

Three Year Engineering Factors, SFY 2025 Report:

Engineering Costs per Total Construction Costs

Report Key:

Projects are grouped by the primary Detailed Work type, and then Detailed Work types are grouped into categories:

| Category | Detailed Work |
|---------------------|-------------------------------------|
| CAPITAL IMPROVEMENT | DRIVING/THRU LANES |
| CAPITAL IMPROVEMENT | CONSTRUCT NEW BRIDGE |
| CAPITAL IMPROVEMENT | INTERCHANGE |
| ASSET MANAGEMENT | BARRIERS |
| ASSET MANAGEMENT | BICYCLE/PEDESTRIAN FACILITIES |
| ASSET MANAGEMENT | BRIDGE MISC |
| ASSET MANAGEMENT | BRIDGE PREVENTIVE MAINT |
| ASSET MANAGEMENT | BRIDGE REDECK |
| ASSET MANAGEMENT | BRIDGE REHAB |
| ASSET MANAGEMENT | BRIDGE REPLACEMENT |
| ASSET MANAGEMENT | DRAINAGE |
| ASSET MANAGEMENT | DRIVING/THRU LANES |
| ASSET MANAGEMENT | FENCING |
| ASSET MANAGEMENT | INTERCHANGE |
| ASSET MANAGEMENT | INTERSECTION |
| ASSET MANAGEMENT | J-TURNS |
| ASSET MANAGEMENT | LIGHTING |
| ASSET MANAGEMENT | PAVEMENT FRICTION |
| ASSET MANAGEMENT | PAVEMENT MARKING |
| ASSET MANAGEMENT | PAVEMENT PRESERVATION |
| ASSET MANAGEMENT | PAVEMENT REBUILD |
| ASSET MANAGEMENT | PAVEMENT REPAIR ONLY |
| ASSET MANAGEMENT | PAVEMENT RESURFACING |
| ASSET MANAGEMENT | PAVEMENT RESURFACING WITH SHOULDERs |
| ASSET MANAGEMENT | ADA TRANSITION PLAN UPGRADES |
| ASSET MANAGEMENT | ROADWAY ALIGNMENT |
| ASSET MANAGEMENT | ROUNABOUT |
| ASSET MANAGEMENT | RUMBLESTRIPES |
| ASSET MANAGEMENT | SAFETY OTHER |
| ASSET MANAGEMENT | SHOULDERs |
| ASSET MANAGEMENT | SIGNAGE |
| ASSET MANAGEMENT | SIGNALS |
| ASSET MANAGEMENT | SLIDES/EROSION |
| ASSET MANAGEMENT | TURN LANES |
| OTHER | EMERGENCY RESPONSE OPERATIONS |
| OTHER | ITS EQUIPMENT OR SOFTWARE |
| OTHER | ON-CALL WORKZONE ENFORCEMENT |
| OTHER | STAFFING AND MANAGEMENT OF THE TMC |

Note: Since SFY 2015'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 Detailed Work type and district. Excludes payment and payback 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.

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

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

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

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

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

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

$$\text{Total Engineering} = \frac{(\text{actual PE}) + (\text{actual CE}) + (RW \text{ incidentals})}{(\text{actual CN})}$$

