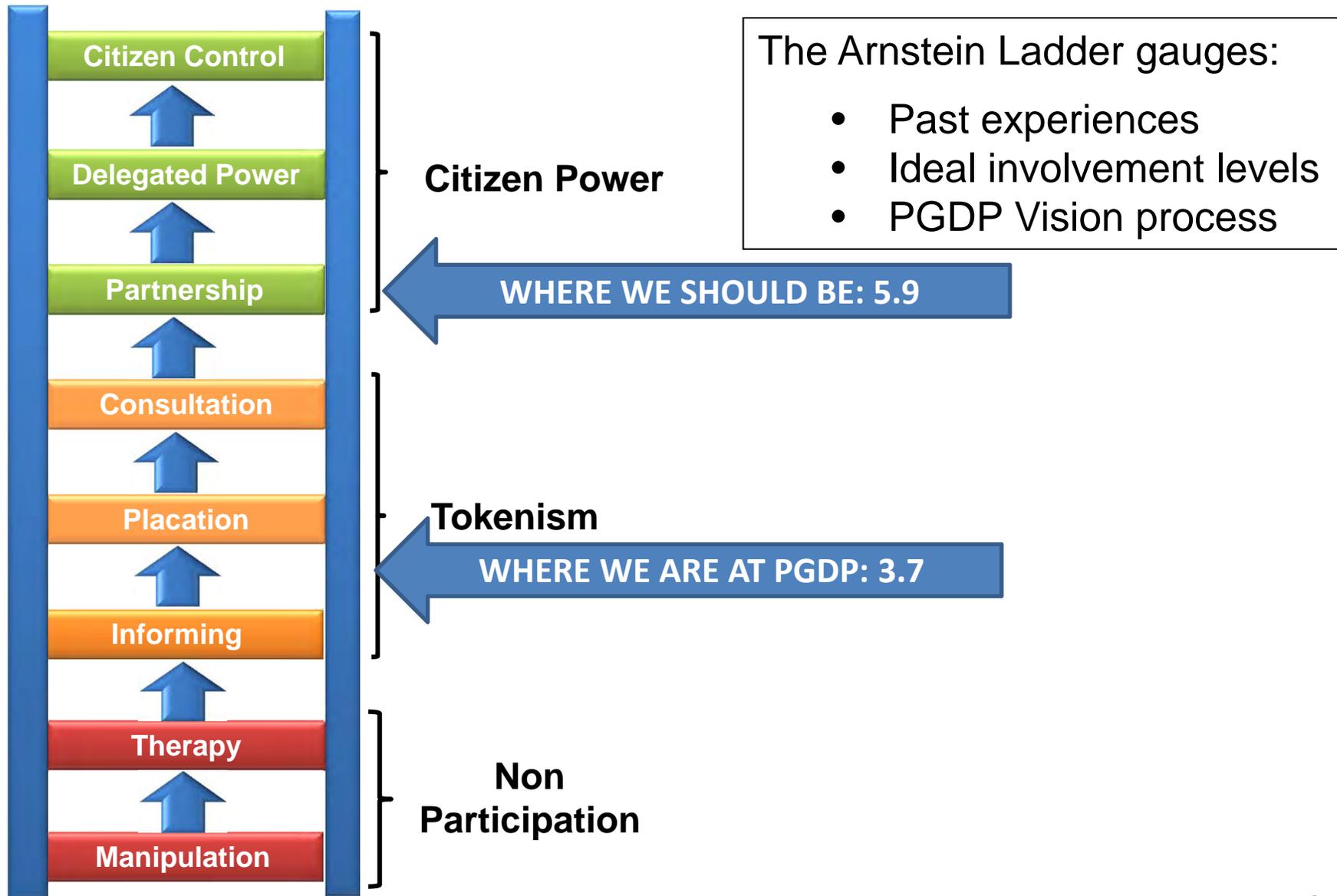
### *Assembled Group*

- Community values discussion
- Scenario critiques
- Information gap identification
- Credible sources

# Community Based Participatory Communication (CBPC)



# Arnstein Ladder of Citizen Participation



The Arnstein Ladder gauges:

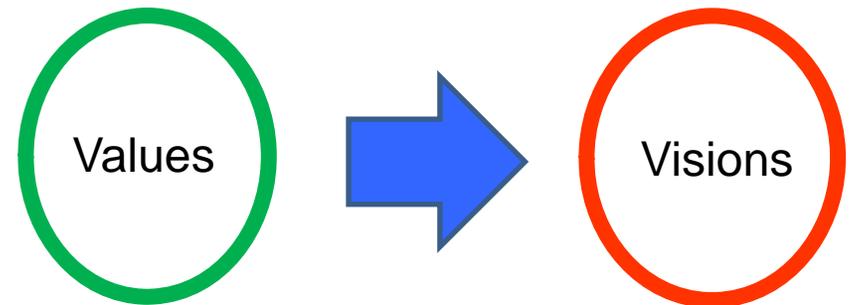
- Past experiences
- Ideal involvement levels
- PGDP Vision process

(Arnstein 1969)

# Value Exercises

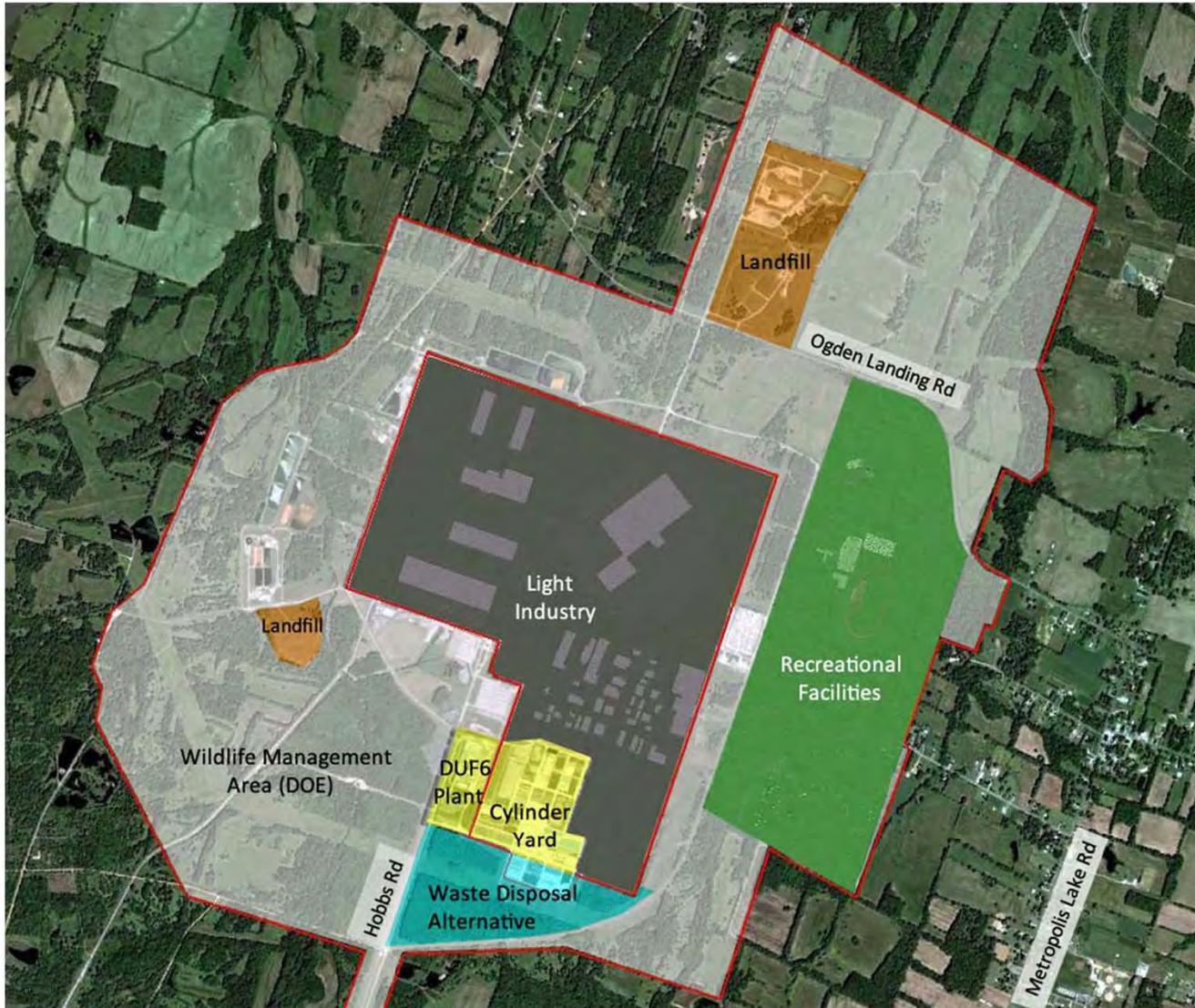
- Appealing characteristics of the local community
  - Sense of community/community spirit
  - Heritage/tradition/family/“roots”
  - Friendliness
  - Outdoor recreation
  - Rural lifestyle with proximity to urban areas
  - Scenic Beauty
  - Safety
  - Cultural/arts opportunities
- Characteristics of the ideal city
  - Jobs and economic opportunities
  - Clean environment
  - Safety
  - Kid-friendly
  - Scenic beauty
  - Education
  - Affordability

Values were used to evaluate hypothetical future visions (i.e. scenarios)



# Future Vision Scenarios

S#	PGDP Landuse						WMA Land Use		Future Waste Ship Off Site:			Legacy Waste Excavate:	
	NE	HI	LI	AR	PR	IC	Addl Rec	Exist	None	Part	All	All	Part
1	x							x	x			x	
2	x			Industrial Land uses				x		x			x
3		x		Industrial Land uses			x				x	x	
4		x						x	x				x
5			x				x			x		x	
6			x					x			x		x
7				x				x		x			x
8				x			x		x			x	
9					x		x				x		x
10	Non Industrial Land uses				x			x		x		x	
11	Non Industrial Land uses					x		x			x	x	
12						x	x		x				x



## Scenario 5

\*Light Industry on Plant Site

\* Active Recreational Facilities added to PGDP WMA

\* Part of Plant Decommissioning Waste kept onsite in WDA and part placed in managed Landfill

\* All Existing Burial Grounds excavated, some placed in the WDA and the rest shipped off-site.



