

**TOWN OF PLYMOUTH CAPITAL IMPROVEMENT PLAN REQUEST
FY26 SPRING ANNUAL TOWN MEETING**

Department: Energy and Environment	Priority #:	2 - Special
Project Title and Description: Morton Park Culvert Replacements	Total Project Cost:	5,383,500

Department/Division Head: David Gould, Director

Check if project is: New ☐ Resubmitted ☒ **Cost estimate was developed:** Internally ☐ Externally ☒

For project re-submittals, list prior year(s):

List any funding sources and amounts already granted:

\$2,000,000 in Federal Highway Adminsitration (Aquatic Organism Passage) Funding

Basis of Estimated Costs (attach additional information if available)			If project has impact on 5 Year Plan and future operating budgets, insert estimated amounts.		
Capital:	Cost	Comments	Fiscal Year:	Capital	Operations & Maintenance
<i>Planning and Design</i>			<i>FY27</i>		
<i>Labor and Materials</i>	5,383,500		<i>FY28</i>		
<i>Administration</i>			<i>FY29</i>		
<i>Land Acquisition</i>			<i>FY30</i>		
<i>Equipment</i>			<i>FY31</i>		
<i>Other</i>					
<i>Contingency</i>					
Total Capital	\$5,383,500				

Project Justification and Objective:

The project proposes the replacement of two culverts along the rear entrance to Morton Park, one on the mainstem of Town Brook and one over an unnamed tributary. Both have weight restrictions and the smaller culvert has a steel plate over it. Both are undersized and pose safety concerns.

For Capital Project Requests:

Will this project be phased over more than one fiscal year? If yes, enter it on the 5 Year Plan Yes ☐ No ☒
 Can this project be phased over more than one fiscal year? Yes ☐ No ☒

For Capital Equipment Requests:

☐ Check if equipment requested is replacement and enter the year, make & model, VIN and present condition of existing equipment

What is the expected lifespan of this new/replacement equipment: 50 years

Attach backup information, estimates, or justification to support this request.



Town of Plymouth
Department of Energy & Environment
26 Court Street, Plymouth, MA 02360



MEMO

To: Derek Brindisi, Town Manager
Lynne Barrett, Finance Director

From: David Gould, Director of Energy and Environment

Re: Capital Request – Morton Park Culverts

Date: November 6, 2024

The proposed replacement of the Morton Park culverts would replace two undersized culverts, both of which have weight limits and one which currently has a steel plate over it to allow for vehicular traffic to pass. These two culverts allow residents to access their homes on either side of Morton Park as well as visitors into the park. Approximately, two years ago the main access to the park during the summer months was relocated from Summer Street to the back entrance resulting in an increase in vehicular traffic over the two structures.

Since one of the culverts passes over Town Brook the Town applied for and received a grant from the Federal Highway Administration Aquatic Organism Passage (AOP) Program in the amount of \$2,000,000 since diadromous fish migrate upstream and downstream in Town Brook. The second culvert is on an unnamed tributary and does not pass diadromous fish.

The project would involve the demolition of both structures and replace each with pre-cast concrete culverts – one an arch and one a box culvert. Due to geotechnical limitations of the glacial outwash sediment that predominates in this area there is a need for micro-piles to ensure an adequate base and footings for each structure. In addition, the projects fall within the Town Brook Historic District which is recognized as a National Historic Register District so additional work including stone facades and timber guard rail will be utilized. The construction is limited to the winter months based upon the summer season in the park and the spring and fall time-of-year restrictions for the migration of diadromous fish. This further increases the cost of the project.

Should you have any questions regarding this project or capital request please contact me at your earliest convenience. Thanks.



Summary of Project Estimate

August 7, 2024

Morton Park Road Culverts – Plymouth, Massachusetts

Item 1 – Design and Engineering (In Progress).....\$288,500

Eastern 3-Sided Culvert Construction\$1,800,000

Western Arch Culvert & Stream Restoration Construction.....\$2,800,000

Item 2 – Total Construction Estimate\$4,600,000

Item 3 – Construction Administration (Based on 6 Month Construction).....\$350,000

Additional Design and Engineering Services

NEPA Assistance (Per FHWA).....\$35,000

Section 106 Coordination w/ PAL (Including MOA Development).....\$75,000

Coordination w/ FHWA Grant\$35,000

Item 4 – Total Additional Design and Engineering Services\$145,000

Total Items 1 Thru 4.....\$5,383,500

OPINION OF PROBABLE CONSTRUCTION COSTS
Based Upon Semi Final Drawings
Morton Park Culvert Replacement - Eastern 3-Sided Culvert
District 5
Plymouth, Massachusetts
#11982.00023
July 30, 2024