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

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

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

7/1/2022 - 6/30/2025
Statewide Totals

Statewide

| Detailed Work Type | Preliminary Engineering | Construction Engineering | Right of Way Incidentals | Total Engineering | Right of Way Acquisition | n= |
|--|-------------------------|--------------------------|--------------------------|-------------------|--------------------------|-------|
| ADA TRANSITION PLAN UPGRADES | 25.26% | 12.36% | 1.43% | 39.05% | 0.91% | 36 |
| BARRIERS | 7.80% | 11.90% | 1.21% | 20.92% | 7.45% | 8 |
| BICYCLE/PEDESTRIAN FACILITIES | 6.42% | 8.64% | 1.91% | 16.97% | 43.02% | 8 |
| BRIDGE MISC | 4.40% | 11.95% | 0.16% | 16.51% | 0.37% | 11 |
| BRIDGE PREVENTIVE MAINT | 4.32% | 12.71% | 0.00% | 17.02% | 0.00% | 33 |
| BRIDGE REDECK | 6.01% | 6.28% | 0.02% | 12.31% | 0.00% | 14 |
| BRIDGE REHAB | 6.15% | 7.00% | 0.04% | 13.20% | 1.03% | 119 |
| BRIDGE REPAINT | 5.07% | 13.88% | 0.00% | 18.95% | 0.00% | 10 |
| BRIDGE REPLACEMENT | 12.65% | 8.58% | 0.14% | 21.37% | 0.35% | 118 |
| DRAINAGE | 8.28% | 19.12% | 0.92% | 28.31% | 2.29% | 6 |
| DRIVING/THRU LANES | 12.77% | 6.60% | 0.86% | 20.23% | 3.80% | 12 |
| INTERCHANGE | 6.21% | 7.05% | 0.61% | 13.87% | 4.86% | 5 |
| INTERSECTION | 10.17% | 11.32% | 0.97% | 22.46% | 0.83% | 5 |
| ITS EQUIPMENT OR SOFTWARE | 15.58% | 12.46% | 0.00% | 28.04% | 0.00% | 2 |
| J-TURNS | 9.58% | 10.95% | 0.00% | 20.53% | 0.00% | 4 |
| LIGHTING | 31.82% | 22.82% | 0.00% | 54.64% | 0.00% | 2 |
| PAVEMENT FRICTION | 2.14% | 3.71% | 0.00% | 5.85% | 0.00% | 6 |
| PAVEMENT MARKING | 0.18% | 5.27% | 0.00% | 5.45% | 0.00% | 30 |
| PAVEMENT PRESERVATION | 1.15% | 4.38% | 0.00% | 5.53% | 0.00% | 68 |
| PAVEMENT REBUILD | 6.81% | 10.32% | 0.84% | 17.97% | 2.11% | 8 |
| PAVEMENT REPAIR ONLY | 2.01% | 8.05% | 0.00% | 10.06% | 0.00% | 35 |
| PAVEMENT RESURFACING | 2.39% | 5.44% | 0.15% | 7.97% | 0.45% | 389 |
| PAVEMENT RESURFACING WITH SHOULDERS | 2.55% | 4.40% | 0.00% | 6.95% | 0.00% | 8 |
| PAVING/REPAIRING SHOULDERS ONLY | 0.87% | 1.13% | 0.00% | 2.01% | 0.00% | 1 |
| ROADWAY ALIGNMENT | 11.50% | 13.85% | 1.96% | 27.31% | 2.12% | 2 |
| ROUNDABOUT | 6.83% | 12.63% | 1.33% | 20.79% | 4.64% | 10 |
| RUMBLESTRIPES | 3.44% | 8.38% | 0.00% | 11.82% | 0.00% | 6 |
| SAFETY OTHER | 15.85% | 19.05% | 3.80% | 38.70% | 4.70% | 2 |
| SHOULDERS | 6.45% | 6.32% | 0.80% | 13.57% | 1.53% | 4 |
| SIGNAGE | 5.39% | 8.91% | 0.00% | 14.31% | 0.00% | 9 |
| SIGNALS | 17.14% | 14.73% | 0.09% | 31.96% | 0.07% | 10 |
| SLIDES/EROSION | 8.13% | 9.06% | 0.09% | 17.28% | 0.01% | 6 |
| TURN LANES | 11.98% | 10.57% | 0.64% | 23.19% | 1.54% | 21 |
| | 5.55% | 6.82% | 0.21% | 12.58% | 1.03% | 1,008 |

| Detailed Work Categories | Preliminary Engineering | Construction Engineering | Right of Way Incidentals | Total Engineering | Right of Way Acquisition | n= |
|----------------------------|-------------------------|--------------------------|--------------------------|-------------------|--------------------------|-------|
| CAPITAL IMPROVEMENT | 10.70% | 6.74% | 0.78% | 18.22% | 4.13% | 17 |
| ASSET MANAGEMENT | 5.31% | 6.82% | 0.18% | 12.31% | 0.88% | 989 |
| OTHER | 15.58% | 12.46% | 0.00% | 28.04% | 0.00% | 2 |
| | 5.55% | 6.82% | 0.21% | 12.58% | 1.03% | 1,008 |

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

Three Year Average Engineering Factors
Engineering Costs per Total Construction Costs

