



Asphalt Estimating and Asphalt Mix Overview

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Estimating for purpose

Variances based on roles:

- Contractor – bidding, cost of work, profit
- District Estimate / Districts – measurement to identify and set the budget.
- Evaluative Estimate / Engineer's Estimate – assess the value and worth, identify the market value, validate the bids.

We will review the DE and EE process for Asphalt Pay Items on Schedule and Construction projects.

The Secret Ingredient:



Engineer's Estimate for Schedule Projects

- Engineer's Estimate includes at least 65% of the District Estimate.
- All asphalt Pay Items are included. Generally, this is more than 70% of the cost of the project.
- Any other Pay Items with potential risk factor.
- Two independent Estimates, done by the Estimator and Supervisor.



Advantages and Disadvantages: EE vs DE

- Time of the estimate - EE
 - Performed a week before the Letting.
 - More recent data availability.
- Familiarity with the project – DE
- Time spent on estimating – DE
 - Due to the specific deadlines on the delivery of paving program, there is a limited time available to perform the EEs.
- Completeness of the Estimate – DE (not all pay items for EE)

Estimating Asphalt Pay Items: EE and DE

- Starts Day 1 – Once the project is Initiated
- Understanding of the scope, specifics of the project, any additional details and restrictions.
- Historical bid data.
- Market conditions – size of the program, contractor availability
- Geographical location of the project.
- Proximity of Asphalt Plants.
- Daily potential asphalt production rate, number of mobilizations.

Estimating Asphalt Pay Items: EE and DE

- Consistency in Asphalt Mix Types used on the project.
- Number of potential bidders.
 - Historical number of bidders in this area.
 - Plan Holders List.
 - GIS map.
- Sequence of the operations.

Specifics of the project: Additional Requirements and Restrictions.

- Types of the roads – road system: Interstate, Primary, Secondary.
- Project Specifications
- All restrictions – Limitation of Operation Hours, Specific completion dates. **Ads cost.**
- Mix Types and number of mixes used. Where those mixes are used (Mainline, Shoulder, Ramps etc.).
- Incentive / Disincentive Rideability requirements, potential density or standard deviation bonuses.

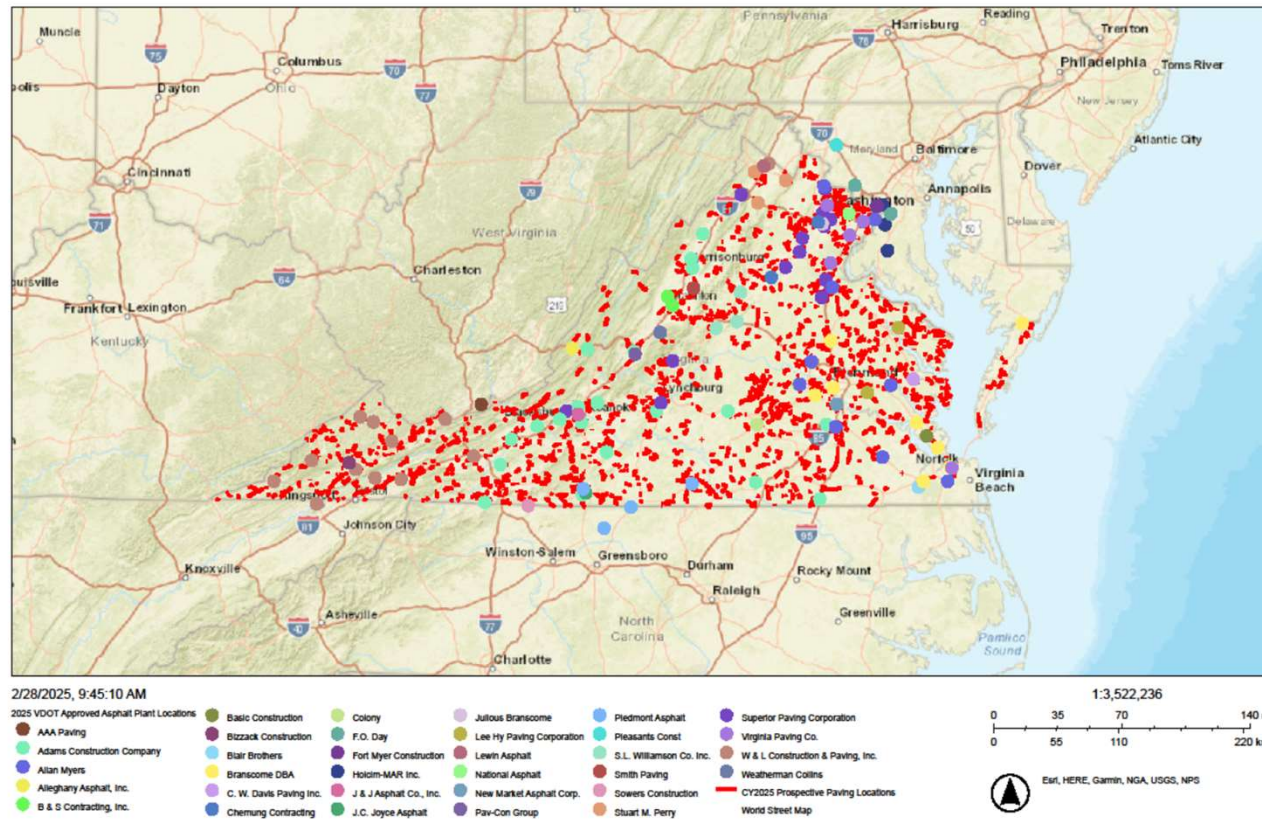
Historical Bid Data. Statewide Bid Tab Query.

