



GIS/VALUATION TECHNOLOGIES CONFERENCE

2026

March 30 - April 2, 2026 ■ Mobile, Alabama



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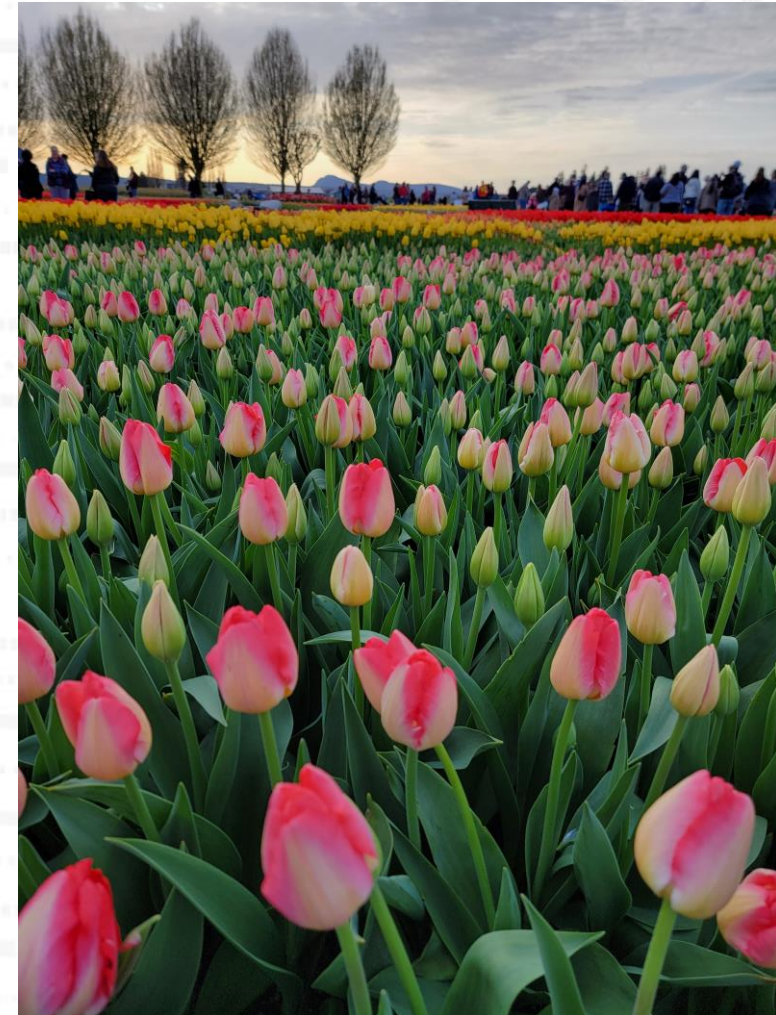
Vertical Equity – Skagit Style

*“Tools, Practices & Results
from Skagit County”*

Presented by:
Skagit County Assessor
Danny Hagen
IAAO Professional Member

Introduction of Skagit County

- Approximately 80,000 parcels
 - 72,000 residential to 8,000 commercial
- Population of 130,000
- Located directly between Seattle, WA and Vancouver, BC
- Agricultural hub
 - Tulip capital of the U.S.
- Puget Sound shoreline to the glaciers of the North Cascades



Why This Topic Matters

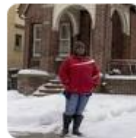
- Fairness across value tiers
- Public trust
- Litigation risk and policy scrutiny
- Media attention

B Bloomberg

How Unfair Property Taxes Keep Black Families From Gaining Wealth

Flawed assessments for America's \$500 billion in annual property taxes hit Black neighborhoods hardest.

Mar 9, 2021



& Raleigh News & Observer

Orange County taking another look at revaluation after group exposes racial disparity

One study found vertical regressivity affected property tax values for lower-income homeowners in over 80% of N.C. counties.

Jun 6, 2025



NYC Center for New York City Affairs

Mamdani Calls the Property Tax System 'Broken.' He's Right. Here's How It Might Be Repaired.

Urban Matters: James, early in his inaugural address, Mayor Zohran Mamdani pledged to fix 'a long-broken property tax system.'

1 month ago



B Brookings

How the property tax system harms Black homeowners and widens the racial wealth gap

Black homeowners face inequities in our tax code and housing industry, unfair tax burdens, and a biased appraisal system—all of which...

