

*Purdue Cooperative Extension Service*

# Soil Productivity Factors and Farmland Assessment

Larry DeBoer  
Purdue University  
July 9, 2013

# Farmland Property Taxes

- Assessed Value of Farmland
  - Equals the base rate per acre of farmland
    - *Base rate calculated each year by the Department of Local Government Finance based on rents, yields, commodity prices, costs and interest rates*
  - Times the acre's soil productivity factor
    - *Accounts for variations in quality of farmland*
  - Less its influence factor, if any
    - *Reduce assessments for characteristics like frequent flooding or forest cover*

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## Calculation of the Base Rate for an Acre of Farmland

**Assessment Year 2012; Tax Year 2013**

### NET INCOMES

### MARKET VALUE IN USE

Year	Cash Rent	Operating	Cap. Rate	Cash Rent	Operating	Average
2004	104	135	6.35%	1,638	2,126	1,882
2005	110	59	7.22%	1,524	817	1,170
2006	110	74	8.18%	1,345	905	1,125
2007	122	184	7.94%	1,537	2,317	1,927
2008	140	189	6.56%	2,134	2,881	2,508
2009	139	116	6.17%	2,253	1,880	2,066

**Average Market Value in Use**

**\$1,630**

## Calculation of the Base Rate for an Acre of Farmland

**Assessment Year 2013; Tax Year 2014**

### NET INCOMES

### MARKET VALUE IN USE

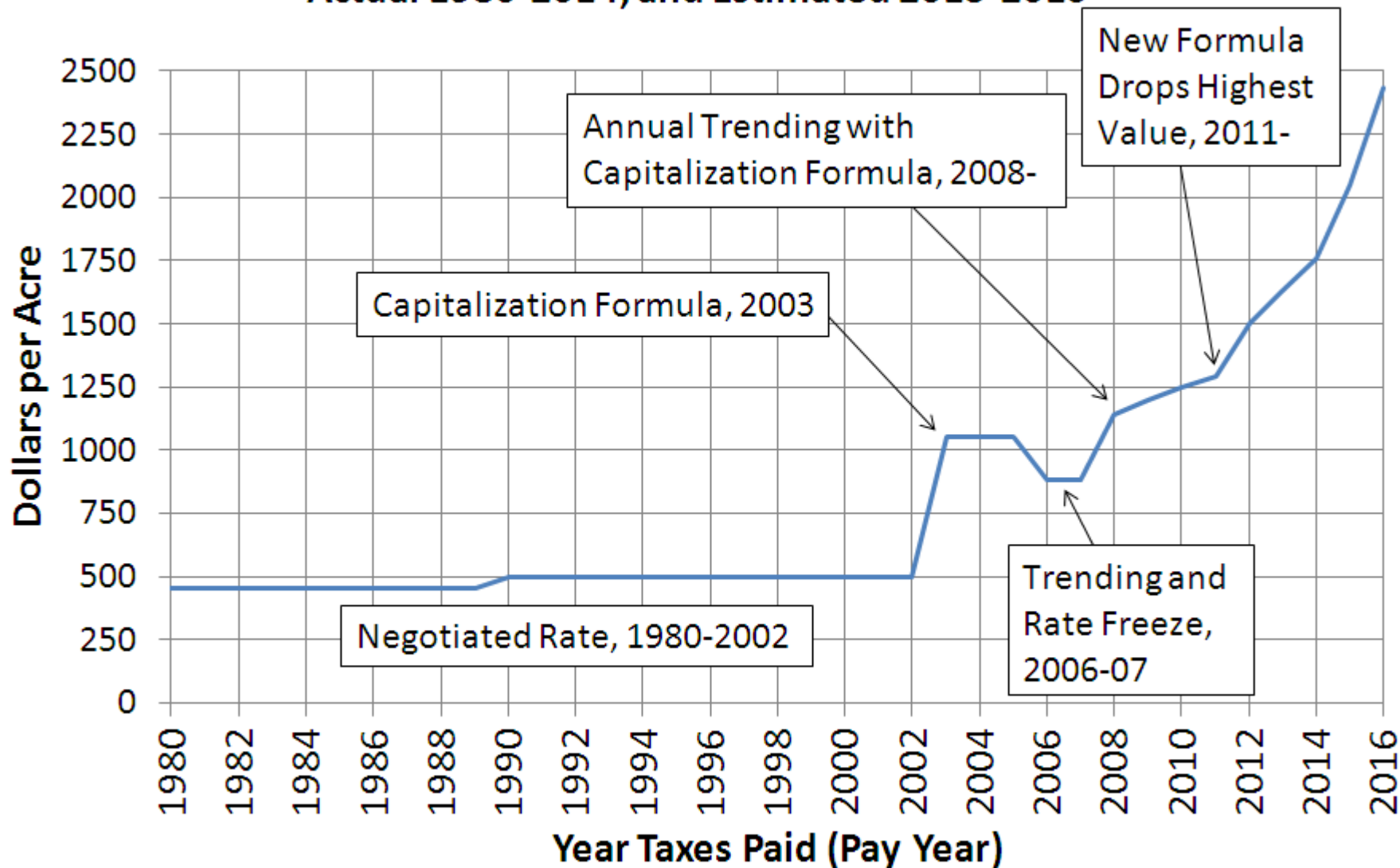
Year	Cash Rent	Operating	Cap. Rate	Cash Rent	Operating	Average
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2006	110	74	8.18%	1,345	905	1,125
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2008	140	189	6.56%	2,134	2,881	2,508
2009	139	116	6.17%	2,253	1,880	2,066
2010	141	173	5.97%	2,362	2,898	2,630

