

# Bridge Type Ranking

## Guidelines:

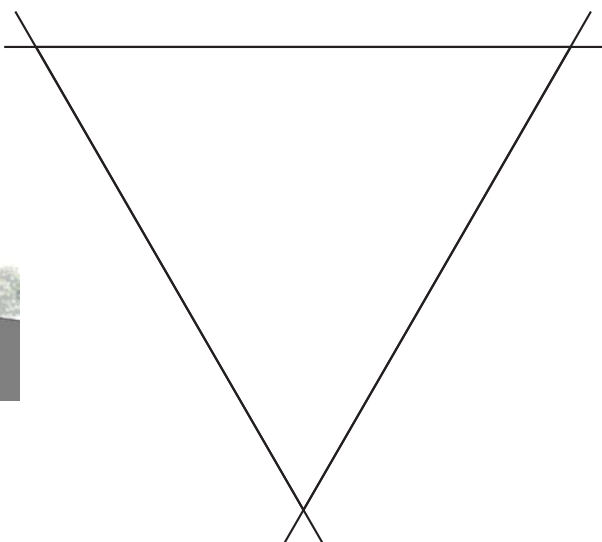
We are interested in your "gut" level ranking of the bridge type options presented. Please keep in mind that the designs presented this evening are schematic; the design direction chosen will continue to be refined in light of all the structural, cost, aesthetic, constructability, maintenance, and safety considerations we have worked with you to establish for the project. The input you provide here will influence the design direction we recommend to the City of Durham for the final design phase.

We encourage you to provide additional written comments in the space below or on the back of this sheet.

A prefabricated steel truss is commonly used for bicycle/pedestrian bridge structures in the region because it can be purchased "off-the-shelf", transported in sections, bolted together on-site and lifted into place, and because primarily downward vertical forces need to be resisted by the foundation. For this project the freeway closure constraints required by the DOT impose somewhat greater challenges for the construction process.



A cable-stayed structure with a lightweight steel deck that can be bolted together in sections presents some constructability advantages because the structure can support itself as a cantilever as it is built; thus only short-duration lane closures are required. This type of structure generally requires more structural engineering design work and a foundation system that can resist significant uplift forces. Maintenance issues associated with cable systems have essentially been eliminated by advances in cable jacketing technology.



A low profile "arch" structure would actually be constructed as two cantilevers that meet in the middle. It would require foundation systems at each end capable of resisting uplift. The structure could appear as an open steel framework, an enclosed steel framework, or a combination of a tubular steel arch and a thin and slightly undulating concrete deck.



## Comments:

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