



*Valuing People and Property*

# The **GAMA** Project at Los Angeles County Office of the Assessor

**ESRI USER CONFERENCE**

**June 27 – July 1, 2016 | San Diego Convention Center**

*Presented by:*

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# Los Angeles County

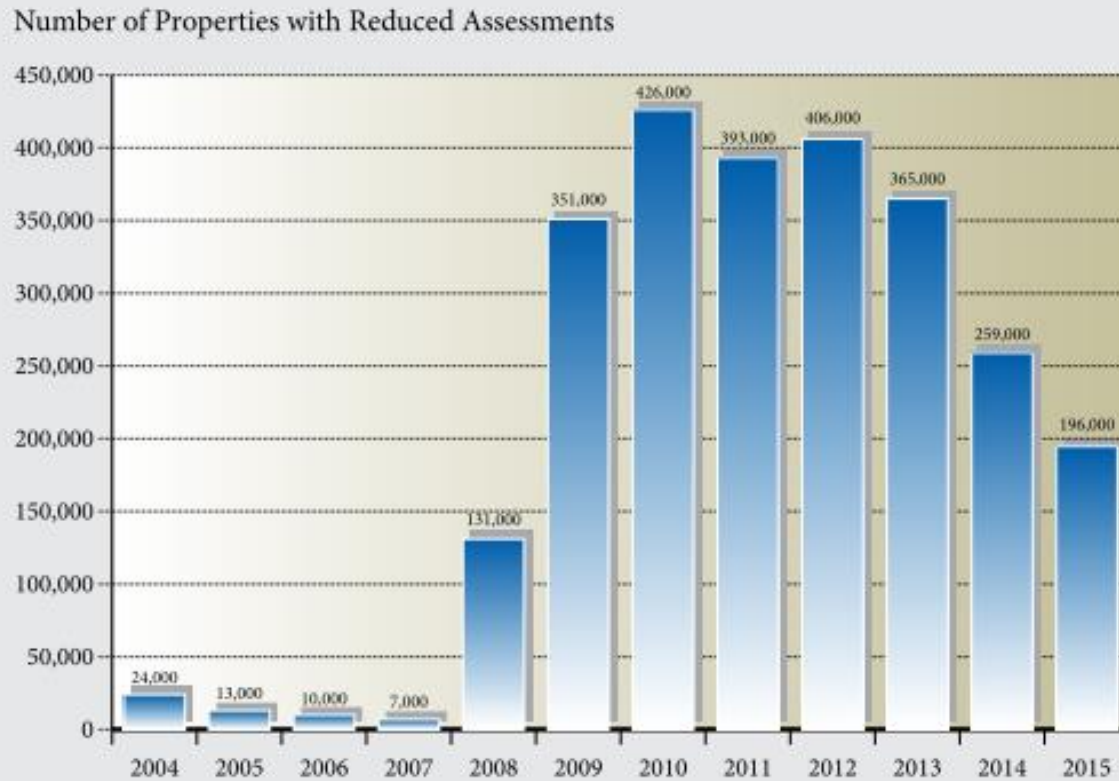
- Area: 4,752 square miles
- Population: 10.2 million
- Parcels: 2.4 million



## Some Of The Challenges We Are Facing

- Real Estate Transfer Valuations: **136,000**
- Decline-in-Value Reviews: **241,000**
- Assessment Appeals: **40,600**
- Most valuations and verifications done either manually or semi-manually
  - Labor intensive
  - Backlog
  - Public Services

