



# TIME ADJUSTMENT OF SALES

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Joe Hapgood, CAE

# Time Adjustment of Sales

- Basic Questions Before We Start
- Why Do We Need SALES for CAMA Valuation?
  - Market Value (Actual Fair Cash Value) is Goal
  - Remember 3 Approaches to Value (Market or Sales Comparison, Cost, and Income)
  - When Adequate Sales are Available, Greater Reliance Should be Made on Sales Comparison Approach
  - Sales “Fuel” CAMA Valuation Process

# Time Adjustment of Sales

- How Do We Use Sales in CAMA?
  - Automated Sales Comparison Programs
  - Development of County and NBHD Adjustment Factors to CAMA RCNLD Figures
    - Correlates Cost with Market Approach in CAMA)
  - Development of Regression Models (MRA) - Acronym for Multiple Regression Analysis
    - Some Counties Run MRA and Rely on it to Some Degree

# Finding Adequate Sales

- Sales are Critical in CAMA Valuation, But Finding ENOUGH Good Sales is Often a Problem
- Many Times in Smaller Counties, Two or Three Years of Sales May Need to be Used

## Problems With Multiple Years of Sales:

- Goal for CAMA Appraisal as of Each Jan. 1 is Actual Fair Cash Value (market value)
- Value is Supposed to be “Current” as of That Appraisal Date
- If Market is Increasing (or Decreasing), Older Sales May Not Properly Reflect Relationship between CAMA Value and Sales Price

## Problems With Multiple Years of Sales:

- If Older Sales are Used in CAMA Valuation Without Time Adjustment...
- And if the Market Increases/Decreases Over Time...
- Then CAMA Values Developed WILL NOT Reflect Current Actual Fair Cash Value!

# IAAO Comments

- IAAO Textbook:
- Sales Prices Should be Adjusted for Time
- Separate Factors by Type of Property and Geographic Area May be Necessary
- Rates of Change in Real Estate Prices Often Vary Based on Class of Property and Location

## IAAO Comments, Continued

- Goal is to Adjust Sales to Appraisal Date
- Can Adjust by Month or Quarter
- Can Do Straight Line or Compounded
- Results Usually Very Similar Unless Extreme Market Conditions Exist

# Options for Calculating Time Adjustment:

- Multiple Regression Analysis (MRA)
  - Requires Modeling Capabilities in CAMA Software, or Statistical Software Program Such as SPSS
  - Requires Greater Understanding of Mathematical Concepts
  - Legitimate Option for Larger Counties with Software and Technical Capabilities
  - Not Viable Option for Many Counties
  - **Will NOT Focus on This Method Today!**

## Options for Calculating Time Adjustment:

- Year Over Year Change in Unadjusted Ratios by Property Class (County & NBHD Adjustment Factors Set at 100)
  - Makes Year Over Year Comparison of Unadjusted CAMA Appraisal to Sale Ratios by Property Class (Residential, Commercial)
  - Advantages:
    - Can be Done in Even Small Counties with Limited Sales Data
    - Simple to Calculate and Easily Explainable
    - Uses Actual Data in Your County for Development of Numbers
  - Disadvantages:
    - Forces a “Linear” Increase/Decrease Approach, When Market May Not be Actually Working That Way

# Options for Calculating Time Adjustment:

- Alternative Methods
  - “Hybrid” Approaches
    - Some Involve MRA and Combinations of Approaches Mentioned Previously
    - Will Not Explore These Today!

# Time Adjustments, “How To”

- Since Sales are Needed for CAMA Valuation...
- And Since Multiple Years of Sales May be Required in Some Situations...
- And Since CAMA Value Distortion Can Occur with Multiple Years Sales and No Time Adjustment...
- Leaves Us with Important Question:
- **HOW DO WE TIME ADJUST SALES?**

# Time Adjustments, “How To”

- Several Options:
  - MRA (Multiple Regression Analysis)
  - Year Over Year Change in Unadjusted Ratios by Property Class (County & NBHD Adjustment Factors Set at 100)
  - Repeat Sales Analysis (Either County Data or FHFA Oklahoma Data)
  - Alternative Methods



## Two Simple Methods We Will Use:

- Federal Housing Finance Agency (FHFA)  
Oklahoma Repeat Sales Data
- Use of Your County's CAMA Ratio Statistics

# First Time Adjustment Method Using Repeat Sales

- Federal Housing Finance Agency Data (FHFA)
- What Is FHFA?
- Federal Agency Responsible for Oversight of Fannie Mae, Freddie Mac and Federal Home Loan Banks
- FHFA Creates a House Price Index Report (HPI) Every Quarter

# FHFA House Price Index

- **Advantages** in Using FHFA HPI for Time Adjustment:
  - Relies on Repeat Sales Transactions Across Entire State
  - Based on Thousands of Actual Oklahoma Sales Transactions
  - Statistically Very Reliable
- **Disadvantages**
  - May Not Represent What is Actually Happening In Your Specific County Market

# Use of Your County's Ratio Statistics

- **Advantages** in using County Ratio Statistics for Time Adjustment:
  - Based on Your County's Market Data with Local Sales Transactions
  - Direct Comparison to Unadjusted Cost Figures in CAMA
  - Easier to Justify and Explain
- **Disadvantages**
  - Occasionally There Will be Problems in Getting Enough Sales to Have Statistically Meaningful Numbers



# TIME ADJUSTMENT METHOD USING FHFA REPEAT SALE DATA

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Simple Method Using Free Federal  
Information Available on Internet

# Accessing Quarterly HPI Data:

- Go to Federal Housing Finance Agency Home Page:
- <http://www.fhfa.gov>

# FHFA Web Site:

- Home Page

The screenshot shows the FHFA website home page in a browser window. The browser's address bar shows the URL <http://www.fhfa.gov/>. The page features a blue header with the FHFA logo and the text "Federal Housing Finance Agency". To the right of the logo is the "Mission Statement": "Ensure that the housing GSEs operate in a safe and sound manner so that they serve as a reliable source of liquidity and funding for housing finance and community investment." Below the header is a red navigation bar with various menu items: "About FHFA", "GSEs", "Supervision & Regulations", "House Price Index", "Capital", "Research & Analysis", "Public Info", "OIG", "Conservatorship Operations", "Ombudsman", "OMWI", and "Plain Language".

The main content area is titled "Welcome to FHFA – the regulator and conservator of Fannie Mae and Freddie Mac and the regulator of the 12 Federal Home Loan Banks". Below this is a section titled "FHFA Resources for..." with two columns of links:

- Consumers
- GSE Business Partners
- Housing Industry Professionals
- Investors
- Legal Professionals
- Researchers/Analysts/Students
- Small Business/Vendors/Contractors

Below the resources is a section titled "Home Affordable Refinance Program (HARP)". The text in this section reads:

**For a mortgage to be considered for a HARP refinance, it *must* be owned or guaranteed by Fannie Mae or Freddie Mac.** To determine if your loan is owned or guaranteed by Fannie Mae or Freddie Mac, you should contact your mortgage servicer who should verify that information for you. Also, you may verify it yourself by going to the following link: [www.makinghomeaffordable.gov/get-assistance/loan-look-up/Pages/default.aspx](http://www.makinghomeaffordable.gov/get-assistance/loan-look-up/Pages/default.aspx).

If your loan is a **Fannie Mae** loan, you may obtain more information on the program, at <http://www.knowyouroptions.com/refinance/home-affordable-refinance-program>.

If your loan is a **Freddie Mac** loan, you may obtain more information at <http://www.freddiemac.com/avoidforeclosure/harp.html>.

If your loan is not a Fannie Mae or a Freddie Mac loan, your loan is not covered by the HARP refinance program. You may want to contact your servicer or other lenders to discuss refinance programs you may be eligible for. For more information see: FHFA [HARP](#) page.

Below the HARP section is a section titled "Careers Available at FHFA". The text in this section reads:

**FHFA: MORE THAN A JOB - MAKING A DIFFERENCE!**

At FHFA employees enjoy all [the standard federal benefits plus additional agency benefits](#), including flexible work sites and schedules as well as a 401K plan administered by T. Rowe Price. We also are not tied to the traditional government pay system, and our salaries are competitive in the housing finance job market and dependent on education, experience, and work site location.

For detailed information on open positions and how to apply, click [here](#).

# FHFA Web Site:

- “Arrow Over” House Price Index Tab At Top

The screenshot shows the FHFA website interface. At the top, there is a navigation menu with the following items: About FHFA, GSEs, Supervision & Regulations, House Price Index, Capital, Research & Analysis, Public Info, OIG, Conservatorship Operations, Ombudsman, OMWI, and Plain Language. The 'House Price Index' tab is highlighted with a red circle. Below the navigation menu, there is a dropdown menu for 'House Price Index' with the following items: About HPI, State HPI Data, City HPI Data, Regional HPI Data, Quarterly HPI, Monthly HPI, HPI Calculator, Downloadable Data, and HPI Historical Reports. The 'Quarterly HPI' item is also highlighted with a red circle. The main content area features a 'Welcome to FHFA' message, a 'FHFA Resources for' section with links for Consumers, GSE Business Partners, Housing Industry, and Investors, and a 'Home Affordable Refinance Program' section. The footer includes a 'Careers Available at FHFA' section with the tagline 'FHFA: MORE THAN A JOB - MAKING A DIFFERENCE!'.

Quick Links

- About FHFA
- Housing Mission and Goals
- Budget, Performance & Accountability
- Capital
- Conforming Loan Limits
- Career Opportunities
- Executive Compensation
- Freedom of Information Act (FOIA)/Privacy Programs
- Government Sponsored Enterprises (GSE)
- House Price Index
- Office of Minority and Women Inclusion
- Public Information
- Joint Mortgage Servicing Compensation

Welcome to FHFA – the Federal Housing Finance Agency

**FHFA Resources for:**

- Consumers
- GSE Business Partners
- Housing Industry
- Investors

**Home Affordable Refinance Program**

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# FHFA Web Site:

- Quarterly HPI Data

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The main navigation menu includes: About FHFA, GSEs, Supervision & Regulations, House Price Index, Capital, Research & Analysis, Public Info, OIG, Conservatorship Operations, Ombudsman, OMWI, and Plain Language.

The "House Price Index" section is active, showing a sub-menu with "Quarterly HPI" selected. Under "Quarterly HPI", there is a link for "Quarterly HPI Reports (PDF)". Below this, there is a list of years: 2013, 2012, 2011, 2010, 2009, and 2008. The 2013 link is expanded, showing "February 26 4Q 2012 (and December 2012 U.S. Monthly) House Price Index".

The left sidebar contains links for: About HPI, State HPI Data, City HPI Data, Regional HPI Data, Quarterly HPI, Monthly HPI, HPI Calculator, Downloadable Data, and HPI Historical Reports.

The footer contains: Home | No FEAR Act Data | Accessibility and 508 | Privacy Policy | Site Map | Contact Us | FHFA Office of Inspector General | Information for Employees | Webmaster | USA.gov

# Quarterly HPI Data

- Data Lags About One Quarter Behind
- Third Quarter Usually Released in November
- You Won't be Adding a Time Adjustment in For Your Most Recent 3 Months of Sales Anyway
- So You Can Do Three Quarters of Current Year by November... In Time for Analysis and Adjustments for Next Valuation Year!

# Quarterly HPI Reports:

- Long Reports (4<sup>th</sup> Qtr. 2012 is 79 pages long!)
- Standard Methodology Explanation
- Standard Format Each Time
- Locate State Summary And Find Oklahoma Quarterly Number
- Locate SMSA City Summaries And Find Those Numbers
  - Lawton Is SMSA in HPI Studies But Not Enough Data to Include in Quarterly Reports (Only Year Over Year Changes, Other Reports on Web Site)

# Example Quarterly Report:

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## FEDERAL HOUSING FINANCE AGENCY



### NEWS RELEASE

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For Immediate Release  
February 26, 2013

**Contact:** Corinne Russell (202) 649-3032  
Stefanie Johnson (202) 649-3030

### U.S. House Prices Rose 1.4 Percent in Fourth Quarter 2012

**Washington, DC** – U.S. house prices rose **1.4 percent** from the third quarter to the fourth quarter of 2012 according to the Federal Housing Finance Agency's (FHFA) seasonally adjusted **purchase-only** house price index (HPI). The HPI is calculated using home sales price information from Fannie Mae and Freddie Mac mortgages. Seasonally adjusted house prices rose **5.5 percent** from the fourth quarter of 2011 to the fourth quarter of 2012. FHFA's seasonally adjusted *monthly* index for December was up **0.6 percent** from November.

"The fourth quarter was another strong one for house prices, as it was the third consecutive quarter where U.S. price growth exceeded one percent," said FHFA Principal Economist Andrew Leventis. "While a significant number of homes remained in the foreclosure pipeline, the actual number of homes available for sale was very low and fell over the course of the quarter."

FHFA's **expanded-data** house price index, a metric introduced in August 2011 that adds transaction information from county recorder offices and the Federal Housing Administration to the HPI data sample, rose 1.6 percent over the latest quarter. Over the latest four quarters, that index is also up 5.5 percent. For individual states, price changes reflected in the expanded-data measure and the traditional purchase-only HPI are compared on pages 23-25 of this report.

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# Example State Page:

## House Price Appreciation by State Percent Change in House Prices

Seasonally Adjusted, Purchase-Only HPI

*Period ended December 31, 2012*

State	Rank*	1-Yr	Qtr	5-Yr	Since 1991Q1
Arizona (AZ)	1	21.64%	4.63%	-30.41%	102.54%
Nevada (NV)	2	19.73%	5.48%	-44.40%	31.08%
Hawaii (HI)	3	14.50%	6.53%	-6.85%	94.79%
Idaho (ID)	4	13.25%	2.81%	-20.73%	108.37%
California (CA)	5	12.04%	4.83%	-27.30%	70.46%
Utah (UT)	6	11.67%	2.64%	-16.35%	165.68%
North Dakota (ND)	7	11.45%	2.62%	25.92%	160.85%
Colorado (CO)	8	10.69%	3.45%	3.69%	186.69%
District of Columbia (DC)	9	10.67%	2.07%	12.82%	286.57%
Florida (FL)	10	9.83%	1.55%	-32.52%	87.12%
Washington (WA)	11	9.37%	3.29%	-19.55%	124.99%
Wyoming (WY)	12	8.30%	1.71%	-0.17%	202.34%
Michigan (MI)	13	7.71%	1.07%	-12.60%	53.52%
Georgia (GA)	14	7.52%	2.52%	-18.82%	60.06%
Montana (MT)	15	7.42%	3.47%	-3.80%	209.50%
West Virginia (WV)	16	7.07%	4.09%	2.36%	98.21%
Oregon (OR)	17	6.57%	1.40%	-20.85%	164.65%
Texas (TX)	18	6.56%	1.66%	5.88%	102.60%
<b>USA</b>		<b>5.45%</b>	<b>1.39%</b>	<b>-12.87%</b>	<b>90.30%</b>

# Example City Page (SMSA):

## Rankings by Metropolitan Statistical Areas and Divisions

### Percent Change in House Prices with MSA Rankings

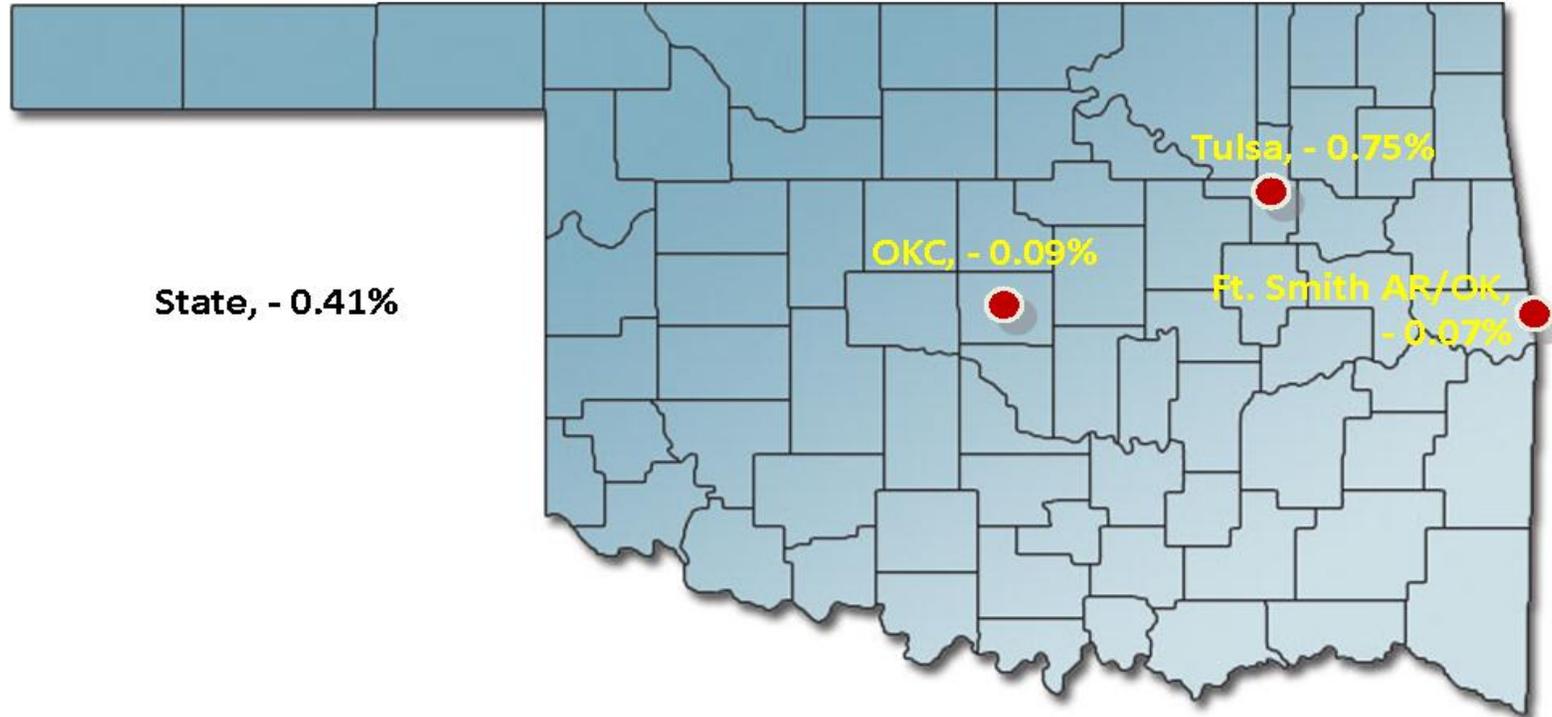
All-transactions HPI which includes purchase and refinance mortgages

*Period ended December 31, 2012*

Metropolitan Statistical Area	National Ranking*	1-Yr	Qtr	5-Yr
Akron, OH	232	-1.47%	0.41%	-11.30%
Albany-Schenectady-Troy, NY	218	-1.12%	-0.19%	-3.98%
Albuquerque, NM	252	-1.90%	-0.41%	-15.90%
Allentown-Bethlehem-Easton, PA-NJ	253	-1.90%	0.67%	-18.11%
Amarillo, TX	54	2.17%	1.96%	4.72%
Ames, IA	141	0.53%	-0.23%	0.39%
Anchorage, AK	125	0.72%	0.97%	1.39%
Anderson, SC	216	-1.07%	-2.31%	-8.56%
Ann Arbor, MI	67	1.77%	0.78%	-12.60%
Appleton, WI	121	0.79%	-0.10%	-4.75%
Asheville, NC	263	-2.12%	-0.96%	-12.89%
Athens-Clarke County, GA	234	-1.54%	-2.68%	-17.46%
Atlanta-Sandy Springs-Marietta, GA	273	-2.53%	1.11%	-23.65%
Atlantic City-Hammonton, NJ	299	-5.15%	-2.13%	-24.52%
Auburn-Opelika, AL	266	-2.26%	-0.58%	-11.64%
Augusta-Richmond County, GA-SC	264	-2.17%	-1.06%	-10.98%
Austin-Round Rock-San Marcos, TX	27	3.53%	1.08%	4.72%
Bakersfield-Delano, CA	6	6.12%	1.96%	-40.79%
Baltimore-Towson, MD	210	-1.01%	0.10%	-19.90%
Barnstable Town, MA	131	0.62%	0.82%	-11.85%

