

# Undermining the Public Trust

A Review and Analysis of PADEP's  
Fourth Act 54 Five-Year Assessment Report



**Presentation to CAC  
17 March 2015**

Prepared for:

**Citizens Coal Council**

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**CITIZENS  
COAL  
COUNCIL**

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# Public Trust Doctrine

The principle that certain natural and cultural resources are preserved for public use, and that the government owns and must protect and maintain these resources for the public's use.

**Definition from Nolo's Plain-English Law Dictionary**

**Article 1, Section 27**  
**Pennsylvania Constitution**  
**(Environmental Rights Amendment)**

*“The people have a right to clean air, pure water, and to the preservation of the natural, scenic, historic and esthetic values of the environment. Pennsylvania’s public natural resources are the common property of all the people, including generations yet to come. As trustee of these resources, the Commonwealth shall conserve and maintain them for the benefit of all the people.”*

[Home](#) > [Public Participation Center](#) > [Citizens Advisory Council](#)

## Citizens Advisory Council

### **Welcome to the Citizens Advisory Council's Web Site**

It is the mission of the Citizens Advisory Council to strive to ensure that all people of the Commonwealth enjoy the benefits included in Article I, Section 27 of the Pennsylvania Constitution.

## **CAC MISSION**

**PENNSYLVANIA**

**Bituminous Mine  
Subsidence and Land  
Conservation Act**

27 April 1966

**“1966 Mining Law”**

# 1966 MINING LAW:

**Prohibited damage from  
underground coal mining to  
structures built before April 1966:**

- **homes**
- **public buildings**
- **structures used by the public** (such as churches, schools, and hospitals)
- **cemeteries**

**1966 Mining Law's**  
prohibition on damage  
compatible  
with traditional  
room-and-pillar mining  
methods

1966 Mining Law's  
prohibition on damage

problematic

for operators wanting to  
use longwall mining



# Keystone Bituminous Coal Association

Consolidation Coal Company  
Helvetia Coal Company  
Rochester & Pittsburgh Coal Company  
U.S. Steel Mining Co.

## 1982 Civil Action - Argued “Takings”

**District and Appellate Courts:** *the 1966 Act served valid public interests in protecting the health, the environment, and the fiscal integrity of the coalfields*

## 1986 US Supreme Court (5-4)

*“duty to retain a small percentage of coal for support does not materially affect petitioners' reasonable ‘investment-backed expectations’”.*

*Keystone Bituminous Coal Association v. DeBenedictis*, 480 U.S. 470, 474, 478 (1987)

**Unable to invalidate the law,  
industry then sought to amend it**

## **Deep Mine Mediation Project**

- ✓ **Consolidation Coal Company**
- ✓ **Rochester & Pittsburgh Coal Company**
- ✓ **U .S. Steel Mining Co.**

**Beth Energy Mines, Inc.**

**Pennsylvania Coal Association**

**Pennsylvania Farmers' Association**

**Pennsylvania Environmental Council**

**Western Pennsylvania Conservancy**

**Pennsylvania Federation of Sportsmen's Clubs**

**1986 –1990**

**Drafted “compromise” legislation**

June 22, 1994

# ACT 54

## AMENDMENTS

Act 54 of 1994  
Amendments to the Bituminous Mine Subsidence and Land Conservation Act

*Official Advance Copy*

SESSION OF 1994

Act 1994-54 357

No. 1994-54

AN ACT

SB 955

Amending the act of April 27, 1966 (1st Sp.Sess., P.L.31, No.1), entitled "An act to protect the public health, welfare and safety by regulating the mining of bituminous coal; declaring the existence of a public interest in the support of surface structures; forbidding damage to specified classes of existing structures from the mining of bituminous coal; requiring permits, and in certain circumstances bonds, for the mining of bituminous coal; providing for the filing of maps or plans with recorders of deeds; providing for the giving of notice of mining operations to political subdivisions and surface landowners of record; requiring mine inspectors to accompany municipal officers and their agents on inspection trips; granting powers to public officers and affected property owners to enforce the act; requiring grantors to certify as to whether any structures on the lands conveyed are entitled to support from the underlying coal and grantees to sign an admission of a warning of the possible lack of any such right of support; providing for acquisition with compensation of coal support for existing structures

# ACT 54

## SIGNIFICANT CHANGES in language and intent

The prevention *or restoration* of damage from mine subsidence is recognized as being related to the economic future and well-being of Pennsylvania.

# Section 18.1 of Act 54

## Department shall:

compile on an ongoing basis,

and

analyze at five-year intervals,

## information contained in:

- mining permit application files
- monitoring reports
- mining enforcement files
- any other appropriate source

**to determine the effects of deep mining on surface structures, features, and water resources**

# ACT 54 INTENT

“The Act ... put in place a  
*‘you break it, you fix it’* rule...”

- James M. Seif, Secretary PADEP, June 1999

Transmittal letter of *1<sup>st</sup> Act 54 Report* to Governor,  
General Assembly, and CAC

# ACT 54

## 5-YEAR REPORTS

### TO DATE

<u>Report</u>	<u>Year</u>	<u>Prepared by</u>	<u>5-Year Period</u>	<u>Report Cost</u>
1 <sup>st</sup>	1999	PADEP	1993-1998	N/A
1 <sup>st</sup> (supl)	2001	PADEP	1993-1998	N/A
2 <sup>nd</sup>	2005	California University of PA	1998-2003	\$200,000
3 <sup>rd</sup>	2011	University of Pittsburgh	2003-2008	\$313,000
4 <sup>th</sup>	<b>2014</b>	<b>University of Pittsburgh</b>	<b>2008-2013</b>	<b>\$603,000</b>

4<sup>th</sup> Act 54 Five-Year Assessment:

# **DATA ARE INADEQUATE For ACT 54 Analyses**

- **BUMIS data incomplete, disorganized, inaccurate, inconsistent**
- **No DEP mining-related GIS database, Pitt created two**
- **Not all impacts identified (outside RPZ)**
- **No clear understanding of hydrologic balance vs mining**
- **No meaningful wetland or groundwater monitoring**
- **No stream quality tracking**
- **No QA/QC**

**Inadequate for PADEP regulatory/permitting purposes, too**



## **University of Pittsburgh, 4<sup>th</sup> Act 54 Five-Year Assessment:**

**“BUMIS cannot be relied upon as the authoritative source of information on undermined surface features, impacts, or impact resolution.”**

**“...the [final] percentage of features lacking a feature identification number [was] around 30 percent.”**

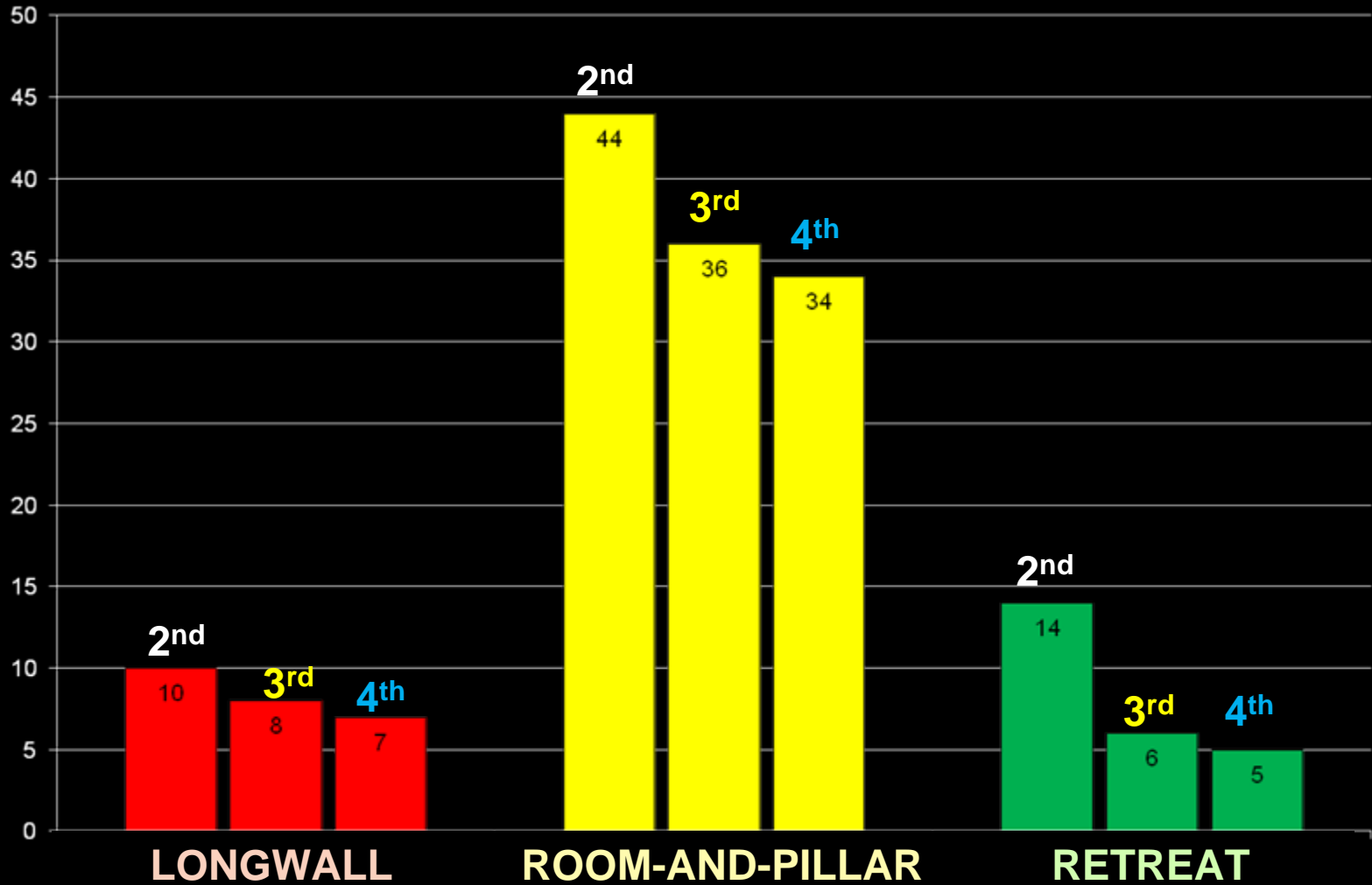
**“... Data entry is often incomplete.... In some cases, impacts are missing altogether.”**