Aug 22, 2023

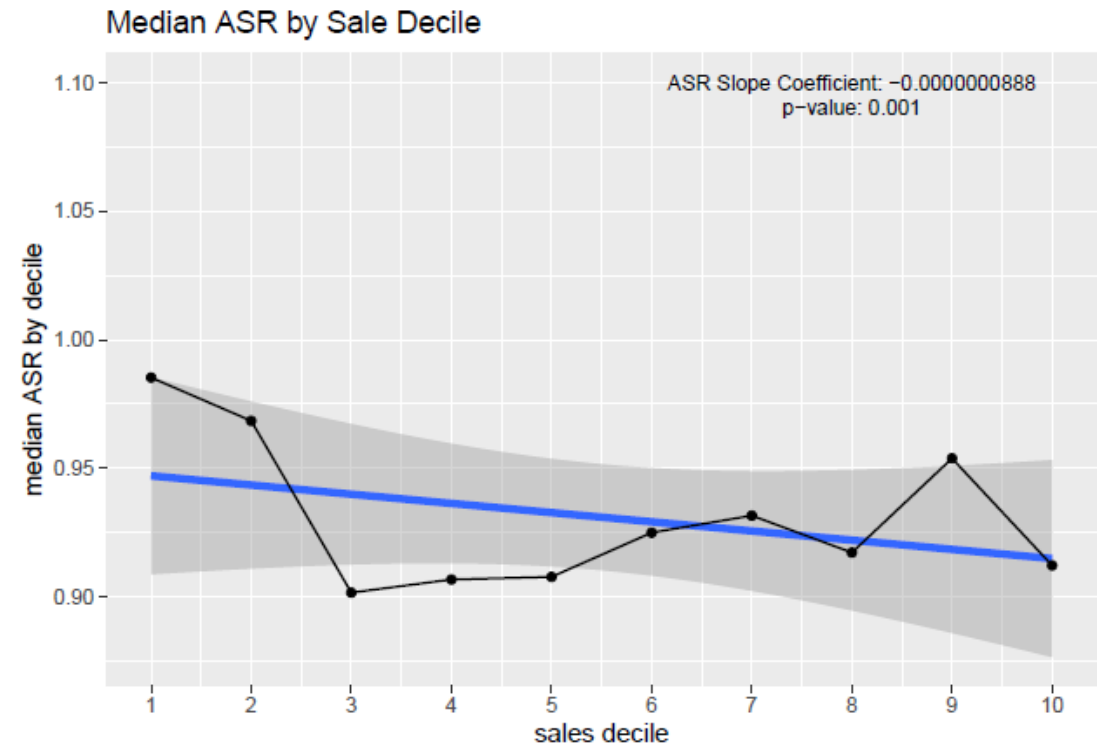


Two Axes of Equity

- Horizontal = Similar properties, similar ratios



- Vertical = Proportionality across value ranges



Horizontal Equity in Practice

Groupings Commonly Used to Test Horizontal Equity:

- Location (neighborhood, school district, plat)
- Physical Characteristics: living area, land size, outbuildings
- Structural Types: 1-story vs. 2-story, manufactured vs. site-built
- Quality Metrics: construction grade, actual vs. effective age, condition

Why it Matters:

- Validates that similar properties are treated consistently
- Key to building trust with property owners and defending values on appeal
- Provides the baseline before stratifying by value to assess **vertical equity**

Vertical Equity: Why It's a Complex Goal

- ◆ **Proportionality Is Conceptually Harder Than Uniformity**
 - Horizontal equity is intuitive: similar homes, similar assessments
 - Vertical equity requires assessing fairness **across value ranges**, not within them

- ◆ **Comparable Sales Lose Meaning at the Extremes**
 - At very high or low price points, **market behavior isn't linear**
 - The assumptions of mass appraisal—like consistent \$/sqft value—begin to break down

- ◆ **Standard Models Tend to Flatten**
 - Cost and sales comparison models can **compress values at the top and stretch at the bottom**
 - Without targeted analysis, regressivity hides in otherwise "balanced" systems

- ◆ **Inequity Is Easy to Miss Without Stratified Testing**
 - Aggregate metrics like median ratio or COD can look fine
 - Vertical issues only emerge when you **stratify by value tier or sale decile**

Challenges to Vertical Equity

Limited Sales Data at High Value Tiers

- *Fewer high-end sales reduce model reliability*
- *Luxury properties are more heterogeneous and harder to model*

Appeal System Effects

- *Higher-value properties often appeal more successfully*
- *Creates downward pressure on upper-tier values over time*