Very useful for asphalt pay items. Scale / filter as close to the specifics of your project as possible, quantity, type of the road system, district / county etc. **This is the program we use.**

The screenshot displays the 'Statewide Bid Tab Query' web application. The header includes the VDOT logo, the text 'Virginia Department of Transportation', and a link 'Here's how you know'. A secondary header shows 'Find a Commonwealth Resource'. The main title bar reads 'VDOT | Statewide Bid Tab Query' and 'Bid Data Updated Through: 01/22/2025'. The interface is divided into two columns of search criteria. The left column includes fields for 'Item Code', 'District', 'City/Town/County', 'Quantity between', 'Contract let between', 'Apply Inflation', 'Order Number', 'Contract totals between', 'Highway System', 'Custom Additions', and 'Exclude High & Low Bids from Stats'. The right column includes 'Search Criteria' (set to AND), 'Unit Of Measure', 'Vendor Number/Name', 'Item Description', 'Category', 'Bid Year' (set to Current (Prev. 36 mos.) x), 'Contract ID', 'Contract Description', 'Interstate/Route', and 'Only Past 24 months'. At the bottom, there are 'Submit', 'Clear', and 'Show Query Criteria' buttons, and a copyright notice: '© Copyright 2025, Virginia Department of Transportation. All rights reserved.'

