

Three Year Engineering Factors, SFY 2023 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	ROUNDABOUT
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.

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

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

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

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

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

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

$$\begin{aligned} \text{Total Engineering} = & \\ & ((\text{actual PE}) + (\text{actual CE}) + (RW \text{ incidentals})) \\ & \text{-----} \\ & (\text{actual CN}) \end{aligned}$$

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

7/1/2020- 6/30/2023
Statewide Totals

Statewide						
Detailed Work	Preliminary Engineering	Construction Inspection	Right of Way Incidentals	Total Engineering	Right of Way Acquisition	n=
BARRIERS	1.74%	8.85%	0.18%	10.77%	1.15%	38
BICYCLE/PEDESTRIAN FACILITIES	10.99%	12.02%	0.00%	23.01%	0.00%	3
BRIDGE MISC	0.84%	12.28%	0.00%	13.11%	0.00%	9
BRIDGE PREVENTIVE MAINT	7.00%	7.85%	0.05%	14.90%	0.09%	13
BRIDGE REDECK	4.90%	4.64%	0.00%	9.54%	0.00%	1
BRIDGE REHAB	7.22%	7.41%	0.03%	14.66%	0.05%	156
BRIDGE REPAINT	4.98%	13.96%	0.00%	18.94%	0.00%	15
BRIDGE REPLACEMENT	16.62%	10.62%	0.23%	27.47%	0.40%	167
DRAINAGE	16.25%	24.33%	0.54%	41.11%	1.06%	8
DRIVING/THRU LANES	6.70%	6.26%	0.78%	13.75%	6.48%	13
FENCING	0.55%	16.26%	0.00%	16.82%	0.00%	5
INTERCHANGE	9.05%	7.56%	0.60%	17.21%	7.26%	9
INTERSECTION	15.74%	12.61%	0.12%	28.47%	0.319%	4
ITS EQUIPMENT OR SOFTWARE	0.93%	5.61%	0.00%	6.55%	0.00%	12
J-TURNS	14.16%	9.30%	0.00%	23.46%	0.00%	2
LIGHTING	1.12%	9.13%	0.00%	10.25%	0.00%	5
PAVEMENT FRICTION	2.99%	6.87%	0.00%	9.87%	0.00%	6
PAVEMENT MARKING	0.47%	7.91%	0.00%	8.38%	0.00%	5
PAVEMENT PRESERVATION	1.66%	5.06%	0.00%	6.73%	0.00%	83
PAVEMENT REBUILD	7.57%	10.14%	0.00%	17.71%	0.00%	3
PAVEMENT REPAIR ONLY	0.75%	7.26%	0.00%	8.01%	0.00%	60
PAVEMENT RESURFACING	2.40%	5.91%	0.04%	8.35%	0.07%	483
PAVEMENT RESURFACING WITH SHOULDERS	12.04%	6.01%	0.79%	18.84%	0.18%	2
ADA TRANSITION PLAN UPGRADES	15.53%	14.07%	1.47%	31.07%	0.79%	46
ROADWAY ALIGNMENT	15.32%	21.75%	5.70%	42.77%	4.81%	2
ROUNDBABOUT	6.69%	9.94%	1.60%	18.23%	6.54%	8
RUMBLESTRIPES	5.75%	9.05%	0.32%	15.13%	0.29%	9
SAFETY OTHER	14.85%	14.78%	1.09%	30.72%	5.66%	5
SHOULDERS	7.44%	5.41%	0.93%	13.78%	1.76%	3
SIGNAGE	12.15%	11.14%	0.00%	23.29%	0.00%	17
SIGNALS	9.82%	7.23%	0.32%	17.38%	1.36%	12
SLIDES/EROSION	9.13%	10.22%	0.16%	19.51%	0.51%	29
TURN LANES	13.75%	12.61%	0.74%	27.10%	3.81%	30
	6.04%	7.34%	0.19%	13.58%	1.02%	1,263