**Average Market Value in Use**

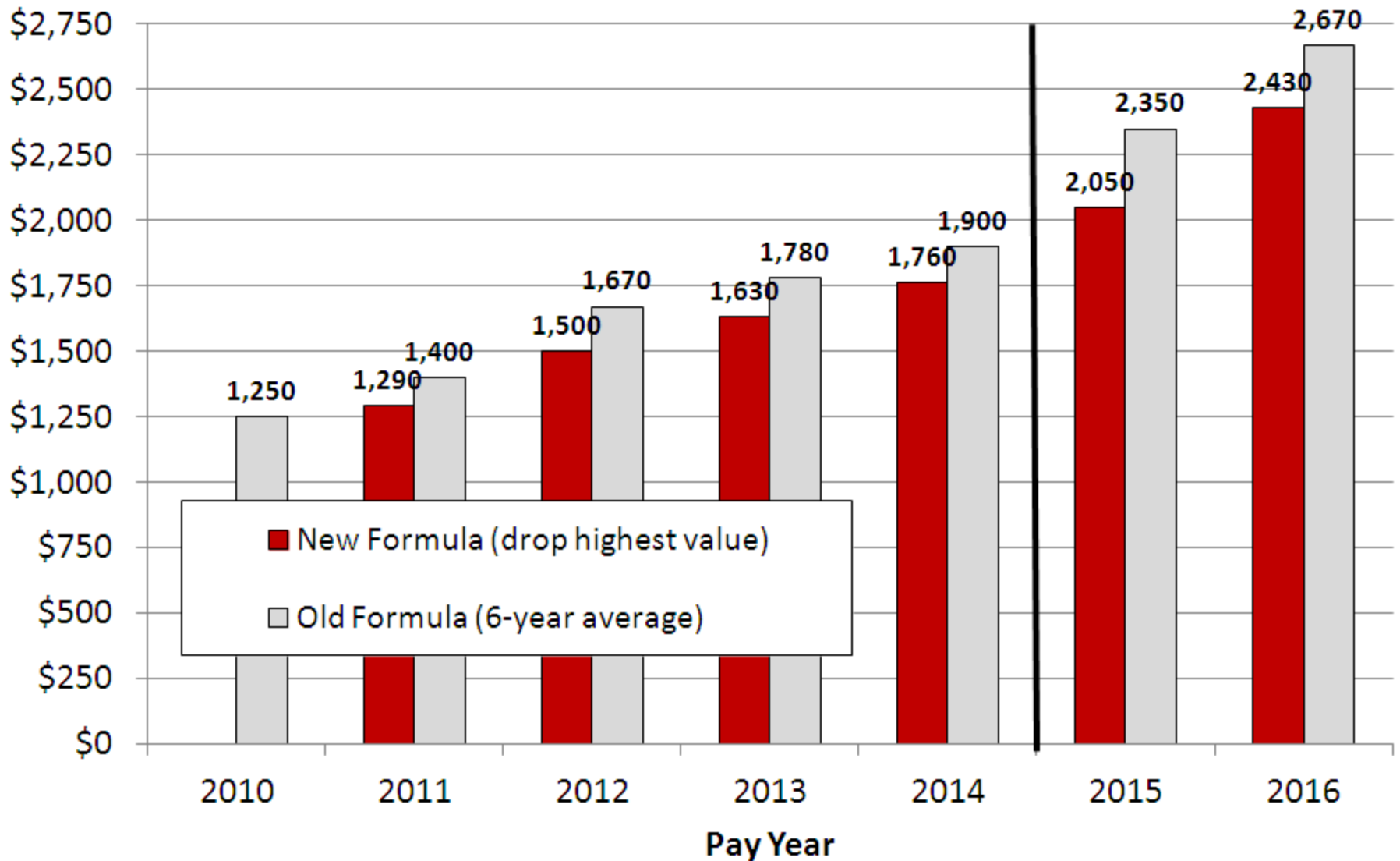
**\$1,760**

**+8.0%**

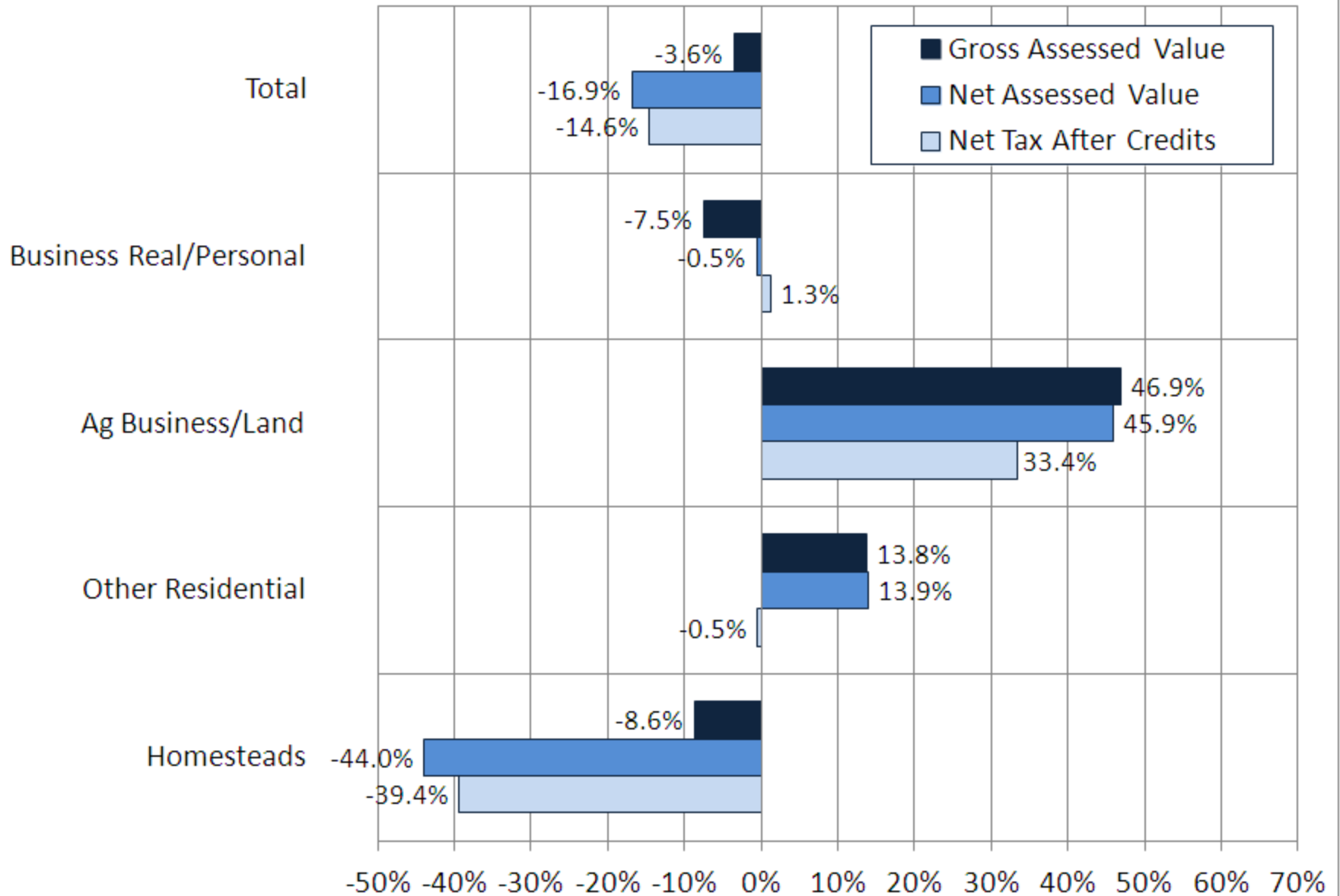
## Base Rate per Acre of Farmland for Property Taxation, Actual 1980-2014; and Estimated 2015-2016



