



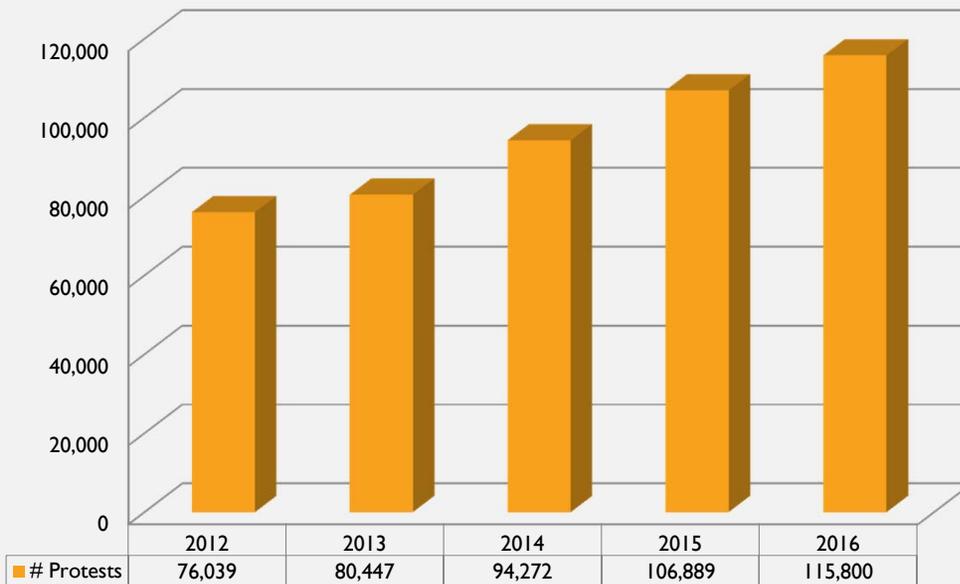
TRAVIS CAD PROCESS INITIATIVES

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**

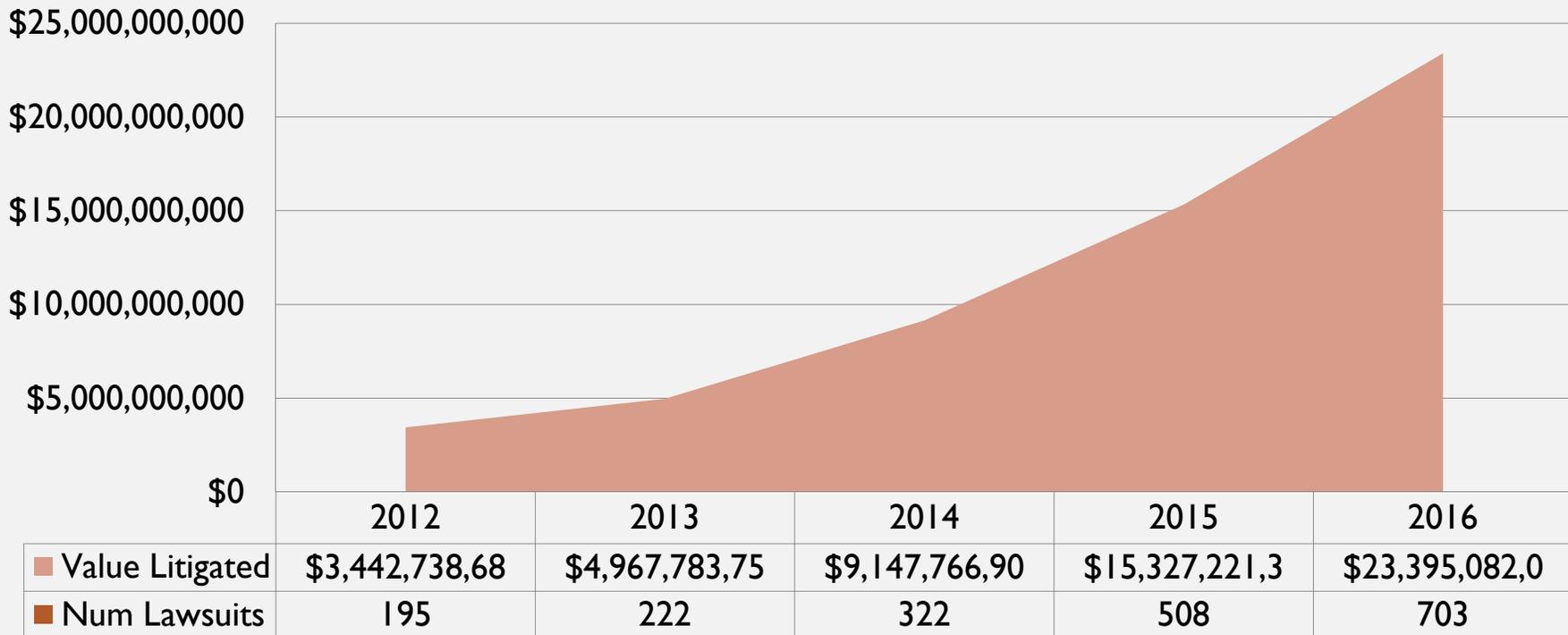
PROTEST

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



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

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 2015 and into 2016. 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 2016 Viewpoint has Austin's industrial market in their expansion stage 2 defined as: High absorption, Moderate/High Employment growth, Moderate/High new construction, decreasing vacancy rates, and Medium/High rental rate growth.

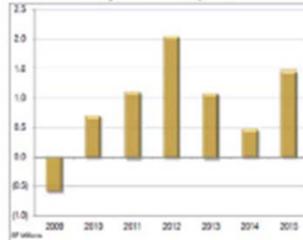
Citywide Absorption

REOC Austin, in their fourth quarter 2015 publication states Austin's industrial market, "Featured a trifecta of positive indicators... healthy leasing/sales 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.

Current Quarter Absorption

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

Citywide 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 flexibility. Expect rates to continue to increase and vacancy rates to continue their decline as many traditional office users move to the flex-based 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.



Market Graphics

Austin

Year	Month	Volume	YoY %	#	Total Units
Year	'01	\$ 21,423,284		4	227,507
	'02				
	'03	\$ 25,603,202		3	378,572
	'04	\$ 334,915,095	1208%	50	4,692,911
	'05	\$ 157,785,000	-53%	15	3,068,215
	'06	\$ 425,409,606	170%	27	4,313,698
	'07	\$ 354,322,845	-17%	35	5,058,508
	'08	\$ 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	\$ 317,778,353	52%	34	5,471,825
	'13	\$ 290,143,660	-9%	29	4,017,353
	'14	\$ 666,138,649	130%	66	10,533,836
	'15	\$ 1,001,949,915	50%	137	15,374,459

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

Composition of Buyers



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.

	August 1 - December 1, 2016					August 1 - December 1, 2015			
Year	Count	Certified	Adjudged	Pct		Count	Certified	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	\$ 10,952,373,199	\$ 10,348,879,702	-6%		223	\$ 2,660,385,553	\$ 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

