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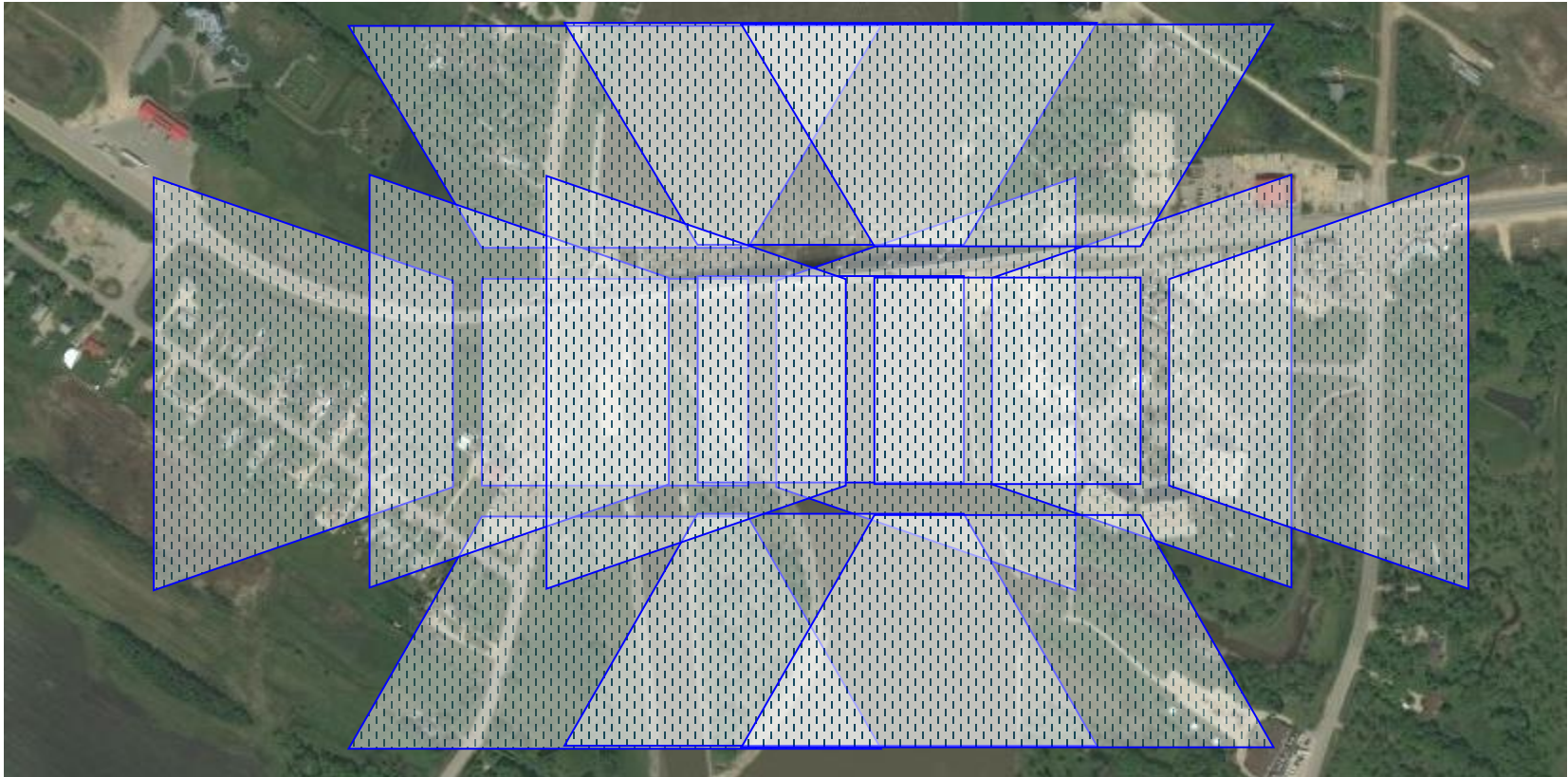


# Agenda

- **Introductions**
- **Why Obliques matter and how they differ from traditional aerial Imagery**
- **Uses in Reassessment**
- **Integrations**
- **Case Studies**
- **Questions**



# Area-wide Capture (5 way viewing)

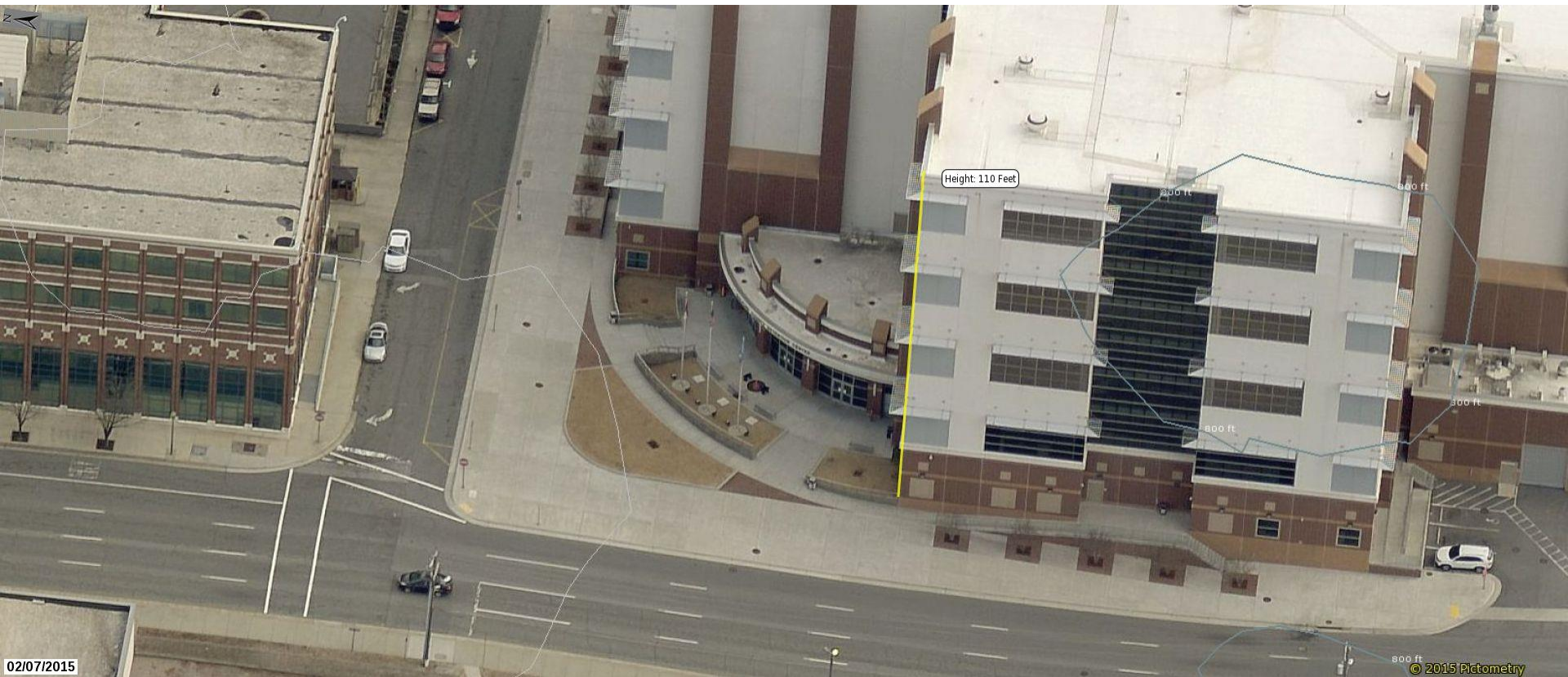


**Many overlapping images make tens of millions of overlapping geo-referenced pixels**



# What Is “Intelligent” Oblique Imagery

- Imagery at a 40 degree angle that is georeferenced to the ground, is measurable and is able to take into account the change in elevation