# FHFA Quarterly Data:

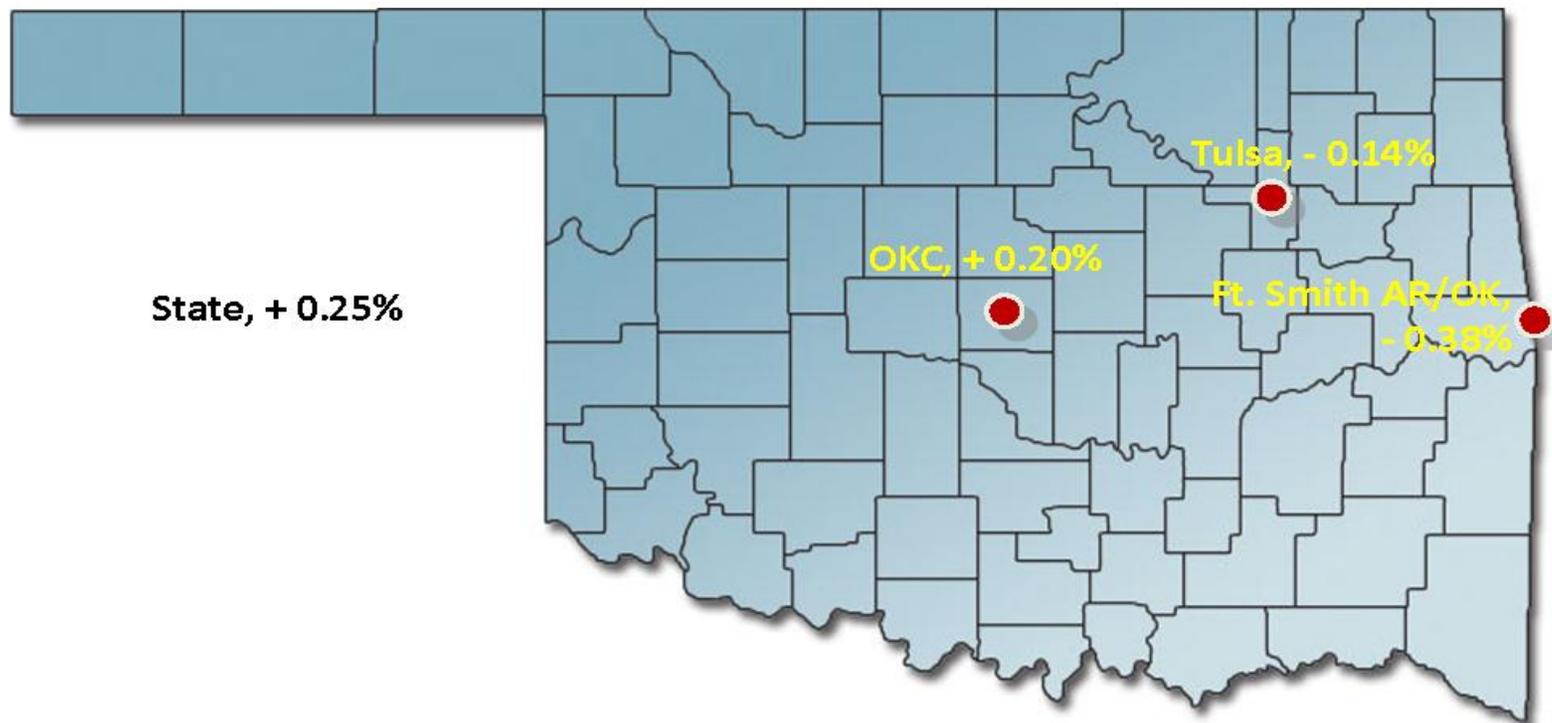
## 1st Quarter 2012 Appreciation/Depreciation State and Selected Cities (SMSA's)



Source: Federal Housing Finance Authority (FHFA)  
<http://www.fhfa.gov>

# FHFA Quarterly Data:

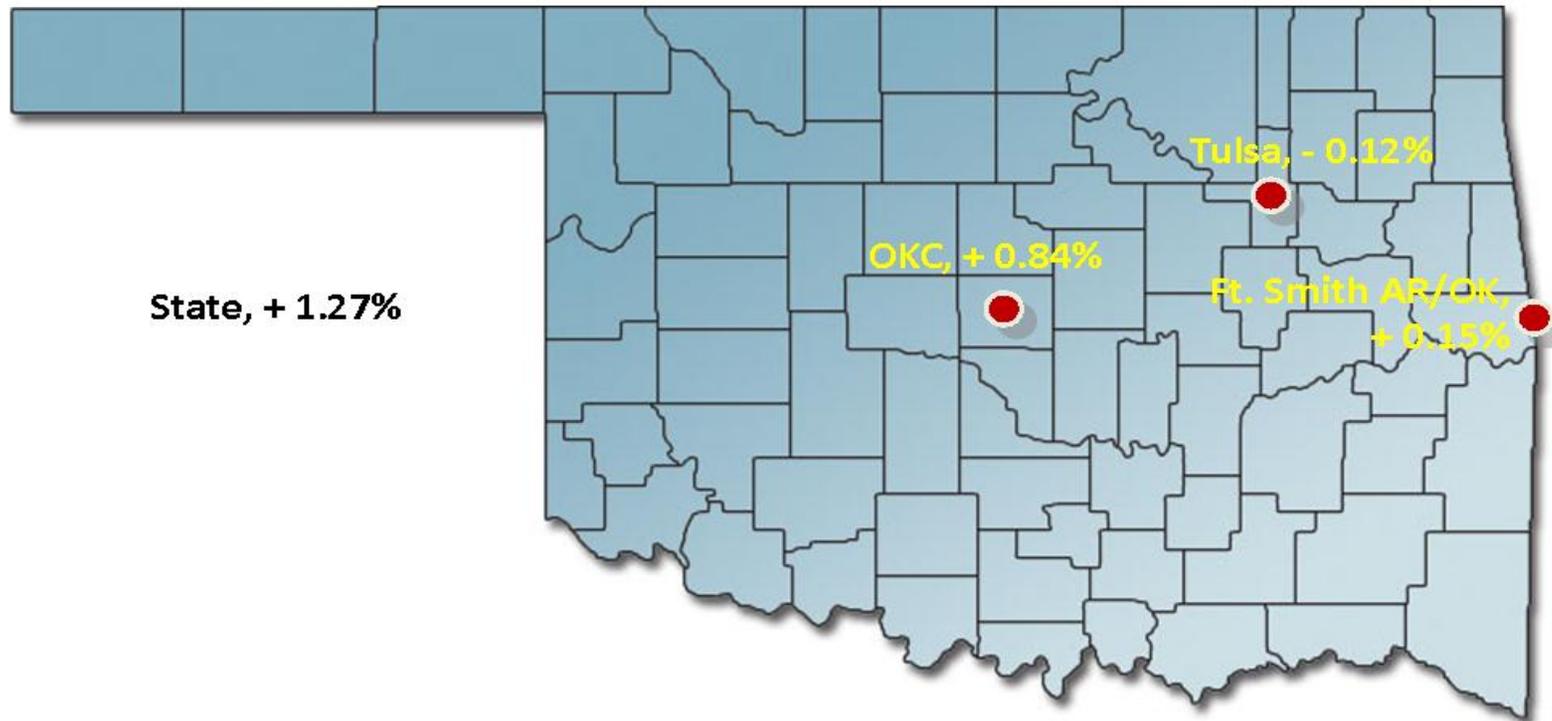
## 2nd Quarter 2012 Appreciation/Depreciation State and Selected Cities (SMSA's)



Source: Federal Housing Finance Authority (FHFA)  
<http://www.fhfa.gov>

# FHFA Quarterly Data:

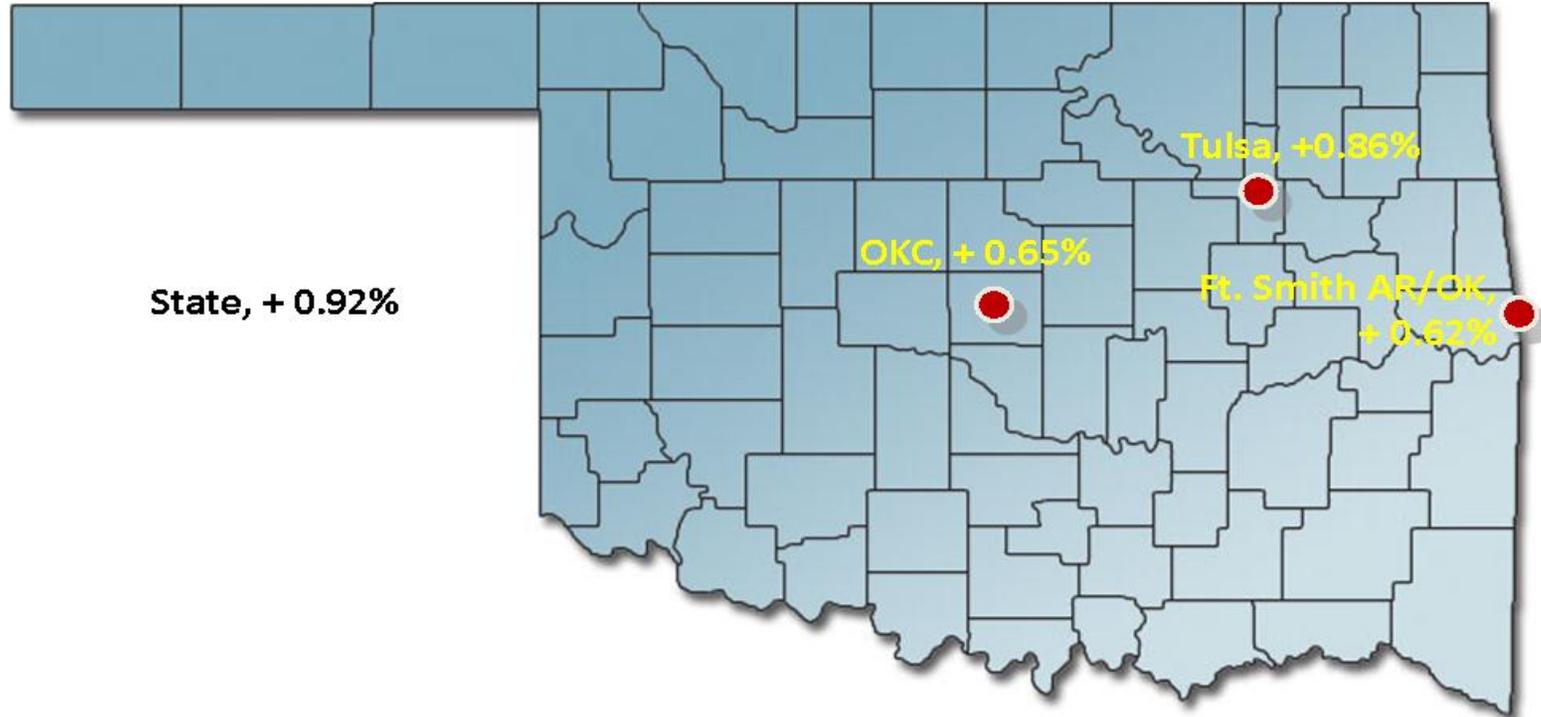
## 3rd Quarter 2012 Appreciation/Depreciation State and Selected Cities (SMSA's)



Source: Federal Housing Finance Authority (FHFA)  
<http://www.fhfa.gov>

# FHFA Quarterly Data:

## 4th Quarter 2012 Appreciation/Depreciation State and Selected Cities (SMSA's)



Source: Federal Housing Finance Authority (FHFA)  
<http://www.fhfa.gov>

# Applying FHFA Percentages in CAMA

- In State CAMA, Must Enter Percentages in “TIME” Table:

Table Maint OKLA. CO.#22 WORK FILE 2012

File Menu Functions Help

Refresh Delete

Radiant Software

Code: TIME

Data Description: 13 Comp Sales Time Adjustment le

Key Format: 999999

Data Format: 999999X

200501	000025
200502	000025
200503	000010
200504	000010
200505	000010
200506	000010
200507	000010
200508	000010
200509	000010
200510	000010
200511	000000
200512	000000
200601	000000
200602	000010
200603	000015
200604	000015
200605	000015
200606	000010
200607	000010
200608	000005
200609	000005
200610	000005
200611	000000
200612	000010
200701	000005
200702	000005
200703	000000
200704	000003

## Applying FHFA Percentages in CAMA

- Can Choose to Enter FHFA Percentages in “TIME” Table by Month, by Quarter, or by Year
- In Quarterly Percentage Example, Enter the Factor Indicated in 03, 06, 09, and 12 Months and Leave the other Monthly Factors at 000000
- This Applies Time Adjustment Cumulatively by Quarter, As Opposed to Month by Month or Once a Year

# Applying FHFA Percentages in CAMA:

- For Year(s) You Have Calculated Factors, You enter One Factor Per Quarter, With Other Months Set at “000000”

Code	
TIME	
Key Format	
999999	
2005 01	000025
2005 02	000025
2005 03	000010
2005 04	000010
2005 05	000010
2005 06	000010
2005 07	000010
2005 08	000010
2005 09	000010
2005 10	000010
2005 11	000000
2005 12	000000
2005 01	000000

## Things to Remember with State System CAMA and Time Adjusted Sales:

- If You're Using Time Adjusted Sales to Do Ratio Analysis and Establish Adjustment Factors to Cost Figures in CAMA, Then You Must Run the Following Extracts/Reports:
  - Time Adjusted Sales Extract
  - Time Adjusted Sales Report
- These are Available on Menus in CAMA



# TIME ADJUSTMENT METHOD USING CAMA RATIO DATA

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Simple Method Using Your Own Data



## Time Adjustment Method Using County Ratio Data

- Looks at Year by Year Percentage Change in Median Appraisal to Sale Ratios
- Primarily for Use on Residential Property Class



# What You Need

- Accurate CAMA Data
- Accurate and Complete CAMA Sales File

# State System CAMA Tables and Reports Involved:

- TIME
- CMULT
- NBHD

# State System CAMA Tables Involved:

- TIME

Table Maint OKLA. CO.#22 WORK FILE 2012

File Menu Functions Help

Refresh Delete

Radiant Software

Code: TIME

Data Description: 13 Comp Sales Time Adjustment le

Key Format: 999999

Data Format: 999999X

200501	000025
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200504	000010
200505	000010
200506	000010
200507	000010
200508	000010
200509	000010
200510	000010
200511	000000
200512	000000
200601	000000
200602	000010
200603	000015
200604	000015
200605	000015
200606	000010
200607	000010
200608	000005
200609	000005
200610	000005
200611	000000
200612	000010
200701	000005
200702	000005
200703	000000
200704	000003

# State System CAMA Tables Involved:

- CMULT

Code	Data Description
CMULT	Comparative Cost Multiplier Table

Key Format	Data Format
	XXXXXX

0000	1	CMA
0000	2	CMB
0000	3	CNC
0000	4	CND
0000	4S	CND
0000	5	CNS
0192	1	CMA
0192	2	CMB
0192	3	CNC
0192	4	CND
0192	4S	CND
0192	5	CNS
0492	1	CMA
0492	2	CMB
0492	3	CNC
0492	4	CND
0492	4S	CND
0492	5	CNS
0792	1	CMA
0792	2	CMB
0792	3	CNC
0792	4	CND
0792	4S	CND
0792	5	CNS

# State System CAMA Tables Involved:

- NBHD

OKLA. CO.#75 WORK FILE 2012

1

Table ID:NBHD

Table Name: Neighborhood Table

Seq	Table Key	Table Data	Maint Date
	NBHD	XXXXXXXXXXXXXXXXXXXX 999 999 999	931209
01	00000000	N/A	130516
02	00000100	RURAL	130516
03	00000500	CALDWELL	010208
04	00000500 COM	CALDWELL	931230
05	00000500 MOB	CALDWELL	010208
06	00000500 TAB	CALDWELL	100310
07	00001000	ORIGINAL TOWN	110330
08	00001000 COM	ORIGINAL TOWN	931230
09	00001000 MOB	ORIGINAL TOWN	010208
10	00001000 TAB	ORIGINAL TOWN	130516
11	00001500	CORDELL HEIGHTS	110308
12	00001500 COM	CORDELL HEIGHTS	931230
13	00001500 MOB	CORDELL HEIGHTS	010208
14	00001500 TAB	CORDELL HEIGHTS	130516
15	00002000	HILCREST	110308
16	00002000 COM	HILCREST	931230
17	00002000 MOB	HILCREST	010208
18	00002000 TAB	HILCREST	130516
19	00002500	MARLEY	110308
20	00002500 COM	MARLEY	931230
21	00002500 MOB	MARLEY	010208
22	00002500 TAB	MARLEY	130516
23	00003500	COUNTY	
24	00004500	FOSS	940323
25	00004500 COM	FOSS	010208
26	00004500 MOB	FOSS	010208

# How to Determine Market Change

- Pick a Class of Property (Residential)
- Set County and NBHD Adjustment Factors to 100 in CAMA Tables
  - This is Done to Create a Uniform Comparison of Appraisal to Sale Ratios Between Years
  - The Appraisals Remain Constant, and are Compared to the Sales from Each Year Being Reviewed

## Example of Market Change:

- 2012 CAMA Value with County and NBHD Factors set at 100 Compared With 2010, 2011 and 2012 Residential Improved Qualified Verified Sales:
- Median Unadjusted Appraisal to Sales Price Ratio for 2012 Sales = .83
- Median Unadjusted Ratio for 2011 Sales = .91
- 2010 Sales Price for Property Like This \$100,000 ( $\$100,000 / \$100,000 = 1.00$ )

## Example, Unadjusted Ratios By Year:

- 2012 = .83
- 2011 = .91
- 2010 = 1.00

# What Do the Unadjusted Ratios By Year Tell Us?

- 2012 = .83
- 2011 = .91
- 2010 = 1.00
  
- Appraisal to Sale Ratio is DECREASING Over Time
- Means the Market is INCREASING !
- Appraisals in 2012 are Lower in Relation to the Sales Overall, Producing a Lower Ratio Than Prior Two Years

# Calculation of Annual Percentage of Change

- (Using Undadjusted Appraisal to Sale Ratios Previously Discussed)
- Subtract Old Value from New Value
- Show That as a Percentage of the Old Value by Taking the Difference and Dividing by the Old Value
- Example Next Slide...

# Calculation and Application of Time Adjustment

- $.91 - 1.00 = - .09$
- $- .09 / 1.00 = -.09$
- Ratio Decreased by 9%
- This Means the Market Increased by 9% In a One-Year Period

## Entry of Annual Figures, State System:

- Recommend Application of “Straight Line” Percentage Over the Entire Year
- To Do That, You Would Take the Annual Percentage Change and Divide it by 12
- In Our Previous Example, Take  $.09 / 12$
- $.09 / 12 = .0075\%$  Per Month for That Year in Time Adjustment Table
- Just Enter That Percentage in Each Month for That Year in the CAMA TIME Table

# Entry of Time Adjustment Percentages

- Enter “007500” Into CAMA Time Table for Each Month of the Year To Which You Are Applying the Straight Line Percentage:

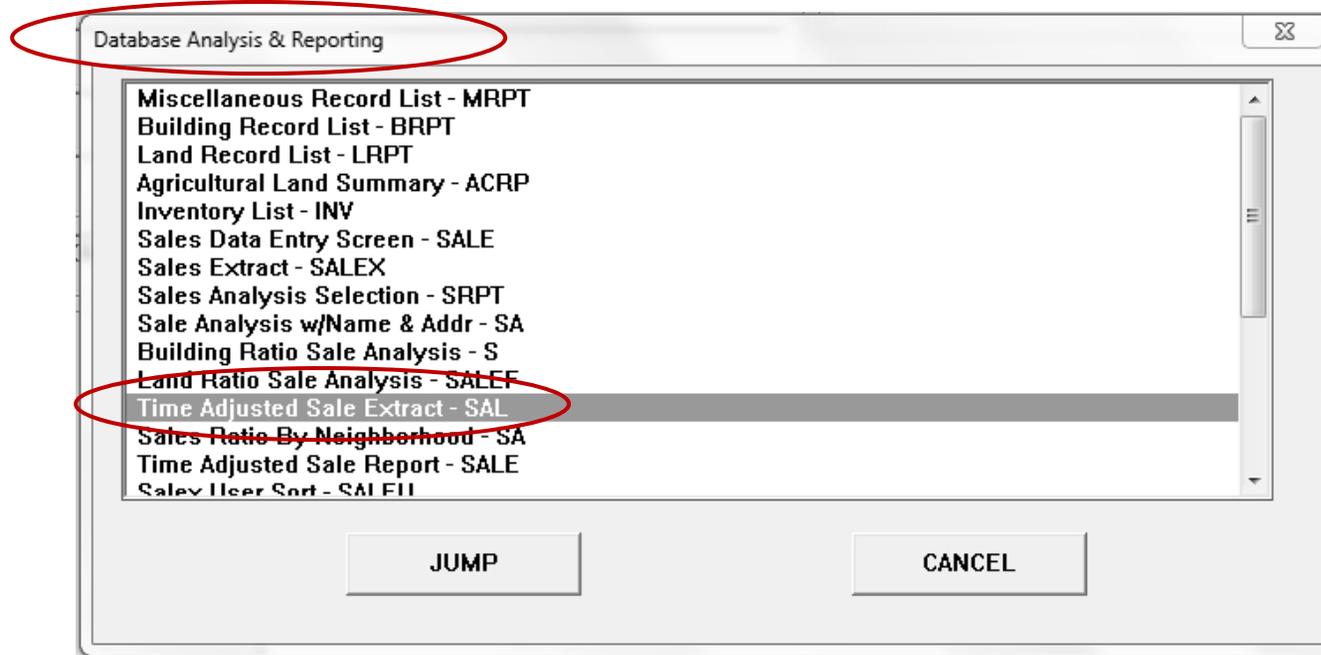
Code	
TIME	
Key Format	
999999	
200501	000025
200502	000025
200503	000010
200504	000010
200505	000010
200506	000010
200507	000010
200508	000010
200509	000010
200510	000010
200511	000000
200512	000000
200601	000000

# State System CAMA Time Adjusted Sales Extract

- When Using Time Adjusted Sales to Establish New NBHD Factors and New Values in State System CAMA, **You Need to Run the Time Adjusted Sales Extract**

# Time Adjusted Sales Extract:

- On Database Analysis and Reporting Screen in State System CAMA, You Choose Time Adjusted Sales Extract From Menu When Using Time Adjusted Sales for Valuation:



## Ratio Analysis With Time-Adjusted Sales

- Once Time Adjustments Have Been Entered in CAMA TIME Table, And You Have Run Your Time Adjusted Sales Extract, Do Your Regular Ratio Analysis and Calculation of New Adjustment Factors
- Each Year You Will Add Another Year's Worth of Time Adjustment Factors to Your CAMA TIME TABLE
- Same Process Each Year, Just Repeat Over and Over (Means You Should Get Good at It After You Do it for a While!!!)

