

Percent Mobilization by Work Type

2011 -2015



The following tables summarize the mobilization according to work type based on 5 years of data from January 2011 to December 2015. Tables for all work types are in the following pages. Definitions for the statistics provided in the tables are listed in the appendix.

The tables below include all projects of varying sizes for each work type. Quartile values do vary depending upon the amount spent for the project. Small and large projects typically will have higher mobilization costs than mid-size projects.

The [Historical Mobilization Calculator](#) excel document allows sorting of all 5 years of data by a number of criteria including region, month, year, and total bid price. The excel document is available via a link directly below this document on the Estimating Guidance website.

All Work Types

Type:	2011 -2015	2011	2012	2013	2014	2015
Sample Size	1350	292	288	254	247	269
1 st Quartile	2.7%	2.1%	2.2%	2.5%	3.7%	3.6%
Median	5.2%	4.3%	4.8%	4.8%	6.1%	6.7%
3 rd Quartile	8.3%	7.1%	8.0%	7.9%	9.5%	9.8%
High Outlier Bound	22.1%	19.2%	22.3%	21.2%	23.3%	25.2%
Trimean	5.3%	4.5%	5.0%	5.0%	6.4%	6.7%

Gen/Gena

Type:	2011 -2015	2011	2012	2013	2014	2015
Sample Size	426	78	96	81	80	91
1 st Quartile	2.6%	1.6%	2.6%	2.8%	3.8%	2.8%
Median	4.8%	3.5%	4.6%	4.4%	5.7%	5.9%
3 rd Quartile	8.4%	6.5%	8.9%	7.4%	9.2%	9.2%
High Outlier Bound	22.1%	18.1%	23.6%	18.3%	22.0%	25.2%
Trimean	5.2%	3.8%	5.2%	4.7%	6.1%	6.0%

Earthwork

Type:	2011 -2015	2011	2012	2013	2014	2015
Sample Size	83	22	16	22	12	11
1 st Quartile	2.5%	2.5%	1.9%	2.4%	3.3%	4.8%
Median	4.7%	3.4%	3.5%	5.1%	6.0%	6.7%
3 rd Quartile	7.2%	5.2%	5.0%	6.6%	8.5%	9.4%
High Outlier Bound	18.8%	11.5%	12.9%	17.9%	21.4%	20.4%
Trimean	4.8%	3.6%	3.5%	4.8%	5.9%	6.9%

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Concrete Paving

Type:	2011 -2015	2011	2012	2013	2014	2015
Sample Size	92	26	20	16	10	20
1 st Quartile	2.0%	1.4%	2.0%	2.3%	2.9%	3.0%
Median	3.8%	3.8%	3.5%	4.2%	3.4%	4.6%
3 rd Quartile	6.6%	4.5%	5.3%	6.0%	8.3%	9.2%
High Outlier Bound	17.6%	13.1%	13.4%	15.3%	19.6%	23.1%
Trimean	4.1%	3.4%	3.5%	4.2%	4.5%	5.4%

Asphalt Paving

Type:	2011 -2015	2011	2012	2013	2014	2015
Sample Size	306	77	69	68	52	40
1 st Quartile	1.3%	1.3%	1.2%	1.2%	2.9%	1.8%
Median	3.0%	2.6%	2.1%	2.6%	3.8%	3.2%
3 rd Quartile	5.3%	5.3%	4.6%	4.8%	6.0%	6.2%
High Outlier Bound	14.9%	14.6%	12.4%	13.3%	13.2%	16.3%
Trimean	3.2%	2.9%	2.5%	2.8%	4.1%	3.6%

Structures

Type:	2011 -2015	2011	2012	2013	2014	2015
Sample Size	361	84	72	55	69	81
1 st Quartile	5.6%	5.0%	6.0%	5.7%	6.7%	6.1%
Median	7.8%	6.7%	7.5%	7.9%	8.3%	8.7%
3 rd Quartile	9.9%	8.8%	9.3%	10.6%	10.9%	10.6%
High Outlier Bound	20.8%	18.0%	17.3%	22.4%	21.0%	22.1%
Trimean	7.8%	6.8%	7.6%	8.0%	8.5%	8.5%



Appendix

Sample Size: Number of projects used to calculate the median.

Median (Q2): Middle value; 50% of the values in the sample size are above this value and 50% are below this value.

1st Quartile (Q1): 25% of the values in the sample are less than this value.

3rd Quartile (Q3): 75% of the values in the sample are less than this value.

Interquartile Range (IQR): Difference between the 1st and 3rd quartile.

High Outlier Bound: $(3 * IQR + Q2)$; Commonly used method for identifying strong outliers.

Median Without Outliers: Median of the sample without the values determined to be strong outliers (values greater than the high outlier bound).

Trimean: $\frac{Q1+Q2*2+Q3}{4}$; Combines the median's focus on center with the extremes.

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Work Type Letter Codes

The letter codes listed in parenthesis symbolize the work type and are assigned by the plan checkers at the Bureau of Project Development. They are assigned according to a formula based on the quantity of items in the project from each work type. For example, if a majority of the items are asphalt items, the project will be assigned a D work type code. A combined work type code is used when another work type makes up a significant portion of the project. For example, a primarily asphalt job with a significant amount of general construction items would be labeled AD. The definitions for each letter are listed below.

- A General Construction
- B Grading
- C Portland Cement Concrete Pavement
- D Asphaltic Surfacing
- F Highway Structures
- G Railroad Road and Bridge
- H Bridge Painting
- I Street and Airport Lighting
- J Building Construction
- K Incidental Construction

Work Type Grouping

Data analysis showed that there was little difference in mobilization between B (Grading) and AB (General Construction and Grading). Since there was a limited sample size for B (Grading) alone, B and AB were grouped together in the table. This was also true for the Concrete, Asphalt, and Bridge Painting work types. However, the F (Structures) work type and K (Incidental) work type showed a significant difference when combined with A (General Construction); therefore, these were kept in separate tables.