## Farm Land Base Rates: New and Old Formulas (Actual 2010-2014; Estimated 2015-2016)



## Indiana Total Property Taxes, 2007-2013





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    - *Accounts for variations in quality and value of farmland*
  - Less its influence factor, if any
    - *Reduce assessments for characteristics like frequent flooding or forest cover*

# Department of Local Government Finance, “Soil Productivity Factor Update,” February 2, 2012

STATE OF INDIANA  
DEPARTMENT OF LOCAL GOVERNMENT FINANCE



INDIANA GOVERNMENT CENTER NORTH  
100 NORTH SENATE AVENUE N1058(B)  
INDIANAPOLIS, IN 46204  
PHONE (317) 232-3777  
FAX (317) 232-8779

TO: Assessing Officials  
FROM: Barry Wood, Assessment Division Director *BW*  
RE: Soil Productivity Factor Update  
DATE: February 2, 2012

“The Department of Local Government Finance recently requested and received updated Soil Productivity Factors from the Natural Resources Conservation Service. . . .”

“The best soil productivity in the state is now approximately 1.66 (changed from 1.28), while the poorest remains 0.50.”

# Legislative Services Agency, “Soil Productivity Factors,” February 15, 2012

**LEGISLATIVE SERVICES AGENCY**  
Office of Fiscal and Management Analysis  
200 W. Washington Street, Suite 302  
Indianapolis, Indiana 46204-2789  
(317) 233-0696  
(317) 232-2554 (FAX)

## MEMORANDUM

To: Interested Parties  
From: Bob Sigalow  
Re: Soil Productivity Factors  
Date: February 15, 2012

“The Pay 2012 soil productivity factors range from 0.5 to 1.28 with an acreage-weighted average of 0.958. The Pay 2013 factors will range from 0.5 to 1.66 with a weighted average of 1.203, or a 25.5% increase in the average.”

