

THE PROPOSED WESTERN HILLS VIADUCT

AN EXTRADOSED BRIDGE

The proposed Western Hills Viaduct will be an elegant and iconic new landmark for the Greater Cincinnati region. Known as an extradosed bridge, the Viaduct will feature low cable-stay towers that support a single deck design that spans the Mill Creek Valley and Queensgate Railyard, the largest active railyard in the country.

KEY FEATURES

- Single deck
- Two sets of low cable-stayed towers
- Four support piers in the railroad yard
- Four travel lanes in each direction connecting Beekman Street and Harrison, Queen City, and Westwood avenues with Spring Grove Avenue, Central Parkway, McMillan Street, and I-75
- A 14-ft wide, protected multi-use path for pedestrians and bicyclists on the south side
- An 8-ft wide sidewalk on the north side



A view of the new Western Hills Viaduct, looking west.

WHAT IS AN EXTRADOSED BRIDGE?

An extradosed bridge combines the major elements of cable-stayed and box girder bridges. The deck of an extradosed bridge provides the primary load-bearing support with cable stays attached to low towers for supplemental support. This configuration allows the bridge to span across greater distances. The bridge would look similar to a cable-stayed bridge but would have shorter towers.

WHAT DOES EXTRADOSED MEAN?

“Extradosed” (pronounced ex-TRA-dos) is an architectural term that refers to the outer or upper curve of an arch. In this case, it is a nod to the supplemental reinforcement the bridge deck gains through the cable-stayed support system.

CHOOSING THE EXTRADOSED DESIGN

Earlier studies identified six possible bridge types for the Western Hills Viaduct replacement. Each type was evaluated in detail over a two-year period in terms of:

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| • Traffic flow | • Impact on the railroads |
| • Constructability | • Drainage |
| • Maintenance needs | • Cost |
| • Durability | • Aesthetics |

When compared against the other bridge types, the extradosed design emerged as the highest ranking. It was also most closely aligned with the design features desired by the community. Study results are summarized in the 2020 Alternatives Evaluation Report (AER) posted on the project website.



Looking southeast toward downtown.