Detailed Work Categories	Preliminary Engineering	Construction Inspection	Right of Way Incidentals	Total Engineering	Right of Way Acquisition	n=
CAPITAL IMPROVEMENT	7.89%	6.92%	0.69%	15.49%	6.88%	22
ASSET MANAGEMENT	5.84%	7.40%	0.14%	13.38%	0.32%	1,229
OTHER	0.93%	5.61%	0.00%	6.55%	0.00%	12
	6.04%	7.34%	0.19%	13.58%	1.02%	1,263

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

7/1/2020 - 6/30/2023
by District

Northwest

Detailed Work	Preliminary Engineering	Construction Inspection	Right of Way Incidentals	Total Engineering	Right of Way Acquisition	n=
BARRIERS	0.02%	8.53%	0.00%	8.55%	0.00%	1
BRIDGE PREVENTIVE MAINT	2.53%	9.29%	0.00%	11.82%	0.00%	4
BRIDGE REHAB	7.84%	6.93%	0.01%	14.78%	0.01%	39
BRIDGE REPAINT	1.72%	16.02%	0.00%	17.75%	0.00%	3
BRIDGE REPLACEMENT	19.81%	7.83%	0.32%	27.97%	0.57%	24
DRAINAGE	0.00%	23.79%	1.42%	25.21%	10.39%	1
PAVEMENT PRESERVATION	0.84%	4.22%	0.00%	5.06%	0.00%	18
PAVEMENT REPAIR ONLY	0.05%	4.11%	0.00%	4.16%	0.00%	7
PAVEMENT RESURFACING	0.64%	4.15%	0.00%	4.78%	0.00%	47
PAVEMENT RESURFACING WITH SHOULDERS	12.04%	6.01%	0.79%	18.84%	0.18%	2
ADA TRANSITION PLAN UPGRADES	19.23%	9.69%	0.93%	29.85%	0.74%	5
SAFETY OTHER	17.67%	27.08%	0.00%	44.75%	0.00%	1
SLIDES/EROSION	9.23%	8.41%	0.00%	17.64%	0.00%	10
	4.50%	5.31%	0.06%	9.87%	0.09%	162

Detailed Work Categories	Preliminary Engineering	Construction Inspection	Right of Way Incidentals	Total Engineering	Right of Way Acquisition	n=
ASSET MANAGEMENT	4.50%	5.31%	0.06%	9.87%	100.00%	162
	4.50%	5.31%	0.06%	9.87%	0.09%	162

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

7/1/2020 - 6/30/2023
by District

Northeast						
Detailed Work	Preliminary Engineering	Construction Inspection	Right of Way Incidentals	Total Engineering	Right of Way Acquisition	n=
BARRIERS	1.11%	13.67%	0.00%	14.78%	0.00%	6
BRIDGE MISC	48.32%	27.32%	0.00%	75.64%	0.00%	1
BRIDGE PREVENTIVE MAINT	8.45%	6.13%	0.00%	14.57%	0.00%	2
BRIDGE REHAB	9.39%	13.93%	0.05%	23.37%	0.01%	9
BRIDGE REPAINT	8.24%	13.69%	0.00%	21.92%	0.00%	11
BRIDGE REPLACEMENT	16.48%	11.34%	0.12%	27.94%	0.22%	29
ITS EQUIPMENT OR SOFTWARE	11.77%	32.73%	0.00%	44.50%	0.00%	1
LIGHTING	0.00%	38.03%	0.00%	38.03%	0.00%	1
PAVEMENT PRESERVATION	3.18%	4.47%	0.00%	7.64%	0.00%	29
PAVEMENT REBUILD	4.13%	6.83%	0.00%	10.96%	0.00%	1
PAVEMENT REPAIR ONLY	2.17%	18.79%	0.00%	20.96%	0.00%	3
PAVEMENT RESURFACING	3.39%	5.58%	0.23%	9.20%	0.33%	51
ADA TRANSITION PLAN UPGRADES	32.72%	21.44%	3.33%	57.48%	1.46%	7
ROUNDABOUT	7.75%	11.14%	0.50%	19.40%	0.41%	1
RUMBLESTRIPES	1.93%	0.95%	0.00%	2.88%	0.00%	1
SIGNAGE	3.09%	12.84%	0.00%	15.93%	0.00%	1
TURN LANES	12.05%	14.02%	0.62%	26.69%	2.83%	3
	7.40%	7.95%	0.23%	15.58%	0.31%	157

