



CITY OF NOVI CITY COUNCIL
JULY 10, 2023

SUBJECT: Consideration of Approval of Change Order No. 1 to Mattioli Cement Company, Inc. for the 2023 Neighborhood Road Program – Concrete Streets in the amount of \$337,104.25.

SUBMITTING DEPARTMENT: Department of Public Works – Engineering Division

EXPENDITURE REQUIRED	\$ 333,617.16
AMOUNT BUDGETED	\$ 567,447.00 FY 2022-23 BA Rollover \$1,400,000.00 FY 2023-24 Budget \$1,967,447.00 Total
APPROPRIATION REQUIRED	\$ 0
LINE ITEM NUMBER	203-449.30-974.241

BACKGROUND INFORMATION:

Spalding DeDecker and Testing Engineers and Consultants assisted the Engineering Division with developing a list of potential streets for the 2022 and 2023 Neighborhood Road Program (NRP). The program was divided into two contracts: concrete roads and asphalt roads. The programs were also advertised for a two-year contract to secure unit prices and lower the overall costs of bidding and design.

In preparation for this year's program (2023), we noted significant, excessive deterioration of Highlands Drive, which was not visible during the 2021 inspection or selection process. It appears most of the roadway suffers from a chemical reaction condition called ASR or Alkali-Silica Reaction or more commonly known as "concrete cancer" (included is a picture of the current, final stages of ASR). ASR is a deleterious swelling reaction that occurs over time in concrete between the highly alkaline cement paste and the reactive silica found in many aggregates. This chemical reaction causes the expansion of the altered aggregate by the formation of a soluble and viscous gel and ultimately causes spalling and loss of strength of the concrete. The rate of deterioration from ASR can vary greatly from location to location. The final stages of this reaction can take place in a rapid 10 years to a slow 40+ years. The viscous gel is normally not visible until the concrete has reached its total loss of structural integrity.

The original plan was to remove and replace individual concrete panels along the entire length of Highlands Drive (from Park Ridge Road to Cherry Hill Road). With the current state of deterioration staff now recommends an expanded reconstruction reflected in this change order. The amount of work estimated for the panel replacement, approximately \$56,000, will be deducted from the contract before proceeding with this new course of action.

The contract administration and geotechnical engineering services related to this project addition will be granted to the following pre-qualified firms using the fee percentages in the Agreements for Professional Engineering Services and Geotechnical Engineering Services for Public Projects.

Spalding DeDecker			
Highlands Drive	Contract Administration	7.5% of the Change Order value (\$337,104.25 X 0.075)	\$ 25,282.82
	Crew Days	\$800 daily inspection fee x 25 days	\$ 20,000.00
G2 Consulting Group, Inc. (G2)			
Highlands Drive	Material testing services	2.0% of the Change Order value (\$337,104.25 X 0.02)	\$ 6,742.09

RECOMMENDED ACTION: Approval of Change Order No. 1 to Mattioli Cement Company, Inc. for the 2023 Neighborhood Road Program – Concrete Streets in the amount of \$337,104.25.