



**CITY OF NOVI CITY COUNCIL  
JUNE 20, 2022**

**SUBJECT:** Consideration of approval to award engineering design services to AECOM for the Lakeshore Park Tunnel Replacement, in the amount of \$39,644.10, and approval to advance purchase a 7-foot by 10-foot concrete tunnel to replace the existing tunnel, in the estimated amount of \$70,000.

**SUBMITTING DEPARTMENT:** Department of Public Works, Engineering Division

<b>EXPENDITURE REQUIRED</b>	<b>\$ 39,644.10 Design Services</b> <b>\$ 70,000.00 Concrete Tunnel</b> <b>\$ 109,644.10 Total</b>
<b>AMOUNT BUDGETED</b>	<b>\$ 507,530.00 FY 2022-23</b>
<b>APPROPRIATION REQUIRED</b>	<b>\$ 0</b>
<b>LINE ITEM NUMBER</b>	<b>400-691.00-977.038</b>

**BACKGROUND INFORMATION:**

The pedestrian tunnel, which crosses under South Lake Drive to the beach at Lakeshore Park, needs replacement. For the project, the existing tunnel will be removed and replaced with a new precast 7'x 10' concrete tunnel with a side drain which will outlet into Walled Lake. The project will require reconstruction of the road and surrounding elements, such as fence, guardrail and sidewalk. Lockable gates will be installed on either side of the tunnel. Due to long lead times, it is recommended that the tunnel be purchased in advance of contract award in order to complete the project in the fall of 2022.

Engineering consultant, AECOM, submitted the attached proposal for design of a replacement tunnel. The design fee for the project is \$39,644.10 (10% of the estimated construction cost of \$390,644.10). The design fee is based on the fixed fee schedule established in the Agreement for Professional Engineering Services for Public Projects.

Design of this project and tunnel procurement would begin following award with construction expected to start in the fall of 2022.

**RECOMMENDED ACTION:** Approval to award engineering design services to AECOM for the Lakeshore Park Tunnel Replacement, in the amount of \$39,644.10, and approval to advance purchase a 7-foot x 10-foot concrete tunnel to replace the existing tunnel in the estimated amount of \$70,000.

# Lakeshore Park Tunnel

Location Map



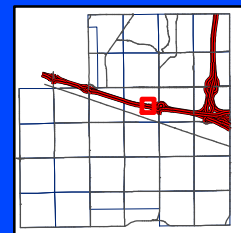
Project area

South Lake Dr

Map Author: Jokic  
Date: 06/08/2022  
Project: Lakeshore Park Tunnel  
Version #: 1.0

**MAP INTERPRETATION NOTICE**

Map information depicted is not intended to replace or substitute for any official or primary source. This map was intended to meet National Map Accuracy Standards and use the most recent, accurate sources available to the people of the City of Novi. Boundary measurements and area calculations are approximate and should not be construed as survey measurements performed by a licensed Michigan Surveyor as defined in Michigan Public Act 132 of 1970 as amended. Please contact the City GIS Manager to confirm source and accuracy information related to this map.



**City of Novi**

Engineering Division  
Department of Public Works  
26300 Lee BeGole Drive  
Novi, MI 48375  
cityofnovi.org



0 5 10 20 30  
Feet  
1 inch = 42 feet



March 4, 2022

Ms. Rebecca Runkel  
City of Novi  
Field Services Complex  
26300 Lee Begole Drive  
Novi, MI 48375

**Reference: Proposal for Engineering Services  
Lakeshore Park Tunnel Replacement**

Dear Ms. Runkel,

AECOM is pleased to submit this proposal for the above referenced project.

