

Three Year Engineering Factors

Overhead Costs per Total Construction Costs

Report Key:

Projects are group by Work Type 1, and then work types are used to group projects into categories:

qry01MakeKey 11/18/2015

| Category | Work Type |
|---------------|---------------------------|
| MAJOR PROJECT | A- ADD LANES |
| MAJOR PROJECT | D- DUAL DIVIDED |
| MAJOR PROJECT | F- FREEWAY |
| MAJOR PROJECT | I- INTERCHANGE |
| MAJOR PROJECT | M- MAJOR BRIDGE |
| MAJOR PROJECT | T- NEW OR IMPROVED 2 LANE |
| TCOS | 1- ITS |
| TCOS | B- BRIDGE REPLACEMENT |
| TCOS | G- PREV MAINT-BRIDGE |
| TCOS | H- HIGH TYPE RESURFACING |
| TCOS | J- PREV MAINT-PAVEMENT |
| TCOS | K- MED TYPE RESURFACING |
| TCOS | L- LOW TYPE RESURFACING |
| TCOS | O- OTHER |
| TCOS | P- PAVEMENT REPLACEMENT |
| TCOS | Q- CMAQ |
| TCOS | R- BRIDGE REHABILITATION |
| TCOS | S- BRDG RETROFIT AND STR |
| TCOS | X- SAFETY |
| TCOS | Y- ROUTINE MAINTENANCE |
| OTHER | E- ENHANCEMENTS |
| OTHER | W- SHOULDER WIDENING |

Note: With this year's report, all projects are in the seven, reorganized districts. The group of "various" districts has been removed.

Calculations:

Projects completed in the time frame are tabulated and categorized by primary work type and district. Excludes payment projects, right of way only projects, and other projects without actual construction costs.

Within each line item, all projects are totaled and then converted to percentages, based on the actual construction amount (actual CN). Not based on the actual total amount (actual Total). Thus, estimated construction costs for a project can be used with factors in this report to estimate overhead costs, which add up to total costs.

$$PE\% = (\text{actual PE}) / (\text{actual CN})$$

$$CE\% = (\text{actual CE}) / (\text{actual CN})$$

$$RW \text{ acquisition} = (\text{actual land})$$

$$RW \text{ incidentals} = (\text{total actual RW}) - (\text{actual land})$$

$$RWp\% = (\text{actual land}) / (\text{actual CN})$$

$$RWi\% = (RW \text{ incidentals}) / (\text{actual CN})$$

$$\text{Total Engineering} =$$

$$((\text{actual PE}) + (\text{actual CE}) + (RW \text{ incidentals}))$$

$$\text{-----}$$

$$(\text{actual CN})$$

Note: Only the first work type is used. For instance, many projects include shoulder widening, but few projects have shoulder widening as their first work type.

If a district has no completed projects of the work type, in the time frame, then the line item is removed from their table.

Highlighted values:

n < 20 Each line item has an 'n' value indicating the number of projects included in the line. If the number of projects is low, then any unusual project can have a large effect on the results. Thus, lower 'n' values are highlighted and validity of the data should be confirmed.

0% In some line items, none of the projects will include a type of engineering expense. For instance, Routine Maintenance normally does not include Right of Way Acquisition. The calculated rate will then be 0%, and these values have been highlighted.

Three Year Average Engineering Factors Engineering Costs per Total Construction Costs

7/1/2012 - 6/30/2015
Statewide Totals

Statewide

| Work Types | Preliminary Engineering | Construction Inspection | Right of Way Incidentals | Total Engineering | Right of Way Acquisition | n= |
|----------------------------------|-------------------------|-------------------------|--------------------------|-------------------|--------------------------|-------|
| 1- ITS | 1.85% | 18.28% | 0.31% | 20.43% | 0.21% | 3 |
| A- ADD LANES | 6.09% | 2.31% | 0.48% | 8.88% | 7.65% | 27 |
| B- BRIDGE REPLACEMENT | 12.01% | 9.36% | 0.19% | 21.56% | 0.35% | 60 |
| D- DUAL DIVIDED | 9.67% | 6.72% | 1.09% | 17.48% | 19.27% | 20 |
| E- ENHANCEMENTS | 5.22% | 9.92% | 0.09% | 15.22% | 0.45% | 25 |
| F- FREEWAY | 11.96% | 5.24% | 1.36% | 18.56% | 32.26% | 18 |
| G- PREV MAINT-BRIDGE | 2.75% | 6.56% | 0.00% | 9.32% | 0.00% | 29 |
| H- HIGH TYPE RESURFACING | 1.25% | 5.49% | 0.00% | 6.74% | 0.00% | 77 |
| I- INTERCHANGE | 6.23% | 7.10% | 0.17% | 13.51% | 2.86% | 33 |
| J- PREV MAINT-PAVEMENT | 2.56% | 7.06% | 0.08% | 9.71% | 0.12% | 146 |
| K- MED TYPE RESURFACING | 1.07% | 5.53% | 0.01% | 6.60% | 0.01% | 199 |
| L- LOW TYPE RESURFACING | 0.75% | 5.43% | 0.02% | 6.20% | 0.01% | 173 |
| M- MAJOR BRIDGE | 15.74% | 1.20% | 1.53% | 18.46% | 8.03% | 4 |
| O- OTHER | 7.09% | 7.87% | 0.32% | 15.28% | 3.99% | 99 |
| P- PAVEMENT REPLACEMENT | 2.38% | 6.87% | 0.22% | 9.47% | 0.25% | 18 |
| Q- CMAQ | 4.31% | 6.00% | 0.00% | 10.31% | 0.00% | 37 |
| R- BRIDGE REHABILITATION | 4.82% | 7.78% | 0.09% | 12.69% | 0.09% | 83 |
| S- BRDG RETROFIT AND STR | 39.99% | 8.34% | 0.52% | 48.85% | 16.55% | 3 |
| T- NEW OR IMPROVED 2 LANE | 6.42% | 7.04% | 1.71% | 15.16% | 31.89% | 7 |
| W- SHOULDER WIDENING | 4.04% | 19.53% | 1.68% | 25.25% | 2.69% | 1 |
| X- SAFETY | 4.89% | 8.47% | 0.26% | 13.63% | 4.02% | 91 |
| Y- ROUTINE MAINTENANCE | 1.04% | 6.44% | 0.00% | 7.48% | 0.01% | 28 |
| | 6.40% | 5.03% | 0.47% | 11.90% | 6.55% | 1,181 |

| Work Type Categories | Preliminary Engineering | Construction Inspection | Right of Way Incidentals | Total Engineering | Right of Way Acquisition | n= |
|----------------------|-------------------------|-------------------------|--------------------------|-------------------|--------------------------|-------|
| MAJOR PROJECT | 8.54% | 3.77% | 0.78% | 13.09% | 11.00% | 109 |
| TCOS | 3.61% | 6.58% | 0.08% | 10.28% | 0.82% | 1046 |
| OTHER | 5.21% | 10.02% | 0.11% | 15.33% | 0.47% | 26 |
| | 6.40% | 5.03% | 0.47% | 11.90% | 6.55% | 1,181 |

Engineering costs are represented as percentages of corresponding actual construction costs. Based on projects completed within the indicated time frame. Excludes payment projects, right of way only projects and other projects without actual construction costs.

Three Year Average Engineering Factors Engineering Costs per Total Construction Costs

**7/1/2012 - 6/30/2015
by District**

Northwest

| Work Types | Preliminary Engineering | Construction Inspection | Right of Way Incidentals | Total Engineering | Right of Way Acquisition | n= |
|---------------------------------|-------------------------|-------------------------|--------------------------|-------------------|--------------------------|-----|
| B- BRIDGE REPLACEMENT | 12.23% | 8.91% | 0.24% | 21.37% | 0.28% | 3 |
| G- PREV MAINT-BRIDGE | 0.00% | 4.43% | 0.00% | 4.43% | 0.00% | 1 |
| H- HIGH TYPE RESURFACING | 1.17% | 5.21% | 0.00% | 6.38% | 0.00% | 9 |
| J- PREV MAINT-PAVEMENT | 0.70% | 5.44% | 0.00% | 6.14% | 0.00% | 15 |
| K- MED TYPE RESURFACING | 1.23% | 5.23% | 0.00% | 6.46% | 0.00% | 19 |
| L- LOW TYPE RESURFACING | 0.59% | 4.54% | 0.13% | 5.26% | 0.07% | 42 |
| O- OTHER | 5.31% | 5.35% | 0.28% | 10.94% | 0.09% | 6 |
| P- PAVEMENT REPLACEMENT | 1.78% | 7.13% | 0.39% | 9.29% | 0.06% | 6 |
| R- BRIDGE REHABILITATION | 8.26% | 8.62% | 0.00% | 16.88% | 0.00% | 9 |
| X- SAFETY | 8.62% | 11.57% | 0.24% | 20.43% | 0.94% | 6 |
| | 2.15% | 5.68% | 0.06% | 7.90% | 0.03% | 116 |

| Work Type Categories | Preliminary Engineering | Construction Inspection | Right of Way Incidentals | Total Engineering | Right of Way Acquisition | n= |
|----------------------|-------------------------|-------------------------|--------------------------|-------------------|--------------------------|-----|
| TCOS | 2.15% | 5.68% | 0.06% | 7.90% | 0.03% | 116 |
| | 2.15% | 5.68% | 0.06% | 7.90% | 0.03% | 116 |

Engineering costs are represented as percentages of corresponding actual construction costs. Based on projects completed within the indicated time frame. Excludes payment projects, right of way only projects and other projects without actual construction costs.

Three Year Average Engineering Factors Engineering Costs per Total Construction Costs

**7/1/2012 - 6/30/2015
by District**

| Northeast | | | | | | |
|---------------------------------|-------------------------|-------------------------|--------------------------|-------------------|--------------------------|-----|
| Work Types | Preliminary Engineering | Construction Inspection | Right of Way Incidentals | Total Engineering | Right of Way Acquisition | n= |
| A- ADD LANES | 0.00% | 6.49% | 0.00% | 6.49% | 0.00% | 1 |
| B- BRIDGE REPLACEMENT | 21.66% | 11.19% | 0.18% | 33.03% | 0.16% | 8 |
| D- DUAL DIVIDED | 7.04% | 8.06% | 0.63% | 15.74% | 6.46% | 3 |
| G- PREV MAINT-BRIDGE | 2.21% | 11.15% | 0.00% | 13.36% | 0.00% | 6 |
| H- HIGH TYPE RESURFACING | 1.77% | 6.10% | 0.00% | 7.88% | 0.00% | 9 |
| I- INTERCHANGE | 14.80% | 10.79% | 1.34% | 26.93% | 41.04% | 1 |
| J- PREV MAINT-PAVEMENT | 0.87% | 5.68% | 0.00% | 6.56% | 0.00% | 25 |
| K- MED TYPE RESURFACING | 3.17% | 8.30% | 0.00% | 11.47% | 0.00% | 3 |
| L- LOW TYPE RESURFACING | 0.22% | 7.08% | 0.00% | 7.29% | 0.00% | 37 |
| O- OTHER | 17.10% | 10.89% | 1.18% | 29.17% | 7.74% | 11 |
| P- PAVEMENT REPLACEMENT | 0.00% | 15.22% | 0.00% | 15.22% | 0.00% | 1 |
| R- BRIDGE REHABILITATION | 5.41% | 10.91% | 0.00% | 16.32% | 0.00% | 9 |
| X- SAFETY | 13.26% | 11.34% | 0.60% | 25.19% | 8.45% | 6 |
| Y- ROUTINE MAINTENANCE | 0.00% | 55.84% | 0.00% | 55.84% | 0.00% | 2 |
| | 5.63% | 8.12% | 0.27% | 14.02% | 3.64% | 122 |

| Work Type Categories | Preliminary Engineering | Construction Inspection | Right of Way Incidentals | Total Engineering | Right of Way Acquisition | n= |
|----------------------|-------------------------|-------------------------|--------------------------|-------------------|--------------------------|-----|
| MAJOR PROJECT | 8.11% | 8.46% | 0.73% | 17.30% | 11.79% | 5 |
| TCOS | 4.77% | 8.00% | 0.10% | 12.88% | 0.80% | 117 |
| | 5.63% | 8.12% | 0.27% | 14.02% | 3.64% | 122 |

Engineering costs are represented as percentages of corresponding actual construction costs. Based on projects completed within the indicated time frame. Excludes payment projects, right of way only projects and other projects without actual construction costs.

Three Year Average Engineering Factors Engineering Costs per Total Construction Costs

**7/1/2012 - 6/30/2015
by District**

Kansas City

| Work Types | Preliminary Engineering | Construction Inspection | Right of Way Incidentals | Total Engineering | Right of Way Acquisition | n= |
|----------------------------------|-------------------------|-------------------------|--------------------------|-------------------|--------------------------|-----|
| A- ADD LANES | 4.68% | 1.33% | 0.23% | 6.24% | 2.31% | 2 |
| B- BRIDGE REPLACEMENT | 13.55% | 9.19% | 0.28% | 23.02% | 0.91% | 8 |
| D- DUAL DIVIDED | 8.95% | 5.35% | 1.31% | 15.61% | 6.92% | 6 |
| E- ENHANCEMENTS | 6.27% | 9.76% | 0.00% | 16.03% | 0.00% | 4 |
| G- PREV MAINT-BRIDGE | 7.16% | 7.39% | 0.00% | 14.55% | 0.00% | 6 |
| H- HIGH TYPE RESURFACING | 1.62% | 4.76% | 0.00% | 6.38% | 0.00% | 9 |
| I- INTERCHANGE | 5.56% | 5.89% | 0.14% | 11.59% | 1.10% | 16 |
| J- PREV MAINT-PAVEMENT | 3.71% | 8.15% | 0.38% | 12.24% | 0.55% | 18 |
| K- MED TYPE RESURFACING | 0.44% | 6.08% | 0.00% | 6.52% | 0.00% | 22 |
| L- LOW TYPE RESURFACING | 1.20% | 5.36% | 0.02% | 6.58% | 0.00% | 21 |
| O- OTHER | 8.05% | 6.42% | 0.11% | 14.58% | 0.29% | 25 |
| P- PAVEMENT REPLACEMENT | 0.86% | 5.27% | 0.00% | 6.13% | 0.00% | 1 |
| Q- CMAQ | 0.50% | 1.96% | 0.00% | 2.45% | 0.00% | 12 |
| R- BRIDGE REHABILITATION | 3.69% | 8.37% | 0.04% | 12.10% | 0.02% | 19 |
| T- NEW OR IMPROVED 2 LANE | 9.26% | 6.95% | 1.42% | 17.63% | 37.55% | 1 |
| X- SAFETY | 2.61% | 8.33% | 0.00% | 10.94% | 0.00% | 16 |
| Y- ROUTINE MAINTENANCE | 0.31% | 2.26% | 0.00% | 2.57% | 0.00% | 6 |
| | 4.67% | 4.53% | 0.26% | 9.47% | 2.17% | 192 |

| Work Type Categories | Preliminary Engineering | Construction Inspection | Right of Way Incidentals | Total Engineering | Right of Way Acquisition | n= |
|----------------------|-------------------------|-------------------------|--------------------------|-------------------|--------------------------|-----|
| MAJOR PROJECT | 5.70% | 3.42% | 0.39% | 9.51% | 3.49% | 25 |
| TCOS | 3.04% | 6.23% | 0.06% | 9.33% | 0.12% | 163 |
| OTHER | 6.27% | 9.76% | 0.00% | 16.03% | 0.00% | 4 |
| | 4.67% | 4.53% | 0.26% | 9.47% | 2.17% | 192 |

Engineering costs are represented as percentages of corresponding actual construction costs. Based on projects completed within the indicated time frame. Excludes payment projects, right of way only projects and other projects without actual construction costs.