**“...information on the number and kind of structures undermined during the 4th assessment period is not presented.”**

**“... BUMIS was not designed to track the complexity of stream impacts ... PADEP has struggled to develop a system for recording stream data.”**

# DAMAGES ARE INCREASING

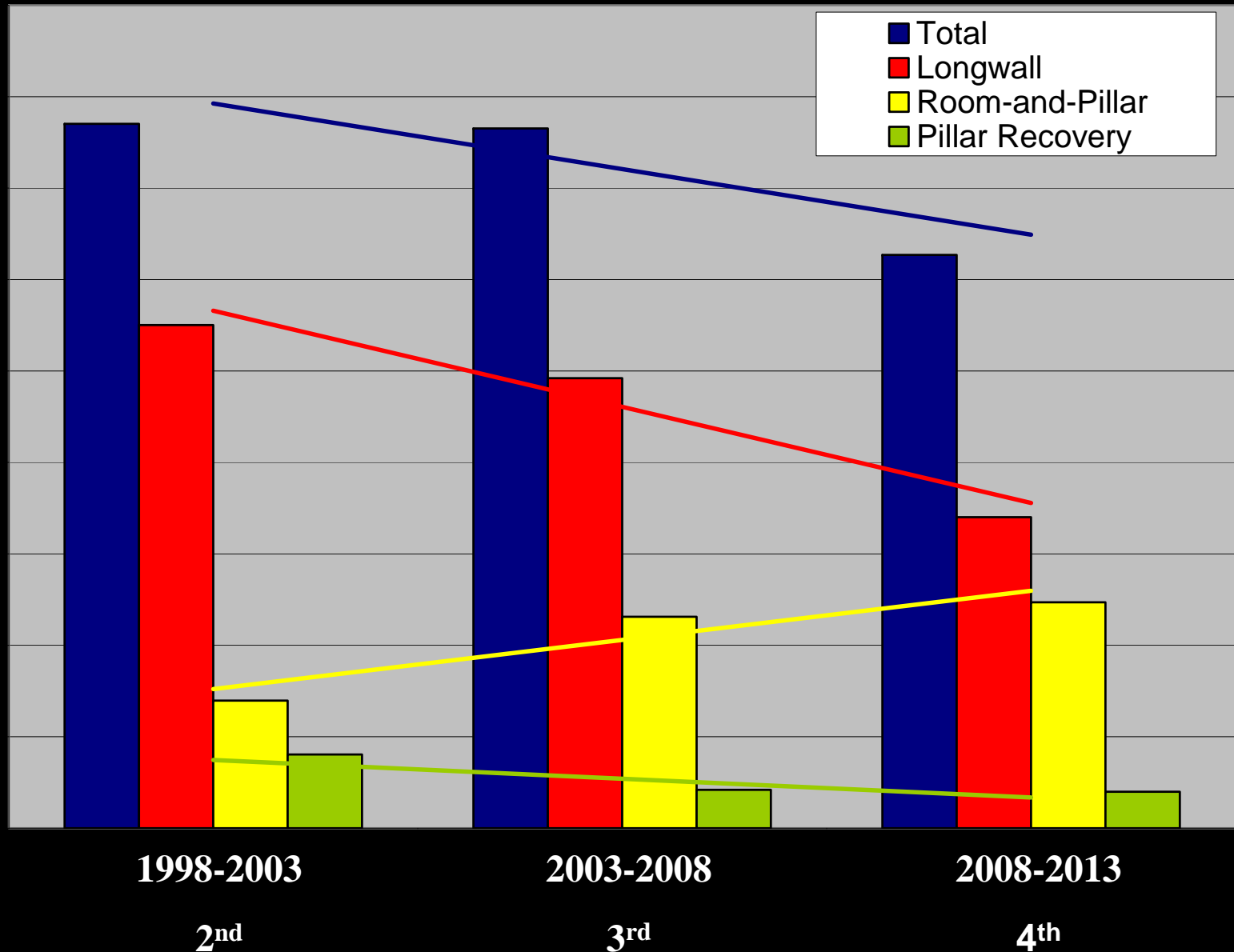
- **Underground mines/acreage *decreasing***  
-18% from 3<sup>rd</sup> to 4<sup>th</sup> 5-year period
- **Total reported effects *increasing***  
+8% from 3<sup>rd</sup> to 4<sup>th</sup> period
- **Water supply impacts (active mines) *increased***  
+40% from 3<sup>rd</sup> to 4<sup>th</sup> period

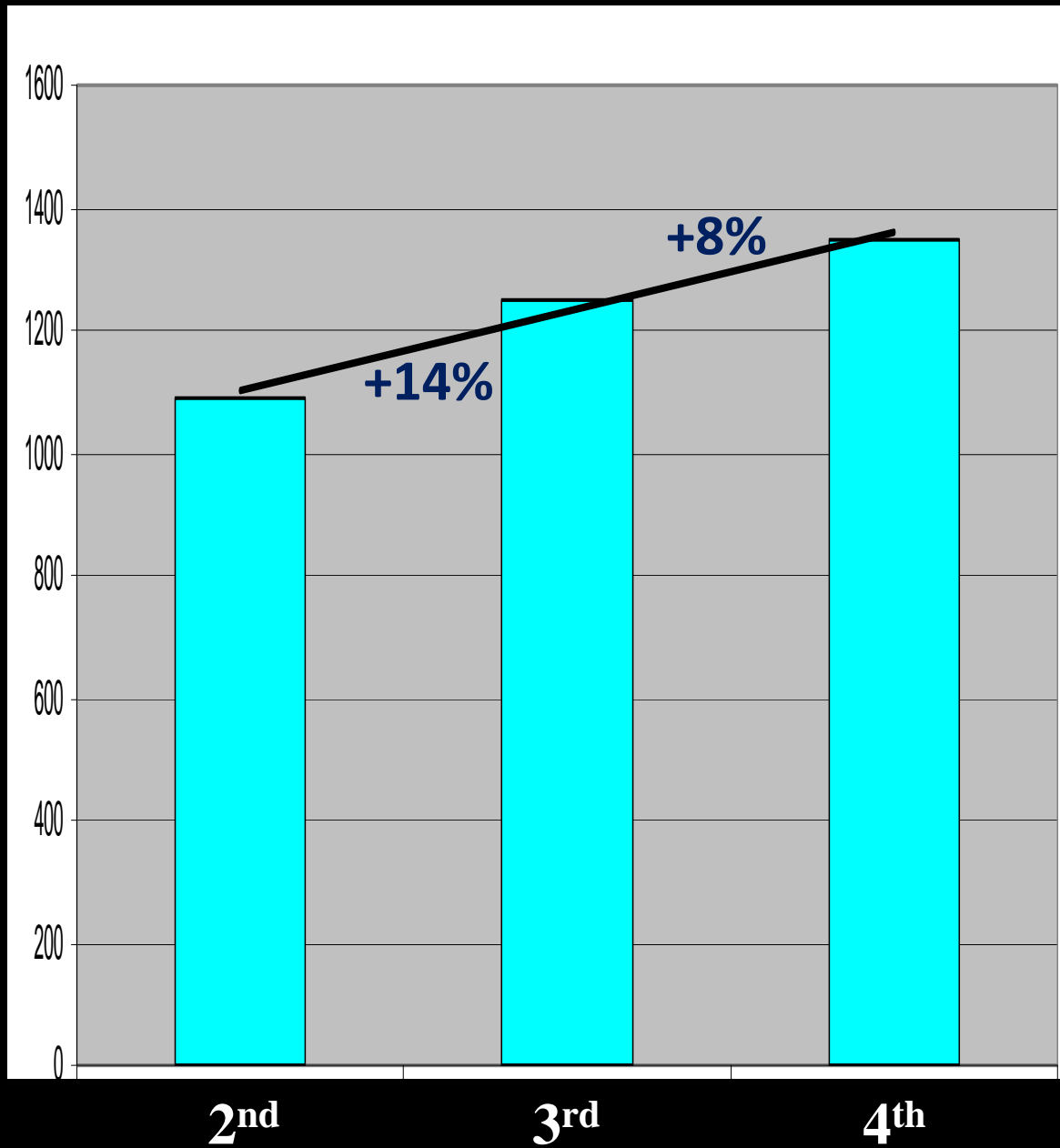


**# Mines Decreased Each Assessment Period**

# ACREAGE UNDERMINED

(last three Assessment periods)