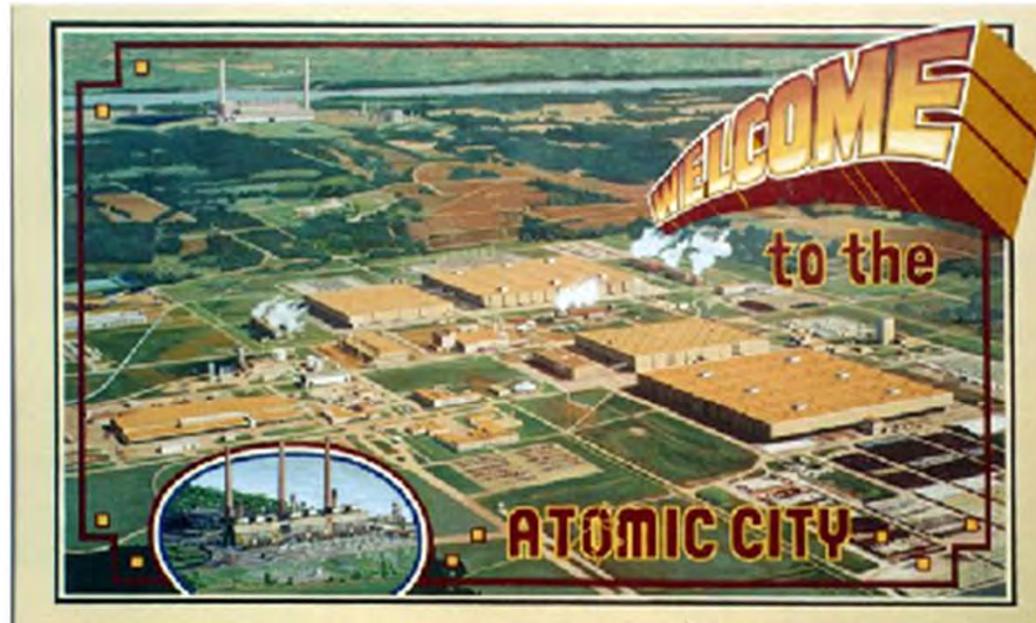




Welcome

### Project History

In 2003, the [Kentucky Research Consortium for Energy and Environment \(KRCEE\)](#) was created at the [University of Kentucky](#). The Consortium's mission is to provide technical support to the [US Department of Energy \(US DOE\)](#), the [US Environmental Protection Agency \(US EPA\)](#), and the [Kentucky Division of Waste Management](#) regarding non-consensus issues associated with clean-up efforts at the Paducah Gaseous Diffusion Plant (PGDP), a National Priority List (NPL) Superfund site.



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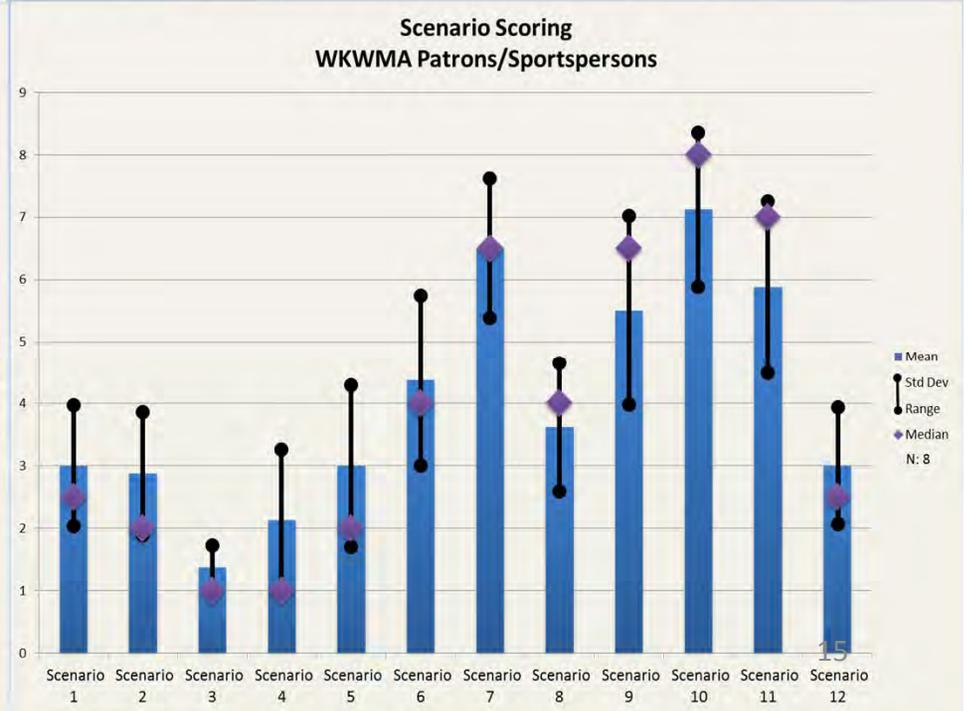
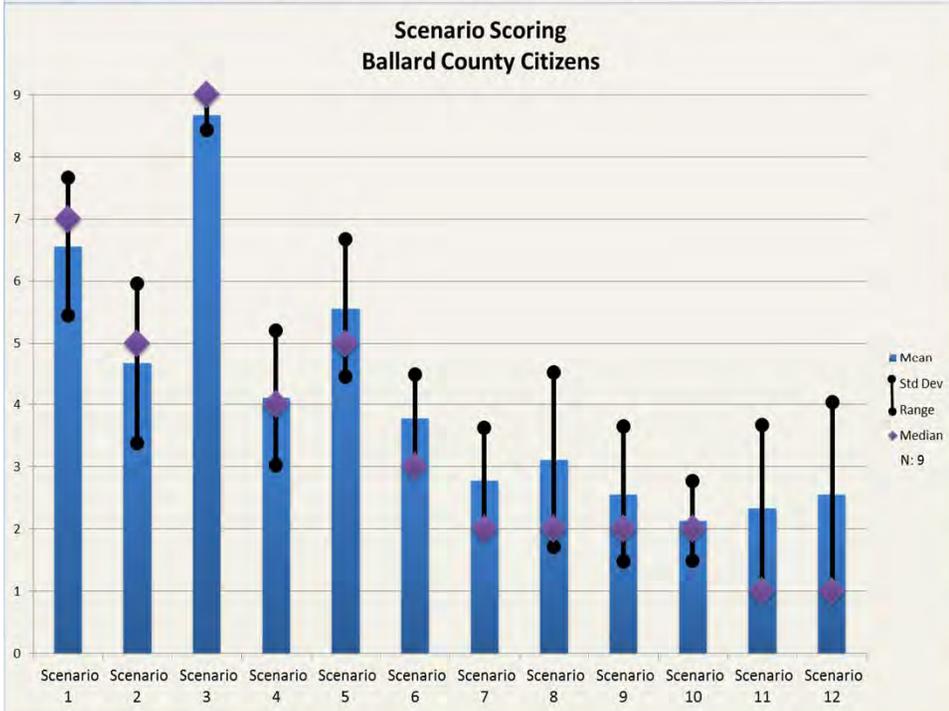
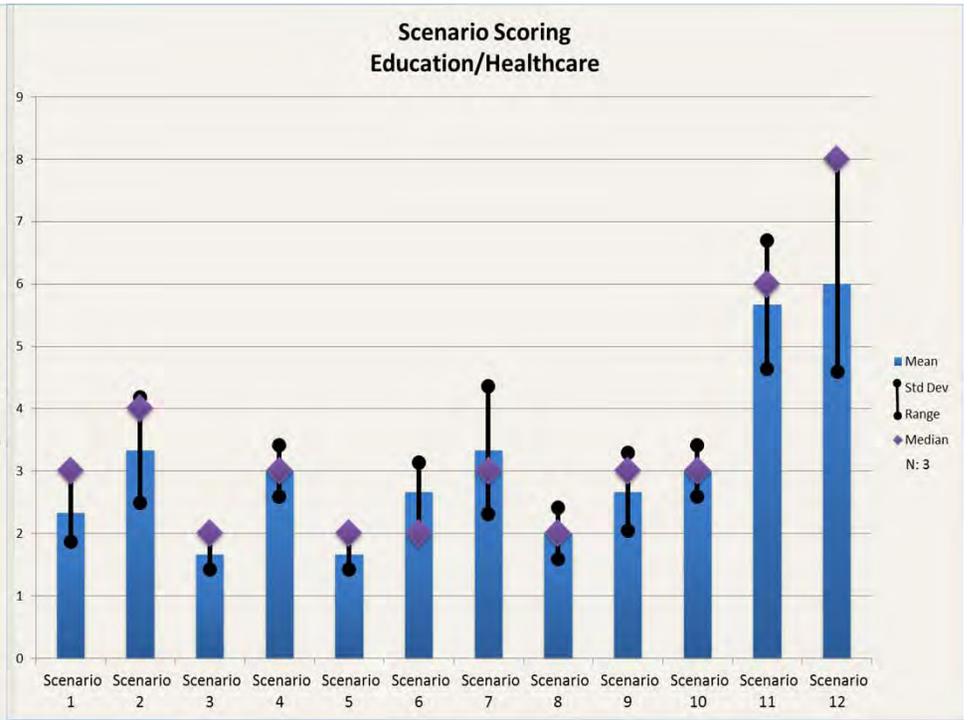
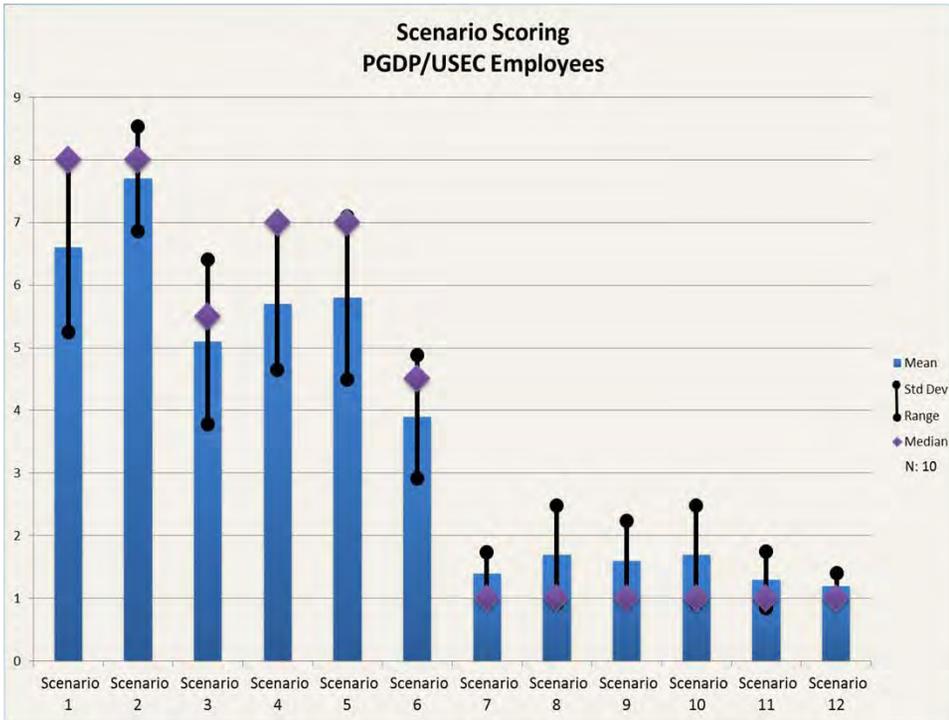
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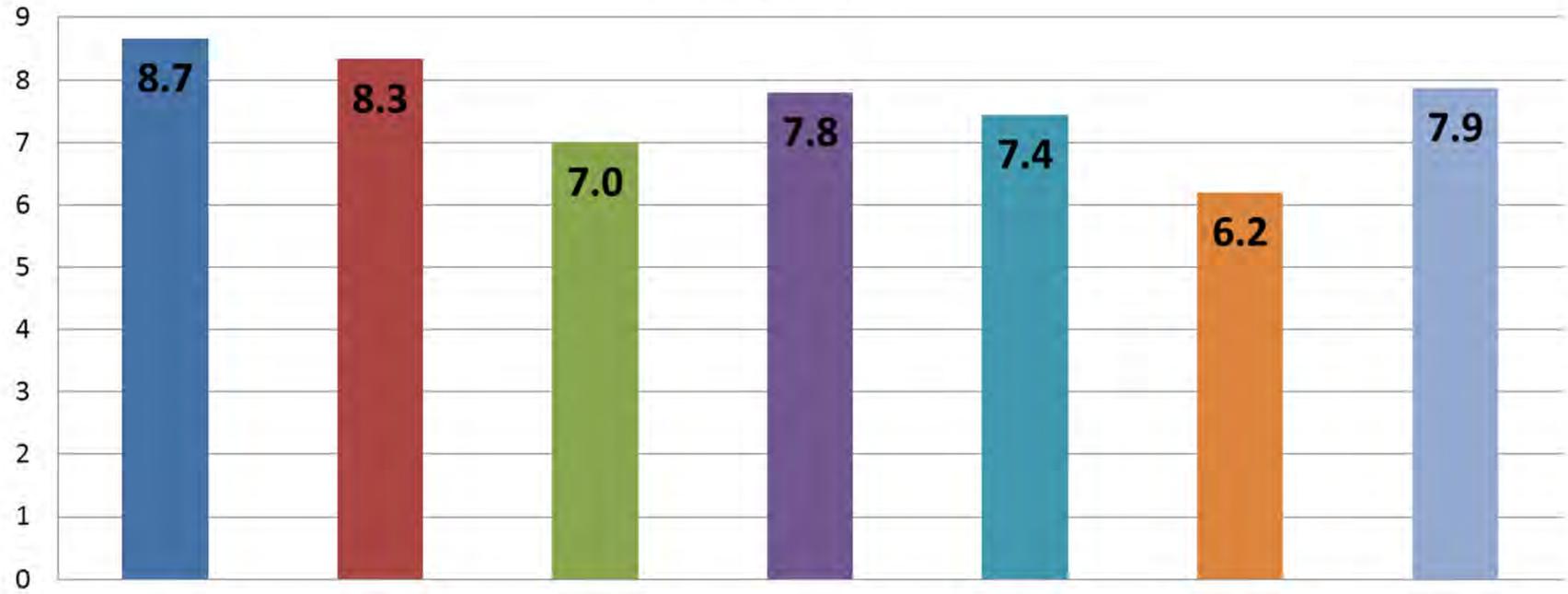
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## Process Rating by Meeting