Detailed Work Categories	Preliminary Engineering	Construction Inspection	Right of Way Incidentals	Total Engineering	Right of Way Acquisition	n=
CAPITAL IMPROVEMENT	0.87%	6.95%	0.00%	7.82%	100.00%	1
ASSET MANAGEMENT	7.40%	7.94%	0.23%	15.57%	100.00%	156
OTHER	11.77%	32.73%	0.00%	44.50%	100.00%	1
	7.08%	7.90%	0.22%	15.21%	0.30%	158

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Three Year Average Engineering Factors

Engineering Costs per Total Construction Costs

7/1/2020 - 6/30/2023
by District

Kansas City

Detailed Work	Preliminary Engineering	Construction Inspection	Right of Way Incidentals	Total Engineering	Right of Way Acquisition	n=
BARRIERS	0.34%	9.39%	0.00%	9.74%	0.00%	4
BRIDGE MISC	0.29%	9.81%	0.00%	10.10%	0.00%	3
BRIDGE REDECK	4.90%	4.64%	0.00%	9.54%	0.00%	1
BRIDGE REHAB	4.61%	4.03%	0.01%	8.65%	0.02%	14
BRIDGE REPLACEMENT	18.86%	9.79%	0.05%	28.71%	0.05%	20
DRAINAGE	25.12%	30.46%	0.70%	56.29%	0.41%	4
DRIVING/THRU LANES	6.76%	8.83%	0.00%	15.59%	0.00%	1
FENCING	1.55%	55.51%	0.00%	57.06%	0.00%	3
INTERCHANGE	9.32%	6.26%	0.18%	15.76%	6.51%	3
INTERSECTION	17.35%	14.79%	0.41%	32.55%	1.12%	1
LIGHTING	0.57%	8.31%	0.00%	8.88%	0.00%	2
PAVEMENT REBUILD	7.30%	9.29%	0.00%	16.59%	0.00%	1
PAVEMENT REPAIR ONLY	0.06%	6.73%	0.00%	6.79%	0.00%	13
PAVEMENT RESURFACING	1.94%	6.55%	0.03%	8.51%	0.01%	86
ADA TRANSITION PLAN UPGRADES	8.05%	13.46%	1.08%	22.60%	0.00%	7
ROADWAY ALIGNMENT	18.67%	16.78%	7.73%	43.18%	6.16%	1
ROUNDABOUT	8.85%	12.31%	0.94%	22.10%	0.09%	2
RUMBLESTRIPES	15.27%	7.80%	1.28%	24.35%	1.14%	1
SAFETY OTHER	15.46%	14.97%	0.58%	31.01%	2.54%	3
SHOULDERS	14.17%	5.65%	1.76%	21.58%	3.36%	2
SIGNAGE	4.71%	8.56%	0.00%	13.28%	0.00%	6
SIGNALS	8.90%	6.00%	0.37%	15.27%	1.55%	7
SLIDES/EROSION	25.69%	10.22%	0.00%	35.92%	0.00%	1
TURN LANES	13.08%	11.32%	0.51%	24.92%	0.52%	6
	6.25%	6.96%	0.14%	13.35%	0.91%	192