Resource Constraints

- *Staff shortages, training costs, and outdated tech limit capacity for deeper analysis*
- *Many offices lack tools for advanced ratio stratification or regressivity detection*

Challenges to Vertical Equity (cont'd)

Market Volatility & Lag

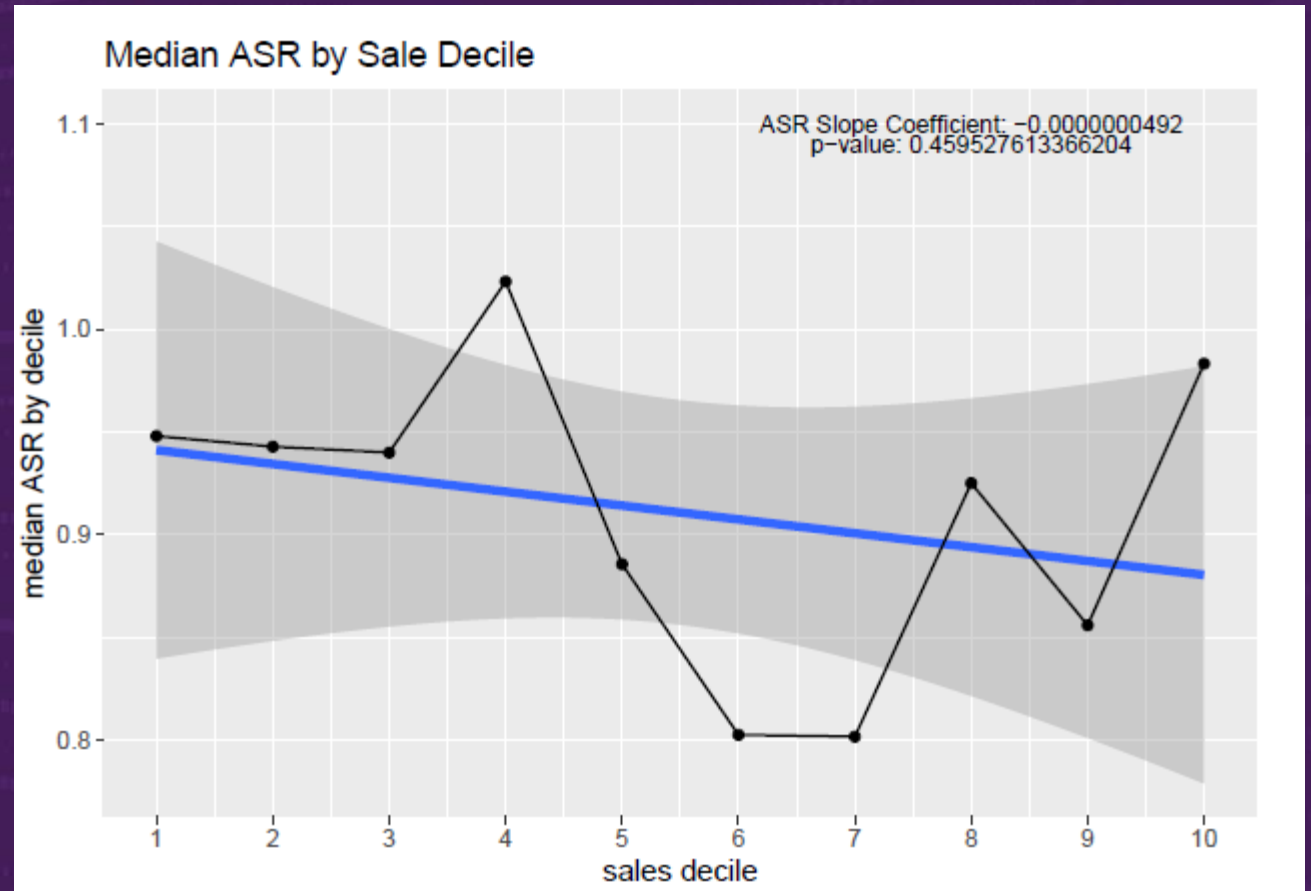
- *Rapid appreciation or depreciation affects ratio performance unevenly across value bands*
- *Lower-value areas may be over-assessed due to stale cost data or reactive revaluations*

Modeling Limitations

- *Fragmented land tables or over-generalized neighborhoods can distort ratios*
- *Uncalibrated cost tables may fail to reflect value curve flattening at high end*