# Why Are Obliques Are Important?

- Let's play a game and find out

**GIVEAWAY  
TIME**













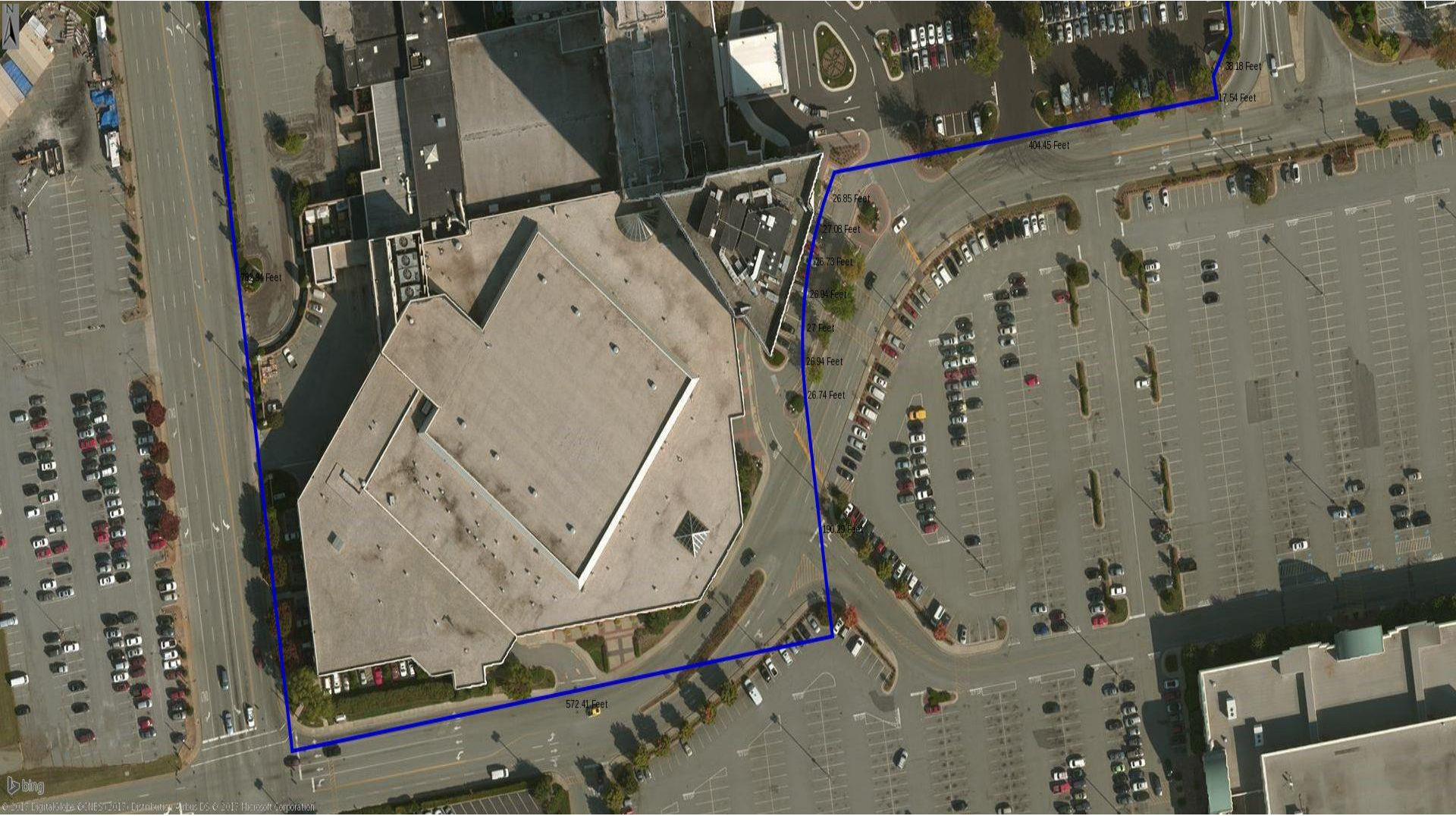






*America's #1 Cookbook Since 1930*

*New* **Better  
Homes  
and Gardens**  
**COOK  
BOOK**



331.8 Feet

17.54 Feet

404.45 Feet

26.85 Feet

27.08 Feet

26.73 Feet

26.94 Feet

27 Feet

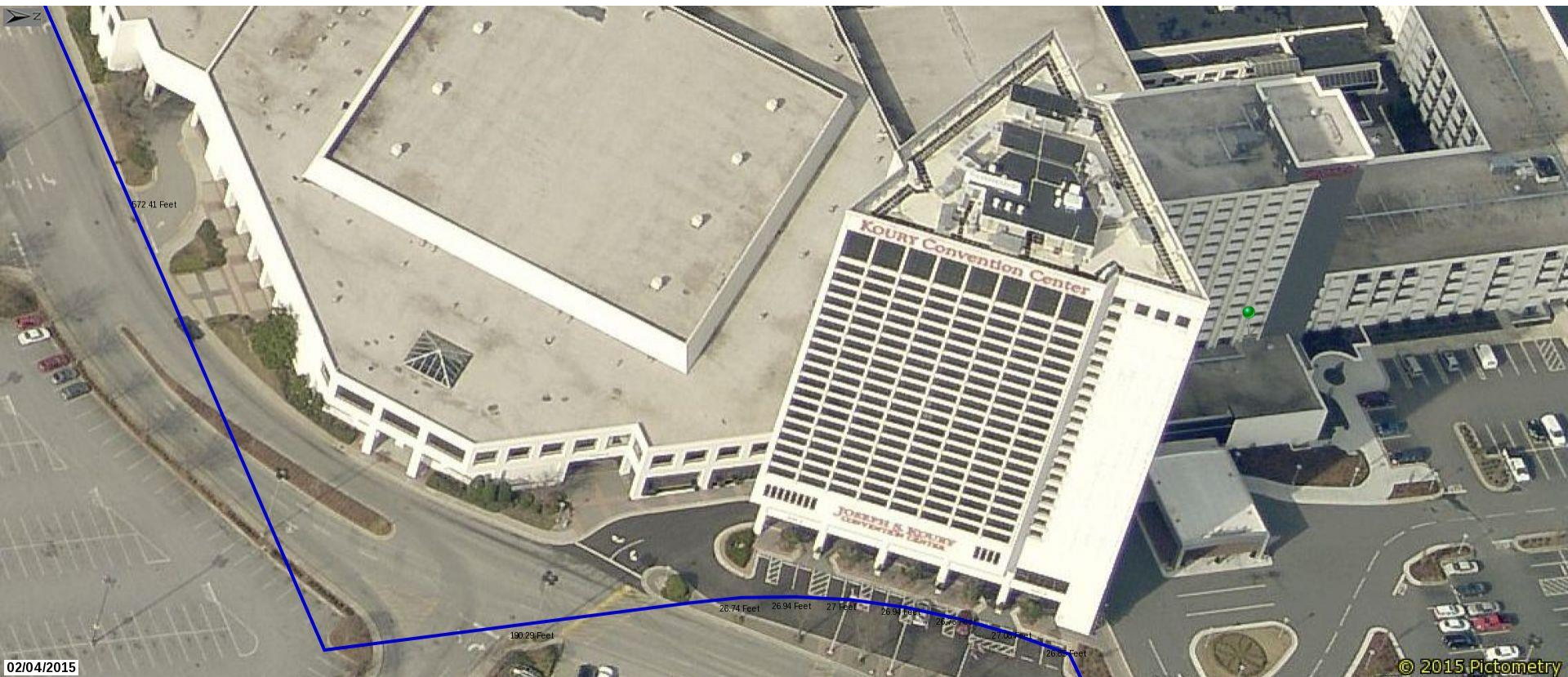
26.94 Feet

26.74 Feet

190.3 Feet

572.41 Feet





02/04/2015

© 2015 Pictometry



Standard Ortho Image





North facing Oblique



East facing Oblique



South facing Oblique



West facing Oblique



# Why Is This Important??

The comparison duration was one calendar year

Office staff checked **281%** more parcels than the year before

Field staff checked **284%** more parcels than the year before

Total Field Costs were cut by **69%**

Miles Driven (per parcel) were cut by **70%**



# Average cost benefits

- NC Department of Revenue estimates for 2017:
- Reval cost \$21 per parcel on average
- With ChangeFinder cost \$13.50 per parcel
- **Cost savings of \$7.50 per parcel**
- **Total savings \$1,575,000**



# Integrations

- Bring intelligent obliques into your CAMA system and your GIS