The work for the Lakeshore Park Tunnel Replacement will consist of the removal of the existing tunnel that runs underneath S. Lake Drive and replacing it with a new precast 7' x 10' concrete tunnel with a side drain, which will connect to underdrain and outlet into Walled Lake in order to assist drainage. Due to desired construction dates, it is assumed that the City will need to begin the procurement of the precast tunnel prior to contract award. AECOM will provide a design for the tunnel ahead of the final project design in order to obtain estimates from precast suppliers. AECOM will then review the shop drawings and the City can proceed in procuring the tunnel ahead of time upon approval of the shop drawings. Lockable gates will be on either side of the tunnel. Included in the work will be excavation and backfill surrounding the tunnel as well as required reconstruction of the road and surrounding elements such as fences, guardrail, and sidewalk, in order to complete the work. AECOM understands the City's desire to complete this work in the fall of 2022. The feasibility of this completion schedule will be based on the availability of materials.

The following tasks will be completed for the project:

**Initial Meeting and Scope Verification**

The intent of this task is to meet with the City and verify the limits and scope of work for the project. A full topographic survey will be required for the project. Upon completion of this task, we will move forward with the surveying and preliminary design.

**Survey and Base Plans**

The intent of this task is to provide topographic survey and base mapping as needed for the proposed design work. A full topographic survey is anticipated to be needed. Base drawings will be created using the survey data, supplemented by aerial photos, and a detailed field review of the site.

AECOM will prepare base plans (30%-40% complete) to identify the major design features. Base plans will include the results of the survey information and a preliminary estimate. Given the proposed nature of the project, AECOM does not anticipate any utility conflicts

**Utilities**

AECOM will obtain existing utility data with a design ticket through the MISS DIG system. In addition, AECOM will distribute the base plan design set to the utility companies that have indicated that they have facilities in the project area. We will incorporate the additional information that utility companies provide to AECOM into the plan set. City of Novi sanitary and water main cross the tunnel, but it is assumed they run underneath the tunnel. If they run between



Ms. Rebecca Runkel  
March, 2022  
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the tunnel and the roadway, it is possible that sections would need to be removed before the tunnel is installed and replaced once the new tunnel is in place.

#### **Preliminary Plans**

Incorporating the information obtained from the above tasks, we will prepare the preliminary plan set (90%) in accordance with City requirements. This submittal will include items such as the typical cross sections, materials/quantities and details. A Project Manual and preliminary updated cost estimate will also be prepared and submitted.

#### **Final Plans and Proposal**

Incorporating comments from the City, AECOM will develop the final plans submittal, including the plan set, Project Manual, and cost estimate.

#### **Advertising and Award**

We will respond to any final comments received from the City and submit the Advertisement for Bids to the City for publication. Contract Documents will be made available to bidders by AECOM. AECOM will respond to bidder inquiries during the advertising period and prepare addenda as required. Following the bid opening AECOM will submit the Bid Tabulation and a letter with recommendations regarding contract award

#### **Construction**

AECOM will provide full time inspection, contract administration, and staking as required for the project.

#### **Estimated Cost of Construction and Design Fees**

Design Fee (Base Bid) = \$390,644.10 x 10.0% = **\$ 39,644.10**

We understand that fees for construction phase services will be determined after a construction contract is awarded. Please contact me if you have any questions or wish to discuss this submittal.

Sincerely,

AECOM Great Lakes, Inc.

A handwritten signature in blue ink that reads "Sean Kelsch".

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Sean Kelsch, PE  
Vice-President