When Vertical Equity Breaks Down

- Lower-value properties carry a higher effective tax burden
- High-value properties are systematically under-assessed
- Appeals can amplify imbalance
- Public trust erodes

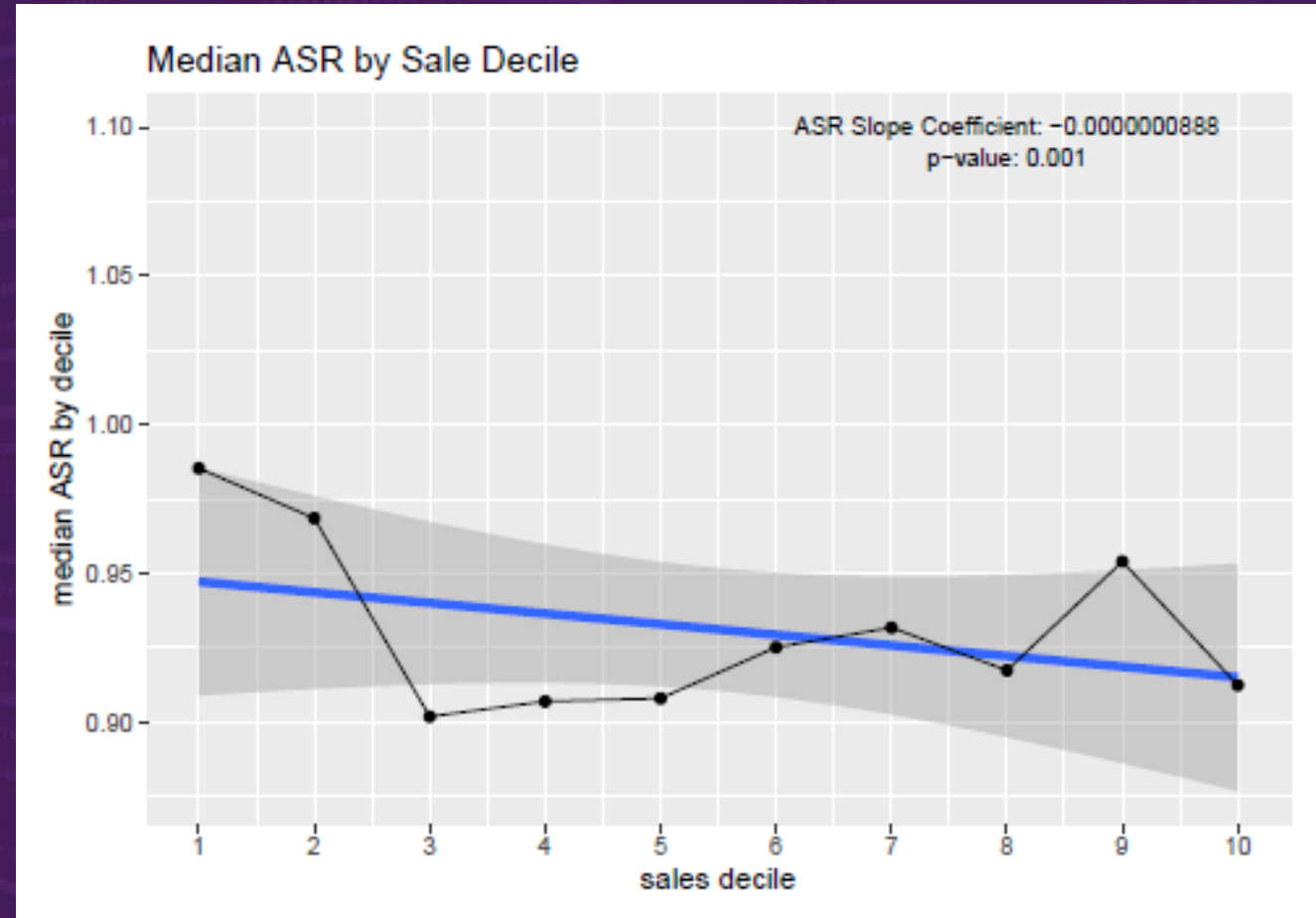


Core Metrics

Metric	Purpose	Acceptable Range	Pros	Cons
PRD (Price-Related Differential)	Detects overall regressivity or progressivity by comparing ratios for high- and low-value properties	0.98 – 1.03	<ul style="list-style-type: none"> ✓ Simple to calculate ✓ Widely recognized ✓ Built into most ratio tools 	<ul style="list-style-type: none"> ✗ Can mask trends when extremes cancel each other out ✗ Less sensitive to slope
PRB (Price-Related Bias)	Measures direction and slope of equity bias across the value range	-0.05 – 0.05	<ul style="list-style-type: none"> ✓ More sensitive to subtle bias ✓ Better for large datasets ✓ Identifies trend direction 	<ul style="list-style-type: none"> ✗ Less familiar to some audiences ✗ Requires regression analysis
COD (Coefficient of Dispersion)	Measures uniformity of assessments within a group	5.0 – 15.0 (Residential)	<ul style="list-style-type: none"> ✓ Strong indicator of internal consistency ✓ Essential for horizontal equity 	<ul style="list-style-type: none"> ✗ Doesn't directly assess vertical equity ✗ Sensitive to outliers

Ratio by Decile Visualization

- Most powerful visual diagnostic
