



2014 Property Tax Base Projections

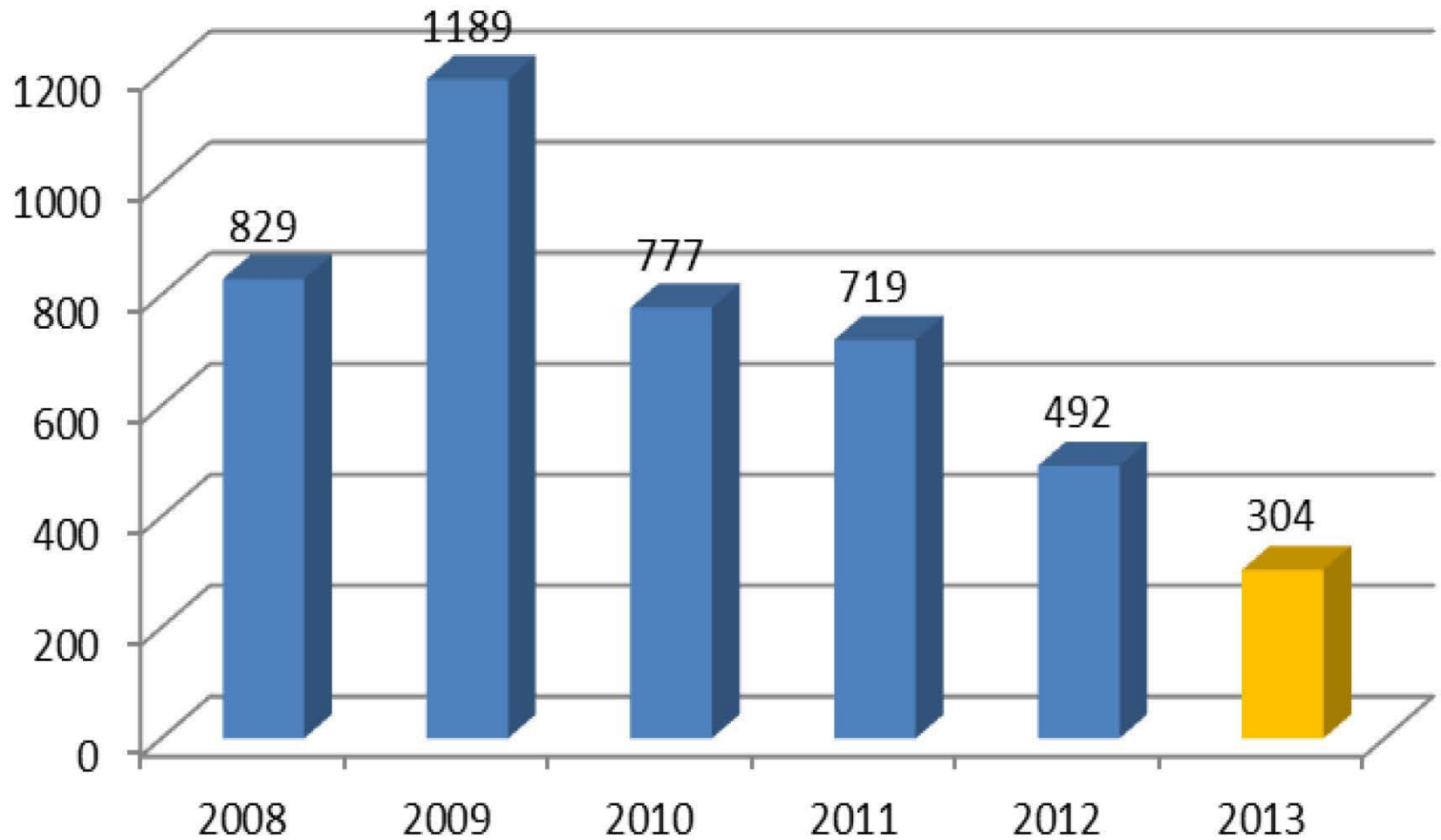
SALES OCTOBER 1, 2012 - SEPTEMBER 30, 2013		
2014 Ratios/Change	Rev Dates	Change based on:
Preliminary as of 11/7/13		49.50%
	RESIDENTIAL RATIOS	RESIDENTIAL CHANGES
Addison Township	43.50	13.79%
Bloomfield Township	45.04	9.90%
Brandon Township	45.77	8.15%
Commerce Township	45.13	9.68%
Groveland Township	45.82	8.03%
Highland Township	45.66	8.41%
Holly Township	45.98	7.66%
Independence Township	45.50	8.79%
Lyon Township	46.22	7.10%
Milford Township	44.54	11.14%
Novi Township	45.48	8.84%
Oakland Township	45.92	7.80%
Orion Township	45.35	9.15%
Oxford Township	45.54	8.70%
Rose Township	46.00	7.61%
Royal Oak Township	50.66	-2.29%
Southfield Township	43.96	12.60%
Springfield Township	46.10	7.38%
Waterford Township	46.28	6.96%
West Bloomfield Township	45.41	9.01%
White Lake Township	45.54	8.70%

Auburn Hills	45.55	8.67%
Berkley	44.24	11.89%
Birmingham	44.45	11.36%
Bloomfield Hills	45.18	9.56%
Clarkston	45.98	7.66%
Clawson	43.81	12.99%
Farmington	45.99	7.63%
Farmington Hills	45.43	8.96%
Fenton	49.65	-0.30%
Ferndale	44.82	10.44%
Hazel Park	48.47	2.13%
Huntington Woods	44.44	11.39%
Keego Harbor	46.21	7.12%
Lake Angelus	47.02	5.27%
Lathrup Village	45.15	9.63%
Madison Heights	46.22	7.10%
Northville	44.03	12.42%
Novi City	45.57	8.62%
Oak Park	48.01	3.10%
Orchard Lake	45.52	8.74%
Pleasant Ridge	44.92	10.20%
Pontiac	48.38	2.32%
Rochester	44.95	10.12%
Rochester Hills	44.88	10.29%
Royal Oak City	45.62	8.51%
Southfield City	47.68	3.82%
South Lyon	46.24	7.05%
Sylvan Lake	44.38	11.54%
Troy	45.37	9.10%
Walled Lake	44.81	10.47%
Wixom	45.03	9.93%
	Average	8.36%

Commercial Industrial

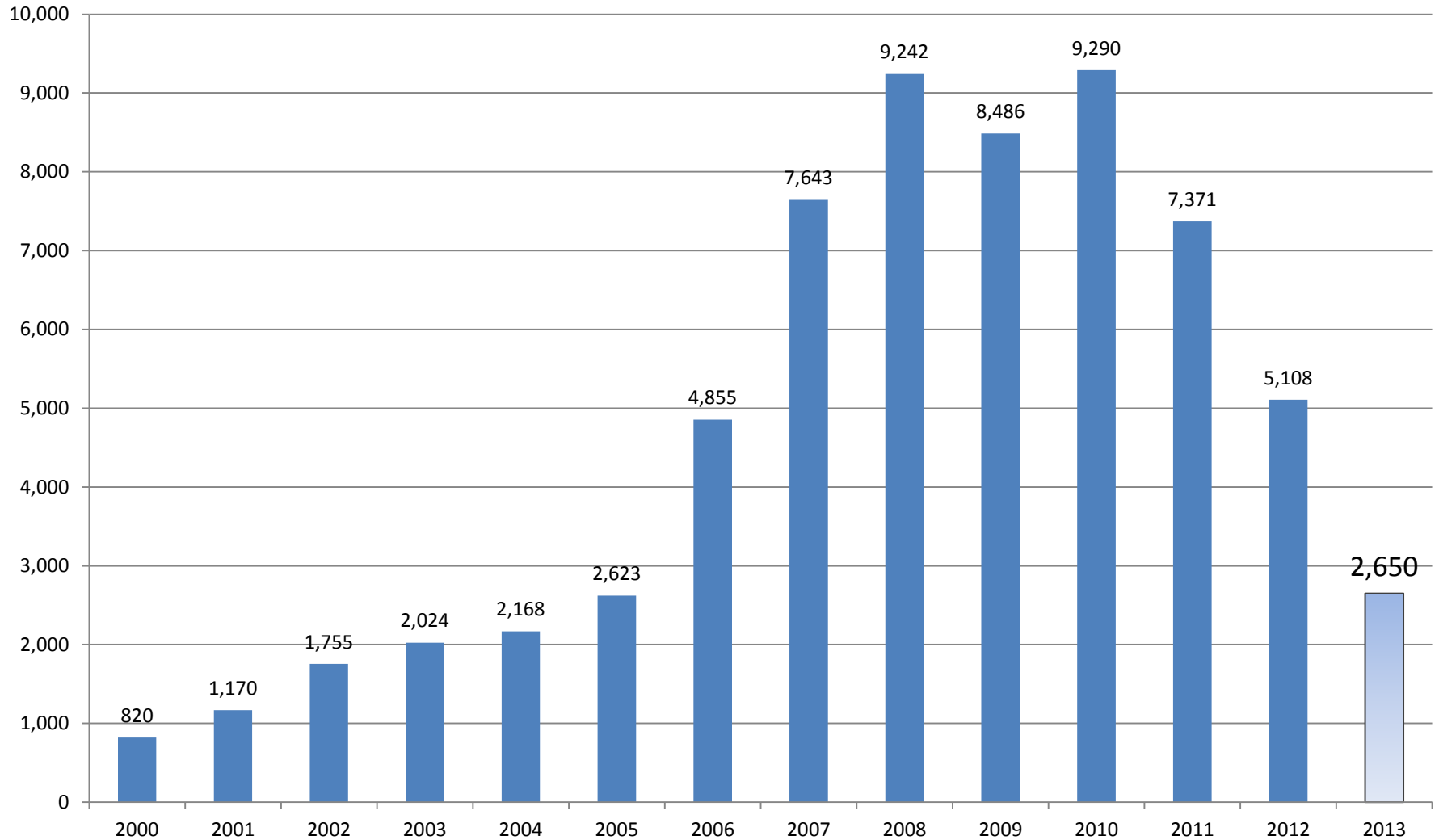
	COMMERCIAL CHANGE	INDUSTRIAL CHANGE
Auburn Hills	0.00%	-2.32%
Berkley	0.04%	0.10%
Birmingham	0.71%	0.00%
Bloomfield Hills	0.40%	
Clarkston	0.51%	
Clawson	-0.56%	0.02%
Farmington	0.83%	0.24%
Farmington Hills	-3.08%	-1.07%
Fenton		
Ferndale	0.63%	-0.18%
Hazel Park	-0.84%	-0.80%
Huntington Woods	0.32%	
Keego Harbor	-0.44%	
Lake Angelus	-0.08%	
Lathrup Village	-4.09%	
Madison Heights	-0.86%	1.84%
Northville	-0.14%	-0.12%
Novi City	2.24%	-1.13%
Oak Park	-1.76%	-1.84%
Orchard Lake	0.26%	-0.28%
Pleasant Ridge	0.00%	#DIV/0!
Pontiac	-4.69%	-5.56%
Rochester	1.32%	0.85%
Rochester Hills	0.89%	0.91%
Royal Oak City	-0.42%	0.14%
Southfield City	-1.50%	-1.25%
South Lyon	-0.40%	-0.32%
Sylvan Lake	2.09%	1.76%
Troy	-1.09%	-1.97%
Walled Lake	-0.34%	-0.26%
Wixom	0.28%	0.93%

