

AASHTOWare Project Estimation

Bid-Based Pricing Methodology

Estimation Implementation Schedule

- Phase 1 - complete
- Phase 2 – In Progress
 - Parametric (Typical Sections) estimating for planning through scoping estimates
 - Additional Estimation features included in this presentation
 - Feedback requested

Advantages of Estimation

- Cost Estimate Configurations (Phase 1)
- Reference-Based Pricing (Phase 1)
- Enhanced Bid-Based Pricing (Phase 1)
- Estimate Snapshots (Phase 1)
- Parametric Estimating Tools (Phase 2)
- Pricing Parameters – Cost Index (Phase 3)

Cost Estimate Configurations

- Multiple Cost Estimates
 - Maintain Cost Estimates for all design alternates
- Cost Estimate Templates
 - Allows agency to preconfigure standardized Cost Estimates
 - Categories
 - Cost Estimate Items
 - Non-construction costs
 - Contingency

Parametric Estimating

- Typical Sections
 - Pay item representation of a typical section in a set of plans
 - Utilizes variables and equations to generate quantities of pay items
 - Generally defined by functional work on a project
 - Reconstruction, Roundabout, Etc.
 - Can transition to Cost Estimate Items
- Parametric Items
 - Early estimating pay item used to represent groups of work
 - Traffic Control
 - Signing and Striping
 - Represent early estimates using SF, SY, or Lane Mile costs
 - Can transition to Cost Estimate Items

Reference-based Pricing

- Percentage based or defined amount for Lump Sum items
- Defined amount used for measured quantity items
- Can be preconfigured on Reference Items

Enhanced Bid-Based Pricing

- Expands available pricing parameters
- Utilize multiple Bid History Profiles
- Pricing adjustments using Price vs Quantity Graph

Pricing Parameters - Attributes

- Parameters based on past Project Attributes

- Highway Type
- Improvement Type
- Work Type
- Terrain
- Urban/Rural

▼ Variables to include in analysis	
Highway Type ☐	Terrain ☐
Improvement Type ☐	Urban/Rural ☐
Market Area ☒	Work Type ☒
Season ☒	
▶ Averages	
▼ Regressions	
Generate Regressions ☒	Percent of Regression Model Outliers to exclude * 10.00
Minimum Number of Observations * 20	Level of Improvement to add * 0.20
Exclude models that are out of range compared to the average ☒	Exclude regression with positive quantity coefficients ☒

Pricing Parameters – Cost Index (Phase 3)

- Cost Index Adjustment

- $\text{Current Index/Past Index} = \text{Multiplier}$
- $\text{Multiplier} \times \text{Historical Price} = \text{Indexed Price}$

Start Date ▼	Item Classification ▼	Market Area ▼	Region ▼	Cost Index Value ▼
06/01/2022 		Begin typing to search or pres	Begin typing to search or pres	2.79
03/01/2022 		Begin typing to search or pres	Begin typing to search or pres	2.56
01/01/2022 		Begin typing to search or pres	Begin typing to search or pres	2.28
09/01/2021 		Begin typing to search or pres	Begin typing to search or pres	2.18
06/01/2021 		Begin typing to search or pres	Begin typing to search or pres	2.11
03/01/2021 		Begin typing to search or pres	Begin typing to search or pres	2.04
01/01/2021 		Begin typing to search or pres	Begin typing to search or pres	1.91
09/01/2020 		Begin typing to search or pres	Begin typing to search or pres	1.86
06/01/2020 		Begin typing to search or pres	Begin typing to search or pres	1.89