Three Year Average Engineering Factors Engineering Costs per Total Construction Costs

**7/1/2012 - 6/30/2015
by District**

| Central | | | | | | |
|----------------------------------|-------------------------|-------------------------|--------------------------|-------------------|--------------------------|-----|
| Work Types | Preliminary Engineering | Construction Inspection | Right of Way Incidentals | Total Engineering | Right of Way Acquisition | n= |
| A- ADD LANES | 10.13% | 29.29% | -5.75% | 33.67% | 0.64% | 2 |
| B- BRIDGE REPLACEMENT | 14.49% | 9.87% | 0.23% | 24.59% | 0.69% | 5 |
| D- DUAL DIVIDED | 9.66% | 8.34% | 1.25% | 19.25% | 20.19% | 7 |
| E- ENHANCEMENTS | 1.82% | 11.11% | 0.06% | 12.99% | 0.09% | 6 |
| G- PREV MAINT-BRIDGE | 2.07% | 9.40% | 0.00% | 11.47% | 0.00% | 2 |
| H- HIGH TYPE RESURFACING | 0.75% | 6.00% | 0.00% | 6.75% | 0.00% | 16 |
| I- INTERCHANGE | 16.63% | 7.80% | 0.00% | 24.43% | 0.00% | 2 |
| J- PREV MAINT-PAVEMENT | 0.22% | 5.57% | 0.00% | 5.80% | 0.00% | 32 |
| K- MED TYPE RESURFACING | 1.37% | 5.65% | 0.00% | 7.02% | 0.00% | 13 |
| L- LOW TYPE RESURFACING | 0.37% | 6.30% | 0.00% | 6.67% | 0.00% | 31 |
| M- MAJOR BRIDGE | 14.45% | 4.21% | 0.02% | 18.68% | 0.71% | 1 |
| O- OTHER | 3.91% | 9.21% | 0.10% | 13.21% | 0.04% | 8 |
| P- PAVEMENT REPLACEMENT | 9.12% | 10.47% | 0.59% | 20.18% | 2.10% | 5 |
| R- BRIDGE REHABILITATION | 7.31% | 8.70% | 0.19% | 16.21% | 0.41% | 7 |
| T- NEW OR IMPROVED 2 LANE | 6.25% | 8.91% | 0.00% | 15.16% | 0.00% | 1 |
| X- SAFETY | 4.41% | 10.32% | 0.20% | 14.93% | 0.29% | 9 |
| Y- ROUTINE MAINTENANCE | 1.18% | 17.45% | 0.00% | 18.63% | 0.04% | 5 |
| | 6.50% | 7.49% | 0.40% | 14.40% | 6.48% | 152 |

| Work Type Categories | Preliminary Engineering | Construction Inspection | Right of Way Incidentals | Total Engineering | Right of Way Acquisition | n= |
|----------------------|-------------------------|-------------------------|--------------------------|-------------------|--------------------------|-----|
| MAJOR PROJECT | 11.19% | 7.47% | 0.80% | 19.46% | 13.83% | 13 |
| TCOS | 2.49% | 7.25% | 0.06% | 9.80% | 0.13% | 133 |
| OTHER | 1.82% | 11.11% | 0.06% | 12.99% | 0.09% | 6 |
| | 6.50% | 7.49% | 0.40% | 14.40% | 6.48% | 152 |

Engineering costs are represented as percentages of corresponding actual construction costs. Based on projects completed within the indicated time frame. Excludes payment projects, right of way only projects and other projects without actual construction costs.

Three Year Average Engineering Factors Engineering Costs per Total Construction Costs

**7/1/2012 - 6/30/2015
by District**

| St. Louis | | | | | | |
|---------------------------------|-------------------------|-------------------------|--------------------------|-------------------|--------------------------|-----|
| Work Types | Preliminary Engineering | Construction Inspection | Right of Way Incidentals | Total Engineering | Right of Way Acquisition | n= |
| 1- ITS | 0.00% | 0.00% | 0.00% | 0.00% | 0.00% | 1 |
| A- ADD LANES | 6.62% | 1.52% | 0.44% | 8.58% | 9.85% | 6 |
| B- BRIDGE REPLACEMENT | 8.36% | 10.34% | 0.24% | 18.94% | 0.09% | 8 |
| D- DUAL DIVIDED | 15.33% | 6.22% | 1.17% | 22.72% | 48.35% | 2 |
| E- ENHANCEMENTS | 8.56% | 14.81% | 0.00% | 23.37% | 0.00% | 3 |
| F- FREEWAY | 14.03% | 4.91% | 1.85% | 20.79% | 45.37% | 4 |
| G- PREV MAINT-BRIDGE | 0.58% | 4.05% | 0.00% | 4.62% | 0.00% | 7 |
| H- HIGH TYPE RESURFACING | 3.42% | 8.28% | 0.00% | 11.70% | 0.00% | 19 |
| I- INTERCHANGE | 13.42% | 7.23% | 0.22% | 20.86% | 11.84% | 2 |
| J- PREV MAINT-PAVEMENT | 3.75% | 8.28% | 0.00% | 12.02% | 0.00% | 38 |
| K- MED TYPE RESURFACING | 1.02% | 5.50% | 0.00% | 6.52% | 0.00% | 4 |
| L- LOW TYPE RESURFACING | 5.29% | 5.48% | 0.00% | 10.77% | 0.00% | 1 |
| M- MAJOR BRIDGE | 16.17% | 0.81% | 1.75% | 18.73% | 9.12% | 2 |
| O- OTHER | 8.10% | 12.61% | 0.82% | 21.54% | 2.90% | 14 |
| P- PAVEMENT REPLACEMENT | 21.52% | 6.30% | 0.00% | 27.82% | 0.00% | 1 |
| Q- CMAQ | 7.76% | 10.04% | 0.00% | 17.81% | 0.00% | 22 |
| R- BRIDGE REHABILITATION | 2.48% | 6.62% | 0.20% | 9.30% | 0.15% | 13 |
| S- BRDG RETROFIT AND STR | 39.99% | 8.34% | 0.52% | 48.85% | 16.55% | 3 |
| X- SAFETY | 6.30% | 10.91% | 0.35% | 17.56% | 6.72% | 18 |
| Y- ROUTINE MAINTENANCE | 2.29% | 2.21% | 0.00% | 4.50% | 0.00% | 7 |
| | 9.97% | 3.42% | 0.80% | 14.19% | 12.65% | 175 |

| Work Type Categories | Preliminary Engineering | Construction Inspection | Right of Way Incidentals | Total Engineering | Right of Way Acquisition | n= |
|----------------------|-------------------------|-------------------------|--------------------------|-------------------|--------------------------|-----|
| MAJOR PROJECT | 10.71% | 2.06% | 0.99% | 13.76% | 15.65% | 16 |
| TCOS | 7.30% | 8.17% | 0.16% | 15.62% | 2.02% | 156 |
| OTHER | 8.56% | 14.81% | 0.00% | 23.37% | 0.00% | 3 |
| | 9.97% | 3.42% | 0.80% | 14.19% | 12.65% | 175 |

Engineering costs are represented as percentages of corresponding actual construction costs. Based on projects completed within the indicated time frame. Excludes payment projects, right of way only projects and other projects without actual construction costs.

Three Year Average Engineering Factors Engineering Costs per Total Construction Costs

**7/1/2012 - 6/30/2015
by District**

Southwest

| Work Types | Preliminary Engineering | Construction Inspection | Right of Way Incidentals | Total Engineering | Right of Way Acquisition | n= |
|----------------------------------|-------------------------|-------------------------|--------------------------|-------------------|--------------------------|-----|
| 1- ITS | 2.55% | 25.18% | 0.42% | 28.15% | 0.28% | 2 |
| A- ADD LANES | 8.85% | 7.25% | 1.22% | 17.32% | 6.34% | 12 |
| B- BRIDGE REPLACEMENT | 9.30% | 6.58% | 0.03% | 15.91% | 0.10% | 11 |
| D- DUAL DIVIDED | 3.08% | 5.03% | 0.00% | 8.12% | 0.00% | 1 |
| E- ENHANCEMENTS | 23.03% | 10.59% | 0.83% | 34.45% | 0.00% | 7 |
| F- FREEWAY | 6.95% | 6.03% | 0.17% | 13.15% | 0.49% | 14 |
| G- PREV MAINT-BRIDGE | 0.46% | 6.35% | 0.00% | 6.80% | 0.00% | 6 |
| H- HIGH TYPE RESURFACING | 0.58% | 4.04% | 0.00% | 4.62% | 0.00% | 6 |
| I- INTERCHANGE | 5.10% | 8.24% | 0.20% | 13.53% | 2.41% | 9 |
| J- PREV MAINT-PAVEMENT | 1.94% | 5.03% | 0.00% | 6.98% | 0.00% | 10 |
| K- MED TYPE RESURFACING | 0.94% | 5.24% | 0.01% | 6.18% | 0.00% | 106 |
| L- LOW TYPE RESURFACING | 0.12% | 3.90% | 0.00% | 4.02% | 0.00% | 8 |
| M- MAJOR BRIDGE | 3.57% | 1.49% | 0.00% | 5.06% | 0.00% | 1 |
| O- OTHER | 7.50% | 8.42% | 0.35% | 16.27% | 9.56% | 23 |
| P- PAVEMENT REPLACEMENT | 0.26% | 7.11% | 0.00% | 7.36% | 0.00% | 4 |
| Q- CMAQ | 1.33% | 1.01% | 0.00% | 2.34% | 0.00% | 3 |
| R- BRIDGE REHABILITATION | 6.22% | 7.22% | 0.00% | 13.44% | 0.00% | 16 |
| T- NEW OR IMPROVED 2 LANE | 6.83% | 8.11% | 2.53% | 17.46% | 61.14% | 1 |
| X- SAFETY | 7.41% | 7.10% | 0.47% | 14.98% | 10.69% | 26 |
| Y- ROUTINE MAINTENANCE | 2.72% | 12.10% | 0.00% | 14.81% | 0.00% | 3 |
| | 4.53% | 6.43% | 0.29% | 11.25% | 3.56% | 269 |

| Work Type Categories | Preliminary Engineering | Construction Inspection | Right of Way Incidentals | Total Engineering | Right of Way Acquisition | n= |
|----------------------|-------------------------|-------------------------|--------------------------|-------------------|--------------------------|-----|
| MAJOR PROJECT | 6.32% | 7.08% | 0.58% | 13.98% | 6.28% | 38 |
| TCOS | 3.05% | 5.91% | 0.07% | 9.03% | 1.55% | 224 |
| OTHER | 23.03% | 10.59% | 0.83% | 34.45% | 0.00% | 7 |
| | 4.53% | 6.43% | 0.29% | 11.25% | 3.56% | 269 |

Engineering costs are represented as percentages of corresponding actual construction costs. Based on projects completed within the indicated time frame. Excludes payment projects, right of way only projects and other projects without actual construction costs.

Three Year Average Engineering Factors Engineering Costs per Total Construction Costs