# Legislative Services Agency, “Soil Productivity Factors,” February 15, 2012

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## MEMORANDUM

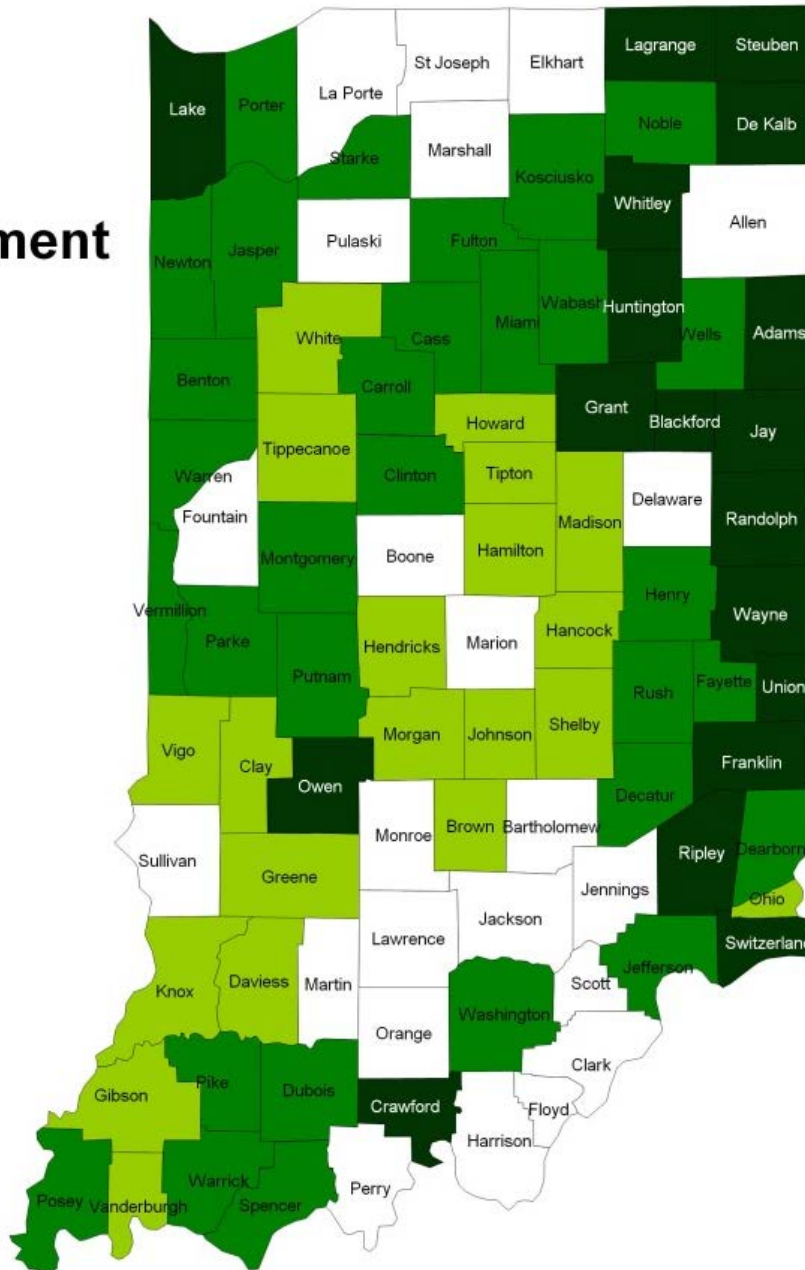
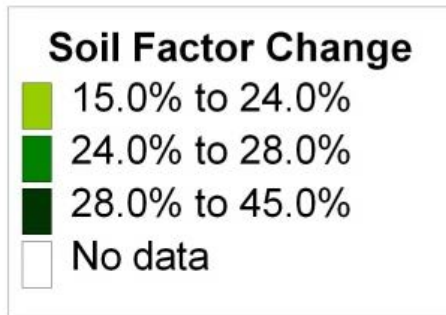
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Re: Soil Productivity Factors  
Date: February 15, 2012

“The new soil productivity factors were introduced into LSA’s property tax model to estimate the resulting tax shift for taxes payable in 2013. For the 69 counties, farmland net taxes are estimated to increase by about \$45.7 million, or 18.5% over the estimated 2013 net tax using the old soil productivity factors.”

# Legislative Services Agency, “Soil Productivity Factors,” February 15, 2012

<b>Estimated Change in 2013 Net Taxes for 69 Counties From Implementation of New Soil Productivity Factors</b>		
<b>Property Type</b>	<b>Net Tax Change</b>	<b>Percent Change</b>
Farmland	\$ 45.7 M	18.5%
Homesteads	\$ -14.2 M	-1.2%
Apartments	\$ -0.2 M	-0.2%
Other Residential	\$ -3.8 M	-0.8%
Ag Business (except Farmland)	\$ -3.9 M	-4.6%
Other Real Property	\$ -6.8 M	-0.7%
Personal Property	\$ -8.5 M	-1.5%
<b>Total</b>	<b>\$ 8.2 M</b>	<b>0.2%</b>