# TOTAL REPORTED EFFECTS

(structures, water supplies, and land)

Last three 5-year Act 54 Assessment periods

4<sup>th</sup> Act 54 Five-Year Assessment:

# DAMAGES NOT BEING REPAIRED OR REPLACED

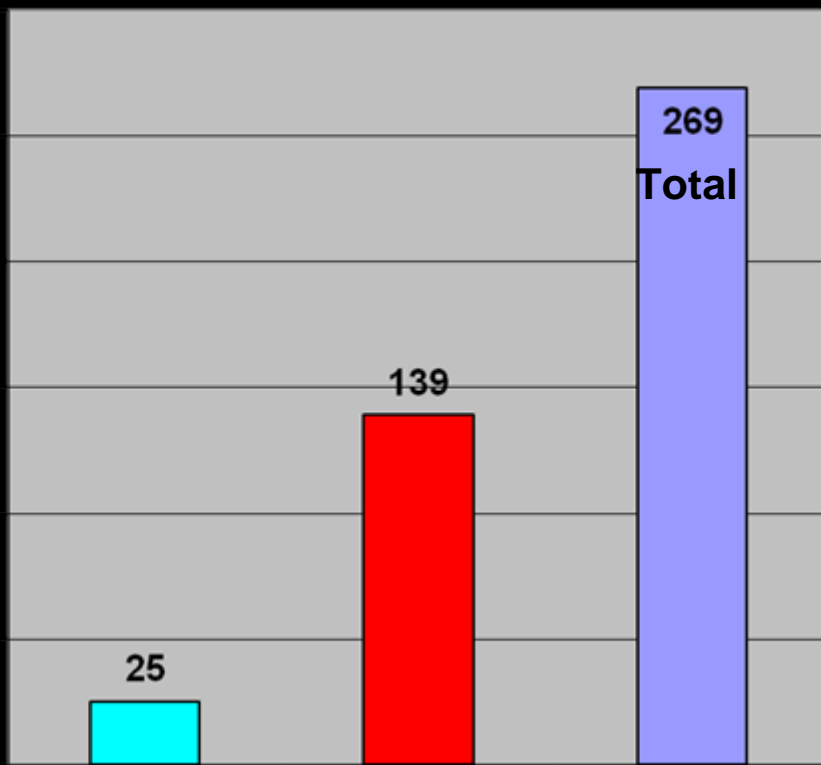
- “*Repair*” is smallest category of resolution
- “*Agreements*” largest proportion – no idea of outcome
- **Property purchase** – does not fix anything

Lost tax ratables, lower property assessments

Externalized costs

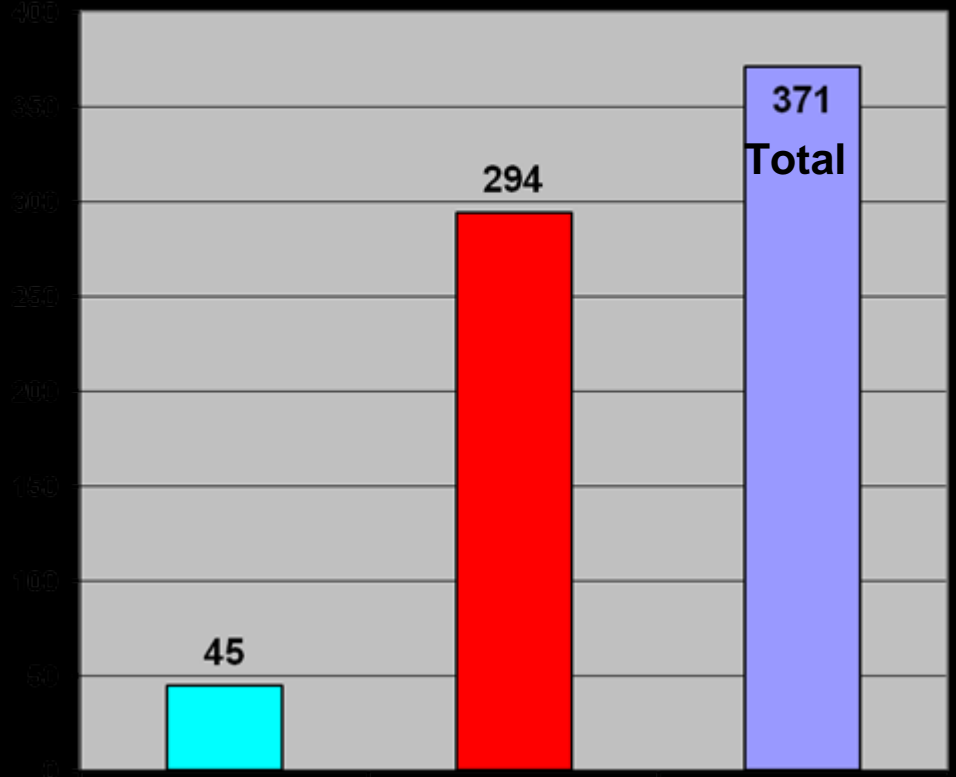
# WATER SUPPLY IMPACT RESOLUTIONS

## 3<sup>rd</sup> ASSESSMENT PERIOD



Repaired  
9%  
Agreement,  
property  
purchase 52%

## 4<sup>th</sup> ASSESSMENT PERIOD

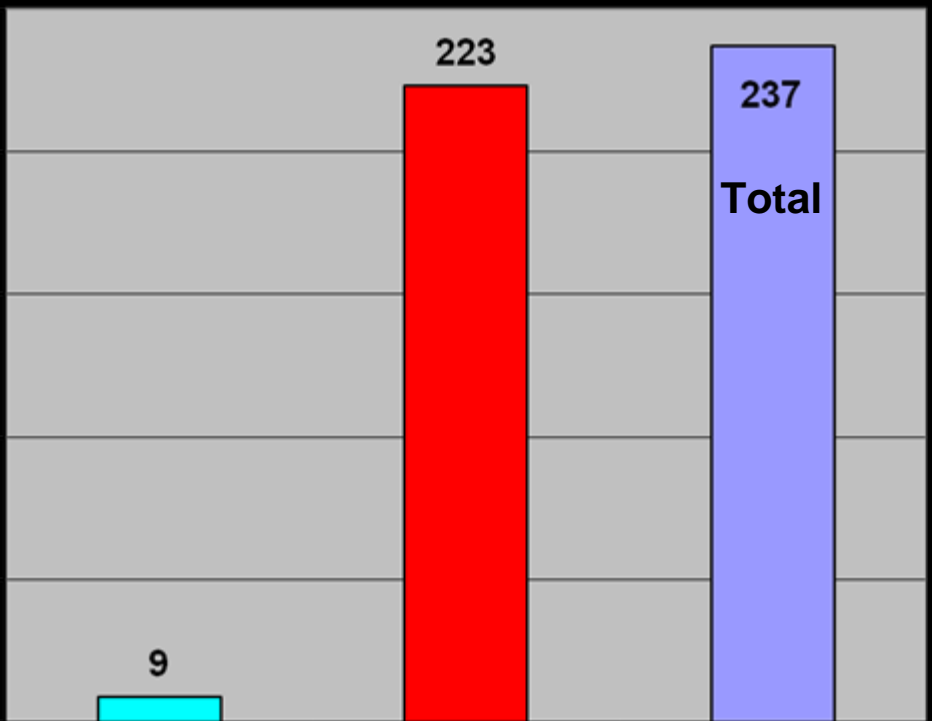
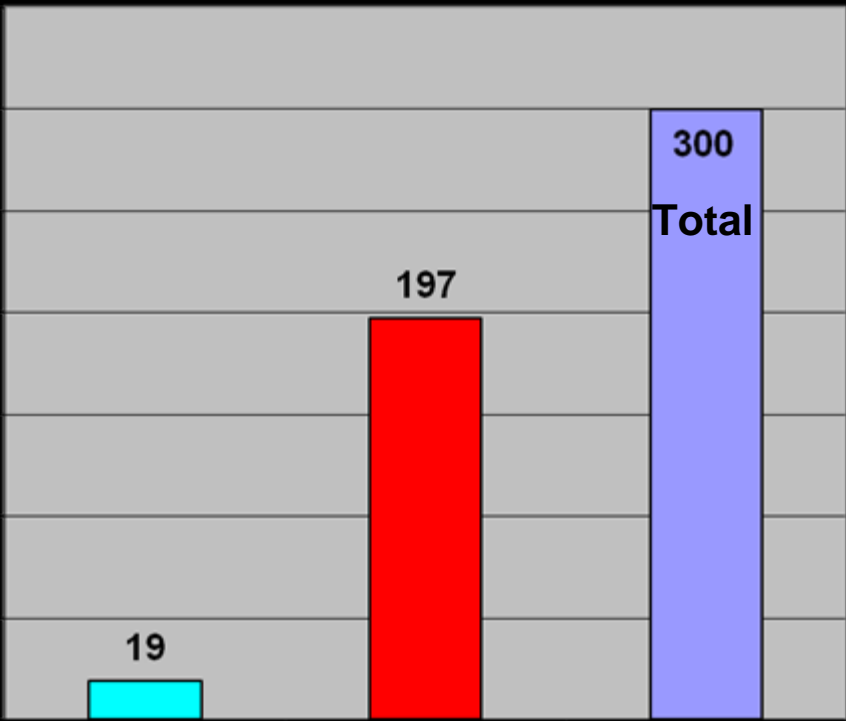