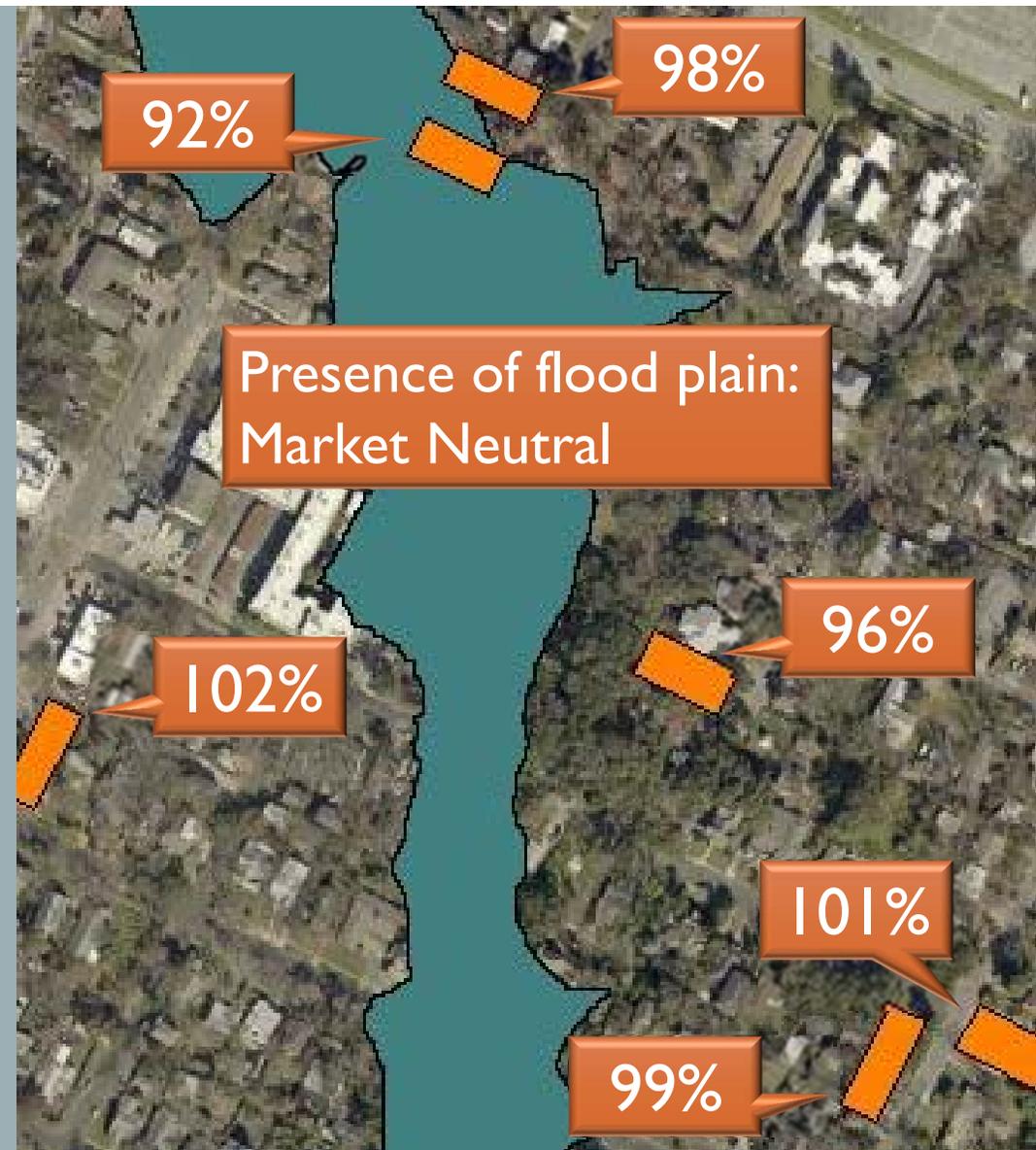
Because I always lead with the exciting stuff!!

KEY TERMS/CONCEPTS

- Appraisal Ratio –
 - (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: $\text{Appraised Value} / \text{Sale Price}$ (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 presence 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

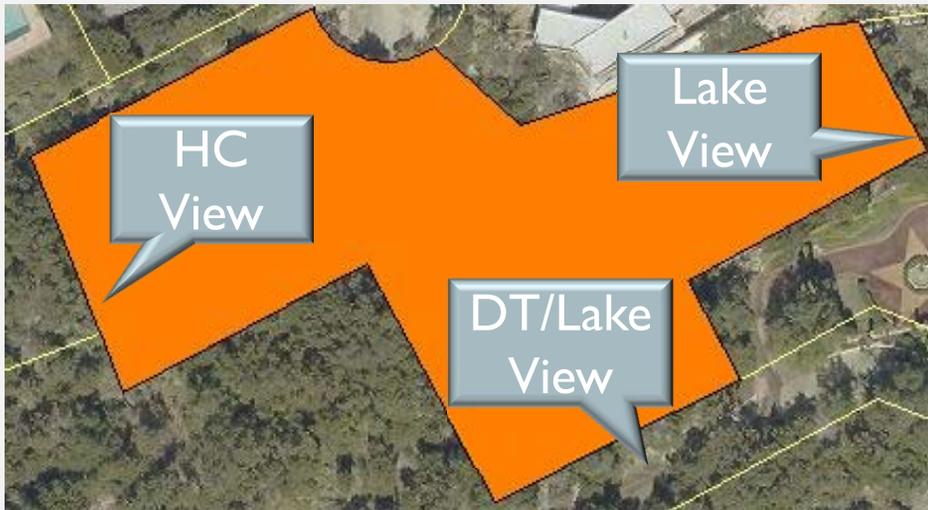
- Assume: 6 home sales in which all factors, other than the presence of flood plain, are equal.
- Was the presence of the flood plain in 2 of the sales a market premium, market neutral, or a market deterrent?
- The market tells us through the appraisal ratios of the sales whether a value adjustment is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



