



## Bassett Creek Watershed Management Commission

September 27, 2021

Liz Stout, P.E.  
Water Resources Regulatory Coordinator  
City of Minneapolis  
309 Second Avenue South, Room 203  
Minneapolis, MN 55401

Kevin Danen, P.E.  
Surface Water & Sewers  
City of Minneapolis  
1901 East 26<sup>th</sup> Avenue  
Minneapolis, MN 55404

### **Re: North Loop Green Phase III Mixed Use Development – Minneapolis, MN**

Dear Liz and Kevin:

We appreciate the city bringing the referenced project to our attention and for requesting our review and comments. It's our understanding the North Loop Green Phase III building project is proposed to be constructed directly over the access vault, shaft and drop structure located at station 116+50 and over a section of the Bassett Creek tunnel (including the box culvert and Third Avenue tunnel). The drop structure is the transition between the box culvert and the Third Avenue tunnel. The 12-foot by 8-foot access shaft, located near the drop structure, is currently located in a parking lot and protected by five precast concrete cover planks. This site would be a primary staging area for future tunnel rehabilitation projects and under current site conditions it provides a large-scale access to tunnel infrastructure, which is not only imperative for routine maintenance but also under emergency circumstances. Although this project is located within an area in the City of Minneapolis under the jurisdiction of the Mississippi Watershed Management Organization (MWMO), it is our understanding that the BCWMC established an internal policy for taking on the operations and maintenance responsibility of the Bassett Creek tunnel and flood control project. In light of that policy and the BCWMC's longstanding involvement, please note the following preliminary comments and concerns based on our limited review and understanding of the development:

#### **A. Station 116+50 Drop Structure and Access Shaft**

1. As BCWMC engineer, we strongly oppose constructing a building or any other physical improvement directly over the Bassett Creek tunnel access shaft and recommend the developer investigate alternative plans to keep the access available and free of encumbrances for future access and construction. This includes providing adequate space for operating a crane around and above the shaft for transporting materials, large equipment, and personnel into the tunnel and to be available for emergency extraction of personnel inspecting or working in the tunnel.
  - a. Construction staging involving tunnel repairs requires significant area to mobilize and stage personnel, equipment and materials. The proposed plans would substantially hinder those operations compared to existing conditions.

**Bassett Creek Watershed Management Commission**

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- b. The 12-foot by 8-foot access shaft and vault at station 116+50 is oversized compared to other access areas and is crucial for debris removal and transporting large equipment such as skid steers and other mobile equipment, pumps, concrete, grout and grout lines, other materials, and personnel into the Third Avenue and Second Street tunnel system.
  - c. Compromising access to the shaft may significantly increase the cost to inspect and perform repairs to the tunnel and drop structure, including increased mobilization. ECI, Inc. (developer's consultant) provided an opinion of providing alternative access to the tunnel without the use of a crane. The letter did not assess the mobilization and construction cost implications associated with performing tunnel rehabilitation under the proposed development scenario compared to the existing open site. Also, the letter did not provide an opinion if the alternative access would allow for the mobilization of large equipment into the tunnel.
  - d. During construction, the shaft may also provide a critical location to stage a crane and personnel basket for emergency egress and personnel extraction due to injury, rising water elevation or other unsafe atmosphere conditions.
2. Does the City have an easement interest over the tunnel shaft that restricts or otherwise limits construction of physical improvements directly over the shaft? Such an easement may exist, given this critical infrastructure and would presumably prohibit the proposed development.

**B. Box Culvert and Third Avenue Tunnel (collectively referred to as tunnel)**

1. Excavation and dewatering along the tunnel must be performed utilizing means and methods to protect the tunnel's integrity. The developer must demonstrate that the proposed building/development or construction methods will not increase loading on the tunnel and drop structure/shaft or negatively impact the tunnel and drop structure/shaft structural integrity during construction or result in consolidation of soils beneath the box culvert segment of the tunnel resulting in settlement.
2. Dewatering methods and controls must be in place to prevent settlement of the box culvert segment of the tunnel. If groundwater drawdown is anticipated, the developer must address the following:
  - a. What is the lowest elevation of the proposed groundwater drawdown?
  - b. How will the drawdown impact the tunnel?
  - c. What monitoring will be in place to document groundwater drawdown limits and to ensure the drawdown does not negatively impact the tunnel?
  - d. What internal tunnel monitoring is proposed to document potential impacts?
3. If the work exposes the box culvert segment of the tunnel, earth pressures should generally be balanced along the tunnel during excavation and backfilling.
4. Stormwater runoff, groundwater or any water collected from dewatering operations must not be discharged into the Bassett Creek tunnel system, on a temporary or permanent basis without prior approval by the BCWMC.
5. The proposed North Loop Green Phase III appears to be located in an area where the tunnel cannot tolerate any settlement. See the following excerpt from the US Army Corps of Engineers' June 1997 Operation and Maintenance (O&M) Manual for the Bassett Creek Flood Control Project (conduit=box culvert):

### Conduit

Sediment, rock, timber, and debris buildup in the conduit will reduce the capacity. Therefore, the conduit should be inspected and cleaned as required. Access to the conduit is available through access manholes located at channel stations 125+00, 134+00, 144+50, 156+50, 165+00, and 170+80.