# Decline-in-Value Reviews



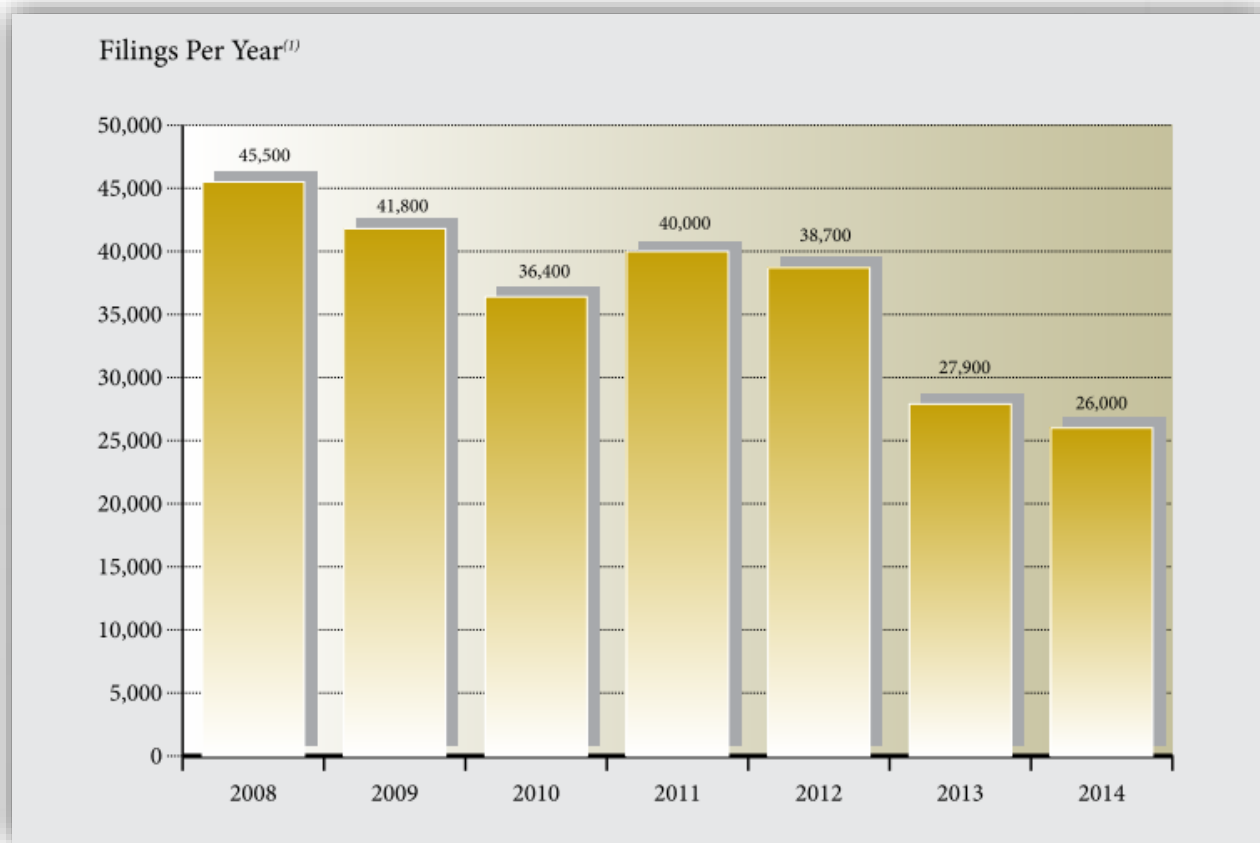
## Decline-in-Value (cont'd)

2015 Decline-in-Value by District Chart

District	Restored	Increased	No Change	Decreased	Removed	Total
<b>North</b> <i>(Sylmar)</i>	15,598	51,974	31,557	1,804	2,136	103,069
<b>South</b> <i>(Signal Hill)</i>	8,873	31,201	19,069	1,675	1,289	62,107
<b>East</b> <i>(S. El Monte)</i>	8,407	25,295	11,328	774	856	46,660
<b>West</b> <i>(Culver City)</i>	7,113	13,908	5,614	608	948	28,191
<b>MRP</b>	338	513	461	39	97	1,448
<b>Total</b>	<b>40,329</b>	<b>122,891</b>	<b>68,029</b>	<b>4,900</b>	<b>5,326</b>	<b>241,475</b>

**Parcels Remaining to Restore: 195,820**

# Assessment Appeals



# Strategies To Overcome Our Challenges

- Automated Valuation Model (AVM) – in general
  - Mathematical modeling techniques combined with market database
    - Market comparable properties
  - Delicate balance between appraiser judgement and science/math
- *Purpose-specific* AVM to address our challenges
  - The **GAMA** Project – **G**eographically **A**ssisted **M**ass **A**ppraisal Project