# “Wrap-Up” on Time Adjustments:

- Review
- Why?
  - The Market Changes Over Time
  - May Need Multiple Years Sales for Valuation, Especially in Small Counties
  - Improves COD (Uniformity)
  - Makes Valuations More Accurate
- How?
  - Two Approaches Discussed:
  - Your Own County’s Ratio Statistics
  - FHFA Data for Oklahoma

# Review, FHFA House Price Index:

- **Advantages** in Using FHFA HPI for Time Adjustment:
  - Relies on Repeat Sales Transactions Across Entire State
  - Based on Thousands of Actual Oklahoma Sales Transactions
  - Statistically Very Reliable
- **Disadvantages**
  - May Not Represent What is Actually Happening In Your Specific County Market

# Review, Your County Ratio Statistics:

- **Advantages** in using County Ratio Statistics for Time Adjustment:
  - Based on Your County's Market Data with Local Sales Transactions
  - Direct Comparison to Unadjusted Cost Figures in CAMA
  - Easier to Justify and Explain
- **Disadvantages**
  - Occasionally There Will be Problems in Getting Enough Sales to Have Statistically Meaningful Numbers

## Final “Wrap-Up” and Review:

- Appraisal is an Art as Much as a Science
- Many Ways to Do Things
- More Than One Approach Can Be Valid
- This Presentation was Designed to Give You Some Ideas About How to Refine and Improve Your CAMA Valuation Process Using Simple Sales Time Adjustment Techniques
- You Can Take These Ideas and Modify Them to Your Specific Needs, Your CAMA System, and Your Market



**FREE  
MARKET DATA  
AVAILABLE ON INTERNET**

---

Useful Tools for Additional Reference

# The More You Know...

- Knowledge is Power
- The More You Know About Your Local Market...
  - The Better Your Values Will Be
  - The Easier it Will Be to Explain Values to Taxpayers
  - The More Confident You'll Be
- The Best Data Is Your Own!
  - Sales
  - Property Characteristic Information
- You Can “Mine” Your Own Data

# Data Mining

- Example: Counts of Properties by Age
  - Pre 1939
  - 1940 – 1970
- Example: Sales Price / Ft. by Class
  - Class A, \$110 / Ft.
  - Class B, \$90 / Ft.
  - Class C, \$70 / Ft.
  - Class D, \$43 / Ft.

# Other Free Market Data

- Federal Housing Finance Authority (FHFA)
  - <http://www.fhfa.gov/Default.aspx?Page=14> (House Price Index Home Page)
  - Various Tools
  - Residential Repeat Sales Data

# Other Free Market Data

- Oklahoma Association of Realtors (OAR)
  - <http://www.oklahomarealtors.com/member-tools/housing-statistics/> (Housing Statistics Home Page)
  - Statewide and Regional Sales Information
  - Useful Tool
  - Indicates Trends in Market
  - Good Graphics

# Other Free Market Data

- <http://www.realtor.com/> (National Listings and Sales Web Site)
  - Can Provide Property Detail for Review and Comparison to Assessor Records
  - Can Provide Both Interior and Exterior Pictures on Both Listed and Recently Sold Properties
  - Useful Supplemental Information for Market Analysis and Individual Property Review

# Other Free Market Data

- National Association of Home Builders (NAHB)
  - [http://www.nahb.org/reference\\_list.aspx?sectionID=132](http://www.nahb.org/reference_list.aspx?sectionID=132)  
(Under “Housing Data” and “State and Local Data” Tabs on Web Site)
  - Building Permits for States and Metro Areas Available in Excel Spreadsheet
  - Can Review Oklahoma Numbers for State and Major Metro Areas
  - Gives Good Indication of Market Strength and New Construction Trends

# Other Free Market Data

- National Association of Realtors (NAR)
  - <http://www.realtor.org/topics/metropolitan-median-area-prices-and-affordability/data>
  - Median home price data and market appreciation / depreciation data for Tulsa and Oklahoma City (also other metro areas across the country)
  - <http://www.realtor.org/reports/commercial-real-estate-outlook>
  - Commercial real estate market overview by region
  - Good info. on cap rate ranges, sales prices / ft., vacancy, absorption, etc.

# Other Free Market Data

- LoopNet
  - <http://www.loopnet.com/>
  - Good Commercial Real Estate Data Site
  - Commercial Sales by Sector for State
  - Can Sort or Analyze by Square Foot, Unit Price, Overall Sales Price, etc.
  - Useful “Benchmark” for Typical Current Ranges on Various Commercial Property Types

# Other Free Market Data

- Zillow
- <http://www.zillow.com>
- Independent Market Value Estimates Using Custom Automated Valuation Model (AVM)
- Similar to CAMA Regression Models
- Other Useful Maps, Listing and Sales Information
- Nice Additional Reference

# Other Market Data by Subscription

- Subscription Services
  - Good Commercial Market Information for Large Metro Counties
  - Includes Sales, Rents, Cap Rates, Vacancy Rates, Etc.
  - Cost Prohibitive and Lack of Viable Data for Small Counties

# Land Valuation

An aerial photograph showing a patchwork of agricultural fields in various shades of brown, tan, and green. A straight road or canal runs horizontally across the middle of the image. In the upper left corner, there is a small cluster of buildings and trees.

**Facing the Future ...**

A futuristic scene with a blue color palette. In the center, a large, glowing sphere is composed of binary code (0s and 1s). Six silhouettes of people in business attire are standing in a room with large windows, looking towards the sphere. The floor is also blue and reflective.

**TOGETHER**

# What is today's Date?

- A. July 23, 2013
- B. July 24, 2012
- C. August 9, 2013
- D. August 8, 2013

# What is today's Date?

B. August 8, 2013

# How often do you update Land Values?

- A. Every Year
- B. Once every four years
- C. Now and then
- D. Haven't in the last ten years
- E. Didn't know we were supposed to

# How often do you update Land Values?

A. Every Year

(according to statute,  
annual valuation of real property

# Land – a key component in estimating property Value

True market value of property is always an unknown

It is estimated everyday by buyers and sellers in the marketplace through transactions

# 3 Traditional Approaches

## Cost Approach

Based on new construction cost  
minus depreciation plus site value

# 3 Traditional Approaches

Sales Comparison Approach

Based on sales of similar properties

# 3 Traditional Approaches

## Income Approach

Based on the income the property can produce

There are reasons why there are different approaches to value

1. Different properties require different approaches. A specific method is dependent on the **data** available

There are reasons why there are different approaches to value

2. More than one method increases confidence in a final estimate of value

# Principle of Substitution

All 3 approaches are based on this principle

*The value of a property tends to be set by the cost of acquiring an equally desirable substitute*

A prudent purchaser can acquire a substitute property in three ways

Decide which valuation method is indicated in each alternative

Decide which valuation method is indicated

Buying an existing property which is a substitute for the one being appraised

- A. Cost Approach
- B. Sales Comparison Approach
- C. Income Approach

Buying an existing property  
which is a substitute for the  
one being appraised

B. Sales Comparison Approach

Decide which valuation method is indicated

Constructing a substitute with the same utility as the one being appraised

- A. Cost Approach
- B. Sales Comparison Approach
- C. Income Approach

Constructing a substitute with the same utility as the one being appraised

A. Cost Approach

Decide which valuation method is indicated

Acquiring an investment property which would produce the same rent and have the same risks as the one being appraised

A. Cost Approach

B. Sales Comparison Approach

C. Income Approach

Acquiring an investment property which would produce the same rent and have the same risks as the one being appraised

C. Income Approach

# Cost Approach

$$V = \text{RCN}(\text{LD}) + \text{Land}$$

RCN the cost replacing the  
improvements

**(LD) less depreciation**

**Add in the value of the land**

# Cost Approach

## Depreciation

Physical Deterioration

Functional Obsolescence

Economic Obsolescence

# Cost Approach

## Physical Deterioration

### Wear and Tear

Is measured by the cost of labor and materials needed to cure it

# Cost Approach

Functional Obsolescence

loss in utility

Economic Obsolescence

external factors

# Cost Approach

Functional Obsolescence

Economic Obsolescence

measured by the behavior of typical buyers ( their reaction to style, function, utility, and external forces)

# Cost Approach

Depends on  
Data from the Land market to  
estimate Land Values

Data from the Cost market to  
estimate material and labor  
prices to estimate Improvement  
Values

# Clicker Question

# Cost Approach

What is the value estimate if:

Land Value is \$20,000

Cost new of improvements is \$65,000

Improvements have depreciated 20%

# Cost Approach

A. \$70,000

B. \$85,000

C. \$72,000

D. \$98,000

# Cost Approach

C. \$72,000

# Cost Approach

Replacement Cost New	\$65,000
Minus Depreciation of 20%	
<u>(.20 x 65,000)</u>	<u>- 13,000</u>
Market Value of Imps	52,000
Plus Land Value	<u>20,000</u>
Equals total market value	\$72,000

# Sales Comparison Approach

Market Value equals

Sales Price of Comparable +/-  
adjustments

$$V = S \pm \text{adjustments}$$

# Sales Comparison Approach

CIA comparable inferior add

CBS comparable better subtract

# Sales Comparison Approach

The more comparable sales the better

Use the most current sales to reflect current market conditions

# Sales Comparison Approach

Depends on the availability of recent, comparable property sales.

# Clicker Question

Do you remember ??

CIA comp inferior **ADD**

CBS comp better **SUBTRACT**

# Sales Comparison Approach

Suppose:

Property “A” sold for \$145,000 and in your opinion it is 10% better than the subject property to be appraised.

What is the estimated value of subject property?

# Sales Comparison Approach

A. \$145,000

B. \$130,500

C. \$159,500

D. None of the above

# Sales Comparison Approach

B. \$130,500

# Sales Comparison Approach

Sale Price of Comp	\$145,000
Adjustment (.10 x 145,000)	<u>- 14,500</u>
Estimated Value of Subject	\$130,500

# Income Approach

When a rate is used to convert income from a property into property value, the **capitalization** process is taking place.

$$V = I \div R$$

# Income Approach

*Remember our good friend*

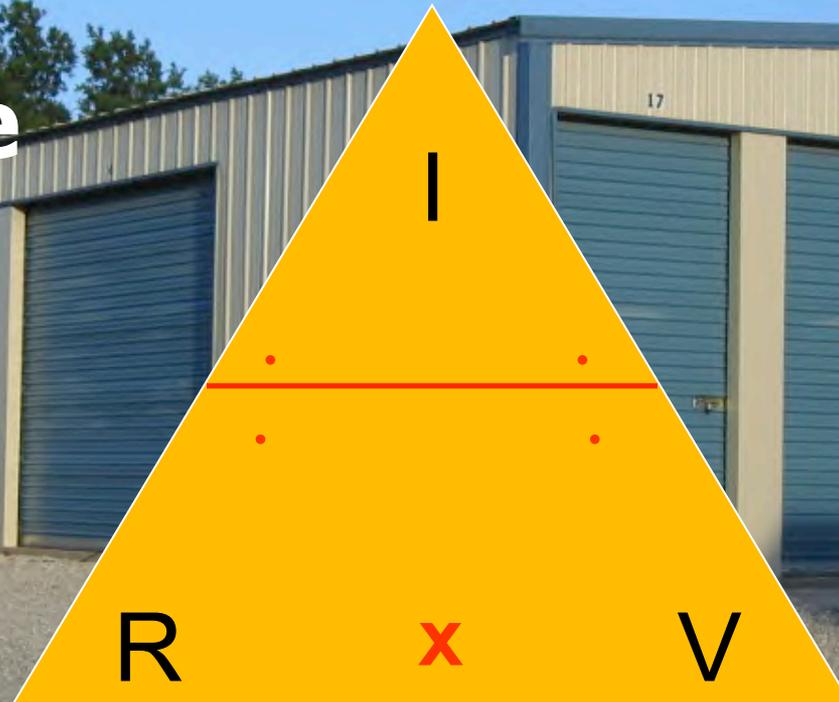
***“IRV”***

# Income Approach

**I = Income**

**R = Rate**

**V = Value**



$$V = I \div R$$

$$R = I \div V$$

$$I = R \times V$$

# Income Approach

The income is the amount of money received by the owner in the form of rents and other income.

The rate reflects both the return **ON** and the return **OF** the investment

Both annual figures

# Income Approach

Depends on the availability of rental income and expense data for the **income model**

Depends on the financial or sale data for the **rate component**

# Clicker Question

# Income Approach

What is the value of a property that rents for \$1,400 per month and the appropriate capitalization rate is 12%.

*(assume \$1,400 is net rent per month)*

# Income Approach

A. \$140,000

B. \$14,000

C. \$168,000

D. None of the above

# Income Approach

A. \$140,000

# Income Approach

Annual Rent       $1400 \times 12 = \$16,800$

$$\text{Value} = I \div R$$

$$\begin{aligned}\text{Value} &= \$16,800 \div .12 \\ &= \$140,000\end{aligned}$$

# Data Collection

# Neighborhood Analysis

A study of the relevant forces that influence property values within the boundaries of a homogeneous area.

# Neighborhood Analysis

- A Neighborhood is the immediate environment of the subject property
- A grouping of parcels all influenced by factors and forces that have a direct and immediate effect on value

# What defines a neighborhood?

Physical barriers; railroads, traffic arteries, hills, ravines, swamps

Changes in the income levels of occupants

Changes in the value range of improvements; such as from more expensive homes to less expensive

Changes in land use; residential to commercial, changes in zoning or other restrictions

# What are the neighborhood life stages?

**Development** a period of growth and acceptance

**Equilibrium** a period of relative stability

**Decline** a period of declining demand and disintegration

**Revitalization** a period of renewed favor

# Neighborhood Data

*Form*

# Neighborhood Data

**NEIGHBORHOOD DATA FORM**

**1 Boundaries:**  
 North \_\_\_\_\_ South \_\_\_\_\_  
 East \_\_\_\_\_ West \_\_\_\_\_

**2 Life Cycle:** Development   
 Equilibrium   
 Decline   
 Revitalization

**3 Land Value Trend** Upward   
 Downward   
 Stable   
 Rate per Year \_\_\_\_\_

**4 Economic Factors**  
 Zoning \_\_\_\_\_ Percent built up \_\_\_\_\_  
 Price Range of Typical Properties From \$ \_\_\_\_\_ to \$ \_\_\_\_\_  
 Predominate Type building \_\_\_\_\_ Typical Age \_\_\_\_\_  
 Owner Occupancy \_\_\_\_\_ % Rental Occupancy \_\_\_\_\_ %  
 Marketability Good  Fair  Poor

**5 Utilities**  
 Electricity  Sewer   
 Gas  Septic   
 Water  Sidewalk   
 Water Well  Street Surfacing   
 Telephone  Cable

**6 Deed Restrictions**  
 Yes  No   
 Specify \_\_\_\_\_

**7 Special Assessments**  
 \_\_\_\_\_

**8 Tax Rate** \_\_\_\_\_ Compared to competing neighborhoods  
 High  Low  Same

**9 Distance from Schools** \_\_\_\_\_

**10 Distance from Churches** \_\_\_\_\_

**11 Distance from Shopping** \_\_\_\_\_

**12 Public Transportation** Yes  No  Type \_\_\_\_\_

**13 Types of Services Offered in Neighborhood**  
 Police and Fire Protection  Delivery Service   
 Gargage Collection  Other \_\_\_\_\_

**14 Distance from Recreational and Cultural Areas** \_\_\_\_\_

**15 Special Traffic Problems** \_\_\_\_\_

**16 Hazards** (airports, gas or oil storage, etc.) \_\_\_\_\_

**17 Nuisances** (noise, smoke, odors) \_\_\_\_\_

**18 Social and Economic Background of Residents**  
 Typical Family Income \$ \_\_\_\_\_ to \$ \_\_\_\_\_  
 Predominate Occupations of Residents \_\_\_\_\_  
 Average Family Size \_\_\_\_\_

# Clicker Question

# Which statement is false?

- A. Market Price is the selling price of property regardless of conditions influencing the sale
- B. Market Value is based on the concept of a willing buyer and a willing seller both of whom is well informed and is not acting under pressure
- C. The terms Market Price and Market Value are synonymous

# Which statement is false?

C. The terms Market Price and Market Value are synonymous

**During which stage of the neighborhood's life cycle would you expect highest value and desirability?**

**A. Development**

**B. Equilibrium**

**C. Decline**

**D. Revitalization**

**During which stage of the neighborhood's life cycle would you expect highest value and desirability?**

**B. Equilibrium**

## RESIDENTIAL

REC#	USE CODE	ZONING	FRONTAGE	DEPTH	TOTAL # UNITS	TYPE		UNIT PRICE								
1							FF									
2							S									
3							ST									
4							AC									
5							LT									
REC#	ADJ#	TYPE	CODE	ADJ.	AMT	%	LAND NOTES	SITUS CODES								
								LAND ADJUSTMENT/DESCRIPTIVE CODES (MAX. 4 ADJ. PER LAND LINE) NOTE: IF NO ADJUSTMENTS ARE TO BE MADE FOR A CATEGORY, THEN ENTER CODES INTO NOTE FIELD FOR THAT CATEGORY								
								<table style="width: 100%; border: none;"> <tr> <th style="width: 25%;">TOPO-A</th> <th style="width: 25%;">SHAPE-B</th> <th style="width: 25%;">UTILITIES-C</th> <th style="width: 25%;">DEPTH-D</th> </tr> <tr> <td>1. LOW 2. ROLLING 3. HILLY 4. LEVEL 5. RUGGED 6. FLOOD</td> <td>1. TYPICAL 2. IRREGULAR 3. SHALLOW 4. NARROW 5. OVERSIZE 6. ACREAGE</td> <td>1. ALL PUBLIC 2. GAS 3. ELECTRIC 4. WATER 5. SEWER 6. SEPTIC 7. NONE</td> <td>1. 100' 2. 125' 3. 132' 4. 140' 5. 150'</td> </tr> </table>	TOPO-A	SHAPE-B	UTILITIES-C	DEPTH-D	1. LOW 2. ROLLING 3. HILLY 4. LEVEL 5. RUGGED 6. FLOOD	1. TYPICAL 2. IRREGULAR 3. SHALLOW 4. NARROW 5. OVERSIZE 6. ACREAGE	1. ALL PUBLIC 2. GAS 3. ELECTRIC 4. WATER 5. SEWER 6. SEPTIC 7. NONE	1. 100' 2. 125' 3. 132' 4. 140' 5. 150'
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REC#	MISCELLANEOUS NOTES						LOCATION-E	DRIVEWAY-F	STREET-G	VIEW-H						
							1. DEAD END 2. CUL DE SAC 3. INTERIOR 4. CORNER 5. RURAL 6. WATERFRONT	1. NONE 2. DIRT 3. GRAVEL 4. CONCRETE 5. BLACKTOP	1. DIRT 2. GRAVEL 3. BLACKTOP 4. CONCRETE 5. NONE	1. FAIR 2. AVERAGE 3. ABOVE AVG. 4. SCENIC						
SALES INFORMATION																
REC#	BOOK	PAGE	MO.	DAY	YR.	INSTR.	Q/U	V/I	PRICE							
REC#	BLDG.#	CODE	DESCRIPTION	GRADE	LENGTH	WIDTH	NUMBER OF UNITS	UNIT PRICE	YEAR BUILT	DEPR. TABLE	DEPR. % GOOD					
1																
2																
3																
4																
5																
6																

# Land Valuation



# Land Valuation

## Land vs Site

**Land** refers to the physical aspect of the solid surface of the earth and is often referred to as *“raw land”*

# Land Valuation

## Land vs Site

**Site** refers to the land which has been changed in such a way as to make it ready for an intended purpose. A site is prepared by adding such things as gas, electricity, water, telephone, sewer or septic to the raw land.

