

COST ESTIMATE GUIDE FOR RURAL PRELIMINARY DESIGN
(These cost figures were last updated on 5-1-2014)

	<u>Cost-per-mile</u>	<u>Assumptions</u>
<u>New 2 Lane (Major)</u>		
Grading & Drainage	\$829,000	44 ft. Roadbed
Base & Surface	\$1,257,000	Medium Duty Pavement
<u>New 2 Lane (Minor)</u>		
Grading & Drainage	\$605,000	32 ft. Roadbed
Base & Surface	\$607,000	32 ft. Light Duty Pavement (2 – 4' Shoulders)
<u>Add Lanes for Dual Lanes</u>		
Grading & Drainage	\$733,000	38 ft. Roadbed
Base & Surface	\$1,095,000	Medium Duty Pavement
	\$1,402,000	Heavy Duty Pavement
<u>New 4 Lane</u>		
Grading & Drainage	\$1,275,000	2 - 38 ft. Roadbed & Median
Base & Surface	\$2,190,000	Medium Duty Pavement
	\$2,804,000	Heavy Duty Pavement

Interchanges-Ramps Only, Excludes bridges and crossroad

	<u>Lump sum each</u>
Grading & Drainage	\$ 1,339,000
Base & Surface	\$829,000

Note: Grading cost includes 30% Rock and assumes Medium Grading.

Grading Adjustment Factors

Flat: 0.7; Rolling: 1.0; Mountainous: 3.0

Use these grading factors, unless justified with district information and proper documentation.

Miscellaneous and Utility Costs may be assumed to total **20 percent** of the sum of grading & drainage, and surface & base, unless additional analysis is warranted.

Maintenance Treatment Cost can be found on Page 5

<u>Bridge Structures</u>	<u>Cost per Sq. foot</u>
Prestressed Concrete	\$90
Steel Girder	\$120
Temporary Bridge (State furnished)	\$60
Temporary Bridge (Contractor furnished)	\$140
Major Lake Crossing	\$200 - \$250
Major River Crossing	\$250 - \$450

- **Percentage Cost Factors:**

Bridge costs per square foot [square meter] should be increased for the following:

<u>Item</u>	<u>% Increase</u>
Staged Construction	10
Horizontal Curve Alignment	5
Seismic Category B*	10
Seismic Category C*	15
Seismic Category D*	25
Tight Site/Limited Access	10

* See Sheets 3 and 4 of this figure for details of seismic categories.

- **For Stream Crossings:**

Bridge Replacement Length = 1.10 X Existing Bridge Length, unless otherwise documented. The existing bridge length can be obtained from TMS.

Bridge replacement length may be longer than 1.10 X Existing Bridge Length for bridges crossing FEMA regulatory floodways. Bridges on new alignments are required to span the entire floodway. For bridges on existing alignment, use 1.10 X Existing Bridge Length when the 100-year flood does not overtop the existing roadway. When the 100-year flood does overtop the existing roadway, the new bridge will be required to span the entire floodway.

- **For Companion Grade Separation Structures:**

Bridge Replacement Length = Existing Bridge Length. The existing bridge length can be obtained from TMS.

Bridge Width should equal traveled way, shoulders and barrier rail width.

- **Bridge Approaches:**

The cost of bridge approaches should be added to the total cost derived from the approach slab area. Bridge slab cost:

English: (\$25/ft²) (roadway width, ft) (25 ft.) (2)

