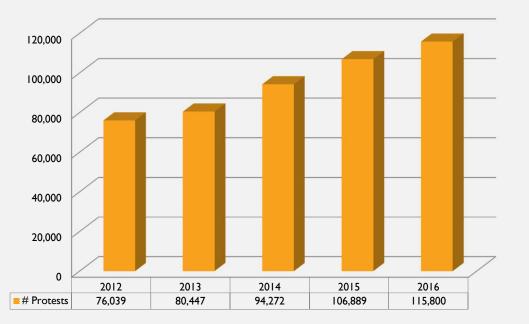


TRAVIS CAD PROCESS INITIATIVES

PROCESS INITIATIVES

- Additional staff to handle increased protest volume
- Increased funding for litigation
- Additional funding for market data and research positions
- Fee appraisals to test and calibrate mass appraisal models

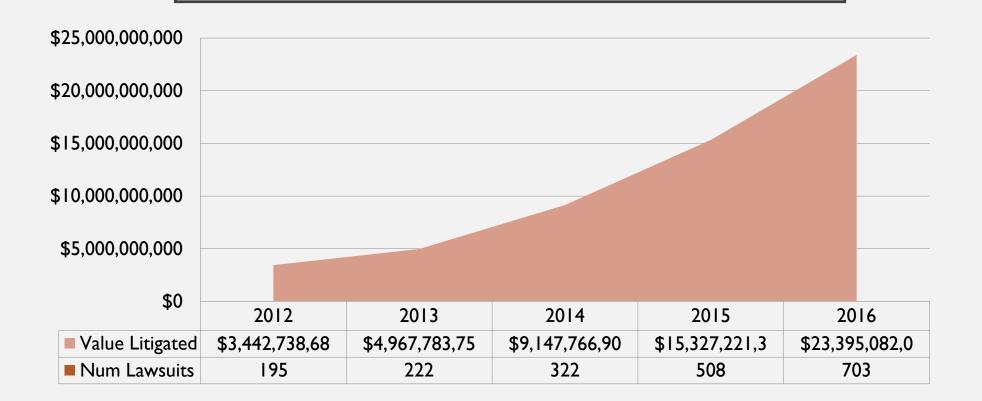
PROTEST



Protest Volume

- Record number of protest in 2016
- Completed all improved commercial by July 1st
- Certified appraisal roll July 18 at 95%
- Completed all protests by August 31st
- Average wait time 9 minutes

LITIGATION



MARKET DATA AND MODEL CALIBRATION

•Commercial - Lonnie Hendry

Residential – Michael Kasper

COMMERCIAL

- Data Mining
- Austin Market Data
- Modernization of Litigation Processes

DATA MINING

- Utilized for 2015 and 2016 valuation cycles
- Increased confirmed sales data, specifically for Office, Hospitality and Multifamily
- Increased refinance appraisal data, across all commercial portfolios
- Increased staff knowledge and expertise, macro and micro
- Greatly reduced TCAD's exposure to "home-run" equity appeals

AUSTIN MARKET DATA

- Representative market values that are more supportable throughout the protest and litigation process
- Creation of a comprehensive evidence packet for all portfolios

0

Commercial Evidence | 15

Industrial

Market Overview

Investment sales continued to dominate the Austin Industrial Market based on data from Real Capital Analytics and are contributing to a rise in rents and absorption rates. Real Capital Analytics shows sales volume increased 50% year over year in Austin. 2015 sales volume in Austin's industrial property portfolio reached over a billion dollars for the first time.

Vacancy Tightening

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Commercial Evidence

Vacancy rates continue to decline and the overall cap rates continue to compress. All of these signs point to a very healthy and vibrant industrial marketplace that is experiencing decades low vacancy coupled with decades high rent increases.