GIS Map: Asphalt Plant Location / Project Location

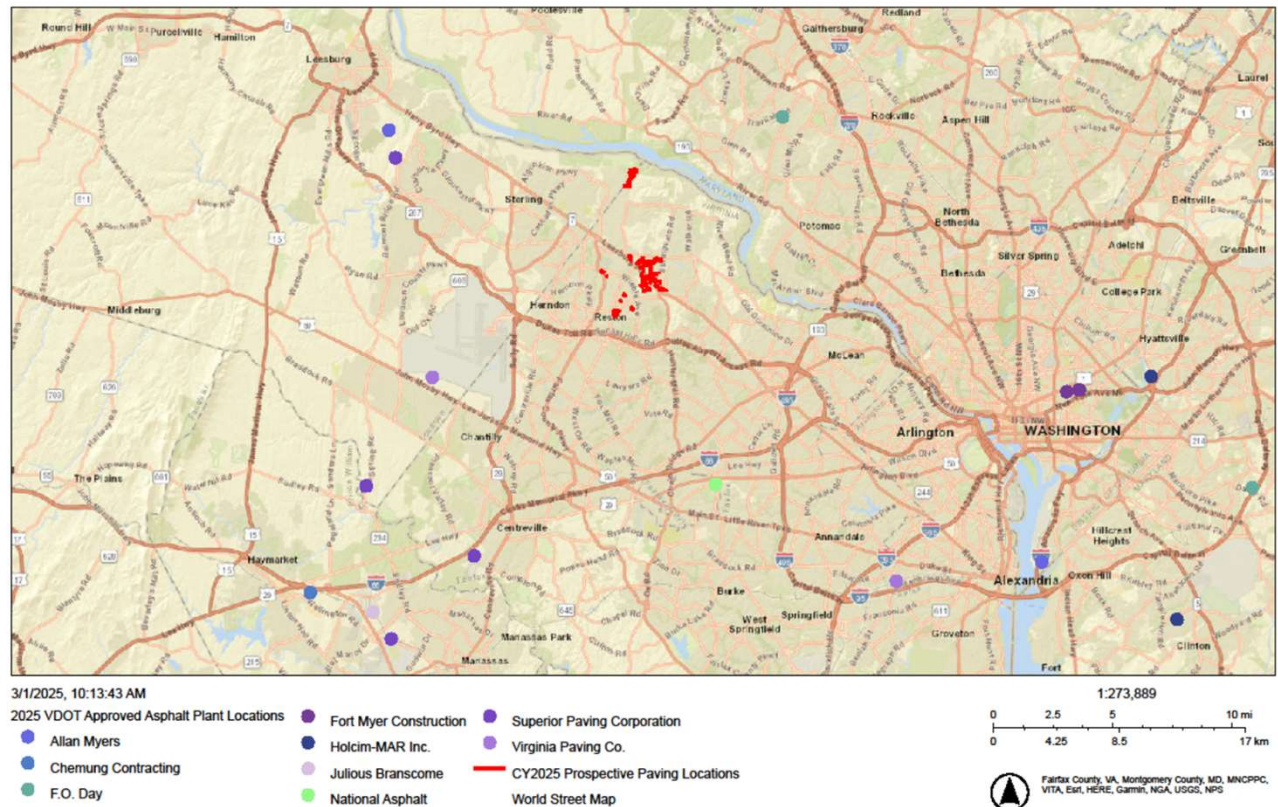
Asphalt Plant Locations / 2025 Paving Program



GIS Map: Asphalt Plant Location / Project Location

- Limited Mobilization
- Longer Lane Closure Hours.
- Multiple nearby Asphalt Plants
- Multiple Bidders
- High daily production rate (800Tons – above)