Pricing Parameters – Item Grouping

Item Group Summary

▼ Item Group: Asph_Grade A - asphalt grading a

General

Detail Items

Item Group Set

Asphalt

Item Group *

Asph_Grade A

Spec Book *

12

Unit System *

English

Common Unit of Measure *

TON - Ton

Lump Sum

☐

Created from Reference Item

No

Obsolete Date

mm/dd/yyyy

Item Group Set Description

Grouping for similar asphalt items

Item Group Description

asphalt grading a

Item Classification

Item Type

Contract Classification

Detail Items

6

Pricing Parameters – Item Grouping

Item Group Summary

▼ Item Group: Asph_Grade A - asphalt grading a

General

Detail Items

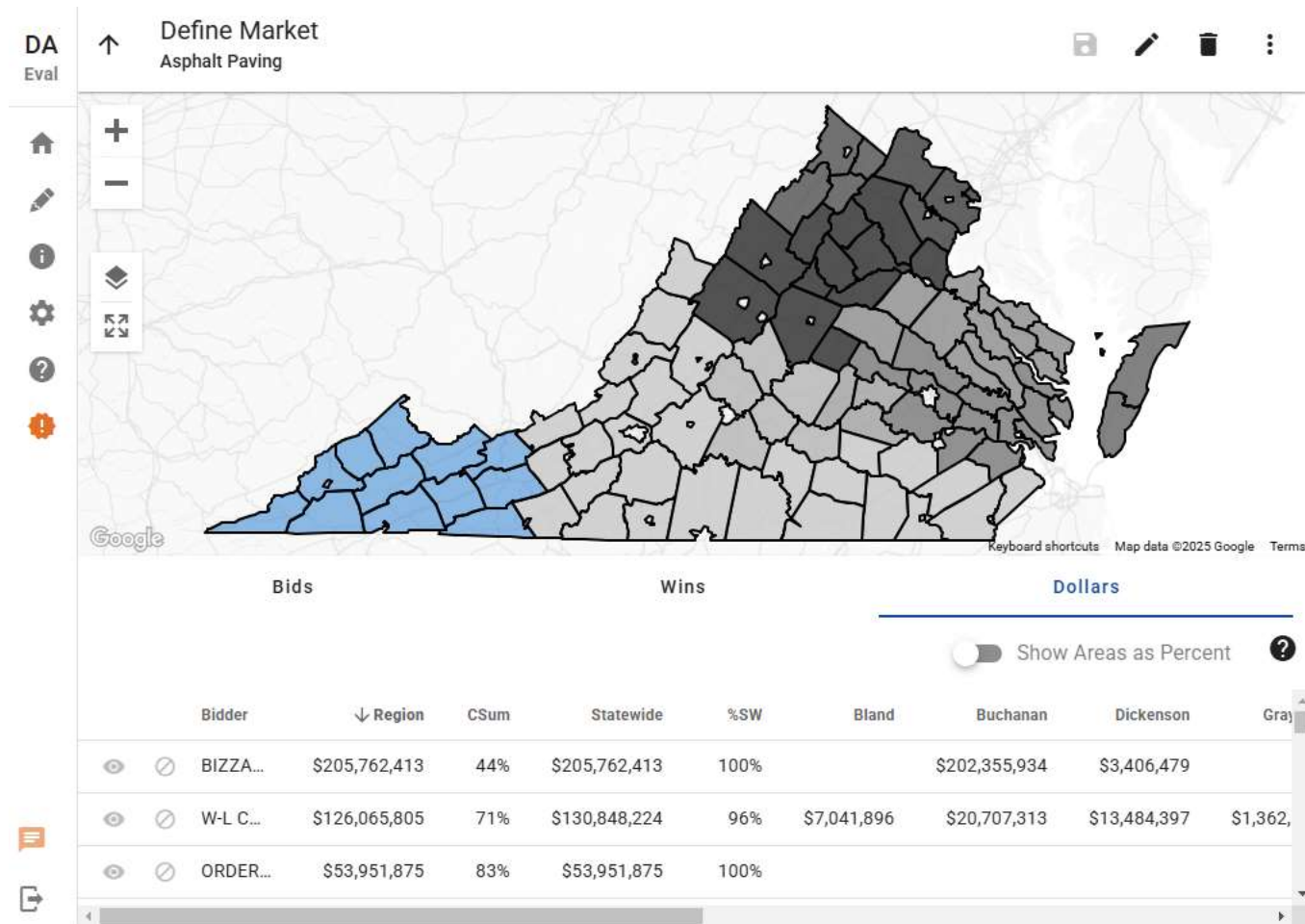
New ▼

Item * ▼	Unit	Conversion * ▼
5010037 HMA, 2E03	Ton - Tons	1.0000000 Σ
5010034 HMA, 36A	Ton - Tons	1.0000000 Σ
5010030 HMA, 2C	Ton - Tons	1.0000000 Σ
5010031 HMA, 3C	Ton - Tons	1.0000000 Σ
5010032 HMA, 4C	Ton - Tons	1.0000000 Σ
5010033 HMA, 13A	Ton - Tons	1.0000000 Σ