The industry analysts and market participants agree that vacancy rates have continued their historic decline in the Austin Industrial Market through aos; and into aos6. Vacancy rates are being reported for the Austin region by the various market publications from 5,7% to 8%. This is an average drop of two or more percentage points from the previous year. While new space continues to come on line, especially in the Southeast and Northeast regions, positive absorption is trending in all areas of Austin. Integra Realty Resources 2015 Viewpoint has Austin's industrial market in their expansion stage a defined as: High new construction, decreasing vacancy rates, and Medium/High rental rate growth.

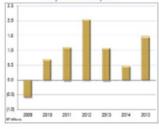
Citywide Absorption

REOC Austin, in their fourth quarter 2015 publication states Austin's industrial market, "Featured a trifecta of positive indicators... healthy leasingisales activity, positive net absorption, and improved occupancy. Strong market fundamentals continue to support stable rental rates and new construction". See the infographics and charts that show the fourth quarter and annual absorption for Austin.

Office/ Flex/ 12/31/15 RAD Warehouse Total **Jound Rock** 15,191 15,191 0 North (54,001) 12,275 (41,726) Northeast 24,279 55,927 80,206 East N/A 0 Southeast (17,041) 337,370 320,329 South 0 26 200 26 200 Total (31,572) 431,772 400,200

Current Quarter Absorption





As the Austin population continues to grow, the need for warehouse/distribution and flex space will continue to grow with it. Office service "flex space" is increasing in popularity as a "go-to" choice for its cost effectiveness and flex/billty. Expect rates to continue to increase and vacancy rates to continue their decline as many traditional office users move to the flexbased office concept for the foreseeable future. As Austin continues to be a national choice for data center services and data disaster recovery, this segment continues to grow as well. New industrial Centers continued to bring new space online in 2015. Notable deliveries included the FedEx Ground Distribution and the latest expansion to the Met Center complex, Met Center Building 3. The prospects for continued growth in the industrial sector look promising. There is plenty of capital available for this type of investment and the Austin market has shown the ability to absorb any new supply that's being brought to market.

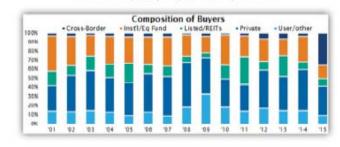
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Commercial Evidence | 16

Market Graphics

				Aust	in	
		1		YoY		Total
Year	Month		Volume	%		Units
	*01	5	21,423,284		4	227,507
	*02				C	
	"03	\$	25,603,202		3	378,572
	"04	S	334,915,095	1208%	50	4,692,911
	"05	5	157,785,000	-53%	15	3,068,215
1	*06	S	425,409,606	170%	27	4,313,698
	*07	s	354,322,845	-17%	35	5,058,598
Year	*08	S	108,803,900	-69%	9	1,326,248
	*09	\$	43,750,000	-60%	2	250,013
	*10	\$	161,749,917	270%	13	2,547,132
	"11	\$	209,524,238	30%	24	3,416,025
	*12	5	317,778,353	52%	34	5,471,825
	"13	5	290,143,660	-9%	29	4,017,353
	"14	\$	666,138,649	130%	66	10,533,836
	*15	S	1,001,949,915	50%	137	15,374,459

This volume was comprised of primarily cross-border and private investors.