7/1/2022 - 6/30/2025
by District

Northwest

| Detailed Work Type | Preliminary Engineering | Construction Engineering | Right of Way Incidentals | Total Engineering | Right of Way Acquisition | n= |
|--------------------------------------|-------------------------|--------------------------|--------------------------|-------------------|--------------------------|----|
| ADA TRANSITION PLAN UPGRADES | 28.84% | 8.87% | 1.17% | 38.87% | 1.02% | 3 |
| BICYCLE/PEDESTRIAN FACILITIES | 7.22% | 18.23% | 6.07% | 31.52% | 2.16% | 1 |
| BRIDGE PREVENTIVE MAINT | 13.60% | 17.03% | 0.00% | 30.63% | 0.00% | 1 |
| BRIDGE REDECK | 12.10% | 7.85% | 0.00% | 19.94% | 0.00% | 1 |
| BRIDGE REHAB | 5.10% | 6.95% | 0.01% | 12.05% | 0.00% | 25 |
| BRIDGE REPAINT | 1.72% | 16.02% | 0.00% | 17.75% | 0.00% | 3 |
| BRIDGE REPLACEMENT | 17.71% | 9.61% | 0.08% | 27.40% | 0.07% | 11 |
| DRAINAGE | 0.00% | 23.79% | 1.42% | 25.21% | 10.39% | 1 |
| PAVEMENT FRICTION | 96.94% | 41.57% | 0.00% | 138.51% | 0.00% | 1 |
| PAVEMENT PRESERVATION | 0.63% | 3.33% | 0.00% | 3.95% | 0.00% | 7 |
| PAVEMENT REPAIR ONLY | 0.00% | 3.56% | 0.00% | 3.56% | 0.00% | 3 |
| PAVEMENT RESURFACING | 0.28% | 3.09% | 0.00% | 3.37% | 0.00% | 23 |
| ROUNDABOUT | 5.98% | 15.84% | 0.44% | 22.27% | 0.58% | 1 |
| SLIDES/EROSION | 19.12% | 8.36% | 0.67% | 28.14% | 0.07% | 1 |
| TURN LANES | 6.02% | 6.11% | 0.08% | 12.21% | 0.24% | 1 |
| | 3.58% | 4.86% | 0.06% | 8.50% | 0.05% | 83 |

| Detailed Work Categories | Preliminary Engineering | Construction Engineering | Right of Way Incidentals | Total Engineering | Right of Way Acquisition | n= |
|--------------------------|-------------------------|--------------------------|--------------------------|-------------------|--------------------------|----|
| ASSET MANAGEMENT | 3.58% | 4.86% | 0.06% | 8.50% | 0.05% | 83 |
| | 3.58% | 4.86% | 0.06% | 8.50% | 0.05% | 83 |

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

Three Year Average Engineering Factors

Engineering Costs per Total Construction Costs

7/1/2022 - 6/30/2025
by District

Northeast

| Detailed Work Type | Preliminary Engineering | Construction Engineering | Right of Way Incidentals | Total Engineering | Right of Way Acquisition | n= |
|--|----------------------------|-----------------------------|-----------------------------|----------------------|-----------------------------|-----|
| ADA TRANSITION PLAN UPGRADES | 31.70% | 15.49% | 3.45% | 50.64% | 1.78% | 12 |
| BARRIERS | 1.32% | 17.52% | 0.00% | 18.84% | 0.00% | 2 |
| BRIDGE MISC | 7.56% | 9.23% | 0.00% | 16.79% | 0.00% | 3 |
| BRIDGE PREVENTIVE MAINT | 2.95% | 18.04% | 0.00% | 20.99% | 0.00% | 12 |
| BRIDGE REHAB | 8.97% | 9.66% | 0.07% | 18.70% | 0.09% | 6 |
| BRIDGE REPAINT | 9.34% | 12.79% | 0.00% | 22.13% | 0.00% | 5 |
| BRIDGE REPLACEMENT | 15.36% | 9.34% | 0.15% | 24.85% | 0.50% | 24 |
| DRIVING/THRU LANES | 2.17% | 12.08% | 0.00% | 14.26% | 0.00% | 1 |
| PAVEMENT MARKING | 0.47% | 4.24% | 0.00% | 4.71% | 0.00% | 2 |
| PAVEMENT PRESERVATION | 2.31% | 4.17% | 0.00% | 6.49% | 0.00% | 16 |
| PAVEMENT REBUILD | 4.13% | 6.83% | 0.00% | 10.96% | 0.00% | 1 |
| PAVEMENT REPAIR ONLY | 1.89% | 16.71% | 0.00% | 18.60% | 0.00% | 3 |
| PAVEMENT RESURFACING | 1.97% | 4.71% | 0.17% | 6.85% | 0.23% | 50 |
| PAVEMENT RESURFACING WITH SHOULDERS | 1.15% | 2.83% | 0.00% | 3.99% | 0.00% | 2 |
| ROUNDABOUT | 7.03% | 10.48% | 0.23% | 17.75% | 1.10% | 2 |
| SLIDES/EROSION | 23.52% | 2.73% | 0.05% | 26.30% | 0.00% | 1 |
| TURN LANES | 13.59% | 16.66% | 0.09% | 30.33% | 0.00% | 2 |
| | 5.66% | 7.33% | 0.20% | 13.19% | 0.28% | 144 |

