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MEMORANDUM

To : Nick Durante, Supervisor

From : James J. Hahn, P.E.
Town Consulting Engineer

Dated : July 25, 2025

Subject : Maple Road Improvements

As requested by the Town of Southeast, we have reviewed the previously proposed drainage and roadway improvements for the approximately 0.5-mile gravel road section of Maple Road from Enoch Crosby Road and northward. Additionally, we have met with Matthew Giannetta from NYCDEP to review the City's requirements and we have met with you and the Town Highway Superintendent, Michael Burdick, to discuss the Town's concerns and possible alternatives to improve this road. We have also obtained historic topography from Nathan L. Jacobson & Associates which was needed to design the improvements.

It is our understanding the primary concerns of local residents are poor road surface conditions due to inadequate drainage along this section of road that occurs during the spring thaw. These temporary conditions result in annual complaints from residents. We have prepared three options to address these concerns.

The first option (1) is to pave the gravel road section of Maple Road, construct new drainage swales and structures, and install new guiderail. NYCDEP requires asphalt to drain to a swale before discharging into the reservoir. Some re-grading would be required to cross-pitch the full length of the road into the swales because of limited space along the reservoir side of the road. Furthermore, due to its length and per NYCDEP requirements, paving the road would have to be performed in two phases separated by two years between the completion of one phase and the start of the second phase. This phasing would be done to avoid NYCDEP and NYSDEC stormwater runoff water quality treatment and peak runoff mitigation requirements. There is insufficient space to install traditional stormwater treatment practices, such as bioretention basins and infiltration trenches, to satisfy such requirements. Alternative proprietary practices, such as "jellyfish" filters, are expensive and maintenance intensive. By phasing the project, such that NYCDEP and NYSDEC threshold requirements are not exceeded, drainage practices could be limited to drainage swales and deep sump catch basins. This would avoid NYSDEC approvals, require only limited NYCDEP review, and would be less costly.

However, project phasing results in additional costs for additional mobilizations and material costs increases over time. We estimate it would cost approximately $1.6 million to design and construct this option to Town specifications; see enclosed estimate. There could be a cost savings if the Highway Department performs some of the work using their own forces. Additionally, our office has been told that there are residents who prefer the gravel road and its rural aesthetic character, which attract pedestrians to walk along the edge of the reservoir.

We have also prepared a second option (2). In this option, only new drainage swales and structures and new guiderail would be installed. The gravel road would remain as is. This option would completely avoid NYCDEP review and, as a result, could be constructed in a single phase. However, due to the road's proximity to the reservoir, NYCDEP would be informed as a courtesy of the project and may opine on it. The intent of the option is to address the drainage concerns while preserving the rural aesthetic character of the road. Additionally, there would be a significant cost savings. We estimate it would cost approximately $575,000 to design and construct this option; see enclosed estimate. As with the previous option, there could be a cost savings if the Highway Department performs some of the work.

The third option (3) is for the Town's Highway Department to install crushed stone sublayer under a 250-300 foot section of Maple Road with geotextile fabric and a new gravel surface course. Subsurface drains with laterals under the gravel road may be an alternative approach. This material could be installed in the Fall of 2025 and evaluated in the Spring of 2026, when the wet conditions are occurring. Our office can evaluate with the Highway Superintendent the effectiveness of the crushed stone sublayer and assess the remaining portions of the gravel road. The Highway Superintendent was in favor of this option as on July 25, 2025. It seems reasonable the Highway Department can implement this remediation measure for approximately $50,000 using their own forces. No approvals from NYCDEP or NYSDEC are required. This option excludes the guiderail which would still have to be installed. If the remediation measure is effective, it can be applied to the remainder of gravel road over a period of approximately five years. This option enables progressive implementation, continued evaluation of effectiveness, at minimal cost.

It should also be noted, the existing topographic data for the road is over 20 years old. Since that time, a significant amount of gravel has been added to the road thereby changing the grades from the earlier design. Depending on the option selected, obtaining an updated topographic survey of the road may be required to provide accurate plans for bidding and to avoid change orders during construction.

As this project, primarily in the form of the first option, has been considered since 2005 but has yet to be implemented, indicates that the Town is hesitant to pave the road at such a considerable expense for a condition that only typically occurs during a minimum time period at one time of the year. As a result, we recommend pursuing the third option described herein at a significant cost savings and to ensure a safe, passable road during all seasons. If option three is the selected alternative it is likely an updated survey may not be required.

If you have any questions, please do not hesitate to contact me at your earliest convenience.