Previous



Ballard County Citizens

Economic Development/Local Government

Education/Healthcare

PGDP/USEC Employees

US DOE Employees/Subcontractors

Water Policy District Residents

WKVMA Patrons/Sportspersons

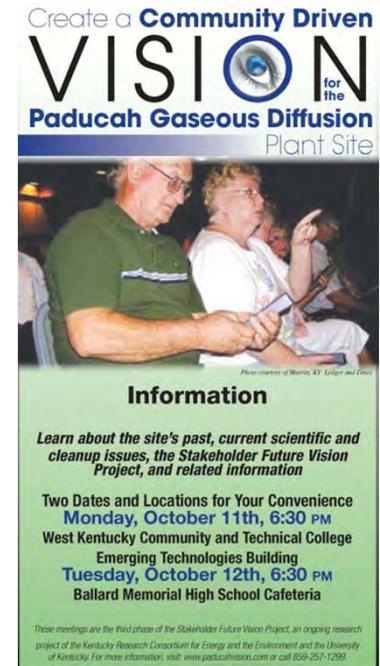
# STEP THREE: Public Informational Meetings

May 6, 2010 – October 12, 2010



## Goals

- Research Informational Needs
  - Inform Public of Study
  - Hold informational meetings
  - Post information on Website



### *Information Meetings*

- 30 Multiple Choice Questions
- 5 Categories
- “Jeopardy” Format
- Opportunity for follow up questions

### *Assembled Group*

- Community values discussion
- Scenario critiques
- Information gap identification
- Credible sources

# STEP FOUR: Public Scenario Scoring Meetings

October 25, 2010 – October 27, 2010

Create a **Community Driven**  
**VISION** for the  
**Paducah Gaseous Diffusion Plant Site**



**Vote on several land use options, including:**

- Permanent Site Closure
- Expanded Wildlife Management
- Recreation Areas
- Heavy Manufacturing
- Light Industry
- Nuclear Industry

**Give us your ratings, participate in democracy, and influence your community's future!**

**Two Dates and Locations for Your Convenience**

**Monday, October 25th, 6:30 PM**  
West Kentucky Community and Technical College  
Emerging Technologies Building

**Tuesday, October 26th, 6:30 PM**  
Ballard Memorial High School Cafeteria

These meetings are the third phase of the Stakeholder Future Vision Project, an ongoing research project of the Kentucky Research Consortium for Energy and the Environment and the University of Kentucky. For more information, visit: [www.paducahvision.com](http://www.paducahvision.com) or call 859-257-1299.

## Goals

- Introduce Scenarios
- Answer Questions
- Score Scenarios
- Solicit Participant Scenarios
- Score Participant Scenarios

Create a Community-Driven Vision for the  
Paducah Gaseous Diffusion Plant Site



Photo courtesy of Marisa, KY Ledger and Times

**Future Scenarios Meeting**  
Give us your rating for twelve examples of options for the future of the plant site.  
Two Dates and Locations for your convenience

**Monday, October 25th, 6:30 p.m.**  
West Kentucky Community and Technical College  
Emerging Technologies Building

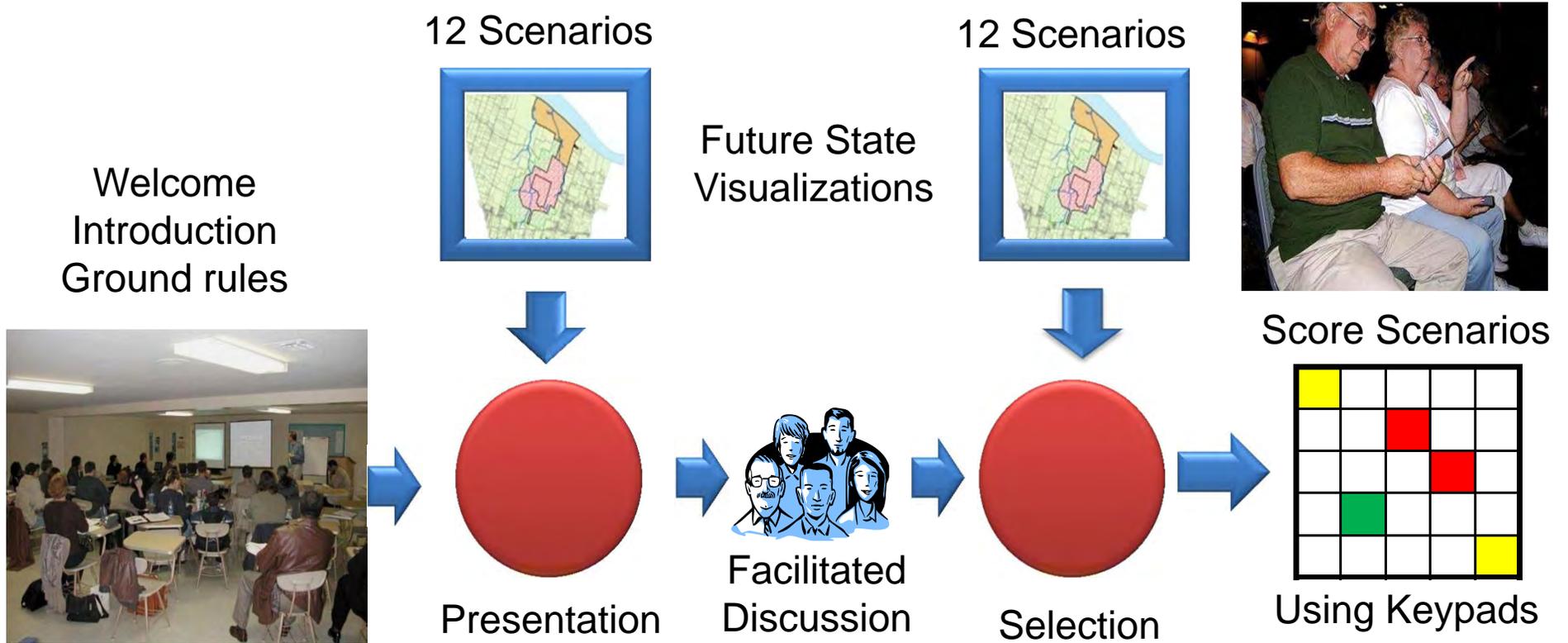
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## Scenario Scoring Meetings

- 12 Scenarios
- Utilize Structured Public Involvement Process
- Utilize Key Pad Technology

# Structured Public Involvement (SPI)

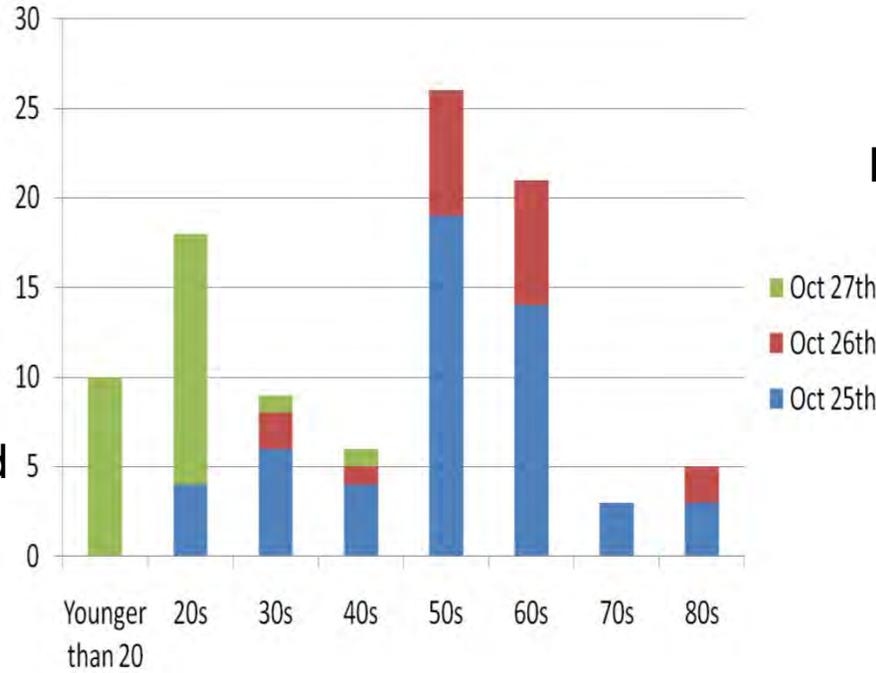


- **Chauffer** manages and operates equipment, enters comments solicited from participants
- **Emcee's** job is to enforce democratic process, keep process moving and on track
- **SME** interprets, aids understanding, helps avoid misinformation