# Enter the **GAMA** Project

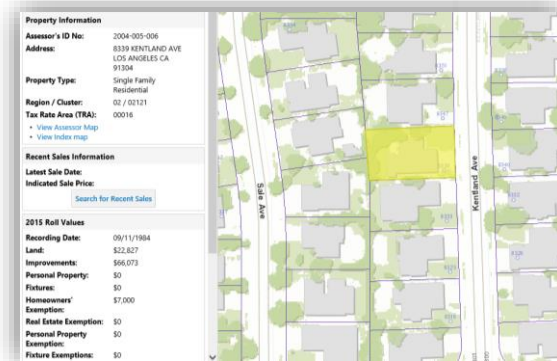
- Goals:
  - Reduce processing time, reduce backlog and improve product, while maintaining appraiser judgement and approval.
- Objectives:
  - Proto-model(s) development and demonstration
    - Efficiency
    - Quality
    - Cost-savings



# Enter the **GAMA** Models

## Major Elements:

- Property Data Base
- Tax Parcel geodatabase
- Microsoft's SQL and Excel 2013
- SAS<sup>®</sup> statistical packages
- ArcGIS<sup>®</sup> Desktop 10.3
  - Spatial Analyst
  - Geostatistical Analyst

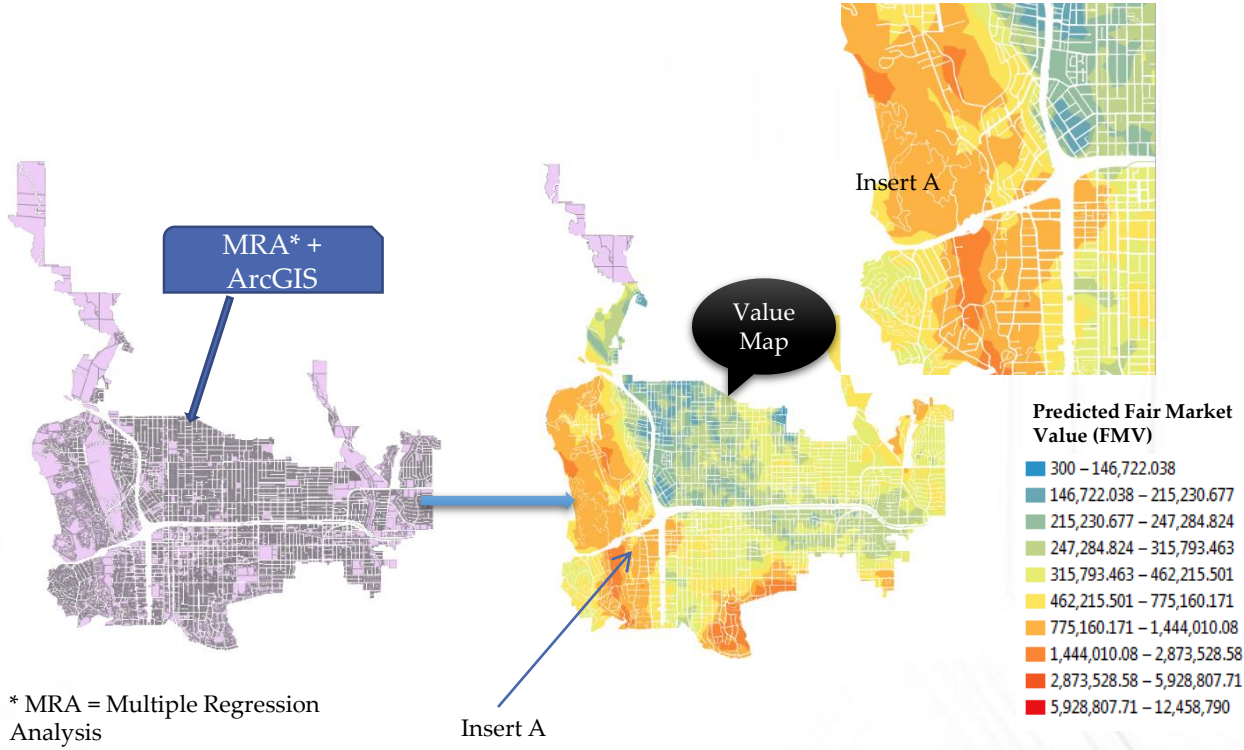


Assessor's ID	Address	Property Type	Region / Cluster	Tax Rate Area (TRA)	2015 Roll Values
2004-005-006	8339 KENTLAND AVE LOS ANGELES CA 91304	Single Family Residential	03 / 03121	00016	Recording Date: 09/11/1984 Land: \$32,827 Improvements: \$66,073 Personal Property: \$0 Fishes: \$0 Homeowners' Exemption: \$7,000 Real Estate Exemption: \$0 Personal Property Exemption: \$0 Fishes Exemption: \$0