Repaired  
12%  
Agreement,  
property  
purchase 79%

# STRUCTURE IMPACT RESOLUTIONS

## 3<sup>RD</sup> ASSESSMENT PERIOD

## 4<sup>TH</sup> ASSESSMENT PERIOD



Repaired  
6%

Agreement,  
property  
purchase 66%

Repaired  
4%

Agreement,  
property  
purchase 94%



# “RESOLUTIONS” TAKING TOO LONG

- Measured in years
- Longest structure resolution – 933 days (2.5+ years)
- 25% water supply resolutions – 1 to 4.5 years
- Stream pooling – takes average of 682 days (1.9 years) to begin restoration



**During 4<sup>th</sup> Assessment Period**

**6 streams**

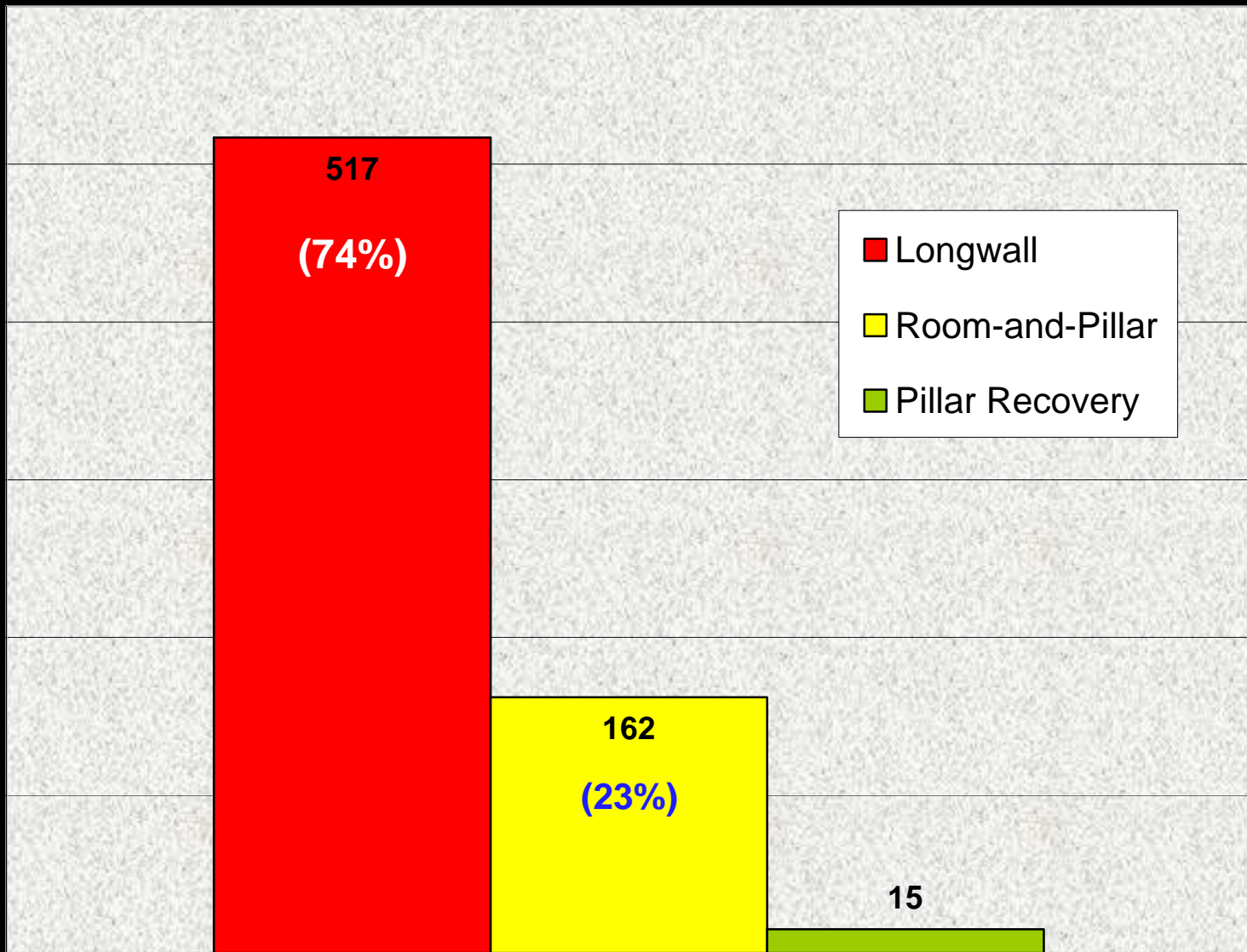
**dewatered by longwall  
mine subsidence**

**couldn't be fixed at all**

4<sup>th</sup> Act 54 Five-Year Assessment:

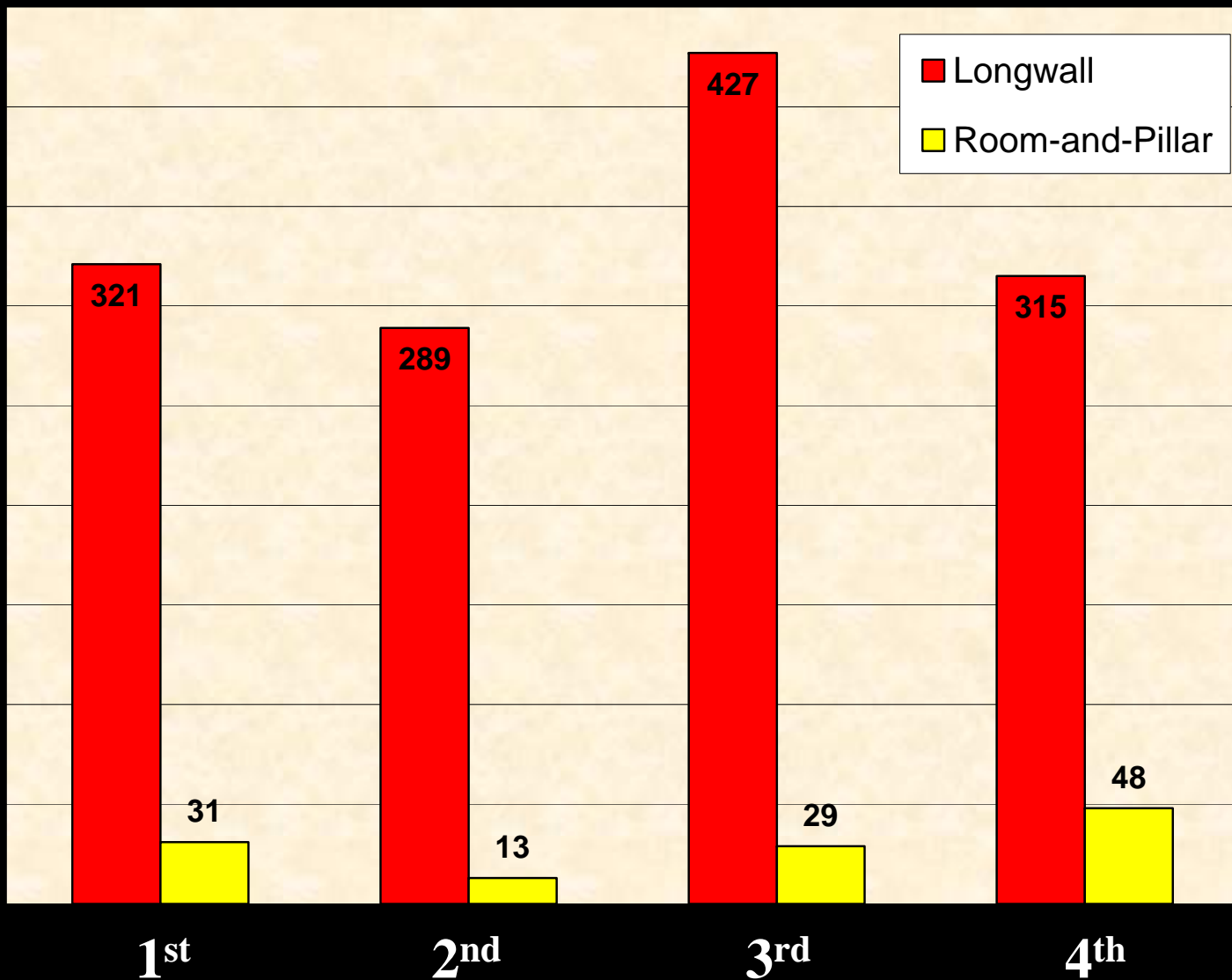
# **MOST DAMAGES DUE TO LONGWALL MINING**