# Age Demographics

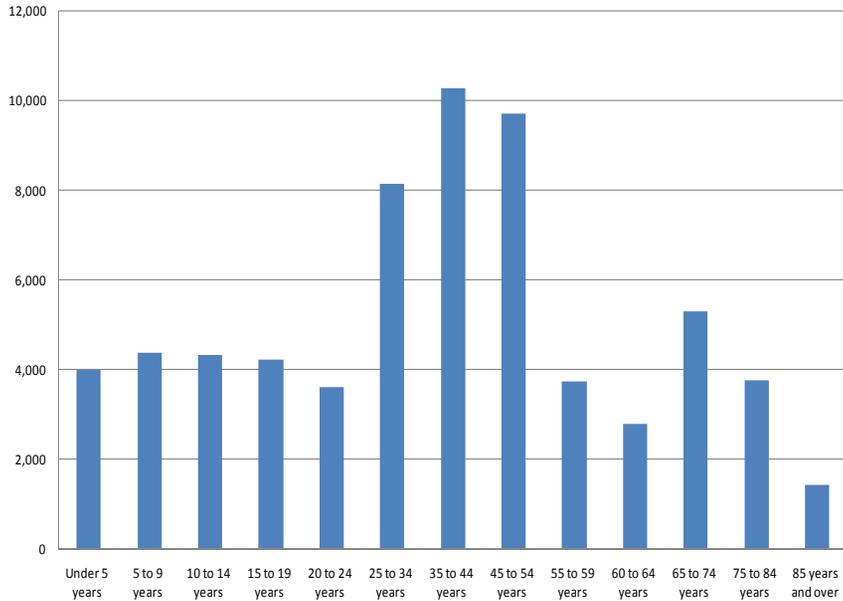
Data collected to date have a gap in the 30s and 40s, which is the largest demographic in both McCracken and Ballard Counties.



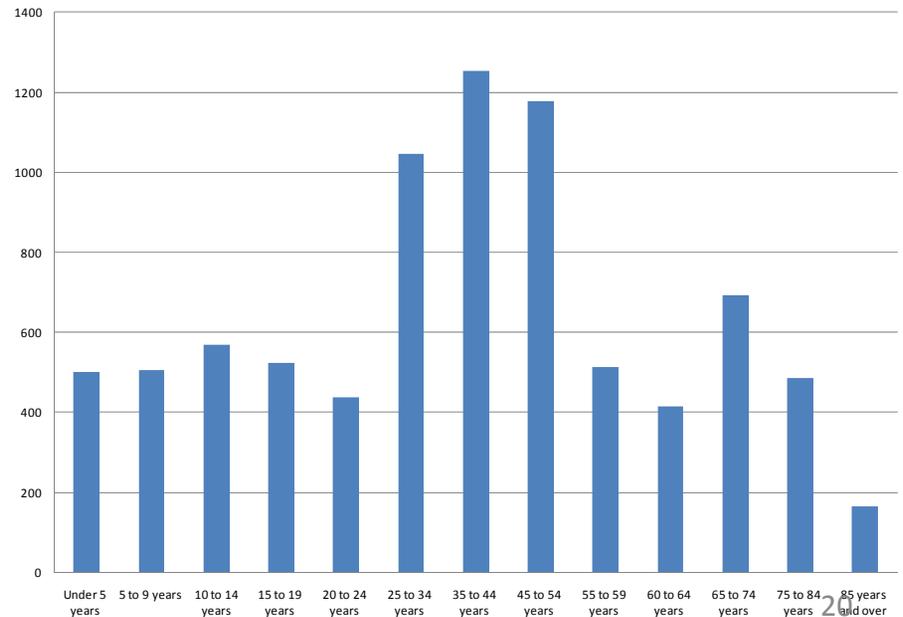
Missing segment  
In which jobs and kids  
are especially  
Important.

Harder for this  
demographic to  
attend meetings.