**7/1/2012 - 6/30/2015
by District**

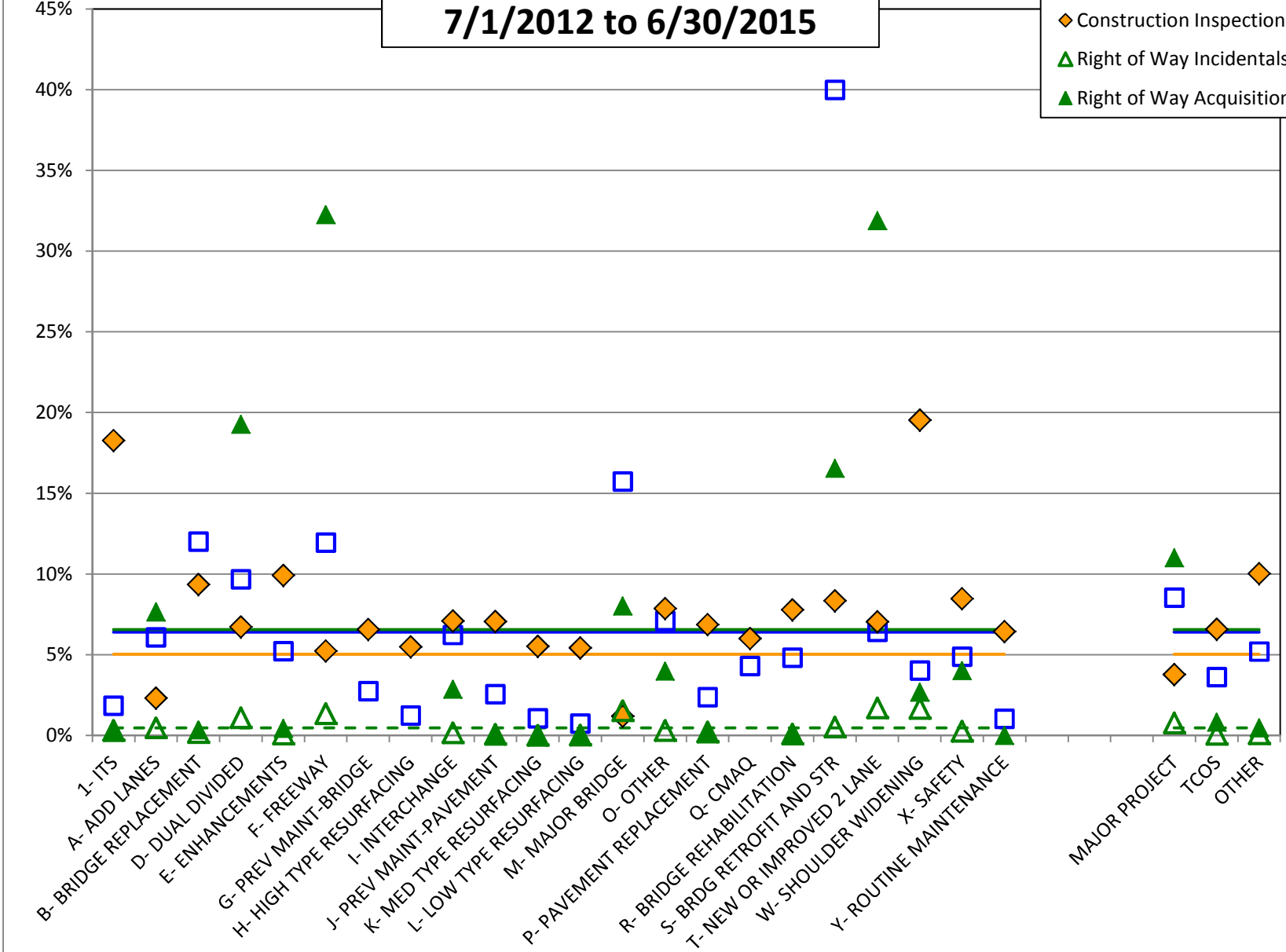
| Southeast | | | | | | |
|----------------------------------|-------------------------|-------------------------|--------------------------|-------------------|--------------------------|-----|
| Work Types | Preliminary Engineering | Construction Inspection | Right of Way Incidentals | Total Engineering | Right of Way Acquisition | n= |
| A- ADD LANES | 5.36% | 6.62% | 1.11% | 13.09% | 12.93% | 4 |
| B- BRIDGE REPLACEMENT | 11.58% | 10.35% | 0.20% | 22.13% | 0.36% | 17 |
| D- DUAL DIVIDED | 6.35% | 6.27% | 1.15% | 13.77% | 13.30% | 1 |
| E- ENHANCEMENTS | 3.29% | 6.68% | 0.01% | 9.97% | 1.28% | 5 |
| G- PREV MAINT-BRIDGE | 0.00% | 18.52% | 0.00% | 18.52% | 0.00% | 1 |
| H- HIGH TYPE RESURFACING | 0.26% | 4.55% | 0.00% | 4.81% | 0.00% | 9 |
| I- INTERCHANGE | 2.28% | 12.35% | 0.00% | 14.63% | 0.00% | 3 |
| J- PREV MAINT-PAVEMENT | 0.52% | 3.51% | 0.00% | 4.03% | 0.00% | 8 |
| K- MED TYPE RESURFACING | 1.89% | 5.91% | 0.04% | 7.84% | 0.09% | 32 |
| L- LOW TYPE RESURFACING | 0.90% | 4.80% | 0.00% | 5.70% | 0.00% | 33 |
| O- OTHER | 2.61% | 5.65% | 0.04% | 8.30% | 3.68% | 12 |
| R- BRIDGE REHABILITATION | 9.20% | 9.89% | 0.07% | 19.16% | 0.09% | 10 |
| T- NEW OR IMPROVED 2 LANE | 4.24% | 6.18% | 1.49% | 11.90% | 10.63% | 4 |
| W- SHOULDER WIDENING | 4.04% | 19.53% | 1.68% | 25.25% | 2.69% | 1 |
| X- SAFETY | 2.40% | 6.29% | 0.21% | 8.91% | 1.82% | 10 |
| Y- ROUTINE MAINTENANCE | 0.06% | 13.97% | 0.00% | 14.04% | 0.00% | 5 |
| | 3.22% | 6.21% | 0.42% | 9.85% | 4.47% | 155 |

| Work Type Categories | Preliminary Engineering | Construction Inspection | Right of Way Incidentals | Total Engineering | Right of Way Acquisition | n= |
|----------------------|-------------------------|-------------------------|--------------------------|-------------------|--------------------------|-----|
| MAJOR PROJECT | 5.10% | 7.03% | 1.06% | 13.19% | 11.47% | 12 |
| TCOS | 2.11% | 5.70% | 0.05% | 7.86% | 0.49% | 137 |
| OTHER | 3.31% | 7.10% | 0.07% | 10.48% | 1.32% | 6 |
| | 3.22% | 6.21% | 0.42% | 9.85% | 4.47% | 155 |

Engineering costs are represented as percentages of corresponding actual construction costs. Based on projects completed within the indicated time frame. Excludes payment projects, right of way only projects and other projects without actual construction costs.

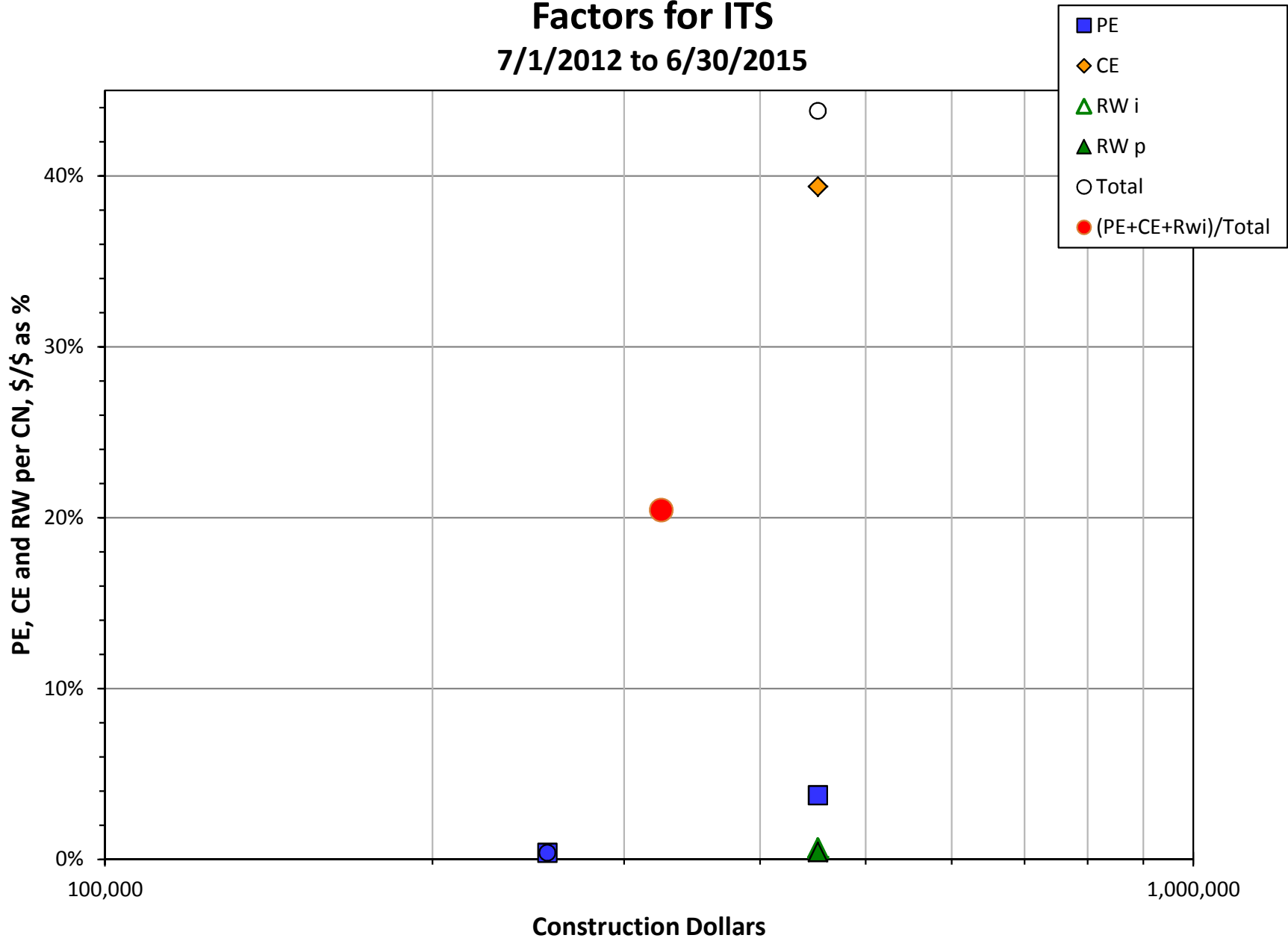
Statewide Engineering Factors 7/1/2012 to 6/30/2015

- Preliminary Engineering
- ◇ Construction Inspection
- △ Right of Way Incidentals
- ▲ Right of Way Acquisition