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	PDr			-		Income Charm	Lett.	Gross Rem	Sec.	VAC	Eap 8 Lase Tax	lag N. Lens Tax	Cap Ras (CAR)	Dans Ret	Finite Inc.	Gross	Sec.	Lincom Incom	Sap 5 Lass Tares	Easp %. Lana Taona	NOI Laux Taxaa	Stated Cap Res Unicaded	Destilite of Assessed Value	Soble d Red \$5	Loaded Cap Rate	Capitar	Adjuned Decall Cap Rate	Grow
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	180,780	COLDENADO TONIST	SOCIED IN	BULLEN.	2014	AAA	TONDE	361.00	8.10	6.0%	#11.7h	11.00%	1.25	477.75	10.0	30.00	81.0	301.08	410.34	20.07%	236.82	LIN	\$718,050,600	3629.00	7.66%	425	7.07%	10013
1	240811	ONE COMPRESS R AVA	LOCUST.	510.58	186	A	ICHOC	347.00	1.00	60%	411.52	21.325	LIN	10110	415.00	342.65	100	14.4.42	410.00	21.84%	271.16	LUN	1017140	101.0	7.90%	-0.68%	1.67%	10,20
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÷ 1	280888	SAN JACINTO CENTERSPORELINE	ADCARD.		100	A	TOHDC-	847.00	15.00	EUM.	#11.52	21.9%	LIPE	107.22	112.40	\$573	112	147.20	10.00	22126	#17.30	ELON.	\$103,671,978	1477.05	7 (87%)	-0.0796	7.07%	1047
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	THEADS.	JOINT WEST SKITH	ADCER:		2000	AA F IND	1CHOC	161.00	15.75	60%	\$11.00	21.32%	_M01.3	100.25	\$27.50	\$1275	16.00	21.13	11.8	21,32%	\$127.6	LIN	\$263,018,422	19.042	7.62%	-0.10%	T.67%	10.61
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- 11		IT CONSTRUES DON CENTER	EDC280		1574	A4180	1GHDC-	\$68.75	M.75	2012	#11.38	26.31%	LOK	pla.TL	#0.00	\$51.7%	\$6.75	945.87	#11.30	24.21%	\$35.65	EDR.	\$113,663,663	\$61271	7.90%	-0.53%	7.07%	10.21
12	140038	HEREY BROOKS TOWER	ROLLED	IN SHE	185	AFTIE	1CHDC	344.75	31.15	£0%	\$17.38	3134	TIME	\$96.06	\$21.00	\$0.06	10.22	\$1.13	11172	2120%	10.00	LON	\$73,638,008	1645.04	7.895	-5.5%	7.67%	10.55
12		LAVACA PLAZA SILUCON LARS MIGHTI	HDC110	110,543	1900	AFIR	1CHDC	BOA.TE	M.75	GIPL	\$11.38	31.31%	1.00%	\$04.60	12.00	344.50	#10.00	\$61,83	\$11.75	22.67%	200.00	LOR	\$51,779,001	106.0	0.09%	-0.03%	7.67%	10.45
		SUCONTAGE GAST	HDCHD		200	A 5 110	10801	\$64.75	34.75	EOE.		28.27%	100	\$07.00	111.60	36.00	100	365.57	111.120	24.67%	\$5.12	LOR	\$65,510,435	3629.72	7.90%	-0.086	T.OTL .	10.58
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	Median Cap Rate	Vatas	Assessed Value	Countral le Value
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Per Spare	Faut	301.02	\$011.00	and an and a second sec
		Based on Modian	E CHINA	
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Per Spore	Four	200 10	2011.02	211.0
	253.000	n Median Effective	Adjusted Rent	
Value Per Square		5316,602,177	30% Annual Value \$327,254,408 \$111.02	DentEnder Enstablik Value 210,572,225 One Valued 210,79
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			812.16	81152	22 12%
			107.00	\$10.60	22.12%
			26.26	\$71.85	26.64%
		-	\$105.100	\$71.86	21.225
		-	ant Fe	\$71.25	as fers.
			\$6.52	\$11.38	36.31%
			\$10.42	\$11.75	21.30%
			\$11.02	871.75	22614
			\$6.62	811.00	36673
			\$65.62	871.00	36875
			241.47	810.00	21.32%
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Bold 10	TALK!	200000000	\$324,194,000
Date in	Ag Here		

LITIGATION

- Gained consensus among plaintiff attorneys to work on a schedule that is more efficient and effective
- Completion date goal for all current and prior year litigation is January 31, 2017 (with the exception of those set for trial)
- Moving forward one year turnaround.