| Detailed Work Categories | Preliminary Engineering | Construction Engineering | Right of Way Incidentals | Total Engineering | Right of Way Acquisition | n= |
|----------------------------|----------------------------|-----------------------------|-----------------------------|----------------------|-----------------------------|-----|
| CAPITAL IMPROVEMENT | 2.17% | 12.08% | 0.00% | 14.26% | 0.00% | 1 |
| ASSET MANAGEMENT | 5.68% | 7.30% | 0.20% | 13.18% | 0.29% | 143 |
| | 5.66% | 7.33% | 0.20% | 13.19% | 0.28% | 144 |

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

Three Year Average Engineering Factors
Engineering Costs per Total Construction Costs

7/1/2022 - 6/30/2025
by District

Kansas City

| Detailed Work Type | Preliminary Engineering | Construction Engineering | Right of Way Incidentals | Total Engineering | Right of Way Acquisition | n= |
|--|-------------------------|--------------------------|--------------------------|-------------------|--------------------------|-----|
| ADA TRANSITION PLAN UPGRADES | 9.33% | 19.39% | 0.00% | 28.72% | 0.00% | 1 |
| BARRIERS | 0.00% | 11.62% | 0.00% | 11.62% | 0.00% | 1 |
| BICYCLE/PEDESTRIAN FACILITIES | 33.98% | 24.59% | 5.44% | 64.01% | 0.38% | 2 |
| BRIDGE MIISC | 0.30% | 16.30% | 0.00% | 16.60% | 0.00% | 2 |
| BRIDGE REDECK | 4.90% | 4.64% | 0.00% | 9.54% | 0.00% | 1 |
| BRIDGE REHAB | 6.03% | 3.53% | 0.01% | 9.56% | 0.02% | 12 |
| BRIDGE REPLACEMENT | 16.51% | 9.62% | 0.08% | 26.21% | 0.04% | 23 |
| DRAINAGE | 16.80% | 18.25% | 1.52% | 36.57% | 0.89% | 2 |
| INTERCHANGE | 3.49% | 5.57% | 0.00% | 9.06% | 0.00% | 2 |
| INTERSECTION | 10.37% | 6.00% | 2.35% | 18.73% | 2.15% | 1 |
| J-TURNS | 5.17% | 12.71% | 0.00% | 17.88% | 0.00% | 1 |
| LIGHTING | 46.33% | 24.19% | 0.00% | 70.52% | 0.00% | 1 |
| PAVEMENT MARKING | 0.33% | 10.20% | 0.00% | 10.53% | 0.00% | 4 |
| PAVEMENT REBUILD | 9.19% | 9.63% | 0.00% | 18.82% | 0.00% | 2 |
| PAVEMENT REPAIR ONLY | 0.39% | 7.34% | 0.00% | 7.73% | 0.00% | 1 |
| PAVEMENT RESURFACING | 1.70% | 6.00% | 0.03% | 7.73% | 0.01% | 60 |
| PAVEMENT RESURFACING WITH SHOULDERS | 6.05% | 14.14% | 0.00% | 20.19% | 0.00% | 1 |
| ROADWAY ALIGNMENT | 19.19% | 16.78% | 7.73% | 43.70% | 6.16% | 1 |
| ROUNDABOUT | 9.06% | 12.88% | 1.93% | 23.88% | 1.93% | 3 |
| SAFETY OTHER | 15.85% | 19.05% | 3.80% | 38.70% | 4.70% | 2 |
| SHOULDERS | 14.17% | 5.65% | 1.76% | 21.58% | 3.36% | 2 |
| SIGNALS | 9.89% | 10.78% | 0.00% | 20.67% | 0.00% | 3 |
| SLIDES/EROSION | 2.77% | 18.95% | 0.00% | 21.72% | 0.00% | 1 |
| TURN LANES | 6.82% | 14.50% | 1.59% | 22.90% | 1.69% | 4 |
| | 5.69% | 6.53% | 0.17% | 12.38% | 0.17% | 133 |

| Detailed Work Categories | Preliminary Engineering | Construction Engineering | Right of Way Incidentals | Total Engineering | Right of Way Acquisition | n= |
|----------------------------|-------------------------|--------------------------|--------------------------|-------------------|--------------------------|-----|
| CAPITAL IMPROVEMENT | 3.49% | 5.57% | 0.00% | 9.06% | 0.00% | 2 |
| ASSET MANAGEMENT | 5.74% | 6.55% | 0.17% | 12.46% | 0.17% | 131 |
| | 5.69% | 6.53% | 0.17% | 12.38% | 0.17% | 133 |