JH:WJA:cb

Enclosures

cc: Town Board (townboard@southeast-ny.gov)
Michael Burdick, Highway Superintendent (mburdick@southeast-ny.gov)

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PRELIMINARY COST ESTIMATE FOR
MAPLE ROAD IMPROVEMENTS
TOWN OF SOUTHEAST
PUTNAM COUNTY, NY
James J. Hahn Engineering, P.C.
1689 Route 22, Brewster, NY 10509
July 25, 2025

Option 1: Pave Maple Road in Two Phases

SPEC. SECT.	ITEM	UNIT	EST. QUAN.	UNIT PRICE	QUANTITY
BBC	Bituminous Base Course (5")	TON	1,900	$245.00	$465,500.00
BBGR	Box Beam Guiderail	LF	2,120	$125.00	$265,000.00
BTC	Bituminous Top Course (2")	TON	800	$275.00	$220,000.00
CB	Catch Basins (with 3' sump)	EA	6	$10,000.00	$60,000.00
CPP	Corrugated Polyethelene Pipe (15" Dia.)	LF	55	$160.00	$8,800.00
CPP	Corrugated Polythelene Pipe (15" Dia. End Section)	EA	1	$1,200.00	$1,200.00
CSG	Crushed Stone and Gravel ("Item 4")	CY	600	$120.00	$72,000.00
ECD	Erosion Control Devices	LS	2	$7,500.00	$15,000.00
MPT	Maintenance and Protection of Traffic	LS	2	$15,000.00	$30,000.00
PM	Pavement Markings (4")	LF	5,000	$3.00	$15,000.00
R	Restoration	NP	NP	NP	NP
RR	RipRap	CY	5	$200.00	$1,000.00
SS	Survey and Stakeout	LS	2	$6,500.00	$13,000.00
VS	Vegetated Swale	LF	2,230	$20.00	$44,600.00
UFG	Unclassified Excavation, Filling, and Grading	LS	2	$5,000.00	$10,000.00
				CONSTRUCTION BASE COST	**$1,221,100.00**
				Contingency (20%)	$244,200.00
				Engineering & Inspection (6% of Base Cost & Contigency)	$87,900.00
				Escalation for Phase 2 (10% of Half of Base Cost, Contigency, and E&I)	$77,700.00
				TOTAL COST	**$1,630,900.00**

This estimate is preliminary and approximate. The prices shown above are not actual construction prices and are subject to change. These prices are based on our engineering experience and knowledge of previous construction projects of similar work and scope. The estimate does not include utility construction costs for telephone, electric and gas, permit fees and any other fees or costs related to the infrastructure work. This estimate is done for budgeting purposes only.

Assumptions: Existing item 4 to be reused; 3" of item 4 across length & width to adjust grade/fill ruts; no walking path; 24 ft wide road; one existig culvert crossing to be replaced; no significant cuts or re-pitching of road; all guide rail to be replaced

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Option 2: Drainage Improvements & Guide Rail Only

SPEC. SECT.	ITEM	UNIT	EST. QUAN.	UNIT PRICE	QUANTITY
BBGR	Box Beam Guiderail	LF	2,120	$125.00	$265,000.00
CB	Catch Basins (with 3' sump)	EA	6	$10,000.00	$60,000.00
CPP	Corrugated Polyethelene Pipe (15" Dia.)	LF	55	$160.00	$8,800.00
CPP	Corrugated Polythelene Pipe (15" Dia. End Section)	EA	1	$1,200.00	$1,200.00
CSG	Crushed Stone and Gravel ("Item 4")	CY	300	$120.00	$36,000.00
ECD	Erosion Control Devices	LS	1	$7,500.00	$7,500.00
MPT	Maintenance and Protection of Traffic	LS	1	$10,000.00	$10,000.00
R	Restoration	NP	NP	NP	NP
RR	RipRap	CY	5	$200.00	$1,000.00
SS	Survey and Stakeout	LS	2	$6,500.00	$13,000.00
VS	Vegetated Swale	LF	2,230	$20.00	$44,600.00
UFG	Unclassified Excavation, Filling, and Grading	LS	1	$5,000.00	$5,000.00
				CONSTRUCTION BASE COST	**$452,100.00**
				Contingency (20%)	$90,400.00
				Engineering & Inspection (6% of Base Cost & Contigency)	$32,600.00
				TOTAL COST	**$575,100.00**

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Assumptions: 1.5" of item 4 across length & width to fill ruts and minor adjustments; no walking path; 24 ft wide road; one existig culvert crossing to be replaced; no significant cuts or re-pitching of road; all guide rail to be replaced