March BOR Petitions



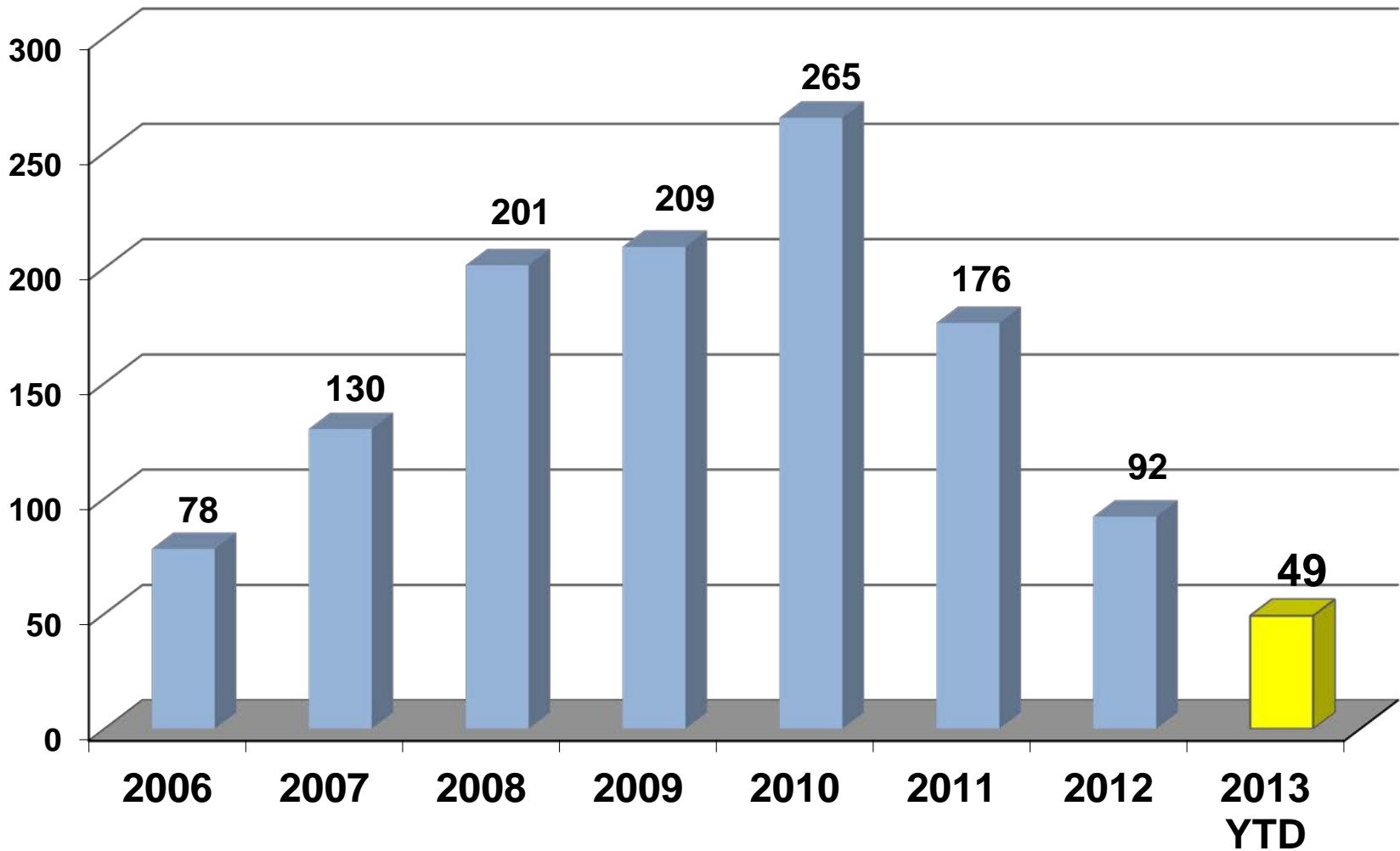
OAKLAND COUNTY

SHERIFF DEEDS: FORECLOSURES



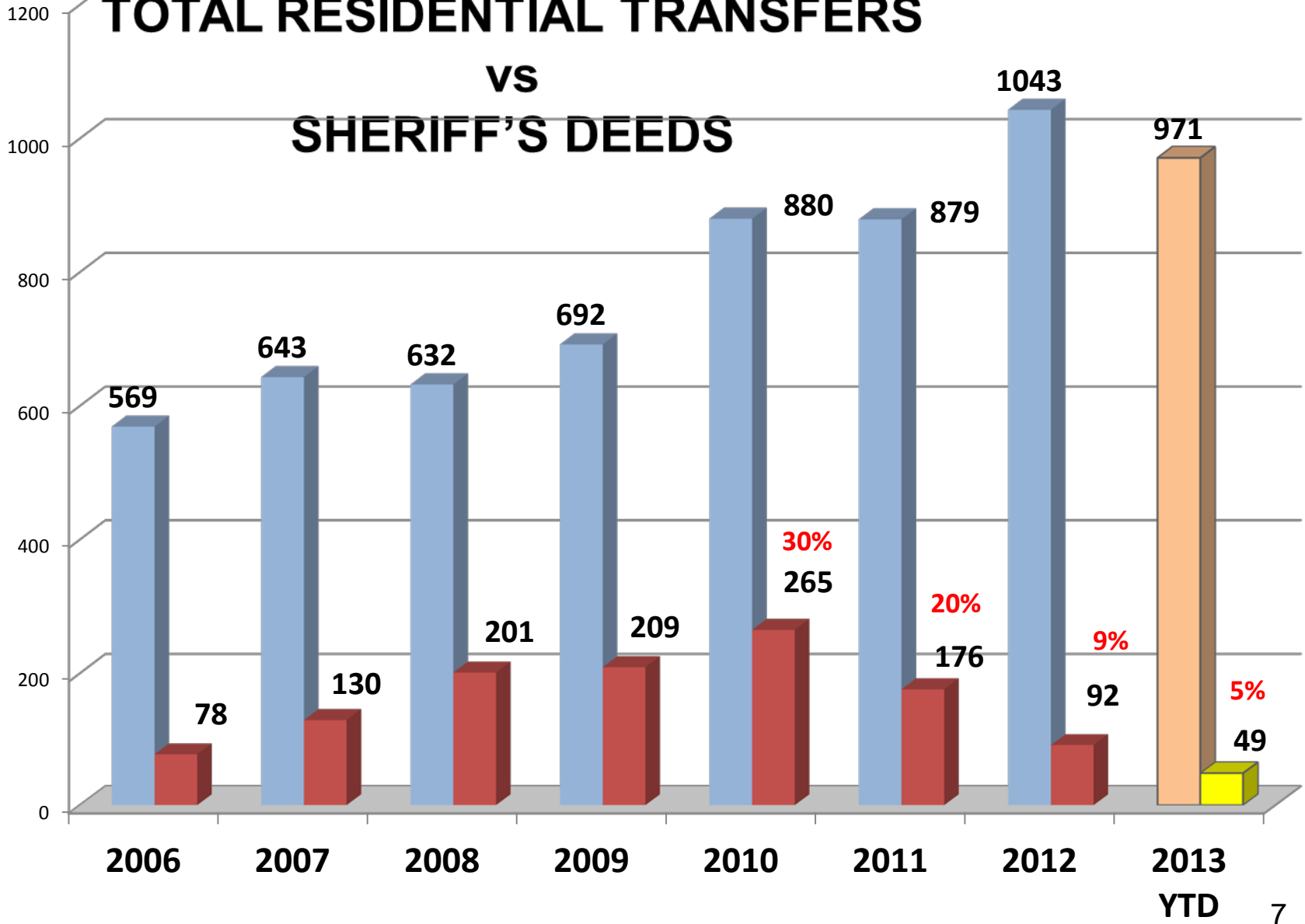
**2013 Totals estimated by using data available up to 11-1-13
Sheriff Deed totals retrieved from the Oakland County Register of Deeds office.*