		Αι	ugust 1 - Deco	eml	ber 1, 2016		August 1 - December 1, 2015						
Year	Count		Certfied		Adjudged	Pct		Count		Certfied		Adjudged	Pct
2005													
2006													
2007													
2008	4	\$	16,934,562	\$	15,148,000	-11%		1	\$	15,908,516	\$	12,141,873	-24%
2009													
2010								3	\$	5,020,949	\$	4,149,360	-17%
2011								3	\$	4,023,399	\$	3,220,835	-20%
2012	10	\$	115,322,051	\$	106,731,869	-7%		48	\$	145,066,539	\$	135,768,577	-6%
2013	41	\$	446,527,594	\$	424,691,409	-5%		50	\$	513,592,897	\$	486,807,914	-5%
2014	116	\$	1,525,135,041	\$	1,416,199,935	-7%		103	\$	1,972,277,691	\$	1,842,907,576	-7%
2015	244	\$	4,759,347,865	\$	4,503,923,055	-5%		15	\$	4,495,562	\$	4,092,310	-9%
2016	154	\$	4,089,106,086	\$	3,882,185,434	-5%							
	569	\$1	0,952,373,199	\$ 1	0,348,879,702	-6%		223	\$2	2,660,385,553	\$2	2,489,088,445	-6%

RESIDENTIAL

- Key Terms/Concepts
- Neighborhood (NBHD) Life Cycle
- Austin Urban Core (AUC) Transitional NBHDs
- NBHD Life Cycle Market Effect
- Market Segmentation 2.0

KEY TERMS/CONCEPTS

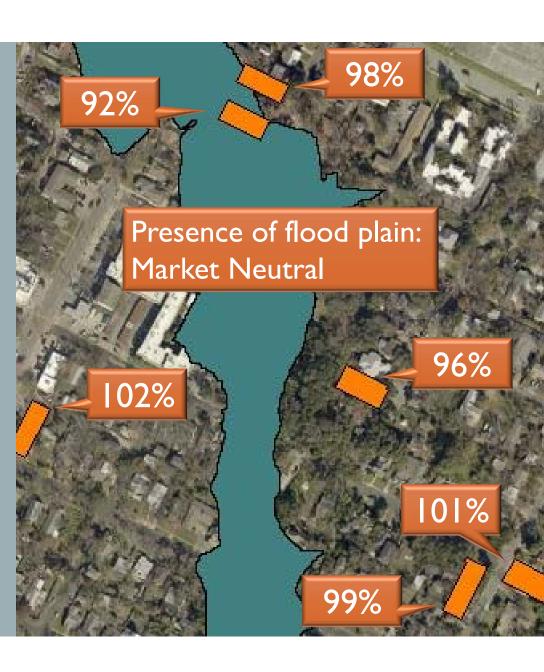
Because I always lead with the exciting stuff!!

KEY TERMS/CONCEPTS

- <u>Appraisal Ratio</u>
 - (1) The ratio of the appraised value to an independent indicator of market value (usually a sale price). (2) The ratio of the appraised value to the sale price of a property; a simple indication of appraisal accuracy.
 - Calculated as: Appraised Value/Sale Price (1.00 or 100% would be a "completely accurate" appraisal)
- The market SETS values. The Appraisal District REFLECTS the market.
- An appraiser is not required to determine the <u>presence</u> of a characteristic
 - An appraiser's task is to determine if a given characteristic is a:
 - Market Premium?
 - Market Neutral?
 - Market Deterrent?

THE MARKET SETS THE VALUE

- Assume: 6 home sales in which all factors, other than the presence of flood plain, are equal.
- Was the presence of the flood plain in 2 of the sales a market premium, market neutral, or a market deterrent?
- The market tells us through the appraisal ratios of the sales whether a value adjustment is warranted.
- Statistically relevant data and generally accepted appraisal methods are required for adjustments.

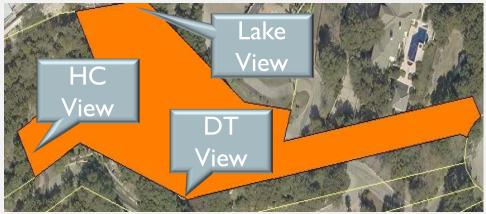


THE MARKET SETS THE VALUE

ODD-SHAPED LOT #1 ELEVATION CHANGE: 120 FT.