PRID: 012011A131.  
PHD: 04435000  
OWNER: TERRY D & CINDY

RO  
4298 TRC

Navigation icons: Home, Refresh, Map, Zoom In, Zoom Out, Hand, Search, Pin, Home, Layers, Full Screen, Print, Date: 12/01/2013



1 of 4  
Return to Search Results

**Reports**  
 Commercial PRC  
 Comp Sheet  
 Mailing List  
 Residential PRC

[View Report Status](#)





## DEVNET CAMA SYSTEM

DEVNET North Carolina Assessor Gaston County 7 DEVNET, Inc.

09/05/2017

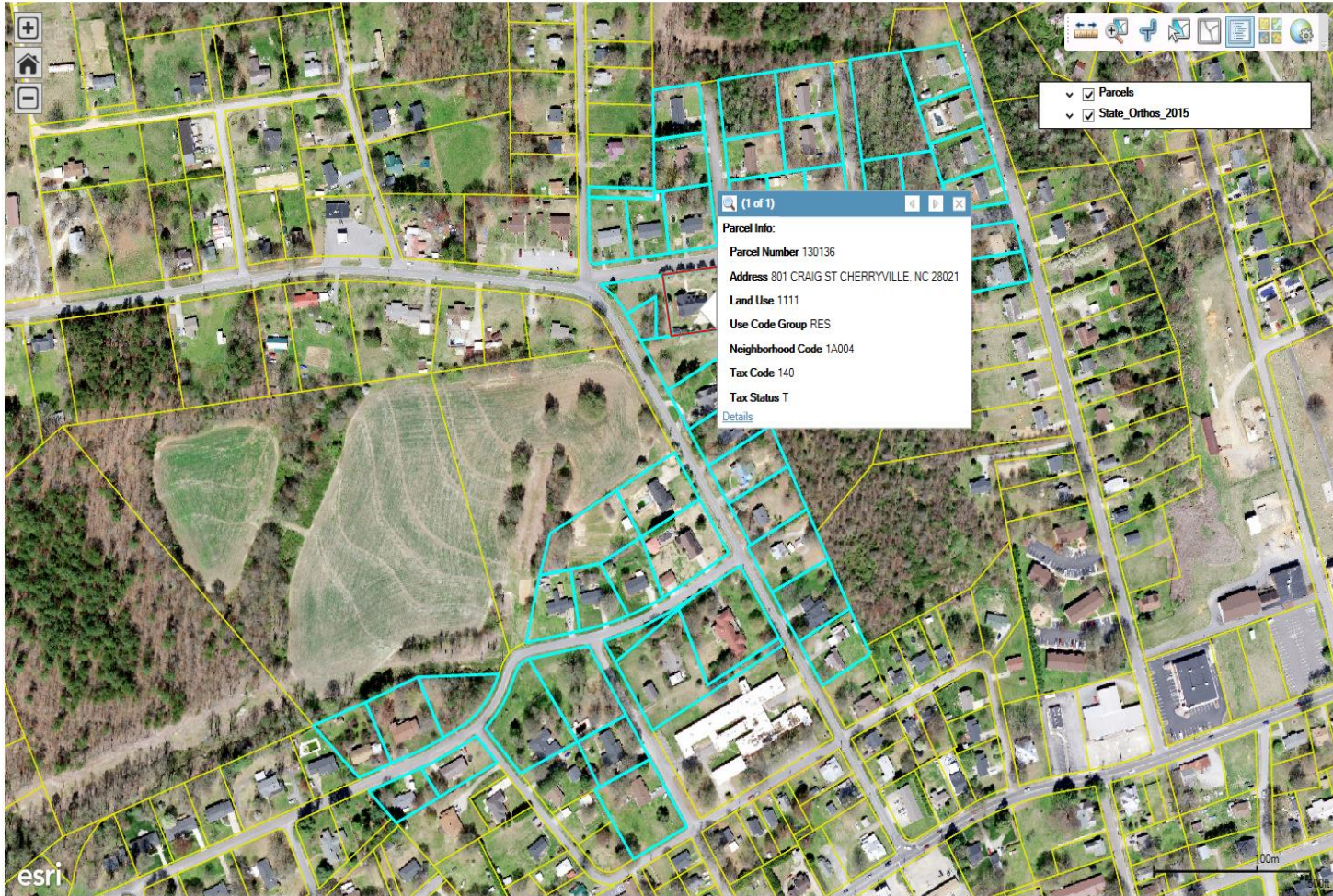
File Parcel Personal Property MobileHomes Process Map Reports Window Help



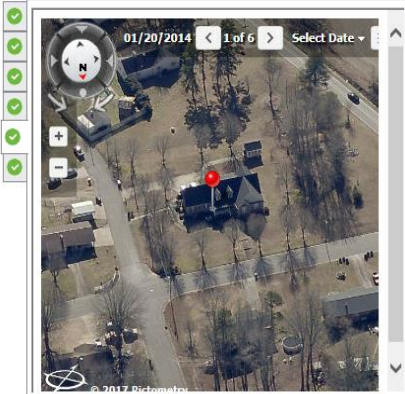
Location Map Explorer x

Apply Reset Criteria

- NEIGHBORHOOD**
- Neighborhood
- 1A001 - HIDDEN VALLEY
  - 1A002 - NORTH PINK ST
  - 1A003 - DIXIE ST
  - 1A004 - CRAIG ST
  - 1A005 - SUNSET RD
  - 1A006 - DELLINGER LOOP
  - 1A007 - MOUNTAIN ST
  - 1A008 - E FIRST ST
  - 1A009 - VISTA DR
  - 1A011 - PEN ST
  - 1A012 - HUSS AVE
  - 1A014 - JAMES ST
  - 1A016 - WEBB ST
  - 1A017 - WEST END IND
  - 1A018 - WESTGATE DR
  - 1A019 - MULBERRY ST
  - 1A021 - CEDAR ST
  - 1A022 - MOUNTAIN ST S
  - 1A023 - BATES AVE
  - 1A024 - QUEENS RD
  - 1A025 - HALLMAN RD
  - 1A026 - PINE AVE