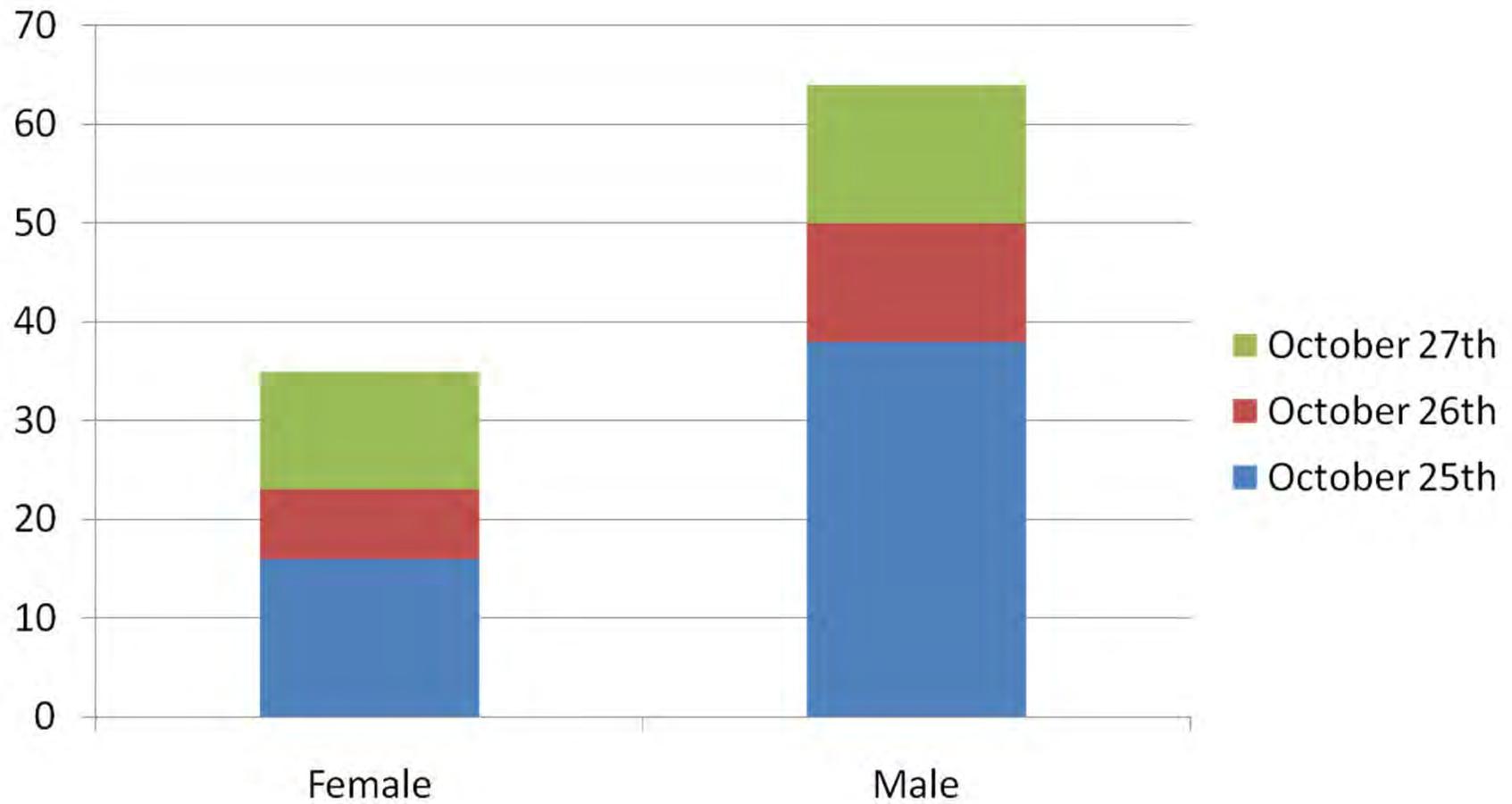
McCracken County Age Distribution



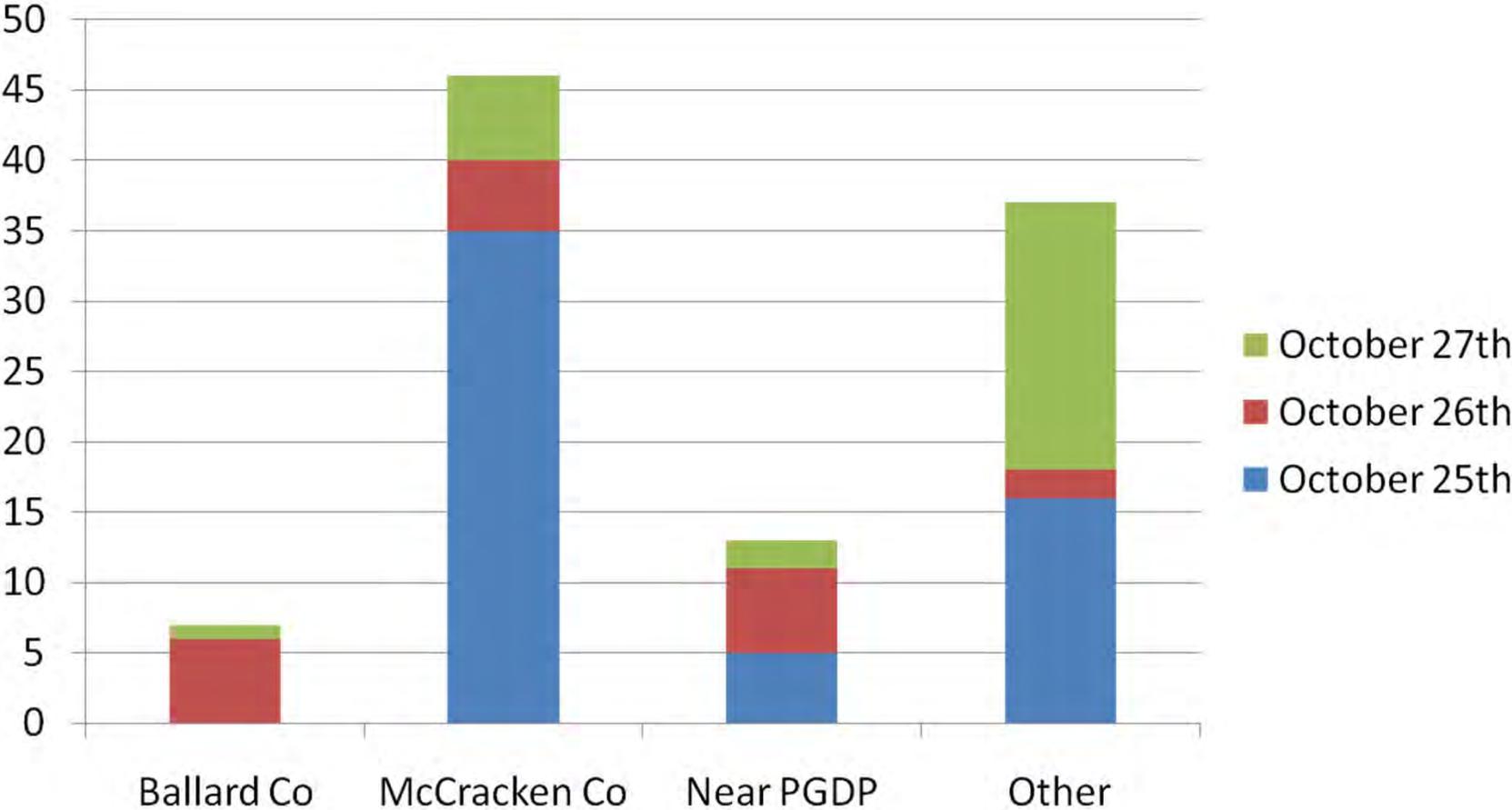
Ballard County Age Distribution



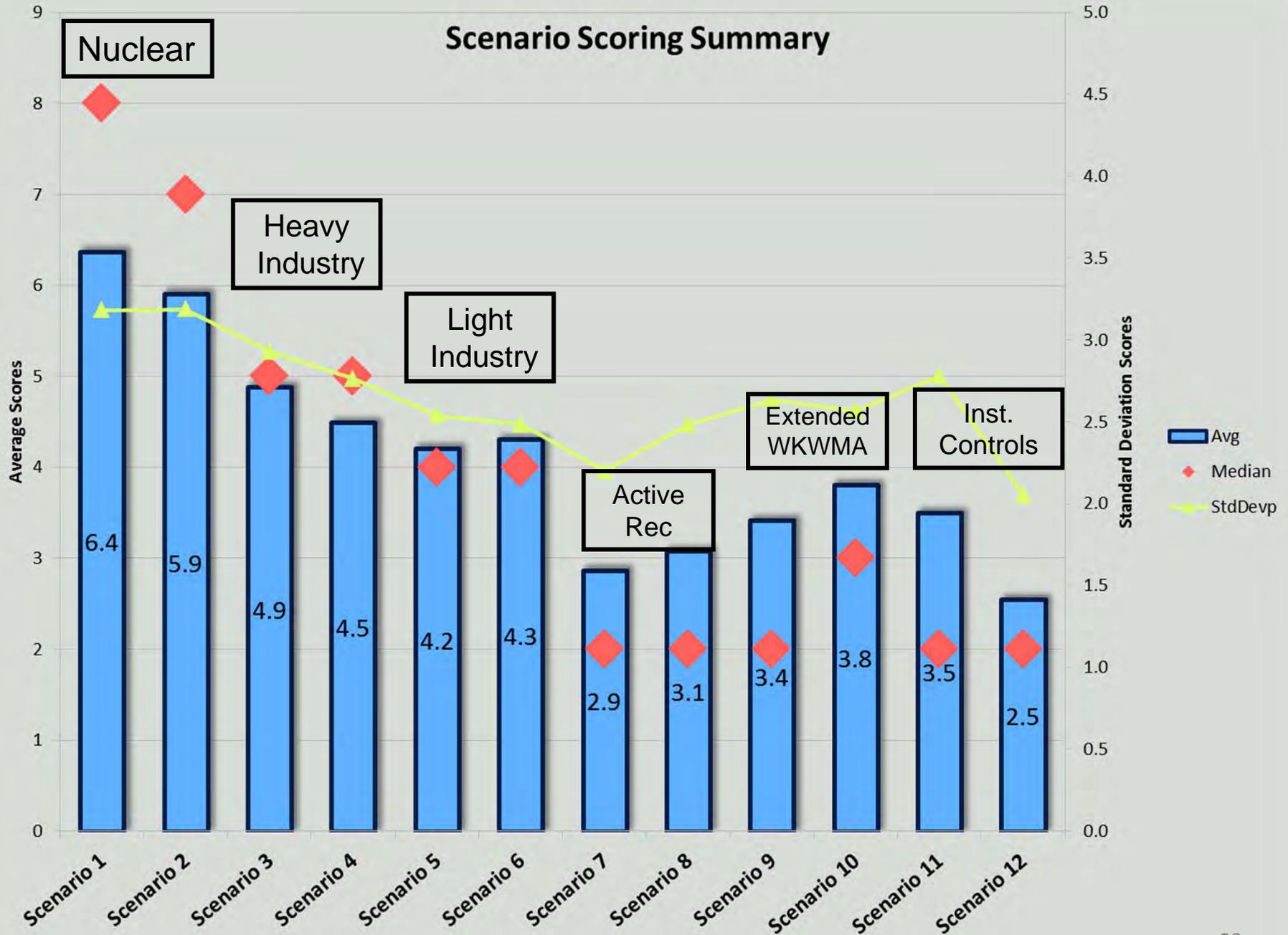
# Women/Men?

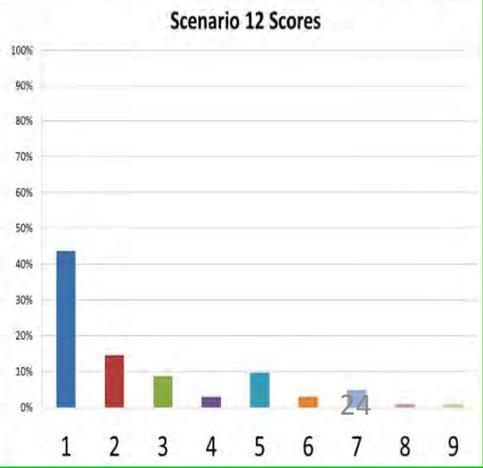
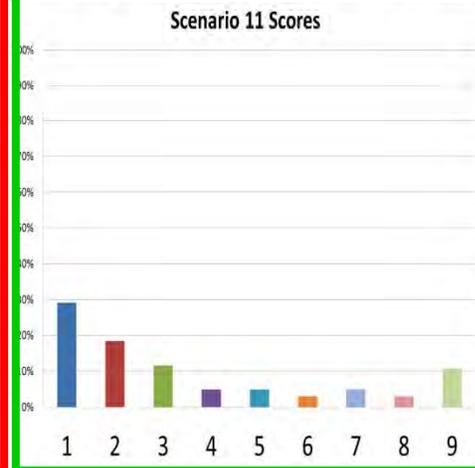
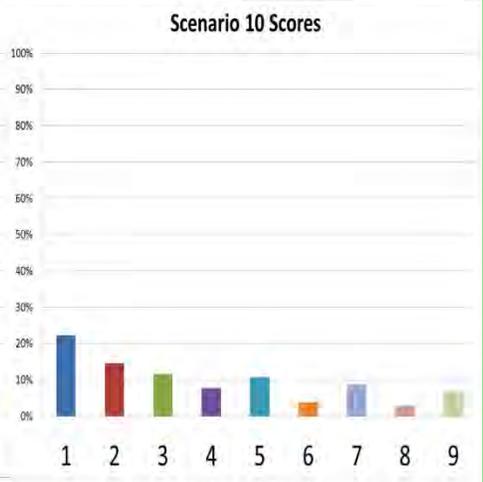
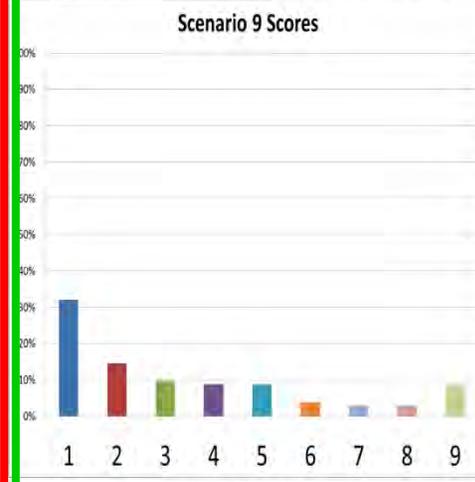
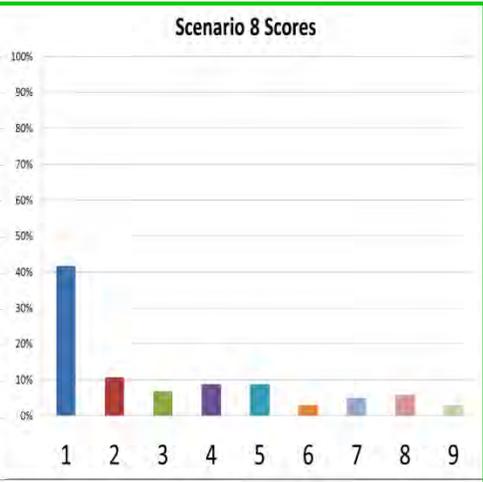
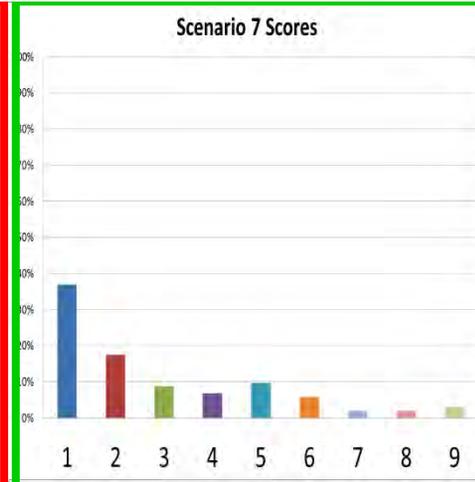
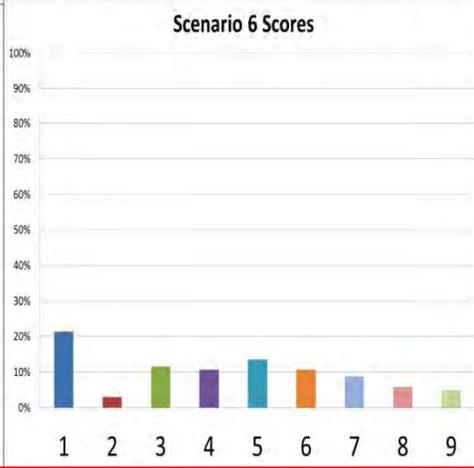
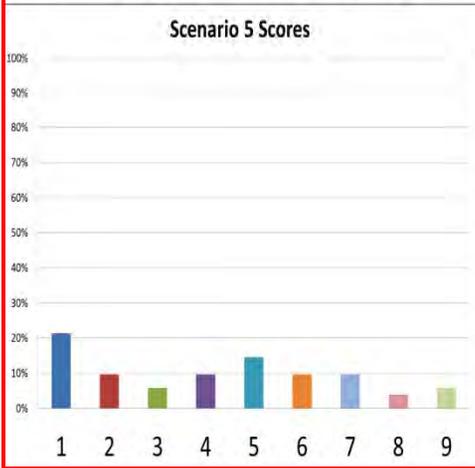
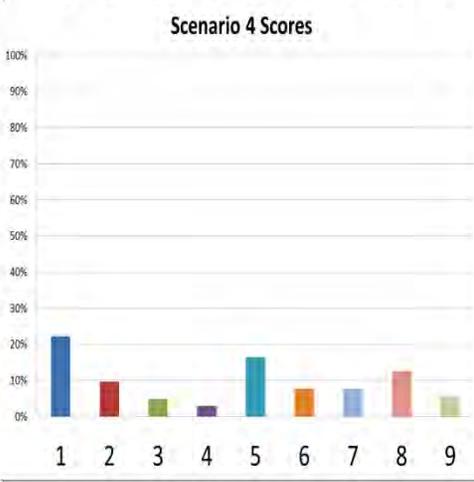
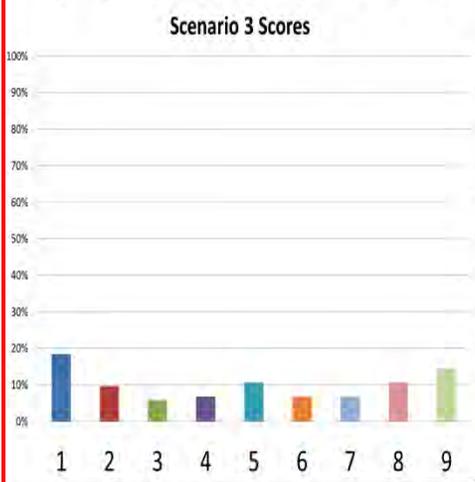
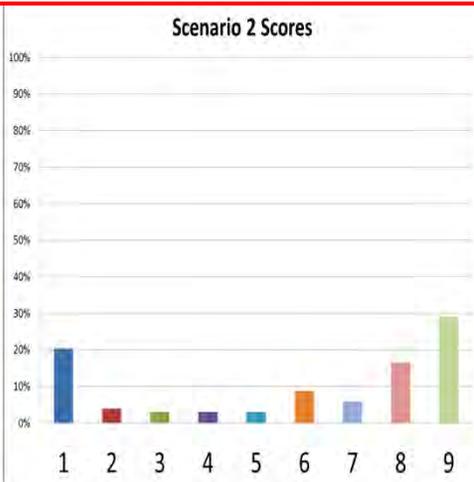
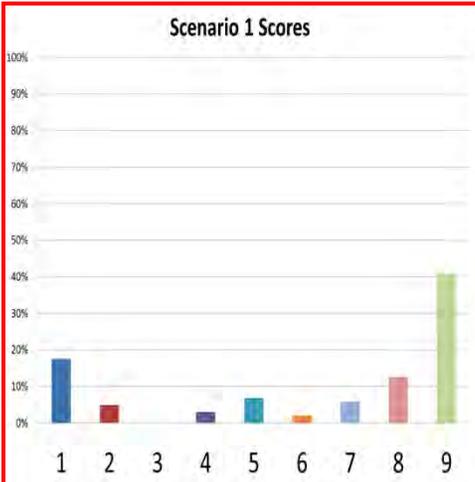


