

**ELIZABETH AVENUE, JOSEPH STREET, PUTH DRIVE AND  
DETROIT ROAD SANITARY SEWER IMPROVEMENT - PHASE 2**

**PRELIMINARY ASSESSMENT COST CALCULATIONS: EXHIBIT C  
(Revision No.4)**

**SEPTEMBER 9, 2019**



**CHAGRIN VALLEY ENGINEERING, LTD.**  
22999 Forbes Road, Suite B  
Cleveland, Ohio 44146-5667  
Project No. 15204  
**RYAN E. CUMMINS, P.E., CPESC**

**PROJECT SCOPE:**

This project will consist of the installation of approximately 6,100 feet of 8" sanitary sewers to service the properties along Elizabeth Avenue, Puth Drive, Joseph Street and a section of Detroit Road from 34008 Detroit to 34901 Detroit. It also includes 4,000 feet of waterline replacement, miscellaneous storm sewer replacement, and pavement rehabilitation. The assessed portion of the project will only include sanitary related items.

**Notes:**

- (1) Ownership is per the Lorain County Auditor's website as of July 12, 2019.
- (2) Plans, Specifications and Engineer's Estimate of Probable Construction Cost Prepared by Bramhall Engineering and Surveying Company (Bramhall) dated August 14, 2019.
- (3) The following project costs are based on estimates only as prepared by Bramhall.
- (4) At various points costs are adjusted to 2020 dollars via application of a 3% inflation rate (x 1.03).
- (5) A Benefitted Unit is herein defined as the greater value of either: a) the existing number of residential structures on each noted parcel currently permitted by the Avon Codified Ordinances or; b) the potential number of residential structures on each noted parcel currently permitted by the Avon Codified Ordinances, or; c) the maximum number of lots created by land subdivisions for each parcel that would result in a buildable lot fronting on either Elizabeth Ave., Puth Dr., Joseph St. or Detroit Rd. based on the parcel's current zoning requirements.

<b>MAXIMUM ASSESSMENT CALCULATION</b>	PHASE 1 EJPD TOTAL CONSTRUCTION COST - 100% CITY ASSUMED PAYMENT	\$123,753.20	Previously paid by the City. Not included in calculations below.
	PHASE 2 EJPD TOTAL CONSTRUCTION COST	\$3,606,305.00	Estimated by Bramhall, 2019 Dollars
	PHASE 2 EJPD TOTAL CONSTRUCTION COST W/3% INFLATION	\$3,714,494.15	Anticipated Total Construction Cost for 2020 Construction Season (\$3,606,305.00 x 1.03)
	PHASE 2 EJPD SANITARY SEWER SYSTEM CONSTRUCTION COST	\$893,430.00	Estimated by Bramhall. This cost includes all sanitary sewers, manholes, and connections to right-of-way. This cost does not include pavement or other restoral items.
	PHASE 2 EJPD TOTAL SANITARY SEWER SYSTEM CONSTRUCTION COSTS W/3% INFLATION	\$920,232.90	\$893,430.00 (sanitary) x 1.03 (inflation) = \$920,232.90
	PHASE 2 EJPD TOTAL UNDERGROUND IMPROVEMENTS CONSTRUCTION COST W/3% INFLATION	\$1,905,211.60	\$893,430.00 (sanitary sewer) + \$290,585 (storm sewer) + \$665,705(water main) = \$1,849,720.00 \$1,849,720.00 x 1.03 (inflation) = \$1,905,211.60 This cost does not include any above ground restoration improvements.
	PHASE 2 EJPD SANITARY SEWER SYSTEM PERCENTAGE OF TOTAL UNDERGROUND CONSTRUCTION COSTS	48.300824%	\$920,232.90 (sanitary sewer system total) / \$1,905,211.60 (underground improvement total) = 48.300824%
	PHASE 2 EJPD WATER SYSTEM PERCENTAGE OF TOTAL UNDERGROUND CONSTRUCTION COSTS	35.989501%	(\$665,705 water system total x 1.03) / (\$1,905,211.60 underground improvement total) = 35.989501%
	PHASE 2 EJPD STORM SYSTEM PERCENTAGE OF TOTAL UNDERGROUND CONSTRUCTION COSTS	15.709675%	(\$290,585 storm system total x 1.03) / (\$1,905,211.60 underground improvement total) = 15.709675%