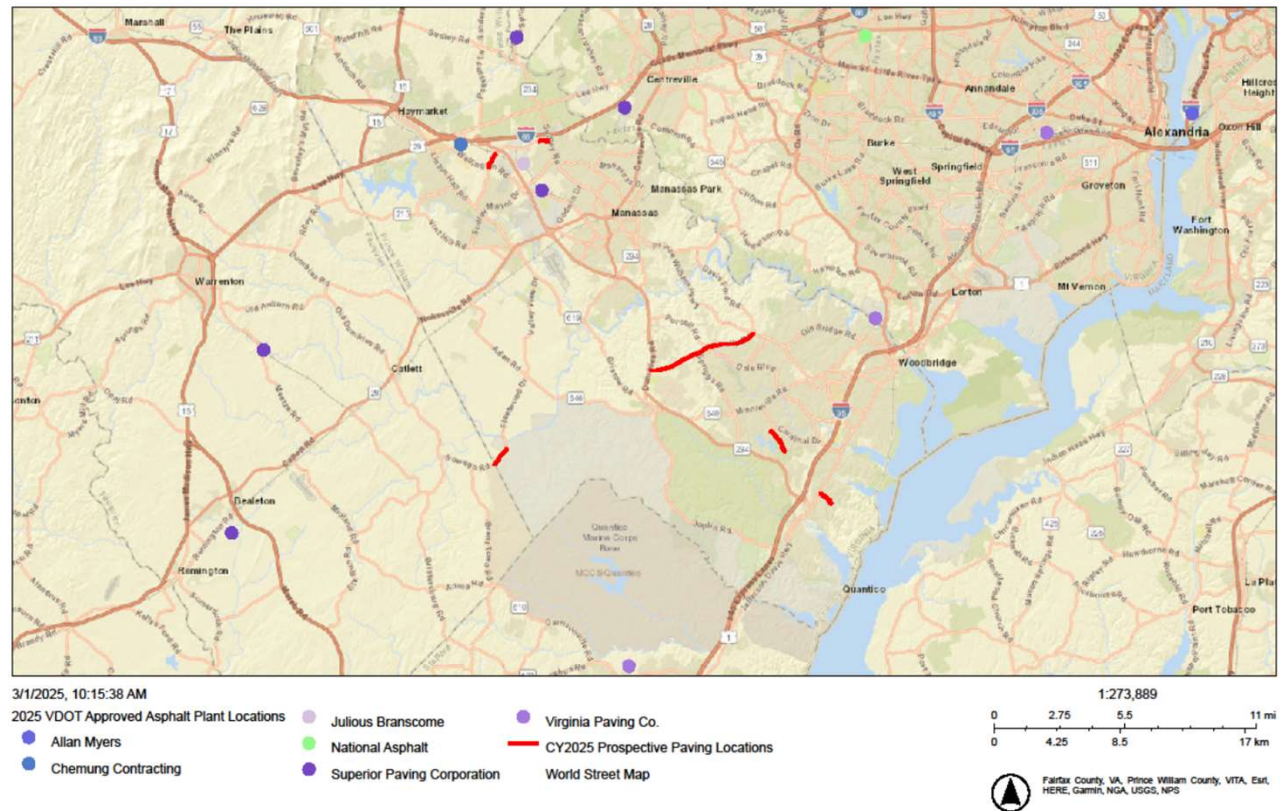
Asphalt Plant Locations / PM9V



GIS Map: Asphalt Plant Location / Project Location

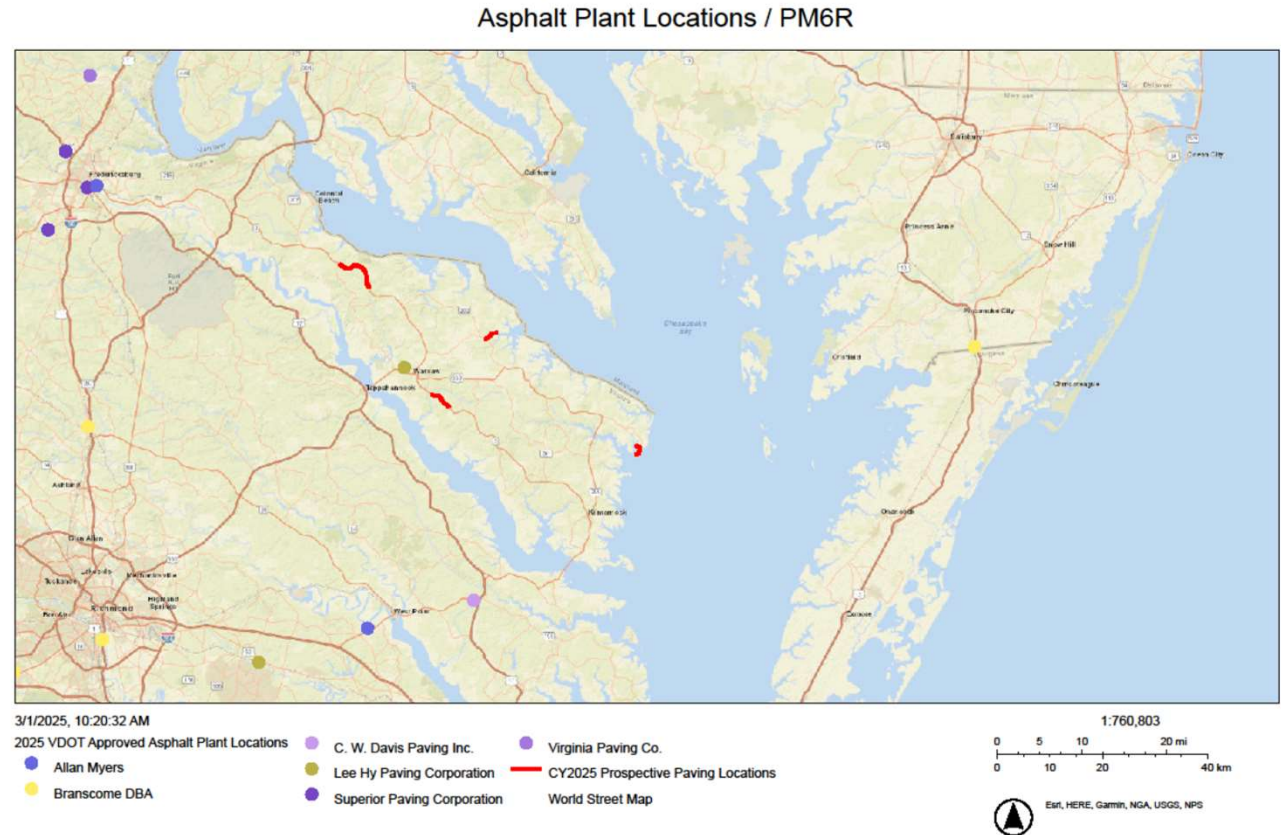
- Multiple Mobilizations
- Restricted Lane closure hours
- Multiple Asphalt Plants nearby
- Multiple Bidders
- Average-Low daily production rate (500-800Tons, Below 500 Tons)