- Parcels
- State\_Orthos\_2015



esri



Home | Airt Admin | Valuation | Tax | Cashiering | Records | Info Center | Personal Property Appraisal | Reports and Interfaces | Configuration

RPA main page

SiteView: CONVERSION94 | Year: 2014 | Effective Date: 1/17/2014 | [Refresh] [Conclude] [Workflow] [Preview Changes] [Save] [Cancel]

Nbhd: TE7001 | Active | Class: Single Residence | Valuation Method: | Primary Value: \$0 | Parcel: 1

Warning: As a result of your configuration setting, necessary data has been added to the account.

Account | Appraisal Site | Workflow | Value | Permits | Sales history

Site Address

Primary	Street Number	Suffix	Pic.	Street Name	Street Type	Post.	Unit Type	Secondary Unit	City	State	Zip Code
3	4352E			CALLE DE VELARDO					TEMECULA	CA	92592

Site Information | Notes

Appraisal Site Flags

Flag Type	Flag Value	Priority	Status	Begin Date	Expiration	Comment
No records to display.						

Area Data

Unit Type	Units
Acresage	2.31

Adjustments

Level	Type	Adj. Type	Adj. Amount
No records to display.			

Characteristics

A/E	Y
INSP APPRAISER	T472
Inspection Date	8/1/2006
CUL-DE-SAC	CUL-DE-SAC
CURE/GUTTER	NONE
DOMESTIC WATER	DEVELOPED
ELECTRICITY	DEVELOPED/UNDERGROUND
GAS	NOT AVAILABLE
IRREGULAR SHAPE	YES
IRRIGATION WATER	NOT AVAILABLE
LEGAL ACCESS	YES
SEWER	NOT AVAILABLE
SITE ELEVATION	ABOVE STREET LEVEL
STREET FRONTAGE	YES
STREET GRADE	SLOPE

Pictometry

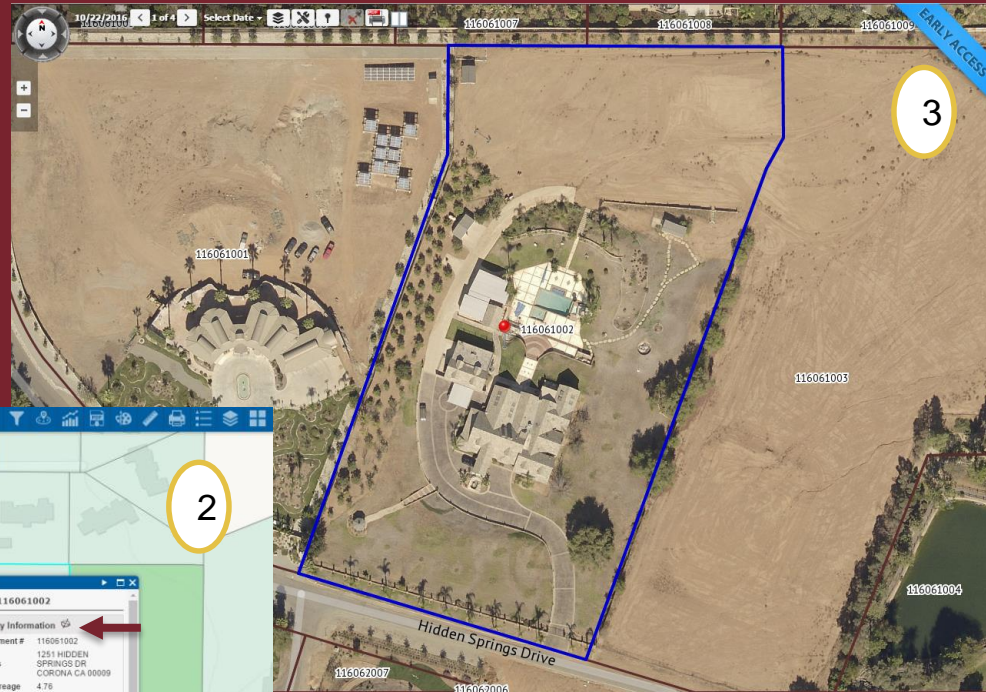
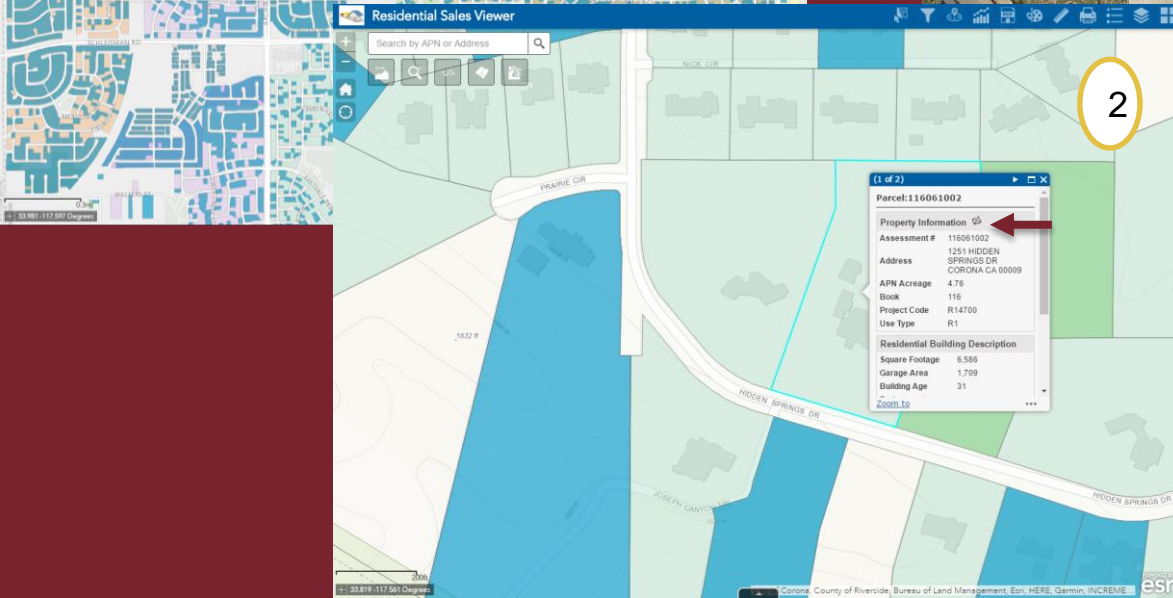
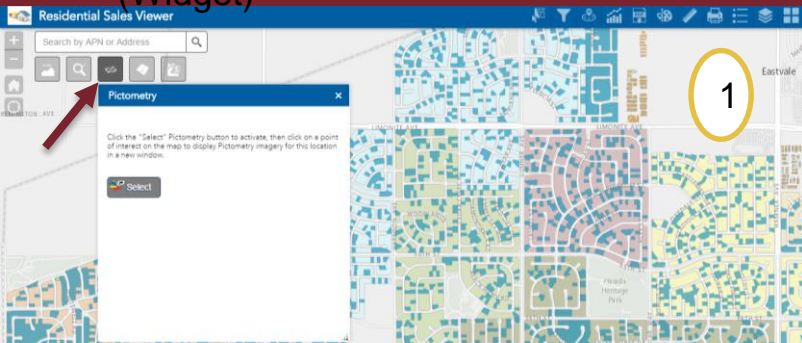
Navigation: [Home] [Back] [Forward] [Full Screen] [Print] [Close]