# Where Do You Live?



# Scenario Scoring Summary





# General Land Use Findings

- Of the range of six major possible land use options for the PGDP footprint, industrial land uses scored higher than non-industrial land uses. However, relying on only the average scenario scores as a basis of evaluation or comparison can be misleading.
  - While more participants supported a nuclear industry option than opposed it, this scenario also received very strong opposition from at least 20% of the participants; the only scenario to receive greater opposition was heavy industry.
  - The light industry land uses received the lowest average score among the industrial land-uses, but it also received the least opposition.
  - Among the non-industrial land uses, the expanded wildlife management option received the most favorable response, although only marginally better than the other two: structured recreational and institutional controls.

# Nuclear Industry Participant Discussion

## *Balancing Perceived Economic, Environmental, Health, & Seismic Risks*

- “[T]he idea of nuclear power is appealing to me... I’m not really opposed to having that around us as long as...it can be made safe.”
- “I like the idea of a nuclear power plant, using some alternative energy sources instead of coal...”
- “If it’s safe, then I say yes it is a good future use...”
- “It would bring a lot of jobs into the community... But in the end...you’ve got potential environmental disaster [and] further contamination.”
- “I’m all for nuclear power as long as you do two things. One, get nuclear power that doesn’t leave waste. And second is repeal Murphy’s Law.”

# Heavy Industry Participant Discussion

*Weighing jobs, the environment, waste disposal, & perceptions*

- “We thought it was probably the most feasible thing you could do with the land.”
- “We think it’s probably a good idea, as long as the industry that it brings in doesn’t damage the wildlife area anymore.”
- “[Y]ou’d have a lot of jobs there, but you’d still have the same old problems we’ve always had.”
- “I just don’t see how you’re gonna convince [industry] that this is perfectly safe and, you know, we can build right next to this [WDA]. I think...it’s gonna, basically, condemn the site for any future development.”

# Light Industry Participant Discussion

*Public appeal; waste & recreation constraints*

- “We thought it was one of the easier [scenarios] for maybe the public to accept.”
- “[This scenario represents] the continuation of jobs and employment here with light industry... That’s encouraging ‘cause we’re all interested in continuing to have a job.”
- “No use of the trained workforce—the nuclear workforce—we thought that was a negative...”

# Expanded Wildlife Participant Discussion

## *Economic and environmental tensions*

- “[Expanding the WMA represents] a lot of continued and enhanced recreational uses of the area; enhanced economic potential, secondary to widespread recreational uses.. And then, in a way, it would maintain and improve the overall quality of the life in the surrounding community.”
- “It blends well with the surrounding area... But...you’ve gotten rid of industry and the whole jobs and employment kind of thing has went away. So, I mean, good preserve, bad that you lose jobs.”

# Current Land Use Findings

Based on qualitative and quantitative data collected to date:

- It appears that the community's preferences between different land use types were somewhat independent of the following secondary factors: 1) the land use of the property surrounding the PGDP industrial footprint, i.e. property that has been currently leased to KY as part of the WKWMA, 2) the disposition of the current burial grounds, and 3) the disposition of future wastes associated with the D&D of the facility. However, preferences within similar land use types were influenced by these secondary factors.
- It appears that the majority of respondents oppose the construction of structured recreational facilities within the existing WKWMA.

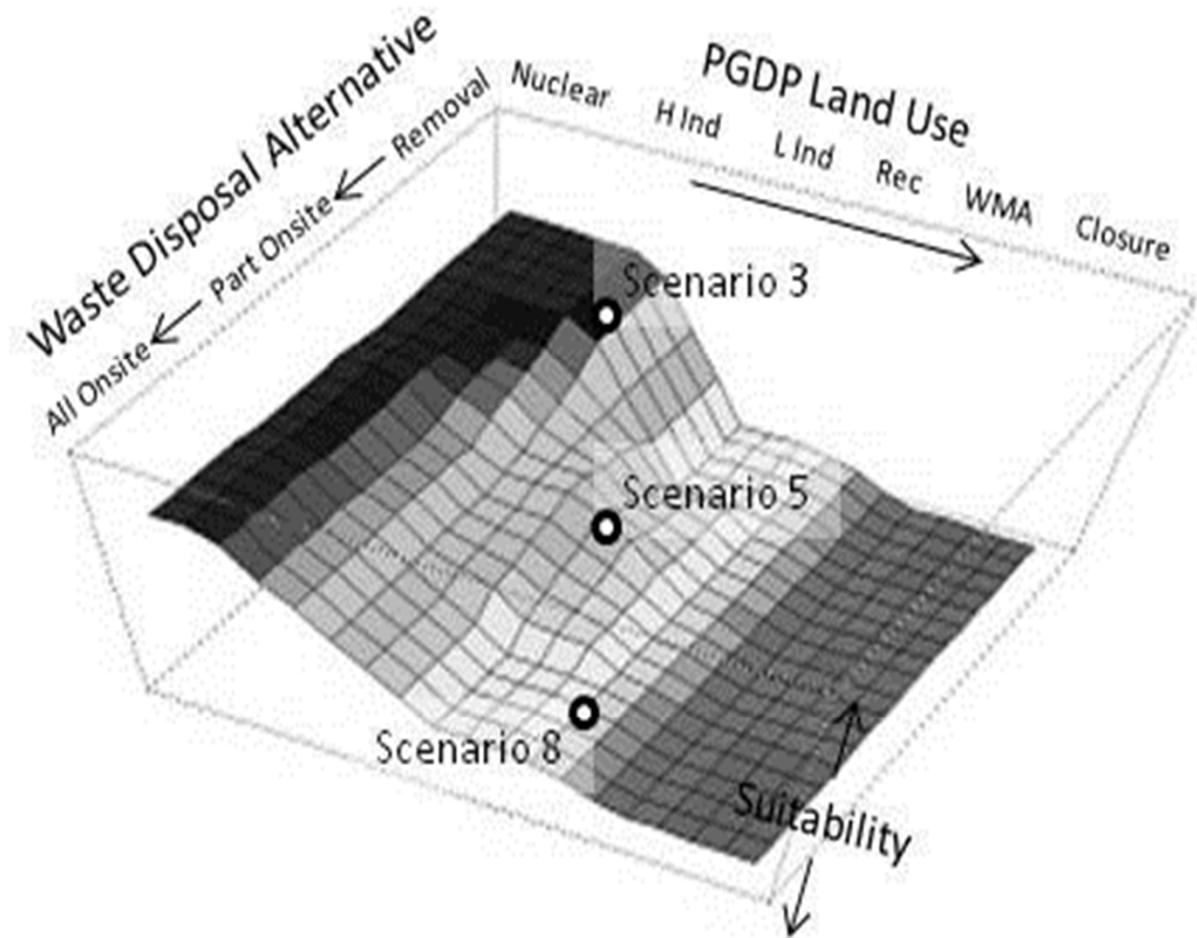
# Current Land Use Findings

- Based on the quantitative and qualitative data collected to date, it appears that a large proportion of respondents favor removal of all of the burial grounds. However, this preference is influenced by the actual land use.