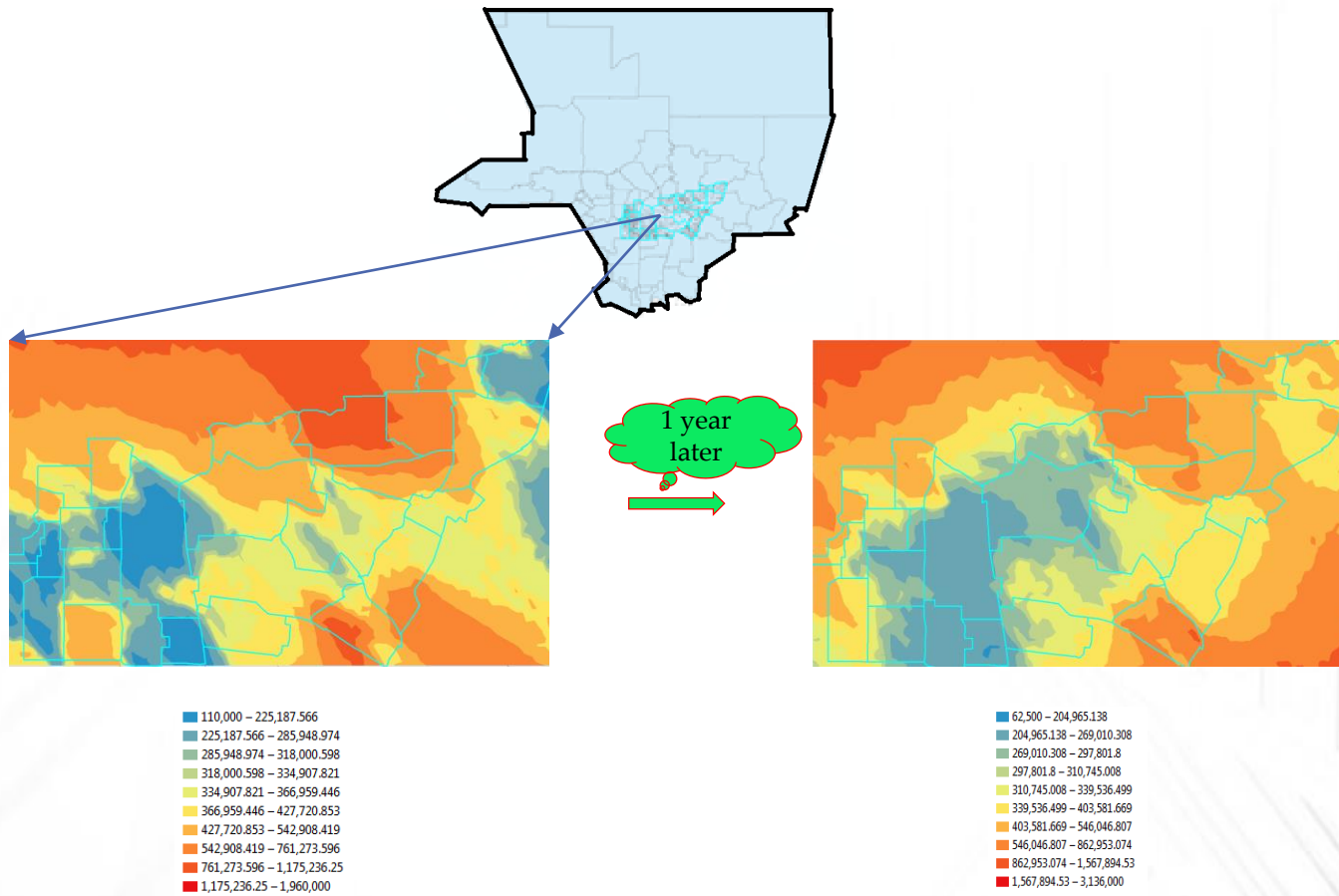
# The Foundation Of Our **GAMA** Models

- Statistical/Regression models
  - Hedonic pricing models (global)
  - GWR (local)
- Geostatistics database
  - Spatial
  - Spatio-temporal
- The primarily tool
  - Stochastic modeling