# Aumentum – Property Tax System

## CAMA, GIS, and Pictometry

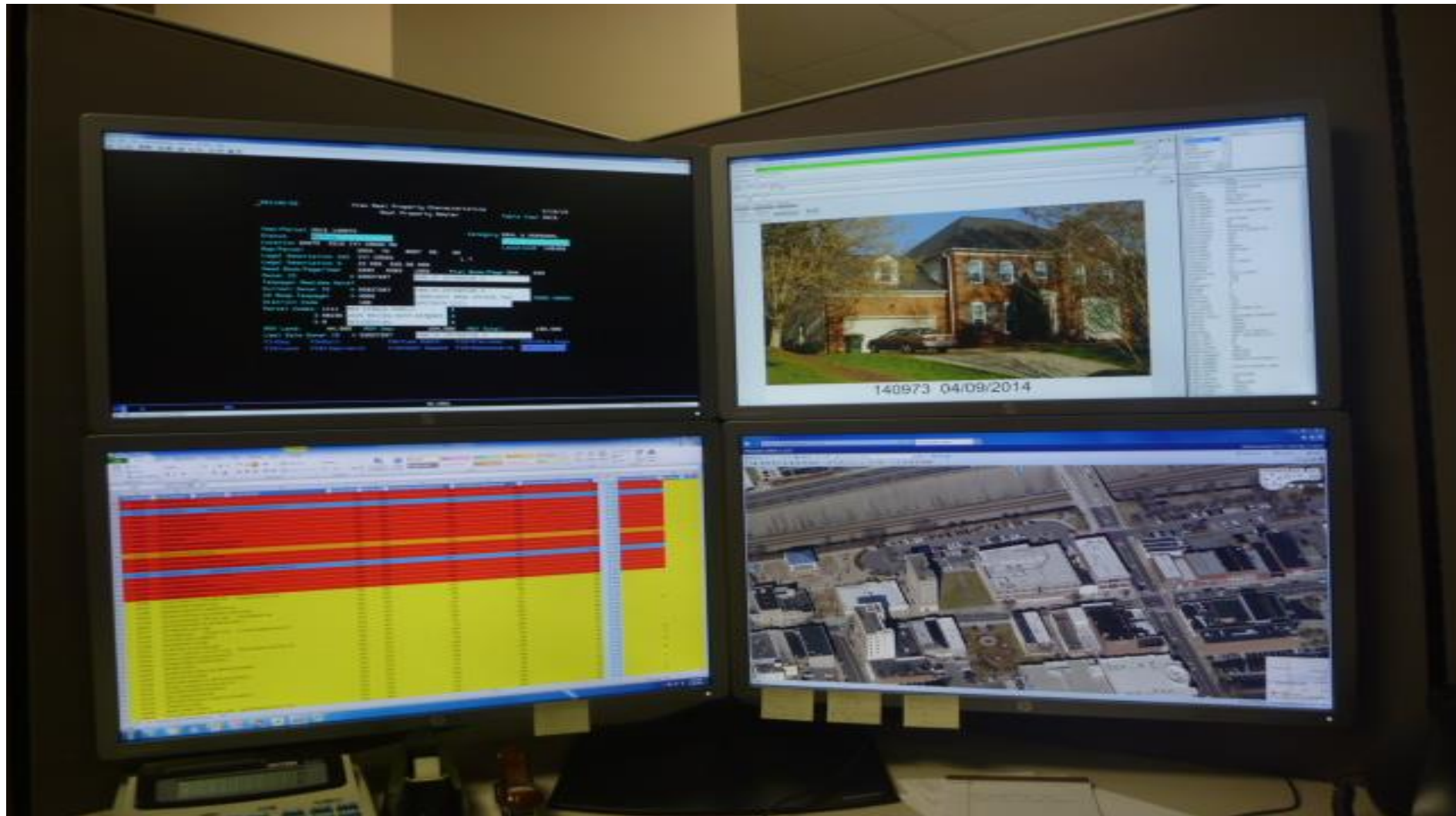


# Esri Web AppBuilder Integration (Widget)





## APPRAISAL WORKSTATION



# Case Studies

- A few slides from a recent User Group Meeting





- **MOST EFFICIENT, COST EFFECTIVE AND EASIEST TOOL AVAILABLE FOR REAPPRAISAL WORK**
  - **PROPERTY REVIEW FROM DESK**
  - **CONFIRM MEASUREMENTS FROM DESK**
  - **CONFIRM LAND ADJUSTMENTS FROM DESK**
  - **SPECIAL PROJECTS WITHIN REAPPRAISAL**





- **PROVIDES SUPPORTING DOCUMENTATION**
  
- **REFERENCE POINT IN TIME---REAPPRAISAL DATE**
- **VISUAL GUIDE FOR MAKING DECISIONS AND OPINIONS**





- **INSTILLS CONFIDENCE FOR STAFF IN BOTH:**
  - **WORK PRODUCT**
  - **DEALING WITH PROPERTY OWNERS**
- **APPEAL EFFICIENCY**
  - **ABILITY TO PROCESS QUICKER**
  - **TAXPAYERS CAN UNDERSTAND AN IMAGE**
  - **PROVIDES REALITY FOR BOARD OF E/R, AND NCPTC**