Item No	Description	Unit of Measure	Unit Price	Total Quantity	Total
1	SITE PREPARATION	LUMP SUM	\$23,000.00	1	\$23,000.00
2	INCIDENTIALS	LUMP SUM	\$35,000.00	1	\$35,000.00
2	TRAFFIC MANAGEMENT	LUMP SUM	\$18,000.00	1	\$18,000.00
4	SITE IMPROVEMENTS AND RESTORATION	LUMP SUM	\$29,000.00	1	\$29,000.00
115.1	DEMOLITION OF BRIDGE NO. P-13-XXX	LUMP SUM	\$ 30,000.00	1	\$30,000.00
120	EARTH EXCAVATION	LUMP SUM	\$ 35,000.00	1	\$35,000.00
140	BRIDGE EXCAVATION	CUBIC YARD	\$ 70.00	615	\$43,050.00
151	GRAVEL BORROW	CUBIC YARD	\$ 60.00	225	\$13,500.00
151.2	GRAVEL BORROW FOR BACKFILLING STRUCTURES AND PIPES	CUBIC YARD	\$ 65.00	130	\$8,450.00
156.1	CRUSHED STONE FOR BRIDGE FOUNDATIONS	TON	\$ 75.00	15	\$1,125.00
170	FINE GRADING AND COMPACTING	SQUARE YARD	\$ 10.00	305	\$3,050.00
402.	DENSE GRADED CRUSHED STONE FOR SUB-BASE	CUBIC YARD	\$ 90.00	105	\$9,450.00
443	WATER FOR DUST CONTROL	M GAL	\$ 80.00	25	\$2,000.00
620.3	STEEL BACKED TIMBER GUIDERAIL END ANCHORAGE	EACH	\$ 4,500.00	4	\$18,000.00
628.1	STEEL BACKED TIMBER GUIDERAIL BRIDGE ATTACHMENT	EACH	\$ 4,500.00	4	\$18,000.00
748.	MOBILIZATION	LUMP SUM	\$86,000.00	1	\$86,000.00
901	4000 PSI, 1.5 IN., 565 CEMENT CONCRETE	CUBIC YARD	\$ 1,500.00	80	\$120,000.00
904.3	5000 PSI, 3/4 IN., 685 HP CEMENT CONCRETE	CUBIC YARD	\$ 1,800.00	30	\$54,000.00
910.1	STEEL REINFORCEMENT FOR STRUCTURES - EPOXY COATED	POUND	\$ 3.50	18000	\$63,000.00
965	MEMBRANE WATERPROOFING FOR BRIDGE DECKS	SQUARE YARD	\$ 35.00	55	\$1,925.00
970.	DAMP-PROOFING	SQUARE FOOT	\$ 3.00	750	\$2,250.00
991.1	CONTROL OF WATER	LUMP SUM	\$ 100,000.00	1	\$100,000.00

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District 5
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 July 30, 2024

Item No	Description	Unit of Measure	Unit Price	Total Quantity	Total
995.011	CULVERT STRUCTURE, CULVERT NO. XXXXX	LUMP SUM	\$ 80,000.00	1	\$80,000.00
	BANK TREATMENT	TON	\$ 120.00	460	\$55,200.00
	3/4" CRUSHED STONE	CUBIC YARD	\$ 75.00	55	\$4,125.00
	9.625" MICROPILE	EACH	\$ 8,000.00	40	\$320,000.00
	MICROPILE TEST PILE	EACH	\$ 20,000.00	1	\$20,000.00
	MICROPILE LOAD TEST	EACH	\$ 15,000.00	2	\$30,000.00
	4" NATURAL STONE VENEER	SY	\$ 500.00	115	\$57,500.00
	BLUESTONE CAP	LF	\$ 550.00	100	\$55,000.00

PROJECT COST SUBTOTAL =	\$1,335,625.00
CONTINGENCIES 10% =	\$ 133,562.50
INCEDENTIALS 10% =	\$ 133,562.50
MARKET UNCERTAINTY 15% =	\$ 200,343.75

TOTAL PROJECT COST (ROUNDED) = \$1,803,000.00

OPINION OF PROBABLE CONSTRUCTION COSTS
Based Upon Semi Final Drawings
Morton Park Culvert Replacement - Western Arch Culvert
District 5
Plymouth, Massachusetts
#11982.00023
July 30, 2024

