



Chapter 5. Bridges

Bridges are an integral part of the transportation system, and therefore a study such as this one would be incomplete without a short discussion of their needs. Unfortunately, as with the 2008 study, there have been no statewide local bridge needs assessment performed in California. Some MPOs such as MTC have performed bridge assessments⁶ for their regions, but these are just pieces of the bigger picture.

However, for this study, Los Angeles County was able to provide some estimates performed by Quincy Engineering (QE). The data and assumptions come from both Caltrans as well as past bridge projects from QE.



As before, local bridges are defined as bridges that are owned by a county, city or town or by a local park. Transit or railroad bridges (e.g. bridges owned and maintained by BART – Bay Area Rapid Transit) are not included in this category. According to Caltrans, there are approximately 12,000 state bridges and 12,562 local bridges⁷. However, this does not include structures such as culverts and bridges that have a span of less than 20 feet.

Caltrans maintains a bridge management system (PONTIS) that contains inventory and condition data for all the bridges in the state, regardless of whether a city/county owns it. This condition data assists in determining what bridge repairs would be necessary (seismic retrofits, bridge replacements or maintenance).

Bridge condition is typically characterized by a bridge health index or sufficiency rating (SR), similar to the PCI used for pavements. The sufficiency rating ranges from

zero (insufficient) to 100 and is based on four factors:

- Structural adequacy and safety
- Serviceability and functional obsolescence
- Essentiality for public use
- Special reductions, i.e., detours, safety features

The sufficiency rating is used to determine eligibility for Federal Highway Bridge Program (HBP) funding. Structures are eligible for rehabilitation funding when the structure is structurally deficient or functionally obsolete and has a sufficiency rating ≤ 80 . Replacement funding is available when the structure is structurally deficient or functionally obsolete and the sufficiency rating is ≤ 50 .

5.1 Replacement & Rehabilitation Costs

Table 5.1 summarizes the estimated bridge replacement and rehabilitation costs for 12,562 city and county bridges by county. The total estimated cost is almost \$3.3 billion.

⁶ MTC Local Bridge Needs Update – Final Report, Metropolitan Transportation Commission, April 2008.

⁷ <http://www.dot.ca.gov/hq/structur/strmaint/>





Table 5.1 Estimated Replacement and Rehabilitation Bridge Costs by County

County	Total Number of Bridges	Number of Bridges for Reconstruction or Rehabilitation	Replacement Cost (\$M)	Rehabilitation Cost (\$M)	Total Cost (\$M)
Alameda	258	45	\$19.8	\$41.0	\$60.8
Alpine	12	3	\$1.4	\$0.3	\$1.7
Amador	39	19	\$10.2	\$3.5	\$13.8
Butte	305	72	\$71.9	\$10.4	\$82.3
Calaveras	68	20	\$16.0	\$3.1	\$19.1
Colusa	150	22	\$16.7	\$5.7	\$22.3
Contra Costa	358	65	\$45.5	\$39.3	\$84.8
Del Norte	40	18	\$21.0	\$2.7	\$23.7
El Dorado	91	47	\$27.2	\$5.8	\$32.9
Fresno	535	66	\$48.7	\$40.4	\$89.1
Glenn	167	27	\$48.7	\$1.5	\$50.3
Humboldt	176	68	\$85.8	\$11.8	\$97.7
Imperial	141	16	\$14.3	\$2.3	\$16.6
Inyo	32	5	\$1.3	\$0.6	\$1.9
Kern	276	28	\$21.5	\$29.5	\$51.0
Kings	105	5	\$1.8	\$1.8	\$3.7
Lake	80	32	\$28.9	\$4.1	\$33.0
Lassen	64	13	\$8.7	\$1.7	\$10.4
Los Angeles	1589	309	\$82.0	\$348.4	\$430.4
Madera	152	29	\$28.4	\$5.7	\$34.2
Marin	122	40	\$29.3	\$6.3	\$35.6
Mariposa	53	26	\$14.1	\$2.8	\$16.9
Mendocino	162	59	\$43.7	\$10.4	\$54.1
Merced	293	42	\$31.4	\$6.2	\$37.6
Modoc	53	7	\$1.4	\$1.0	\$2.4
Mono	9	2	\$3.6	\$0.0	\$3.6
Monterey	145	56	\$106.1	\$8.2	\$114.3
Napa	105	36	\$24.3	\$7.7	\$31.9
Nevada	58	21	\$32.7	\$1.5	\$34.2
Orange	544	90	\$14.0	\$59.8	\$73.8
Placer	183	40	\$35.6	\$5.5	\$41.1
Plumas	92	30	\$32.2	\$4.3	\$36.6
Riverside	426	66	\$40.2	\$45.2	\$85.4
Sacramento	358	68	\$91.0	\$40.1	\$131.1
San Benito	46	9	\$3.2	\$1.2	\$4.4
San Bernardino	502	136	\$182.5	\$45.2	\$227.7
San Diego	496	56	\$32.1	\$48.6	\$80.7
San Francisco	52	16	\$11.9	\$12.1	\$24.0
San Joaquin	357	51	\$52.0	\$19.5	\$71.4
San Luis Obispo	195	66	\$56.7	\$13.2	\$70.0





County	Total Number of Bridges	Number of Bridges for Reconstruction or Rehabilitation	Replacement Cost (\$M)	Rehabilitation Cost (\$M)	Total Cost (\$M)
San Mateo	150	51	\$20.3	\$31.8	\$52.1
Santa Barbara	185	38	\$21.4	\$11.0	\$32.4
Santa Clara	474	111	\$66.0	\$57.0	\$123.0
Santa Cruz	112	54	\$40.4	\$13.1	\$53.6
Shasta	294	72	\$54.6	\$19.7	\$74.4
Sierra	32	11	\$12.7	\$1.0	\$13.6
Siskiyou	172	34	\$30.5	\$3.4	\$34.0
Solano	187	23	\$17.7	\$13.6	\$31.3
Sonoma	422	117	\$111.6	\$28.0	\$139.6
Stanislaus	283	59	\$43.1	\$32.0	\$75.1
Sutter	96	18	\$7.3	\$4.0	\$11.3
Tehama	309	94	\$90.3	\$16.5	\$106.8
Trinity	96	25	\$19.7	\$3.4	\$23.1
Tulare	397	46	\$5.4	\$16.9	\$22.3
Tuolumne	55	23	\$13.7	\$2.7	\$16.4
Ventura	178	42	\$24.3	\$32.0	\$56.2
Yolo	144	32	\$27.3	\$10.3	\$37.6
Yuba	87	28	\$33.4	\$3.2	\$36.6
Totals	12562	2704	\$2,077	\$1,198	\$3,276

5.2 Bridge Funding

There are two primary sources of funding for local bridges – the Federal HBP and a local match. The local match is usually from local sales taxes, gas taxes or general funds. For those bridges in the mandatory seismic retrofit program, Proposition 1B (the Highway Safety, Traffic Reduction, Air Quality, and Port Security measure approved by the voters in November 2006) provides the funding for the local match. The HBP program provides approximately 88.53 percent of the total funding.

The “needs” for bridges can be broadly categorized into preservation, rehabilitation, replacement and improvement needs. Improvement needs include safety, strengthening (including seismic strengthening), widening or raising a structure.

Of the \$3.3 billion in bridge needs from Table 6.1, local agencies are required to finance 11.47 percent or approximately \$375.8 million. Therefore, the shortfall is approximately \$0.3 billion.

However, the shortfall does not include bridges that have a span of less than 20 feet, nor does it include maintenance costs.