# Oblique Images ideal for large buildings or parcels with difficult access

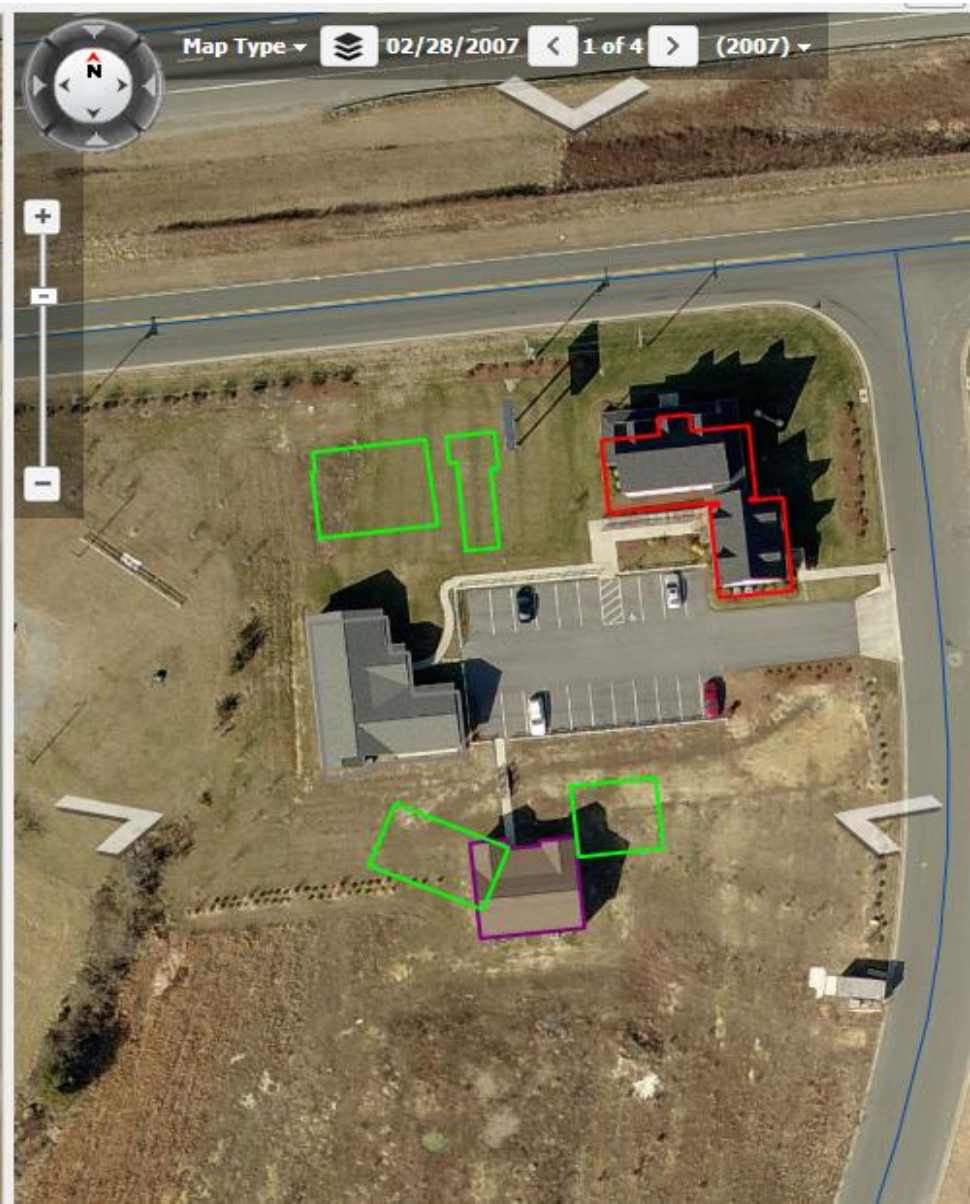


# Split Screens

- Side by side images make it easy to identify change
- Noted changes are held in a work Queue
- Imagery is good enough to identify not only structural changes but upgrades to existing structures as well



# Pictometry ChangeFinder



# Filters & Queues

The screenshot displays the CONNECTASSESSMENT web application interface. At the top, there is a search bar with the text "Enter an Address, Landmark, or other Location" and a search icon. To the right of the search bar are "Address" and "Bookmarks" dropdown menus, and a user profile "Bill McGinn". Below the search bar is a toolbar with various icons for map navigation and editing.

The main interface is split into two panels. The left panel is a sidebar containing a "Review" tab and an "Info" tab. Under "Filters", there are several dropdown menus: "Change Type" (set to "new, changed"), "Percent Changed" (set to "25-50%, 50-75%, > 75%"), "Residential" (set to "SOUTH EAST, SOUTH WE"), "Commercial" (set to "HIGH POINT"), and "Review Status" (set to "Under Review"). Below these filters, it shows "Matches: 21" and a "Start" button. Under "Actions", there are "Back" and "Next" buttons, a "Set Review Status ..." dropdown, and "View/Add Comments" and "Export Selected" buttons. At the bottom of the sidebar is a "Data" section.

The right panel shows two side-by-side aerial maps. The left map is dated "02/05/2015" and is labeled "1 of 6" in a queue. The right map is dated "03/04/2007" and is labeled "1 of 8" in a queue. Both maps show a residential area with a red rectangle highlighting a specific building. The interface includes a compass, zoom controls, and a "Map Type" dropdown menu.



# CF Workflow Queue—New Building

CONNECTASSESSMENT

assessment.pictometry.com//index.php

Enter an Address, Landmark, or other Location

Address Bookmarks Alan Myrick

Review Info

Filters

Change Type: hew

Percent Changed:  existing

Residential:  new

Commercial:  changed

Review Status:  demolished  unknown

Matches: 2442

Actions

Back Next

Set Review Status ...

View/Add Comments Export Selected

Data

Map Type 02/06/2015 1 of 18 Select Date

2015

Map Type 03/09/2007 1 of 12 (2007)

2007

10 ft 5 m

© 2016 Pictometry

# Ability to add notes

Review Info

Filters

Actions

Highlight:

Matches: Back 1 of 1 Next

Status: Set Review Status ...

View/Add Comments Export Selected

Data

Review Status: Not Reviewed  
Determination:  
Est. Value Change:  
reid: 0033278  
Change Type: changed  
Area: 74168.7697915804  
Previous Area: 66167.9799485755  
Percent Changed: 12.0916345143  
Residential: SOUTH WEST CITY  
Commercial: NORTH WEST  
Comment:

Activity History

Map Type 02/04/2015 1 of 6 (2015)

Map Type (2007)

Comments

No comments for this item yet.

Add Comment:

Save Cancel

200 ft  
50 m

© 2015 Pictometry

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# Appraisers Desktop View- Change Queue

CONNECTASSESSMENT™ 0033278

PARCELS041717 Bookmarks Alan Myrick

Review Info Search Results

Filters

Actions

Highlight:

Matches: Back 1 of 1 Next

Status: Set Review Status ...

View/Add Comments Export Selected

Data

Review Status: Not Reviewed  
Determination:  
Est. Value Change:  
reid: 0033278  
Change Type: changed  
Area: 74168.7697915804  
Previous Area: 66167.9799485755  
Percent Changed: 12.0916345143  
Residential: SOUTH WEST CITY  
Commercial: NORTH WEST  
Comment:

Activity History

Map Type 02/04/2015 1 of 6 (2015)

Map Type 03/04/2007 2 of 6 (2007)

50 ft 20 m © 2015 Pictometry

50 ft 20 m © 2007 Pictometry

# More Changes

**CONNECTASSESSMENT** 0033278 PARCELS041717 Bookmarks Alan Myrick

Review Info Search Results

Filters

Actions

Highlight:

Matches: Back 1 of 1 Next

Status: Set Review Status ...