The concrete box conduit could be adversely affected in two ways by loads on the ground surface. The most obvious negative impact would occur if the structural capacity of the box conduit was exceeded. The other aspect would occur if the imposed surface load remained long enough to cause consolidation of the soil beneath the conduit, resulting in settlement that could damage the structure.

Listed below are the surcharge loads used in the design of the concrete conduit:

<u>Station</u>	<u>Surcharge<sup>1</sup></u>	<u>Surcharge<sup>2</sup></u>
116+50 to 138+00	652	31
138+00 to 145+00	705	34
145+00 to 155+00	735	35
155+00 to 169+00	768	37
169+00 to 172+00	987	47

<sup>1</sup> Pounds per square foot.

<sup>2</sup> Kilopascals.

The conduit between station 130+00 to 133+00 and station 150+00 to 152+50 was designed to accommodate only limited settlement by the addition of shear keys at 50-foot (15 m) spacing. The conduit between stations 119+00 and 121+00 cannot tolerate any settlement. Therefore, additional surface loading between these stations must be prohibited because of the poor soils that would consolidate with increased pressure.

## **C. Cooperative Agreements**

1. Several agreements, including but not limited to the following, document O&M responsibilities of the Bassett Creek Flood Control Project (including the tunnel and drop structure).
  - a. Agreement between The State of Minnesota Department of Transportation and the City of Minneapolis, February 3, 1978
  - b. Local Cooperation Agreement between Department of the Army and The City of Minneapolis, Minnesota for Flood Protection on Bassett Creek, Hennepin County, Minnesota, June 27, 1986.
  - c. Operation and Maintenance Manual, Flood Control Project Bassett Creek Local, Hennepin County, Minnesota, US Army Corps of Engineers, St. Paul District, June 1997 (O&M Manual)
  - d. Joint and Cooperative Agreement for Boundary Change by and between the City of Minneapolis, the Bassett Creek Watershed Management Commission and the Middle Mississippi River Watershed Management Organization. September 28, 2000.
2. Finally, it's our understanding that any proposed improvement or modification to any of the Bassett Creek Flood Control Project features, which includes the above-mentioned elements, requires review and approval from other individuals and entities, including but certainly not limited to, the United States Army Corps of Engineers (USACE) District Engineer, the Minnesota Department of Transportation (MnDOT) and the City of Minneapolis Public Works and Surface

Waters and Sewers division. For those reasons, individuals that should be made aware of this project and the numerous concerns have been copied on this correspondence.

Our comments are based on our knowledge of the Bassett Creek tunnel and the following documents provided by the city:

1. North Loop Green Phase III, Permit Set 11/23/2020, Drawings A1.2-C (Level P3); L1.02A (Level 1.02A)
2. North Loop Green Phase III, Drawing issue 7/20/2021, Drawing A2.0 (Parking Plans); Drawing C2.0 (Area Site Plan); Drawing C4.2 (Utility Plan, Storm Sewer, Parking Level P3; Drawing C4.4 (Utility Plan, Sanitary Sewer & Watermain, Parking Level P3)
3. Document titled *North Loop Green III Mixed Use Project, Access to and potential use of the Bassett Creek (Vault) Drop Shaft Lid*, author, and date unknown.
4. Infinity Scaffold Quotation Number 21-0670, September 23, 2021.
5. ECI letter to Mr. David Spillman, North Loop Green III, Bassett Creek Tunnel Shaft Surface Access Rev 2, August 12, 2021.
6. ECI letter to Mr. David Spillman, North Loop Green III, Bassett Creek Tunnel Shaft Surface Access Rev 1, August 5, 2021.

In addition, the following information was also reviewed.

7. North Loop Green Phase III, Drawing Update 7/20/2021, Drawing AS0.1 (Tunnel Section).
8. OSM/St. Paul District, Corps of Engineers, As-Built Drawing M34.4-P-64/8 (Bassett Creek Stage IV, Drop Structure Section), July 1992.
9. Operation and Maintenance Manual, Flood Control Project Bassett Creek Local, Hennepin County, Minnesota, US Army Corps of Engineers, St. Paul District, June 1997 (O&M Manual).

If you have questions, please contact me at 952-832-2784 ([jherbert@barr.com](mailto:jherbert@barr.com)) or Laura Jester, BCWMC Administrator at 952-270-1990 ([Laura.jester@keystonewaters.com](mailto:Laura.jester@keystonewaters.com)).