SHERIFF'S DEEDS

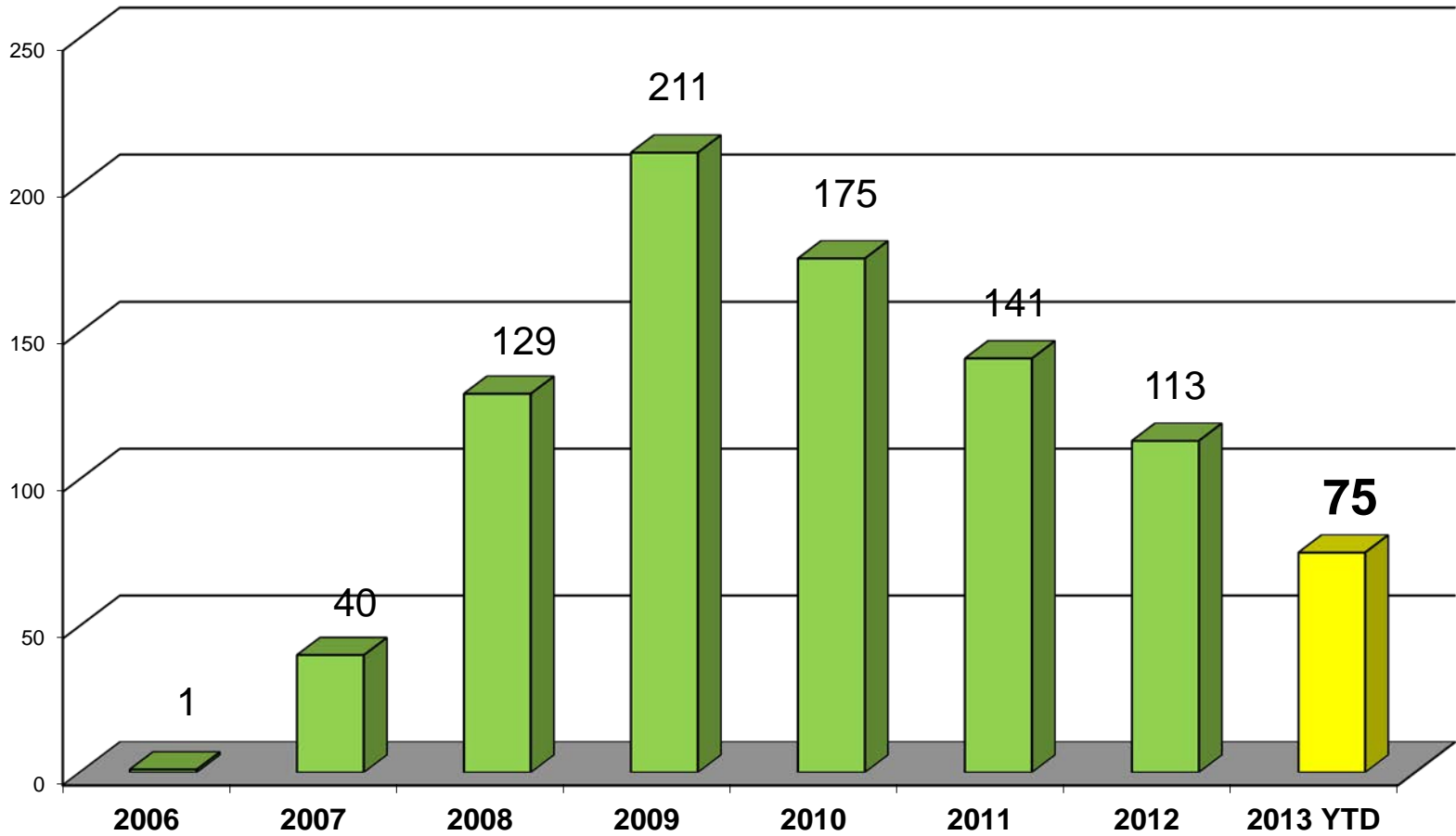


TOTAL RESIDENTIAL TRANSFERS

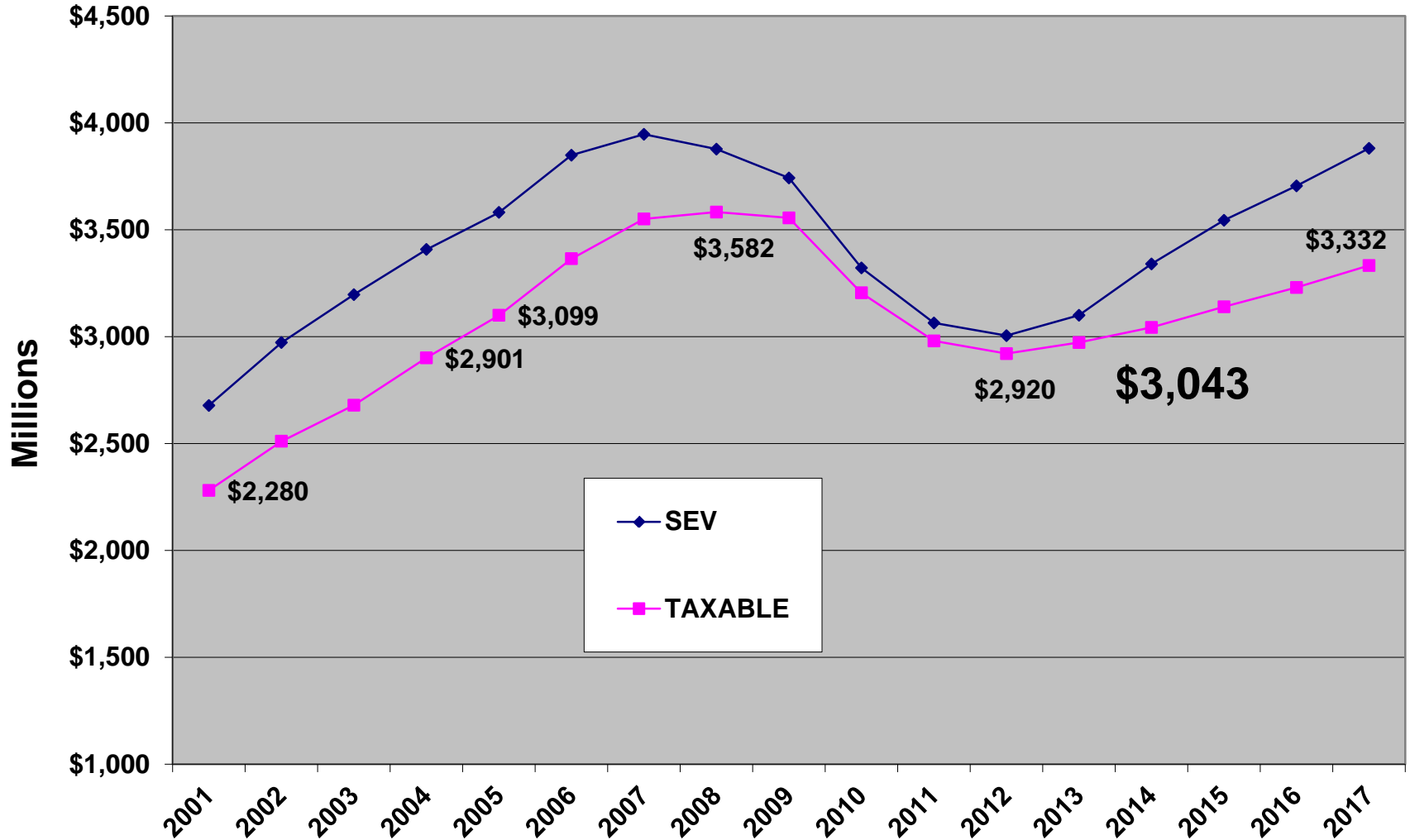
VS SHERIFF'S DEEDS



BANK SALES 2006-2013



SEV & TAXABLE VALUES 2001 - 2017



ASSESSED AND TAXABLE VALUE PROJECTION FOR 2014

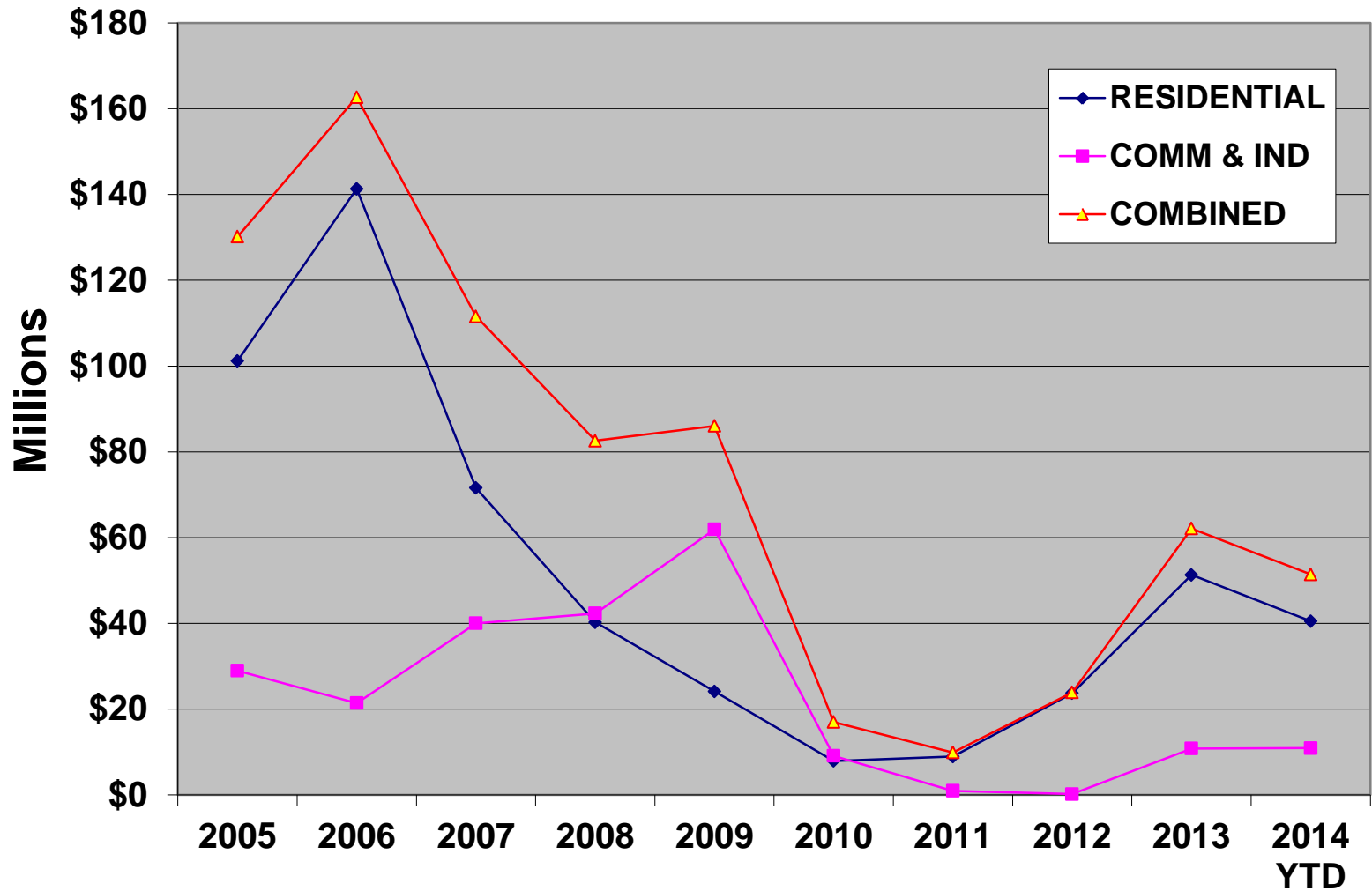
RESIDENTIAL PROPERTIES 17,273 PARCELS	2013 ACTUAL	NEW/ADDNS	LOSS/LOSSES	2014 ESTIMATED	2014 ADJ ONLY
SEV	\$1,982,518,310	\$46,214,360	\$3,474,100	\$2,217,495,900	\$2,171,281,540
TAXABLE	\$1,892,836,510	\$37,939,870	\$446,593	\$1,978,436,170	\$1,940,496,300
% CHANGE TO ASSESSED				11.85%	8.85%
% CHANGE TO TAXABLE				4.52%	2.48%
% OF PARCELS WHERE SEV = TAXABLE				14.65%	
% OF VALUE WHERE SEV = TAXABLE				89.22%	

COMMERCIAL & INDUSTRIAL PROPERTIES 1,077 PARCELS	2013 ACTUAL	NEW/ADDNS	LOSS/LOSSES	2014 ESTIMATED	2014 ADJ ONLY
SEV	\$893,516,550	\$16,495,700	\$7,205,500	\$920,061,050	\$903,565,350