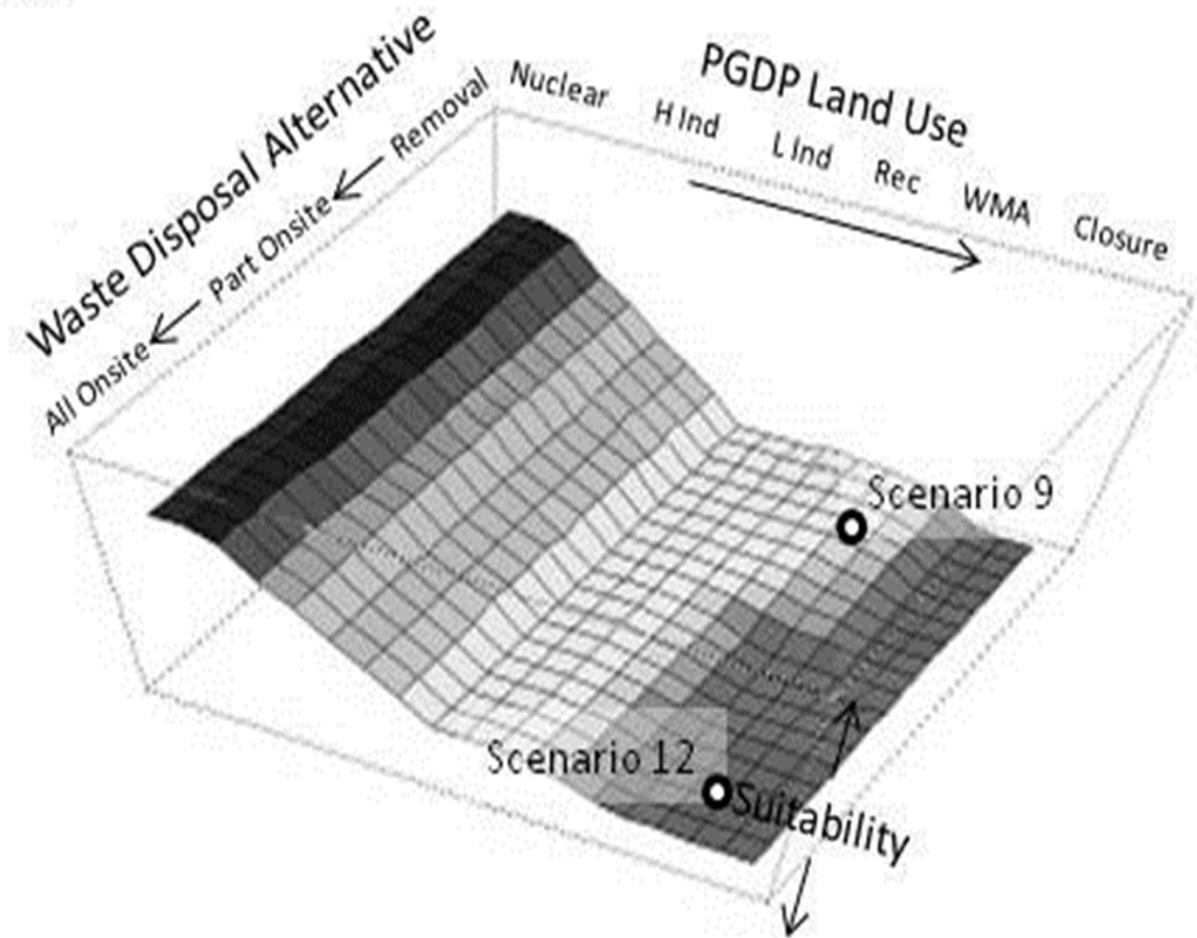
# Current Land Use Findings

- To a slightly lesser extent, a larger proportion of respondents also oppose the construction of a new waste disposal facility on site. Reasons for opposition included:
  - Environmental and health concerns
  - Future development concerns
- However, some respondents support such a facility, citing:
  - Job security (e.g. individuals from USEC and DOE employee community)
  - Discourage competing interests (e.g. individuals from the WKMMA users)
  - Unethical to ship our waste to others (e.g. individuals from the environmental community)

- PGDP Land Use – x axis
- WMA Land Use – Added Recreation
- Waste Disposal Alternative – y axis
- Legacy Waste – Dig Up



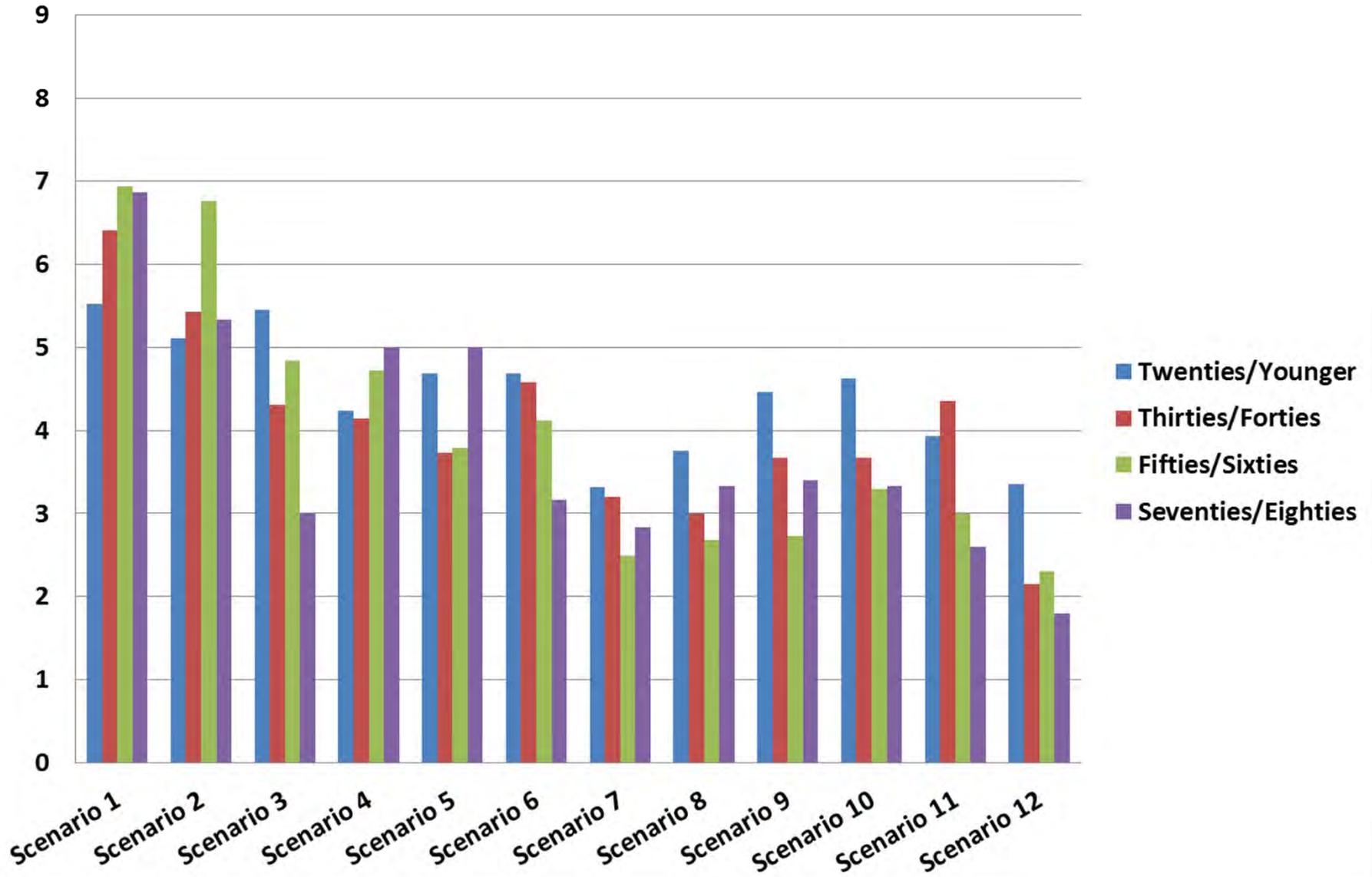
- PGDP Land Use – x axis
- WMA Land Use – Added Recreation
- Waste Disposal Alternative – y axis
- Legacy Waste – Leave As Is



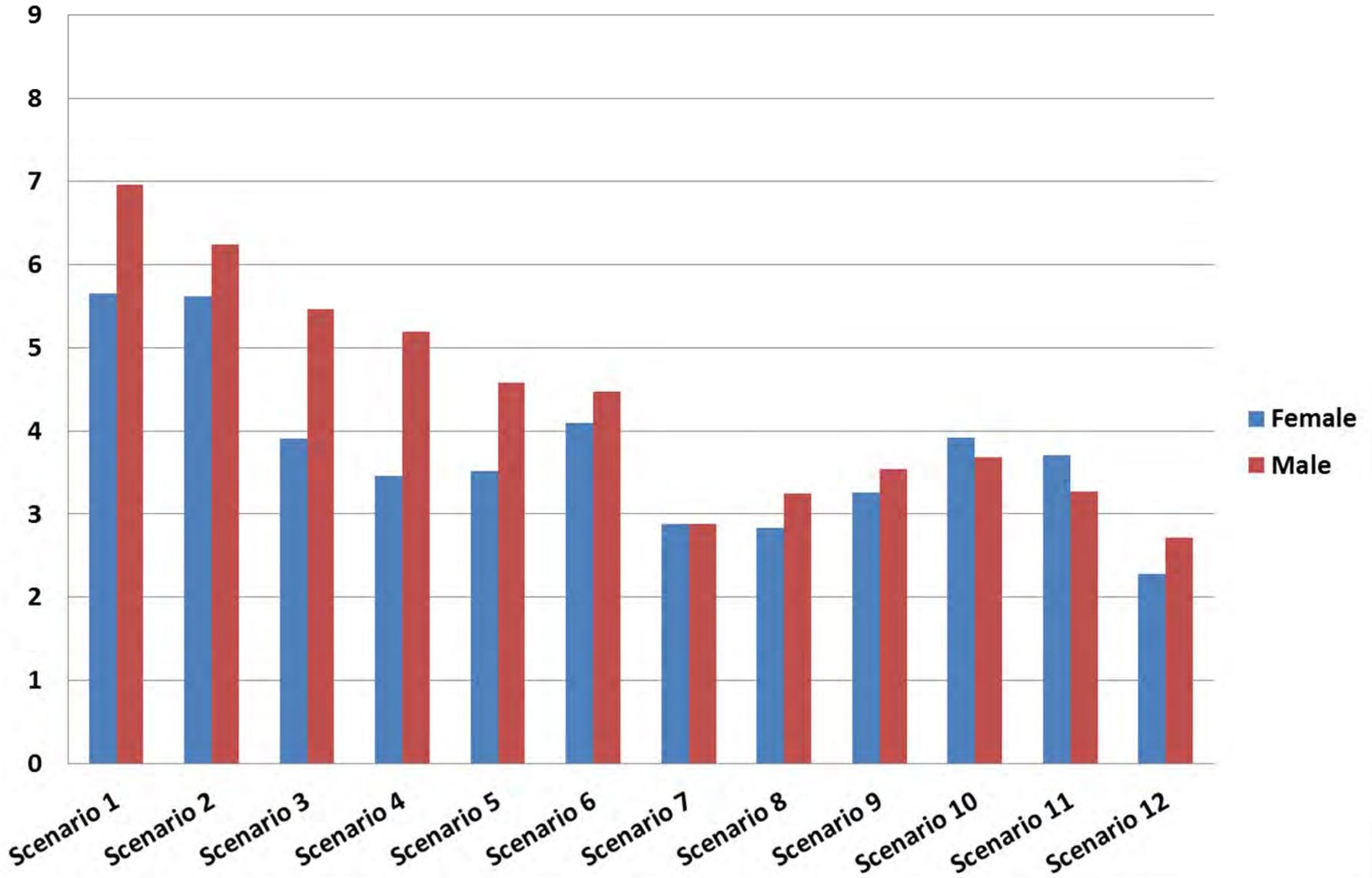
# Supplemental Land Use Findings

- The solicitation of additional scenarios from the public produced an additional land use scenario that received average scores greater than the best score (6.4) of any of the 6 original landuses:
  - Research Facility
    - Alternative Energy Research Center (6.5)
    - Remediation Research Center Combined with Power Plant (6.9)
    - Remediation Research Facility (7.2)
    - Federal Lab to Test Cleanup (7.1)
- Notably is the fact that the research facility was suggested independently at all three public scoring meetings
- In general, this landuse also received very little opposition
- **Supports similar previous CAB recommendations**

