LIVERMORE
ASSET MANAGEMENT PROGRAM
INVEST • MAINTAIN • SHINE

SPOTLIGHT ON: BRIDGES

The City of Livermore owns and manages 44 bridges which are integral pieces of the City's transportation infrastructure. These assets include **32 vehicle bridges** and **12 trail bridges** which serve a mix of pedestrians, bicyclists, and equestrians. They do not include bridges managed by Livermore Area Recreation and Park District, Caltrans, or the Las Positas Golf Course. All together, the City's bridges and related components are worth over **$168 million.**

Currently, bridges have an **Asset Health grade of A.** This tells us that bridges are in good physical condition. However budget projections indicate that we will face funding shortages of $4.29M/year (on average) for repair and replacement activities over time.

Quick Facts

Number of Bridges: 44

Asset Components: 377

Total Replacement Cost: $168.6M

Asset Health Grade: A

Funding Gap: $4.29M/year

Bridge Classifications

City bridges are organized first by bridge type—vehicle or trail—then by location. Once that has been determined, the individual bridges are organized by **superstructure** (above the ground, span of the bridge) and **substructure** (in-ground, supports the superstructure). Examples of superstructure components include bridge decks, guardrails, etc. Substructure components include culverts, abutments, walls, etc.

Superstructure

Substructure

This fact sheet is part of the Asset Spotlights series. Find more at **www.LivermoreAssets.net/documents**

Asset Health

The many different **components** that make up a bridge need to be regularly monitored and maintained.

Over time, these components must be repaired or replaced as they age.

The City assigns an overall **Asset Health Grade** for all bridges using the following process:

1 LEVEL OF RISK

First, we routinely inspect every component to determine its level of risk based on the following:

Probability of Failure:

How soon will the component need to be replaced?

Consequence of Failure: What would happen if the component failed? We consider both the role of the component as well as the type and location of the bridge.

High Probability

High Risk

High Consequence

Components with high probability and high consequence of failure are considered **high risk**.

2 REPLACEMENT COSTS

Next, we calculate the one-time **cost to replace** all components in each risk category, including High Probability and High Risk (shown below).

High Risk: $2M

High Probability: $3.1M

Total Replacement Cost: $168.6M
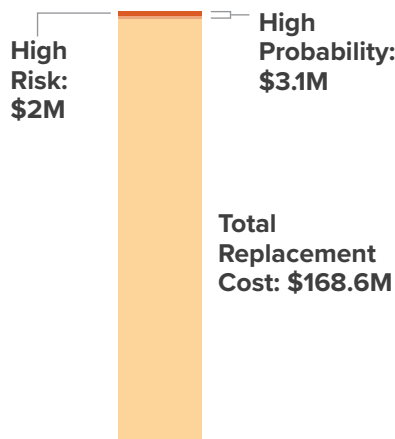
More components will move to the High Risk category as they age.

3 HEALTH GRADES

Finally, we compare the replacement cost of High Probability components versus the total replacement cost of ALL components, and then we do the same for High Risk components only. This gives us the **Asset Health grades** shown below.

High Probability: A

High Risk: A

These grades show us that most of our bridges are in good condition, with relatively few high risk components.

Asset Health Grade: A

The Road Ahead

Based on 30-year projections, City bridges are underfunded by an average of $4.29M/year. If this persists, bridges may begin to fail, which will impact vehicle and pedestrian mobility.

Available Funding: $10K/year

Funding Gap: $4.29M/year

TOTAL Needed: $4.3M/year