ODD-SHAPED LOT #2 ELEVATION CHANGE: 130 FT.



KEY TERMS

Market Segmentation

• The act of distinguishing or <u>delineating the universe of properties that the appraiser should consider, or</u> <u>distinguish between, in their data analysis</u>. When appraising a typical, single-family residence, the market segmentation process may relate only to identifying the specific neighborhood in which the subject property is located, along with comparable land and improved property sales.

Market Segmentation 2.0 (TCAD Exclusive)

- Applying conventional market segmentation analysis, through ratio studies, to discover the presence and effect of an unconventional <u>"market within a market</u>" or "submarket" as a result of the neighborhood life cycle and neighborhoods in transition.
- <u>Each year</u> a NBHD must be re-evaluated for the presence of a "submarket".

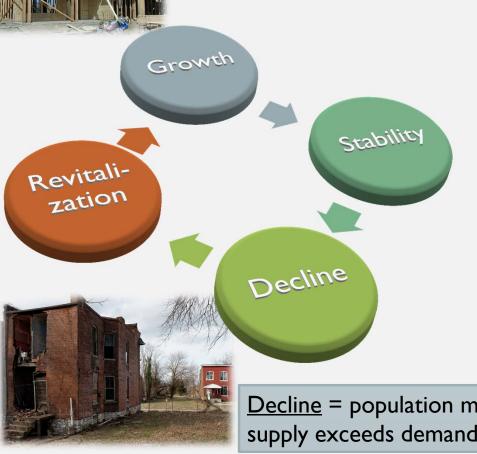
NBHD LIFE CYCLE

Having homes, side by side, that are at different points along the NHBD life cycle indicates a neighborhood in transition.

<u>Growth</u> = new construction, demand exceeds supply



<u>Revitalization</u> = new construction, "old made new", demand exceeds supply



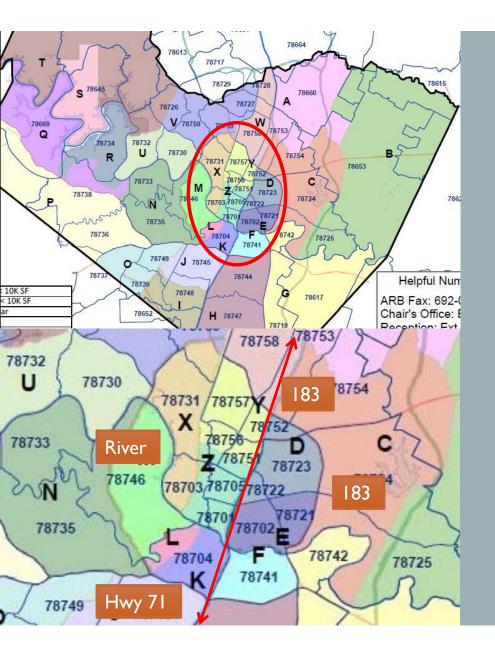
<u>Stability</u> = price point uniformity, supply and demand are in equilibrium



<u>Decline</u> = population migrates to suburbs, supply exceeds demand

AUSTIN URBAN CORE (AUC)

NBHDs in Transition



AUC MARKET DEFINED

Travis CAD Alpha Areas:

L, K, F, X, Z, E, Y, D

<u>Zip Codes</u>: 78704, 78741, 78703, 78701, 78702 78705, 78722, 78721, 78756, 78751 78723, 78731, 78757, 78752