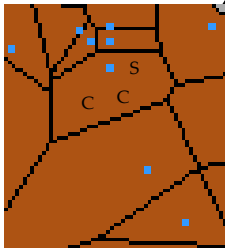
# GAMA for Decline-in-Value



# GAMA for Decline-in-Value (cont'd)

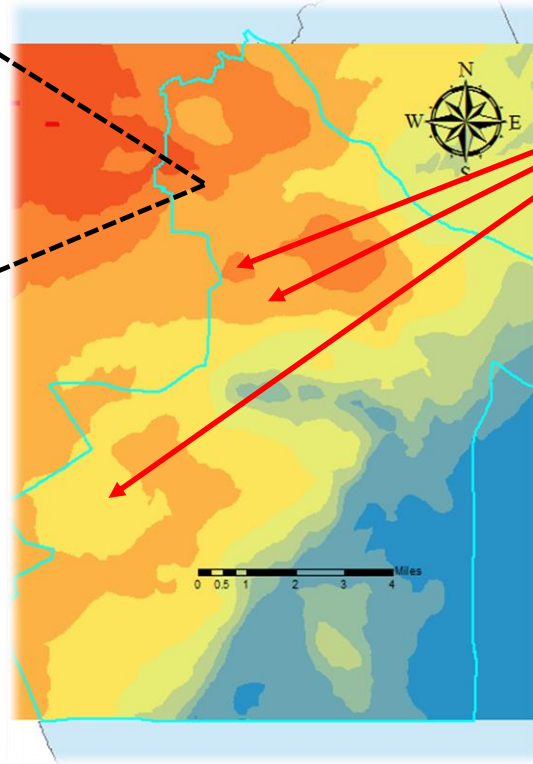


# GAMA for Valuation Restoration



Comparables selected within a Neighborhood

- S – Subject
- C – 2 Comparables

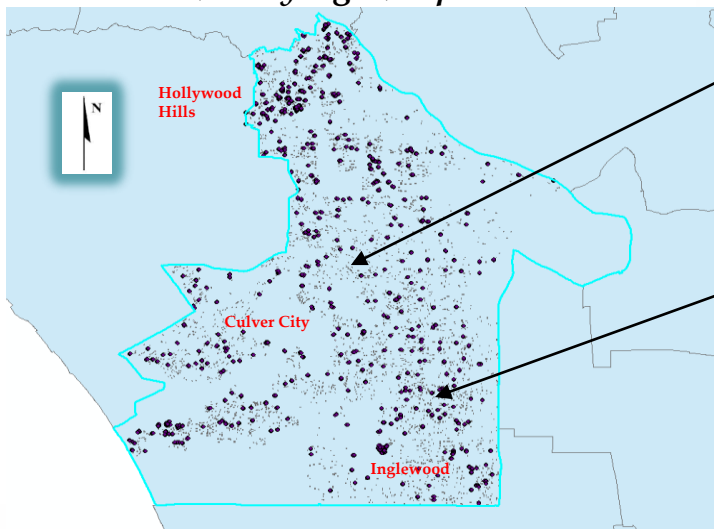


**Predicted Fair Market Value**

130,000 – 273,395.836
273,395.836 – 344,634.718
344,634.718 – 380,026.11
380,026.11 – 451,264.992
451,264.992 – 594,660.828
594,660.828 – 883,300.475
883,300.475 – 1,464,299.53
1,464,299.53 – 2,633,785.12
2,633,785.12 – 4,987,827.72
4,987,827.72 – 9,726,250

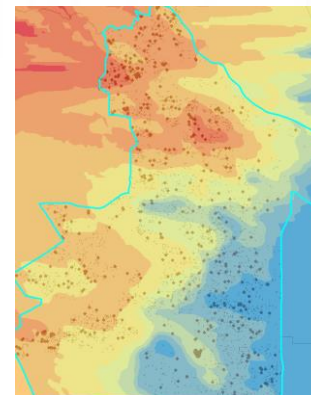
# GAMA for Assessment Appeals

Each dot (heavy/light) represents an AIN



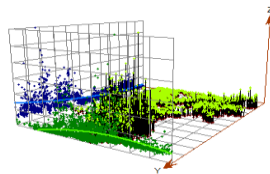
Actual sales (statistically-validated) light dots