Detailed Work Categories	Preliminary Engineering	Construction Inspection	Right of Way Incidentals	Total Engineering	Right of Way Acquisition	n=
CAPITAL IMPROVEMENT	8.65%	6.93%	0.14%	15.72%	100.00%	4
ASSET MANAGEMENT	5.80%	6.96%	0.14%	12.90%	100.00%	188
	6.25%	6.96%	0.14%	13.35%	0.91%	192

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Three Year Average Engineering Factors

Engineering Costs per Total Construction Costs

7/1/2020 - 6/30/2023
by District

Central						
Detailed Work	Preliminary Engineering	Construction Inspection	Right of Way Incidentals	Total Engineering	Right of Way Acquisition	n=
BARRIERS	0.31%	12.71%	0.00%	13.02%	0.00%	3
BRIDGE MISC	3.60%	2.37%	0.00%	5.97%	0.00%	1
BRIDGE PREVENTIVE MAINT	7.65%	14.66%	0.00%	22.32%	0.00%	1
BRIDGE REHAB	12.49%	11.68%	0.19%	24.36%	0.18%	30
BRIDGE REPLACEMENT	20.60%	16.44%	0.55%	37.60%	0.36%	17
DRAINAGE	20.41%	17.80%	0.00%	38.21%	0.00%	1
INTERCHANGE	11.77%	11.82%	1.12%	24.70%	11.01%	1
ITS EQUIPMENT OR SOFTWARE	2.42%	4.74%	0.00%	7.16%	0.00%	1
PAVEMENT FRICTION	6.99%	4.65%	0.00%	11.64%	0.00%	1
PAVEMENT MARKING	0.00%	18.55%	0.00%	18.55%	0.00%	1
PAVEMENT PRESERVATION	2.05%	6.04%	0.01%	8.10%	0.00%	15
PAVEMENT REBUILD	12.03%	16.10%	0.00%	28.13%	0.00%	1
PAVEMENT REPAIR ONLY	0.57%	4.98%	0.00%	5.54%	0.00%	8
PAVEMENT RESURFACING	2.36%	5.87%	0.06%	8.29%	0.01%	60
ADA TRANSITION PLAN UPGRADES	15.96%	12.66%	3.00%	31.62%	2.34%	3
ROUNDBOUT	4.63%	10.27%	5.94%	20.84%	40.83%	1
SIGNAGE	3.36%	19.42%	0.00%	22.78%	0.00%	2
SIGNALS	10.02%	21.10%	0.00%	31.12%	0.00%	1
SLIDES/EROSION	1.43%	12.41%	0.00%	13.84%	0.00%	3
TURN LANES	17.61%	13.60%	0.92%	32.13%	2.73%	4
	5.84%	8.19%	0.26%	14.30%	0.82%	155

Detailed Work Categories	Preliminary Engineering	Construction Inspection	Right of Way Incidentals	Total Engineering	Right of Way Acquisition	n=
CAPITAL IMPROVEMENT	11.77%	11.82%	1.12%	24.70%	100.00%	1
ASSET MANAGEMENT	5.62%	8.06%	0.23%	13.92%	100.00%	153
OTHER	2.42%	4.74%	0.00%	7.16%	100.00%	1
	5.84%	8.19%	0.26%	14.30%	0.82%	155