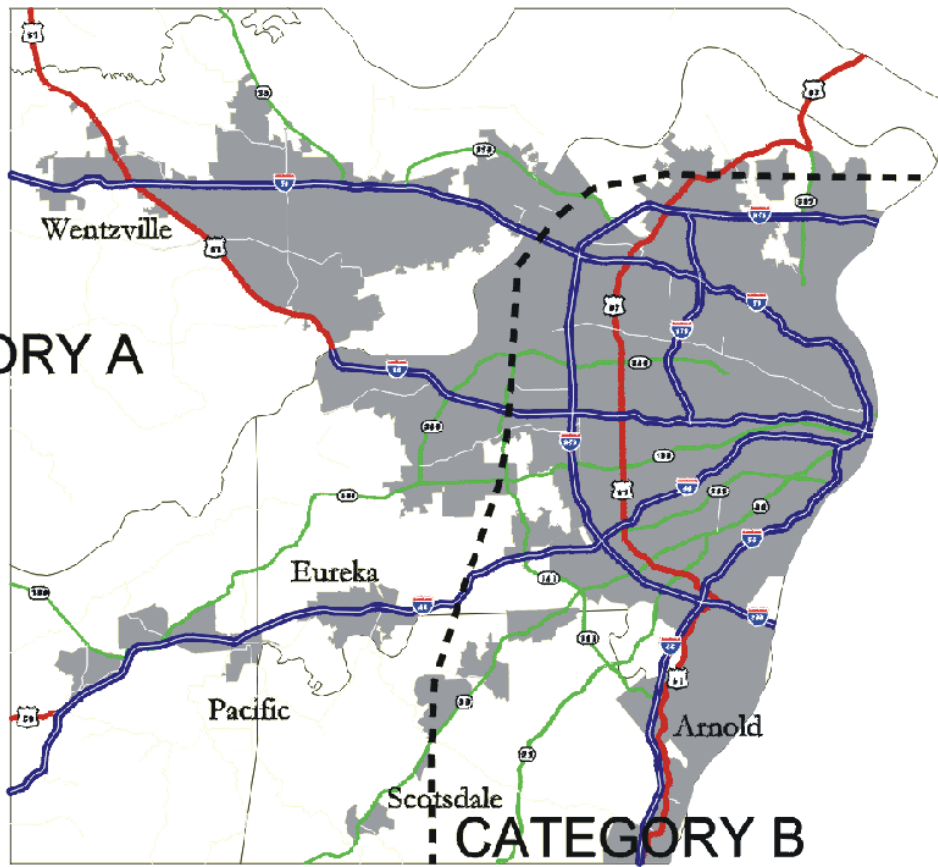
<u>Bridge Removals</u>	<u>Cost per Sq. foot</u>
Simple Structures	\$8
Steel Structures over Roads	\$10
Concrete Structures over Interstates (quick opening of lanes to traffic required)	\$25

Specialized Projects

Projects having unusual features and special scopes of work should be compared to similar types of district projects using historic data. Generic cost information listed in this guide should not be applied for projects such as traffic signal improvements, geometric improvements, and other types of small projects. Check with GHQ Design Bidding and Contract Services for assistance.

Additional costs should be included in the project estimate for retaining walls, extensive sound walls, temporary bypasses and traffic signals.