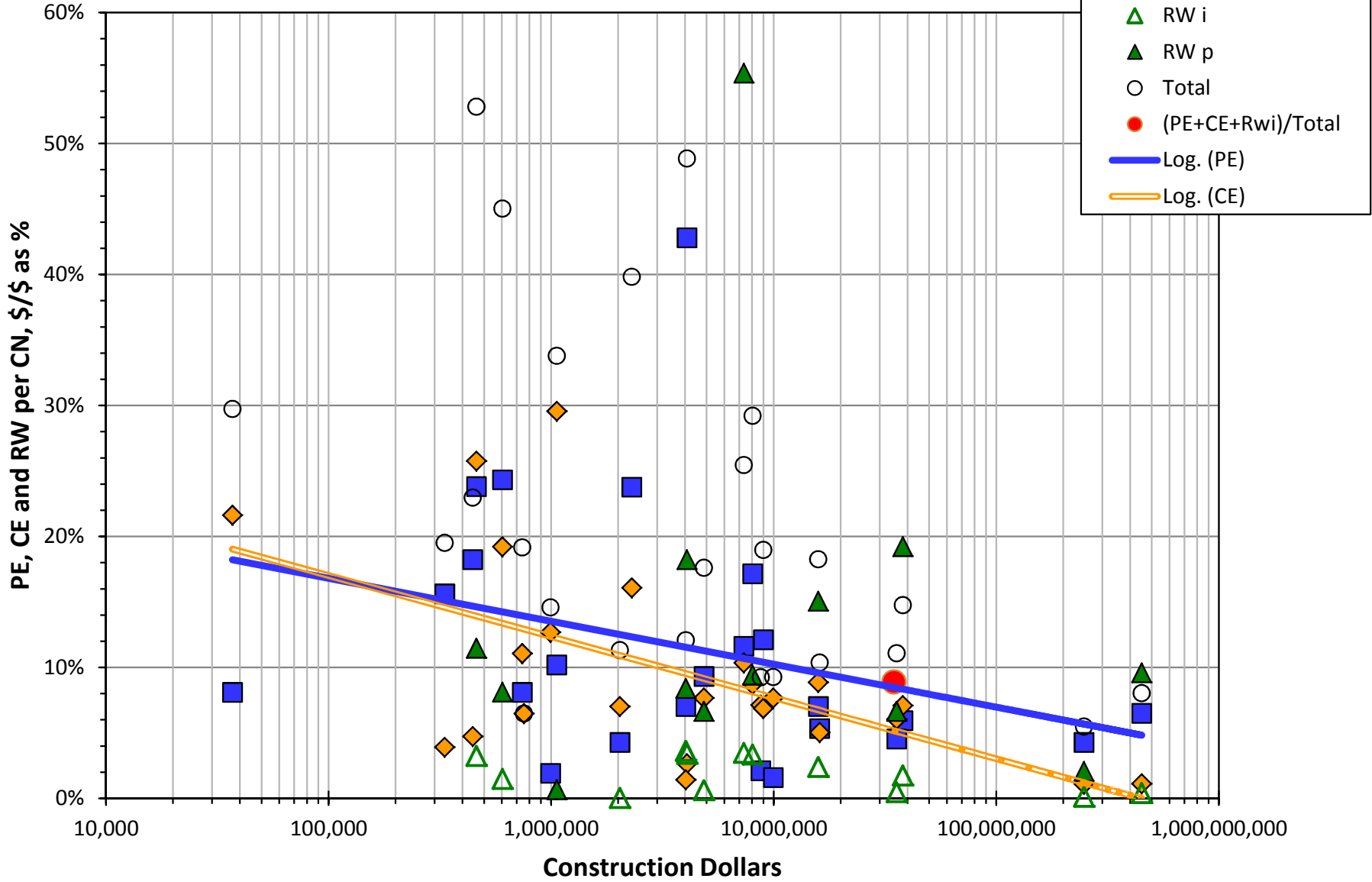
Factors for ITS

7/1/2012 to 6/30/2015



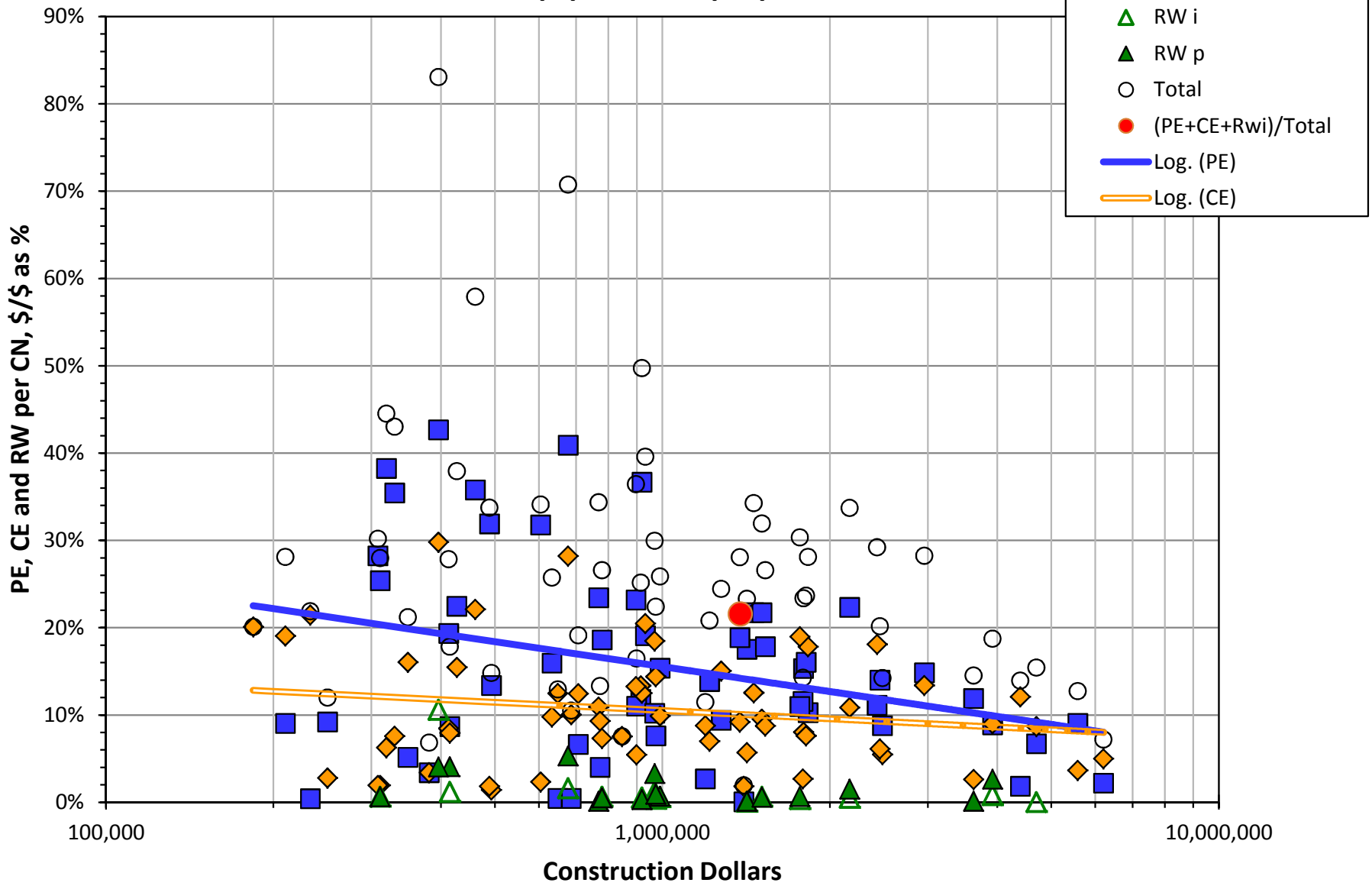
Factors for Add Lanes

7/1/2012 to 6/30/2015

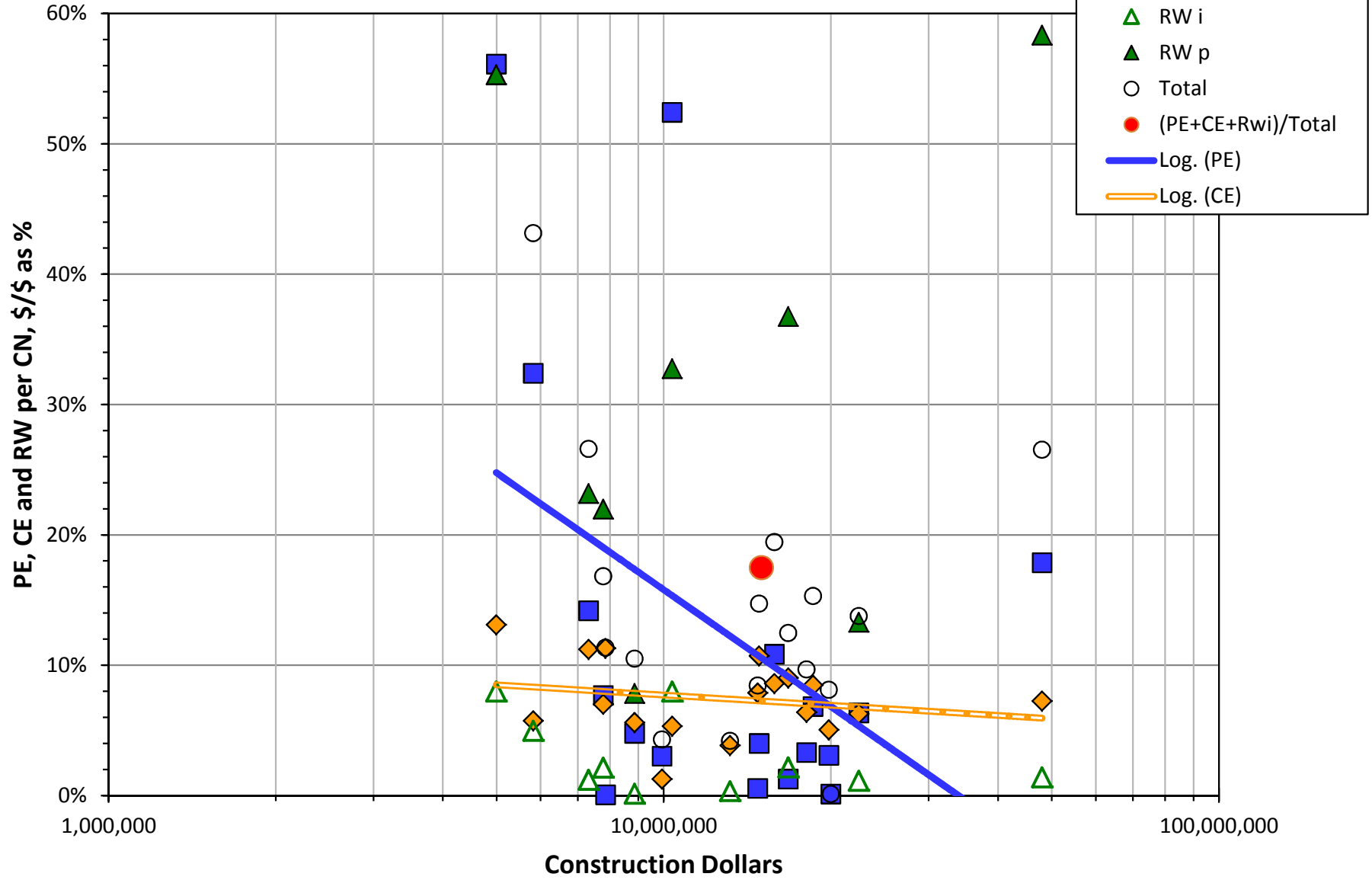


Factors for Bridge Replacement

7/1/2012 to 6/30/2015

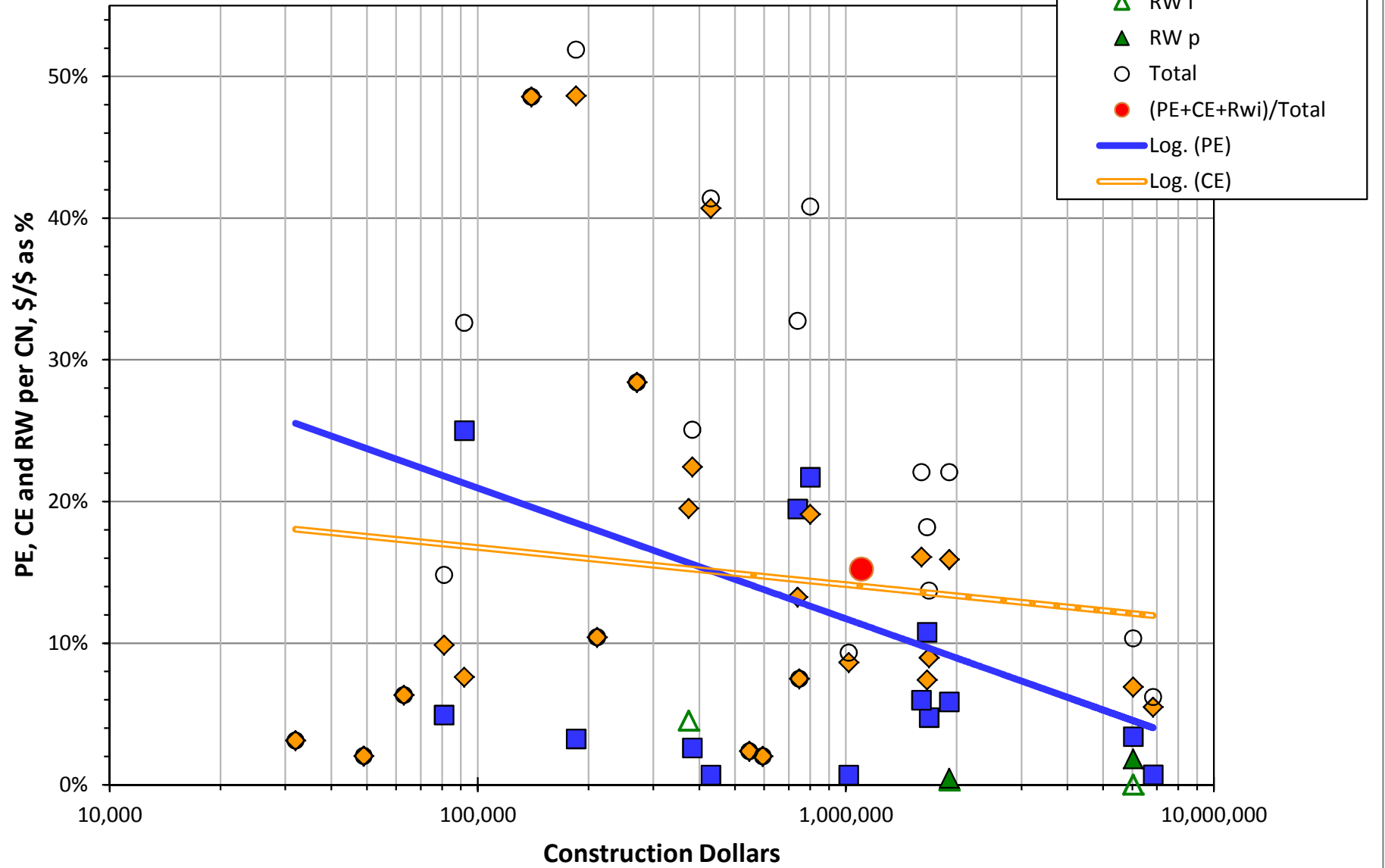


Factors for Dual Divided 7/1/2012 to 6/30/2015

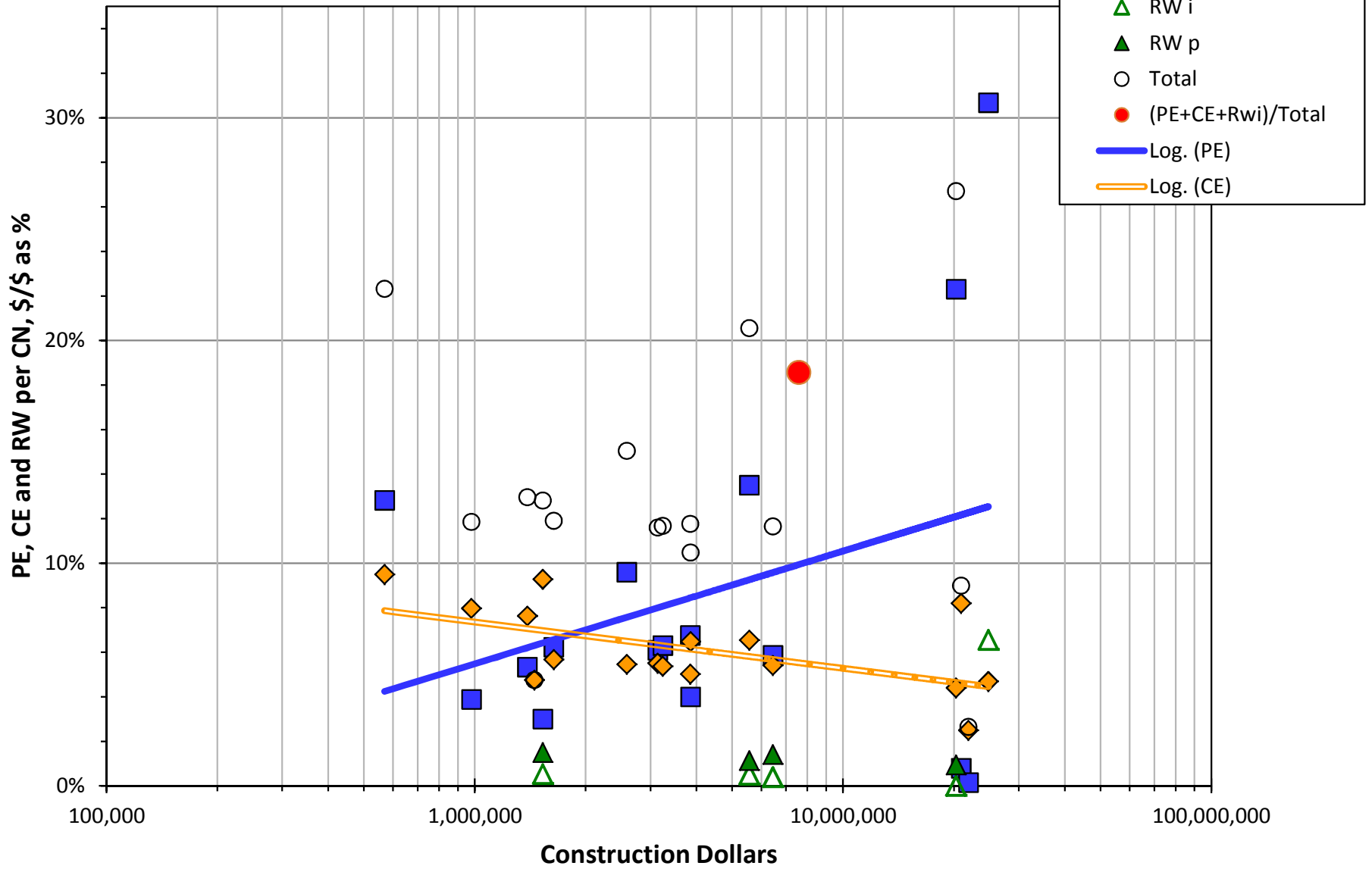