View/Add Comments Export Selected

Data

Review Status: Closed - Matched with CAMA  
 Determination: on 2013  
 Est. Value Change:  
 reid: 0014659  
 Change Type: new  
 Area: 3553.5395242576  
 Previous Area:  
 Percent Changed:  
 Residential: SOUTH WEST CITY  
 Commercial: NORTH WEST  
 Comment:

Activity History

Map Type 02/07/2015 1 of 5 (2015)

10 ft  
5 m

Map Type 03/06/2007 1 of 10 (2007)

10 ft  
5 m

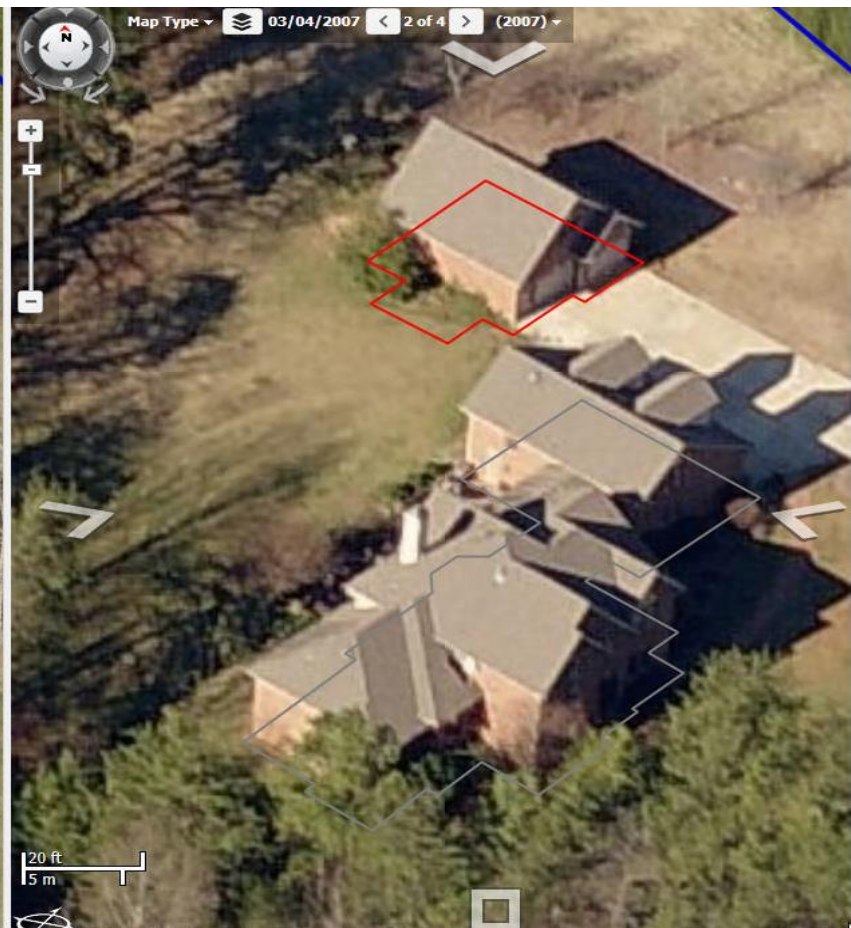




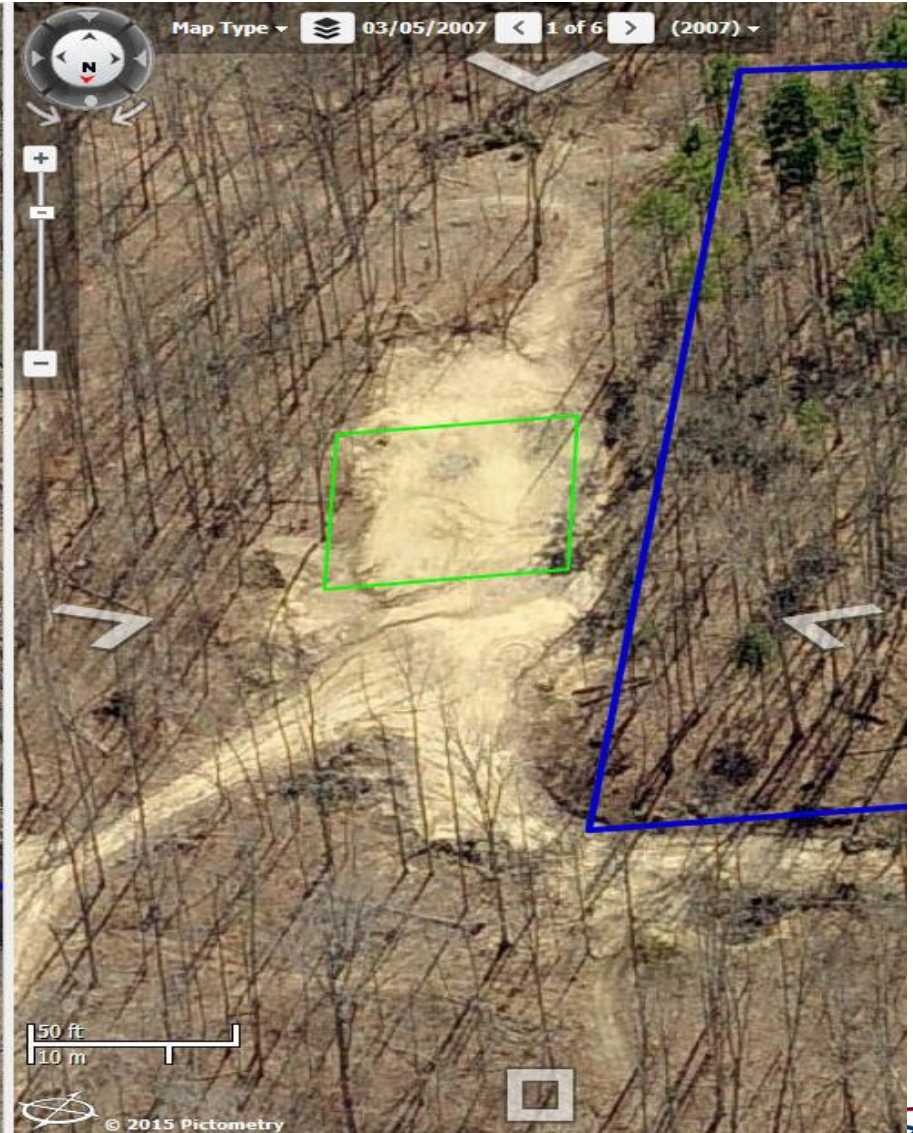
# Sketch Change Queue



# Garage changed to living



# Rural Areas- Many Buildings are built without a Permit



# Demolition Review Queue

CONNECTASSESSMENT™ Enter an Address, Landmark, or other Location [Search] Address [Dropdown] Bookmarks [Dropdown] Alan Myric

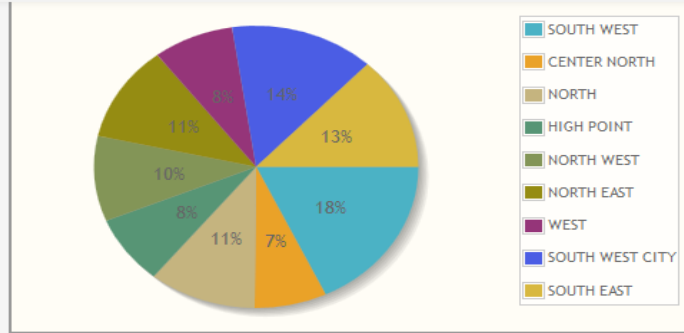
Map Type [Dropdown] 02/04/2015 [Dropdown] 1 of 4 [Dropdown] Select Date [Dropdown]