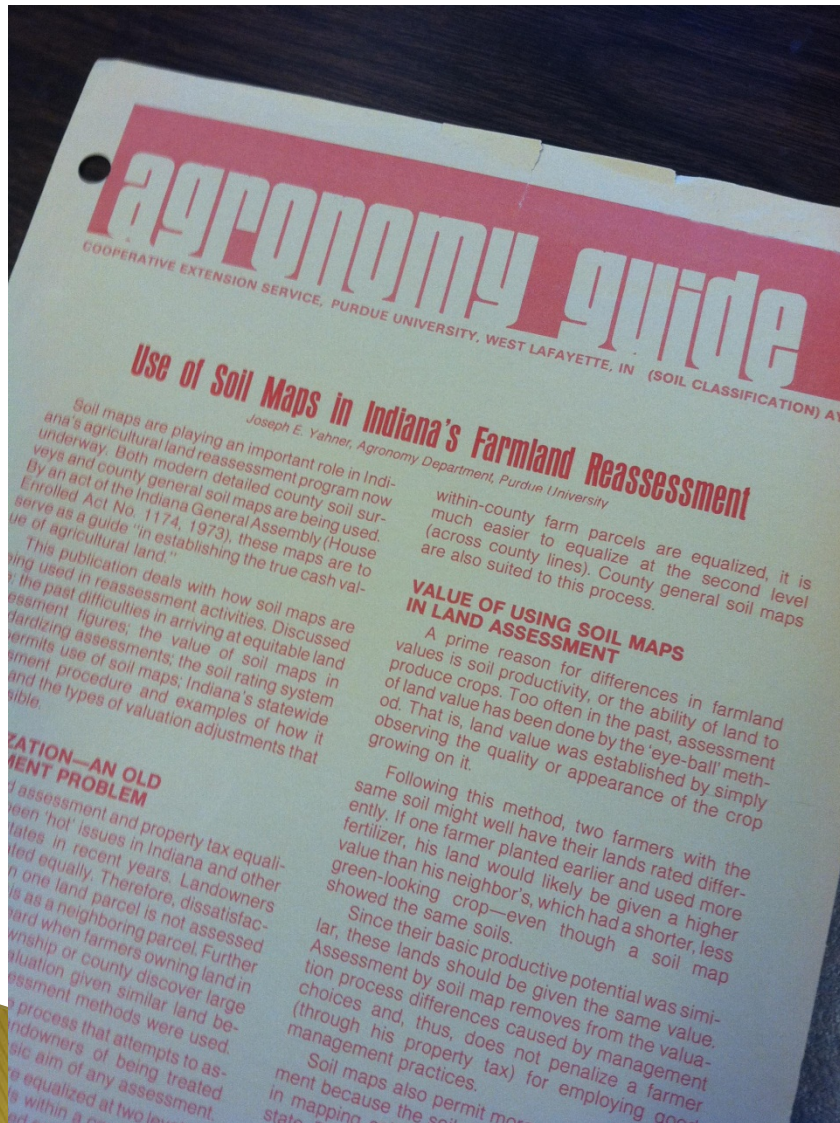
# Percent Change in Weighted Average Soil Factors, 2012-13 Reassessment



## Department of Local Government Finance, Real Property Assessment Guidelines, Chapter 2 “Land”.

“The productivity factor for a soil map unit is calculated by dividing the estimated 10-year average corn yield (calculated in bushels per acre) by 100. Productivity factors do not accurately predict the actual yields for a particular year since weather has a great influence on actual yields. However, you can think of the soil productivity index as a relative ranking of soil map units. The more productive the soil, the higher the rating. The best soil in the state has a productivity factor of approximately 1.28; the poorest soil has a productivity factor of .50.” (pp. 95-96)