# LAND VALUATION

- ✘ Land may be classified as:
  - + Residential
  - + Commercial/Industrial
  - + Agricultural
- ✘ Land is the non-wasting portion of the real estate
- ✘ Improvements are the wasting portion subject to various forms of depreciation

# INTRODUCTION

- ✘ Land and improvements are typically valued separately allowing for independent study of:
  - + Trends
  - + Factors
- ✘ Oklahoma statutes require land and improvements to be valued separately

# INTRODUCTION

- ✘ Land is valued as though vacant, unimproved, and available for development to its highest and best use or last classified use.

# Land valuation (3 Steps)

## 1. Identify the property:

- a) Size
- b) Location

## 2. Site analysis of the subject property:

- a) Study of trends and factors influencing value
- b) Collection of site-specific data

## 3. Land Valuation Methods:

- a) Direct Sales Comparison
- b) Allocation
- c) Abstraction

# IDENTIFY THE PROPERTY (STEP 1)

- × **Size** – The area of the parcel:
  - + Square Feet
  - + Acres
- × **Location** – Where the property is located
  - + Single most important factor in establishing property value

# SITE ANALYSIS (STEP 2)

## ✘ Trends and factors:

- + Land classification
- + Highest and best use
- + Environmental (physical), economic, governmental, and social factors
- + Development of regional, city, and neighborhood data

# SITE ANALYSIS (STEP 2)

## ✘ Site-specific data:

- + **Frontage** – The measured distance along which a property abuts a street or other public way (expressed in front feet).
- + **Width** – Usually measured along the front of a parcel
- + **Depth** – The distance from the front to the rear line of a parcel

# SITE ANALYSIS (STEP 2)

## ✘ Site-specific data:

- + Off-Site Improvements – Streets (including width), sidewalks, street lighting, traffic patterns, and available of utilities.
- + Zoning – Ordinances that describe exactly what uses are permitted on the site.

# LAND VALUATION METHODS (STEP 3)

## ✘ Direct Sales Comparison Method:

- A. Gather sales information
- B. Verify the sales information
- C. Select appropriate units of comparison
- D. Make adjustments to sold parcels (match subject)
- E. Determine the value of subject property

# LAND VALUATION METHODS (STEP 3)

## ✘ Direct Sales Comparison Method:

### A. Gather Sales Information (types of information):

- ✘ Names of buyer and seller
- ✘ Sale date
- ✘ Sales price
- ✘ Description and location
- ✘ Financing
- ✘ Conditions of sale (such as personal property)

# LAND VALUATION METHODS (STEP 3)

## ✘ Direct Sales Comparison Method:

### A. Gather Sales Information (sources of information):

- ✘ County Assessor's office
- ✘ Recorded deeds
- ✘ Multiple Listing Service
- ✘ Brokers and appraisers
- ✘ Attorneys and bankers

# LAND VALUATION METHODS (STEP 3)

## ✘ Direct Sales Comparison Method:

A. Research Sales Information (sales file of information):

- ✘ Build sales file that contains all information collected and gathered

# LAND VALUATION METHODS (STEP 3)

## ✘ Direct Sales Comparison Method:

### B. Verify Sales Information:

- ✘ Sales questionnaire
- ✘ Telephone confirmation
- ✘ Personal interview

# LAND VALUATION METHODS (STEP 3)

## ✘ Direct Sales Comparison Method:

c. Select appropriate units of comparison(5 types):

✘ Front foot

✘ Square foot

✘ Acre

✘ Site (lot)

✘ Units buildable

+ Formula: Sales Price ÷ Unit of Comparison = Unit Value

Example: \$100,000 ÷ 250 FF = \$400 per front foot

Example: \$100,000 ÷ 2,000 sq.ft = \$50.00 per Sq. Ft

# LAND VALUATION METHODS (STEP 3)

## ✘ Direct Sales Comparison Method:

D. Make adjustments to sold parcels (match subject):

- ✘ Financing terms (not typical)
- ✘ Conditions of sale (personal property)
- ✘ Time of sale (old sales)
- ✘ Location (physical location of property)
- ✘ Physical characteristics (street improvements, lot size)

# LAND VALUATION METHODS (STEP 3)

## ✘ Direct Sales Comparison Method:

Example - Adjustments of comparable sale

Sales Price	Time	Time-adj. Sales Price	Street Improvements	View	Indicated value of subject
\$40,000	+\$4,000	\$44,000	-\$4,400	+\$2,200	\$41,800

# LAND VALUATION METHODS (STEP 3)

## ✘ Direct Sales Comparison Method:

### Example - Adjustments of comparable sale

Sales Price	Time-adj. Time	Sales Price	Street Improvements	View	Composite Factor	Indicated value of subject
\$30,000	+10%	\$33,000	-10%+	+5%	(-5%)	\$31,350

Sales price  $\times$  time adj. = time adjusted sale price

$$\$30,000 \times 10\% = \$3,000$$

$$\$30,000 + \$3,000 = \$33,000$$

Time adj. sale price  $\times$  composite factor = Indicated value of subject

$$\$33,000 \times (-5\%) = \$1,650$$

$$\$33,000 - \$1,650 = \$31,350$$

# LAND VALUATION METHODS (STEP 3)

- ✘ Direct Sales Comparison Method:
  - E. Determine the value of subject property:

**WHAT IF YOU DON'T HAVE ANY  
VACANT LAND SALES?**



# LAND VALUATION METHODS (ALTERNATIVE)

## ✘ Allocation Method:

- + No vacant land sales

- + Establish proper ratios:

  - ✘ Site values in previous years

  - ✘ Land-to- building ratios in similar neighborhoods

  - ✘ Analysis of new construction on similar sites

# Allocation Method

Based on the Principle of Balance

Land should have a logical value relationship to total property value

A portion of the total property value may be assigned to Land

Typical ratios are established from improved property sales

# Allocation Method

To establish proper ratios, consider the following:

**Site value in previous years**

**Land-to-Improvement Ratios of similar neighborhoods**

**Analysis of new construction on similar sites**

# Allocation Method

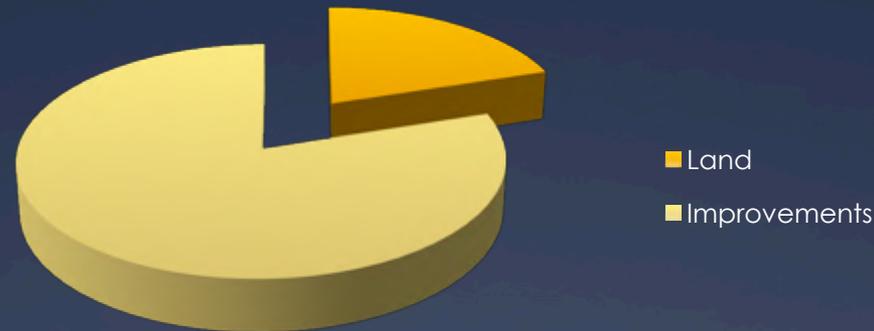
Assume land represents 20% of the total property value in a given area

For a \$100,000 property, land portion of the value would be \$20,000.

$$(100,000 \times .20 = \$20,000)$$

# Allocation Method

The “Pie” is divided into 5 parts  
( $100,000 \div 20,000 = 5$ )



**The Allocation (Ratio) would be: 1 : 4**  
(one part land; 4 parts improvements)  $1+4=5$

# LAND VALUATION METHODS (ALTERNATIVE)

## ✘ Abstraction Method:

- + No vacant land sales

- + Employs elements of the cost approach:

Cost Approach (RCNLD + Land = Market Value)

Sales Price	\$100,000
Less improvement Value	<u>– \$75,000</u>
Indicated Site Value	\$25,000

# Abstraction Method

Sale Price		\$120,000
RCN	\$150,000	
Accrued Deprec	<u>\$54,000</u>	
Value of Improvements		<u>\$96,000</u>
Indicated <b>Site Value</b>		<b>\$24,000</b>

# Abstraction Method

Sale	Sale Price	RCN	Accrued Deprec	Imps Value	Site Value
1	\$180,000	\$160,000	\$25,000	\$135,000	\$45,000
2	\$168,000	\$150,000	\$24,000	\$126,000	\$42,000
3	\$174,000	\$154,000	\$24,000	\$130,500	\$43,500

# Abstraction Method

Indicated Range of Site Value  
\$42,000 - \$45,000

---

\$42,000

\$43,500      **Median**

\$45,000



## What would you do?

The neighborhood you are appraising does not have any vacant land, therefore no vacant land sales and no current sales of improved properties.

**A newer neighborhood, close by with similar type and size houses does have a few current improved property sales.**

# What would you do?

- A. Look up the cost of land in the land book.
- B. Call a fee appraiser and ask him what he thinks the land is worth.
- C. Use the Abstraction Method to determine what land is worth in both neighborhoods
- D. Use whatever CAMA says the land is worth and call it good.

# What would you do?

- C. Use the *Abstraction Method* to determine what land is worth in both neighborhoods

# Abstraction

0000-19-021-01E-1-023-00

Page 1 of 1

Req By:  
PIERCE JAMES D  
22384 PRIVATE ROAD 136

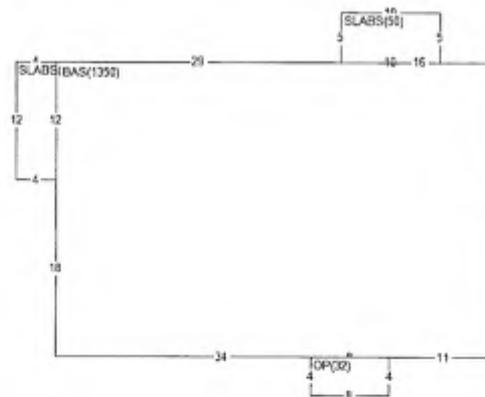
05/23/11 12:34:37 STATE OF OKLAHOMA CURRENT YE

PT W/2 NE/4  
1E WD 4/8/11

ADD MISC #5 DETACHED CARPORT

BLDG # 1  
Stories/Style 1 One Story  
Occupancy 1 Single Fami  
Design 0001 TRADITIONAL  
Quality 05 Class C FA  
Roof Type 01 GABLE  
Roof Material 1 COMP SHG CL  
Exterior Wall-1 1 PLY/HBD CLS  
Exterior Wall-2  
Foundation 1 "C" SLAB  
Interior Fin 3 C AVERAGE  
Floor Cover 3 "C" AVERAGE  
No. Bedrooms 003  
No. Baths 1  
Total Rooms 005  
Heating 1 FORCED AIR  
Air Condition 1 FORCED AIR  
Fireplace #1  
Fireplace #2  
Primary Garage  
Primary Porch 3 OpnPorch Cl  
Basement  
Actual Year Blt 2006  
Year Remodeled  
Eff. Year Built  
Condition 3 AVERAGE  
Normal Depr Tbl CA Class C AVG  
Functional Obs.  
Economic Obs.  
Observed Depr.  
Obsvd Depr Code  
RENT  
Cnty Adj. Fact. 112 112%

OK  
Site Address: 022384 PRIVATE ROAD 136



Land Value 8,540  
Misc Value 5,583  
Bldg Value 104,412  
Total Value 118,535  
Value By CAMA

Effective Area 1,350  
Points 0.0000  
Bldg Rate 80.56  
RCN 108,762  
Pct Good 0.9600  
OBSOL 0.0000  
Building Value 104,412

BOOK	PAGE	DATE	QS	SALE PRICE
691	849	0411	Q	126,000
652	928	0708	Q	120,000
650	131	0108	04	

PERMIT NO TYPE DATE AMOUNT

Appraiser HC4 NONE  
Appr Date  
Use Code 0002 RURAL RESIDENT  
NBHD 1.00 SR COUNTY  
L100 M100 B140

AREA	FLAT	EFF% E/AREA	ACT% A/AREA	EA/AA HEATED
BAS	1350	1.00	1350	1350
OP	32	1.00	32	32
SLABS	98	1.00	98	98

History Values  
Tax Year Total Appraised Value  
05 2,751

MISC BLDG CODE	DESC	LENGTH	WIDTH	UNITS	ADJ PRICE	EYB DT PCT	ADJUSTMENT	VALUE
1 1 SLABC	Slab Class C	5.00	10.00	50.00	4.25	2006 CA 96.00	1.00	204
2 1 SLABC	Slab Class C	12.00	4.00	48.00	4.28	2006 CA 96.00	1.00	197
3 1 SHW	Shed, Wood	10.00	12.00	120.00	10.00	2007 30 93.00	1.00	1,116
4 1 SHW	Shed, Wood	12.00	30.00	360.00	10.00	2007 30 93.00	1.00	3,348
5 1	DETACHED CARPORT	18.00	21.00	378.00	2.00	2008 30 95.00	1.00	718
6 1	EXEMPT CELLAR	.00	.00	1.00	.00	2000 50 93.00	1.00	
LAND LUSE DESC	ZONING	UNITS TP	PRICE	ADJUSTMENT CODE/FACTOR				VALUE
1 211E 21N 1E RESIDENTI		4.27 AC	2000.00	.00	.00	.00	.00	8,540

# Abstraction

Land Value	8,540
Misc Value	5,583
Bldg Value	104,412
Total Value	118,535
Value By	CAMA

Effective Area	1,350
Points	0.0000
Bldg Rate	80.56
RCN	108,762
Pct Good	0.9600
OBSOL	0.0000
Building Value	104,412

BOOK	PAGE	DATE	QS	SALE PRICE
691	849	0411	Q	126,000
652	928	0708	Q	120,000
650	131	0108	04	
PERMIT NO	TYPE	DATE		AMOUNT

Sale \$126,000

*Minus Imps* \$109,995

Indicated

Land Value \$16,005

CAMA Land Value

\$8,540

$$\text{Total Value} \div \text{Sale} = \%$$

$$\$118,535 \div \$126,000 = 94\%$$

# Abstraction

Based on this one Sale

What do we do now?

A. Override CAMA to hit sale price.

B. Adjust Quality Grade of Improvements to hit sale price

C. Use a land multiplier

D. Adjust land value for the NBHD to reflect market value

D. Adjust land value for the NBHD to reflect market value

**How do we do that?**

Indicated Land Value from Sale      \$16,009

CAMA Land Value      \$ 8,540

$$16,009 \div 8,540 = 1.87$$

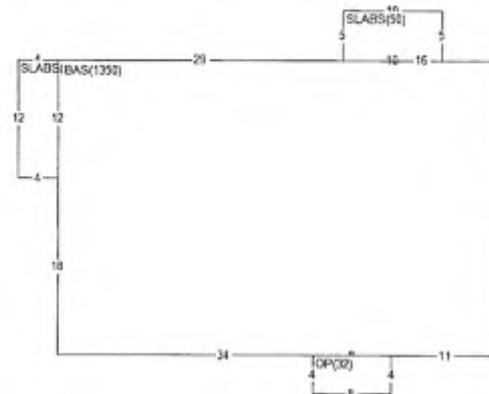
**Land sold for 87% more than we  
have it valued**

PT W/2 NE/4  
1E WD 4/8/11

ADD MISC #5 DETACHED CARPORT

BLDG # 1  
Stories/Style 1 One Story  
Occupancy 1 Single Fami  
Design 0001 TRADITIONAL  
Quality 05 Class C FA  
Roof Type 01 GABLE  
Roof Material 1 COMP SHG CL  
Exterior Wall-1 1 PLY/HBD CLS  
Exterior Wall-2  
Foundation 1 "C" SLAB  
Interior Fin 3 C AVERAGE  
Floor Cover 3 "C" AVERAGE  
No. Bedrooms 003  
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Heating 1 FORCED AIR  
Air Condition 1 FORCED AIR  
Fireplace #1  
Fireplace #2  
Primary Garage  
Primary Porch 3 OpnPorch Cl  
Basement  
Actual Year Blt 2006  
Year Remodeled  
Eff. Year Built  
Condition 3 AVERAGE  
Normal Depr Tbl CA Class C AVG  
Functional Obs.  
Economic Obs.  
Observed Depr.  
Obsvd Depr Code  
RENT  
Cnty Adj. Fact. 112 112%

Site Address: 022384 PRIVATE ROAD 136



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PERMIT NO TYPE DATE AMOUNT

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Appr Date  
Use Code 0002 RURAL RESIDENT  
NBHD 1.00 SR COUNTY  
L100 M100 B140

AREA	FLAT	EFF%	E/AREA	ACT%	A/AREA	EA/AA	HEATED
BAS	1350	1.00	1350	1.00	1350	1350	1350
OP	32	1.00	32	1.00	32	32	32
SLABS	98	1.00	98	1.00	98	98	98

History Values

**\$2,000 per acre x 1.87 = \$3,750 per acre**

MISC BLDG CODE	DESC	LENGTH	WIDTH	UNITS	ADJ PRICE	EYE DT	PCT	ADJUSTMENT	VALUE
1 1 SLABC	Slab Class C	5.00	10.00	50.00	4.25	2006	CA 96.00	1.00	204
2 1 SLABC	Slab Class C	12.00	4.00	48.00	4.28	2006	CA 96.00	1.00	197
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5 1	DETACHED CARPORT	18.00	21.00	378.00	2.00	2008	30 95.00	1.00	718
6 1	EXEMPT CELLAR	.00	.00	1.00	.00	2000	50 93.00	1.00	
LAND LUSE DESC	ZONING	UNITS TP	PRICE	ADJUSTMENT CODE/FACTOR				ADJUSTMENT	VALUE
1 211E 21N 1E RESIDENTI		4.27 AC	2000.00					.00	8,540

**4.27 ac x \$3,750 = \$16,013**

## Scenario

A tract sells with an old house or building and the improvement is demolished and replaced with a new improvement.

How should you value the land?

How should you value the land?

- A. Just for the selling price
- B. Whatever value CAMA has on other land in the area
- C. Look it up in the Land Book
- D. Consider the price of the land but also include demo costs, removal, and site preparation.

How should you value the land?

- D. Consider the price of the land but also include demo costs, removal, and site preparation.

## Scenario

A tract of land in a flood plain was purchased at a price you think is well below the typical market value for land in the area and not in a flood plain.

How would you value this tract?

How would you value this tract?

- A. Look it up in the Land Book
- B. Call FSA agency and ask them**
- C. Consider the selling price but also include the cost of “cut and fill” and other miscellaneous costs
- D. Never consider including the cost of “cut and fill” and other miscellaneous costs**

How would you value this tract?

- C. Consider the selling price but also include the cost of “cut and fill” and other miscellaneous costs

## Scenario

Land in “transition” is an area where the use is changing due to revitalization, renewal and modernization.

- (Bricktown, Riverwalk,
- City Limits expanded to include a new subdivision,
- Residential properties changing to commercial due to commercial encroachment)

# How would you value land in transition?

- A. Value the land based on the previous use
- B. Value the land based on the new use
- C. Classify it as AG and give em a brake
- D. None of the above

# How would you value land in transition?

B. Value the land based on the new use

# Scenario

You are developing values for vacant unplatted rural residential tracts of 2.5 to 10 acre tracts.

Buyers are installing their own water wells, septic systems, driveways, in some cases electric service, telephone service and gas or propane

# How would you value these rural residential tracts?

- A. Value all tracts are the same rate.
- B. Put em on for sale price
- C. If the selling price is market value, then add to it the extra costs of developing the tract
- D. Never add in extras over what the indicated value of the “doc stamps”

How would you value these rural residential tracts?

