

SUMMARY OF ENGINEERING RECOMMENDATIONS
Reconstruct Br. No. 62504 Summit Avenue over Ayd Mill Road & CPRR

Report Prepared 5/13/2019

PROJECT

The project seeks to reconstruct **Summit Avenue Bridge and road approaches between Syndicate Street and Griggs Street.**

EXISTING CONDITIONS

Summit Avenue Bridge No. 62504 was constructed in 1961 with development of Ayd Mill Road. The existing 4-span steel beam bridge has a sufficiency rating of 48.5 (out of 100), with many structural elements in deteriorated condition due to age. The bridge also employs a deck “hinge” design that is functionally obsolete. Approach roadway was last rebuilt in the 1980s and must be reconstructed with minor adjustments to grade and alignments to meet current geometric bridge and road standards.

CP Railway operates a set of railroad tracks beneath the east span of the bridge, which is framed by stone abutments that date back to a single-span bridge that was constructed by the railroad in 1887. The City has a permanent easement over CP property and has obtained an agreement for bridge reconstruction.

Summit Avenue average daily traffic (ADT) is 8,763 vehicles per day. In addition, the bridge serves an estimated 550 bicycles and 550 pedestrians per day, with seasonal fluctuation in non-motorized use. 5-foot wide bicycle lanes and 7-foot wide bridge walks are provided. Summit Avenue is one of the city’s most popular and historic parkways, and is on the route of the Twin Cities Marathon, held in early October each year.

The existing bridge is not eligible for the historic register and not contributing to the historic district; however because it resides within the historic districts, it is subject to local and state historic review processes including Section 106. Existing street lighting is a combination of historic “king” ornamental lanterns and highway-style “bent-straws” added in 1961.

PROPOSED CONDITIONS

Improvements to the bridge and approach roadways will include constructing a new 2-span concrete beam bridge, increasing clearance over the existing railroad tracks to meet CP requirements, adjusting approach road alignments to improve comfort and safety, improving sight lines between traffic modes, reducing pedestrian crossing distances at intersections, and re-distributing road width to improve comfort and safety of travel modes, particularly to non-motorized users.

The bridge and approach roads were constructed to accommodate two-way two-lane vehicle traffic in 1961, though the current and future Summit Avenue will require only one vehicle lane in each direction. As a result, designers were able to provide 6-foot wide bike lanes and 10-foot wide sidewalks while reducing total paved (impervious) area, reducing environmental impacts and future maintenance costs.

Because the project utilizes state and federal fund sources, the project is not subject to designated public art ordinance funding. However, design staff coordinated with the city artist to discuss key aesthetic treatments including ornamental metal railing, lighting and landscaping. These design details were

further coordinated with local historic preservation staff to ensure that selected treatments were respective of the historic district.

Sidewalk will be reconstructed throughout the project limits and pedestrian ramps and crossings will be brought up to current ADA design standards.

The street lighting system will be updated to current City lighting standards and policies. The historic “king” ornamental lanterns will be removed, refurbished and reinstalled. The “bent-straw” lights will be removed and replaced with ornamental metal lanterns that match the appearance and layout of the refurbished “king” lanterns.

The large stone abutments adjacent to the railroad tracks will remain in-place and be utilized as earth retention walls for the new bridge structure. Size and scale of the original abutments are reflected in the design of the new west abutment and center pier, providing a balanced aesthetic to the bridge supports. New pile-supported foundations and reinforced concrete beams can carry greater loads. Thus, piers adjacent to Ayd Mill Road were eliminated in the new design. In addition to reducing operation and maintenance needs, this reduction in number of spans improves safety and adaptability of the Ayd Mill Road corridor.

ALTERNATES

Public Works facilitated a multi-departmental project scoping and preliminary staff team process to develop and assess bridge repair, rehabilitation and replacement alternatives. Alternatives involving repair or rehabilitation did not meet the primary needs and objectives of the project. Several bridge replacement alternatives were also considered. The proposed bridge best meets all needs and objectives, improves comfort and safety for bicyclists, pedestrians and other modes of traffic, and reserves additional structural capacity for various road re-development concepts that may be considered along Summit Avenue within the 75-100 year design life of the new bridge.

POSITIVE BENEFITS

General improvement of the public right-of-way will enhance and add quality to the neighborhood. The newly rebuilt infrastructure will improve the durability and drivability of the streets, reduce future maintenance, and further the City’s efforts to improve the transportation system in Saint Paul. The new distribution of vehicle lanes, bike lanes and sidewalk (including a buffer space between the vehicle and bike lanes) will improve safety and continuity of Summit Avenue Bikeway. The plan supports the City’s Complete Streets Initiative and the approved Street Design Manual.

ADVERSE EFFECTS

Common impacts and inconveniences associated with construction such as noise, dust, reduced access to the neighborhood, and general disruption will be present during the project.

EFFECTS ON TREES

Overall tree impacts are relatively small, around one-quarter of an acre, considering the scope of work. However trees must be removed to replace the bridge and reconstruct the approach roads. Trees within the west median will also be impacted, as this will be the site of a storm water filtration system.

In advance of construction, City forestry staff will spade and relocate desirable trees of an appropriate size. Forestry staff has also provided construction details that will be used to protect approximately 17 trees adjacent to the work.

The contractor will re-establish turf grass in the boulevards and medians, and City forestry will assist with tree plantings similar to the present condition. Road realignment results in a net increase of “green space” and the bridge abutments project outward from the deck at structure corners, creating planting areas alongside the sidewalk. As such, there will be additional opportunity to plant trees near the bridge, improving the pedestrian experience.

TIME SCHEDULE

The project is anticipated to begin in October 2019 and be substantially complete by September 2020. The schedule is set to fit between concurrent dates of the Twin Cities Marathon, an event that attracts thousands of people to Summit Avenue.

COST ESTIMATE

Construction	\$	6,525,000
Engineering	\$	1,631,000
TOTAL	\$	8,156,000

ESTIMATED FINANCING

Federal Bridge Replacement Off-System Grant	\$	1,722,000
Federal Repurposed Funding	\$	1,404,000
State Bridge Bond Funding	\$	1,432,000
Municipal State Aid (MSA)	\$	4,600,000
TOTAL	\$	9,158,000

The project is not subject to any assessments.

SOURCE OF ADDITIONAL INFORMATION

For additional information, contact Brent Christensen at 651-266-6182.

SUMMARY AND RECOMMENDATION

The Department of Public Works feels that this is a necessary and high-priority bridge project, and the Engineering Recommendation is for approval of the project.

Respectfully submitted,



Brent Christensen
Public Works