- **Longwall Mines: 54%** of undermined land – 4<sup>th</sup> Assessment Period
- Yet **Longwall Mines** responsible for:
  - **97% STRUCTURE IMPACTS**
  - **89% LAND IMPACTS**
  - **100% STREAM IMPACTS**



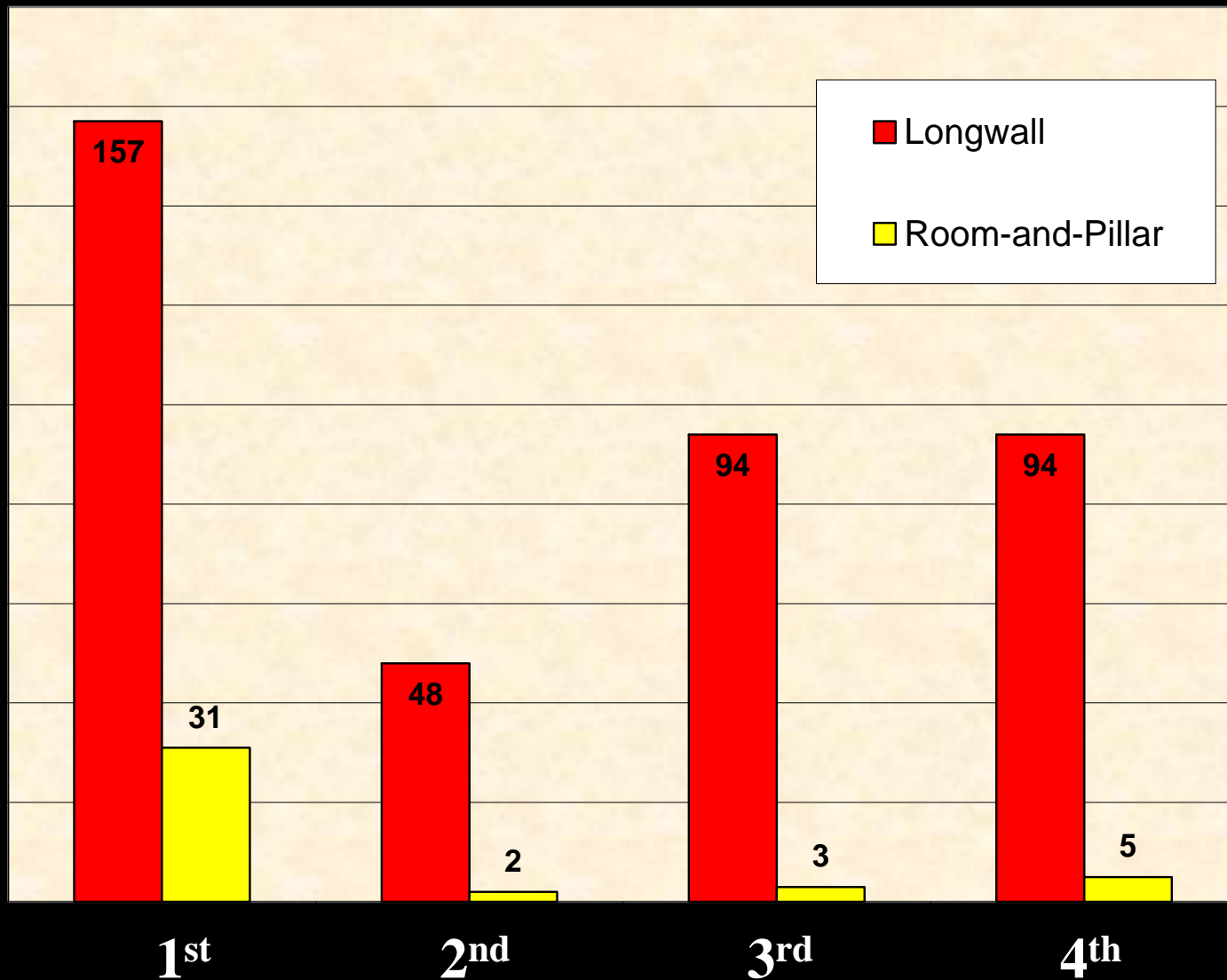
1

**TOTAL Mine-Liable EFFECTS (active mines)**  
**4<sup>TH</sup> ASSESSMENT PERIOD 2008-2013**



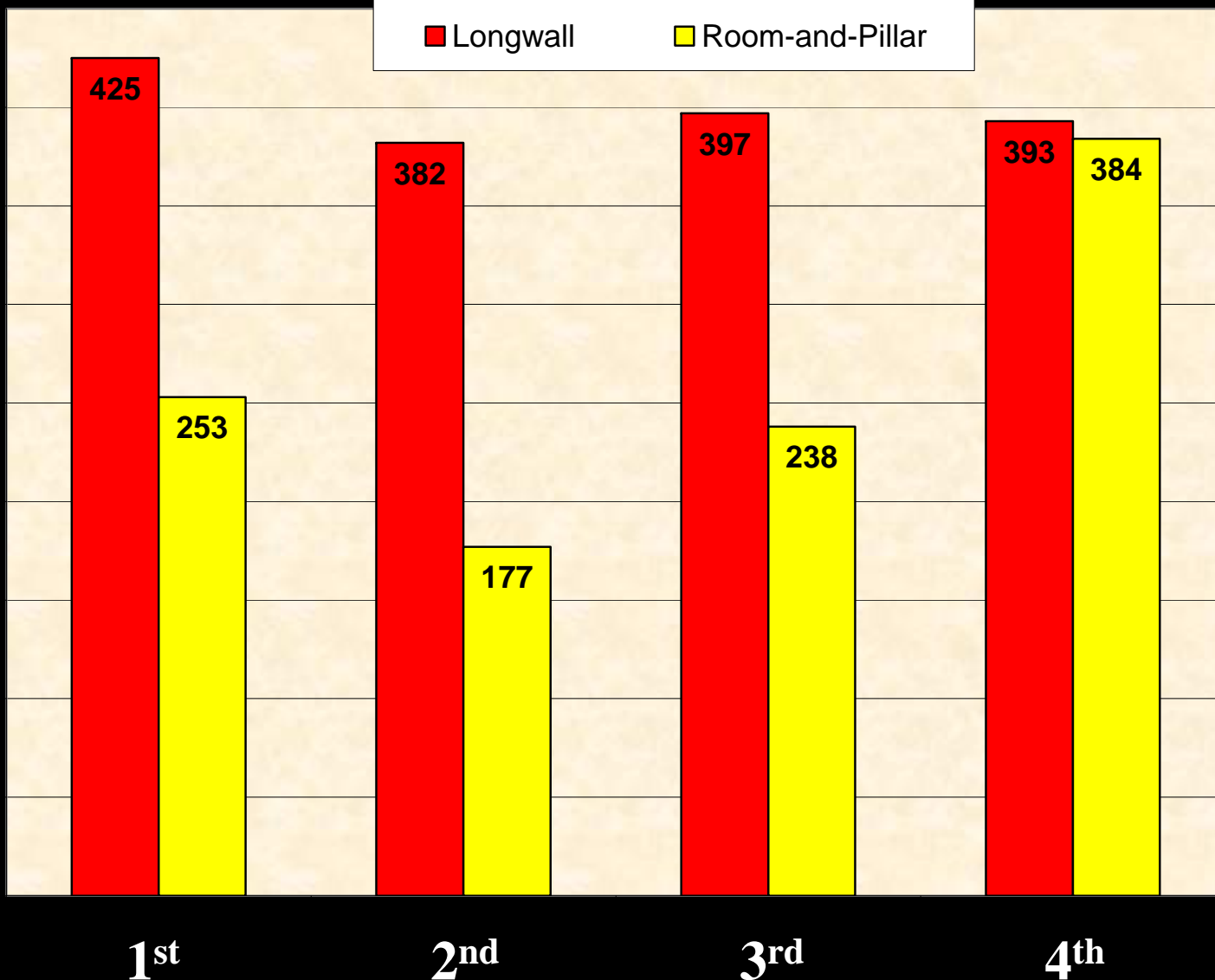
TOTAL REPORTED , ACTIVE MINES

# Structure Impacts, by Assessment Period



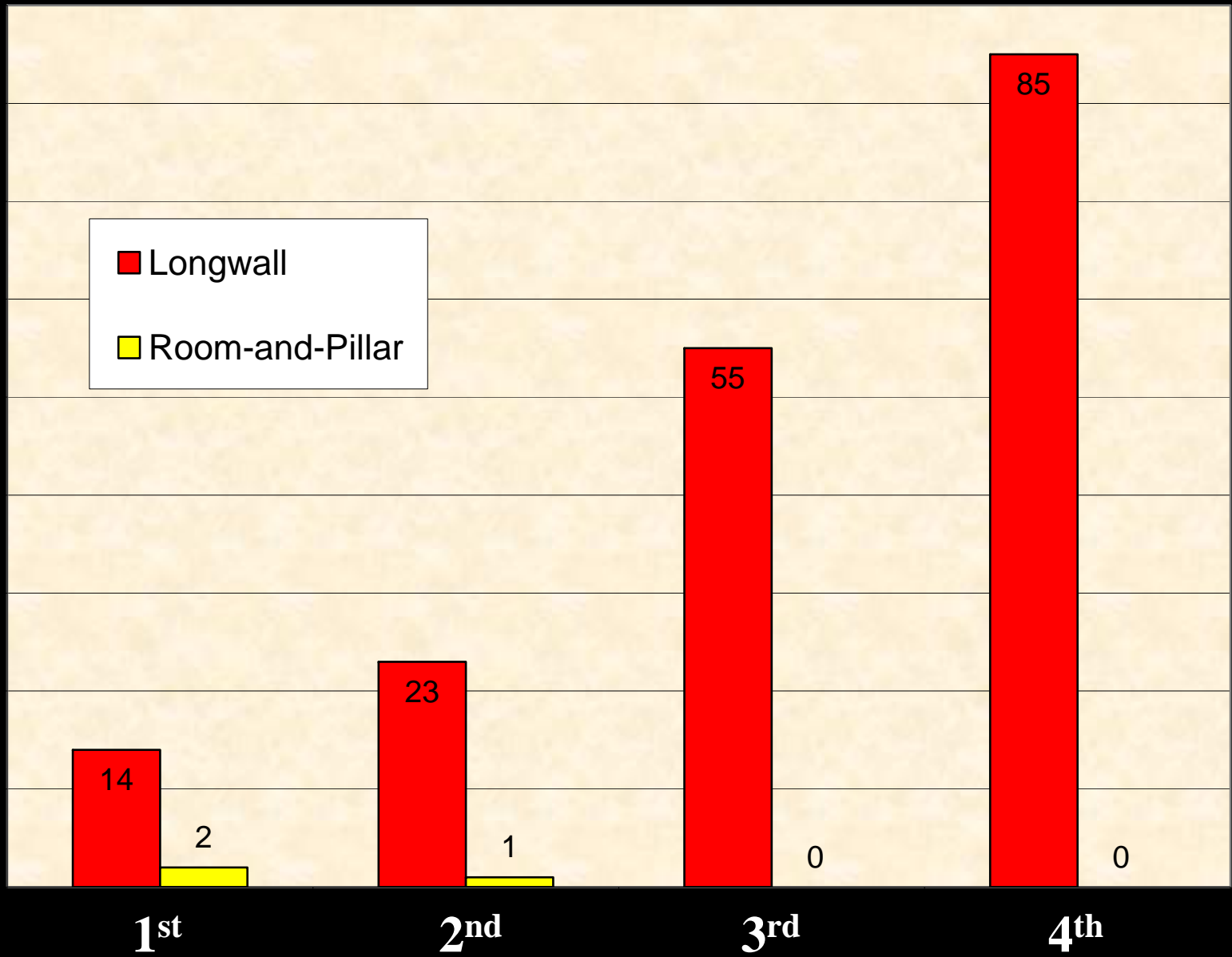
TOTAL REPORTED , ACTIVE MINES

# Land Impacts, by Assessment Period



TOTAL REPORTED , ACTIVE MINES

# Water Supply Impacts, by Assessment Period



**Stream Impacts, by Assessment Period**



# Impacts to Natural Features

- Streams
- Wetlands
- Groundwater
- Hydrologic Balance

"While mining companies are generally either able to repair, replace, or financially compensate for **damages to structures**, the ability to repair damage to **streams** remains largely unknown." (Page V-7)

"... given the hydrologic complexity of the region and the resulting complexity in hydrologic response, the data, as reported, is **insufficient** to allow **clear assessment** of **hydrologic impacts..**" (Page VI-44)