- C. If the selling price is market value, then add to it the extra costs of developing the tract





















# Improvements to the 15 Ac.Tract

Dirt Work; Driveway, House Pad	\$3,000
Septic System	\$6,700
Water Well	\$5,000
Utilities (Electric)	\$1,000

---

**\$15,700**

$$\$15700 \div 15 \text{ ac.} = \$1,047/\text{ac}$$

## Does COST equal VALUE?

- A. It does in my county
- B. Never
- C. Almost Always
- D. Always
- E. Don't have enough info to answer

## Scenario

**Land values have increased in the last several years just as the value of improvements**

**Not adjusting the value of land in the neighborhood to reflect market value will:**

Not adjusting the value of land in the neighborhood to reflect market value will:

- A. Cause the value by CAMA to be too high
- B. Cause the NBHD multiplier to decrease to reflect current market values**
- C. Cause improvement values to increase to compensate for low land values
- D. None of the above**

**Not adjusting the value of land in the neighborhoods will:**

**C. Cause improvement values to increase to compensate for low land values**

# Units of Comparison

**How the buyer and seller trades an asset for cash**

**The appropriate unit is usually the unit used in the market place when sites are bought and sold**

# Land Units of Comparison

**Per Site**

**Per Acre**

**Per Front Foot**

**Per Square Foot**

**Per Buildable Unit**

SKYLINE

1647.0

ROAD

STARRISE

152.85

DRIVE

31.38

152.9	304.35	303.5	150.7
22		1	

441	441	444	444
21		2	

441	441	444	444
20		3	

441	441	444	444
19		4	

441	441	444	444
18		5	

441	441	444	444
17	2	6	

441	441	444	444
16		7	

441	441	444	444
15		8	

441	441	444	444
14		9	

441	441	444	444
13		10	

441	441	444	444
12	304.5	11	

150.5	303.6	303.5	141.3
22		1	

444	444	444	444
21		2	

441	441	444	444
20		3	

441	441	444	444
19		4	

441	441	444	444
18		5	

441	441	444	444
17	1	6	

441	441	444	444
16		7	

441	441	444	444
15		8	

441	441	444	444
14		9	

441	441	444	444
13		10	

148	303.5	303.5	141.3
12		11	

PAYNE

STREET

JARDOT

STREET

2444.4

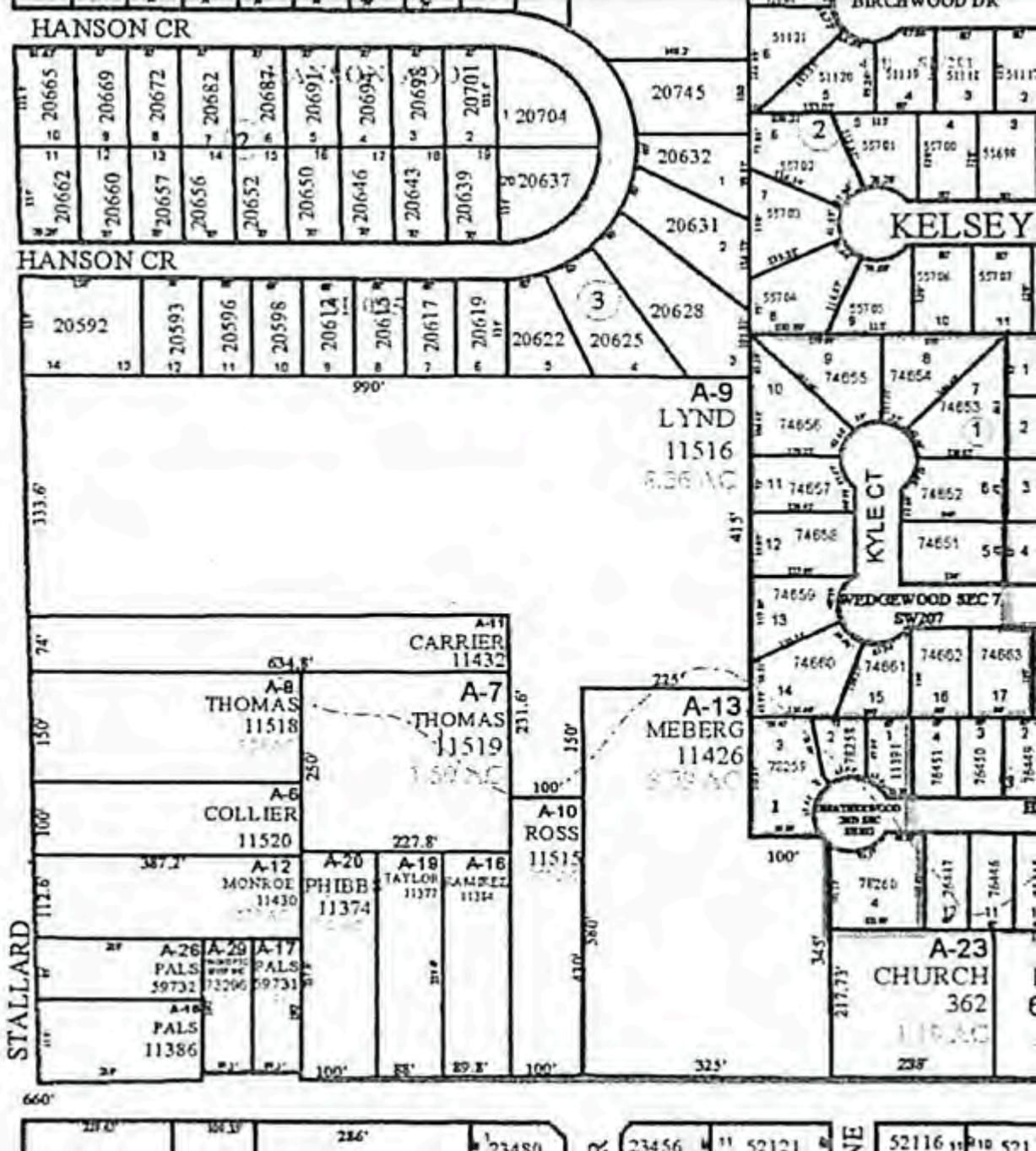
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1477.5

33.0







VIRGINIA

STALLARD

KELSEY

A-23 CHURCH 362

A-10 ROSS 11515

A-13 MEBERG 11426

A-9 LYND 11516

A-11 CARRIER 11432

A-8 THOMAS 11518

A-7 THOMAS 11519

A-6 COLLIER 11520

# Mini-Warehouses

*and*

# Self-Storage Facilities

Presented by :

Gary Snyder, RES and Doug Warr, AAS



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# What Do We Call Them?

That's a Good Question!



# What Do We Call Them?

- A. Mini-warehouses
- B. Mini-storage
- C. Mini-storage warehouses
- D. Self-service storage
- E. Self storage
- F. Self-storage mini-warehouses
- G. All of the above



# What Do We Call Them?

- A. Mini-warehouses
- B. Mini-storage
- C. Mini-storage warehouses
- D. Self-service storage
- E. Self storage
- F. Self-storage mini-warehouses
- G. All of the above



# What is a Mini-Storage?

Text book definition:

- Small units or cubicles rented to individuals or businesses for storage purposes
- Items stored are personal property items on a temporary basis

# What is a Mini-Storage?

Doug and Gary's definition:

- Small units or cubicles full of stuff we most likely don't need
- The stuff is probably stored way to long

Example of  
typical storage  
unit:

132

133



Gary's  
little  
red  
wagon



**KAMBERT**  
**STORAGE**  
Clean Safe Dry  
For Info: 357-1333

8



30

31

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38

07/25/2006



W RENO AVE

E RENO AVE

W I-40 HWY

E I-40 HWY

ROADWAY AVE

S EK GAYLOR

S OKLAHOMA AVE

SW 3RD ST

SE 2ND ST

COMPRESS ST SE 3RD ST

309.96'

COMRESS STREET

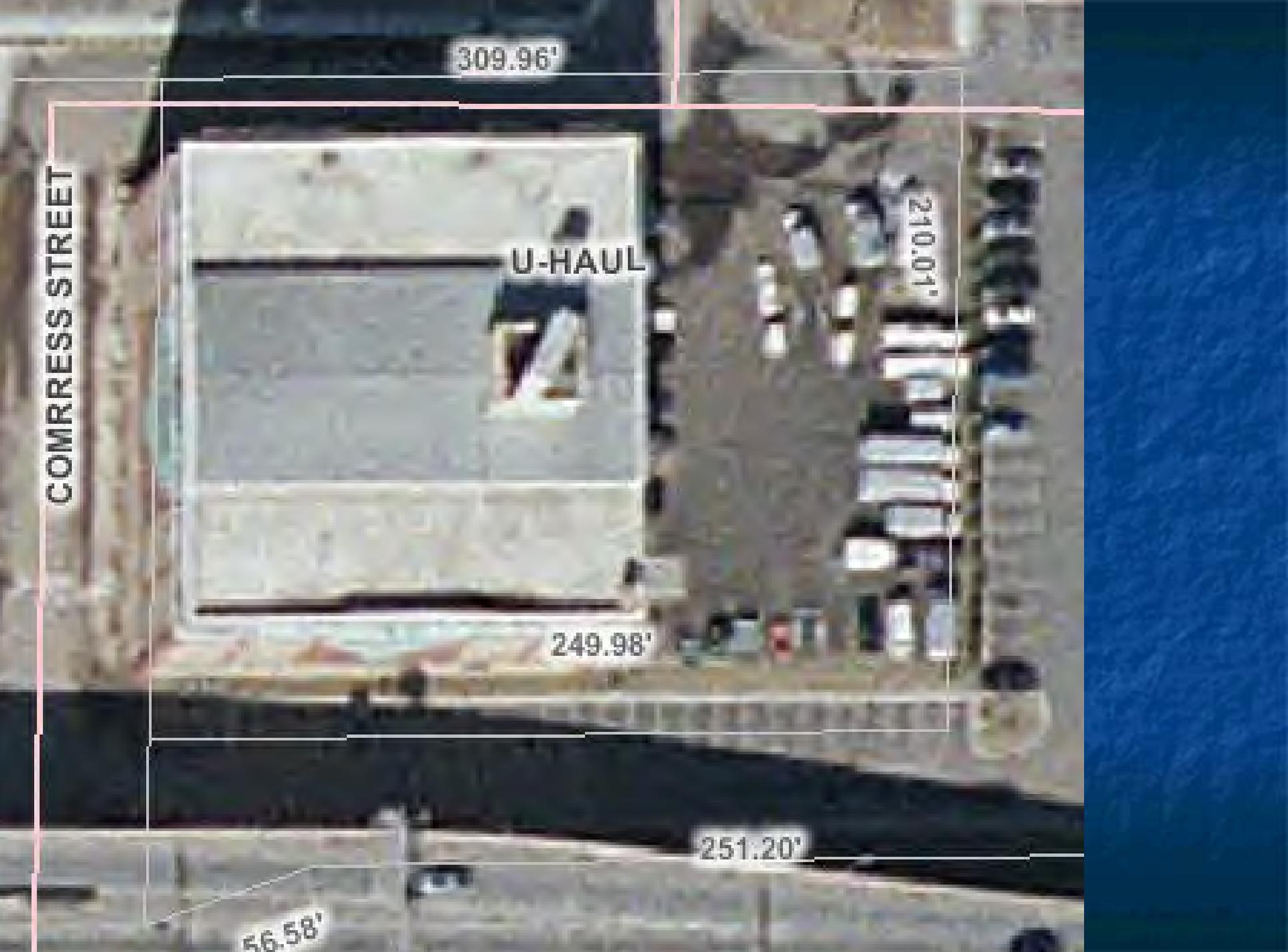
U-HAUL

210.01'

249.98'

251.20'

56.58'





CUSTOM HITCHES

LEHMAN'S  
RENTALS

MOVING SUPPLIES

Lehman's  
SELF-STORAGE

MOVING SUPPLIES

Lehman's  
SELF-STORAGE



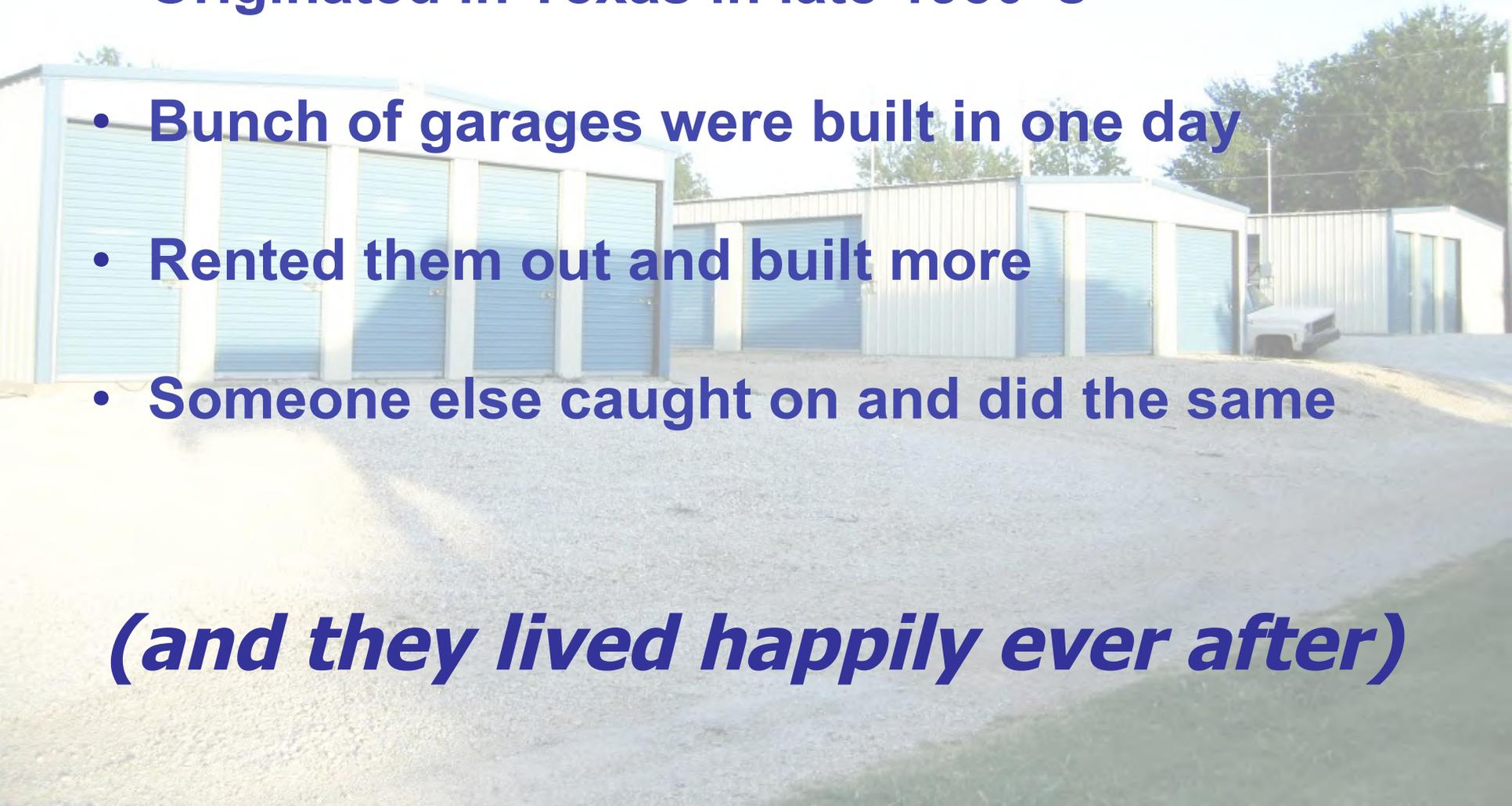


2001 8 14

# How did Mini-Storage Start?

- Originated in Texas in late 1950' s
- Bunch of garages were built in one day
- Rented them out and built more
- Someone else caught on and did the same

***(and they lived happily ever after)***



# How Many Mini-Storages Facilities Today?

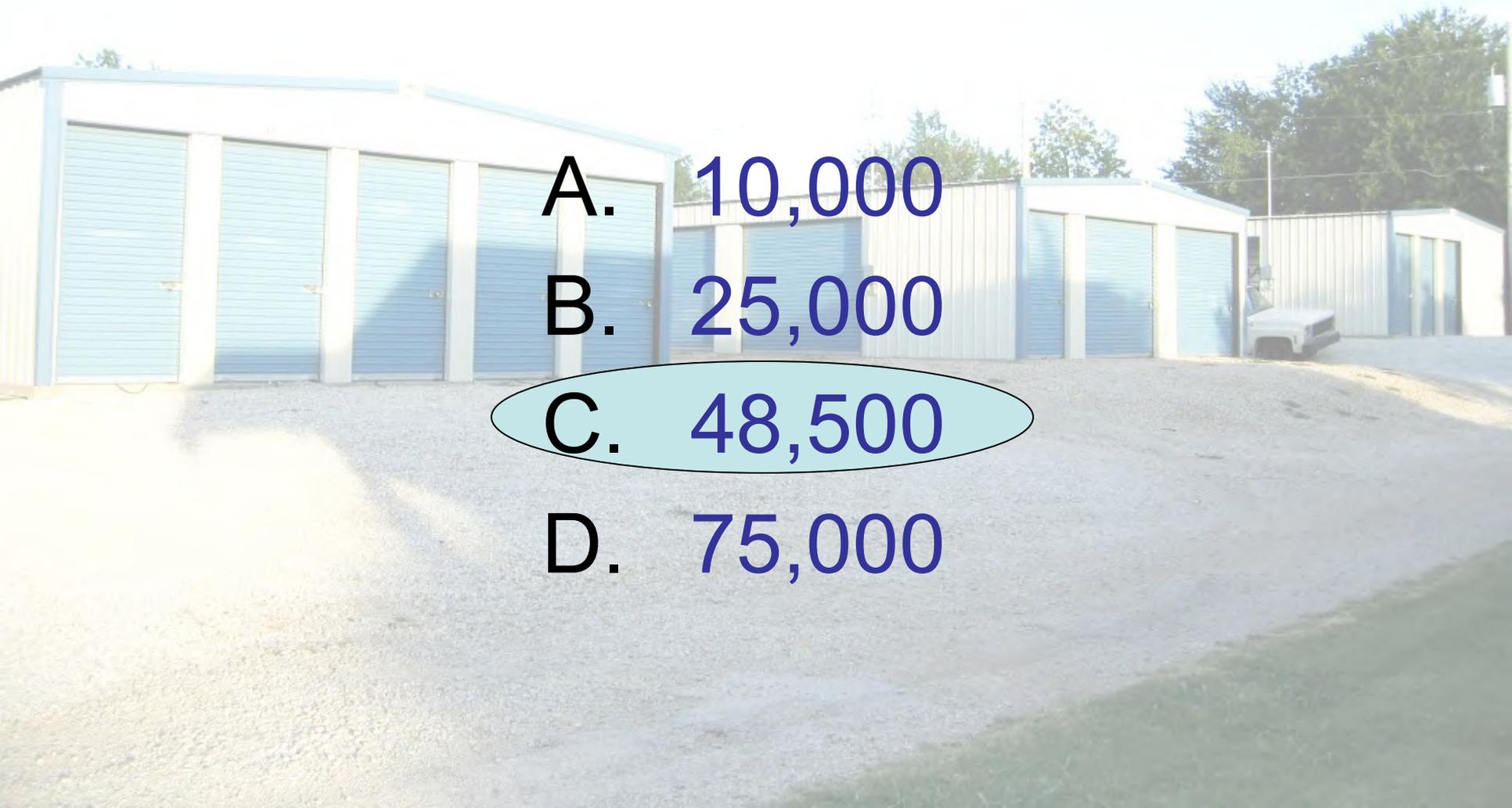
---

A. 10,000

B. 25,000

C. 48,500

D. 75,000



# Mini Facts on MiniStorage

There are now approximately 48,500 “primary” self storage facilities in the United States as of year end 2012 (45, 812 at the end of 2005)

another 4,000 are “secondary” facilities (“primary” means that self storage is the “primary” source of business revenue – US Census Bureau)

# Mini Facts on MiniStorage

There are approximately 59,500 self storage facilities worldwide as of Q4 – 2012; there are more than 3,000 in Canada and more than 1,000 in Australia.

Total self storage rentable space in the US is now **2.3 billion** square feet

That figure represents more than **78** square miles of rentable self storage space, under roof – or an area well more than 3 times the size of Manhattan Island (NY)

# Mini Facts on MiniStorage

U.S. self storage facilities pay a total of more than **\$3.25 billion** in property taxes to local government jurisdictions.

The distribution of U.S. self storage facilities (Q4-2012) is as follows: 32% urban, 52% suburban and 16% rural

Occupancy rates for self storage facilities as of Q1 2013 were 85.3%

# Mini Facts on MiniStorage

The average revenue per square foot varies from facility to facility; on *average*

**\$1.12 psf** for non-climate controlled and  
**\$1.42 psf** for climate controlled space..

# Mini Facts on MiniStorage

There is **7.3 sq.ft.** of self storage space for every man, woman and child in the nation; thus, it is physically possible that every American could stand – all at the same time – under the total canopy of self storage roofing

There is a total U.S. self storage space capacity of about **21 sq.ft.** per American household

# Mini Facts on MiniStorage

**1 in 9** of all U.S. households currently rent a self storage unit (10.85 million of the 113.3 million US HHs in 2012)

that has increased from **1 in 17** US households (6%) in 1995 (18 years ago)

# Mini Facts on MiniStorage

More than 1.5 million self storage units nationwide are rented to military personnel (6% of all units); however, in communities adjacent to domestic US military bases, military occupancy can be from 20% to 95% of all rented units.

# Mini Facts on MiniStorage

It took the self storage industry more than 25 years to build its first billion square feet of space;

it added the second billion square feet in just 8 years (1998-2005)

# Mini Facts on MiniStorage

Some 68% of all self storage renters live in a single family household; 27% live in an apartment or condo.

Some 65% of all self storage renters have a garage but still rent a unit; 47% have an attic in their home; and 33% have a basement.