Pricing Parameters - Market Areas

Market areas are defined by
project type

Assigned individually by Bid History
Profile



Bid History Profile Assignment

- Multiple Bid History Profiles can be used
 - Assigned at the Cost Estimate level
 - Assigned at the Cost Estimate Item level
- Bid History Profile assignment to Reference Items
 - Profile is inherited by the Cost Estimate Item

Automatic Pricing Adjustments

- Pricing adjustments are made automatically
 - Only if variable is set on Bid History Profile
 - Only if variable improves regression fit

Task Price

51.48585

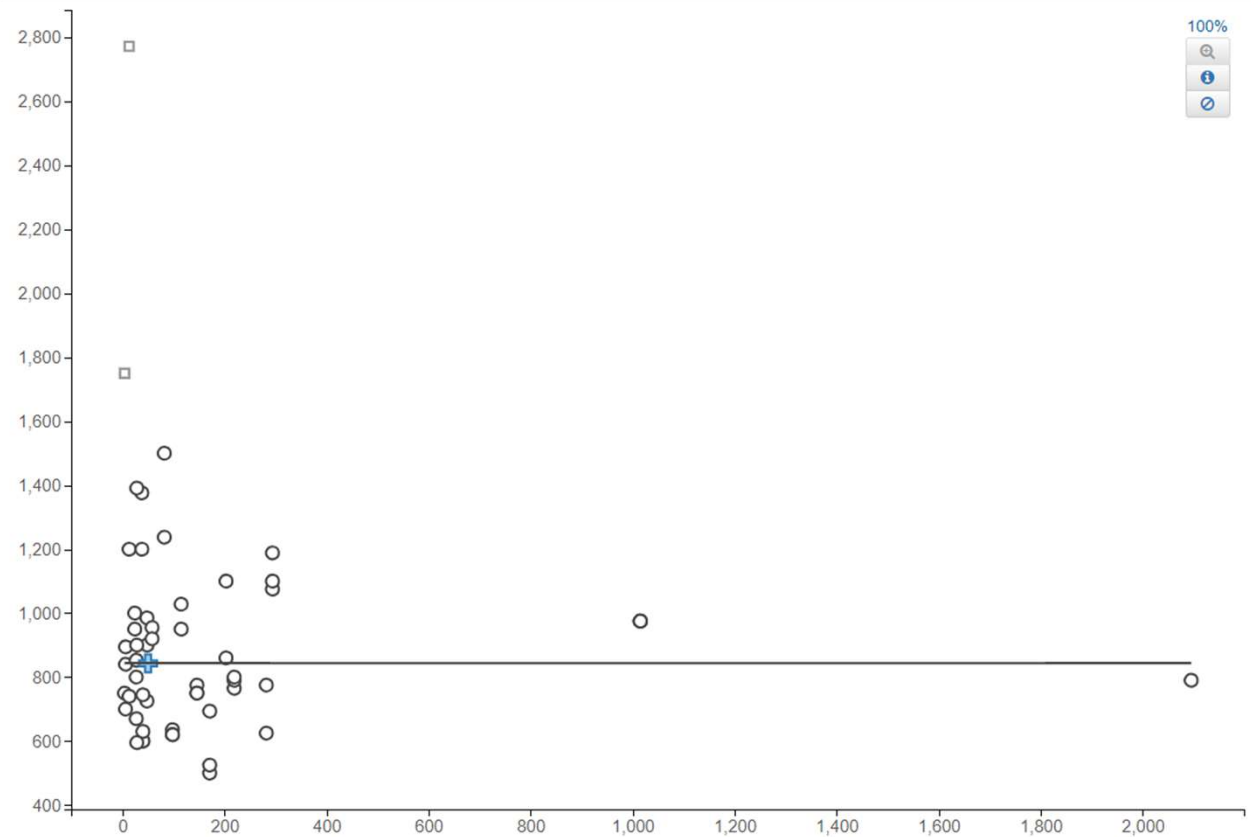
Task Comment

Regression price based on quantity, market area, and work type.