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

Three Year Average Engineering Factors

Engineering Costs per Total Construction Costs

7/1/2022 - 6/30/2025
by District

Central

| Detailed Work Type | Preliminary Engineering | Construction Engineering | Right of Way Incidentals | Total Engineering | Right of Way Acquisition | n= |
|-------------------------------------|-------------------------|--------------------------|--------------------------|-------------------|--------------------------|-----|
| ADA TRANSITION PLAN UPGRADES | 160.52% | 26.08% | 1.51% | 188.11% | 0.00% | 1 |
| BARRIERS | 2.06% | 6.02% | 0.00% | 8.08% | 0.00% | 1 |
| BRIDGE MISC | 5.86% | 7.35% | 0.00% | 13.21% | 0.00% | 2 |
| BRIDGE PREVENTIVE MAINT | 5.49% | 9.25% | 0.00% | 14.74% | 0.00% | 3 |
| BRIDGE REDECK | 8.89% | 14.32% | 0.00% | 23.21% | 0.00% | 8 |
| BRIDGE REHAB | 6.56% | 10.48% | 0.06% | 17.09% | 0.01% | 35 |
| BRIDGE REPAINT | 2.52% | 11.75% | 0.00% | 14.27% | 0.00% | 2 |
| BRIDGE REPLACEMENT | 18.36% | 11.72% | 0.37% | 30.45% | 0.13% | 22 |
| DRAINAGE | 0.00% | 13.36% | 0.00% | 13.36% | 0.00% | 1 |
| INTERCHANGE | 11.77% | 11.82% | 1.12% | 24.70% | 11.01% | 1 |
| INTERSECTION | 9.90% | 12.25% | 0.00% | 22.15% | 0.00% | 1 |
| PAVEMENT FRICTION | 1.40% | 2.73% | 0.00% | 4.13% | 0.00% | 1 |
| PAVEMENT MARKING | 0.52% | 6.25% | 0.00% | 6.77% | 0.00% | 6 |
| PAVEMENT PRESERVATION | 2.54% | 5.67% | 0.00% | 8.21% | 0.00% | 14 |
| PAVEMENT REBUILD | 12.03% | 16.10% | 0.00% | 28.13% | 0.00% | 1 |
| PAVEMENT REPAIR ONLY | 0.32% | 5.86% | 0.00% | 6.18% | 0.00% | 7 |
| PAVEMENT RESURFACING | 1.39% | 4.71% | 0.01% | 6.11% | 0.00% | 71 |
| ROUNDABOUT | 4.63% | 10.27% | 5.94% | 20.84% | 40.83% | 1 |
| RUMBLESTRIPES | 1.48% | 6.92% | 0.00% | 8.40% | 0.00% | 1 |
| SIGNAGE | 7.26% | 4.93% | 0.00% | 12.19% | 0.00% | 4 |
| SIGNALS | 11.36% | 23.30% | 1.15% | 35.81% | 0.90% | 2 |
| TURN LANES | 20.15% | 8.78% | 0.36% | 29.29% | 1.16% | 5 |
| | 4.83% | 6.63% | 0.12% | 11.58% | 0.53% | 190 |

| Detailed Work Categories | Preliminary Engineering | Construction Engineering | Right of Way Incidentals | Total Engineering | Right of Way Acquisition | n= |
|----------------------------|-------------------------|--------------------------|--------------------------|-------------------|--------------------------|-----|
| CAPITAL IMPROVEMENT | 11.77% | 11.82% | 1.12% | 24.70% | 11.01% | 1 |
| ASSET MANAGEMENT | 4.64% | 6.49% | 0.09% | 11.22% | 0.23% | 189 |
| | 4.83% | 6.63% | 0.12% | 11.58% | 0.53% | 190 |

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

Three Year Average Engineering Factors
Engineering Costs per Total Construction Costs