# Use of Soil Maps in Indiana's Farmland Reassessment, March 1979

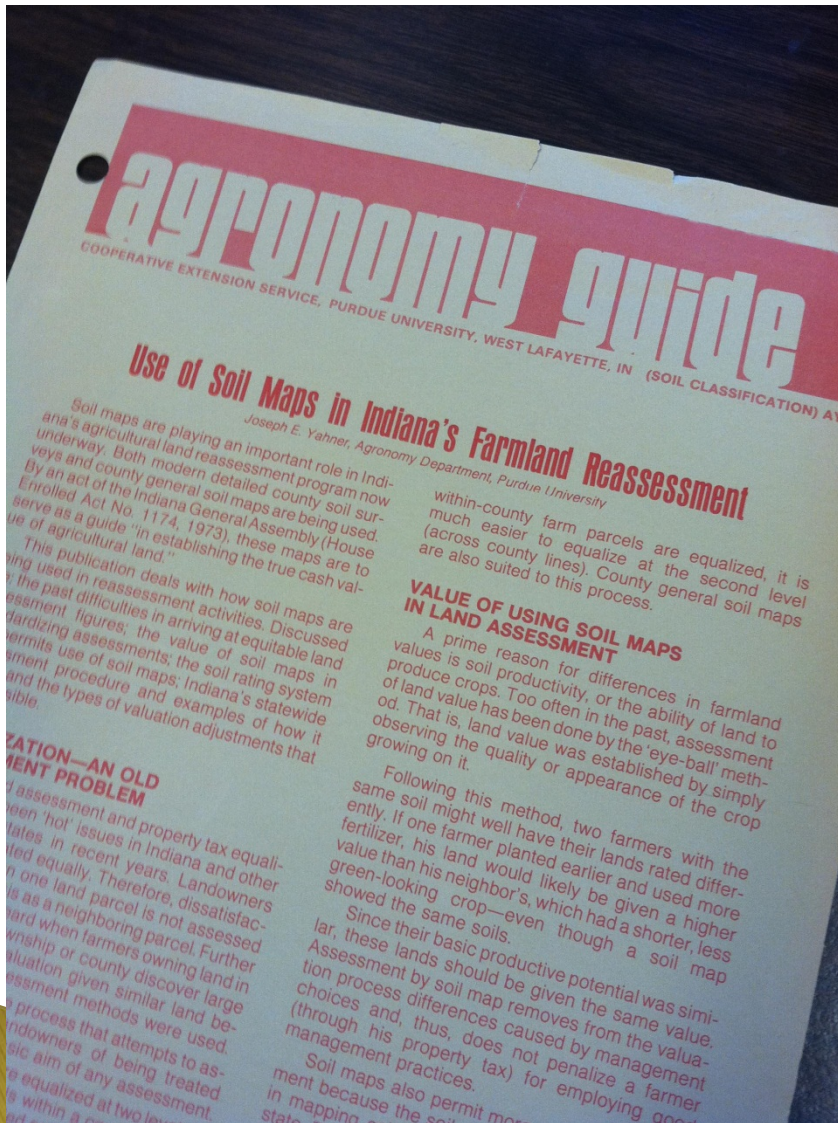


“Too often in the past, assessment of land value has been done by the ‘eye-ball’ method. That is, land value was established by simply observing the quality or appearance of the crop growing on it.”

“Assessment by soil map removes from the valuation process differences caused by management choices and, thus, does not penalize a farmer (through his property tax) for employing good management practices.”