## **Chapter 89: Underground Coal Mining Regulations**

**HYDROLOGIC BALANCE:** The relationship between the quality and quantity of water inflow to, water outflow from and water storage in a hydrologic unit such as a drainage basin, aquifer, soil zone, lake or reservoir. It encompasses the dynamic relationships among precipitation, runoff, evaporation and changes in groundwater and surface water storage. **(25 Pa. Code 89.5)**

The [mining] operation ... shall ... ensure the protection of the hydrologic balance and ... prevent adverse hydrologic consequences. **(25 Pa. Code 89.36)**

# Inadequate Models and Assumptions for impact prediction

- most 20+ years old
- none re-evaluated or recalibrated for current conditions
- stream pooling is predicted (Peng model)
- but no models for stream flow loss, wetlands, groundwater
- impacts occur outside presumed "zones of influence"

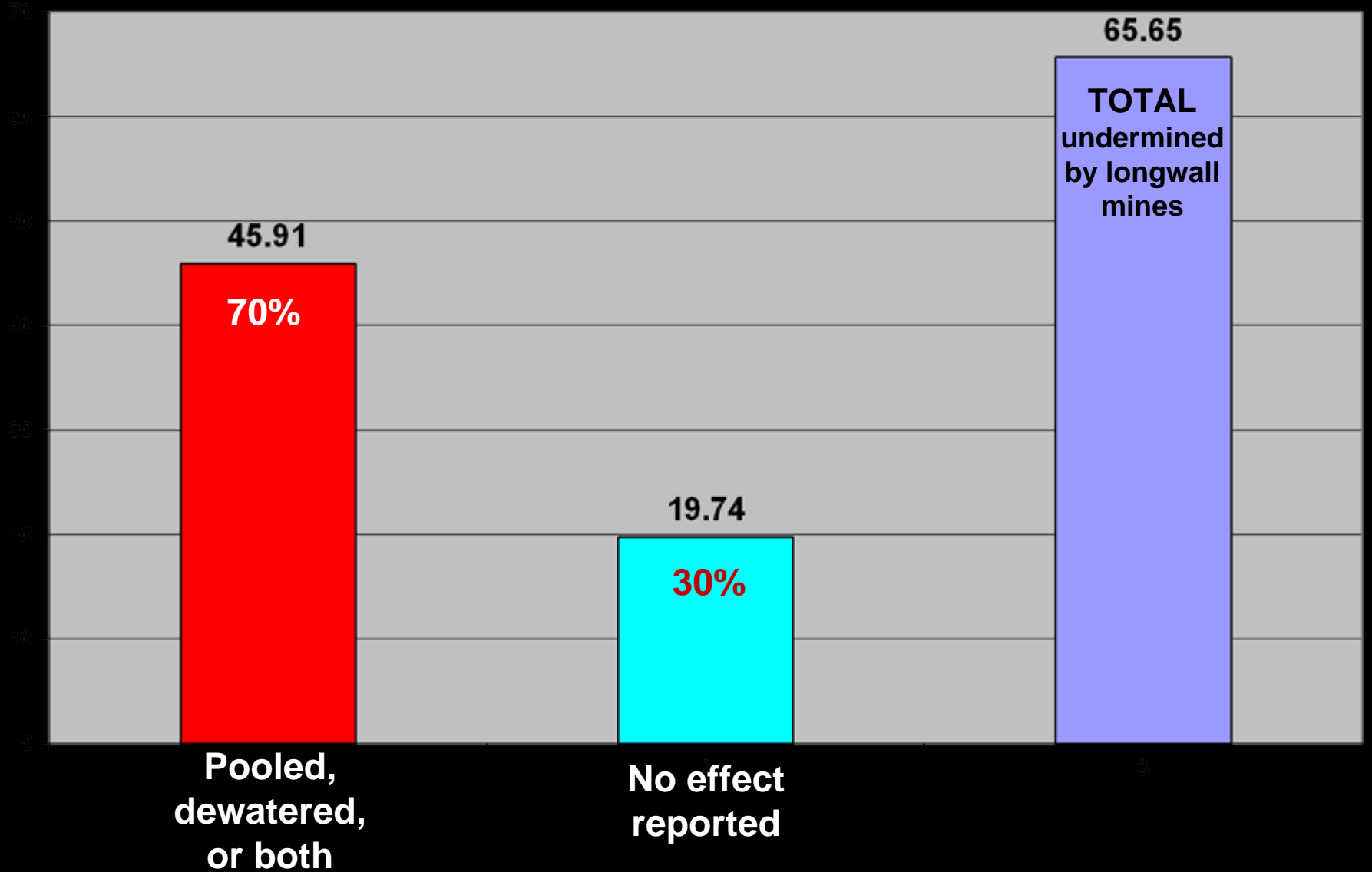
## 4<sup>th</sup> Act 54 Five-Year Assessment:

".... 25% of effects lie outside of the RPZ, as much as 85 degrees outward and upward from the edge of mining. " (Page XI-4)