Asphalt Plant Locations / PM9Q



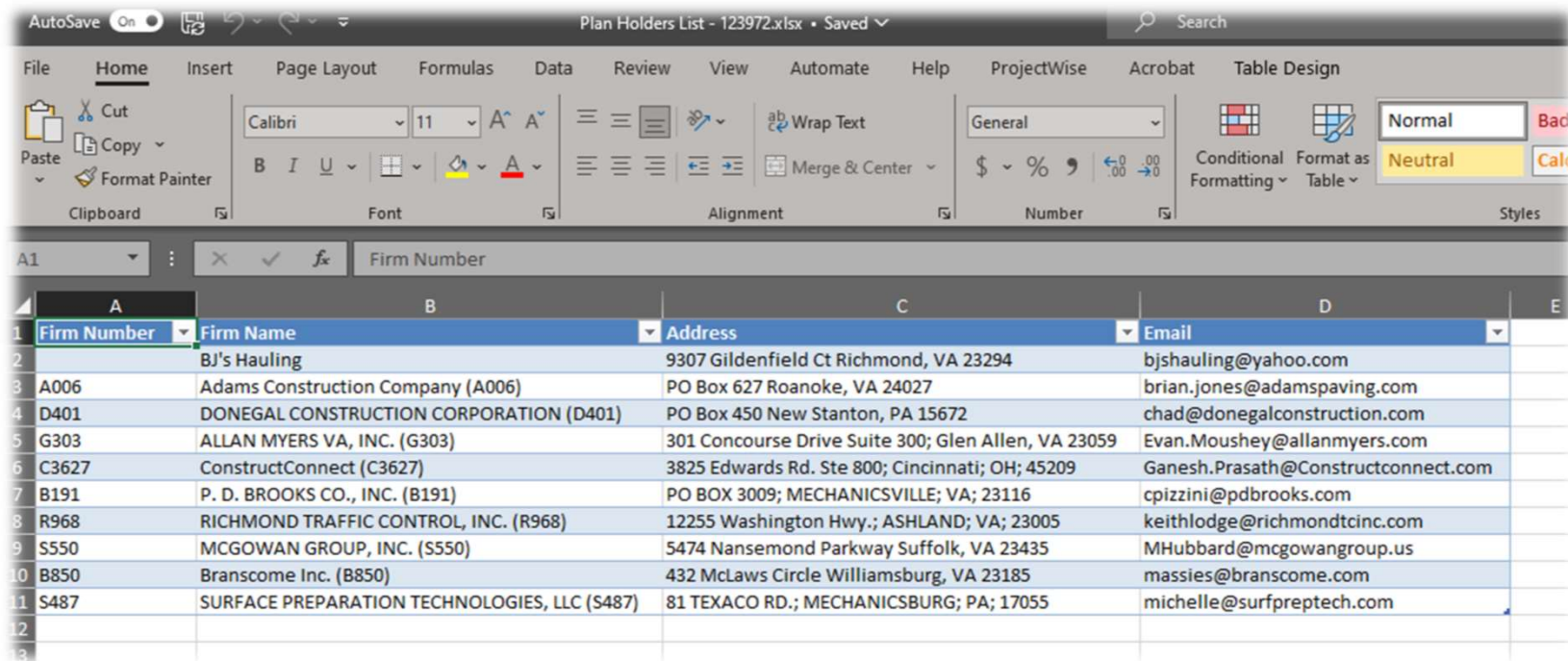
GIS Map: Asphalt Plant Location / Project Location

- Multiple Mobilizations
- Average Lane closure hours
- Minimum Asphalt Plants nearby
- High Risk, Single Bidder project
- Average - Low daily production rate



Plan Holders List: EE

Good indicator of the potential number of bidders.