- Easily communicated to stakeholders
- Reveals hidden slope
- Biggest issue is providing additional context



The Lincoln Institute's Vertical Equity App

- Developed by the **Lincoln Institute of Land Policy**
- Introduced at IAAO Annual Conference 2023
- Free, Excel-based tool for analyzing vertical equity using your own sales ratio data
- Provides statistical outputs like:
 - PRD, PRB, COD
 - Gini coefficient
 - Spearman's rank-order correlation
 - Ratio by sales decile
- Designed specifically for assessors and mass appraisal teams



Lincoln Institute of Land Policy Vertical Equity App

Introduction Data ASR COD PRD PRB Spearman

Gini Measures

Data

The app requires a comma or tab delimited file or Excel file as input. The first row of the file should contain the name of each column of data. Once the file is loaded, use the drop-down boxes below to identify the columns that contain the time adjusted sale price and assessed value.

While it is permissible to have additional columns of data in your file, a file that only contains the required sale and assessment data will improve the performance of the app.

Upload your assessment and sale data.

Browse... No file selected

Please select your time adjusted sale price

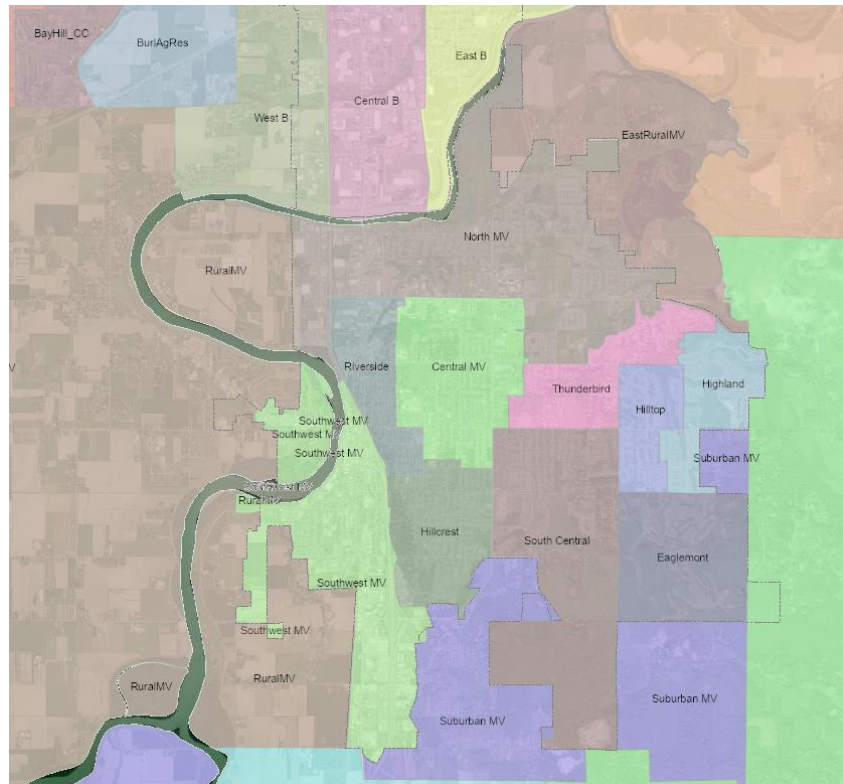
Please select your assessed value

Washington's statutory framework structurally supports vertical equity.