Each year stands on its own and must be <u>re-evaluated...</u>

MARKET EFFECT OF TRANSITIONAL NBHDS

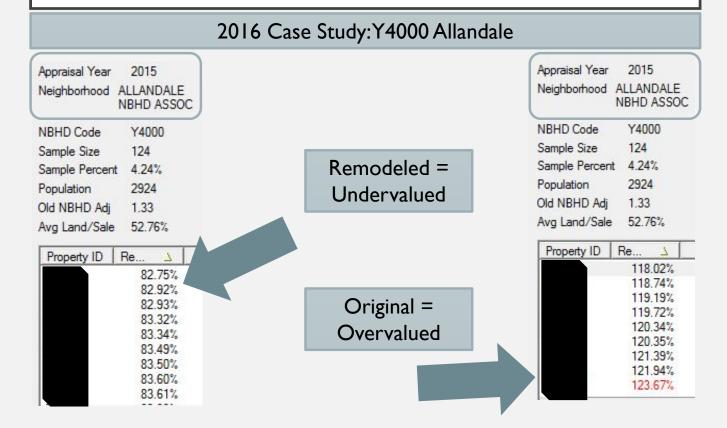
Evidence of market segmentation in appraisal ratio studies

STATISTICAL EVIDENCE OF MARKET SEGMENTATION

NBHD Profile: Sorted by Appraisal Ratio (appraised value/sale price)

		Segmer	ntation	No Segn	nentation	
	R	EM	82%	REM	96%	
	R	EM	82%	Ori	97%	
	R	EM	83%	Ori	98%	REM = remodeled
	R	EM	84%	REM	98%	Ori = original
Median Level	R	EM	84%	Ori	100%	
of Appraisal	R	EM	84%	REM	100%	
	C	Dri	122%	REM	101%	
	С	Dri	124%	Ori	101%	% < 100% = undervalued
	C	Dri	124%	REM	102%	% > 100% = overvalued
	C	Dri	126%	REM	103%	