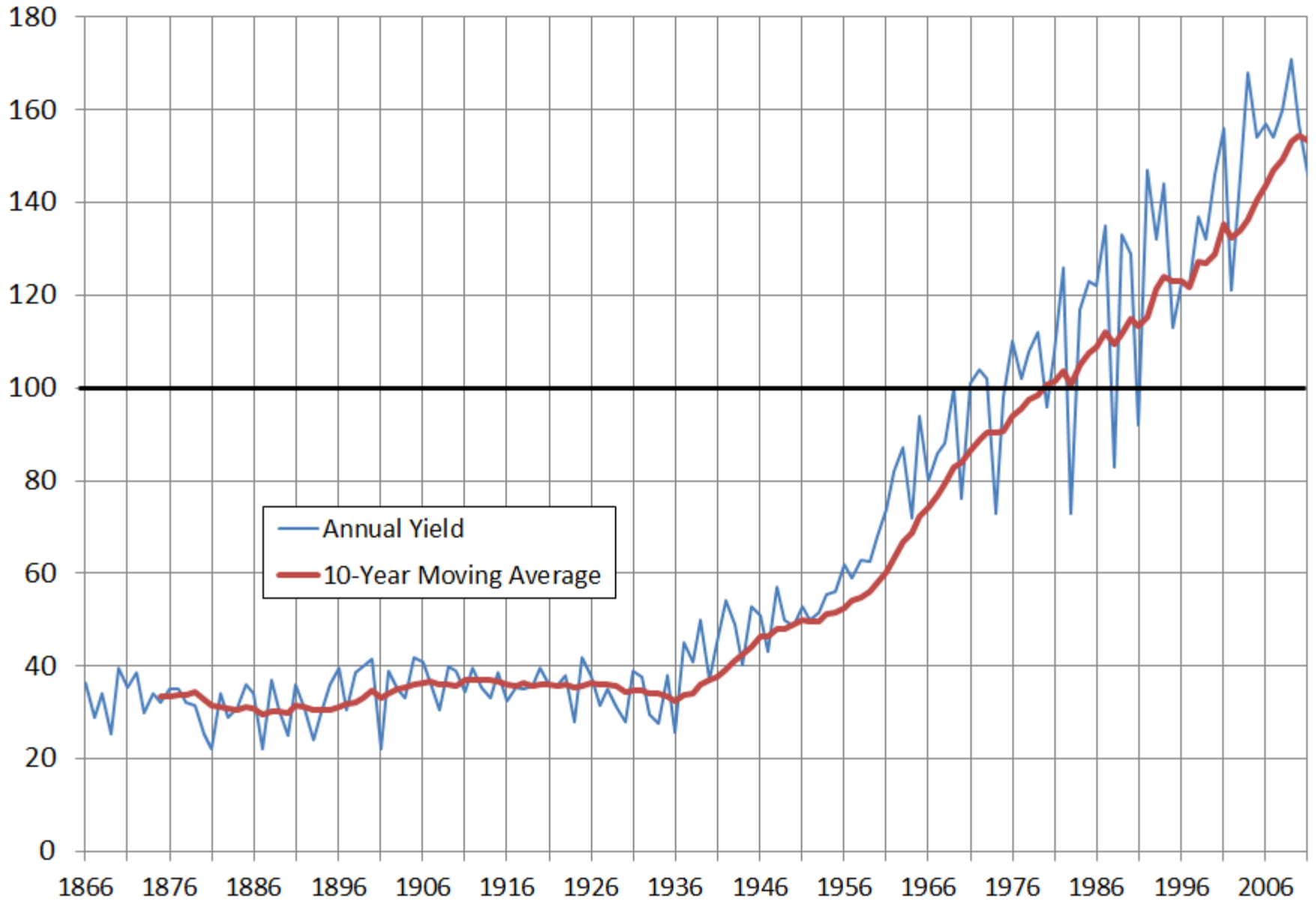


# Use of Soil Maps in Indiana's Farmland Reassessment, March 1979



“The estimated yield translates into a yield factor (estimated yield / 100) and is applied to a base rate of \$450, which is the prescribed true cash value of an acre of land capable of producing 100 bushels of corn.”

# Indiana Corn Yield, Bushels per Acre



# SEA 319 / Public Law 1 (2013)

SECTION 1. IC 6-1.1-4-13, AS AMENDED BY P.L.112-2012, SECTION 9, IS AMENDED TO READ AS FOLLOWS [EFFECTIVE MARCH 1, 2013 (RETROACTIVE)]:

However, notwithstanding the availability of new soil productivity factors and the department of local government finance's notice of the appropriate soil productivity factor for each type or classification of soil shown on the United States Department of Agriculture's soil survey map for the March 1, 2012, assessment date, *the soil productivity factors used for the March 1, 2011, assessment date shall be used for the March 1, 2012, assessment date and for the March 1, 2013, assessment date.* *New soil productivity factors shall be used for assessment dates occurring after March 1, 2013.*

# SEA 319 / Public Law 1

SECTION 1. IC 6-1.1-4-13, AS AMENDED BY P.L.112-2012, SECTION 9, IS AMENDED TO READ AS FOLLOWS [EFFECTIVE MARCH 1, 2013 (RETROACTIVE)]:

(a) The department of local government finance, in cooperation with the Purdue University College of Agriculture, shall before November 1, 2013, submit the following to the commission on state tax and financing policy and to any interim study committee established to study agriculture issues or assigned the topic of studying agriculture issues:

(1) Proposed soil productivity factors to be used in the assessment of agricultural land under IC 6-1.1-4-13.

(2) An explanation of the methodology used to determine the proposed soil productivity factors.

(3) Data, from each county, used to determine the proposed soil productivity factors.

(4) Evidence of oral testimony and written comments provided to the department of local government finance by taxpayers and other stakeholders concerning the proposed soil productivity factors.

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