- Constitutional uniformity
 - RCW 84.40.030
“All property shall be valued at one hundred percent of its true and fair value in money...”
 - Washington Constitution, Article VII, Section 1
“All taxes shall be uniform upon the same class of property...”
- Regular revaluation cycles
 - RCW 84.41.030
Requires counties to conduct annual revaluation (with a physical inspection at least once every six years).
- Mandatory annual ratio studies
- Local administration
- State oversight
 - RCW 84.08.060
DOR must conduct ratio studies and may require corrective action if assessments are not at true and fair value.

What We Control Locally

- Market-aligned neighborhoods
- Standardized land tables
- Appraisal handbook
- Training beyond basics
- Data accuracy discipline



Sedro Woolley 2025 Data Sheet

Lot homesite adjustment chart		Acreage homesite adjustment chart	
.7 to 1 ac	120%	.7 to 1 ac	100%
.5 to .69	115%	.5 to .69	95%
.3 to .49	110%	.35 to .49	90%
.14 to .29	100%	.2 to .34	85%
.07 to .13	90%	.14 to .19	80%
under .07	80%	under .14	75%

Site Utility Adjustments

UTL-4	\$20,000 all types of connections
SWDEV	90% Bare lot development cost

Other standard Adjustments

Topo 1	80%	Topography impact
Topo 2	65%	Topography steep
Topo 3	50%	Topography extreme
PL	90%	Power Lines
Wet	50%	Critical area (undocumented)
HTA	95%	High traffic area
UD	70%	Undeveloped (lacking infrastructure)
CMI	95%	Commercial influence
RR	80-90%	<300' to home/300' to 400' to home
MGO	85%	Marijuana grow-op influence
LOC	85%	External obsolescence
PROAR	50%	Protected area (documented on survey)
BUFFR	75%	Buffer surrounding documented protected area

Neighborhood	Subset	Land Table	Description	Method	2025
20SWNTOWN, 20SWSTOWN, HWY9	52	SWL	Sedro Woolley city lot	Lot	\$159,000
20SWHWY9	258	H9RES	Highway 9 residential homesite	A	\$199,000
20SWNSKAGT	418	HAMLOT	Hamilton city lot	Lot	\$67,000
20SWNSKAGT	419	HAMRES	Hamilton residential homesite	A	\$126,000
10SWREC	120	JC1	Janicki Cove back lot	Lot	\$51,000
10SWREC	560	JC2	Janicki Cove	Lot	\$96,000
20SWBIGLK	281	NOOK	Nookachamps Hills lot	Lot	\$181,000
20SWBIGLK	627	NOOKVIEW	Nookachamps Hills view lot	Lot	\$210,000
20SWSSKAGT, 20SWNSKAGT	269	RIVRES	Riverfront homesite	A	\$284,000
10SWREC	204	SSREC	South Skagit riverfront recreation site	A	\$62,000
20SWSSKAGT	131	SSRES	South Skagit residential homesite	A	\$193,000
20SWSSKAGT	386	SSVIEW	South Skagit view homesite	A	\$230,000
HWY9,BACUS,MINKLR,NSKAGT	71	SWSRES	Sedro Woolley suburban homesite	A	\$174,000
HWY9,BACUS,MINKLR,NSKAGT	166	SWVIEW	Sedro Woolley view homesite	A	\$222,000
HWY9,BACUS,MINKLR,NSKAGT	454	SWGVIEW	Sedro Woolley good view homesite	A	\$267,000
HWY9,BACUS,MINKLR,NSKAGT	136	SWPVIEW	Sedro Woolley prime view homesite	A	\$342,000