Factors for Enhancements

7/1/2012 to 6/30/2015

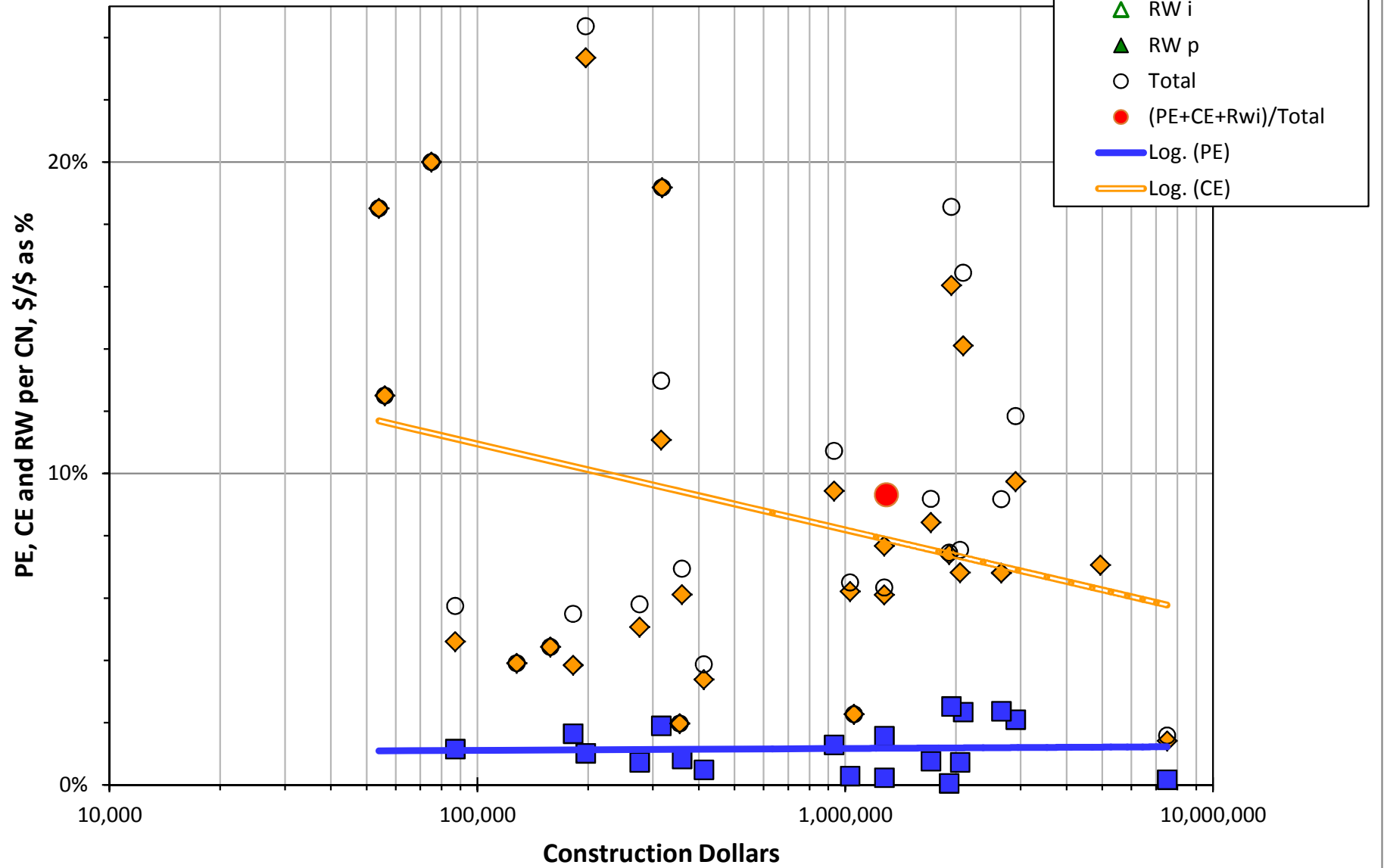


Factors for Freeway 7/1/2012 to 6/30/2015



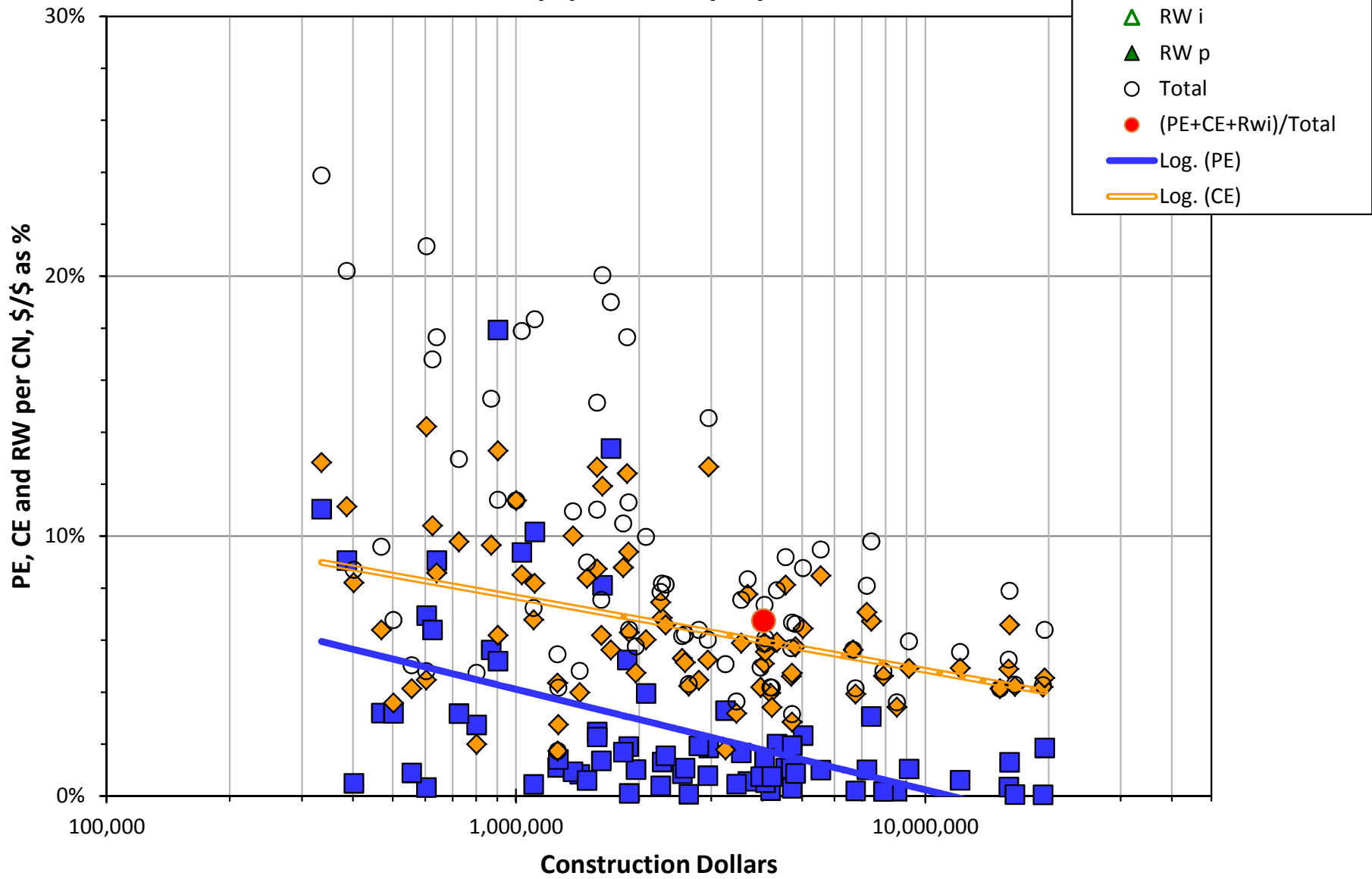
Factors for Prev Maint - Bridge

7/1/2012 to 6/30/2015



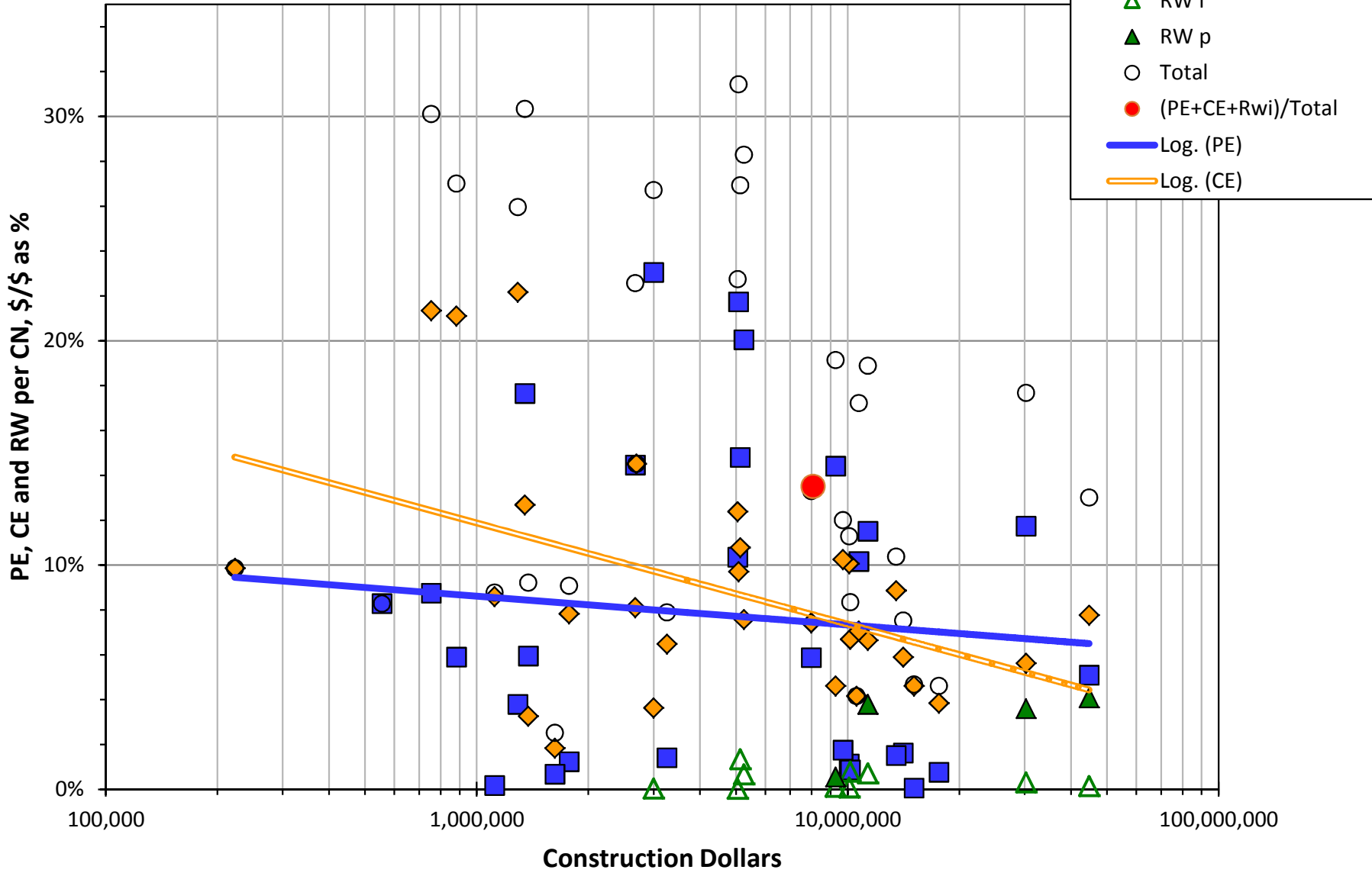
Factors for High Type Resurfacing

7/1/2012 to 6/30/2015



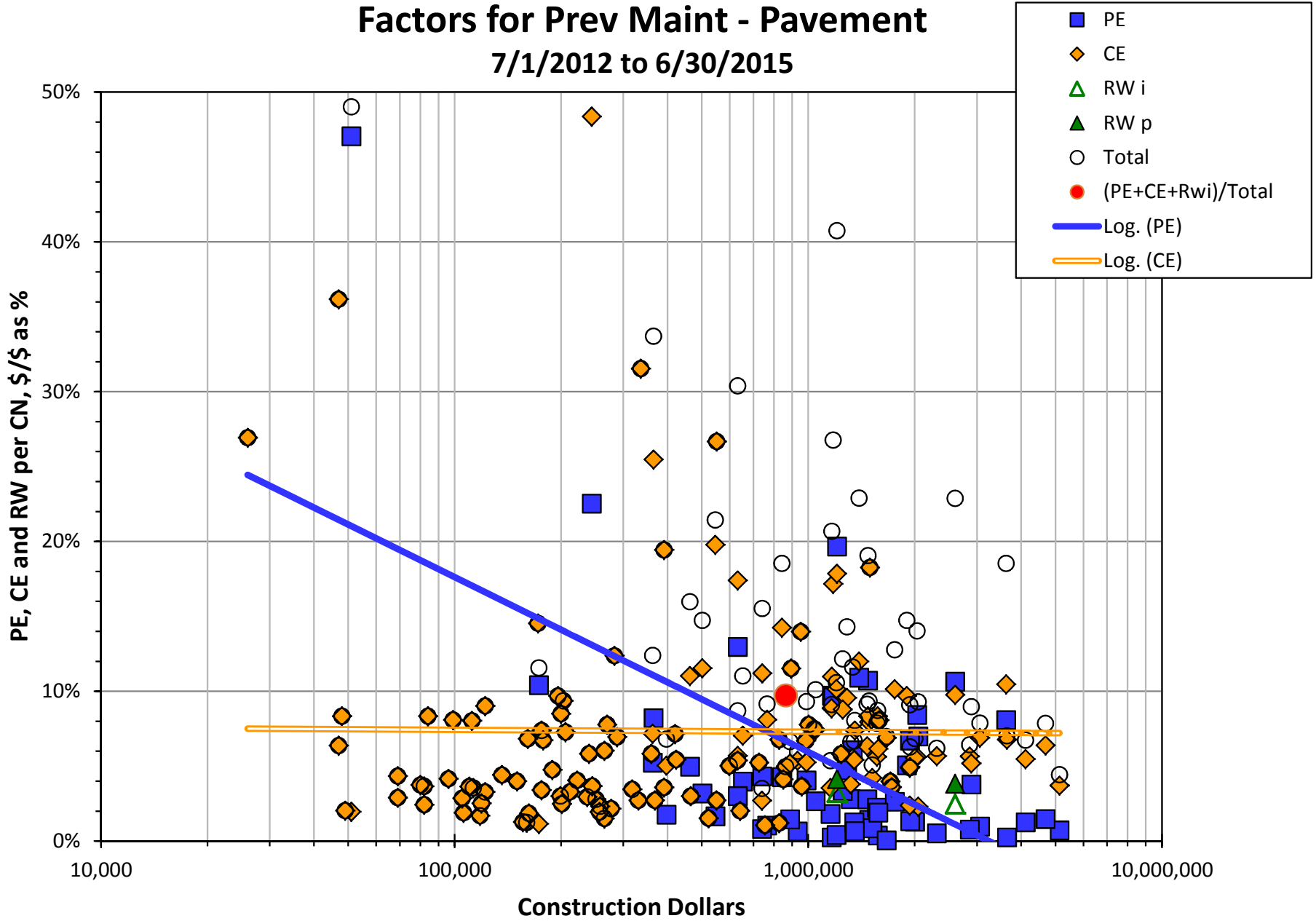
Factors for Interchange