TAXABLE	\$855,546,320	\$10,893,500	\$1,683,254	\$862,312,780	\$851,419,280
% CHANGE TO ASSESSED				2.97%	1.91%
% CHANGE TO TAXABLE				0.79%	-0.29%
% OF PARCELS WHERE SEV = TAXABLE				44.57%	
% OF VALUE WHERE SEV = TAXABLE				93.72%	

PERSONAL PROPERTY - ESTIMATED 653 PARCELS	2013 ACTUAL	NEW/ADDNS	LOSS/LOSSES	2014 ESTIMATED	2014 ADJ ONLY
SEV & TAXABLE	\$223,698,750	\$32,930,800	\$40,527,500	\$202,000,000	-\$169,069,200

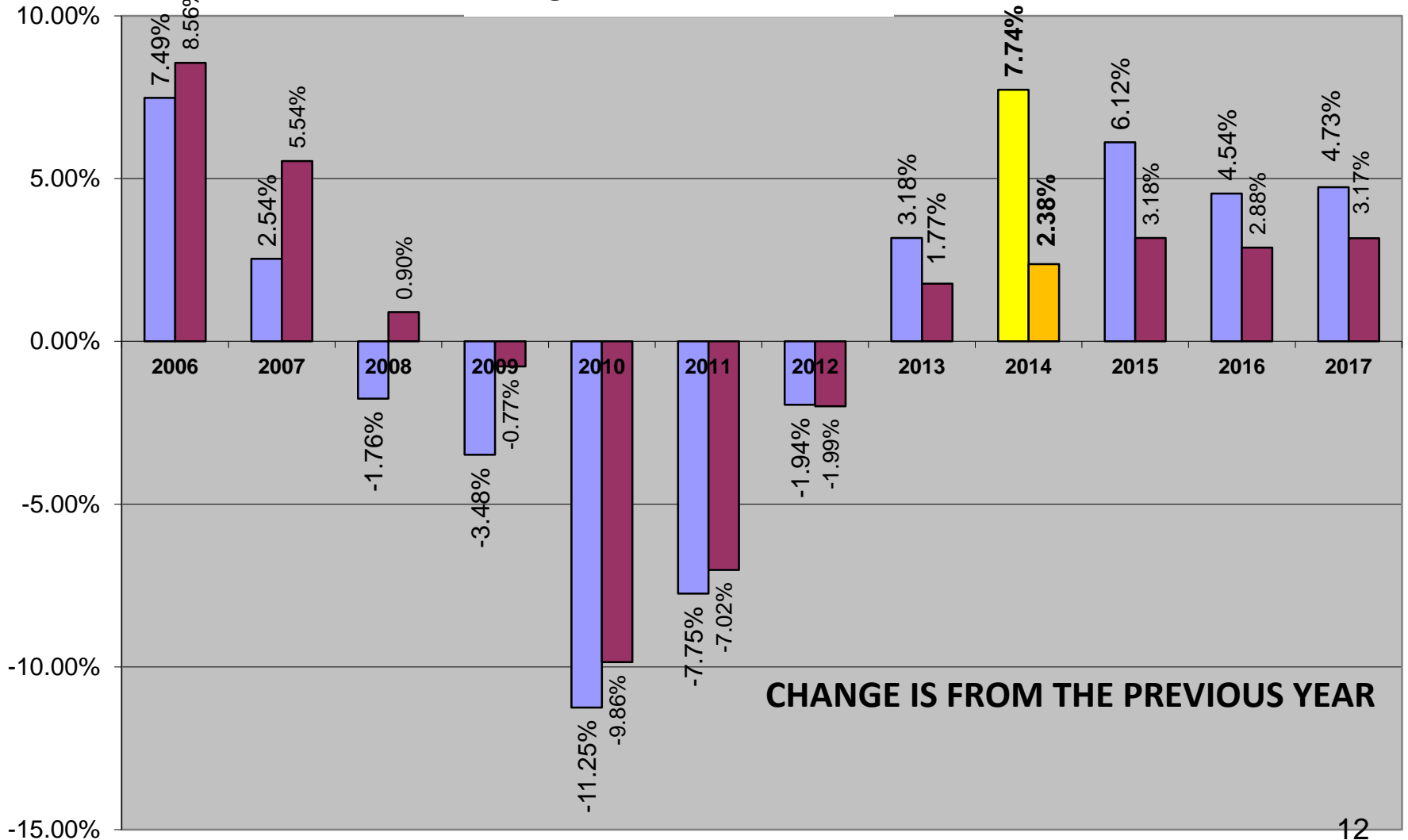
ALL PROPERTIES 19,003 PARCELS	2013 POST MBOR	NEW/ADDNS	LOSS/LOSSES	2014 ESTIMATED	2014 ADJ ONLY
SEV	\$3,099,733,610	\$95,640,860	\$51,207,100	\$3,339,556,950	\$2,905,777,690
TAXABLE	\$2,972,081,580	\$81,764,170	\$42,657,347	\$3,042,748,950	\$2,622,846,380
% CHANGE TO ASSESSED				7.74%	6.02%
% CHANGE TO TAXABLE				2.38%	1.07%
% OF PARCELS WHERE SEV = TAXABLE				19.28%	
% OF VALUE WHERE SEV = TAXABLE				91.11%	