# Mini Facts on MiniStorage

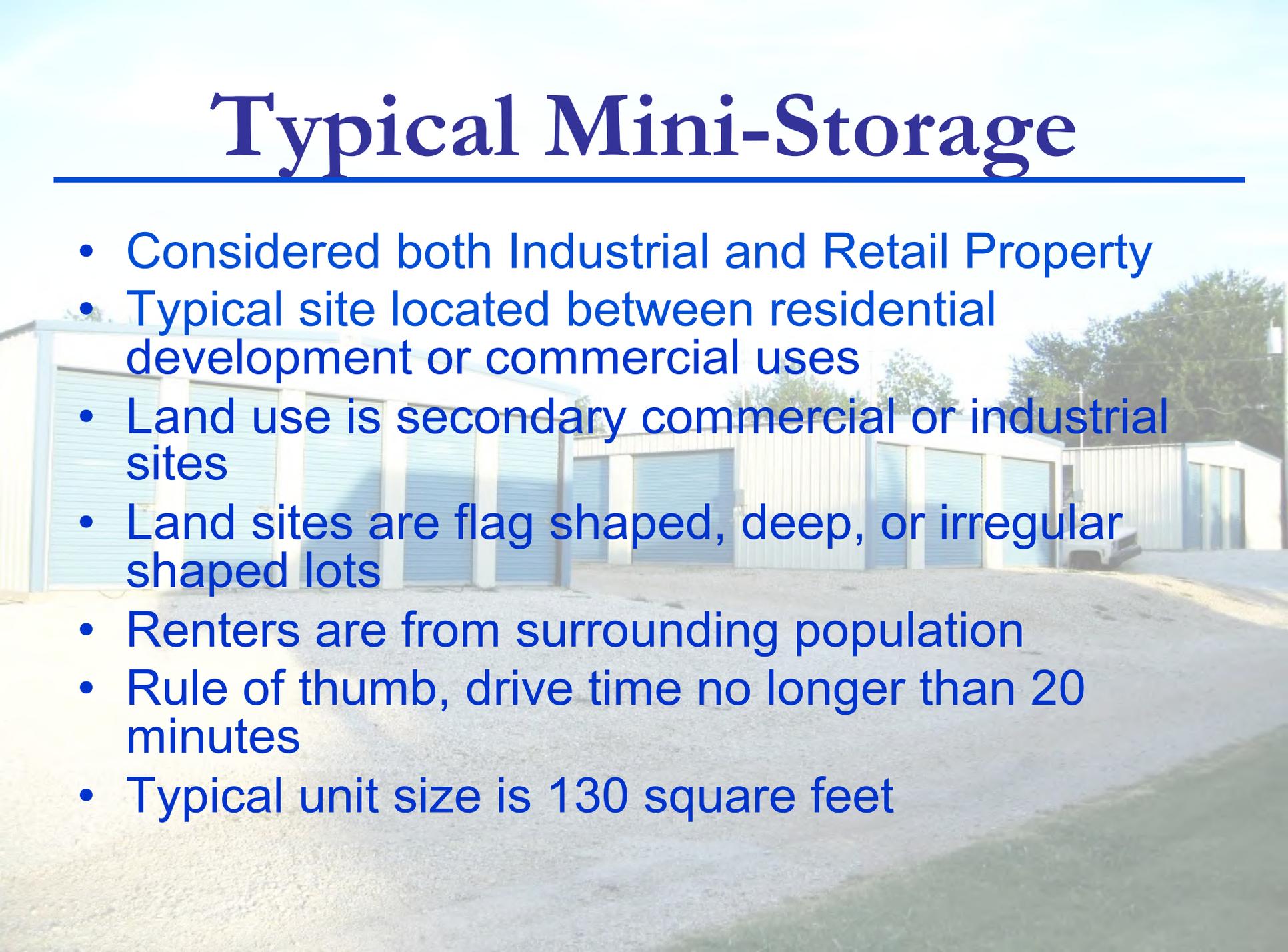
Some 47% of all self storage renters have an annual household income of less than \$50,000 per year; 63% have an annual household income of less than \$75,000 per year.

# Mini Facts on MiniStorage

**83.9%** of all US counties (or 2,634 out of 3,141) have at least one "primary" self storage facility.

# Typical Mini-Storage

---

- Considered both Industrial and Retail Property
  - Typical site located between residential development or commercial uses
  - Land use is secondary commercial or industrial sites
  - Land sites are flag shaped, deep, or irregular shaped lots
  - Renters are from surrounding population
  - Rule of thumb, drive time no longer than 20 minutes
  - Typical unit size is 130 square feet
- 
- A photograph of a mini-storage facility. The image shows several rows of small, rectangular storage units with light-colored walls and blue roll-up doors. The units are arranged in a long, narrow row, typical of a flag-shaped lot. The ground in the foreground is gravel. In the background, there are trees and a clear sky. The overall scene is a typical example of a mini-storage site.



WATERWOOD PRMWY

WATERWOOD



WEDMOND RD

95 HOWARD ST

S STATE ST

Covered Storage



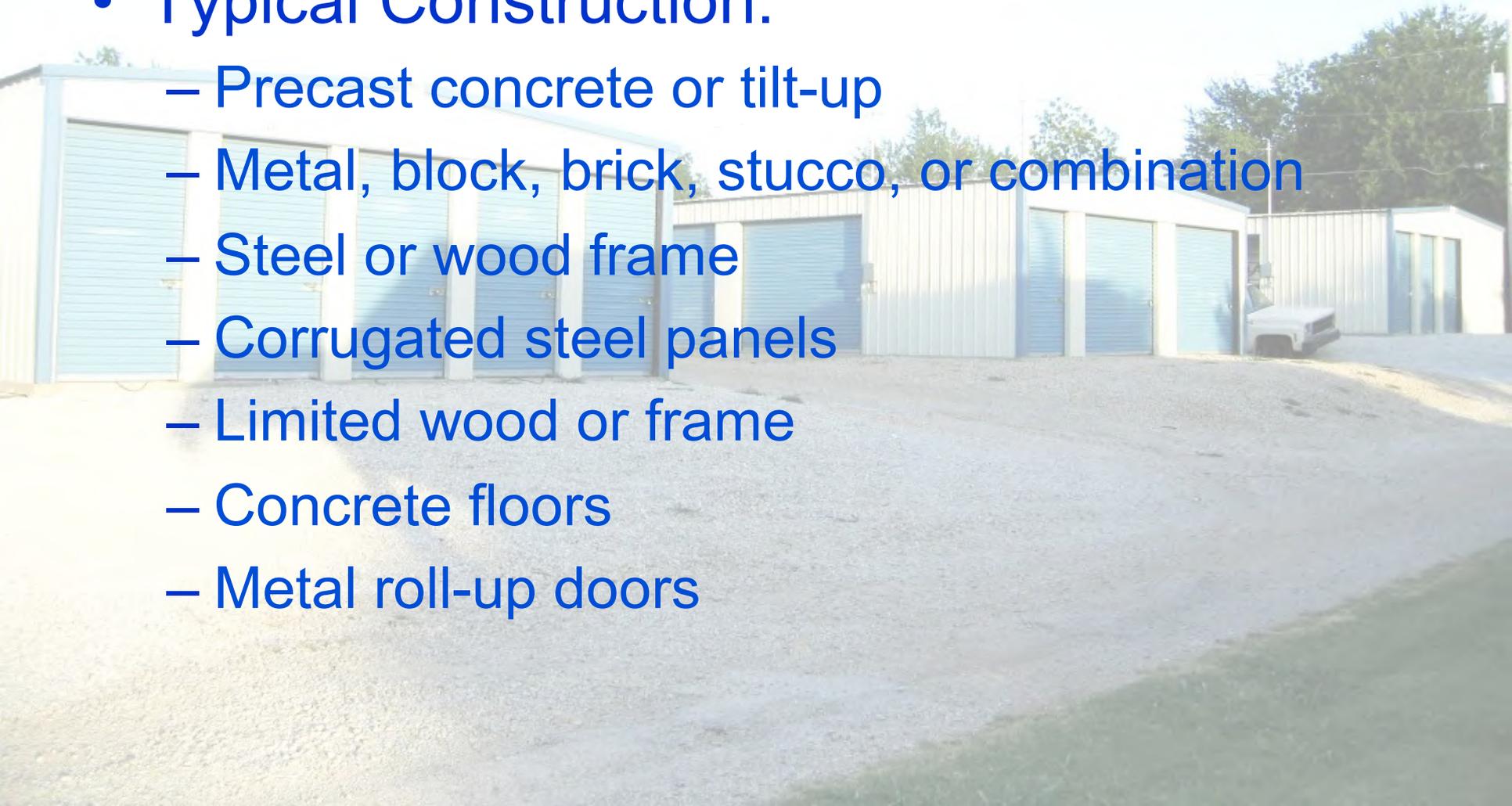


Mini Storage

# Typical Mini-Storage

---

- Typical Construction:
  - Precast concrete or tilt-up
  - Metal, block, brick, stucco, or combination
  - Steel or wood frame
  - Corrugated steel panels
  - Limited wood or frame
  - Concrete floors
  - Metal roll-up doors





DEC 20 2002



2006 10 24



NOV 14 2002



NOV 14 2002



NOV 14 2002



NOV 21 2006



**Improvements on Leased Land  
(School Land)**

**FEB 10 2006**







WE OFFER  
DAILY  
CONKES OR  
90-9186



AMAZING  
SPACE  
**SELF STORAGE**  
405-360-9186



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DEC 11 2006



317





1013





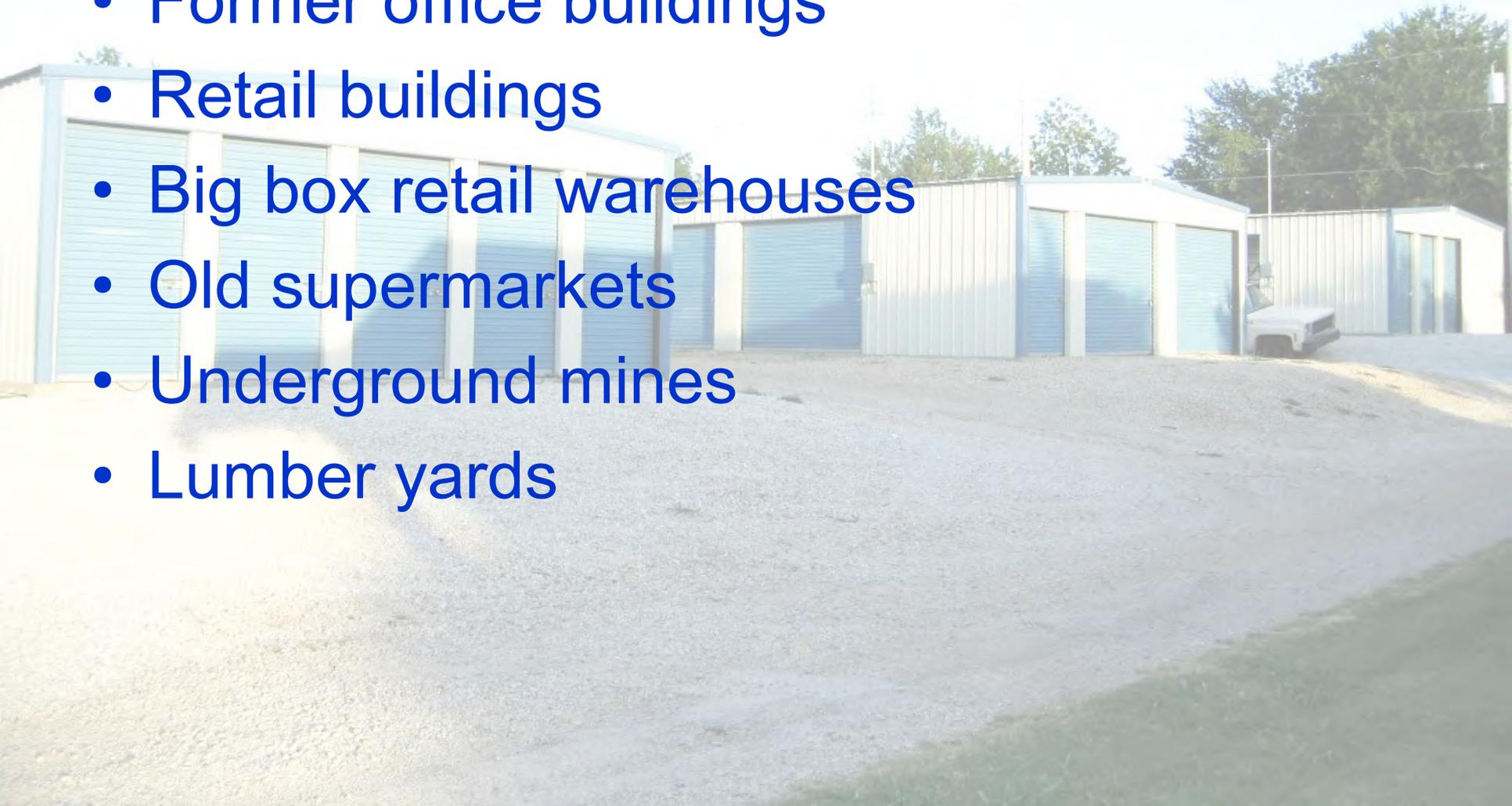
2004 2 19



2002 4 18

# Non-Typical Mini-Storage

- Former office buildings
- Retail buildings
- Big box retail warehouses
- Old supermarkets
- Underground mines
- Lumber yards



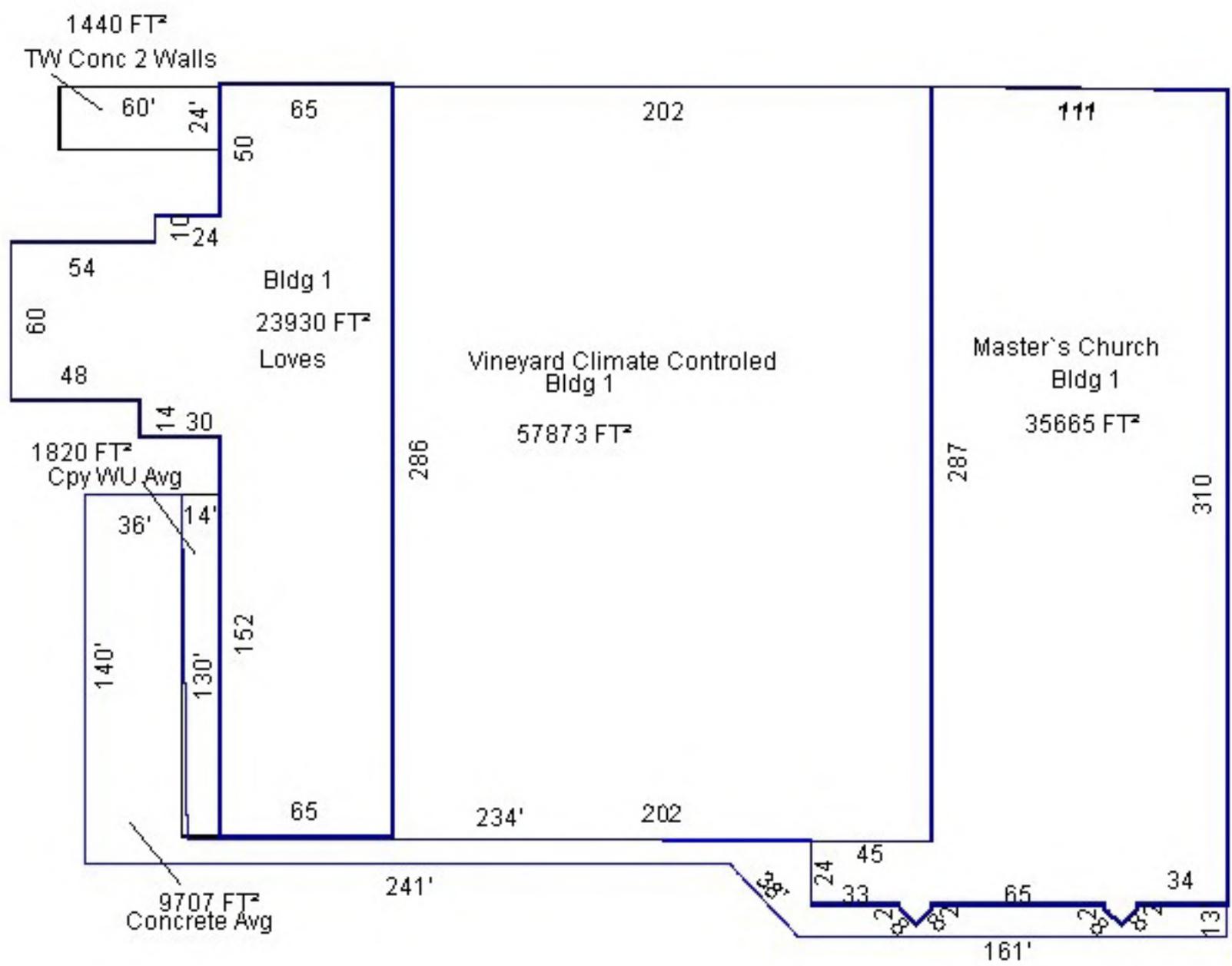
CLIMATE  
CONTROLLED STORAGE  
24 HOUR SECURITY

LOADING  
OFFICE

2005 1 27

MASTERS  
CHURCH

2005 1 27



STORAGE • PROPANE

U-HAUL  
CENTER

CUSTOM HITCHES

AUG 4 2006

24

UHAUL



12

D23

UHAUL







ITCHES

U-HAUL  
CENTURY

FedEx

MOVING SUPPL

2008 12 18





JUL 31 2006



JUL 31 2006



OCAMA BLVD



CENTER  
LANE

JUN 4 2007



COLOR TV

JUN 4 2007



DEC 20 2002



APR 25 2007



**RENT OR SALE**  
465-2719 917-3094







**PORUM BOAT  
&  
MINI STORAGE**  
918-484-2501  
918-681-0705

PORUM BOAT  
&  
MINI STORAGE  
918-844-2501  
918-843-0765

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12  
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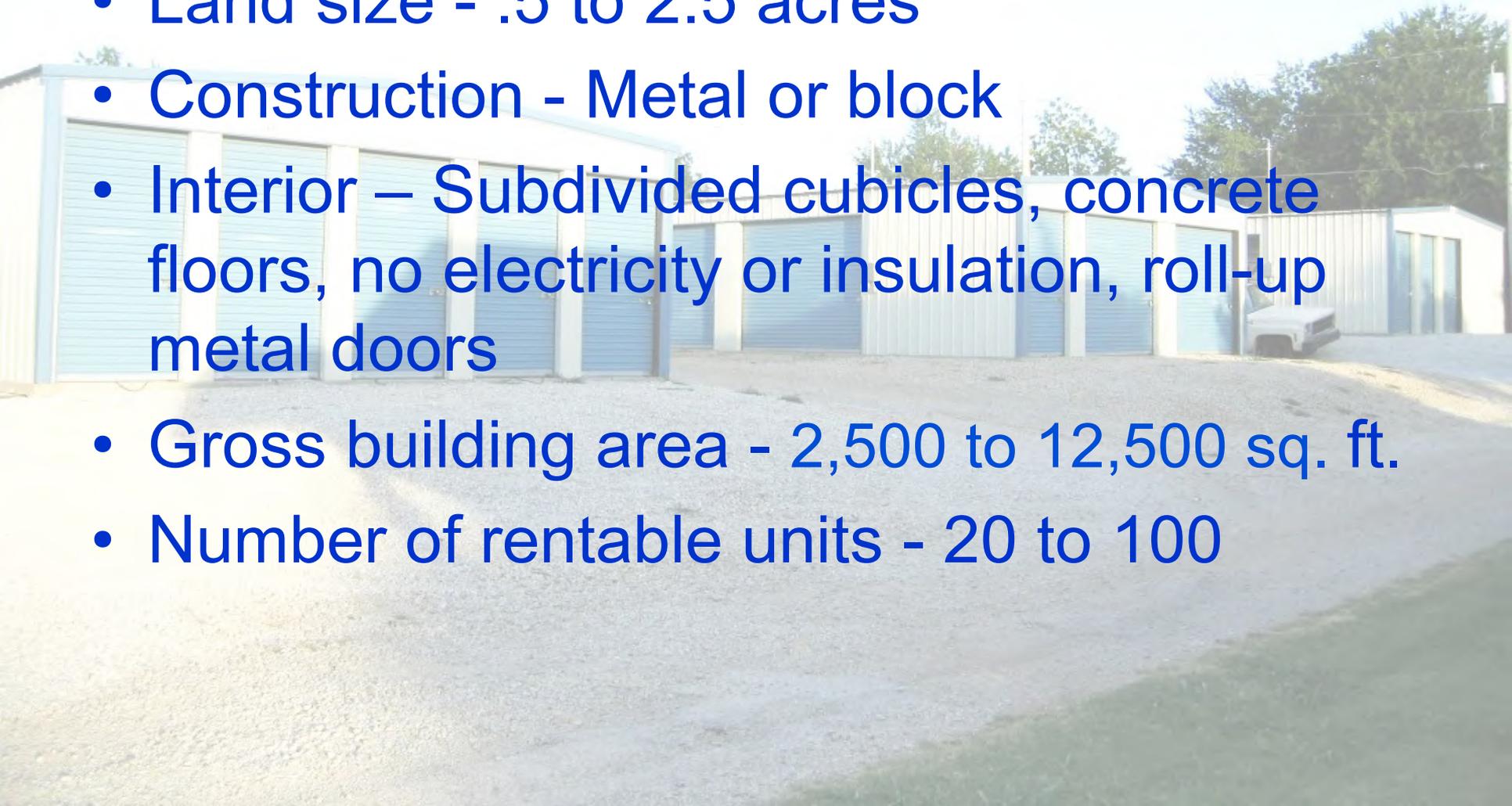