AAB cases filed (heavy dots);  
*AAB value filed to be compared with GAMA Value*



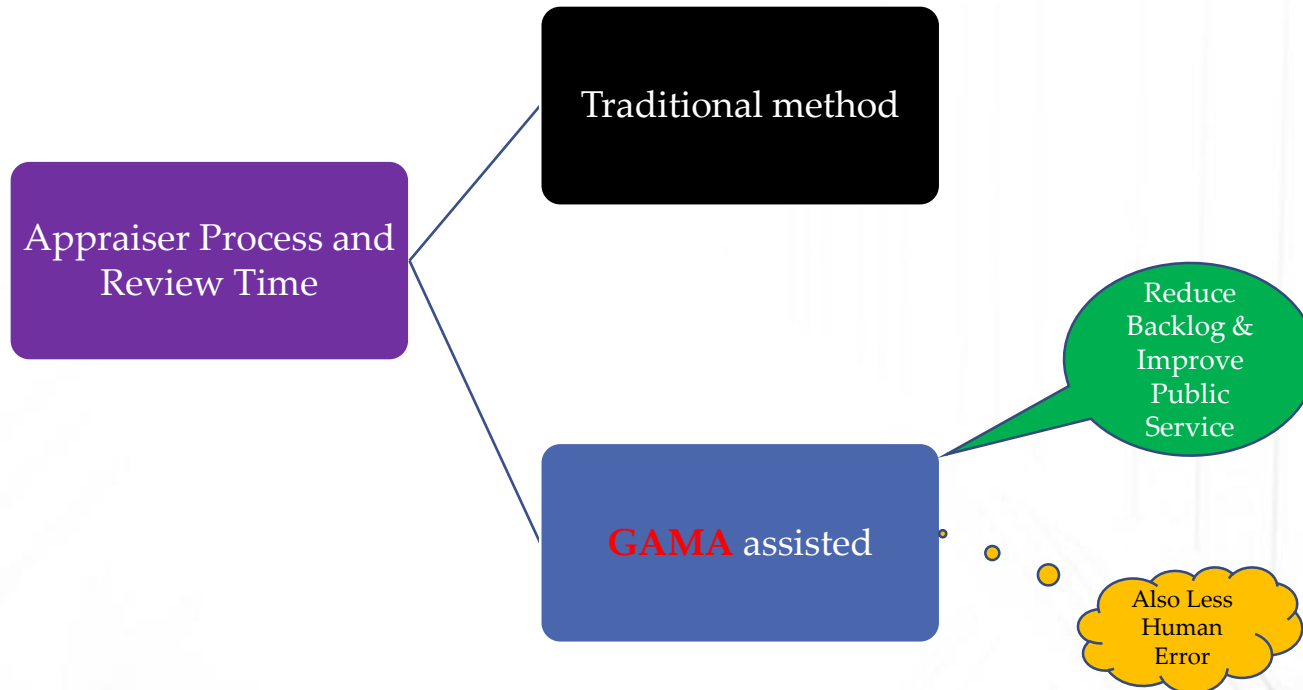
GAMA Fair Market Value (GFMV)

- 150,106 – 283,276.901
- 283,276.901 – 350,771.723
- 350,771.723 – 384,980.028
- 384,980.028 – 452,474.849
- 452,474.849 – 585,645.751
- 585,645.751 – 848,399.08
- 848,399.08 – 1,366,825.49
- 1,366,825.49 – 2,389,708.6
- 2,389,708.6 – 4,407,911.82
- 4,407,911.82 – 8,389,935



Market Trend Analysis

# Time Savings and Improved Quality may be realized on Assessment Appeals



## Summary, Conclusion and Recommendation

- The overriding purpose of the **GAMA** project is to develop a *purpose-specific* AVM for large assessment jurisdictions
  - Customized for LAC Assessor's Office
- The **GAMA** project is a market-based AVM
- The **GAMA** project has demonstrated potential cost-savings achievable for Assessment Appeal Cases
- The **GAMA** models may also be tailored for cyclic assessments, ratio-studies, budget forecasting, emergency management, ....



# Q&A



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## **Assessor Portal:**

- <http://portal.assessor.lacounty.gov>

## **Assessor Website:**

- <http://assessor.lacounty.gov>



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**Thank You!**