



FAIRVIEW AVENUE N BRIDGE REPLACEMENT PROJECT

Partial vs. Full Construction Closure

January 2016

VALUE ENGINEERING STUDY

The Seattle Department of Transportation (SDOT) originally identified a partial closure construction method to rebuild the Fairview Avenue N Bridge with a primary goal of reducing traffic impacts in the surrounding community. With this approach, half of the bridge would have only been open during limited daytime hours. As we continued to evaluate this plan, we realized that project costs would become too high and impacts to the community would be too great (e.g. noise, night work, duration of construction). In 2014, SDOT conducted a Value Engineering (VE) study to identify opportunities to reduce overall project costs (making the project feasible again) and minimize impacts to businesses, residents and commuters.

A number of elements were considered by the VE team to determine whether a partial or full bridge closure would be feasible, including:

- Construction duration
- Night work
- Detour routes
- Metro Transit impacts
- Constructability
- Cost
- Environmental/lake impacts
- Other considerations

PARTIAL VS. FULL CONSTRUCTION CLOSURE

In order to shorten the total construction time and reduce costs, we have decided that the most prudent approach is to close the entire bridge for the full project construction duration (approximately 15 months). The table below includes elements we considered in deciding to fully close the bridge during construction.

	Partial Closure	Full Closure
Construction duration	<ul style="list-style-type: none"> • Approximately 24 months 	<ul style="list-style-type: none"> • Approximately 15 months
Night work	<ul style="list-style-type: none"> • Frequent – estimated 130 nights 	<ul style="list-style-type: none"> • Infrequent – estimated 30 nights
Detour routes	<ul style="list-style-type: none"> • Full closure/detour route necessary during nighttime, weekend, and daytime closures • Bridge only open during limited daytime hours 	<ul style="list-style-type: none"> • Detour route in place consistently throughout construction • Modifications to be made on selected routes to help accommodate additional traffic volumes
Metro Transit route impacts	<ul style="list-style-type: none"> • Metro detour route needed during nighttime, weekend, and daytime closures • Changing service schedule could be confusing to transit riders 	<ul style="list-style-type: none"> • Detours required for Route 70 • Predictable Metro detour for project duration

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PARTIAL VS. FULL CONSTRUCTION CLOSURE (CONTINUED)

Decision-making factors considered in selecting full construction closure

Constructability	<ul style="list-style-type: none"> • Staging areas very limited • Problematic to construct bridge around traffic in the work zone 	<ul style="list-style-type: none"> • Allows staging on site: easier access to construction materials and equipment • Safer for the traveling public by increasing their separation from the construction site
Cost	<ul style="list-style-type: none"> • Labor costs: higher due to longer construction duration (e.g. traffic control setup and maintenance, lane closures and flaggers) • Materials cost: higher due to additional concrete needed for dual-span bridge 	<ul style="list-style-type: none"> • Labor costs: lower due to shorter construction duration • Materials costs: lower due to simpler bridge design
Environmental/ Lake impacts	<ul style="list-style-type: none"> • 20 drilled shafts (the majority in-water); requires more concrete 	<ul style="list-style-type: none"> • 15 drilled shafts (the majority in-water); requires less concrete
Other considerations	<ul style="list-style-type: none"> • Public parking displacement: construction staging areas would displace public parking • Nighttime noise: mitigation would be difficult • Traffic delays 	<ul style="list-style-type: none"> • Public parking displacement: less required as construction staging would occur on the bridge • Traffic delays

PROJECT INFORMATION & CONTACT

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Si necesita traducir esta información al español, llame al (206) 733-9960.