PERMITS HERE  
SELF STORAGE

# Rural Mini-Storage

---

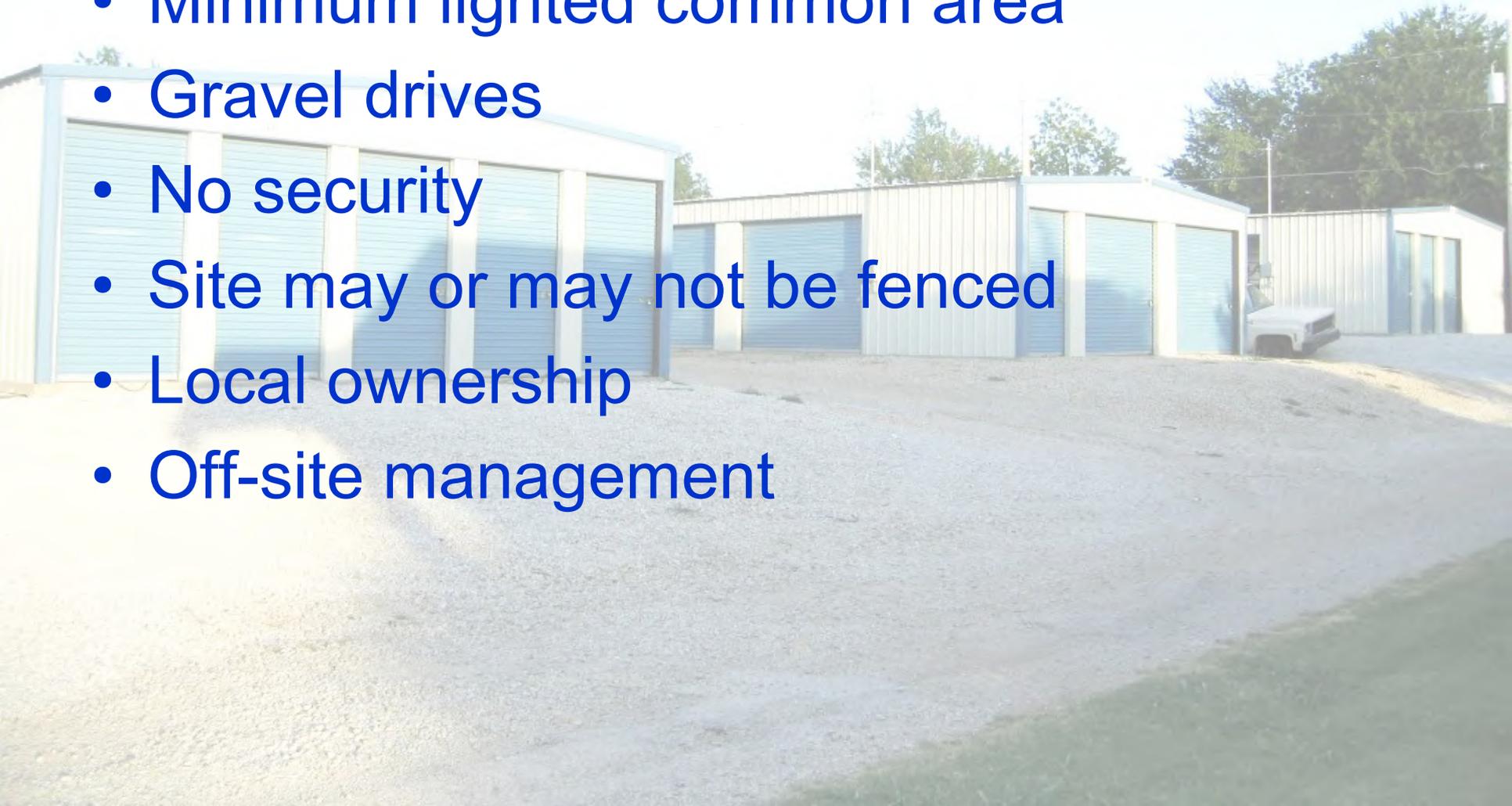
- Land size - .5 to 2.5 acres
- Construction - Metal or block
- Interior – Subdivided cubicles, concrete floors, no electricity or insulation, roll-up metal doors
- Gross building area - 2,500 to 12,500 sq. ft.
- Number of rentable units - 20 to 100



# Rural Mini-Storage

---

- Minimum lighted common area
- Gravel drives
- No security
- Site may or may not be fenced
- Local ownership
- Off-site management





*Wilson's*  
LANDSCAPE-NURSERY  
672-3216 →









4 2

ALL SIZES AVAILABLE  
**Mini-Storage**  
CALL 463-2884 OR 348-1034

463-2884  
348-1034

4 3

4 4

WARNER

**Mini-**

ALL SIZES AVAILABLE

5x10 ★ 10x10 ★ 10x15 ★ 10x20



**Storage**

463-2884

348-1034







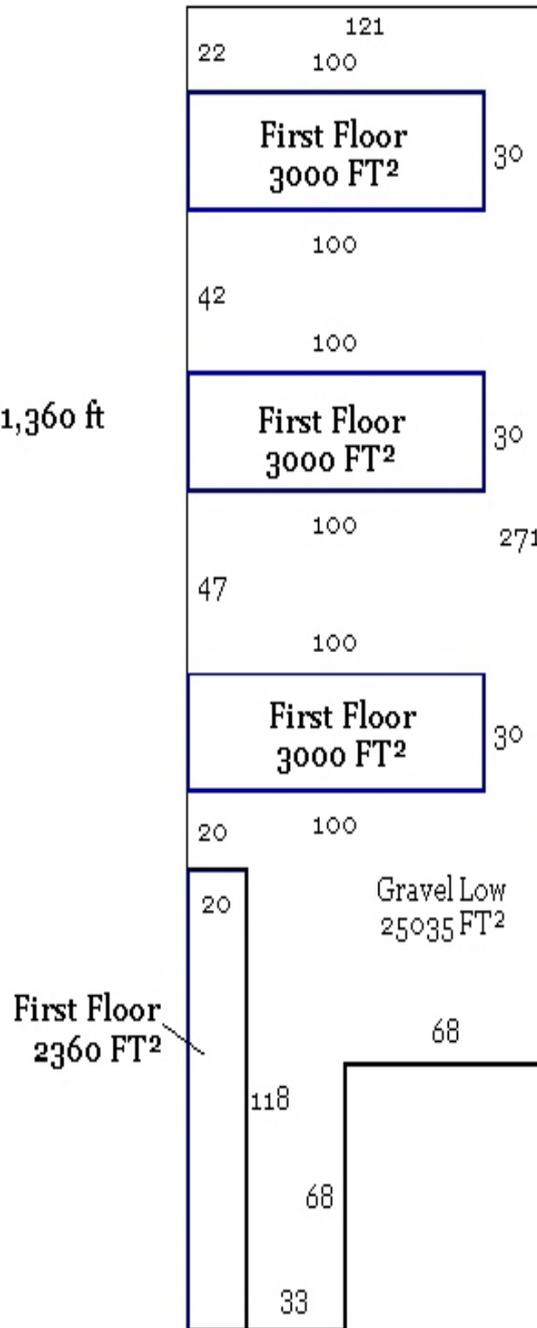
AUG 15 2006



AUG 15 2006



Bldg 2 Total 11,360 ft





  
**EEE STORAGE UNITS**  
**336.3090**

**WARNING**



# Urban Mini-Storage

---

- Land size - 2 to 5 acres
  - Construction - Metal or block or precast
  - Interior – Subdivided cubicles, concrete floors, lighted, insulated, roll-up metal doors
  - Gross building area - 20,000 to 80,000 sq.ft.
  - Number of rentable units - 150 to 500
  - Some units may be climate controlled
- 

# Urban Mini-Storage

---

- Well-lighted common area
- Paved drives
- Surveillance cameras and monitoring stations
- Completely fenced with gated entry
- Local or national ownership
- On-site manager







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U-STORE ALL  
STORAGE

749-1991

U-STORE ALL  
STORAGE

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DEC 20 2002



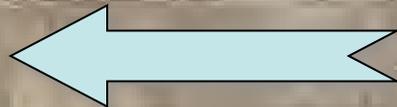
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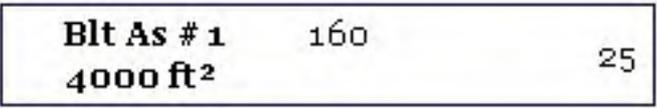
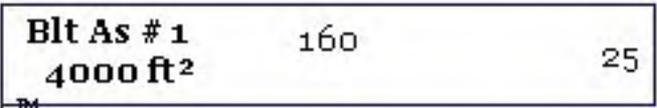
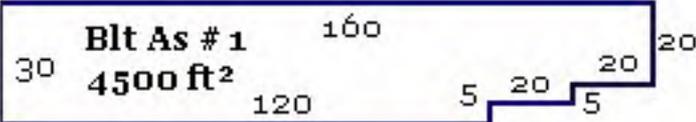
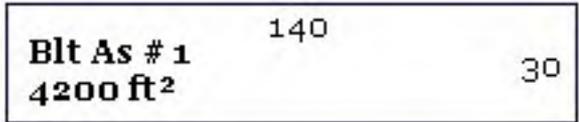
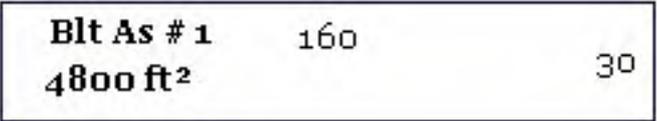
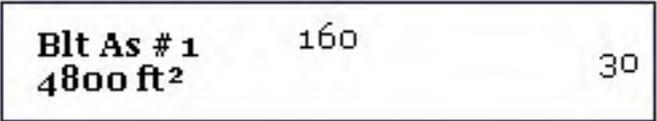
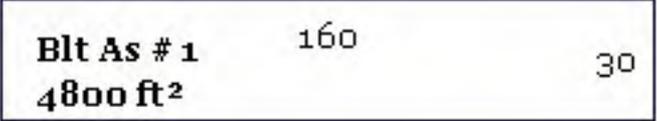
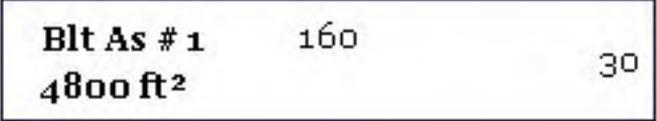
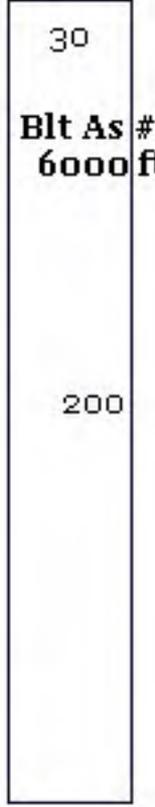
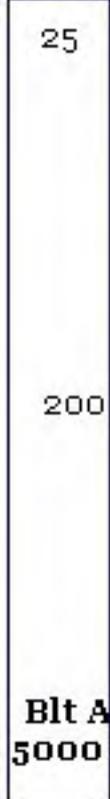
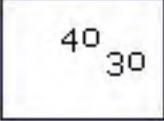
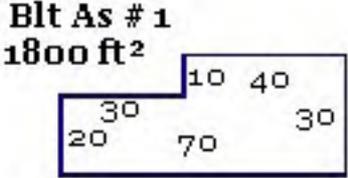
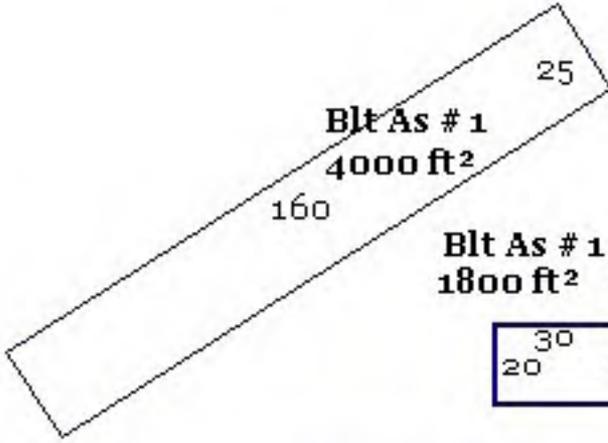
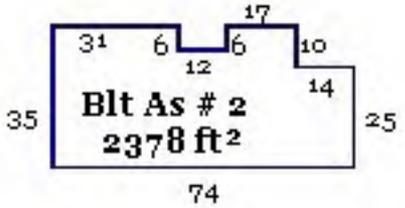
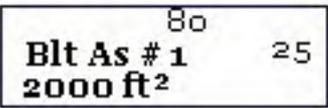
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Chickahominy Creek

N INDIANA AVE

NW 133RD ST







520

519



603

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**PTI**  
INTEGRATED SYSTEMS™







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FAN  
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HEAT  
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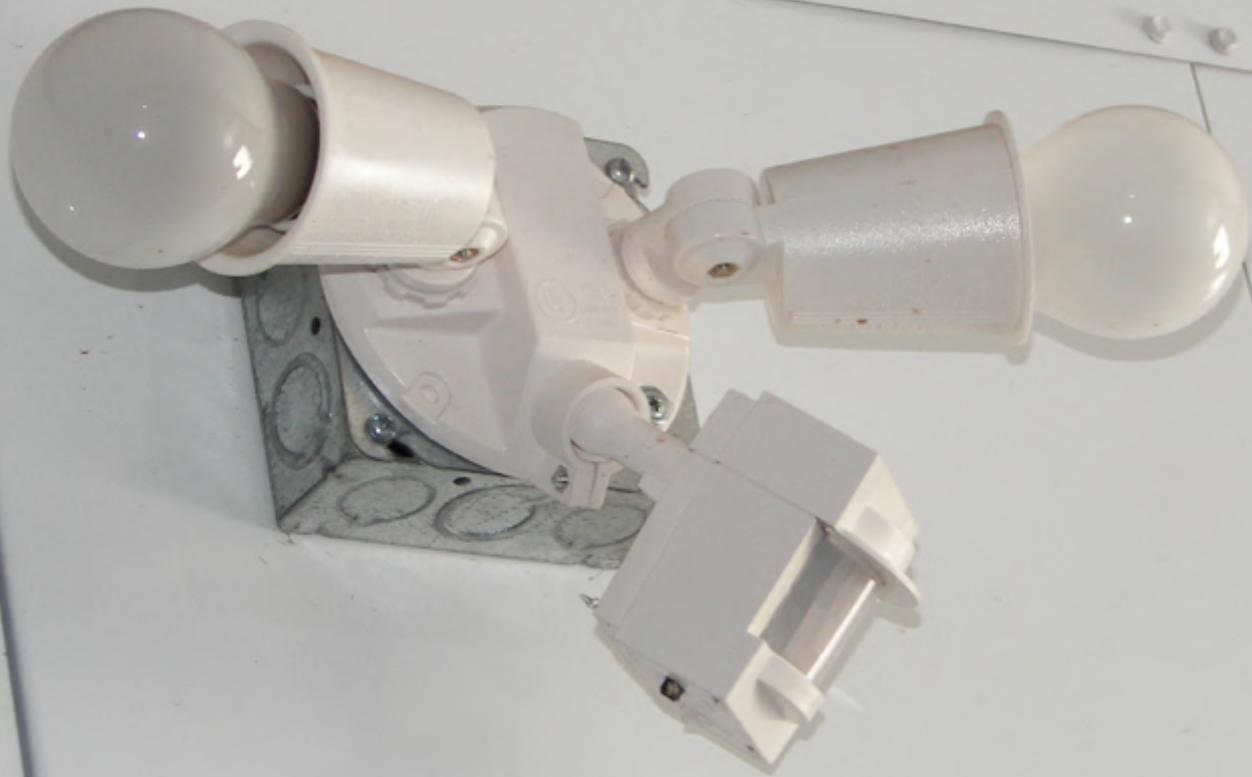
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TEMPERATURE

DOWN UP

  
Electric Heat & Air  
360-5569

07/25/2006



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07 / 25 / 2006



OPEN

07/25/2006

GATE HOURS  
6 AM-9 PM

SPEED  
LIMIT  
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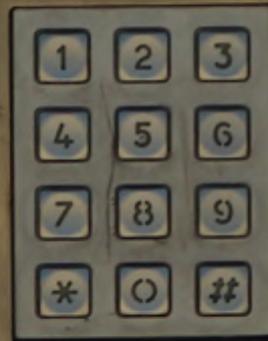
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ENTER UNIT NO.  
PRESS # KEY

ENTER YOUR CODE NO.  
PRESS \* KEY



Follow Instructions



WinSen® Sentinel  
Model 511

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# Mini-Storage Valuation

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# Mini-Storage

## “The Income Approach”

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Presented by :

Gary Snyder and Doug Warr



# The Income Approach

- Based on the concept that market value is the present worth of future benefits of property ownership to be derived from the income produced by an asset over the remainder of its economic life
- Requires income and expense information
- Uses capitalization to convert income into an expression of present worth
- The most appropriate approach when valuing income producing properties
- Valid check on cost and sales approach

# The Income Approach

Market Value = Net Income ÷ Cap Rate

# The Income Approach

## ■ Eight Steps

1. Estimate potential gross income (PGI)
2. Deduct for vacancy and collection loss (V&C)
3. Add miscellaneous income
4. Calculate effective gross income (EGI)
5. Deduct allowable operating expenses
6. Find net operating income
7. Determine capitalization rate
8. Capitalize net income into market value

# The Income Approach

- Step 0 – Collect Income and Expense Data:
  - Five methods:
    1. Mail questionnaires
    2. Personal interview
    3. Telephone interview
    4. Assessment appeals
    5. Published studies and other third-party sources

# The Income Approach

- Step 0 – Collect Income and Expense Data:
  - From whom:
    1. Buyers and sellers
    2. Commercial property managers
    3. Appraisers
    4. Tenants
    5. Realtors and Brokers
    6. Tax reps
    7. Other counties

**Income / Expense Verification**  
**Mini-Storage**

Property Name: \_\_\_\_\_ Address: \_\_\_\_\_

Time Frame of Data, From: \_\_\_\_\_ / \_\_\_\_\_ to: \_\_\_\_\_ / \_\_\_\_\_ Total Units: \_\_\_\_\_  
Month Year Month Year Annual Vacancy Rate: \_\_\_\_\_ %

**INCOME**

Rental Income: \_\_\_\_\_  
Collection Loss: \_\_\_\_\_  
Other Income: \_\_\_\_\_ (Source) \_\_\_\_\_  
Other Income: \_\_\_\_\_ (Source) \_\_\_\_\_  
Miscellaneous Income: \_\_\_\_\_

**EXPENSES**

Management Fee: \_\_\_\_\_  
Advertising: \_\_\_\_\_  
Insurance: \_\_\_\_\_  
Salaries  
    Manager: \_\_\_\_\_  
    Asst. Manager: \_\_\_\_\_  
    Maintenance: \_\_\_\_\_  
    Other \_\_\_\_\_:  
Administration  
    Legal: \_\_\_\_\_  
    Accounting: \_\_\_\_\_  
    Lease Fees/Comm.: \_\_\_\_\_  
    Other \_\_\_\_\_:  
Services  
    Janitorial: \_\_\_\_\_  
    Security: \_\_\_\_\_  
    Exterminator: \_\_\_\_\_  
    Trash Removal: \_\_\_\_\_  
    Lawn Care: \_\_\_\_\_  
    Other \_\_\_\_\_:  
Real Property Taxes: \_\_\_\_\_  
Debt Service: \_\_\_\_\_

**Utilities**

Telephone: \_\_\_\_\_  
Electricity: \_\_\_\_\_  
Gas: \_\_\_\_\_  
Water/Sewer: \_\_\_\_\_

**Minor Repairs & Maintenance:**

Building: \_\_\_\_\_  
HVAC: \_\_\_\_\_  
Plmb / Elec: \_\_\_\_\_  
Supplies: \_\_\_\_\_  
Roof: \_\_\_\_\_  
Parking: \_\_\_\_\_

Other \_\_\_\_\_:

**Major Repairs**

Building: \_\_\_\_\_  
Roof: \_\_\_\_\_  
Parking: \_\_\_\_\_  
Tenant Imps: \_\_\_\_\_  
Paint / Deco: \_\_\_\_\_

Other \_\_\_\_\_:

Reserves for Replacement: \_\_\_\_\_

### Unit Mix & Rates

<u>Unit Size</u>	<u># Each</u>	<u>Monthly Rent</u>
<u>5 x 5</u>	_____	_____
<u>5 x 10</u>	_____	_____
<u>5 x 15</u>	_____	_____
<u>10 x 10</u>	_____	_____
<u>10 x 15</u>	_____	_____
<u>10 x 20</u>	_____	_____
<u>10 x 25</u>	_____	_____
<u>10 x 30</u>	_____	_____
<u>10 x 35</u>	_____	_____
<u>10 x 40</u>	_____	_____
<u>15 x 15</u>	_____	_____
<u>15 x 20</u>	_____	_____
<u>20 x 20</u>	_____	_____
<u>20 x 25</u>	_____	_____
<u>20 x 30</u>	_____	_____
<u>25 x 25</u>	_____	_____

Average Annual number of units that are vacant: \_\_\_\_\_

Average Annual number of square feet that is vacant: \_\_\_\_\_

# Summit Self Storage

2100 24<sup>th</sup> Ave. S.E.