THE MARKET SETS THE VALUE

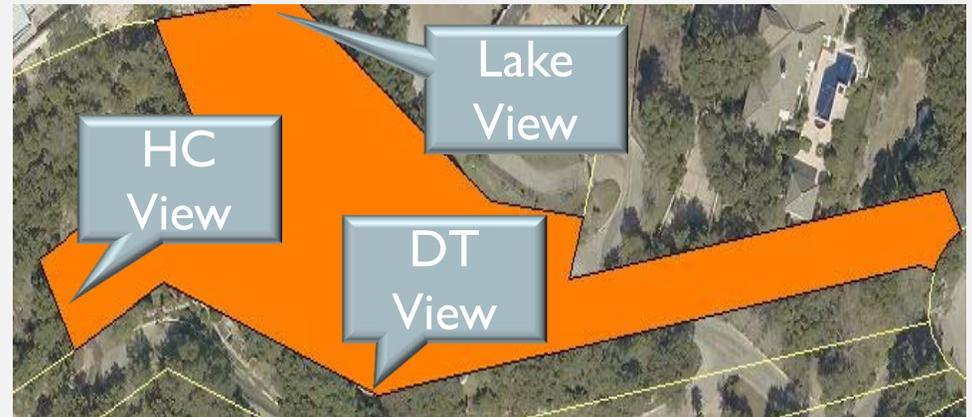
ODD-SHAPED LOT #1

ELEVATION CHANGE: 120 FT.



ODD-SHAPED LOT #2

ELEVATION CHANGE: 130 FT.



KEY TERMS

- Market Segmentation
 - The act of distinguishing or delineating the universe of properties that the appraiser should consider, or distinguish between, in their data analysis. 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 “market within a market” or “submarket” as a result of the neighborhood life cycle and neighborhoods in transition.
 - Each year 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.