7/1/2022 - 6/30/2025
by District

St. Louis

| Detailed Work Type | Preliminary Engineering | Construction Engineering | Right of Way Incidentals | Total Engineering | Right of Way Acquisition | n= |
|--|----------------------------|-----------------------------|-----------------------------|----------------------|-----------------------------|-----|
| ADA TRANSITION PLAN UPGRADES | 15.15% | 7.45% | 0.62% | 23.21% | 1.04% | 1 |
| BARRIERS | 2.97% | 16.18% | 0.00% | 19.15% | 0.00% | 1 |
| BICYCLE/PEDESTRIAN FACILITIES | 0.66% | 3.81% | 2.12% | 6.59% | 68.31% | 3 |
| BRIDGE MISC | 3.62% | 11.41% | 0.00% | 15.02% | 0.00% | 3 |
| BRIDGE PREVENTIVE MAINT | 7.03% | 9.80% | 0.00% | 16.83% | 0.00% | 6 |
| BRIDGE REHAB | 5.42% | 9.22% | 0.06% | 14.70% | 3.55% | 15 |
| BRIDGE REPLACEMENT | 7.19% | 5.94% | 0.11% | 13.24% | 0.70% | 7 |
| DRAINAGE | 3.55% | 18.31% | 0.00% | 21.87% | 0.00% | 1 |
| DRIVING/THRU LANES | 15.84% | 1.76% | 0.00% | 17.60% | 0.01% | 1 |
| INTERCHANGE | 12.85% | 12.44% | 0.00% | 25.29% | 0.00% | 1 |
| INTERSECTION | 16.14% | 20.23% | 0.00% | 36.37% | 0.00% | 1 |
| J-TURNS | 11.47% | 9.81% | 0.00% | 21.27% | 0.00% | 2 |
| LIGHTING | 26.54% | 22.32% | 0.00% | 48.86% | 0.00% | 1 |
| PAVEMENT MARKING | 0.00% | 4.60% | 0.00% | 4.60% | 0.00% | 5 |
| PAVEMENT PRESERVATION | 1.21% | 5.22% | 0.00% | 6.44% | 0.00% | 8 |
| PAVEMENT REBUILD | 7.37% | 10.34% | 0.00% | 17.71% | 0.00% | 2 |
| PAVEMENT REPAIR ONLY | 2.97% | 8.27% | 0.00% | 11.25% | 0.00% | 6 |
| PAVEMENT RESURFACING | 8.98% | 8.92% | 1.05% | 18.95% | 3.82% | 37 |
| PAVEMENT RESURFACING WITH SHOULDERS | 9.57% | 5.99% | 0.00% | 15.56% | 0.00% | 2 |
| ROUNDABOUT | 1.84% | 21.34% | 0.00% | 23.18% | 0.00% | 1 |
| SHOULDERS | 0.05% | 12.20% | 0.00% | 12.26% | 0.00% | 1 |
| SIGNAGE | 5.94% | 10.64% | 0.00% | 16.58% | 0.00% | 3 |
| SIGNALS | 10.55% | 14.95% | 0.00% | 25.50% | 0.00% | 3 |
| SLIDES/EROSION | 0.56% | 9.27% | 0.00% | 9.84% | 0.00% | 1 |
| TURN LANES | 14.74% | 12.46% | 0.86% | 28.06% | 3.83% | 5 |
| | 7.67% | 8.02% | 0.42% | 16.10% | 3.67% | 117 |

| Detailed Work Categories | Preliminary Engineering | Construction Engineering | Right of Way Incidentals | Total Engineering | Right of Way Acquisition | n= |
|----------------------------|----------------------------|-----------------------------|-----------------------------|----------------------|-----------------------------|-----|
| CAPITAL IMPROVEMENT | 15.51% | 2.95% | 0.00% | 18.46% | 0.01% | 2 |
| ASSET MANAGEMENT | 7.31% | 8.25% | 0.44% | 16.00% | 3.83% | 115 |
| | 7.67% | 8.02% | 0.42% | 16.10% | 3.67% | 117 |

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

Three Year Average Engineering Factors
Engineering Costs per Total Construction Costs