Norman, Oklahoma 73071

## Climate Control

5x5	30		\$ 27.00
5x8	58	2	\$ 38.00
5x10	71		\$ 42.00
5x13	18		\$ 49.00
<del>10x5</del>			\$ 42.00
10x8	17	<del>10</del> 24	\$ 57.00
10x10	15	1	\$ 63.00
10x12	6		\$ 69.00
10x15	82	1	\$ 76.00
10x18	6		\$ 82.00
12x15	10		\$ 82.00
10x20	99	3	\$ 87.00
10x22	6	2	\$ 93.00
15x15	2	1	\$ 95.00
10x25	6	1	\$ 99.00
10x30	53	2	\$ 119.00

5x10	20	\$ 65.00
10x10	17	\$ 100.00
10x15	6	\$ 125.00
10x20	4	\$ 155.00

Open  
20x30 1



Lock provided

One time \$15.00 administration fee

Call 1-800-233-2333

Gate Access - 6am - 9pm EVERY DAY

24 hour surveillance  
70 alarms on site managed

97.5% sat.



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## Unit Price List By Sizecode

1012556 - A+ MINI STORAGE #2

Date: 7/25/2006

Display By: **Sizecode**

Download To: **Display On Screen**

Sizecode	Description	Sq/Cu Ft	Total Rms.	Vacant Rms.	Rate	Move-In Rate
5X5X9	1 MINI ENCLOSED CLIMATE	25/225	28	21	\$40.00	\$9.20
5X5X9	1 MINI ENCLOSED NON-CLIMATE	25/225	61	33	\$25.00	\$5.75
5X10X9	1 MINI ENCLOSED CLIMATE	50/450	18	6	\$75.00	\$17.25
5X10X9	1 MINI ENCLOSED NON-CLIMATE	50/450	84	20	\$40.00	\$9.20
10X10X9	1 MINI ENCLOSED CLIMATE	100/900	18	7	\$98.00	\$22.08
10X10X9	1 MINI ENCLOSED NON-CLIMATE	100/900	86	5	\$60.00	\$13.80
10X15X9	1 MINI NON-CLIMATE	150/1350	58	12	\$70.00	\$16.10
10X15X9	1 MINI ENCLOSED CLIMATE	150/1350	9	0	\$125.00	\$28.75
10X20X9	1 MINI ENCLOSED NON-CLIMATE	200/1800	76	7	\$80.00	\$18.40
15X15X9	1 MINI ENCLOSED NON-CLIMATE	225/2025	1	0	\$90.00	\$20.70
10X25X9	1 MINI ENCLOSED NON-CLIMATE	250/2250	30	1	\$98.00	\$22.54
10X30X9	1 MINI ENCLOSED NON-CLIMATE	300/2700	25	1	\$115.00	\$26.45

Total Reservations: 0

454

113

Please Note - Only units noted as "Vacant" will be counted in the Vacant Rms. column. This column does not include those marked as Reserved, Damaged, or Needs Cleaning.

Previous

# The Income Approach

- Step 1 – Estimate Potential Gross Income (PGI)
  - PGI is economic or market rent at 100% occupancy
  - PGI is always annual market rent
  - Formula: *Number of rentable units × monthly rent × 12 months*  
*= PGI*
  - or
  - Formula: *Building size × rent per square foot per year*  
*= PGI*

- Example of PGI

The subject property is a 180 unit mini-storage facility located in south Tulsa. The facility contains:

Units	Size	Economic Rent
50	5 x 5 units	\$27/per month
90	10 x10 units	\$63/per month
40	10 x20 units	\$87/per month

What is subject property's PGI?

$$50 \times \$27 \times 12 = \$16,200$$

$$90 \times \$63 \times 12 = \$68,040$$

$$40 \times \$87 \times 12 = \$41,760$$

$$\text{PGI} = \$126,000$$

## Potential Gross Income Problem #1

The subject property is a 32 unit mini-storage facility located in DryHole County, Oklahoma. It is an average quality facility typically featuring metal constructed buildings containing concrete floors. The facility contains:

<u>Units(# of)</u>	<u>Size</u>	<u>Economic Rent</u>
10	5 x 5 units	\$20/per month
12	10 x10 units	\$50/per month
10	12 x20 units	\$80/per month

What is subject property' s PGI?

$$10 \times \$20 \times 12 \text{ months} = \$2,400$$

$$12 \times \$50 \times 12 \text{ months} = \$7,200$$

$$10 \times \$80 \times 12 \text{ months} = \underline{\$9,600}$$

$$\text{Potential Gross Income} = \$19,200$$

# The Income Approach

- Step 2 – Deduct for vacancy and collection loss (V&C)
  - Revenue loss from units not rented and failure of tenants to pay rent
  - Formula:

$$\text{V\&C Rate} = \frac{\text{Potential Gross Income} - \text{Rent Collected}}{\text{Potential Gross Income}}$$

## ■ Example of V&C loss:

The subject property has been leased the last two years with no vacancy. What V&C rate does the market indicate?

	Prop. A	Prop. B	Prop. C
PGI	\$420,000	\$350,000	\$480,000
Rent Collected	\$380,000	\$320,000	\$440,000

### V&C Rates

A.  $(420000 - 380000) / 420000 = 10\%$

B.  $(350000 - 320000) / 350000 = 9\%$

C.  $(480000 - 440000) / 480000 = 8\%$

# The Income Approach

- Step 3 – Add Miscellaneous Income
  - Any additional income generated from the property other than basic rents
  
- Step 4 – Calculate Effective Gross Income (EGI)
  - Potential Gross Income
  - Less V&C**
  - Plus Miscellaneous Income**

---

  - Effective Gross Income

# Effective Gross Income Problem #1

## ■ Problem:

The subject property is a mini-storage facility consisting of 240 units. There are 60 - 5 x 5 units renting at \$25 per month, 80 - 10 x 10 units renting at \$65 per month, 60 - 10 x 20 units renting at \$90 per month, 40 - 10 x 30 units renting at \$120 per month. All rents are considered to be at market rent. A typical V&C rate is 12% for this type property and the selling of miscellaneous packing supplies average \$1,000 per month.

Calculate effective gross income.

1.	5x5 units (60 × \$25 × 12 months)	\$18,000
2.	10x10 units (80 × \$65 × 12 months)	\$62,400
3.	10x20 units (60 × \$90 × 12 months)	\$64,800
4.	10x30 units (40 × \$120 × 12 months)	<u>\$57,600</u>
	Potential Gross Income	\$202,800
5.	Minus V&C ( $\$202,800 \times .12$ )	\$- 24,336
6.	Plus Misc. Income ( $\$1,000 \times 12$ )	<u>\$+12,000</u>
7.	Effective gross income	\$190,464

# The Income Approach

- Step 5 – Deduct allowable operating expenses
  - Two Types:
    - Direct operating expenses – Short term expenses that are necessary to operate and keep the property competitive with similar properties
    - Reserves for replacements – Long term expenses that are estimated average of potential future expenses

# The Income Approach

- Examples - Direct Operating Expenses
  - Management ( 5% of EGI)
  - Salaries
  - Utilities
  - Supplies and materials
  - Repairs and maintenance
  - Insurance
  - Lawn care
  - Miscellaneous (Advertising)

# The Income Approach

- Examples – Reserves for Replacement
  - Roof
  - Paving
  - Fencing
  - HVAC system
- Formula:  $\text{RCN of item} \div \text{Economic Life}$ 
  - Roof :  $\$25,000 \div 15 \text{ years} = \$1,667 \text{ per year}$
  - HVAC:  $\$7,000 \div 7 \text{ years} = \$1,000 \text{ per year}$

# The Income Approach

- Non-allowable expenses
  - Depreciation
  - Debt service
  - Capital improvements
  - Income tax
  - Owner's business expense
  - Property taxes

# The Income Approach

- Operating Expenses Ratios
  - Ratios of expenses to income can be developed
  - Include both direct and reserves
  - Common in mass appraisal
- Formula: Total operating expenses  $\div$  EGI
- Once ratio developed apply to similar properties  
(EGI  $\times$  operating expense ratio)

# The Income Approach

- Step 6 – Find Net Operating Income (NOI)
  - NOI is the difference between effective gross income and total operating expenses
- Formula:  $\text{EGI} - \text{total operating expenses} = \text{NOI}$

## 1. Example of NOI

2.	5x5 units (60 × \$25 × 12 months)	\$18,000
3.	10x10 units (80 × \$65 × 12 months)	\$62,400
4.	10x20 units (60 × \$90 × 12 months)	\$64,800
5.	10x30 units (40 × \$120 × 12 months)	<u>\$57,600</u>
	Potential Gross Income	\$202,800
6.	Minus V&C (\$202,800 × .12)	\$- 24,336
7.	Plus Misc. Income (\$1,000 × 12)	<u>\$+12,000</u>
8.	Effective gross income	\$190,464
9.	Minus Net Operating Expenses	<u>\$- 57,139</u>
10.	Net Operating income (NOI)	\$133,325
11.	Operating Expense Ratio = (Total Operating Expenses ÷ EGI) \$57,139 ÷ \$190,464 = 30% Exp. Ratio	

## Net Operating Income Problem #1

The G & D Mini-Storage Facility contains a total of 250 storage units. The facility is a quality facility with a combination of concrete block and metal construction. This facility has an on-site office with a retail area that sells moving supplies which generates approximately \$4,500 annually. A typical vacancy and collection rate for this type property is 7%. Total operating expenses are **27%** of the effective gross income. All rental rates are considered current market rates. Listed below are unit types and rents.

<u>Unit Types</u>	<u>Units (# of)</u>	<u>Monthly Rents</u>
5 x 5	30	\$20
5 x 10	42	\$35
10 x 10	75	\$55
10 x 15	40	\$70
10 x 20	30	\$80
10 x 30	33	\$115

Find NOI

## Solution to NOI Problem # 1

<u>Unit Types</u>	<u>Units (# of)</u>	<u>Monthly Rents</u>	<u>PGI</u>
5 x 5	30      x	\$20      x 12 =	\$7,200
5 x 10	42      x	\$35      x 12 =	\$17,640
10 x 10	75      x	\$55      x 12 =	\$49,500
10 x 15	40      x	\$70      x 12 =	\$33,600
10 x 20	30      x	\$80      x 12 =	\$28,800
10 x 30	33      x	\$115     x 12 =	<u>\$45,540</u>
	Potential Gross Income (PGI)		\$182,280
Less V&C (\$182,280 x .07)			\$-12,760
Plus Misc. Income			<u>\$+4,500</u>
Effective Gross Income			\$174,020
Total Operating Expenses ( \$174,020 x .27)			<u>\$-46,985</u>
Net Operating Income (NOI)			\$127,035

Operating Expense Ratio = (Total Operating Expenses ÷ EGI)  
\$46,985 ÷ \$174,020 = 27% Exp. Ratio

# The Income Approach

- Step 7 – Determine capitalization cap
  - Capitalization is the process of converting a series of anticipated future payments into present value
  - Cap rate turns income into value ( $I \div R = V$ )
  - Inverse effect (high rate - low value)  
(low rate - high value)
  - Two methods to find cap rate:
    - Comparable Sales (Market)
    - Composite Rate or Summation Approach

# The Income Approach

- Sales Comparison Method (Market)
  - An overall rate (OAR) can express the direct relationship between net operating income and the sales price or value
  - This method uses sales found in the market
  - When determining comparable properties factors to compare are similar land-to-building ratios, income and expense ratios, and remaining economic lives
- Formula:  $\text{Income} \div \text{Value (sales price)} = \text{Rate}$

- Example – Comparable Sales Method (market)  
Find a overall cap rate from the market?

	NOI	Sales Price
Sale #1	\$32,500	\$300,000
Sale #2	\$41,500	\$400,000
Sale #3	\$37,500	\$390,000

Solution:

Sale #1	\$32,500	÷	\$300,000	=	.1083 or 10.83%
Sale #2	\$41,500	÷	\$400,000	=	.1038 or 10.38%
Sale #3	\$37,500	÷	\$390,000	=	.0962 or 9.62%

The overall cap rate from the market would be **10 %**

# The Income Approach

- Composite or Summation Approach
  - In this approach you build the individual components of the capitalization rate
  - **Three components of the cap rate**
    - Discount Rate – Return on investment
    - Recapture Rate – Return of investment
    - Effective Tax Rate – Property taxes
  - The sum of all three components is the rate

# The Income Approach

- Example – Composite or Summation Approach

Discount Rate	.065 or 6.5%
Recapture Rate	.023 or 2.3%
Effective Tax Rate	<u>.012 or 1.2%</u>
Capitalization Rate	.10 or 10%

# The Discount Rate (Return **On**)

- Band-of-Investment Method
  - Uses a composite of mortgage interest rates and desired yield on equity
  - Information required can be obtained from local lending institutions
  - Applicable for smaller communities

# Band-of-Investment Method

- Three Easy Steps:
  1. Collect information on interest rates and mortgage amounts
  2. Compute the Percentage of Value (Loan to Value Ratio)
  3. Compute a weighted average to estimate the Discount Rate

# Band-of-Investment Method (Example)

1 <sup>st</sup> Mortgage	80%	@	7.0%
2 <sup>nd</sup> Mortgage	10%	@	8.5%
Equity	<u>10%</u>	@	10.5%
	100%		

## Solution

1 <sup>st</sup> Mortgage	.80	x	.07	=	.056
2 <sup>nd</sup> Mortgage	.10	x	.085	=	.0085
Equity	.10	x	.105	=	<u>.0105</u>
Discount Rate	(.056+.0085+.0105)				.075

# The Recapture Rate (Return **Of**)

- Economic Life Method (Straight Line)
  - The percentage of the depreciable asset (building) that must be recaptured annually during the remaining economic life of the property
  - Total Economic Life - Effective Age = REL
  - Requires experience to judge REL
  - $1 \div \text{Remaining Economic Life (REL)} = \text{Recapture Rate}$  (This is the secret formula)

## Economic Life Method (Example)

The estimated remaining economic life of the mini-storage buildings is 25 years.

Compute the Recapture Rate.

$$1 \div 25 = .04 \text{ or } 4\%$$

Compute the Recapture Rate for 35 years (REL)

$$1 \div 35 = .0286 \text{ or } 2.86\%$$

# The Effective Tax Rate

- The percentage that annual real estate taxes are in relation to total property value
- **ETR** in Oklahoma is typically around **1%**
- Two Methods:
  - Assessment Rate  $\times$  Nominal Tax Rate (Millage)
  - Property taxes  $\div$  Total Property Value

## Effective Tax Rate (Example)

The assessment rate is 12% and the millage rate is 95 mills.

What is the Effective Tax Rate?

$$.12 \times .095 = .0114 \text{ or } 1.14\%$$

If property taxes are \$1,710 and the property value is \$150,000, what would be the Effective Tax Rate?

$$\text{\$1,710} \div \text{\$150,000} = .0114 \text{ or } 1.14\%$$

# The Income Approach

- Step 8 – Capitalize net income into market value

- In this final step you convert net operating income (NOI) into property value

- Formula:

$$\text{Net operating income (NOI)} \div \text{Capitalization Rate} \\ = \text{Property Value}$$

# The Income Approach

- Problem:

The subject property is a 20 year old mini-storage facility with 300 units. The effective gross income is \$180,001 and net operating is \$122,401. You have determined from the market that 10% is the appropriate capitalization rate. Use the capitalization process in the income approach and find market value.

Solution:

$$\$122,401 \div .10 = \$1,224,010$$

## Capitalization Rate Problem #1

The subject property is a 60 unit mini-storage facility with average quality construction and average amenities. It is located on 2 acres of flat land. The owners Big Bill and Mr. Ed said it cost \$145,000 to build five years ago; Estimated remaining economic life of 35 years. It has typical market rents and expenses. The effective gross income on the subject property is \$33,500 with an operating expense ratio of 35%. The assessment rate for subject property is 11.5% and the nominal tax rate is 85.84 mills.

A current first mortgage at 7.5% interest can be obtained for 70% of the property value. A second mortgage at 9% can be obtained for 10% of the property value and current investors expect an equity yield rate of 12%.

Determine the Discount, Recapture and Effective Tax Rate from the information given above. Once you have determined the appropriate capitalization rate appraise the subject property.

# SOLUTION

EGI = \$33,500 X .35 = \$11,725 Expenses

Minus \$11,725

NOI = \$21,775

# SOLUTION

## Discount Rate

1 <sup>st</sup> Mortgage	$(.70 \times .075) = .0525$	or 5.25%
2 <sup>nd</sup> Mortgage	$(.09 \times .10) = .009$	or .90%
Equity	$(.20 \times .12) = .024$	or 2.40%
		<hr/>
		8.55%

# Recapture Rate

$$1 \div 35 = .0286 \text{ of } 2.86\%$$

# Effective Tax Rate

Nominal Tax Rate x Millage = ETR

$$\begin{aligned} .115 \quad \times .08584 &= .00987 \\ &\text{or } .01 \\ &\text{or } 1\% \end{aligned}$$

# Composite Rate

Discount Rate	8.55%
Recapture Rate	2.86%
Effective Tax Rate	1.00%
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Cap Rate	12.41%

- NOI \$21,775
- Cap Rate 12.41%

$$V = I \div R$$

$$V = 21775 \div .1241$$

$$V = \$175,463$$

Now you try one on your own



## Problem 1

Use the Income Approach to Estimate Market Value

Self Storage facility consists of :

2 acres of land  
3 - 20 x 120 buildings  
1 - 40 x 84 building

Each 20 x 120 Building consists of :

	<u>Rental Rate/ mo.</u>
8 - 5 x 10 units	\$ 20
10 - 10 x 10 units	\$ 35
5 - 10 x 20 units	\$60

The 40 x 84 building consists of:

6 - 14 x 40 units	\$55
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Land Value	\$12,500/ ac
Vacancy and Collection Loss	5%
Expense Ratio	29%
Remaining Economic Life	35 years
1st Mortgage Interest Rate	8%
Equity Rate	10%
Loan to Value Ratio	80%
Assessment Rate	11.5%
Nominal Tax Rate	85 mills



	Bldg # 1	Bldg # 2	Bldg # 3	Bldg # 4	Rental Rate / mo.	
Size	20 x 120	20 x 120	20 x 120	40 x 80		
# 5 x 10's	8	8	8		\$20	
# 10 x 10's	10	10	10		\$35	
# 10 x 20's	5	5	5		\$60	
# 14 x 40's				6	\$55	
PGI Estimate						
# 5 x 10's	\$1,920	\$1,920	\$1,920			
# 10 x 10's	\$4,200	\$4,200	\$4,200			
# 10x 20's	\$3,600	\$3,600	\$3,600			
# 14 x 40's				\$3,960		
Total Annual PGI	\$9,720	\$9,720	\$9,720	\$3,960	=	\$33,120 PGI
LESS V & C Loss of		5%				\$1,656 V & C Loss
						\$31,464 EGI
LESS Op Expense Estimate of		29.0%				\$9,125 Op Expenses
						<b>\$22,339 NOI</b>

### Composite Cap Rate

Discount Band of Investment			
1st Mortgage Rate		8.00%	6.400%
Equity Rate		10%	2.00%
Loan to Value		80.00%	
Equity Ratio		20.00%	
<b>Discount Rate</b>			<b>8.400%</b>
<b>Recapture</b>	REL =	35	<b>2.86%</b>
	Millage	0.085	
	Assmt R	0.115	
<b>ETR</b>			<b>0.98%</b>
	Cap Rate		<b>12.23%</b>

**\$182,592** Total Value