ADDITIONS FROM NEW CONSTRUCTION



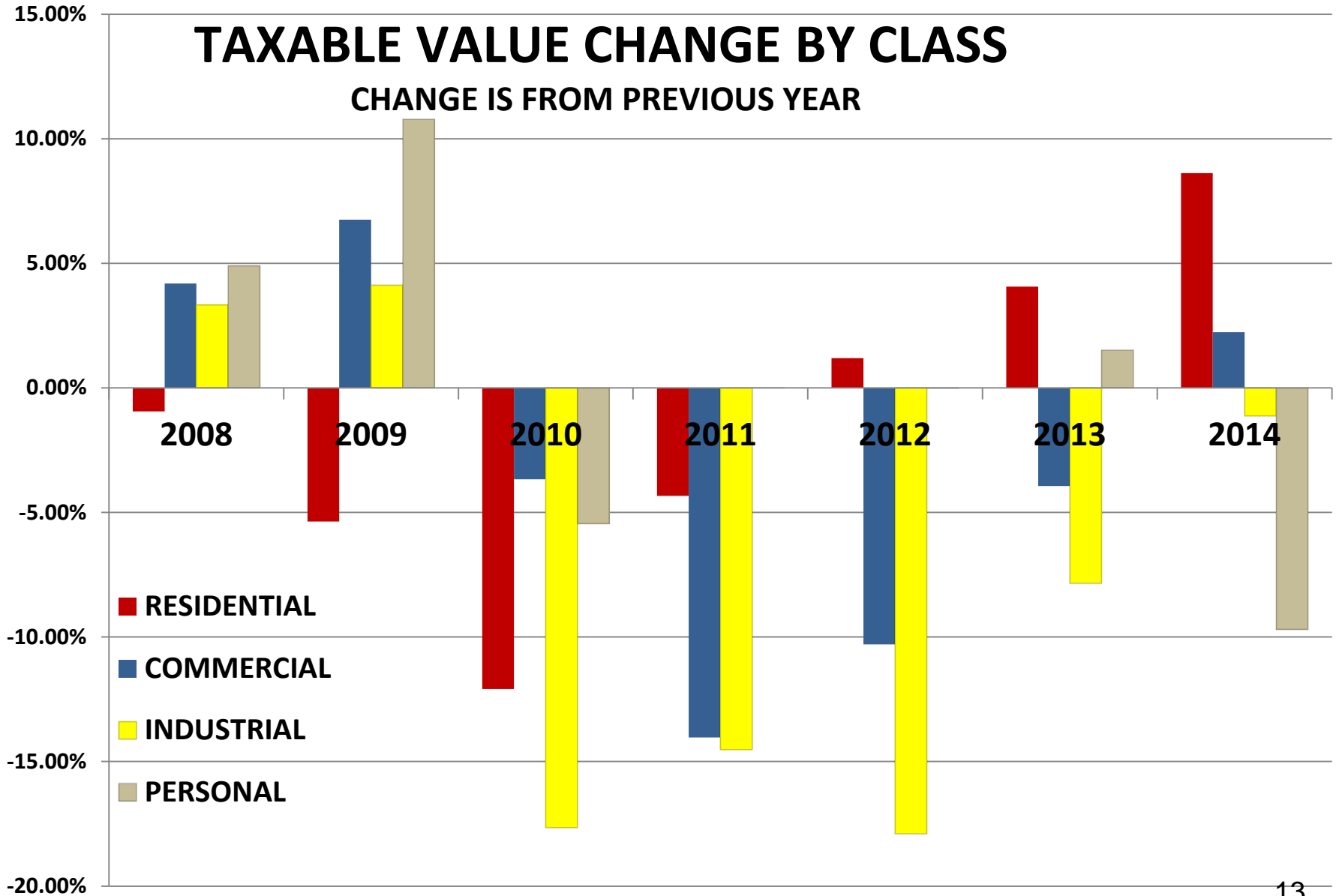
VALUE CHANGE 2005 - 2017

SEV TAXABLE



TAXABLE VALUE CHANGE BY CLASS

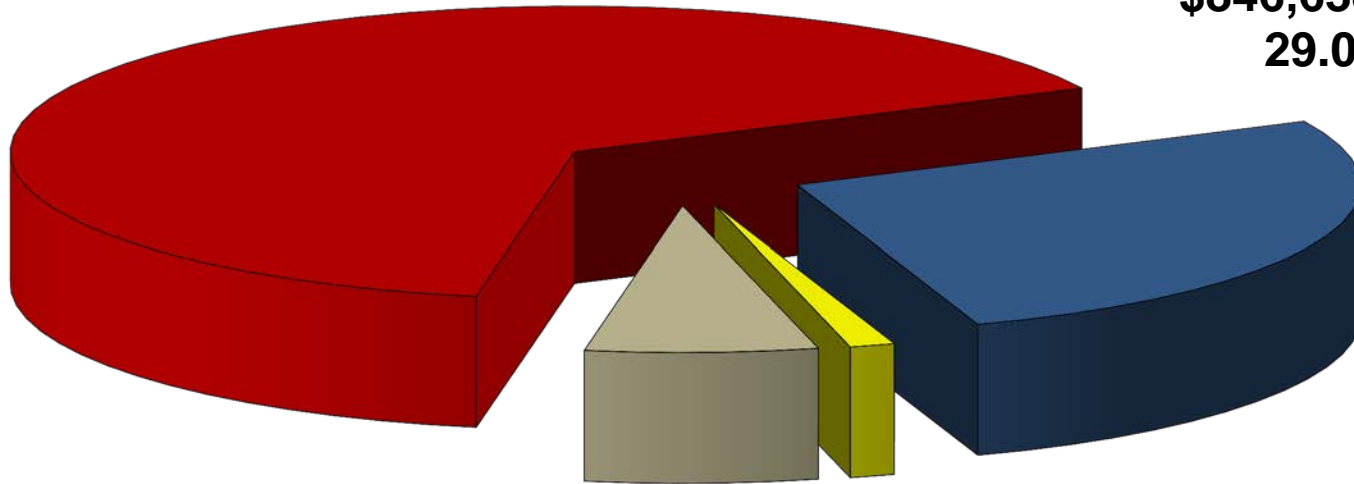
CHANGE IS FROM PREVIOUS YEAR



2014 TAXABLE VALUE (EST)

RESIDENTIAL
\$1,978,436,200
65.0%

COMMERCIAL
\$846,638,000
29.0%

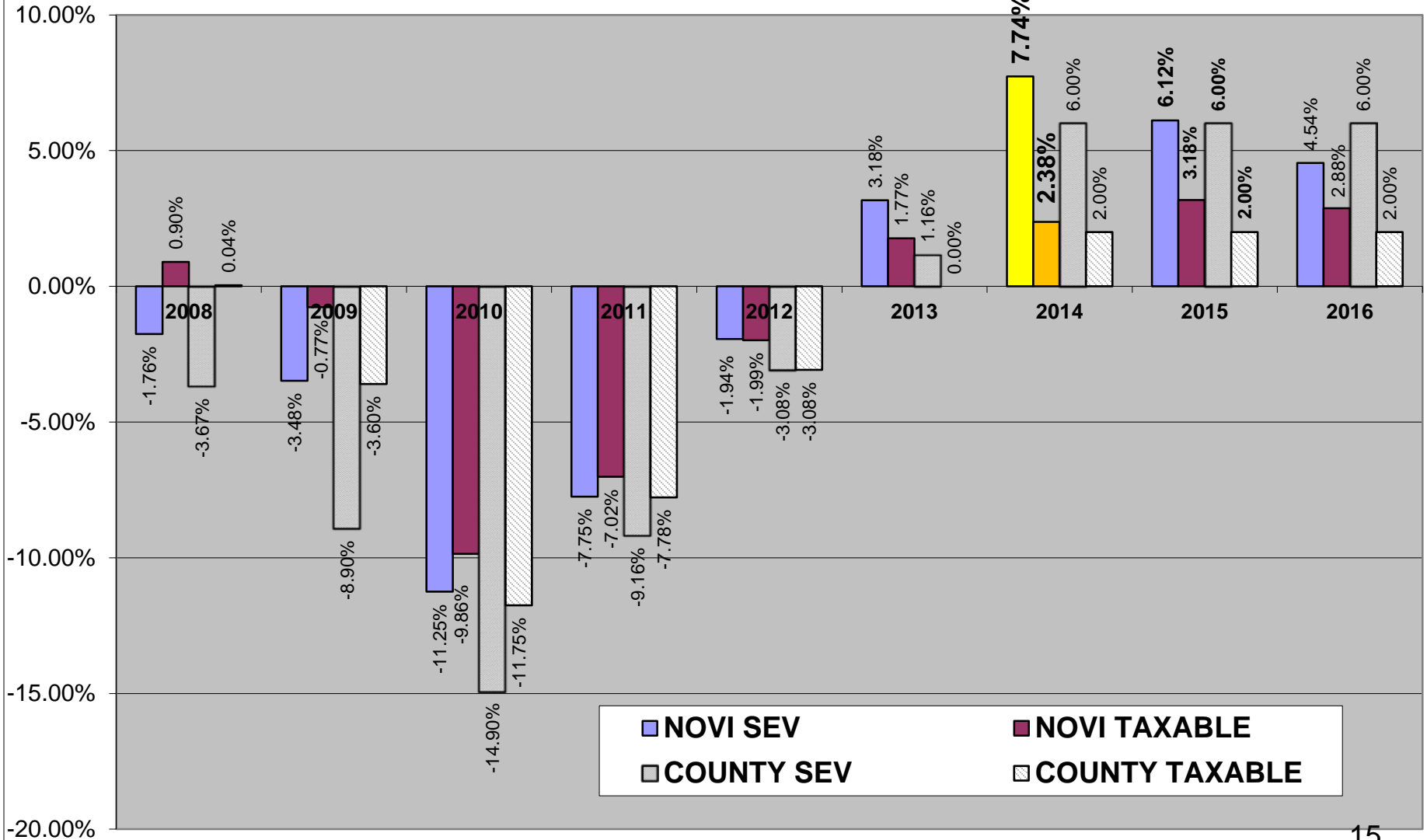


PERSONAL
\$202,000,000
6.6%

INDUSTRIAL
\$39,283,600
1.3%

VALUE CHANGE 2007 - 2016

Novi v Oakland County



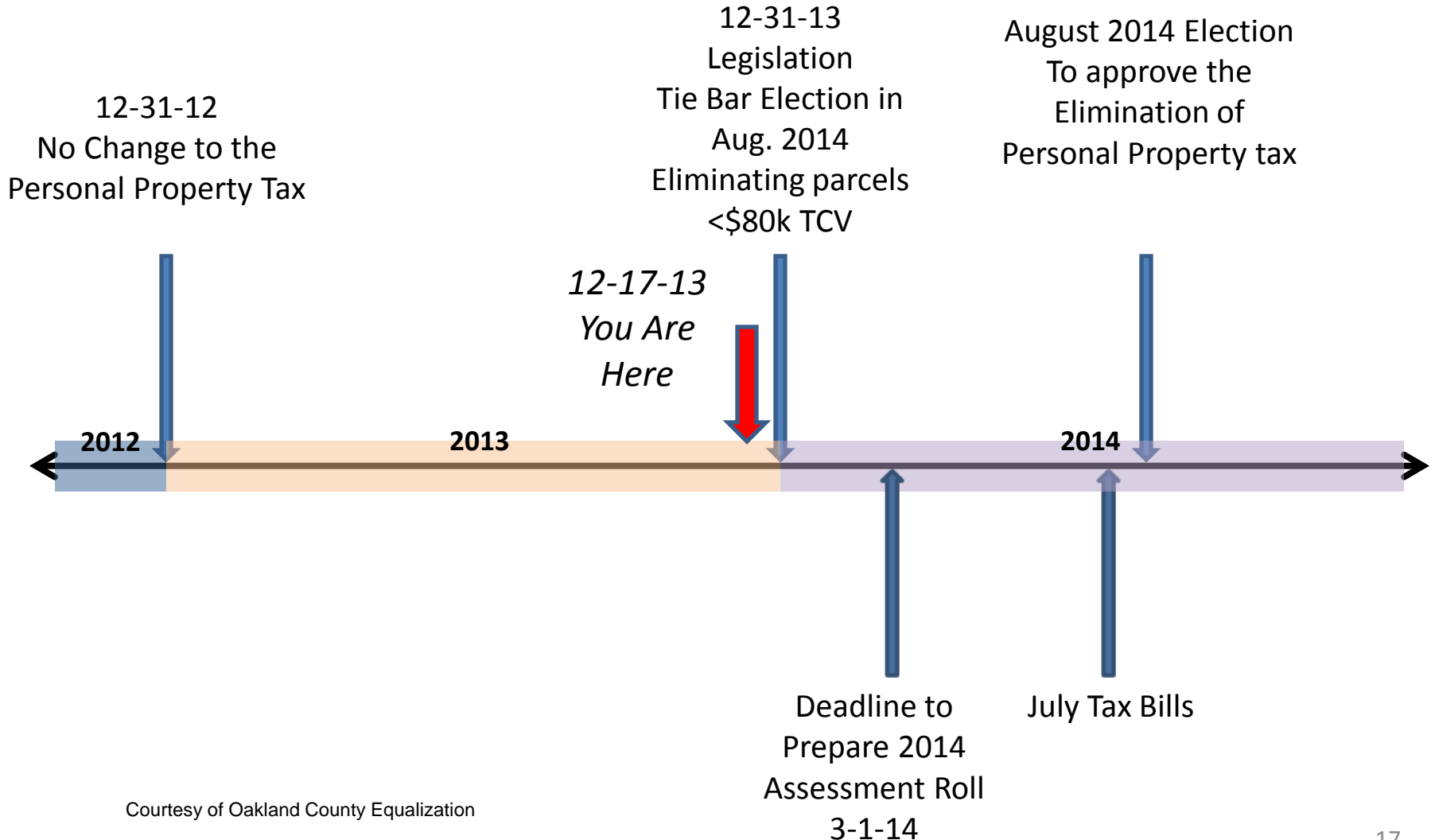


PERSONAL PROPERTY CHANGES

2014 and 2016

PERSONAL PROPERTY TAX

PA 397-408 OF 2012



Courtesy of Oakland County Equalization

2013 PERSONAL PROPERTY TAXABLE VALUE

	COMMERCIAL		INDUSTRIAL		UTILITY		TOTAL	
NOVI	1,904	138,881,990	40	11,861,400	5	32,793,820	1,949	183,537,210
SOUTH LYON	7	101,440	0	0	2	1,440,100	9	1,541,540
WALLED LAKE	192	20,490,090	5	4,999,450	4	6,022,930	201	31,512,470
NORTHVILLE	46	2,220,610	2	586,120	3	4,300,800	51	7,107,530
	2,149	161,694,130	47	17,446,970	14	44,557,650	2,210	223,698,750

PROJECTED 2014 P/P TAXABLE VALUE UNDER \$40,000

	COMMERCIAL		INDUSTRIAL		UTILITY		TOTAL	
NOVI	1,384	\$16,739,960	10	\$177,550	0	\$0	1,394	\$16,917,510
SOUTH LYON	7	\$101,440	0	\$0	0	\$0	7	\$101,440
WALLED LAKE	123	\$1,984,670	0	\$0	0	\$0	123	\$1,984,670
NORTHVILLE	33	\$438,960	0	\$0	0	\$0	33	\$438,960
	1,547	\$19,265,030	10	\$177,550	0	\$0	1,557	\$19,442,580