7/1/2022 - 6/30/2025
by District

Southwest

| Detailed Work Type | Preliminary Engineering | Construction Engineering | Right of Way Incidentals | Total Engineering | Right of Way Acquisition | n= |
|--|-------------------------|--------------------------|--------------------------|-------------------|--------------------------|-----|
| ADA TRANSITION PLAN UPGRADES | 19.06% | 11.67% | 1.53% | 32.26% | 0.66% | 16 |
| BARRIERS | 13.01% | 3.37% | 0.00% | 16.39% | 0.00% | 1 |
| BRIDGE MISC | 5.60% | 14.13% | 0.68% | 20.41% | 1.55% | 1 |
| BRIDGE PREVENTIVE MAINT | 2.77% | 6.52% | 0.00% | 9.29% | 0.00% | 9 |
| BRIDGE REDECK | 7.93% | 8.08% | 0.14% | 16.16% | 0.01% | 4 |
| BRIDGE REHAB | 8.86% | 8.32% | 0.08% | 17.26% | 0.20% | 18 |
| BRIDGE REPLACEMENT | 12.86% | 10.11% | 0.08% | 23.05% | 0.14% | 13 |
| DRIVING/THRU LANES | 12.20% | 7.69% | 1.26% | 21.15% | 5.59% | 9 |
| INTERCHANGE | 2.74% | 3.31% | 0.85% | 6.90% | 5.02% | 1 |
| INTERSECTION | 4.96% | 1.43% | 0.00% | 6.39% | 0.00% | 1 |
| ITS EQUIPMENT OR SOFTWARE | 15.58% | 12.46% | 0.00% | 28.04% | 0.00% | 2 |
| PAVEMENT FRICTION | 1.25% | 4.92% | 0.00% | 6.17% | 0.00% | 3 |
| PAVEMENT MARKING | 0.00% | 3.97% | 0.00% | 3.97% | 0.00% | 10 |
| PAVEMENT PRESERVATION | 0.44% | 3.63% | 0.00% | 4.07% | 0.00% | 9 |
| PAVEMENT REBUILD | 3.13% | 6.39% | 0.00% | 9.52% | 0.00% | 1 |
| PAVEMENT REPAIR ONLY | 7.63% | 2.04% | 0.00% | 9.67% | 0.00% | 11 |
| PAVEMENT RESURFACING | 2.58% | 4.34% | 0.02% | 6.93% | 0.04% | 80 |
| PAVEMENT RESURFACING WITH SHOULDERS | 1.13% | 3.10% | 0.00% | 4.23% | 0.00% | 2 |
| ROUNDABOUT | 7.98% | 7.01% | 1.55% | 16.53% | 5.86% | 2 |
| SIGNAGE | 16.44% | 19.06% | 0.00% | 35.50% | 0.00% | 1 |
| SIGNALS | 101.96% | 21.11% | 0.00% | 123.07% | 0.00% | 2 |
| SLIDES/EROSION | 1.49% | 9.80% | 0.00% | 11.29% | 0.00% | 1 |
| TURN LANES | 11.02% | 12.31% | 1.41% | 24.73% | 0.93% | 1 |
| | 5.91% | 5.98% | 0.31% | 12.21% | 1.16% | 198 |

| Detailed Work Categories | Preliminary Engineering | Construction Engineering | Right of Way Incidentals | Total Engineering | Right of Way Acquisition | n= |
|----------------------------|-------------------------|--------------------------|--------------------------|-------------------|--------------------------|-----|
| CAPITAL IMPROVEMENT | 10.45% | 6.88% | 1.19% | 18.52% | 5.48% | 10 |
| ASSET MANAGEMENT | 4.82% | 5.74% | 0.11% | 10.68% | 0.16% | 186 |
| OTHER | 15.58% | 12.46% | 0.00% | 28.04% | 0.00% | 2 |
| | 5.91% | 5.98% | 0.31% | 12.21% | 1.16% | 198 |

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

Three Year Average Engineering Factors
Engineering Costs per Total Construction Costs