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PHASE 2 EPJD RESTORATION COST TOTAL	\$1,246,521.45	Site Preparation (\$50,000) + Concrete Driveways (\$225,395) + Aggregate & Asphalt Driveways (\$57,450) + Miscellaneous Items (\$406,980)+Contingency(\$470,390.00) = \$1,210,215.00 \$1,210,215.00 x 1.03 (inflation) = \$1,246,521.45 This cost does not include sidewalks and pavement items. Sidewalk and pavement item costs to be assumed by the City.
PHASE 2 EJPD SUBTOTAL SANITARY SEWER SYSTEM PROJECT RESTORATION RELATED COSTS	\$602,080.13	\$1,246,521.45 (Restoration Cost Total) x 48.300824% = \$602,080.13
PHASE 2 EJPD SUBTOTAL NON-SANITARY SEWER SYSTEM PROJECT RESTORATION RELATED COSTS	\$1,207,202.42	(\$1,246,521.45 x 51.699176%) + (\$49,305.00 sidewalk x 1.03 inflation) + (\$497,065.00 pavement x 1.03) = \$1,207,202.42
PHASE 2 EJPD TOTAL CONSTRUCTION COST W/3% INFLATION	\$3,714,494.15	\$1,207,202.42 (total non-sanitary restoral) + \$602,080.13 (total sanitary restoral) + \$1,905,211.60 (total underground improvements) = \$3,714,494.15
PHASE 2 EJPD LEGAL FEES FOR SANITARY SEWER ASSESSMENTS	\$12,500.00	
PHASE 2 EJPD PROPERTY ACQUISITION SERVICES	\$78,880.00	O.R. Colan Services
PHASE 2 EJPD ENGINEERING DESIGN FEES	\$124,500.00	Bramhall Professional Engineering Services
PHASE 2 EJPD CONSTRUCTION SERVICES (EST. 6%)	\$222,869.65	\$3,714,494.15 x 0.06 (6%)
PHASE 2 EJPD PROPERTY ACQUISITION FOR SANITARY SEWER SYSTEM	\$57,427.75	45942.2 sf x \$1.25/sf = \$57427.75 (Estimate only. Will be based on appraisal values.)
PHASE 2 EJPD PROPERTY ACQUISITION FOR HIGHWAY EASEMENT - CITY WILL ASSUME PAYMENT	\$57,427.75	45942.2 sf x \$1.25/sf = \$57427.75 (Estimate only. Will be based on appraisal values.)
PHASE 2 EJPD TOTAL ESTIMATED SOFT PROJECT COSTS INCLUDED IN ASSESSMENT	\$496,177.40	\$12,500.00 + \$78,880.00, + \$124,500.00 + \$222,869.65 + \$57,427.75
PHASE 2 EJPD TOTAL PROJECT COST INCLUDING SOFT COSTS	\$4,268,099.30	\$ 3,714,494.15 + \$496,177.40 (total soft costs assessed) + \$57,427.75 (highway easement acquisition)
PHASE 2 EJPD TOTAL SANITARY SEWER SYSTEM PROJECT COST	\$2,018,490.43	\$920,232.90 (total sanitary system) + \$602,080.13 (total sanitary restoration) + \$12,500.00 (legal fees) + \$78,880.00 (property acquisition services) + \$124,500.00 (engineering fees) + \$222,869.65 (construction services) + \$57,427.75 (property acquisition) = \$2,018,490.43
PHASE 2 EJPD CONSTRUCTION COST OF SANITARY SEWER IMP. WITHIN ELIZABETH AVENUE & JOSEPH STREET INTERSECTIONS & CROSSING DETROIT ROAD TO JAYCOX ROAD - CITY WILL ASSUME PAYMENT	\$85,917.45	297' - 8" Sanitary Sewer, 60' - 8" Sanitary Sewer (Bored), 2 - Drop Sanitary Sewer Manholes, 1 - 60" Sanitary Sewer Manhole, 1 - 48" Sanitary Sewer Manhole, MH Tie-In (Includes 3% Inflation Rate)
PHASE 2 EJPD TOTAL PROJECT COST OF SANITARY SEWER IMPROVEMENTS WITHOUT INTERSECTIONS	\$1,932,572.98	\$2,018,490.43 (sanitary sewer project total) - \$85,917.45 (intersections)