7/1/2012 to 6/30/2015



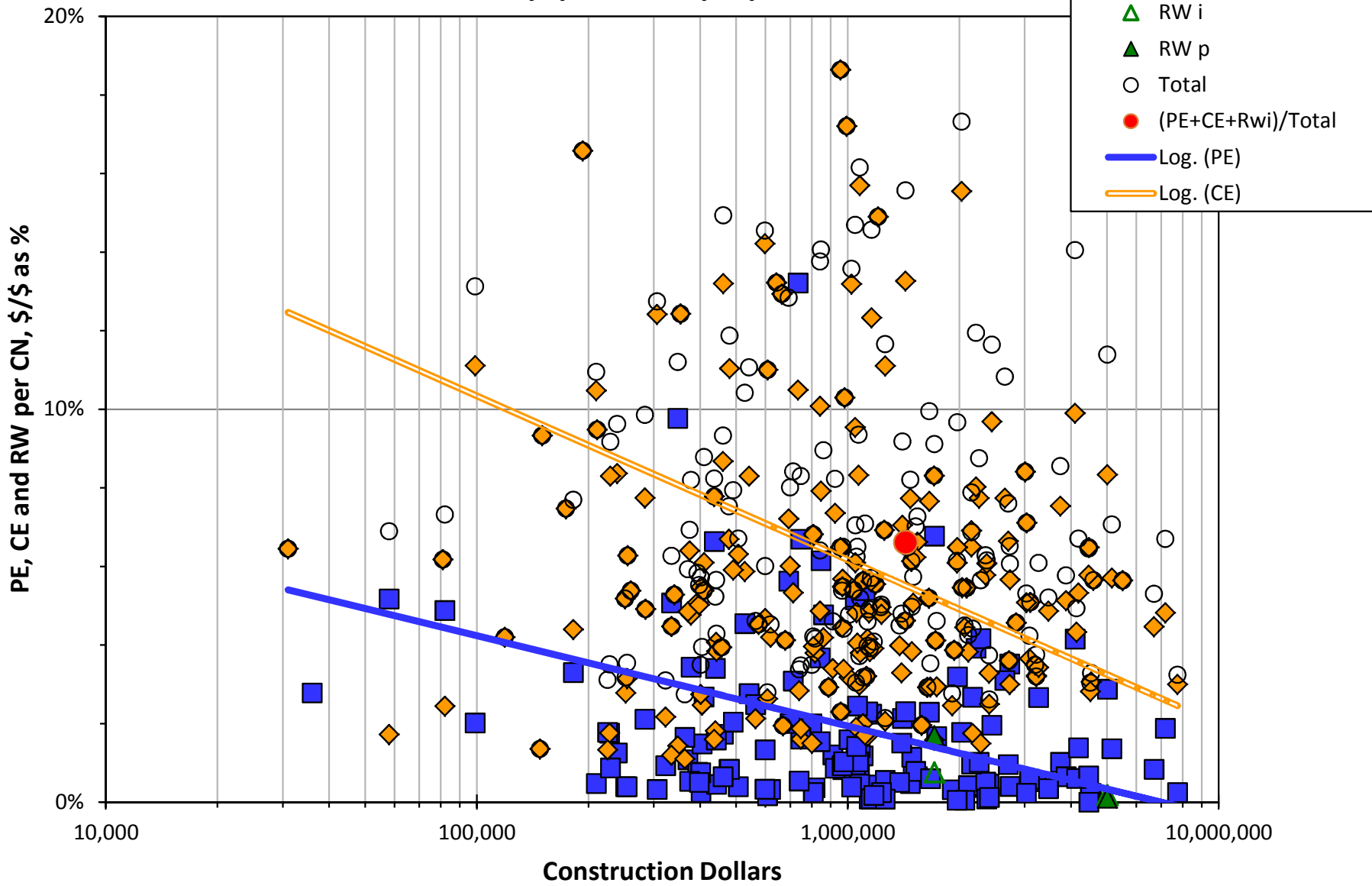
Factors for Prev Maint - Pavement

7/1/2012 to 6/30/2015



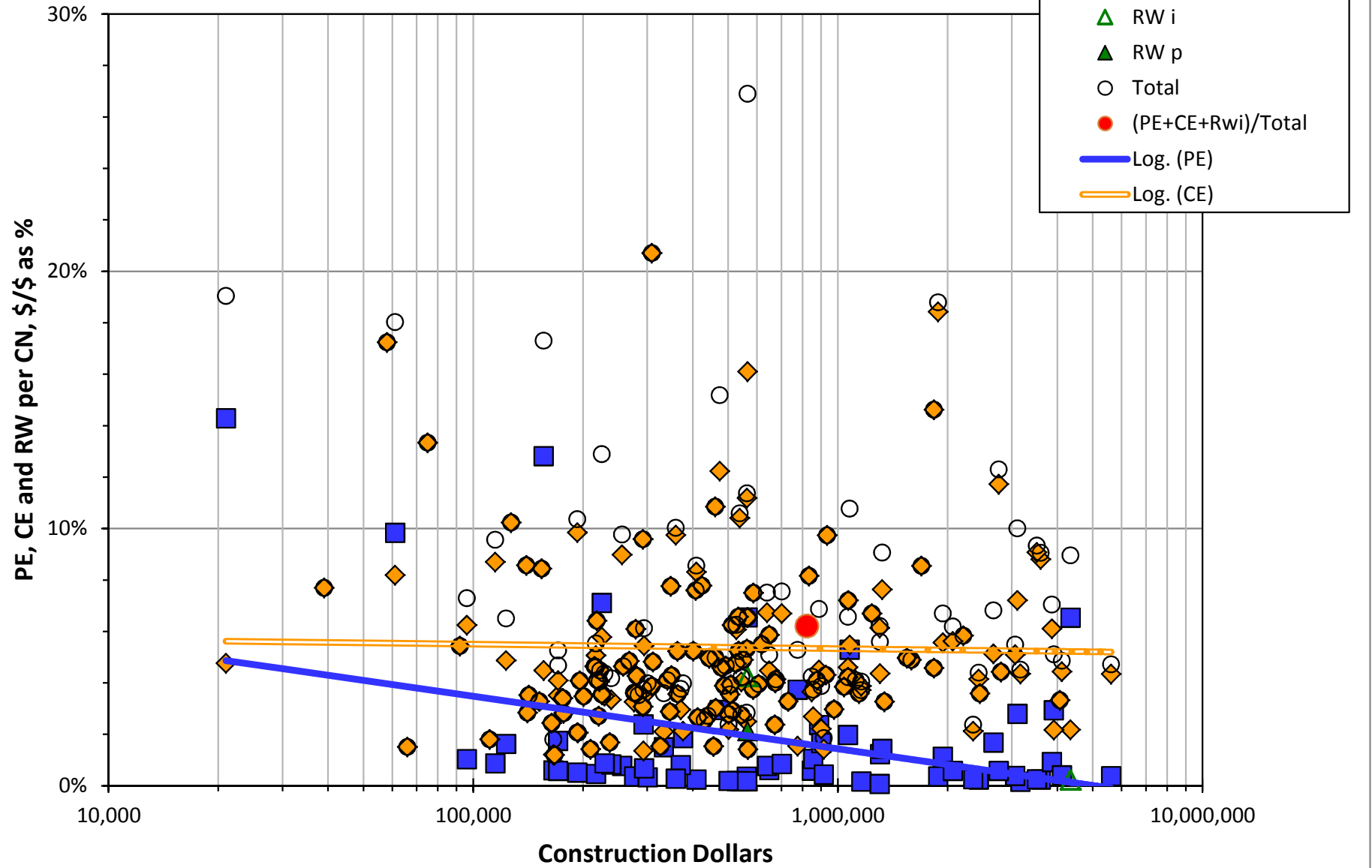
Factors for Med Type Resurfacing

7/1/2012 to 6/30/2015



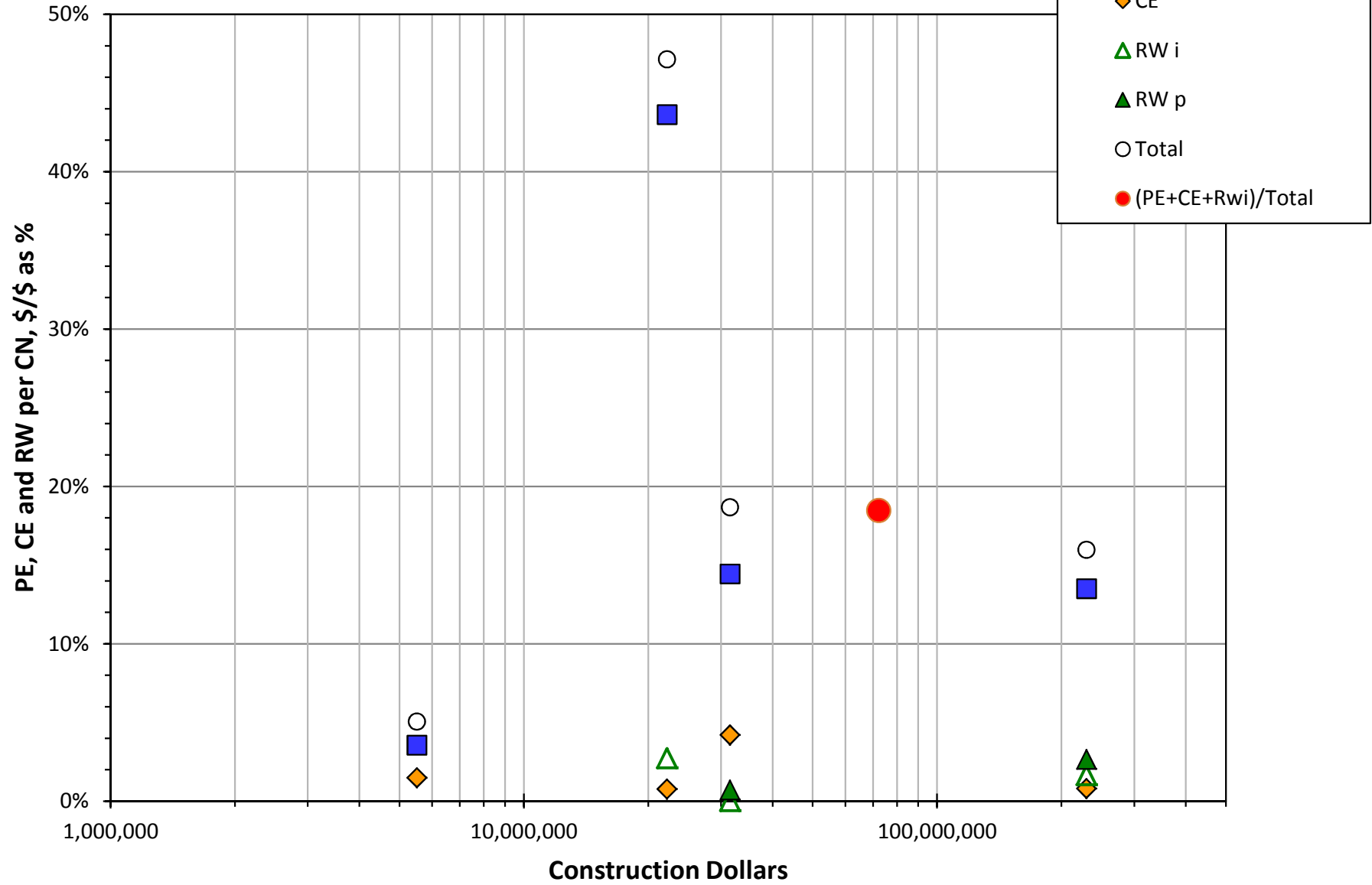
Factors for Low Type Resurfacing

7/1/2012 to 6/30/2015

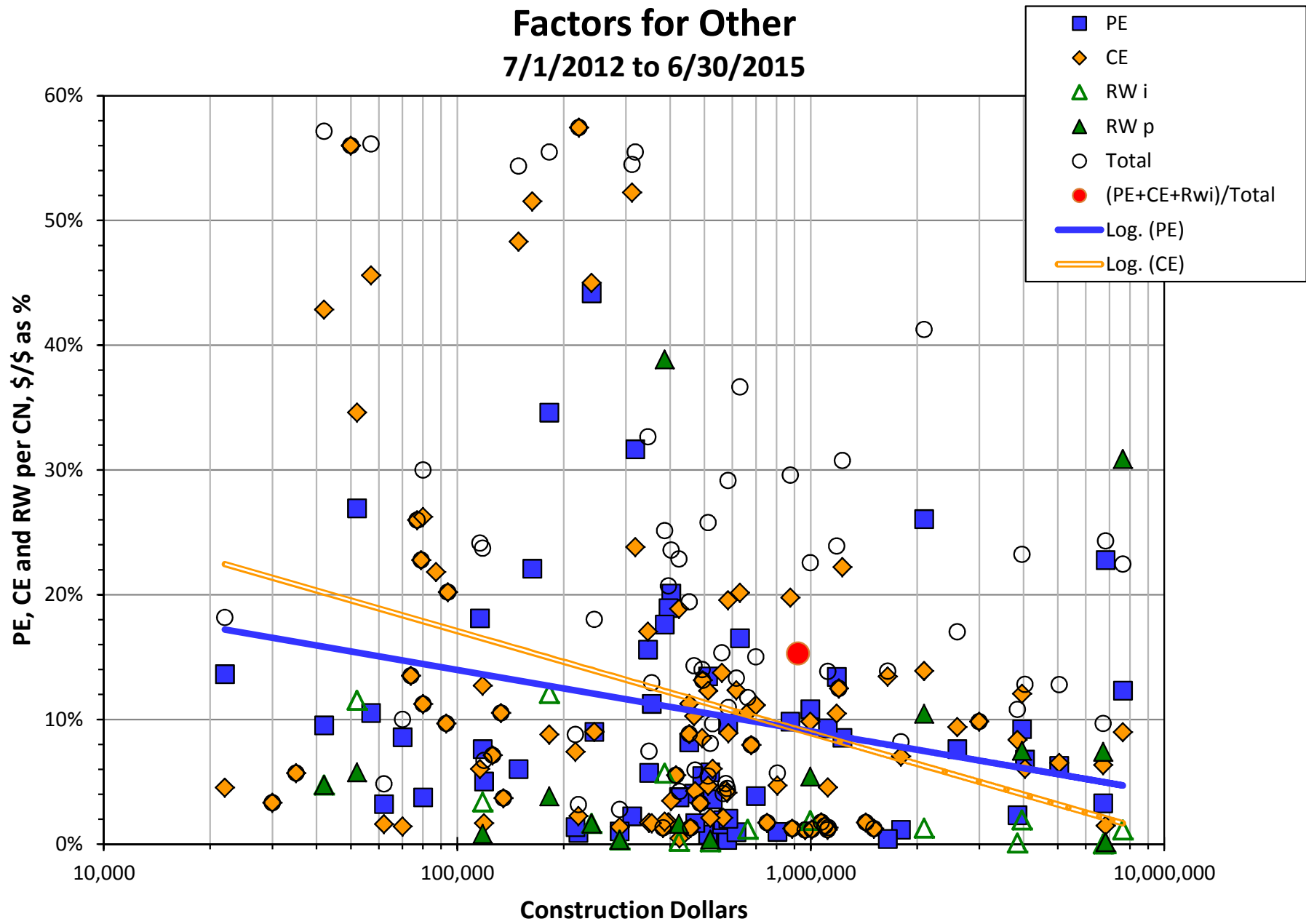


Factors for Major Bridge