7/1/2022 - 6/30/2025
by District

Southeast

| Detailed Work Type | Preliminary Engineering | Construction Engineering | Right of Way Incidentals | Total Engineering | Right of Way Acquisition | n= |
|--|-------------------------|--------------------------|--------------------------|-------------------|--------------------------|-----|
| ADA TRANSITION PLAN UPGRADES | 18.54% | 20.80% | 0.00% | 39.34% | 0.00% | 2 |
| BARRIERS | 9.31% | 11.79% | 1.56% | 22.67% | 9.56% | 2 |
| BICYCLE/PEDESTRIAN FACILITIES | 13.36% | 14.77% | 0.00% | 28.13% | 0.00% | 2 |
| BRIDGE PREVENTIVE MAINT | 5.98% | 16.78% | 0.00% | 22.76% | 0.00% | 2 |
| BRIDGE REHAB | 6.88% | 5.73% | 0.11% | 12.72% | 0.82% | 8 |
| BRIDGE REPLACEMENT | 12.55% | 10.15% | 0.25% | 22.95% | 0.08% | 18 |
| DRAINAGE | 8.14% | 19.97% | 0.96% | 29.07% | 2.77% | 1 |
| DRIVING/THRU LANES | 12.15% | 9.79% | 0.00% | 21.94% | 0.00% | 1 |
| INTERSECTION | 14.80% | 33.62% | 0.72% | 49.14% | 0.20% | 1 |
| J-TURNS | 3.34% | 17.38% | 0.00% | 20.72% | 0.00% | 1 |
| PAVEMENT FRICTION | 0.00% | 8.22% | 0.00% | 8.22% | 0.00% | 1 |
| PAVEMENT MARKING | 0.00% | 4.10% | 0.00% | 4.10% | 0.00% | 3 |
| PAVEMENT PRESERVATION | 0.59% | 5.32% | 0.00% | 5.91% | 0.00% | 13 |
| PAVEMENT REBUILD | 6.74% | 12.49% | 2.53% | 21.77% | 6.35% | 1 |
| PAVEMENT REPAIR ONLY | 0.17% | 14.53% | 0.00% | 14.70% | 0.00% | 4 |
| PAVEMENT RESURFACING | 1.65% | 6.60% | 0.01% | 8.26% | 0.03% | 66 |
| PAVEMENT RESURFACING WITH SHOULDERS | 0.54% | 3.96% | 0.00% | 4.50% | 0.00% | 1 |
| PAVING/REPAIRING SHOULDERS ONLY | 0.87% | 1.13% | 0.00% | 2.01% | 0.00% | 1 |
| ROADWAY ALIGNMENT | 9.13% | 12.94% | 0.19% | 22.26% | 0.87% | 1 |
| RUMBLESTRIPES | 4.33% | 9.04% | 0.00% | 13.37% | 0.00% | 5 |
| SHOULDERS | 0.00% | 5.14% | 0.00% | 5.14% | 0.00% | 1 |
| SIGNAGE | 0.17% | 11.19% | 0.00% | 11.36% | 0.00% | 1 |
| SLIDES/EROSION | 0.00% | 7.17% | 0.00% | 7.17% | 0.00% | 1 |
| TURN LANES | 0.49% | 6.78% | 0.00% | 7.26% | 0.00% | 3 |
| | 4.24% | 7.64% | 0.11% | 11.99% | 0.36% | 140 |

| Detailed Work Categories | Preliminary Engineering | Construction Engineering | Right of Way Incidentals | Total Engineering | Right of Way Acquisition | n= |
|----------------------------|-------------------------|--------------------------|--------------------------|-------------------|--------------------------|-----|
| CAPITAL IMPROVEMENT | 12.15% | 9.79% | 0.00% | 21.94% | 0.00% | 1 |
| ASSET MANAGEMENT | 4.11% | 7.60% | 0.12% | 11.82% | 0.37% | 139 |
| | 4.24% | 7.64% | 0.11% | 11.99% | 0.36% | 140 |

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

Three Year Average Engineering Factors
Engineering Costs per Total Construction Costs

7/1/2022 - 6/30/2025
by District

Statewide

| Detailed Work Type | Preliminary Engineering | Construction Engineering | Right of Way Incidentals | Total Engineering | Right of Way Acquisition | n= |
|------------------------------|----------------------------|-----------------------------|-----------------------------|----------------------|-----------------------------|----|
| PAVEMENT PRESERVATION | 0.00% | 6.00% | 0.00% | 6.00% | 0.00% | 1 |
| PAVEMENT RESURFACING | 0.00% | 5.10% | 0.00% | 5.10% | 0.00% | 2 |
| | 0.00% | 5.21% | 0.00% | 5.21% | 0.00% | 3 |

| Detailed Work Categories | Preliminary Engineering | Construction Engineering | Right of Way Incidentals | Total Engineering | Right of Way Acquisition | n= |
|--------------------------|----------------------------|-----------------------------|-----------------------------|----------------------|-----------------------------|----|
| ASSET MANAGEMENT | 0.00% | 5.21% | 0.00% | 5.21% | 0.00% | 3 |
| | 0.00% | 5.21% | 0.00% | 5.21% | 0.00% | 3 |

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