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

7/1/2020 - 6/30/2023
by District

St. Louis

Detailed Work	Preliminary Engineering	Construction Inspection	Right of Way Incidentals	Total Engineering	Right of Way Acquisition	n=
BARRIERS	2.58%	5.61%	0.07%	8.26%	0.55%	11
BICYCLE/PEDESTRIAN FACILITIES	0.63%	4.77%	0.00%	5.40%	0.00%	1
BRIDGE MISC	0.38%	17.45%	0.00%	17.83%	0.00%	4
BRIDGE PREVENTIVE MAINT	6.87%	7.62%	0.05%	14.54%	0.10%	5
BRIDGE REHAB	9.18%	8.58%	0.01%	17.77%	0.09%	23
BRIDGE REPAINT	4.61%	12.40%	0.00%	17.01%	0.00%	1
BRIDGE REPLACEMENT	9.59%	7.52%	0.07%	17.18%	0.08%	9
DRAINAGE	0.62%	17.85%	0.00%	18.47%	0.00%	1
DRIVING/THRU LANES	2.63%	9.88%	1.08%	13.59%	10.84%	2
FENCING	0.18%	1.41%	0.00%	1.58%	0.00%	2
INTERCHANGE	13.35%	11.06%	1.32%	25.73%	10.17%	2
INTERSECTION	16.14%	20.23%	0.00%	36.37%	0.00%	1
ITS EQUIPMENT OR SOFTWARE	0.56%	4.60%	0.00%	5.16%	0.00%	9
J-TURNS	24.40%	20.95%	0.00%	45.35%	0.00%	1
PAVEMENT FRICTION	7.24%	11.11%	0.00%	18.35%	0.00%	1
PAVEMENT MARKING	0.00%	3.31%	0.00%	3.31%	0.00%	2
PAVEMENT PRESERVATION	5.61%	8.71%	0.00%	14.33%	0.00%	8
PAVEMENT REPAIR ONLY	0.81%	7.17%	0.00%	7.98%	0.00%	12
PAVEMENT RESURFACING	4.42%	8.24%	0.01%	12.67%	0.12%	48
ADA TRANSITION PLAN UPGRADES	25.27%	17.56%	2.42%	45.26%	3.29%	1
ROUNDBOUT	0.31%	4.33%	0.00%	4.65%	0.00%	2
SIGNAGE	20.89%	12.00%	0.00%	32.90%	0.00%	6
SIGNALS	17.65%	13.50%	0.00%	31.16%	0.00%	3
SLIDES/EROSION	20.74%	10.42%	0.83%	31.99%	2.70%	3
TURN LANES	13.44%	13.18%	0.60%	27.21%	1.21%	8
	6.63%	8.45%	0.14%	15.21%	0.93%	166

Detailed Work Categories	Preliminary Engineering	Construction Inspection	Right of Way Incidentals	Total Engineering	Right of Way Acquisition	n=
CAPITAL IMPROVEMENT	7.61%	10.43%	1.19%	19.23%	100.00%	4
ASSET MANAGEMENT	6.65%	8.35%	0.05%	15.05%	100.00%	153
OTHER	0.56%	4.60%	0.00%	5.16%	100.00%	9
	6.63%	8.45%	0.14%	15.21%	0.93%	166

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

**7/1/2020 - 6/30/2023
by District**

Southwest						
Detailed Work	Preliminary Engineering	Construction Inspection	Right of Way Incidentals	Total Engineering	Right of Way Acquisition	n=
BARRIERS	0.23%	9.95%	0.00%	10.18%	0.00%	7
BICYCLE/PEDESTRIAN FACILITIES	21.45%	19.33%	0.00%	40.78%	0.00%	2
BRIDGE PREVENTIVE MAINT	19.25%	12.92%	0.00%	32.17%	0.00%	1
BRIDGE REHAB	4.94%	8.31%	0.01%	13.25%	0.00%	35
BRIDGE REPLACEMENT	17.74%	11.21%	0.32%	29.27%	0.60%	26
DRIVING/THRU LANES	7.54%	4.84%	0.92%	13.30%	7.24%	10
INTERCHANGE	2.74%	3.31%	0.85%	6.90%	5.02%	1
INTERSECTION	15.08%	11.58%	0.00%	26.66%	0.00%	2
ITS EQUIPMENT OR SOFTWARE	0.75%	17.65%	0.00%	18.40%	0.00%	1
J-TURNS	8.05%	2.35%	0.00%	10.40%	0.00%	1
PAVEMENT FRICTION	0.57%	6.62%	0.00%	7.19%	0.00%	2
PAVEMENT PRESERVATION	0.24%	4.20%	0.00%	4.44%	0.00%	7
PAVEMENT REPAIR ONLY	13.69%	2.56%	0.00%	16.25%	0.00%	9
PAVEMENT RESURFACING	2.20%	4.48%	0.02%	6.69%	0.04%	103
ADA TRANSITION PLAN UPGRADES	20.99%	14.29%	1.13%	36.42%	0.67%	20
ROUNDBOUT	11.59%	11.75%	3.70%	27.04%	14.38%	2
SAFETY OTHER	13.64%	14.23%	2.08%	29.96%	11.66%	1
SIGNAGE	2.84%	20.05%	0.00%	22.89%	0.00%	2
SIGNALS	24.12%	15.51%	0.00%	39.63%	0.00%	1
SLIDES/EROSION	8.21%	6.55%	0.00%	14.76%	0.00%	6
TURN LANES	16.71%	9.94%	1.51%	28.16%	17.77%	7
	6.17%	6.35%	0.36%	12.88%	2.28%	246