REMAINING 2014 PERSONAL PROPERTY TAXABLE VALUE*

	COMMERCIAL		INDUSTRIAL		UTILITY		TOTAL	
NOVI	520	\$122,142,030	30	\$11,683,850	5	\$32,793,820	555	\$166,619,700
SOUTH LYON	0	\$0	0	\$0	2	\$1,440,100	2	\$1,440,100
WALLED LAKE	69	\$18,505,420	5	\$4,999,450	4	\$6,022,930	78	\$29,527,800
NORTHVILLE	13	\$1,781,650	2	\$586,120	3	\$4,300,800	18	\$6,668,570
	602	\$142,429,100	37	\$17,269,420	14	\$44,557,650	653	\$204,256,170

*

DOES NOT INCLUDE DEPRECIATION, OR NORMAL LOSSES AND ADDITIONS FOR REMAINING PROPERTIES

**2014 UNDER \$40,000
- THE AFFECT -**

**70.4% of P/P parcels removed
but**

**Only 8.7% of P/P roll lost
Estimated loss of \$200,000 in Revenue
from 2013 due to under \$40,000 removals**

HEADLEE ROLLBACK CALCULATION

FORMULA:

Courtesy of Oakland County Equalization

$\Delta \mathbf{x} = \mathbf{x}_f - \mathbf{x}_i$ $\Delta \mathbf{v} = \mathbf{v}_f - \mathbf{v}_i$
 $\bar{\mathbf{v}} = \frac{\Delta \mathbf{r}}{\Delta t}$ $\bar{\mathbf{a}} = \frac{\Delta \mathbf{v}}{\Delta t}$

$\mathbf{v} = \mathbf{v}_0 + \mathbf{a}t$
 $\mathbf{x} = \mathbf{x}_0 + \mathbf{v}_0 t + \frac{1}{2} \mathbf{a}t^2$
 $v^2 - v_0^2 = 2a(x - x_0)$
 $\bar{v} = \frac{v_f + v_i}{2}$ $\Delta x = \bar{v} \Delta t$

$v = |\mathbf{v}| = \sqrt{v_x^2 + v_y^2}$
 $\theta = \tan^{-1}(\frac{v_y}{v_x})$
 $\theta = \cos^{-1}(\frac{v_x}{v})$
 $\theta = \sin^{-1}(\frac{v_y}{v})$

$\mathbf{x} = r\theta$
 $\mathbf{v} = \omega r$
 $\mathbf{a} = \alpha r$

$\omega = \frac{\Delta \theta}{\Delta t}$ $\alpha = \frac{\Delta \omega}{\Delta t}$
 $\omega = 2\pi f$ $f = \frac{1}{T}$
 $\omega = \omega_0 + \alpha t$
 $\theta = \theta_0 + \omega_0 t + \frac{1}{2} \alpha t^2$
 $\omega^2 - \omega_0^2 = 2\alpha(\theta - \theta_0)$

$I = \sum_i m_i r_i^2$
 $L = I\omega$
 $\tau = r_{\perp} F = rF_{\perp}$
 $\tau = I\alpha$
 $\sum_i \bar{\mathbf{F}}_i = 0$ $\sum_i \bar{\boldsymbol{\tau}}_i = 0$

$\mathbf{F}_{\text{tot}} = m \mathbf{a}$
 $E = K + U$
 $W = F d_{\parallel} = F_{\perp} d$
 $W_{\text{tot}} = \Delta(\text{KE})$
 $\Delta U = -W_{\text{if}}$
 $\frac{1}{2} kx^2$ $\omega = \sqrt{\frac{k}{m}}$
 $p = m v$
 $\bar{P}_{\text{init}} = \bar{P}_{\text{final}}$

μN
 $a = \frac{v^2}{R}$
 $v = \lambda f$

$\Delta Q = (\text{quant.}) C_{\text{cond}} \Delta T$
 $\Delta Q_{\text{into}} = \Delta W_{\text{by}} + \Delta E$
 $\frac{RT}{2} \Big|_{\text{deg. freedom}}$ $C_P = C_V + R$
 $\Delta S \geq 0$
 $\Delta Q = l \Delta(\text{quant.})$
 $e = \frac{\Delta W}{\Delta Q}$ $e = 1 - \frac{T_L}{T_H}$ $P = \frac{F}{A}$

$\mathbf{x} = A \cos(\omega t)$ {or} $A \sin(\omega t)$
 $\mathbf{v} = -A\omega \sin(\omega t)$ {or} $A\omega \cos(\omega t)$
 $\mathbf{a} = -A\omega^2 \cos(\omega t)$ {or} $-A\omega^2 \sin(\omega t)$

$\frac{GM_e}{R_e} = g R_e$ $\frac{GMm}{r^2}$
 $M_e = 5.97(10)^{24} \text{ Kg}$
 $R_e = 6.37(10)^6 \text{ m}$
 $G = 6.67(10)^{-11} \text{ N m}^2/\text{Kg}^2$

$PV = nRT$
 $M = \rho V$ $P_1 = P_2$
 $\Delta P = \rho g \Delta h$
 $B = \rho_{\text{liq}} V_{\text{disp}} g$
 $A_1 v_1 = A_2 v_2$
 $P + \frac{1}{2} \rho v^2 = \text{const.}$

2014 HEADLEE CALCULATION

2013 TAXABLE VALUE - 2013 LOSSES x 2014 IRM

2014 TAXABLE VALUE - 2014 ADDITIONS

FOR NUMBERS OF 1.0000 OR HIGHER – NO MILLAGE ROLLBACK

BASED ON CURRENT PROJECTIONS:

$\$2,972,081,580 - \$42,657,347 \times 1.016$	=	$\$2,976,295,021$
$\$3,042,748,950 - \$81,764,170$	=	$\$2,960,984,780$
= 1.0052		

REAL PROPERTY ONLY:

$\$2,748,382,830 - \$2,129,847 \times 1.016$	=	$\$2,790,193,031$
$\$2,840,748,950 - \$48,833,370$	=	$\$2,791,915,580$
= 0.9994		

PERSONAL PROPERTY EXEMPTIONS

- Exemption of PP will impact the Headlee calculation. The depreciation of existing assets mitigates the real property uncappings.
- Simply put, the depreciation of personal property assets offsets some of the increases in other properties.
- The erosion of the personal property roll will have a negative affect on the existing millages.

PERSONAL PROPERTY TAX

- Beginning in 2016, industrial personal property will begin phase out.
- All acquisitions prior to 2006 and after 2012 will be exempted. This will immediately remove an additional \$11 million TV from the 2016 assessment roll.
- Each year thereafter, the oldest remaining year will be exempted until all industrial p/p is exempted after 2022.

PERSONAL PROPERTY PROJECTIONS

AS OF 12/2/2013

	COMMERCIAL		INDUSTRIAL		UTILITY		TOTAL	
	No.	Taxable	No.	Taxable	No.	Taxable	No.	Taxable
2012	2,359	156,656,610	54	18,816,970	15	44,871,710	2,428	220,345,290
2013	2,390	161,694,130	50	17,446,970	14	44,557,650	2,454	223,698,750
2014	602	139,422,243	37	17,574,530	14	45,003,227	653	202,000,000
2015	602*?	140,816,465	32	17,574,530	14*	45,453,259	697	203,844,254
2016	602*?	142,224,630	21	6,686,107	14*	45,907,791	686	194,818,528
2017	602*?	143,646,876	17	5,228,718	14*	46,366,869	682	195,242,464
2018	602*?	145,083,345	15	4,489,111	14*	46,830,538	680	196,402,994
2019	602*?	146,534,179	14	3,308,264	14*	47,298,843	679	197,141,286
2020	602*?	147,999,520	13	2,857,481	14*	47,771,832	678	198,628,833
2021	602*?	149,479,516	11	1,944,733	14*	48,249,550	676	199,673,799
2022	602*?	150,974,311	11	1,609,592	14*	48,732,046	676	201,315,948
2023	602*?	152,484,054	0	0	14*	49,219,366	665	201,703,420



HISTORY and PROJECTIONS

2010 - 2017

Five-Year State Equalized Valuation (SEV) HISTORY

12/11/2013

SEV is 50% of True Cash Value (Market Value)

