The National Steel Bridge Alliance strives to deliver high quality information for use by departments of transportation and designers alike. To that end, NSBA has created a series of steel bridge design resources. The information in these resources was developed by NSBA staff in conjunction with industry professionals. The resources are intended to serve as a starting point for steel bridge design.

Steel Span Weight Curves is the first of these design aids. We plan to periodically update and refine the information in these resources based on the feedback we receive from designers, owners and constructors.

NSBA is proud of the steel bridge industry and looks forward to maintaining its tradition of excellence in steel bridge construction.

Bill McEleney
Managing Director
National Steel Bridge Alliance
Assumptions

- Section is designed as composite.
- Girders are assumed continuous.
- Design considers fatigue loading.
- Span lengths are based upon the maximum span distance. Where more than one span exists, use the maximum span to determine span weight.
- Trend line value represents the line of best fit based upon the discrete values.
- Shaded area represents deck areas in which 68% of the sample bridges are located.
- Both curved and straight girders are included in the curves.

Design Parameters

These curves represent predicted pounds of steel per square foot derived from data from more than 800 NSBA conceptual solutions optimized for economical bridge designs. Every bridge is unique and other factors can influence the design, resulting in values outside the ranges shown in these curves. Care should be taken to ensure that an appropriate analysis is conducted. The figure below represents a typical bridge section view.
Single-Span Bridges

Single Span — All Girder Spacing

![Graph showing the steel weight per square foot of bridge deck surface (psf) vs. span (ft) for single-span bridges with all girder spacing.]

Single Span — 7' to 9' Girder Spacing

![Graph showing the steel weight per square foot of bridge deck surface (psf) vs. span (ft) for single-span bridges with 7' to 9' girder spacing.]

Steel weight per square foot of bridge deck surface (psf)

Span (ft)
Single-Span Bridges

**Single Span — 9’ to 11’ Girder Spacing**

![Graph showing steel weight per square foot of bridge deck surface (psf) vs. span (ft) for single span with 9’ to 11’ girder spacing. The graph includes a trendline showing the general trend of increasing steel weight with increasing span.]

**Single Span — 11’ and Greater Girder Spacing**

![Graph showing steel weight per square foot of bridge deck surface (psf) vs. span (ft) for single span with 11’ and greater girder spacing. The graph includes a trendline showing the general trend of increasing steel weight with increasing span.]

NSBA STEEL SPAN WEIGHT CURVES
Two-Span Bridges

Two Span — All Girder Spacing

Steel weight per square foot of bridge deck surface (psf)

Span (ft)

Two Span — 7\text{'} to 9\text{'} Girder Spacing

Steel weight per square foot of bridge deck surface (psf)

Span (ft)
Two-Span Bridges

Two Span — 9' to 11' Girder Spacing

Two Span — 11' and Greater Girder Spacing
Three or More Spans — All Girder Spacing

Three or More Spans — 7' to 9' Girder Spacing
Three or More Spans — 9’ to 11’ Girder Spacing

Three or More Spans — 11’ and Greater Girder Spacing