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	PHASE 2 EJPD MINIMUM 2% OF ASSESSMENT COST ASSUMED BY CITY	\$38,651.46	\$1,932,572.98 (sanitary sewer project cost without intersections) x 0.02 (2%)
	PHASE 2 EJPD MINIMUM CITY ASSUMED COST (INTERSECTIONS + 2%)	\$124,568.91	\$85,917.45 (intersections) + \$38,651.46 (2% assessment cost)
	PHASE 2 EJPD MAXIMUM TOTAL COST THAT COULD BE ASSESSED TO BENEFITTED UNITS FOR SANITARY SEWER SYSTEM	\$1,893,921.52	\$2,018,490.43 (total sanitary sewer system) - \$124,568.91 (city assumed cost)
CITY ASSIGNED ASSESSMENT CALCULATION	PHASE 2 EJPD ASSIGNED ASSESSMENT AMOUNT APPLIED TO EACH BENEFITTED UNIT	\$12,000.00	City Assigned assessment amount per Benefitted Unit
	PHASE 2 EJPD TOTAL BENEFITTED UNITS	107	See Exhibit D
	PHASE 2 EJPD TOTAL OF ASSIGNED ASSESSMENTS FOR BENEFITTED UNITS	\$1,284,000.00	\$12,000.00 (City Assigned Benefitted Unit assessment) x 107 (total number of Benefitted Units)
	PHASE 2 EJPD DIFFERENCE BETWEEN MAXIMUM AND ASSIGNED AMOUNT TO BE ASSESSED	\$609,921.52	\$1,893,921.52 (total to be assessed) - \$1,284,000.00 (total benefitted unit assessment)
	PHASE 2 EJPD CITY SHARE OF TOTAL PROJECT COST	\$2,984,099.30	\$4,268,099.30 (total construction with project soft costs) - \$1,284,000.00 (total costs assessed to property owners based on assignment to Benefitted Units)
CITY COST SHARE DIVISIONS	PHASE 2 EJPD CITY SHARE - WATER SYSTEM W/INFLATION AND RESTORATION	\$1,134,293.00	(\$665,705.00 total water system cost x 1.03) + (\$1,246,521.45 total restoration cost x 35.989501%)
	PHASE 2 EJPD CITY SHARE - PAVEMENT W/INFLATION AND HIGHWAY LAND COSTS	\$569,404.70	(\$497,065.00 total pavement cost x 1.03) + (\$57,427.75 property acquisition for highway)
	PHASE 2 EJPD CITY SHARE - STORM SEWER W/INFLATION AND RESTORATION	\$495,127.02	(\$290,585.00 total storm sewer system cost x 1.03) + (1,246,521.45 total restoration cost x 15.709675%)
	PHASE 2 EJPD CITY SHARE - SIDEWALKS W/INFLATION	\$50,784.15	\$49,305.00 x 1.03
	PHASE 2 EJPD CITY SHARE - SANITARY SYSTEM W/INFLATION	\$734,490.43	\$465,921.52 (difference between calculated maximum and assigned assessed amount) + \$85,917.45 (intersection cost) + \$38,651.46 (2% assessed amount)