



Memorandum

To: Bassett Creek Watershed Management Commission
From: Barr Engineering Co.
Subject: Item 5B – Review Information and Consider Recommendations for Flood Control Project Deep Tunnel Inspection and Potential Tour
Date: January 10, 2019

5B. Review Information and Consider Recommendations for Flood Control Project Deep Tunnel Inspection and Potential Tour

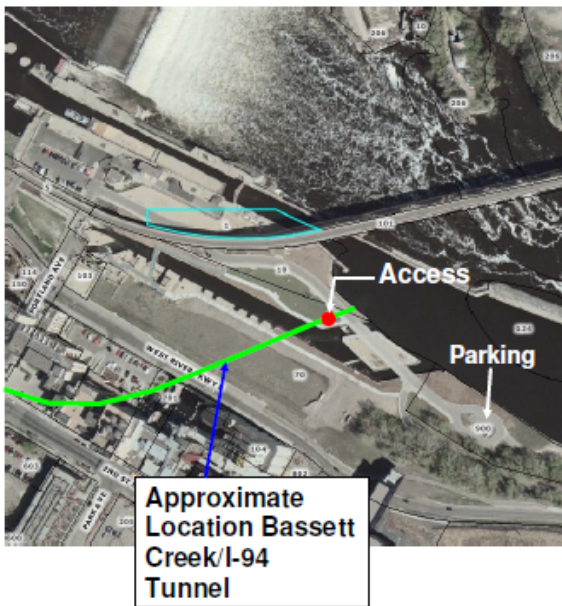
Recommendations:

1. Authorize the Administrator to allocate up to \$15,000 from the Flood Control Project Long-Term Maintenance fund to address potential “last-minute” items that may require hiring a contractor or addressing other unforeseen issues that cannot be addressed by the U.S. Army Corps of Engineers or the City of Minneapolis.
2. Gather input regarding participation and an approximate head count of the Commissioners/TAC members that may be interested in a tunnel tour.
3. If there is enough interest in the tour(s), authorize up to \$5,000 from the 2019 Surveys and Studies Fund to pay for the planning, coordination, expenses and other costs associated with holding the tour(s).
4. Request assistance from member cities in providing safety equipment for their commissioners/TAC members participating in the tour.

Bassett Creek Deep Tunnel Inspection (Second Street tunnel)

The Commission engineer was coordinating with the U.S. Army Corps of Engineers (Corps) staff to schedule the deep tunnel inspection during early November 2018. However, the water control plan was not approved and the inspection was cancelled. Based on further coordination with the Corps, the Commission engineer scheduled the Bassett Creek deep tunnel inspection for the week of February 25, 2019 to minimize navigation impacts and minimize disruptions to Xcel Energy’s operation of the St. Anthony Falls hydropower dam (see Corps news release at end of memo). The tunnel access vault is near Mill Ruins Park (see figure).

Access Location Map



At this location, the tunnel is submerged and several hundred feet of the tunnel is underwater. The middle pool— the area between the lower and upper locks—must be lowered to allow for access to the tunnel and to drain the tunnel for inspection. The inspection typically includes a 3-person inspection team, surface attendants for at least two access/emergency egress locations, a crane and man basket (subcontractor) and a standby emergency extraction team (subcontractor).

The Corps requested assistance to relocate a barge (see photo) located at the St. Anthony Falls Laboratory (SAFL). The Commission engineer asked the Corps to reach out to the Coast Guard or Corps Lock and Dam staff to relocate the barge, but this remains an open item and the Corps has since requested further assistance from the



Commission. We recommend that the BCWMC authorize the Administrator to allocate up to \$15,000 to address potential final coordination items, such as the barge relocation or other unforeseen issues, that cannot be executed by the Corps or by the City of Minneapolis, and may require retaining a contractor or obtaining specialty equipment. This authorization may prevent delaying or cancelling the inspection due to lack of funding.

Tunnel Tour

As previously discussed with the Commission, the inspection presents an opportunity for commissioners/TAC members to enter and observe portions of the tunnel. At their June 21, 2018 Commission meeting, 17 commissioners/TAC members expressed interest in a short tour of the tunnel. Several others were also interested in a longer tour, but were concerned about the additional costs of a longer tour. The BCWMC engineer tentatively scheduled a short tour of the tunnel for Wednesday February 27, 2019. There may be an opportunity for a few interested commissioners/TAC members to walk the entire tunnel (long tour) on Tuesday February 26, 2019. All tours are weather-dependent; for example, if air temperatures are 0°F or lower, we recommend cancelling the tour(s). At this meeting, we need an approximate head count of the commissioners/TAC members interested in participating in a tour.

Assuming enough commissioners/TAC members are interested in participating in a tour, there are several logistical items regarding planning, safety, confined space entry, equipment (hard hats, headlamps or flashlights, safety harnesses, safety glasses, waders, high-visibility vests), etc. to be considered and planned. Ideally, each city would outfit their commissioners/TAC members participating in the tour with the referenced safety equipment (Barr also has some extra gear that can be used).