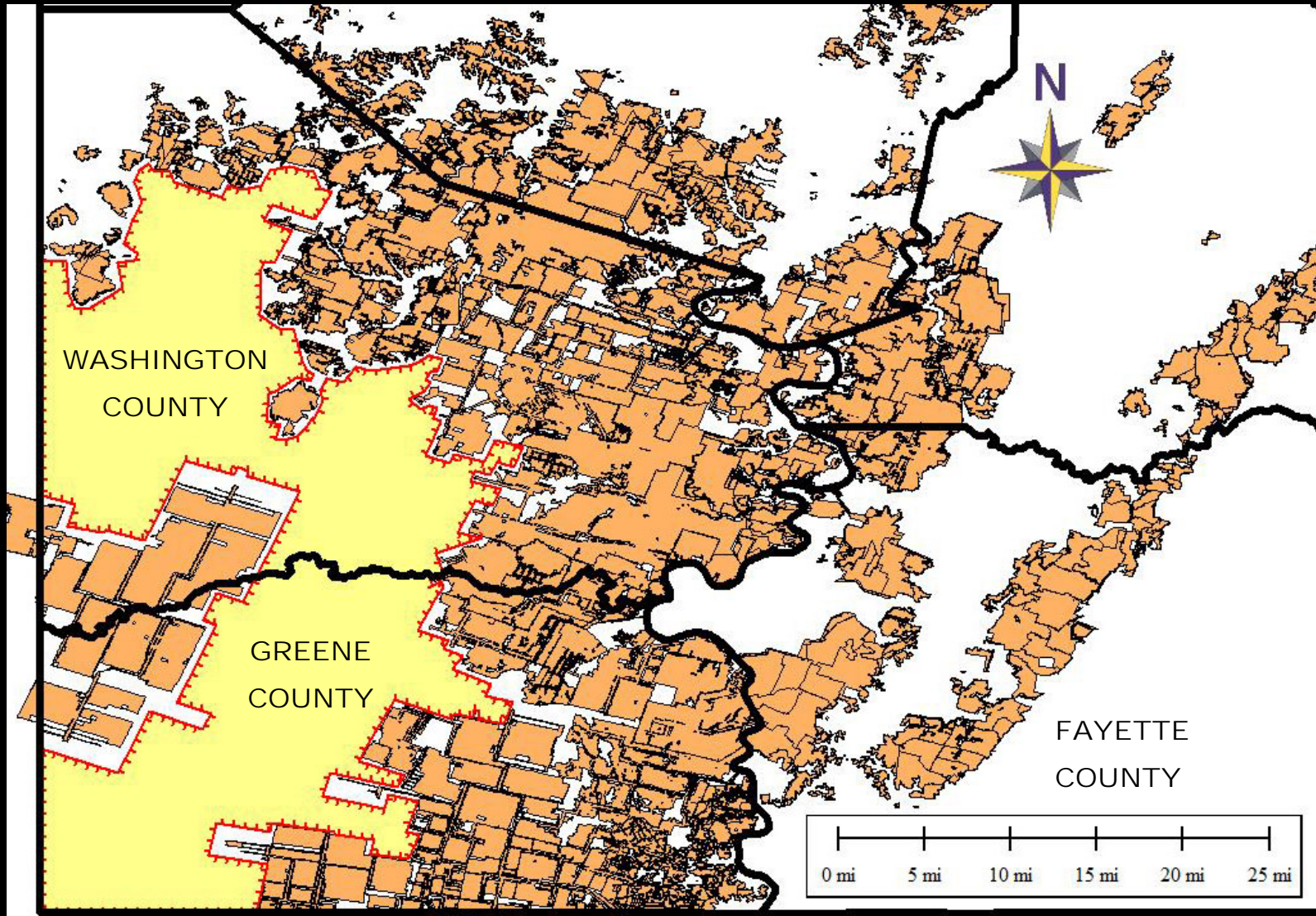
- no comparison of predicted vs not-predicted impacts

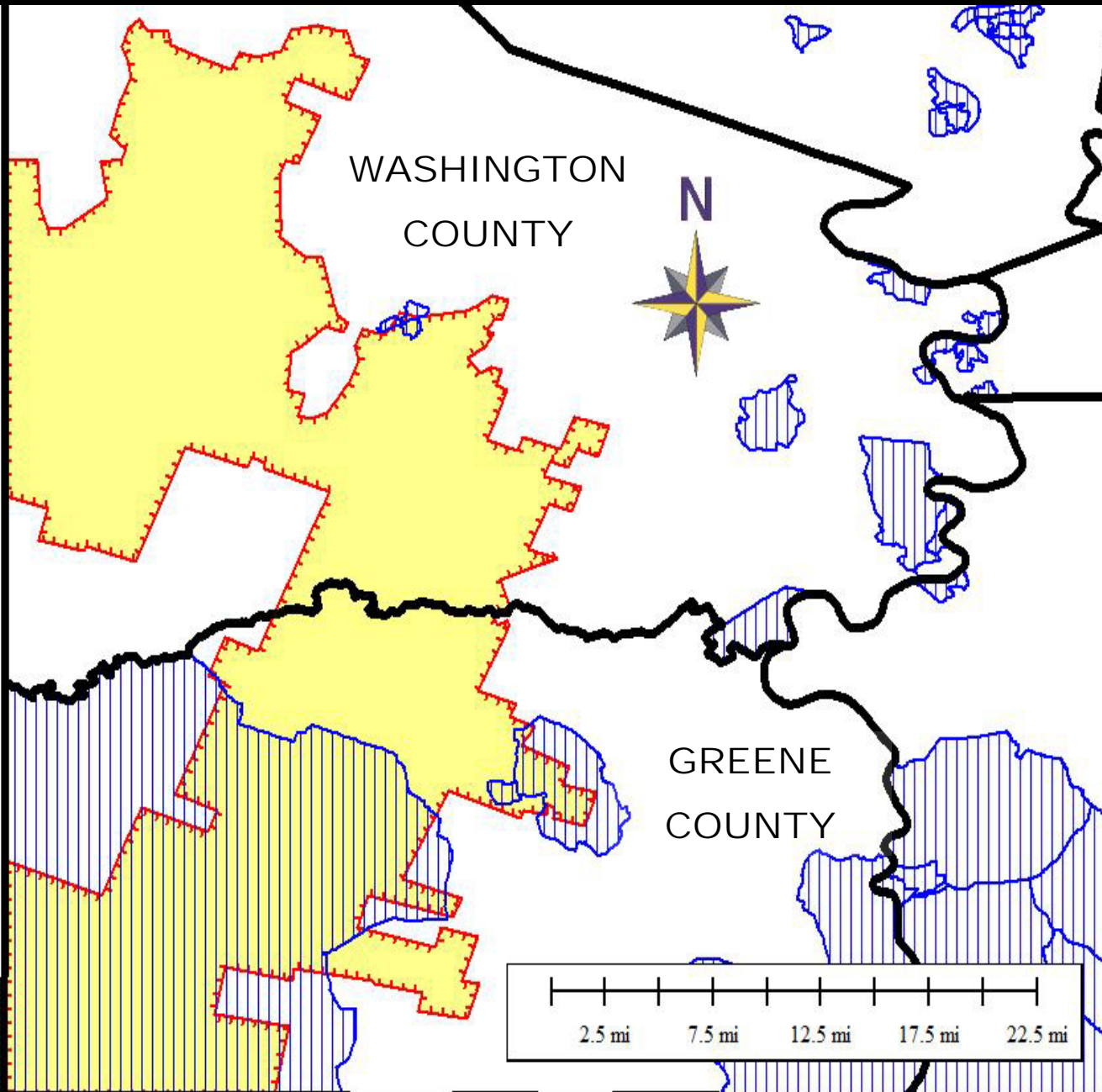
# STREAM MILES AFFECTED BY LONGWALL MINES

(per 4th Act 54 Assessment)