7/1/2012 to 6/30/2015

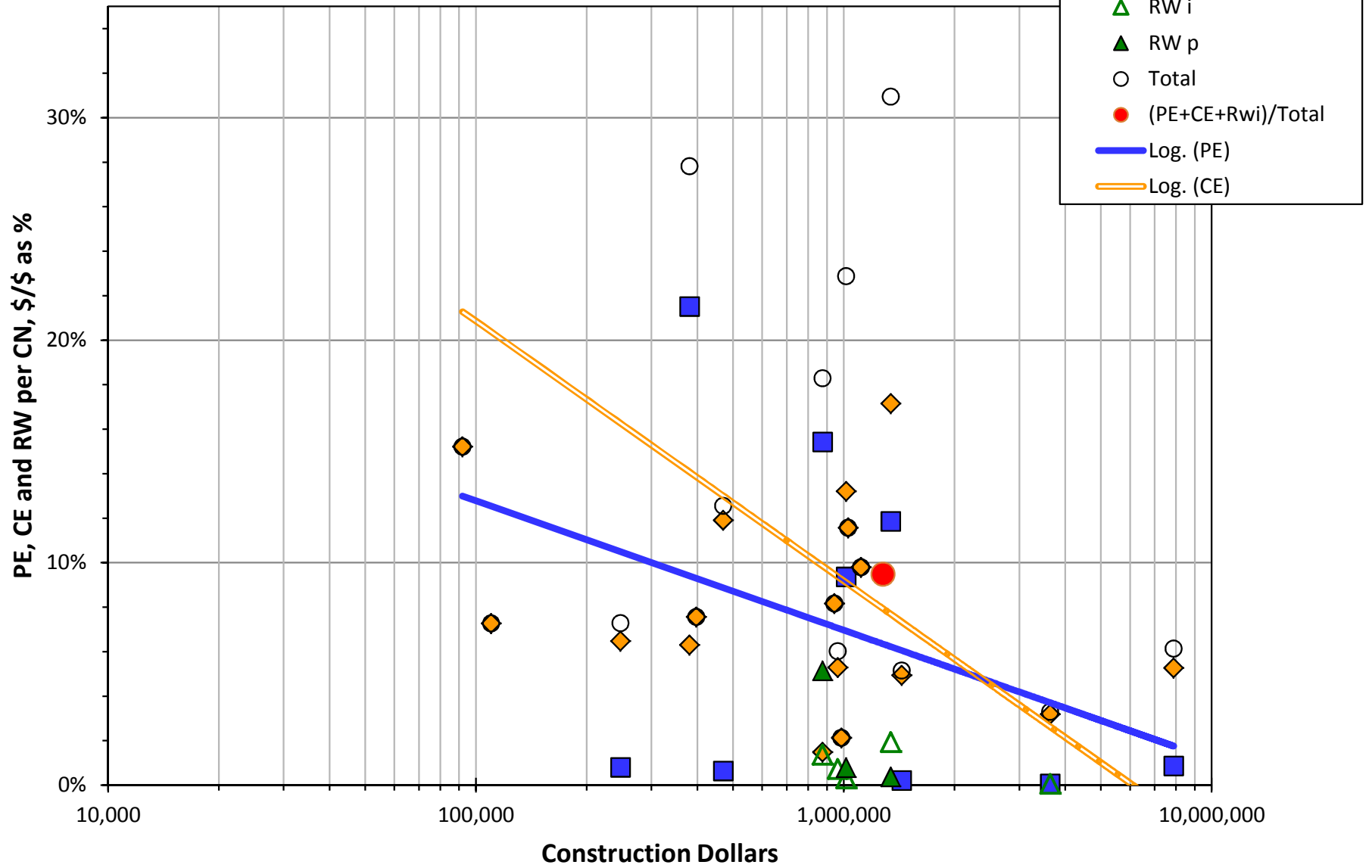


Factors for Other 7/1/2012 to 6/30/2015

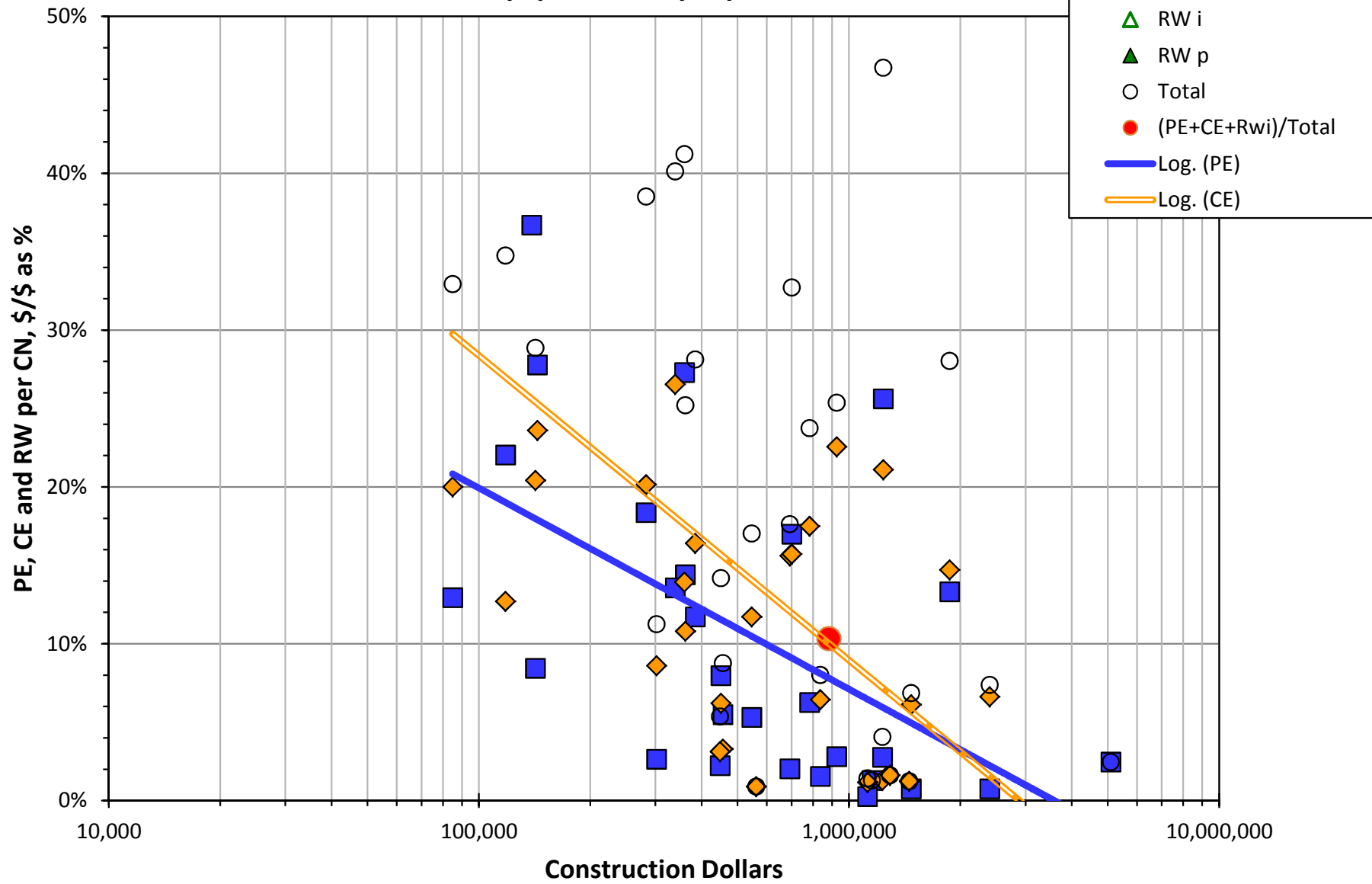


Factors for Pavement Replacement

7/1/2012 to 6/30/2015

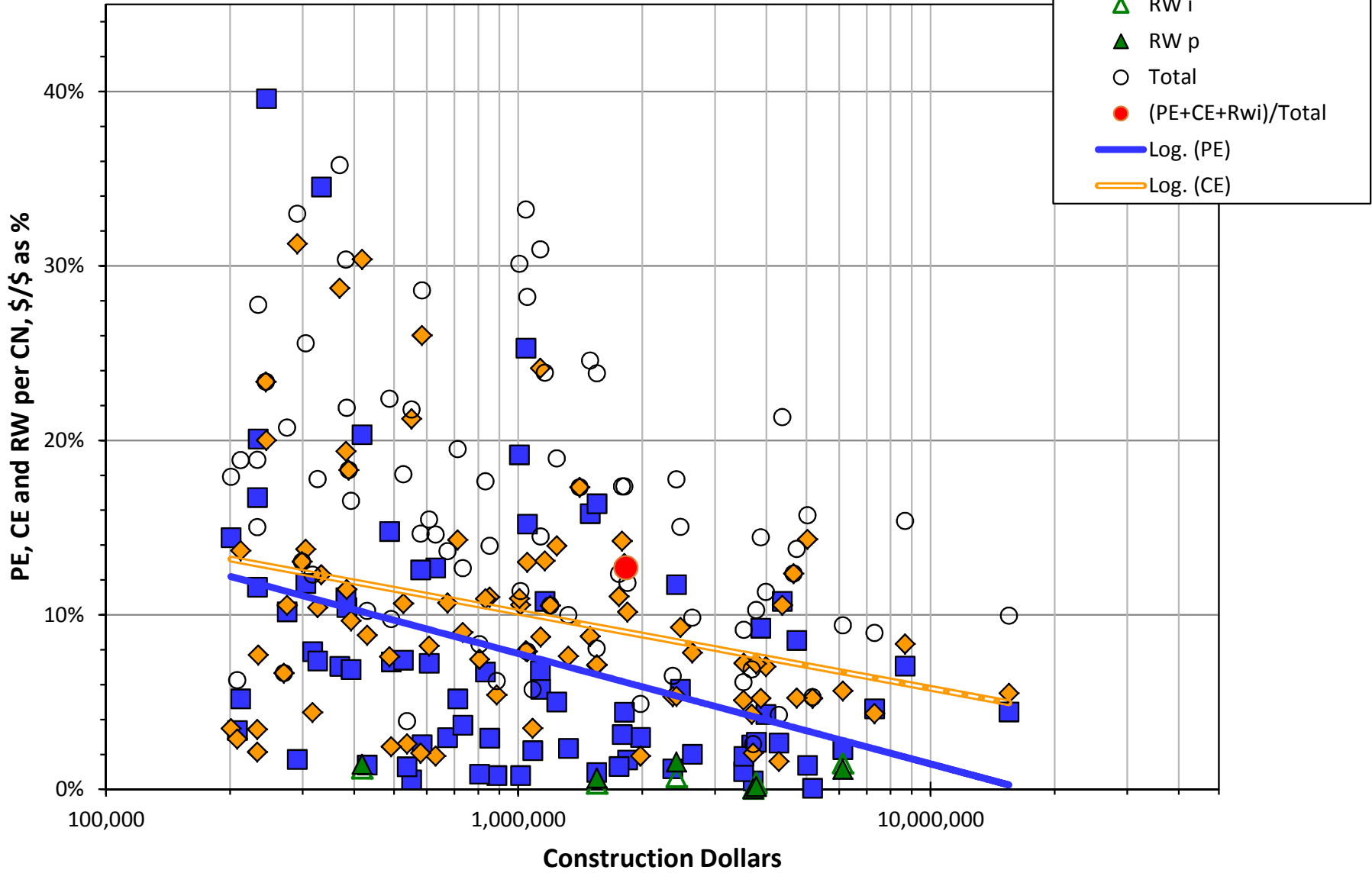


Factors for CMAQ 7/1/2012 to 6/30/2015



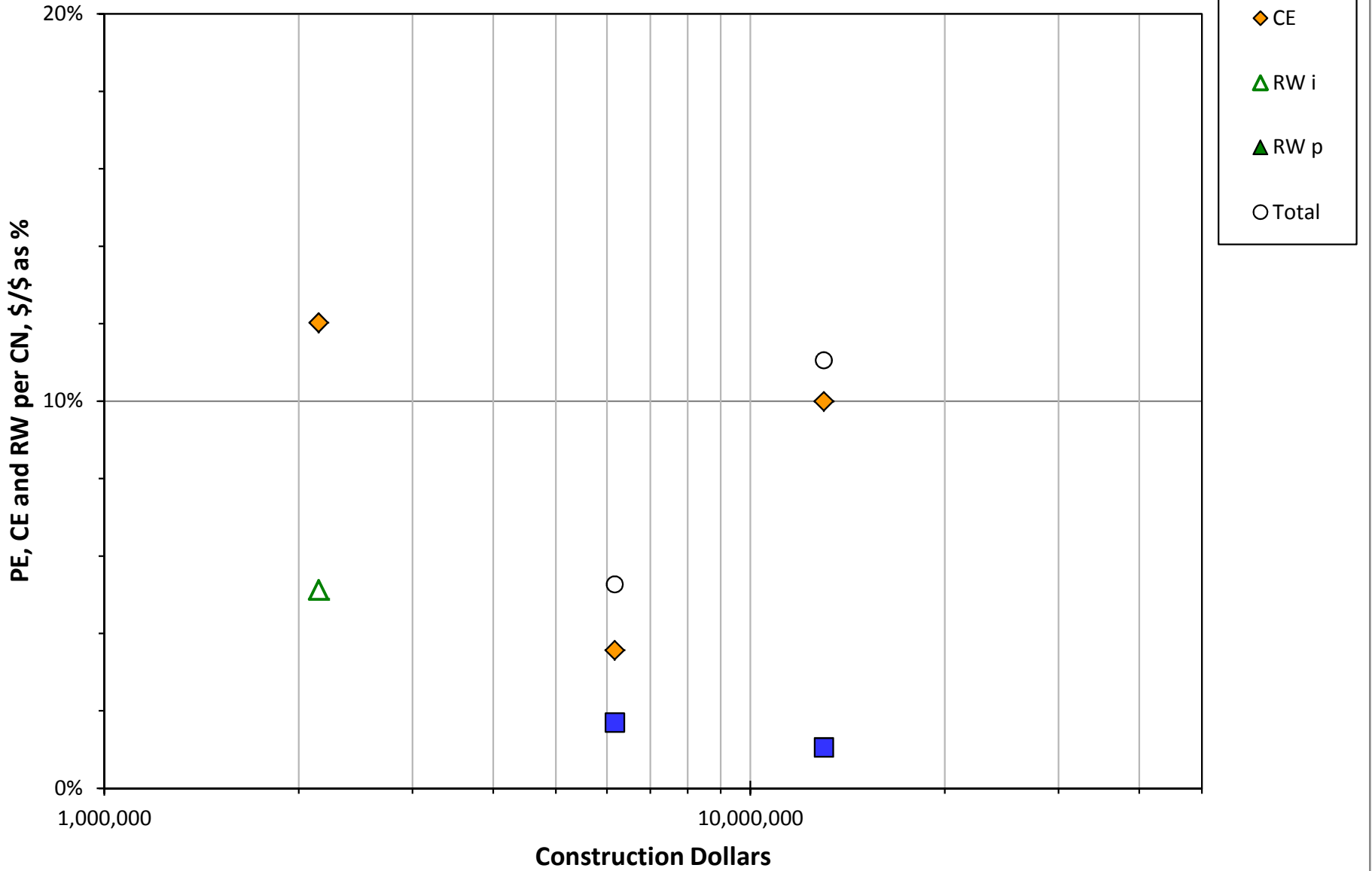
Factors for Bridge Rehabilitation

7/1/2012 to 6/30/2015