Growth =
new construction,
demand exceeds supply



Revitalization =
new construction,
“old made new”,
demand exceeds supply



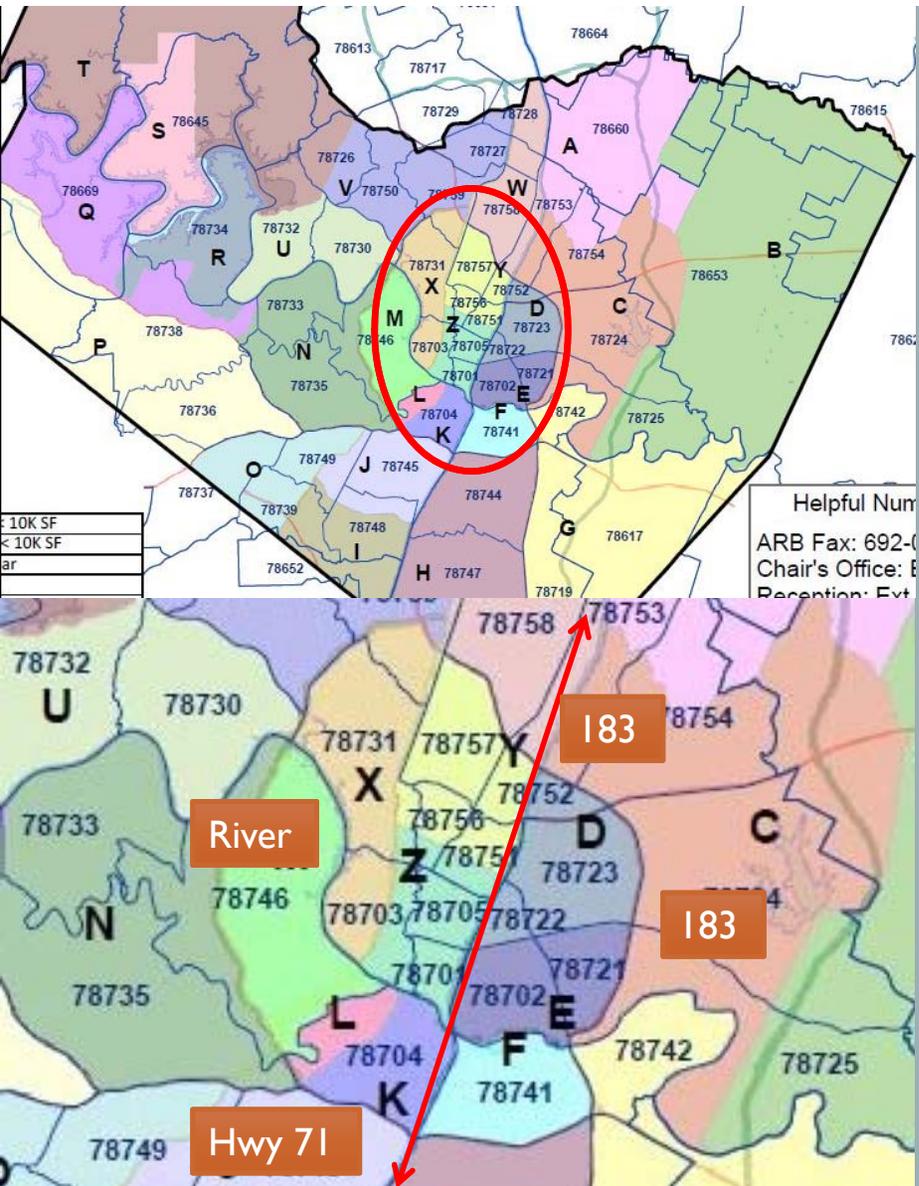
Stability =
price point uniformity,
supply and demand
are in equilibrium



Decline = 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

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

Each year stands on its own and must be re-evaluated...

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)

Segmentation		No Segmentation	
REM	82%	REM	96%
REM	82%	Ori	97%
REM	83%	Ori	98%
REM	84%	REM	98%
REM	84%	Ori	100%
REM	84%	REM	100%
Ori	122%	REM	101%
Ori	124%	Ori	101%
Ori	124%	REM	102%
Ori	126%	REM	103%

Median Level
of Appraisal

REM = remodeled
Ori = original

% < 100% = undervalued
% > 100% = overvalued

STATISTICAL EVIDENCE OF MARKET SEGMENTATION

2016 Case Study: Y4000 Allandale

Appraisal Year 2015
 Neighborhood ALLANDALE
 NBHD ASSOC

NBHD Code Y4000
 Sample Size 124
 Sample Percent 4.24%
 Population 2924
 Old NBHD Adj 1.33
 Avg Land/Sale 52.76%

Property ID	Re...	Δ
[REDACTED]	82.75%	
[REDACTED]	82.92%	
[REDACTED]	82.93%	
[REDACTED]	83.32%	
[REDACTED]	83.34%	
[REDACTED]	83.49%	
[REDACTED]	83.50%	
[REDACTED]	83.60%	
[REDACTED]	83.61%	

Remodeled =
Undervalued

Original =
Overvalued

Appraisal Year 2015
 Neighborhood ALLANDALE
 NBHD ASSOC

NBHD Code Y4000
 Sample Size 124
 Sample Percent 4.24%
 Population 2924
 Old NBHD Adj 1.33
 Avg Land/Sale 52.76%

Property ID	Re...	Δ
[REDACTED]	118.02%	
[REDACTED]	118.74%	
[REDACTED]	119.19%	
[REDACTED]	119.72%	
[REDACTED]	120.34%	
[REDACTED]	120.35%	
[REDACTED]	121.39%	
[REDACTED]	121.94%	
[REDACTED]	123.67%	