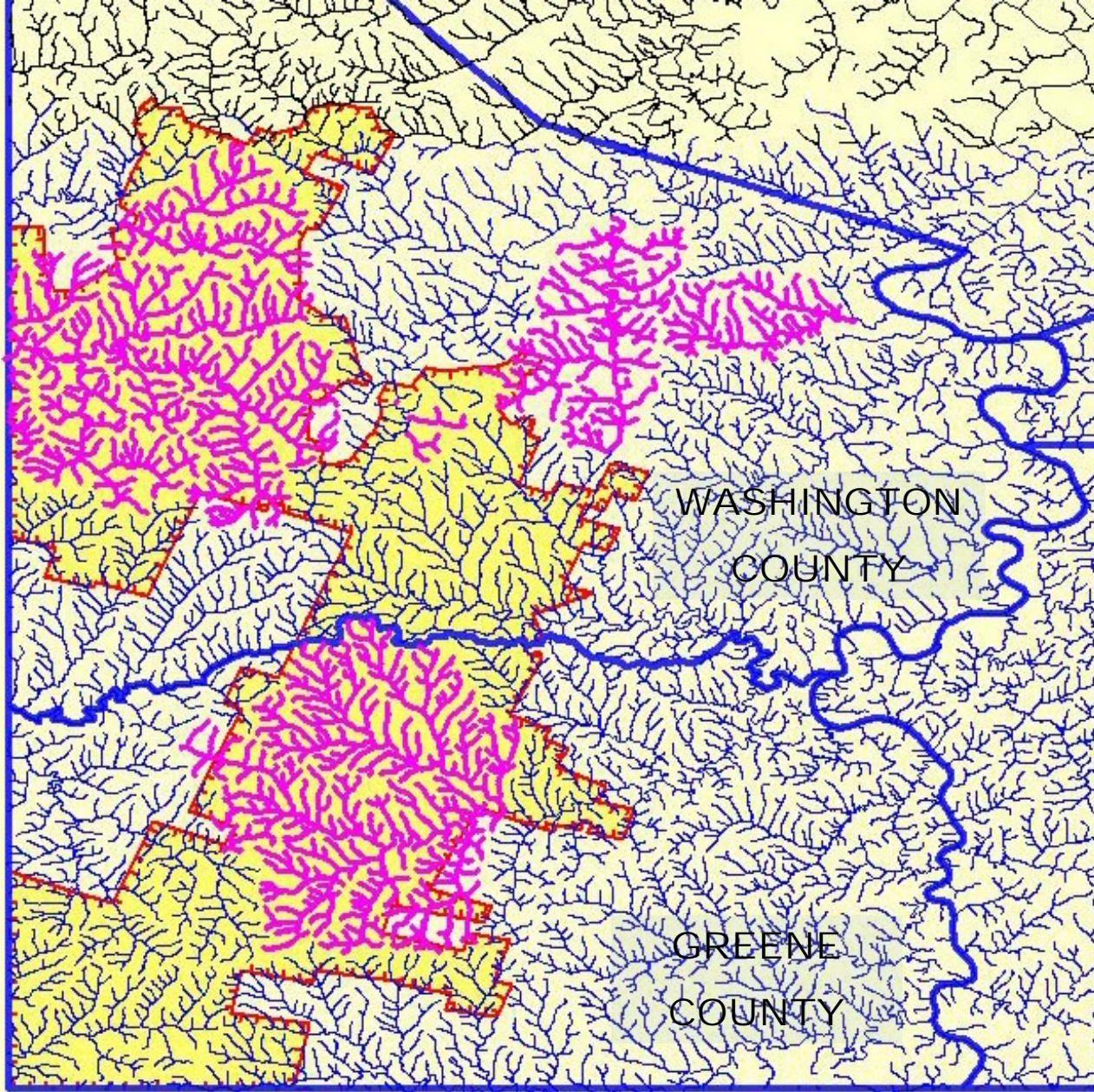
# LOOKING AHEAD: 37 years remain





**Yellow =  
unmined  
Pittsburgh  
Seam**

**Blue Vertical  
Hatching =  
Environmental  
Justice areas  
(32%)**



**Yellow =  
unmined  
Pittsburgh  
Seam**

**Pink =  
Special  
Protection  
Waters  
(51%)**

**Together:  
Special Protection  
+ EJ Areas = 71%**

# RECOMMENDATIONS

- ◆ **4<sup>th</sup> Act 54 Assessment = many practical recommendations**  
**- including BUMIS improvements, Act 54 Database, QC/QA**
- ◆ **Return to mode of Environmental Protection – “no damage”**
- ◆ **Acknowledge differences between mining methods/damages**
- ◆ **Require comprehensive premining inventories**
- ◆ **Require accurate impact predictions -- with consequences**
- ◆ **Require damage repair -- establish strict timeframes**
- ◆ **Revamp Mine Subsidence Insurance (MSI) Fund**
- ◆ **Require adequate bonding for full damage restoration**
- ◆ **Revise reporting and public disclosure – greater transparency**



# TIME LAG FOR NEW POLICY OR REGULATION

10 years ago

TGD 563-2000-655

A revised PADEP

Technical Guidance Document

8 October 2005

*“Surface Water Protection - Underground  
Bituminous Coal Mining Operations”*

Specific methods to identify/assess streams & wetlands

# TGD 563-2000-655

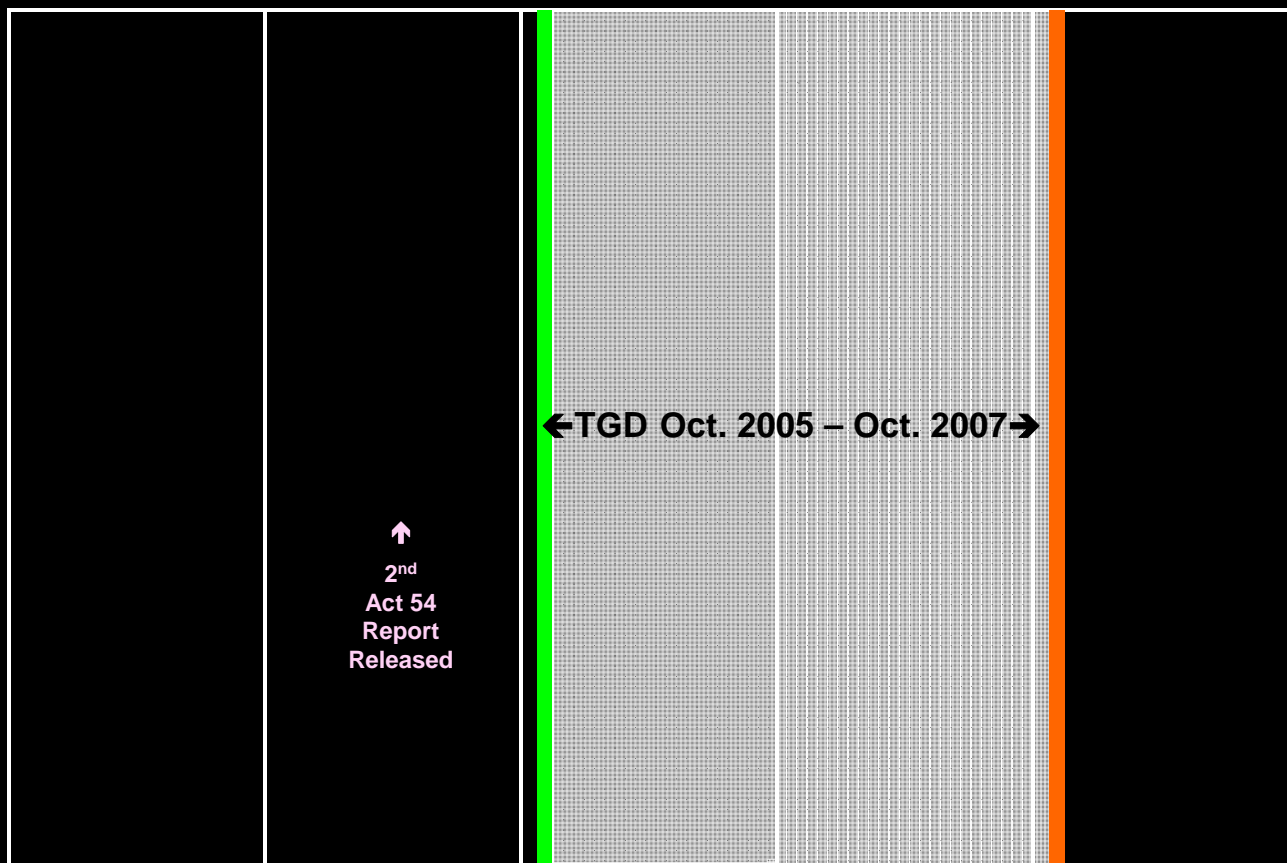
- Most significant change in DEP program since Act 54
- Problems/glitches still need to be fixed
- Still not being followed by mine operators or PADEP
- Still can't be properly evaluated 10 years later
- Ironically, 6 streams determined irreparably damaged since "stream protection" TGD in place

**Need similar TGD for groundwater**

**- but may take 10 – 15 years to evaluate**

----- 3<sup>rd</sup> Act 54 Period -----

TGD  
adopted  
following  
release of  
2<sup>nd</sup> Act 54  
Report →  
(Feb. 2005)



←TGD Oct. 2005 – Oct. 2007→

↑  
2<sup>nd</sup>  
Act 54  
Report  
Released

Aug.  
2003

Aug.  
2004

Aug.  
2005

Aug.  
2006

Aug.  
2007

Aug.  
2008

# DISCONNECT

## *Implementation of ACT 54*

The prevention *or restoration* of damage from mine subsidence is recognized as being related to the economic future and well-being of Pennsylvania.

Article I, Section 27  
Pennsylvania  
Constitution

## *Regulations*

The [mining] operation ... shall ... ensure the protection of the hydrologic balance and ... *prevent adverse hydrologic consequences.*

25 Pa. Code 89.36

"Act 54 is unique in a sense that it ... requires proactivity and certain legal responsibilities on the part of the persons who are affected. In other words, Act 54 requires the affected party to take steps to ensure that they are compensated, and shoulder downstream legal responsibilities, though they are damaged through no fault of their own."

**Evaluation Of Implementation Of Pennsylvania's Longwall Mining Regulations**

Prepared by: The Monaco Group, Inc. (Pittsburgh PA)

Prepared for: Pennsylvania Environmental Council

October 1999

# CAC MISSION

*It is the mission of the Citizens Advisory Council to strive to ensure that all people of the Commonwealth enjoy the benefits included in **Article I, Section 27** of the Pennsylvania Constitution.*

# DEPARTMENT FOLLOWUP NEEDED

- ◆ **Acknowledge problems identified in Act 54 Reports**
- ◆ **Commit to address problems in specific ways**
  - **Regulatory**
  - **Permitting**
  - **Enforcement**
- ◆ **Establish specific timeframes**

(Received Final Report from University of Pittsburgh 30 August 2014)

**THE END**



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