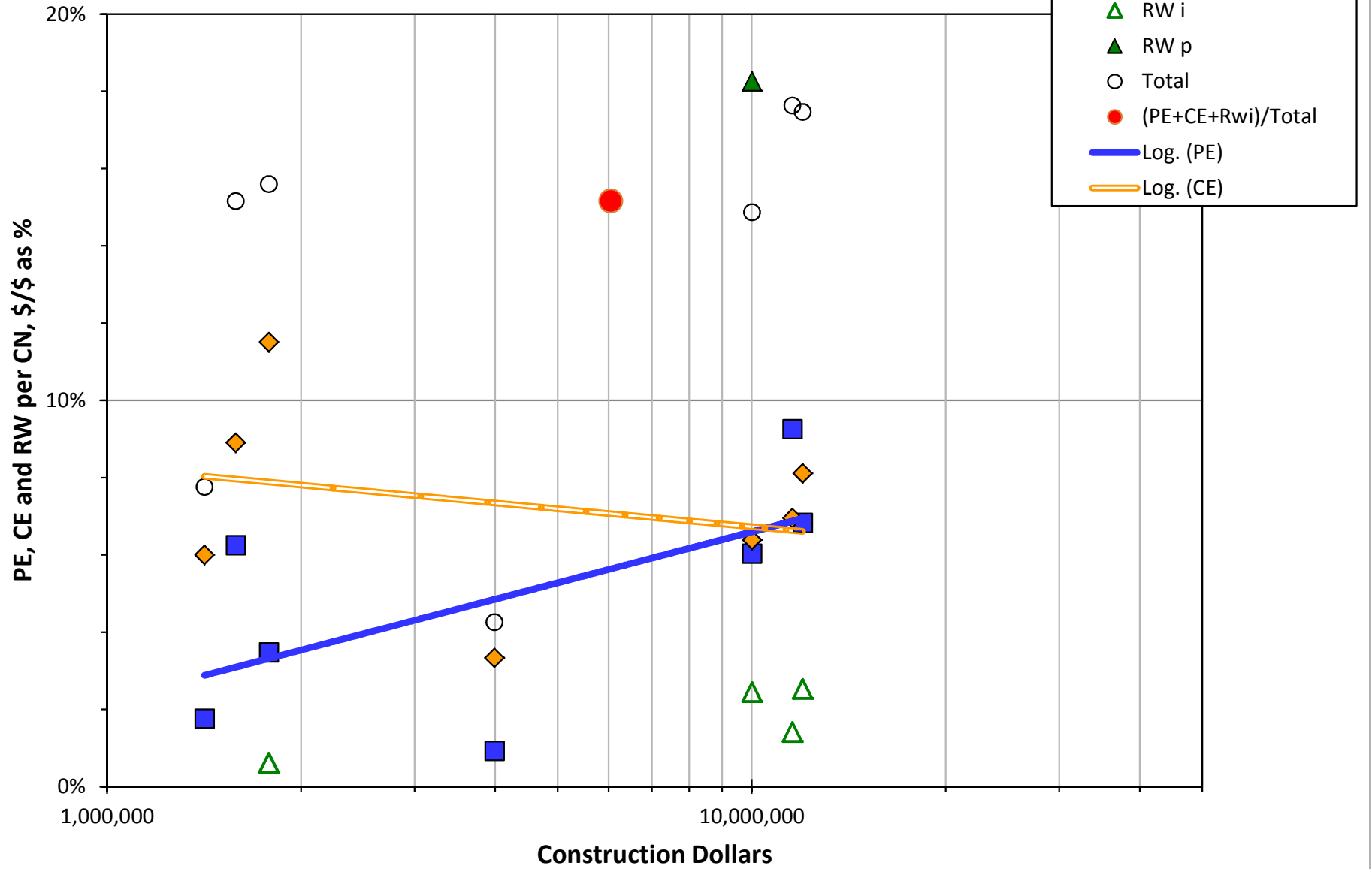
Factors for Bridge Retrofit and Strengthening

7/1/2012 to 6/30/2015



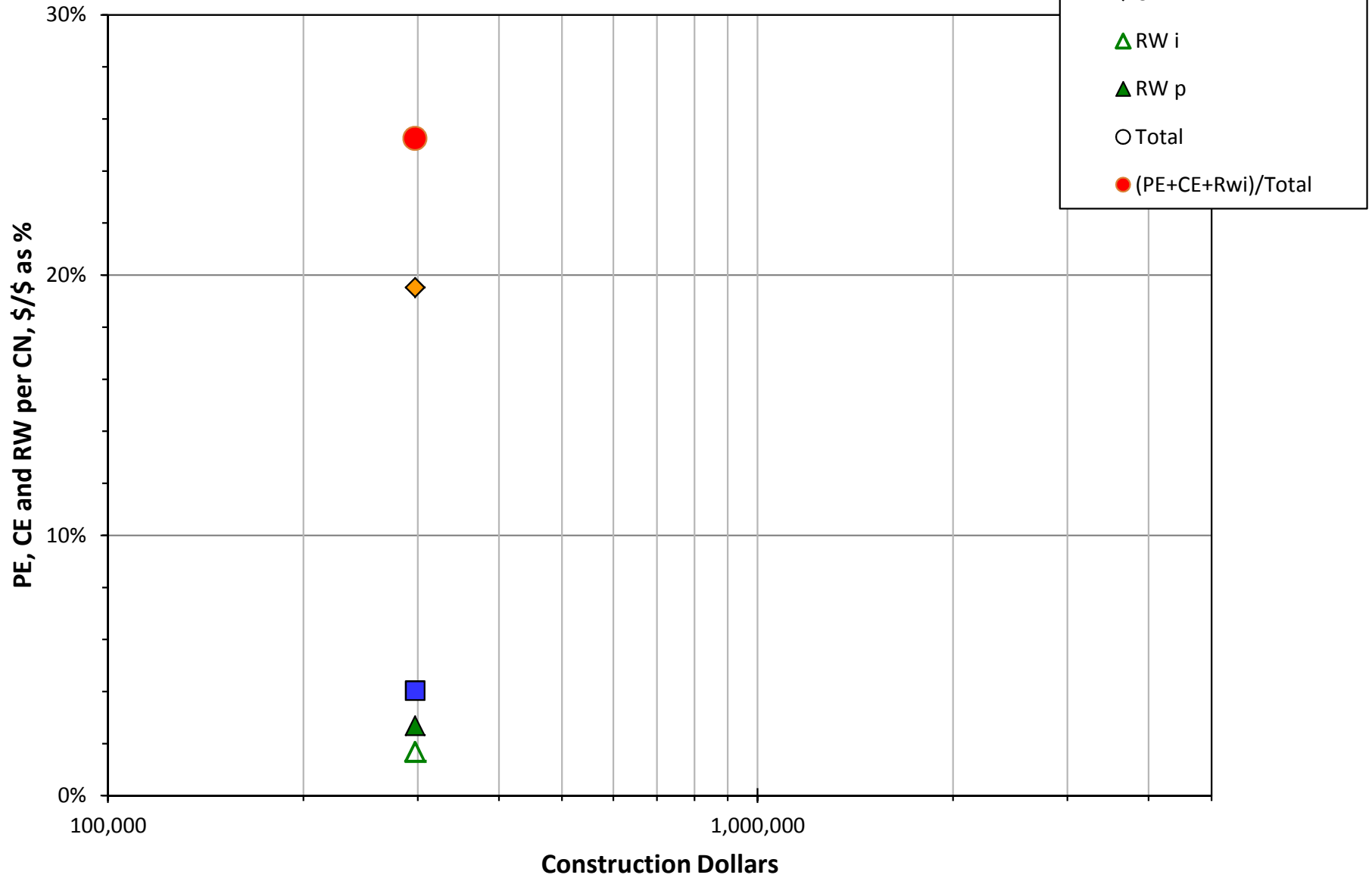
Factors for New or Improved 2 Lane

7/1/2012 to 6/30/2015



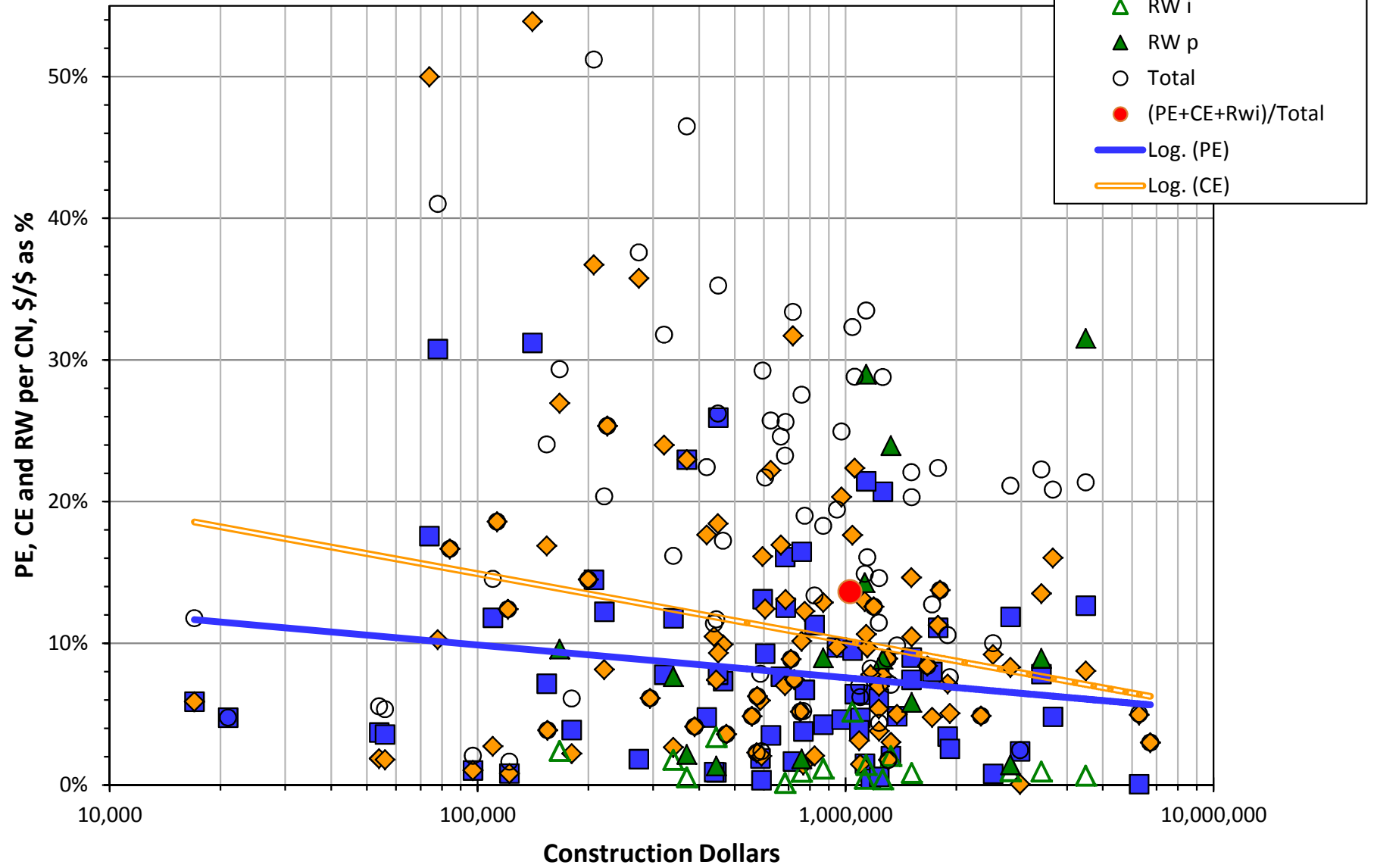
Factors for Shoulder Widening

7/1/2012 to 6/30/2015



Factors for Safety

7/1/2012 to 6/30/2015



Factors for Routine Maintenance

7/1/2012 to 6/30/2015