Price vs Quantity Graph

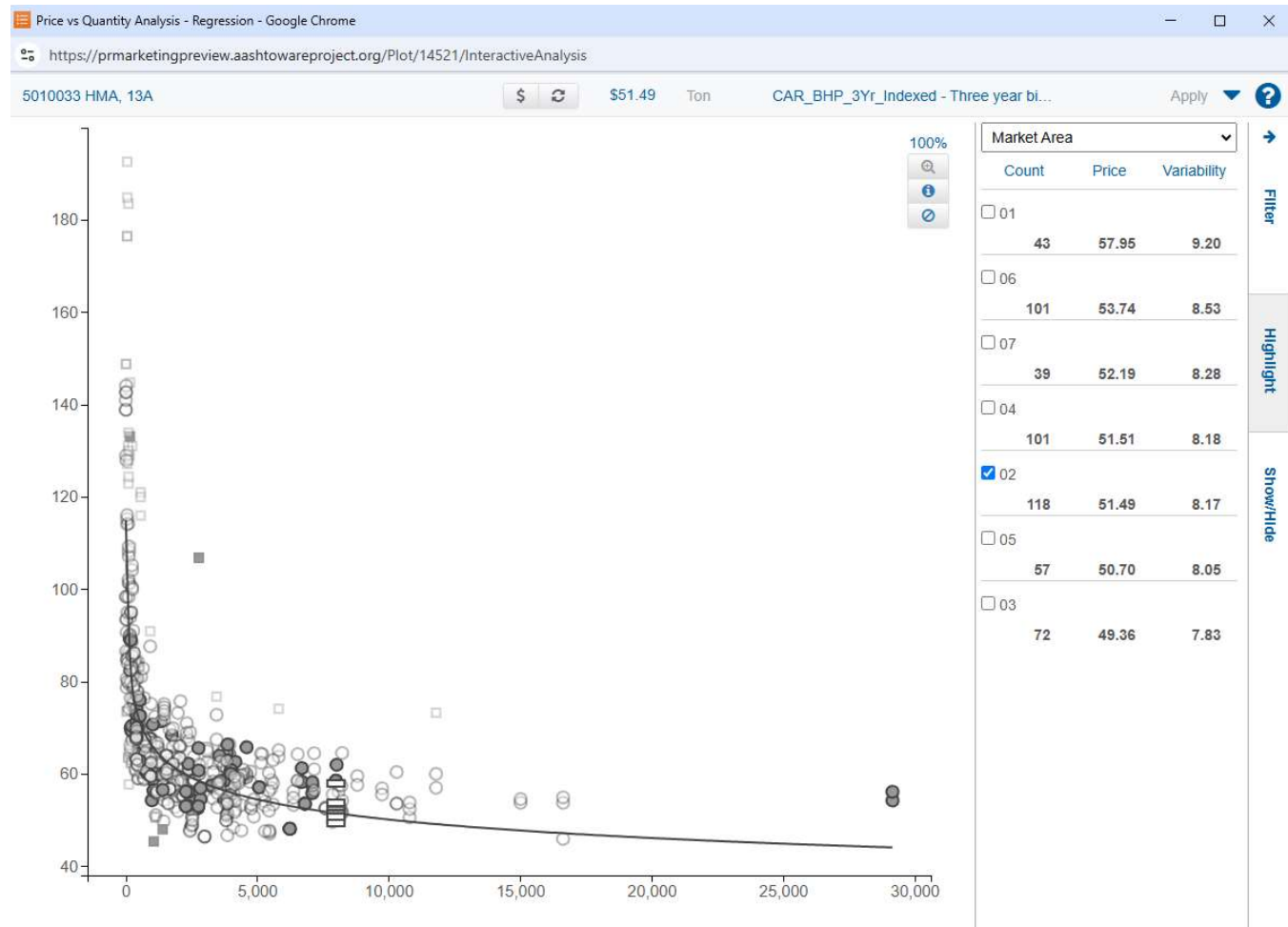
Average vs Regression Pricing

- Average or Regression pricing determined by best fit
- Example shown has sufficient data for Regression curve
- Average delivers best fit in this example