2025 Results (and compared to 2022)

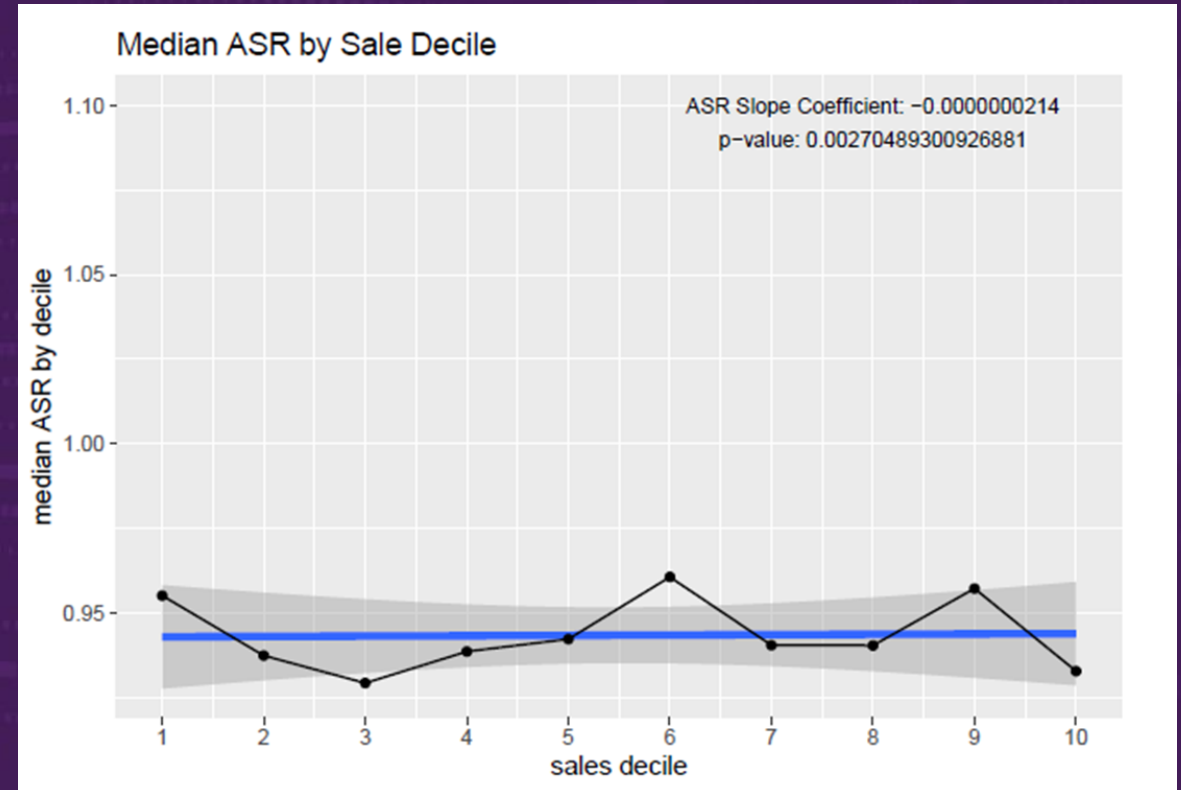
2025 Metrics:

- Median ratio: 94.3
- PRD: 1.007
- PRB: 0.002
- COD: 9.646

2022 Metrics:

- Median ratio: 92.9
- PRD: 1.014
- PRB: -0.007
- COD: 12.573

- Compliance is the floor, not the ceiling
- Small statistical shifts compound over time
- Equity improves through steady, disciplined adjustment
- Ongoing improvement is a permanent commitment



Equity Drives Operational Decisions

- **Refine cost tables**
- **Validate land modeling**
- **Guidance for sales analysis**
- **Revaluation assignments**
- **Monitor appeal drift**
- **Support public transparency**
- **Working with legislators**

Achieving Vertical Equity in Property Assessments

Ensuring fairness in property taxation remains a cornerstone of our mission at the Skagit County Assessor's Office. Vertical equity, the principle that properties of all value ranges are assessed fairly and proportionally—continues to guide our work to maintain public trust and accuracy in assessment.

We are proud to share the **2025 Skagit County Vertical Equity Report**, which reaffirms our commitment to equitable assessments across diverse property types and markets. Conducted using the **Lincoln Institute of Land Policy's Vertical Equity App**, this analysis demonstrates that Skagit County continues to lead the way in consistent, data-driven valuation.

Key Highlights from the 2025 Report:

- **Median Assessment-to-Sale Ratios (ASR):** 0.943, showing exceptional consistency across all sales deciles.
- **Price-Related Differential (PRD):** 1.007, within the IAAO-recommended range, confirming equity between lower- and higher-valued properties.
- **Coefficient of Price-Related Bias (PRB):** 0.002, indicating no systemic bias by price level.