Immediately following the February 21, 2019 Commission meeting, we recommend providing the interested tour participants with a 15-20 minute combined orientation and safety training regarding the inspection and the tour. The BCWMC engineer would lead the orientation/training.

Tour conditions/considerations:

- There may be 1 – 2 feet of water flowing in the tunnel. Hip boots or chest waders may be needed.
- Access to the tunnel would be via the vault approximately 100 feet upstream of the tunnel outlet (access from tunnel outlet is not likely).
- Participants would use a ladder at the access vault to descend approximately 12 feet to the bottom of the tunnel.
- Short duration tour: After entering the tunnel, walk approximately 100 ft. downstream to tunnel outlet (great view of stone arch bridge), then walk approximately 400 ft. upstream to the cathedral arch tunnel section, then return to ladder and exit tunnel. This may be the best manageable approach and will allow several commissioners/TAC members to access the tunnel in shifts (approximately 20-30 minutes in tunnel, and 30-70 feet underground).
- Long duration tour: After entering the tunnel, walk the entire 2nd Street Tunnel (5,146 feet), walk the 3rd Avenue Tunnel (1,450 feet) to bottom of drop structure, return to ladder and exit tunnel (a few hours in the tunnel, walking approximately 2.5 miles round trip, and 80-95 feet underground).

Budget

The tour could be performed under the BCWMC's Surveys & Studies budget (2019 budget = \$20,000) and any unused funds from the Flood Control Project inspection budget. The budget is anticipated to be up to \$5,000 for the planning, coordination, expenses and other costs associated with holding the tour(s).

General Bassett Creek Tunnel Information

The Bassett Creek tunnel was constructed in three phases:

- Phase 1: 2nd Street Tunnel (constructed by MnDOT during 1979). The 2nd Street tunnel generally consists of a concrete-lined 12-foot arch tunnel along 2nd Street North in Minneapolis. The entire tunnel is approximately 8,900 feet long; however, the portion that conveys Bassett Creek is 5,146 feet. The 2nd Street tunnel was designed to convey runoff from Interstate 94 and 394, as well as Bassett Creek.
- Phase 2: 3rd Avenue Tunnel and Drop Structure (constructed by the Corps during 1990). The 3rd Avenue tunnel generally consists of a concrete-lined 13-foot arch tunnel, 1,450 feet long, along 3rd Avenue North in Minneapolis. The tunnel was constructed to convey Bassett Creek flow from the drop structure to the 2nd Street tunnel.
- Phase 3: Twin Box Culvert (constructed by the Corps during 1992). This phase included 5,572 feet of box culvert—5,256 feet of 11-foot by 11-foot twin box culvert and 316 feet of 11-foot by 11-foot single box culvert (near the drop structure and inlet structure).

More information is available on the BCWMC website under “Commissioner Orientation” materials (under “About”):

<http://www.bassettcreekwmo.org/application/files/6914/4424/7362/FloodControlProjectandTunnel.pdf>.

ST. PAUL DISTRICT

News Release

Jan. 8, 2019

MVP-PA-2019-003

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**Corps seeks comments on plan to temporarily lower
Mississippi River elevation near St. Anthony Falls**

ST. PAUL, Minn. – The U.S. Army Corps of Engineers, St. Paul District, is seeking comments on a plan to briefly lower the Mississippi River elevation south of the St. Anthony Falls for an inspection of the Bassett Creek Tunnel with the initial inspection to take place next month.

The Bassett Creek Watershed Management Commission requested the Corps lower the river so the organization can complete a tunnel inspection. The commission would like to do this every 10 years. The Corps is proposing to lower the river by 13 feet to an elevation of 737.0 feet to facilitate these inspections.

The tentative target period for the initial inspection is scheduled for Feb. 25 – March 1. The exact date could be delayed by a week if weather conditions warrant. The inspection should last no more than 5-7 days. The river elevation is expected to be restored to its normal level within four days following the inspection.

The Corps released a draft programmatic Environmental Assessment, or EA, and is seeking public comments until Feb. 8, 2019, on the proposal to lower the river elevation between Upper and Lower St. Anthony Falls dams. The draft EA describing the project and the environmental impacts is available to the public and can be viewed and downloaded on the St. Paul District website at: www.mvp.usace.army.mil/Home/PublicNotices.aspx.

Questions on the project or comments on the EA can be directed to Derek Ingvalson at 651-290-5252 or Derek.S.Ingvalson@usace.army.mil. Please address all formal written correspondence on this project to the U.S. Army Corps of Engineers, St. Paul District, ATTN: Regional Planning and Environment Division North, 180 5th St. E., Suite 700, St. Paul, MN 55101.

NOTE TO EDITORS: For coverage of the intermediate pool during drawdown, please coordinate with Patrick Loch, 651-290-5679 or patrick.g.loch@usace.army.mil, for information on specific dates/times of the drawdown and media availability.

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