Firm Number	Firm Name	Address	Email
	BJ's Hauling	9307 Gildenfield Ct Richmond, VA 23294	bjshauling@yahoo.com
A006	Adams Construction Company (A006)	PO Box 627 Roanoke, VA 24027	brian.jones@adamspaving.com
D401	DONEGAL CONSTRUCTION CORPORATION (D401)	PO Box 450 New Stanton, PA 15672	chad@donegalconstruction.com
G303	ALLAN MYERS VA, INC. (G303)	301 Concourse Drive Suite 300; Glen Allen, VA 23059	Evan.Moushey@allanmyers.com
C3627	ConstructConnect (C3627)	3825 Edwards Rd. Ste 800; Cincinnati, OH; 45209	Ganesh.Prasath@Constructconnect.com
B191	P. D. BROOKS CO., INC. (B191)	PO BOX 3009; MECHANICSVILLE; VA; 23116	cpizzini@pdbrooks.com
R968	RICHMOND TRAFFIC CONTROL, INC. (R968)	12255 Washington Hwy.; ASHLAND; VA; 23005	keithlodge@richmondtrcinc.com
S550	MCGOWAN GROUP, INC. (S550)	5474 Nansemond Parkway Suffolk, VA 23435	MHubbard@mcgowangroup.us
B850	Branscome Inc. (B850)	432 McLaws Circle Williamsburg, VA 23185	massies@branscome.com
S487	SURFACE PREPARATION TECHNOLOGIES, LLC (S487)	81 TEXACO RD.; MECHANICSBURG; PA; 17055	michelle@surfpreptech.com

Most used Pay Items and Mixes for Schedule Projects

Surface:

Secondary – SM-9.5A/D; SM-9.0A

Primary – SM-9.5D; SM-12.5A/D; rarely SM-12.5E or SMA

Interstate – SM-12.5E or SMA

Intermediate:

IM-19.0A/D; rarely IM-19.0E (Interstate projects)

Base:

BM-25.0 (one base mix concept)

Balanced Mix Design:

BMD CONCEPT: currently only four mixes:

Since 2024 all schedule projects use BMD for SM-9.5A/D and SM-12.5A/D. The Department is looking into adding more mixes, such as E and Intermediate.

Estimating new pay items: BMD

- Example: In 2024 the department made a complete switch to BMD concept for SM-9.5A/D and SM-12.5A/D mixes.
- Only available data was from few pilot projects and Change Orders.
- What is the purpose of this implementation?
- Decision was made to consider data of both BMD and Conventional mixes and target the lowest of the two.

Sequence: Patching on Plant Mix vs Latex / Slurry projects

Using the average will result in underestimate on LM/SS projects and overestimate on PM projects. Same will be for Trenching etc.

Item Code

15342 | 323SD20-0041

District

NOVa (9)

City/Town/County

Fairfax

Quantity between

1000

&

3000

Contract let between

9/30/2023

&

2/1/2024

Apply Inflation

☐

Order Number

Contract totals between

\$

&

\$

Highway System

Select Highway System

Custom Additions

Select Custom Additions

Exclude High & Low Bids from Stats

☐

Search Criteria

AND

Unit Of Measure

Select Unit Of Measure

Vendor Number/Name

Item Description

Category

Select Category

Bid Year

Current (Prev. 36 mos.)

Contract ID

Contract Description

Interstate/Route

Only Past 24 months

☐

Query filters are cascaded to show results for item code: 15342 and New Item Code: 323SD20-0041

Submit

Clear

Show Query Criteria

Configure Grid

Export

A total of 7 records were found!

Price Statistics

Average Unit Price=\$103.71 & Weighted Average Unit Price=\$99.31 & Median Bid=\$90.00

For Linear Regression: Unit Cost(\$)= 386.27 + Quantity * -0.172187

For Non-Linear Regression: Unit Cost(\$)= N/A + N/A/Quantity

Standard Deviation: \$49.03, (90% CI Range: \$23.06-\$184.36)

Quantity Range: 1,338 to 1,868 TON

If only data points within the 90% confidence interval (\$23.06 to \$184.36) are used, the resulting stats are: Average Unit Price=\$88.00 & Weighted Average Unit Price=\$86.30 which includes 6 of the original 7 data points.

For Linear Regression: Unit Cost(\$)= 384.42 + Quantity * -0.09364

Contact Information

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