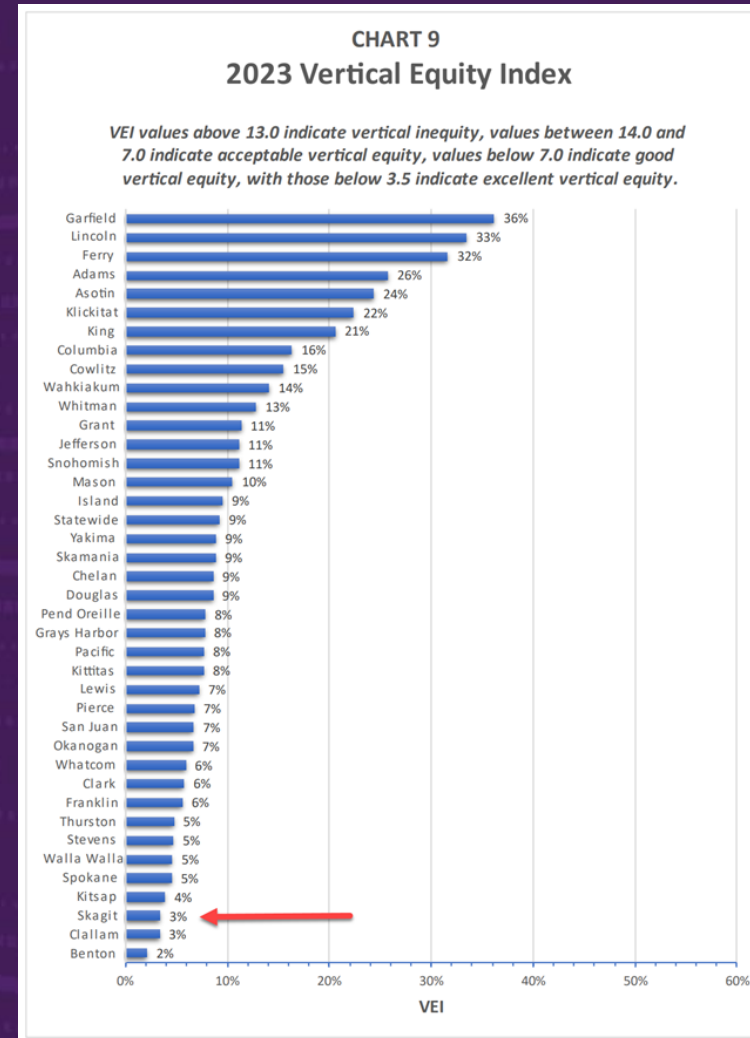
We invite you to explore the full report and learn more about how Skagit County continues to set the standard for fairness and equity in property assessments.

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 [View the 2025 Skagit County Vertical Equity Report](#)

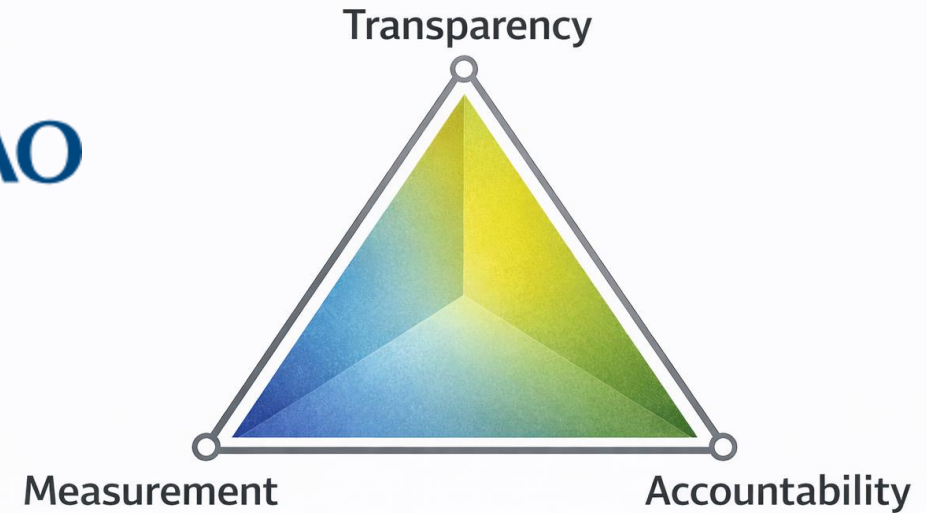
State Level Validation

- WA DOR Vertical Equity Index
- Skagit among lowest bias scores
- Third-party confirmation



Why Third-Party Validation Matters

- Public Trust
- Policy defense
- Internal accountability
- Prevents complacency



What Can You Do Tomorrow

- Clean data first
- Stratify by value
- Analyze slope, not just median
- Document and standardize
- Share tools across counties
- Lincoln Institute of Land Policy Vertical Equity app



Closing

"Good government is not measured by intentions but by outcomes."
– Milton Friedman

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**MILWAUKEE,
WISCONSIN**

GIS-Pro 2026

*October 12-15,
2026*





INSIGHT MEETS OPPORTUNITY
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Please take the Session Survey

“Vertical Equity – Skagit Style”

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