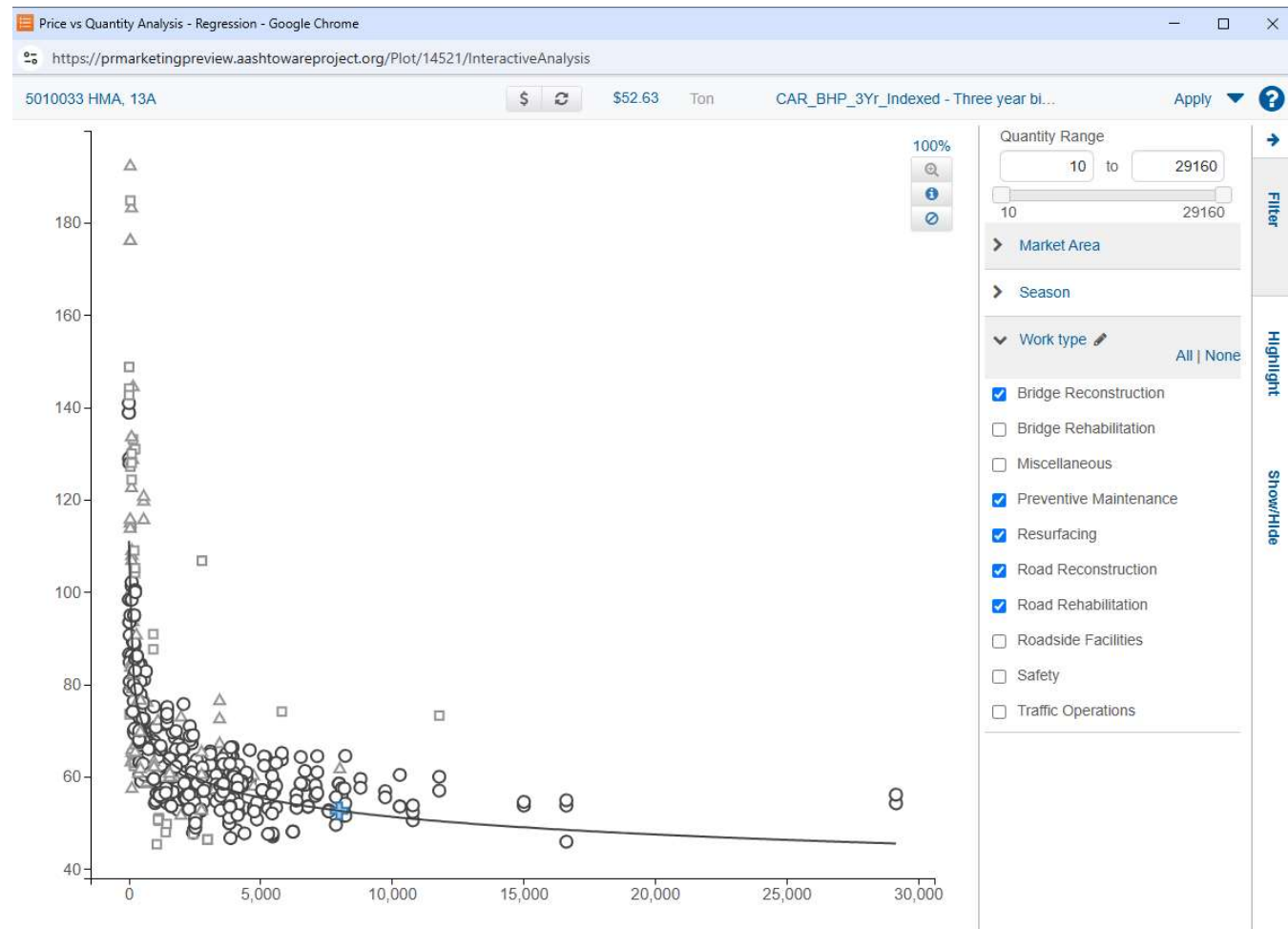


Highlight Data Points

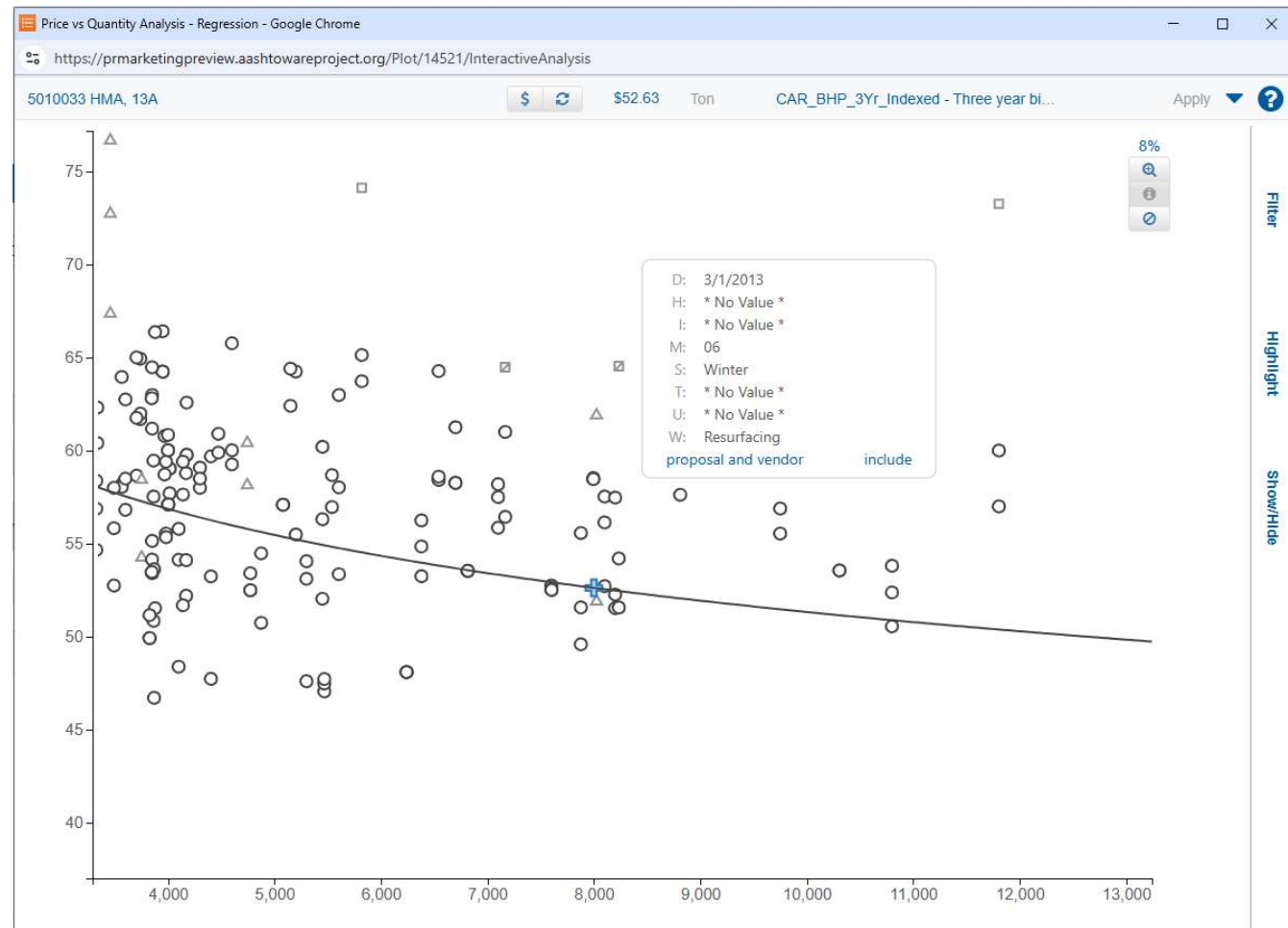
- Pricing Adjustments for Market Area represented by rectangles