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



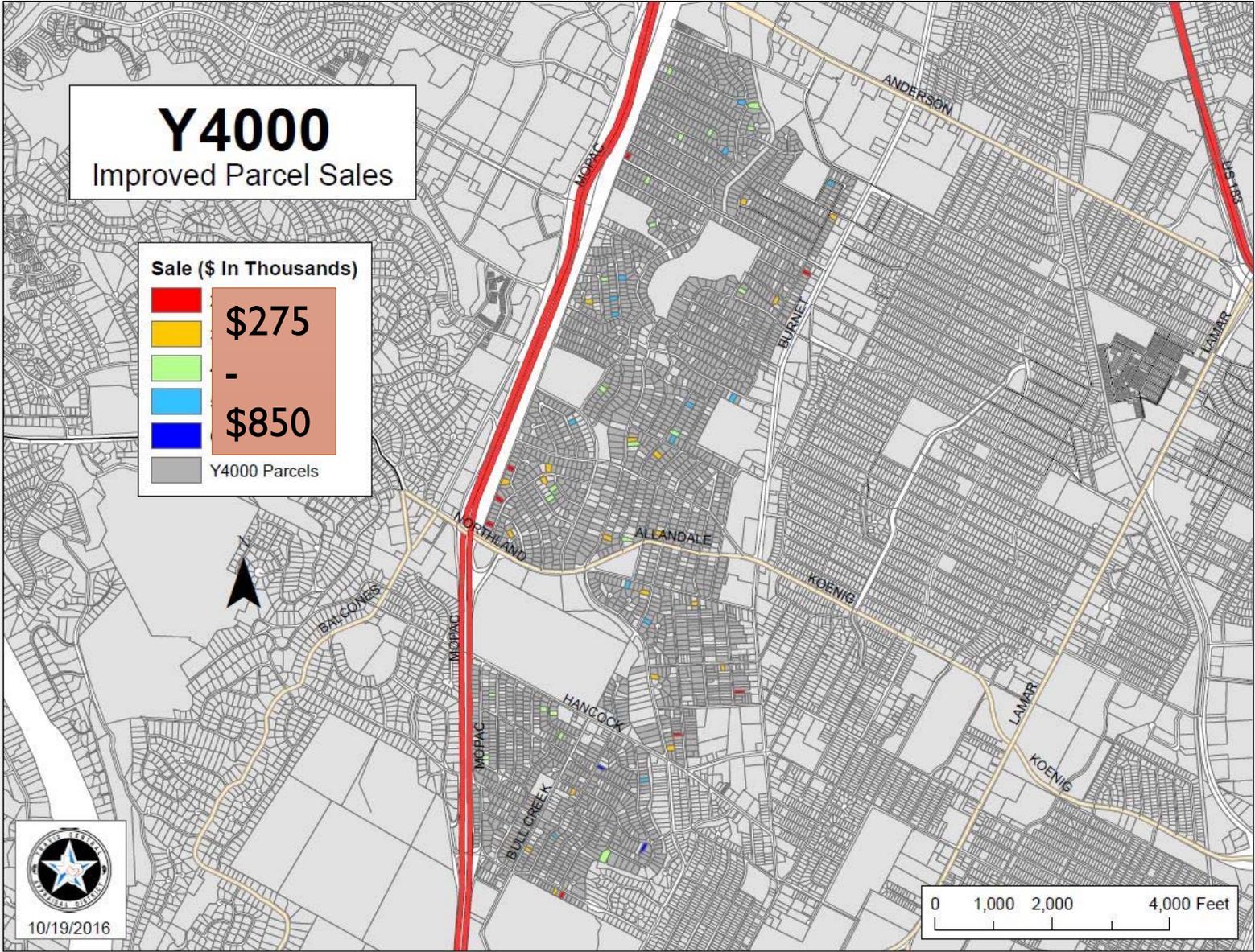
Sales Ratio: 1.24
NOT Updated

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

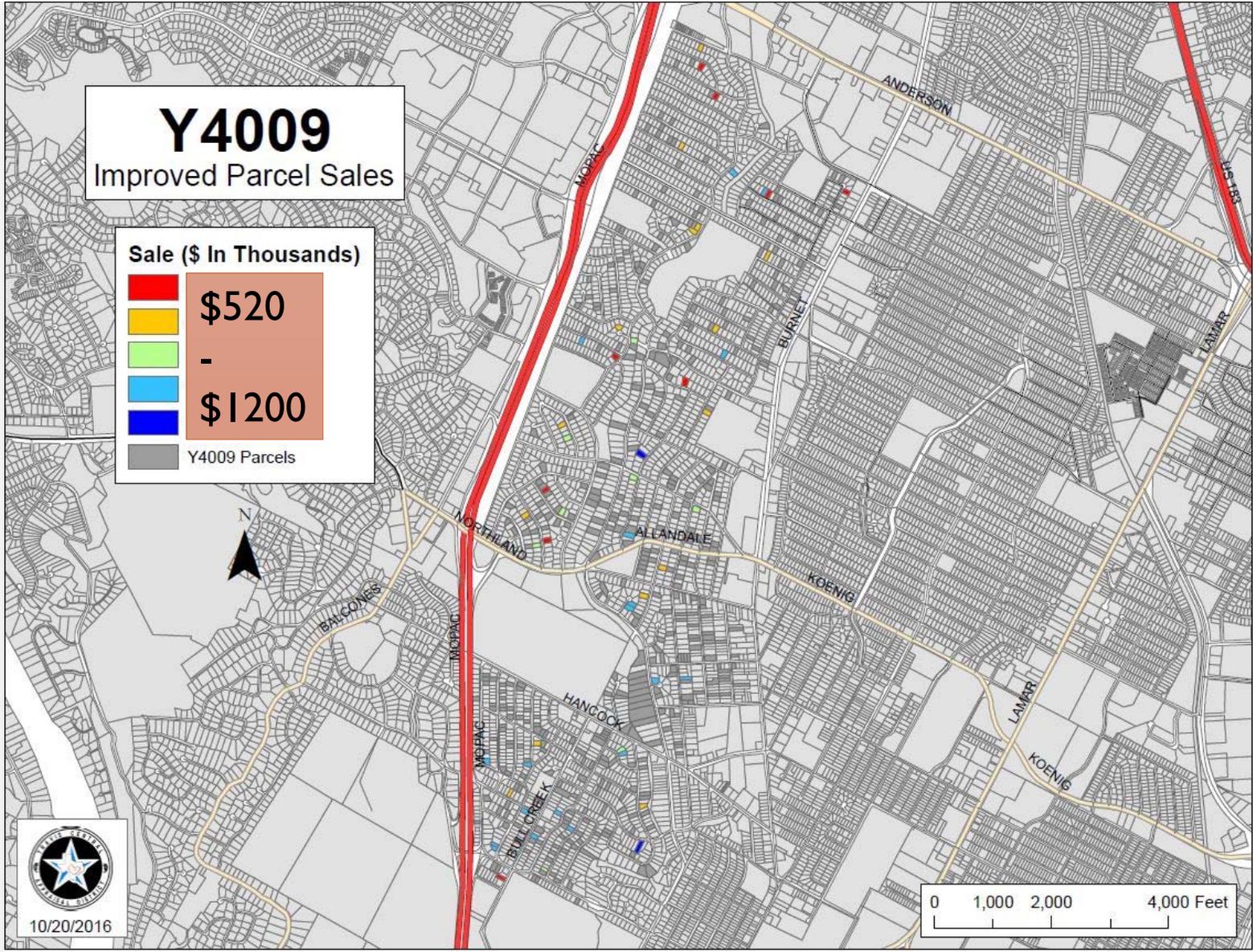
Y4000

Improved Parcel Sales



Y4009

Improved Parcel Sales



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

Zip Codes:

78704, 78741, 78703, 78701, 78702

78705, 78722, 78721, 78756, 78751

78723, 78731, 78757, 78752

Extending into East Austin for 2017!