STATISTICAL EVIDENCE OF MARKET SEGMENTATION



STATISTICAL EVIDENCE OF MARKET SEGMENTATION







Appraisal Ratio: 0.83 Updated/Remodeled

STATISTICAL EVIDENCE OF MARKET SEGMENTATION







Sales Ratio: 0.83 Updated/Remodeled Footprint NOT changed

STATISTICAL EVIDENCE OF MARKET SEGMENTATION







Sales Ratio: 1.20 NOT Updated

STATISTICAL EVIDENCE OF MARKET SEGMENTATION



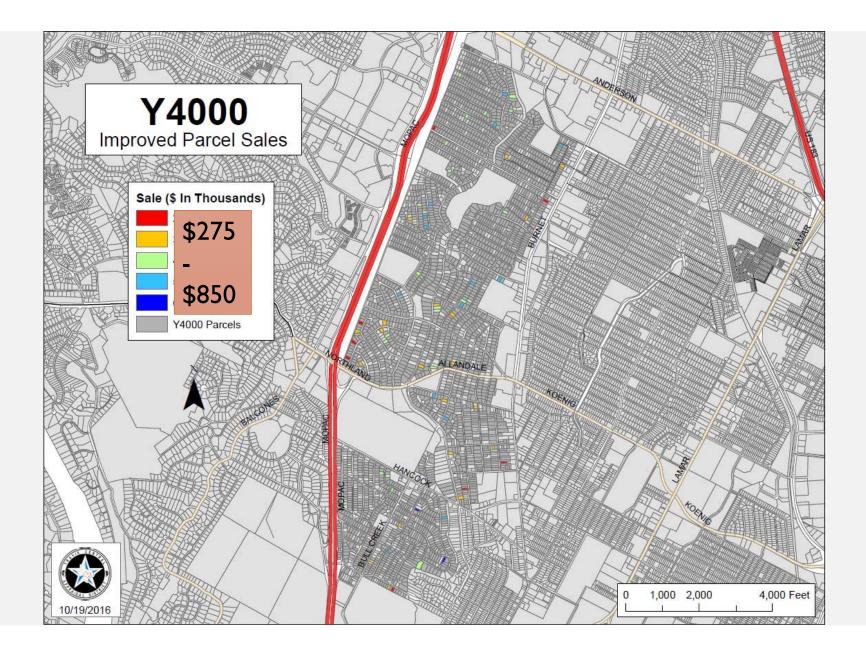


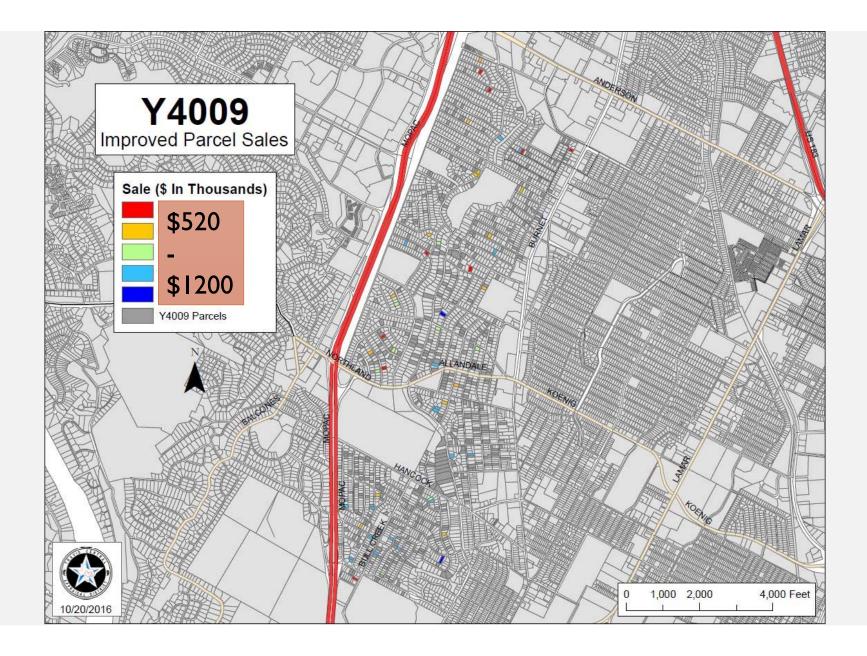


Sales Ratio: 1.24 NOT Updated

TRAVIS CAD: PIONEERS IN MARKET SEGMENTATION

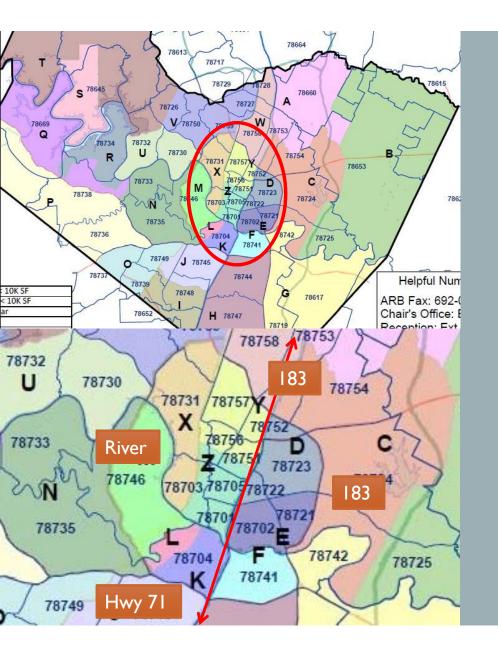
- For 2016 this sample NBHD was bifurcated into two NBHDs to reflect market segmentation:
 - "Original": Older than 2010, and Class \leq 4+, and Condition \leq A+
 - Statistically derived location adjustment: 1.55 or 155%
 - "Remodeled": 2010 or newer, or Class \geq 5-, or Condition G
 - Statistically derived market adjustment: 1.93 or 193%
- Fairness in appraisal:
 - New/remodeled homes appraised at their full market value
 - Homeowners of older/original homes not burdened with undue market value





TCAD MARKET SEGMENTATION 2.0

2017 and beyond...



MARKET SEGMENTATION 2.0 FOR 2017

Travis CAD Alpha Areas:

L, K, F, X, Z, E, Y, D

<u>Zip Codes</u>: 78704, 78741, 78703, 78701, 78702 78705, 78722, 78721, 78756, 78751 78723, 78731, 78757, 78752

Extending into East Austin for 2017!