Sincerely,

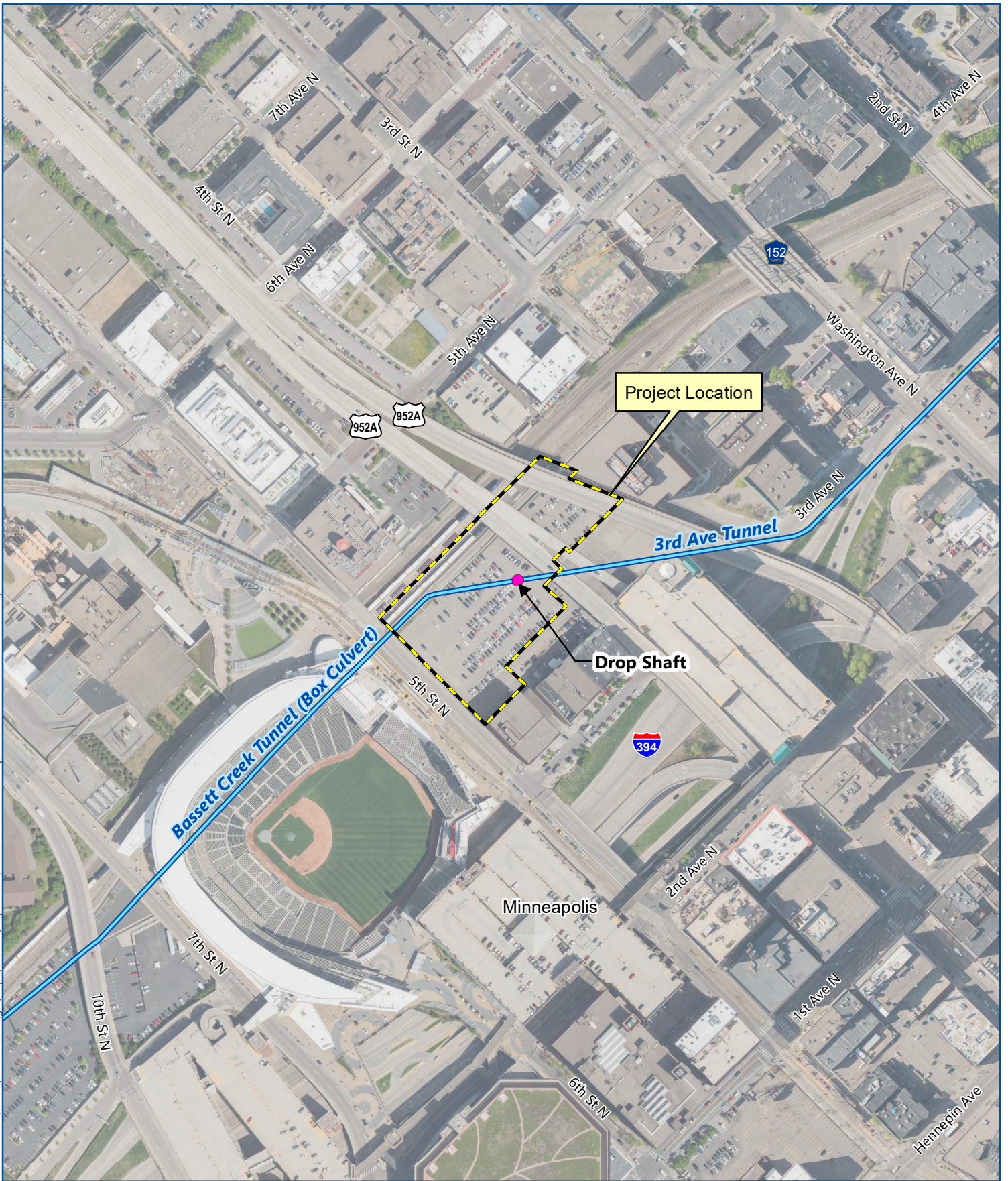


Jim Herbert, P.E.

Barr Engineering Co.

Engineers for the Bassett Creek Watershed Management Commission (BCWMC)

c: Stephanie Johnson, City of Minneapolis  
Jeremy Strehlo, City of Minneapolis  
Catherine Cesnik, BCWMC Chair  
Laura Jester, BCWMC Administrator  
David T. Anderson, Kennedy & Graven, Chartered (BCWMC Attorney)  
Eric Wittine, USACE  
Mark Pribula, MnDOT  
Beth Neuendorf, MnDOT







Project Location

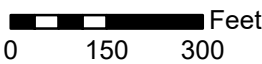
Drop Shaft

Bassett Creek Tunnel (Box Culvert)

3rd Ave Tunnel

Minneapolis

-  Project Location
-  Bassett Creek Tunnel
-  Municipality
-  BCWMC Legal Boundary



BCWMC #2021-3001A  
 NORTH LOOP  
 GREEN PHASE III  
 MIXED USE DEVELOPMENT  
 Minneapolis, MN  
 LOCATION MAP