Attribute Filters



Include/Exclude Datapoints & Identify Points

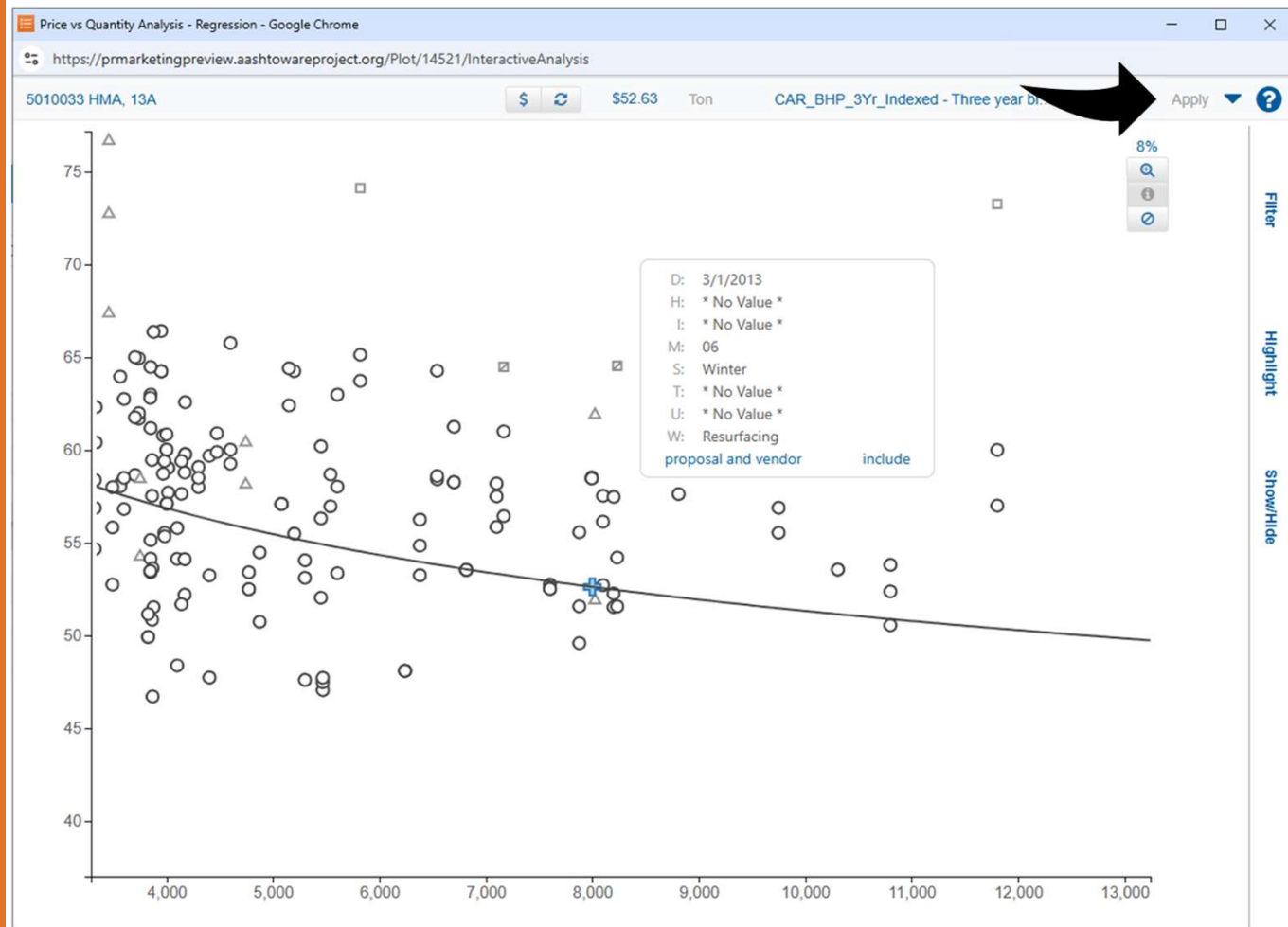


Save Pricing Updates

Changes in Price vs Quantity Graph can be saved

Filter settings and
Include/Exclude selections

Updated bid history respects
previous selections when re-
pricing items



Live Demo

Questions?