Item No	Description	Unit of Measure	Unit Price	Total Quantity	Total
1	SITE PREPARATION	LUMP SUM	\$43,000.00	1	\$43,000.00
2	INCIDENTIALS	LUMP SUM	\$52,000.00	1	\$52,000.00
2	TRAFFIC MANAGEMENT	LUMP SUM	\$26,000.00	1	\$26,000.00
4	SITE IMPROVEMENTS AND RESTORATION	LUMP SUM	\$69,000.00	1	\$69,000.00
5	DEMOLITION OF STRUCTURES	LUMP SUM	\$60,000.00	1	\$60,000.00
115.1	DEMOLITION OF BRIDGE NO. P-13-XXX	LUMP SUM	\$ 100,000.00	1	\$100,000.00
120	EARTH EXCAVATION	LUMP SUM	\$ 70,000.00	1	\$70,000.00
140	BRIDGE EXCAVATION	CUBIC YARD	\$ 70.00	700	\$49,000.00
151	GRAVEL BORROW	CUBIC YARD	\$ 60.00	200	\$12,000.00
151.2	GRAVEL BORROW FOR BACKFILLING STRUCTURES AND PIPES	CUBIC YARD	\$ 65.00	155	\$10,075.00
156.1	CRUSHED STONE FOR BRIDGE FOUNDATIONS	TON	\$ 75.00	20	\$1,500.00
170	FINE GRADING AND COMPACTING	SQUARE YARD	\$ 10.00	485	\$4,850.00
402.	DENSE GRADED CRUSHED STONE FOR SUB-BASE	CUBIC YARD	\$ 90.00	165	\$14,850.00
443	WATER FOR DUST CONTROL	M GAL	\$ 80.00	35	\$2,800.00
620.3	STEEL BACKED TIMBER GUIDERAIL END ANCHORAGE	EACH	\$ 4,500.00	4	\$18,000.00
628.1	STEEL BACKED TIMBER GUIDERAIL BRIDGE ATTACHMENT	EACH	\$ 4,500.00	4	\$18,000.00
748.	MOBILIZATION	LUMP SUM	\$111,000.00	1	\$111,000.00
901	4000 PSI, 1.5 IN., 565 CEMENT CONCRETE	CUBIC YARD	\$ 1,500.00	95	\$142,500.00
904.3	5000 PSI, 3/4 IN., 685 HP CEMENT CONCRETE	CUBIC YARD	\$ 1,800.00	45	\$81,000.00
910.1	STEEL REINFORCEMENT FOR STRUCTURES - EPOXY COATED	POUND	\$ 3.50	23500	\$82,250.00
965	MEMBRANE WATERPROOFING FOR BRIDGE DECKS	SQUARE YARD	\$ 35.00	100	\$3,500.00
970.	DAMP-PROOFING	SQUARE FOOT	\$ 3.00	480	\$1,440.00

OPINION OF PROBABLE CONSTRUCTION COSTS
Based Upon Semi Final Drawings
Morton Park Culvert Replacement - Western Arch Culvert
District 5
Plymouth, Massachusetts
#11982.00023
July 30, 2024

Item No	Description	Unit of Measure	Unit Price	Total Quantity	Total
991.1	CONTROL OF WATER	LUMP SUM	\$ 200,000.00	1	\$200,000.00
995.011	CULVERT STRUCTURE, CULVERT NO. XXXXX	LUMP SUM	\$ 105,000.00	1	\$105,000.00
	BANK TREATMENT	LUMP SUM	\$ 150,000.00	1	\$150,000.00
	3/4" CRUSHED STONE	CUBIC YARD	\$ 75.00	85	\$6,375.00
	9.625" MICROPILE	EACH	\$ 8,000.00	56	\$448,000.00
	MICROPILE TEST PILE	EACH	\$ 20,000.00	1	\$20,000.00
	MICROPILE LOAD TEST	EACH	\$ 15,000.00	2	\$30,000.00
	4" NATURAL STONE VENEER	SY	\$ 500.00	130	\$65,000.00
	BLUESTONE CAP	LF	\$ 550.00	130	\$71,500.00

PROJECT COST SUBTOTAL =	\$2,068,640.00
CONTINGENCIES 10% =	\$ 206,864.00
INCEDENTIALS 10% =	\$ 206,864.00
MARKET UNCERTAINTY 15% =	\$ 310,296.00

TOTAL PROJECT COST (ROUNDED) = \$2,793,000.00