Demolished for Hotel & Apartment Complex

© 2016 Pictometry

© 2016 Microsoft Corporation

# CF Reports on Project Progress by Work Areas

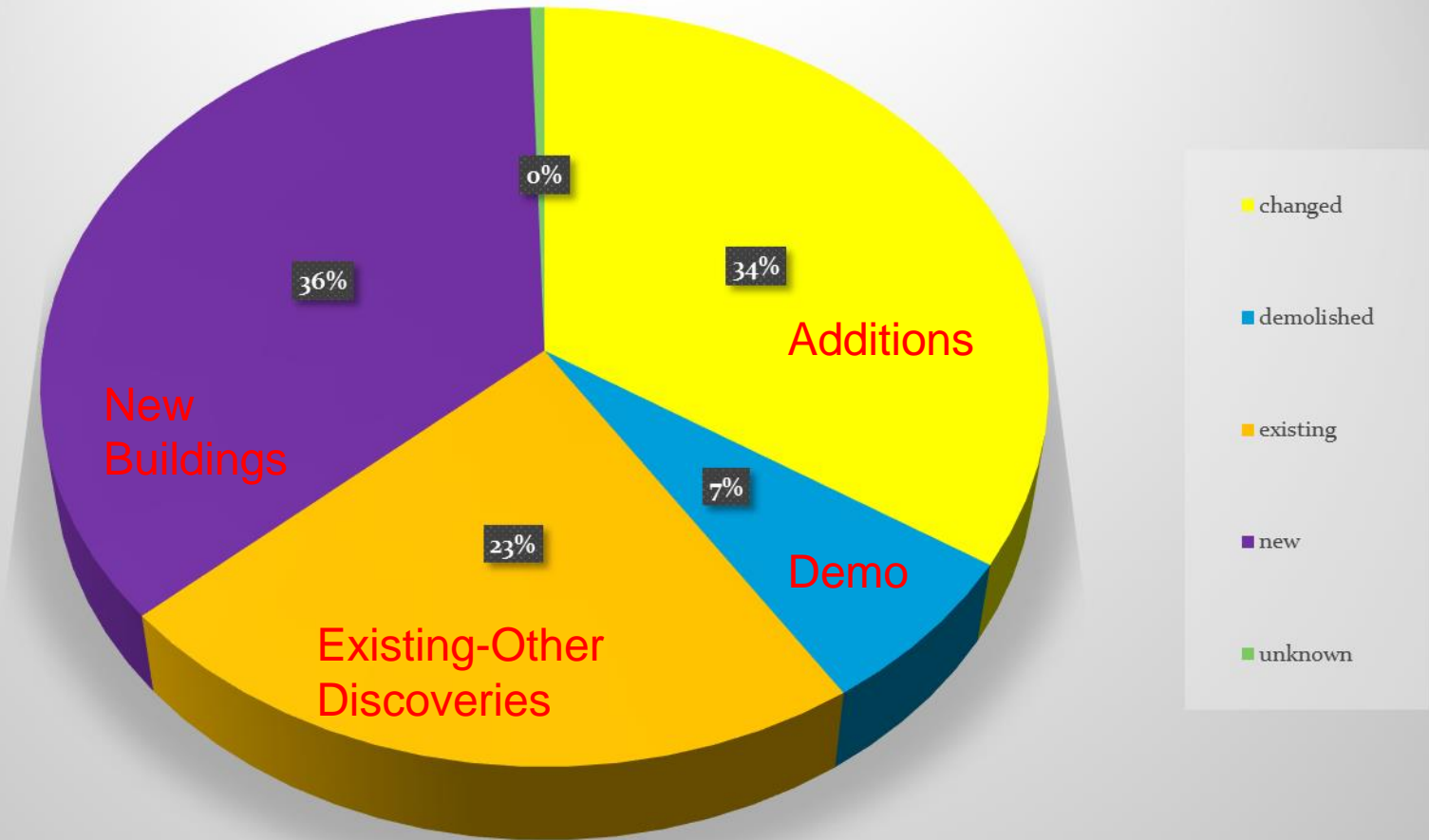


Jurisdiction	Field Inspection Required	Under Review	Not Reviewed	Updated in CAMA	Matched with CAMA	False Positive	Total
SOUTH WEST	36	44	45,319	1,434	3,340	180	<b>50,353</b>
CENTER NORTH	4	201	17,329	442	1,798	357	<b>20,131</b>
NORTH	24	177	27,239	416	1,984	232	<b>30,072</b>
HIGH POINT	27	9	20,270	399	1,399	21	<b>22,125</b>
NORTH WEST	35	0	23,433	587	3,181	150	<b>27,386</b>
NORTH EAST	14	54	28,270	366	2,088	140	<b>30,932</b>
WEST	21	13	18,740	751	2,811	234	<b>22,570</b>
SOUTH WEST CITY	2	3	36,479	653	3,205	75	<b>40,417</b>
SOUTH EAST	14	35	32,076	563	2,956	696	<b>36,340</b>
<b>Total</b>	<b>177</b>	<b>536</b>	<b>249,155</b>	<b>5,611</b>	<b>22,762</b>	<b>2,085</b>	<b>280,326</b>
Est. Value Change	<b>\$0.00</b>	<b>\$0.00</b>	<b>\$0.00</b>	<b>\$51,530,982.00</b>	<b>\$792,909.00</b>	<b>\$37,100.00</b>	<b>\$52,360,991.00</b>



# Changes per Category

## CF Change Types by Queue Category



# One NC Example Of ROI

- County total savings: \$1,575,000
- Total Revenue Discovered: \$1,369,511
- Total Benefit: \$2,944,511

**- Revenue benefit continues to grow each year**



# Cost Vs. Benefit (NC Customer)

- One year Revenue Discovered \$342,378
- Total Revenue Discovered \$1,369,511





# ChangeFinder

- Allows appraisal staff to do an electronic inventory of buildings & outbuildings that have been built since 2007.
- Appraisers reviewed parcels for buildings that had been added or removed since 2007.
- To date appraisal staff have added or removed;

Building Value Added: \$50,372,669

Building Value Removed: \$3,503,722



# Bottom Line

- “This technology makes Reassessment more efficient and is cost-effective by both saving time and by ensuring accurate data”





# Hurricane Harvey

- 22 planes staged & flying around TX
- First to fly post-storm
  - In the air scouting on Monday
  - Permitted access into the airspace on Tuesday
  - First imagery processed on Wednesday
- Over 6,000 sq. miles of imagery captured
- Estimated 340 hours of flight time
- Ferried planes to TX from all across the country



# Hurricane Relief Efforts

- Donated 40,000 meals including clean water to the Southeast Texas Food Bank to the City of Beaumont, TX (customers of ours) after they ran out of clean water completely.
- Worked with Texas Cares to donate bottled water to those affected.
- Complimentary online tool, accessible through desktop and mobile for evacuees to assess their homes remotely.
- Created within **4** days of taking flight in TX
- Employees physically flew to TX to receive drives to hand-deliver to the office over Labor Day weekend.
- <http://harvey2017.eagleview.com/>



# Machine Learning

- EagleView is working with insurance carriers to review an image and classify damage efficiently by stratifying potential property damage based on probability thresholds.
- This high-speed process allows billions of image pixels to be analyzed quickly – far faster than can be analyzed with the human eye.