CATEGORY A



Maintenance Treatment (May 2014)		Cost per 12' Lane Mile
Treatment Description:	Remarks:	
Minor Seal Coat (Chip Seal)	Used history for Grade A, B & C seal coat. \$1.25/sy	\$8,800
Minor Cold Mix Overlay	No history available. Consult with Maintenance Division for price.	no history
Minor Cold Mix Patch	No history available. Consult with Maintenance Division for price.	no history
Minor Concrete Pavement Repair	Based on 2" pavement replacement. Used history for class a full depth pavement repair. \$150.00/sy	\$21,200
Minor Fog Seal (Fly Coat)	Used history for fog seal (0.2 gal/sy). \$2.70/gal	\$3,800
Minor Micro-Surfacing (Type II)	Used history for type II microsurfacing (Single lift). \$3.50/sy	\$24,600
Minor Roto-Milling (Coldmilling 3" or less)	Used history for coldmilling (3" or less). \$0.90/sy	\$6,400
Minor Scrub and Broom Seal	Used history for scrub seal. \$2.85/sy	\$20,100
Ultrathin Bonded Wearing Surface, Type C	Used \$4.00/sy.	\$28,200
Major Concrete Replacement	Removal, Grading, Base & Concrete Paving work only.	\$600,000
Major Concrete Unbonded Overlay 8"	Bond Breaker, Surface Prep. & Concrete Paving work only.	\$386,000
Major Contract Hot-Mix Overlay 1" (Surface Leveling)	Used \$55/ton. Includes 25% for irregularities.	\$26,600
Major Contract Hot-Mix Overlay 1.75" (Superpave) PG64-22	Used \$58.00 per ton for SP125	\$39,300
Major Diamond Grinding	Used \$1.75/sy	\$12,400
Major Light-Duty Overlay (1.25" Superpave) PG64-22	Used \$60.00 per ton for SP095. 581 Tons. Assumes 1/2" scratch course on 50% of overlays (concrete).	\$34,900
Major Light-Duty Overlay (1.75" Superpave) PG64-22	Used \$58.00 per ton for SP125. 775 Tons. Assumes 1/2" scratch course on 50% of overlays (concrete).	\$45,000
Major Light-Duty Overlay (Type C UBAMS & 2" SP190 PG64-22)	Used \$4.00/sy for UBAMS and \$54.00 per ton for SP190. Assumes 1/2" scratch course on 50% of overlays (concrete).	\$75,600
Major Light-Duty Overlay (3.75" Superpave) PG64-22	Used \$58.00 per ton for SP125 and \$54.00 per ton for SP190. Assumes 1/2" scratch course on 50% of overlays (concrete).	\$86,800
Major Light-Duty Overlay (3" Superpave) PG64-22	Used \$58.00 per ton for SP125 and \$65.00 per ton for SP048. Assumes 1/2" scratch course on 50% of overlays (concrete).	\$64,800
Major Medium-Duty Overlay (1.25" Superpave) PG70-22	Used \$64.00 per ton for SP095. Assumes 1/2" scratch course on 50% of overlays (concrete).	\$37,200
Major Medium-Duty Overlay (1.75" Superpave) PG70-22	Used \$61.00 per ton for SP125. Assumes 1/2" scratch course on 50% of overlays (concrete).	\$47,300
Major Medium-Duty Overlay (Type C UBAMS & 2" SP190 PG70-22)	Used \$4.00/sy for UBAMS and \$57.00 per ton for SP190. Assumes 1/2" scratch course on 50% of overlays (concrete).	\$78,300
Major Medium-Duty Overlay (3.75" Superpave) PG70-22	Used \$61.00 per ton for SP125 and Used \$57.00 per ton for SP190. Assumes 1/2" scratch course on 50% of overlays (concrete).	\$91,500
Major Medium-Duty Overlay (3" Superpave) PG70-22	Used \$61.00 per ton for SP125 and \$68.00 per ton for SP048. Assumes 1/2" scratch course on 50% of overlays (concrete).	\$68,000
Major Heavy-Duty Overlay (1.75" Superpave) PG76-22 SMALP	Used \$66.00 per ton for SP125 (SMALP). Assumes 1/2" scratch course on 50% of overlays (concrete).	\$66,700
Major Heavy-Duty Overlay (3.75" Superpave) PG76-22 SMALP	Used \$66.00 per ton for SP125 (SMALP) and \$59.00 per ton for SP190. Assumes 1/2" scratch course on 50% of overlays (concrete).	\$110,200
Major Heavy-Duty Overlay (3" Superpave) PG76-22 SMALP	Used \$66.00 per ton for SP125 (SMALP) and \$70.00 per ton for SP048. Assumes 1/2" scratch course on 50% of overlays (concrete).	\$85,800
Major Heavy-Duty Overlay (1.75" Superpave) PG76-22 SMAR	Rural - Used \$83.00 per ton for SP125 (SMAR). Assumes 1/2" scratch course on 50% of overlays (concrete).	\$64,400
Major Heavy-Duty Overlay (3.75" Superpave) PG76-22 SMAR	Rural - Used \$83.00 per ton for SP125 (SMAR) and \$59.00 per ton for SP190. Assumes 1/2" scratch course on 50% of overlays (concrete).	\$108,200
Major Heavy-Duty Overlay (3" Superpave) PG76-22 SMAR	Rural - Used \$83.00 per ton for SP125 (SMAR) and \$70.00 per ton for SP048. Assumes 1/2" scratch course on 50% of overlays (concrete).	\$83,700

Note: The above prices are for the specific pavement treatments only and do not include incidental items such as: mobilization, traffic control, striping, etc.

Misc. Costs	Cost per 12' Lane Mile	Remarks
Striping (Epoxy (in groove) Lane Line, High Build Edge Line)	\$2,000.00	Used \$1.00 per foot epoxy in groove and \$0.25 per foot for paint (1.125 stripes per lane mile).
Striping (Paint)	\$1,200.00	Used \$0.20 per foot for paint (1.125 stripes per lane mile).
Traffic Control	\$500.00	
Rumble Strips	\$1,000.00	Used \$20.00 per station.
Mobilization	4.5%	