Detailed Work Categories	Preliminary Engineering	Construction Inspection	Right of Way Incidentals	Total Engineering	Right of Way Acquisition	n=
CAPITAL IMPROVEMENT	6.97%	4.65%	0.92%	12.54%	100.00%	11
ASSET MANAGEMENT	5.91%	6.89%	0.18%	12.98%	100.00%	234
OTHER	0.75%	17.65%	0.00%	18.40%	100.00%	1
	6.17%	6.35%	0.36%	12.88%	2.28%	246

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

7/1/2020 - 6/30/2023
by District

Southeast						
Detailed Work	Preliminary Engineering	Construction Inspection	Right of Way Incidentals	Total Engineering	Right of Way Acquisition	n=
BARRIERS	4.78%	9.07%	0.97%	14.81%	5.92%	6
BRIDGE REHAB	6.19%	11.31%	0.00%	17.51%	0.00%	6
BRIDGE REPLACEMENT	18.86%	14.40%	0.53%	33.79%	1.14%	42
DRAINAGE	0.00%	6.39%	0.00%	6.39%	0.00%	1
INTERCHANGE	11.20%	9.71%	1.26%	22.17%	10.47%	1
LIGHTING	4.70%	9.07%	0.00%	13.78%	0.00%	2
PAVEMENT FRICTION	0.00%	6.74%	0.00%	6.74%	0.00%	2
PAVEMENT MARKING	0.67%	7.55%	0.00%	8.22%	0.00%	2
PAVEMENT PRESERVATION	0.00%	8.21%	0.00%	8.21%	0.00%	6
PAVEMENT REPAIR ONLY	0.23%	12.26%	0.00%	12.49%	0.00%	8
PAVEMENT RESURFACING	1.75%	5.92%	0.01%	7.67%	0.04%	88
ADA TRANSITION PLAN UPGRADES	1.27%	16.32%	0.00%	17.59%	0.00%	3
ROADWAY ALIGNMENT	9.47%	30.44%	2.14%	42.05%	2.45%	1
RUMBLESTRIPES	2.64%	10.73%	0.00%	13.36%	0.00%	7
SHOULDERS	0.00%	5.14%	0.00%	5.14%	0.00%	1
SLIDES/EROSION	1.26%	13.19%	0.00%	14.45%	0.00%	6
TURN LANES	1.19%	15.41%	0.00%	16.60%	0.00%	2
	5.30%	8.42%	0.22%	13.94%	1.18%	184

Detailed Work Categories	Preliminary Engineering	Construction Inspection	Right of Way Incidentals	Total Engineering	Right of Way Acquisition	n=
CAPITAL IMPROVEMENT	11.20%	9.71%	1.26%	22.17%	100.00%	1
ASSET MANAGEMENT	4.84%	8.32%	0.13%	13.29%	100.00%	183
	5.30%	8.42%	0.22%	13.94%	1.18%	184

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.