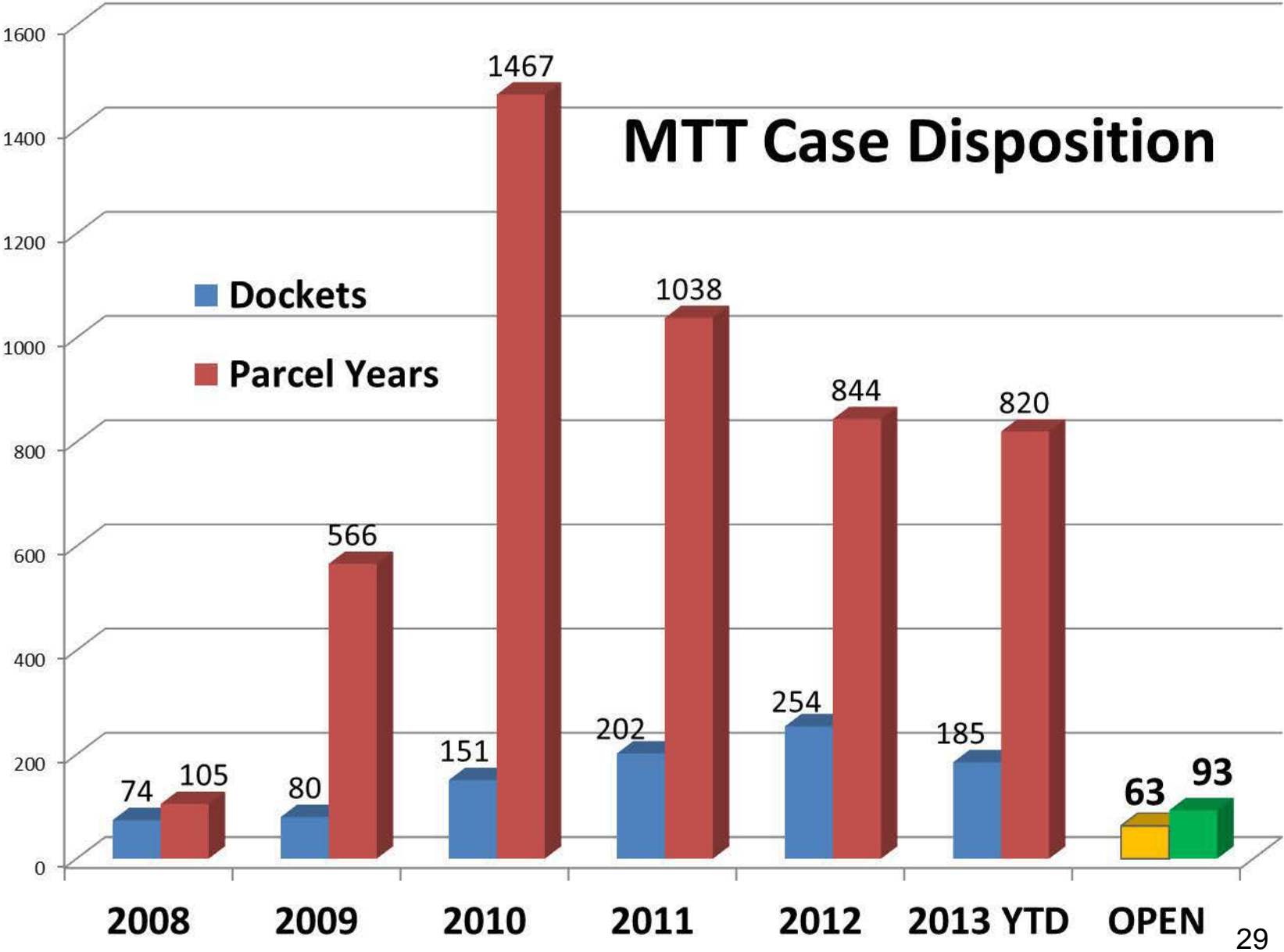
	ACTUAL				ESTIMATED	PROJECTED		
	2010 for FY 2010/2011	2011 for FY 2011/2012	2012 for FY 2012/2013	2013 for FY 2013/2014	2014 for FY 2014/2015	2015 for FY 2015/2016	2016 for FY 2016/2017	2017 for FY 2017/2018
Commercial & Industrial Personal Property	1,197,856,300 220,466,950	1,022,625,150 220,678,540	928,809,850 220,345,290	893,516,550 223,698,750	920,061,050 202,000,000	940,000,000 203,800,000	960,000,000 194,800,000	985,000,000 195,200,000
Total Non-Residential Property	\$1,418,323,250	\$1,243,303,690	\$1,149,155,140	\$1,117,215,300	\$1,122,061,050	\$1,143,800,000	\$1,154,800,000	\$1,180,200,000
Total Non-Residential as % of Total	42.7%	40.6%	38.2%	36.0%	33.6%	32.3%	31.2%	30.4%
Non-Residential Real Change from Previous Year	-8.3%	-12.3%	-7.6%	-2.8%	0.4%	1.9%	1.0%	2.2%
Residential	1,902,861,350	1,820,618,900	1,855,175,200	1,982,518,310	2,217,495,900	2,400,000,000	2,550,000,000	2,700,000,000
TOTAL SEV	\$3,321,184,600	\$3,063,922,590	\$3,004,330,340	\$3,099,733,610	\$3,339,556,950	\$3,543,800,000	\$3,704,800,000	\$3,880,200,000
Change from Previous Year	-11.2%	-7.7%	-1.9%	3.18%	7.74%	6.1%	4.5%	4.7%
% Change by Category	ACTUAL				ESTIMATED	PROJECTED		
	2010 for FY 2010/2011	2011 for FY 2011/2012	2012 for FY 2012/2013	2013 for FY 2013/2014	2014 for FY 2014/2015	2015 for FY 2015/2016	2016 for FY 2016/2017	2017 for FY 2017/2018
Commercial & Industrial	-8.8%	-14.6%	-9.2%	-3.8%	3.0%	2.2%	2.1%	2.6%
Residential	-5.4%	-4.3%	1.9%	6.9%	11.9%	8.2%	6.3%	5.9%
Total Real Property	-8.3%	-8.3%	-2.1%	3.3%	9.1%	6.5%	5.1%	5.0%
Personal Property	3.3%	0.1%	-0.2%	1.5%	-9.7%	0.9%	-4.4%	0.2%
TOTAL SEV	-11.2%	-7.7%	-1.9%	3.18%	7.74%	6.1%	4.5%	4.7%

Five-Year Taxable Value HISTORY

	ACTUAL				ESTIMATED	PROJECTED		
	2010 for FY 2010/2011	2011 for FY 2011/2012	2012 for FY 2012/2013	2013 for FY 2013/2014	2014 for FY 2014/2015	2015 for FY 2015/2016	2016 for FY 2016/2017	2017 for FY 2017/2018
Commercial & Industrial	1,121,427,690	976,935,070	890,883,160	855,546,320	862,312,780	878,000,000	895,000,000	912,000,000
Personal Property	220,466,950	220,678,540	220,345,290	223,698,750	202,000,000	203,800,000	194,800,000	195,200,000
Total Non-Residential Property	\$1,341,894,640	\$1,197,613,610	\$1,111,228,450	\$1,079,245,070	\$1,064,312,780	\$1,081,800,000	\$1,089,800,000	\$1,107,200,000
Total Non-Residential as % of Total	41.9%	40.2%	38.1%	36.3%	35.0%	34.5%	33.7%	33.2%
Non-Residential Real Change from Previous Year	-6.6%	-10.8%	-7.2%	-2.9%	-1.4%	1.6%	0.7%	1.6%
Residential	1,862,673,780	1,781,997,870	1,809,105,200	1,892,836,510	1,978,436,170	2,057,600,000	2,140,000,000	2,225,000,000
TOTAL Taxable Value	\$3,204,568,420	\$2,979,611,480	\$2,920,333,650	\$2,972,081,580	\$3,042,748,950	\$3,139,400,000	\$3,229,800,000	\$3,332,200,000
LOSS PROVISION FOR Board of Review, Michigan Tax Tribunal cases, etc.					\$20,000,000	\$20,000,000	\$20,000,000	\$20,000,000
				NET TAX BASE	\$3,022,748,950	\$3,119,400,000	\$3,209,800,000	\$3,312,200,000
Change from Previous Year	-9.9%	-7.0%	-2.0%	1.8%	2.4%	3.2%	2.9%	3.2%
MI Consumer Price Index	-0.3%	1.7%	2.7%	2.4%	1.6%	2.5% Est	2.5% Est	2.5% Est
% Change by Category								
	2010 for FY 2010/2011	2011 for FY 2011/2012	2012 for FY 2012/2013	2013 for FY 2013/2014	2014 for FY 2014/2015	2015 for FY 2015/2016	2016 for FY 2016/2017	2017 for FY 2017/2018
Commercial & Industrial	-1.0%	-12.9%	-8.8%	-4.0%	0.8%	1.8%	1.9%	1.9%
Residential	-16.8%	-4.3%	1.5%	4.6%	4.5%	4.0%	4.0%	4.0%
Total Real Property	-11.5%	-7.5%	-2.1%	1.8%	3.4%	3.3%	3.4%	3.4%
Personal Property	4.8%	0.1%	-0.2%	1.5%	-9.7%	0.9%	-4.4%	0.2%
TOTAL Taxable Value	-10.5%	-7.0%	-2.0%	1.8%	2.38%	3.2%	2.9%	3.2%

Michigan Tax Tribunal

MTT Case Disposition



MTT Case Disposition