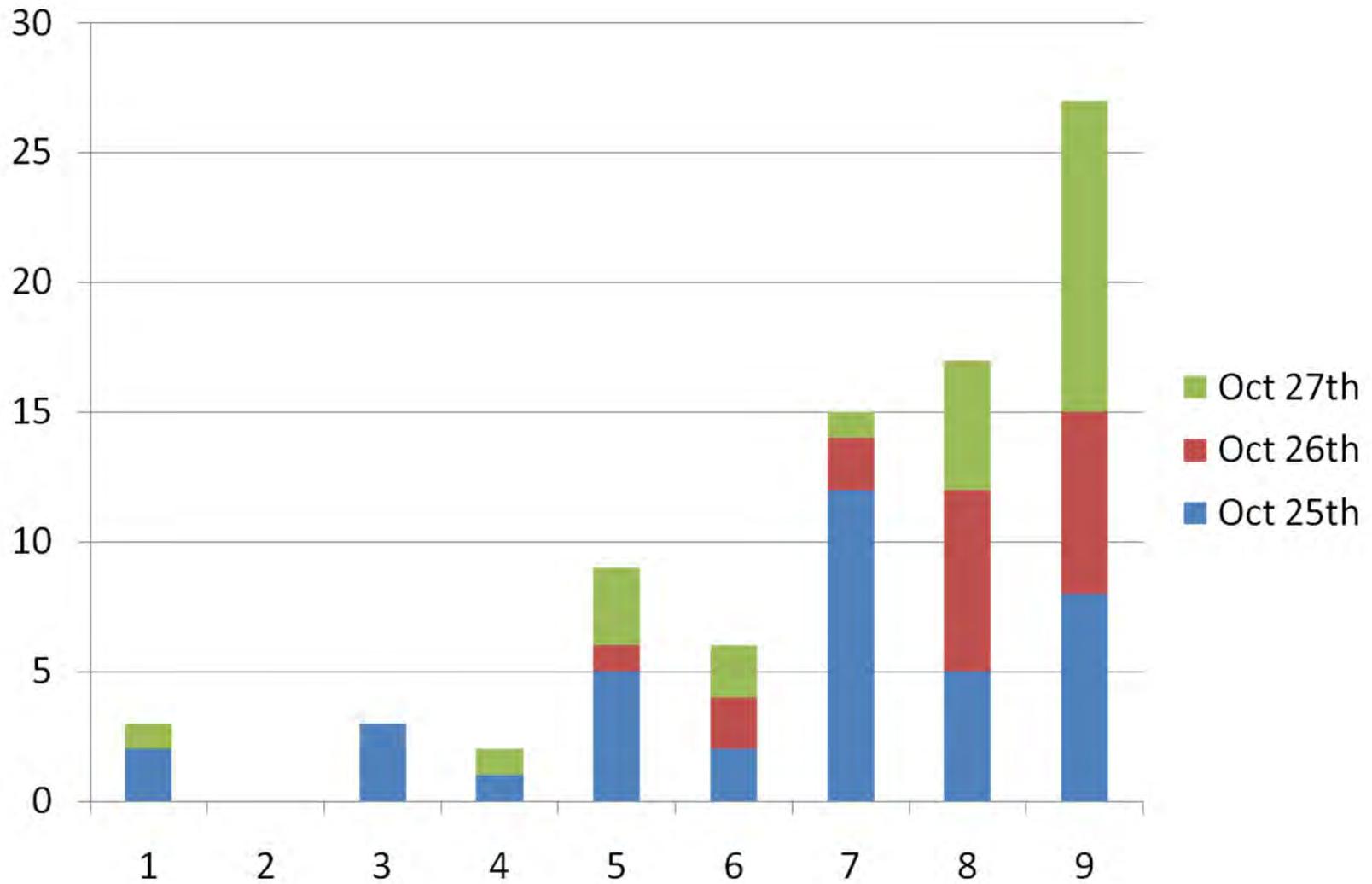
## Scenario Scores by Age



## Scenario Scores by Gender



# Process Satisfaction



# Project Accomplishments

- Developed an effective process for public engagement that integrates:
  - Community Based-Participatory Communication
    - Basis for qualitative analysis
      - Unique use of visual instruments for discussion facilitation
      - Provides framework for citizen ownership of process
      - Provides an effective methodology for solicitation of community values
  - Structured Public Involvement
    - Basis for quantitative analysis
      - Use of computer visualizations for composite analysis of complex multi-faceted issues
      - Public empowerment through anonymous use of keypads
      - Public accountability through real-time process evaluation
      - The ability to demographically and anonymously measure who is in the room, and to track the varying pattern of their preferences

# Project Accomplishments

- Developed an effective process for public engagement that:
  - Assesses and incorporates community values
  - Fosters community trust by providing accountability and transparency:
    - Stakeholder Pilot Group
    - Real-time results via key pads
    - Arnstein Ladder
  - Provides equal voice to all participants
    - Anonymous key pads
- Developed a process that has applicability to future DOE public engagement opportunities

# Project Accomplishments

- Identified the diverse stakeholder groups
- Identified and documented community:
  - Values
  - Concerns
  - Data needs
  - Trusted data sources
- Documented community experiences and expectations with public engagement process
  - Community does not expect full citizen control
  - Present expectations may be influenced by past experiences

# Community Preference Qualifiers

- Community Representation
  - Level of Participation (103)
  - Pattern of Participation (30-40 year olds missing)
- ‘This Project’ vs. THE PROJECT vs. *projecting*
  - Long Term PROJECT vs short term ‘vision project’
  - Community has to ‘project’ preferences under inevitable long term uncertainty.
    - Eg. Ongoing DOE WDA meetings
    - Eg. University of Louisville Worker Epidemiological Study published during ‘This Project’
    - JAPAN

# General Public Engagement Findings

- These findings arise out of a public engagement history where there have been:
  - Possible perception that issues are too complex for “ordinary” citizens to understand
  - Negative experiences with public involvement
  - Fear of losing control of the process
  - Consequent lack of public turnout for public meetings
- Which yields:
  - Lack of an effective strategy to truly involve the public
- This situation creates significant barriers in trying to implement the relevant recommendations of the “Politics of Cleanup” Report, which was specified as a roadmap for this project to follow.

# General Public Engagement Findings

- This is consistent with the findings of Battelle's 2003 Report "An Evaluation of DOE-EM Public Participation Programs"
  - Interviewees "... expressed concern that community interests were not being taken into account and that a combination of an inattentive public and an insufficiently aggressive public awareness and involvement effort was resulting in a civic failure"

# Politics of Cleanup Recommendations

- #1: **All Parties Must Collaborate** — The federal government, local governments, community members, state and federal agencies, and Congress must collaborate when developing the cleanup and future use vision for the site.
- #5: **Understand Community Values** — To properly collaborate, the parties must work to understand the values of the community, and must work to incorporate such values into the planning process.

# Politics of Cleanup Recommendations

- #6: **Education Is Essential** — The parties must take the time to educate each other on the technical and policy issues underlying the cleanup and to commit staff resources to engage each other. Discussion, which need to take place throughout the process, must also include the question of technical risk and perceptions of risk, recognizing perceptions of risks posed do not always align with the technical risk.
  - *DOE and the regulators need to exert whatever time and effort it takes to educate the affected entities about the various issues involved in site cleanups.*

# Politics of Cleanup Recommendations

- #14: **Following the Minimum in the Law Is Not Enough** — Minimum regulatory requirements are insufficient to support substantive public involvement; the parties must develop public involvement processes that are tailored to site-specific needs, recognizing that process is different from negotiations.
  - *A public involvement process for the sake of process will yield little positive results and will not serve to support a timely cleanup*

# Policy Conclusion

- If the recommendations of the POC Report are to be fully achieved, Public Engagement must be pursued as an *ongoing, iterative, and evolving process* that:
  - Involves the total community
  - Is tailored to local community
  - Incorporates community values
  - Fosters collaboration
  - Provides accountability and invokes trust
  - Continues to inform and educate stakeholders
  - Provides for an inclusive and truly democratic way for the concerns and preferences of the local citizens to be both heard and valued

# Policy Conclusion

- In this context, we believe the results of this study should not be viewed as a means to an end, (as significant as these initial insights of this study may be) but the first step in building a more effective process of public engagement.
- We believe that the methodologies that have been brought together in this project provide the tools and strategies to achieve such a goal.

# Recommendations

- UK PES Project Team will provide DOE with a project proposal to addresses integration of a coordinated public engagement process into it's public outreach activities.

# Next Steps: How to Reach Community

- Enable [www.paducahvision.com](http://www.paducahvision.com) so that scenarios can be rated online.
- Present scenarios at WKWMA Clubhouse during April 28<sup>th</sup> neighborhood association meeting
- Promote website at the CAB's EcoFair in May, Rotary at April 27 meeting, C of C meeting.
- Want to create outreach to schools.

# Other Venues? Clubs? Invitations?

- Scenario Presentation and Evaluation Takes About an Hour
- We want to reach more people: several hundred would be nice!
- We want to reach more women.
- We want to reach more 30-50 demographic.
- Me: [tgrossardt@uky.edu](mailto:tgrossardt@uky.edu)  
– 859-257-7522
- Anna Hoover: [aghoov2@email.uky.edu](mailto:aghoov2@email.uky.edu)
- Comment box [www.paducahvision.com](http://www.paducahvision.com)

# Ideas?

- Make it competition
- Go to school on in service days
- Offer child care
- Solicit leaders of Lions, rotary
- Influence of ongoing factors like EQ