**City of Novi  
Lakeshore Park  
Tunnel Replacement  
Preliminary Estimate of Cost  
3/4/2022**

Item No.	Item Description	Unit	Quantity	Unit Price	Total Cost
1	Mobilization (10%)	LS	1	35,513.10	\$ 35,513.10
2	Pre-Construction Audio-Visual	LS	1	\$ 2,500.00	\$ 2,500.00
3	Sidewalk, Rem	Syd	178	\$ 15.00	\$ 2,670.00
4	Pedestrian Culvert, Rem	LS	1	\$ 30,000.00	\$ 30,000.00
5	Curb and Gutter, Rem	Ft	200	\$ 15.00	\$ 3,000.00
6	HMA Surface, Rem	Syd	630	\$ 8.00	\$ 5,040.00
7	Guardrail, Rem	Ft	88	\$ 5.00	\$ 440.00
8	Tree, Rem, 6 inch to 18 inch	Ea	1	\$ 750.00	\$ 750.00
9	Fence, Rem	Ft	300	\$ 5.00	\$ 1,500.00
10	Excavation, Earth	Cyd	250	\$ 35.00	\$ 8,750.00
11	Emankment, CIP	Cyd	35	\$ 14.00	\$ 490.00
12	Fence, Chain Link, 60 inch	Ft	300	\$ 40.00	\$ 12,000.00
13	Fence, Decorative, Rem, Salvage, and Replace	Ft	148	\$ 50.00	\$ 7,400.00
14	Sidewalk, Conc, 4 inch	Sft	1017	\$ 6.00	\$ 6,102.00
15	Box Culvert, 10' x 7' w/ Side Drain (installation)	Ft	87	\$ 850.00	\$ 73,950.00
16	Railing, Rem, Salvage, and Replace	Ft	108	\$ 125.00	\$ 13,500.00
17	Gate, Chain Link, Lockable, 8'	Ea	2	\$ 800.00	\$ 1,600.00
18	Underdrain, Subbase, 6 inch	Ft	300	\$ 12.00	\$ 3,600.00
19	HMA	Ton	208	\$ 150.00	\$ 31,200.00
20	Curb and Gutter, Conc, Det F2	Ft	200	\$ 30.00	\$ 6,000.00
21	Aggregate Base, Limestone, 8 inch	Syd	675	\$ 14.00	\$ 9,450.00
22	Aggregate Base, Limestone, 4 inch	Syd	128	\$ 8.00	\$ 1,024.00
23	Aggregate, 6A	Cyd	46	\$ 75.00	\$ 3,450.00
24	Culvert Bedding, Box Culvert, 34R	Cyd	136	\$ 80.00	\$ 10,880.00
25	Conc, Grade S2	Cyd	35	\$ 400.00	\$ 14,000.00
26	Reinforcement, Steel, Epoxy Coated	Lb	1750	\$ 2.50	\$ 4,375.00
27	Guardrail, Type MGS-8	Ft	88	\$ 45.00	\$ 3,960.00
28	Guardrail, Departing Terminal, Type MGS	Ea	1	\$ 1,500.00	\$ 1,500.00
29	Sign, Rem, Salv and Reinstall	Ea	5	\$ 150.00	\$ 750.00
30	Permanent Pavement Markings	LS	1	\$ 1,250.00	\$ 1,250.00
31	Maintaining Traffic	LS	1	\$ 20,000.00	\$ 20,000.00
32	Surface Restoration	LS	1	\$ 4,000.00	\$ 4,000.00
33	Box Culvert, 10' x 7' w/ Side Drain (purchase)	LS	1	\$ 70,000.00	\$ 70,000.00
	<b>Base Bid Construction Cost</b>				<b>\$ 390,644.10</b>
	Design Engineering	10.00%			\$ 39,064.41
	Geotechnical	2%			\$ 7,812.88
	Design Contingency	10%			\$ 3,906.44
					<b>\$ 50,783.73</b>
	Construction Engineering	7.25%			\$ 28,321.70
	Materials Testing	2%			\$ 7,812.88
	Crew Days	\$ 700	40		\$ 28,000.00
	Construction Contingency	10%			\$ 2,832.17
					<b>\$ 66,966.75</b>
	<b>TOTAL COST</b>				<b>\$ 508,394.58</b>

Estimate Assumptions:

Assuming sufficient clearance over the proposed culvert to keep adequate cross section for road, therefore no need to adjust the length/slope of the roadway and only 100' on either side of the tunnel will need to be removed.

Earth Excavation includes the removal of several large rocks on the south side of the tunnel.

This estimate does not include the removal and replacement of the drinking fountain/shower on the south side of the tunnel.

The estimated cost for the box culvert on item 15 is the installation price as the tunnel itself will need to be pre-ordered by the city in order to meet desired construction dates. The cost for the purchase of the box culvert is item 33.