

TOWNSHIP OF MARLBORO

2022 PAVEMENT MANAGEMENT PROGRAM

TABLE OF CONTENTS

BACKGROUND

PAVEMENT MANAGEMENT PLAN ROADWAY PRIORITIZATION

ROADS COMPLETED 2001-2021

ROADS SCHEDULED FOR 2022

ROADS SCHEDULED FOR MILL & FILL WORK IN 2022

PRELIMINARY FUTURE PLAN (2023)

2022 DATA UPDATE

COORDINATION WITH OTHER PROGRAMS

FUNDING AND FINANCING

BACKGROUND

The Township of Marlboro has over 200 miles of roadways, not including those maintained by Monmouth County and the State of New Jersey such as Route 520, Route 79, Tennent Road, Route 9 and Route 18. Township roadways include primary or collector roads defined as those that collect traffic from local roads and feed major highways, and low volume secondary roads which typically receive less traffic and primarily serve local traffic. The collector roadways are depicted on a map included as **EXHIBIT A**.¹

The Township maintains a detailed six (6) year capital program and updates it on an annual basis. The bulk of the projects in the plan are targeted for improvements to infrastructure, the most significant of which is road improvements.

The common understanding of road paving is the process of putting new asphalt on top of existing roadway surfaces in need of repair, analogous to installing a second layer of shingles on top of the original roof on your home. However, an effective Pavement Management Program is one which utilizes a broad range of strategies to maintain and improve roadways. This includes basic maintenance using pothole repair and crack sealing. It also incorporates road resurfacing, in which the road is milled or scraped free of two inches of old roadway and debris prior to the application of new asphalt. In more extreme cases, a more extensive reconstruction of the roadway is required in which up to twelve inches of the surface is removed and multiple layers of aggregate sub base and asphalt are installed. Along with the roadway surface layers, other issues associated with roadway

¹ Note that there are a few roadways including Lloyd Road and Main Street which are partially owned and maintain by different entities. These roads have 'split' jurisdiction but are depicted as solely the responsibility of the non-Township entity on the map.

deterioration, such as curb, ADA-compliant ramps, sidewalk and drainage improvements are addressed as needed. This comprehensive approach, while naturally increasing the costs of the improvements, helps prolong the useful life of the roadway and ultimately represents the most effective use of resources. As a "rule of thumb", a Township road resurfacing project averages more than \$500,000 per mile.

PAVEMENT MANAGEMENT PLAN ROADWAY PRIORITIZATION

Throughout the year, the Department of Public Works (DPW) and Engineering collect data used to develop a list of roadways to be considered for inclusion in the annual capital program. Through a detailed analysis of the roadways, a road program is designed in order to improve and maximize the life of as many roads as possible within the budget allocated.

The Township has adopted the approach that it will simultaneously fund both less intensive types of projects as well as drainage repair and full depth reconstruction projects so that degraded roads can be addressed while pavement is cost-effectively managed to prevent less impacted roads from becoming worse. There is an inverse relationship between pavement degradation and cost. At the low end of the scale, routine roadway maintenance can cost less than \$10 per linear foot and routine road milling and paving in the area of \$135 per linear foot. At the other end, structural improvements and base rehabilitation can exceed \$225 per linear foot.

Bid priorities for the annual road improvement capital program are formulated by the Department of Public Works (DPW) and Engineering as follows:

- 1) The Township seeks to identify potential grant opportunities to offset the costs of road improvements. Grants serve to supplement local authorizations for road improvements. For example, State monies may be available through NJDOT Local Aid Grants. The scoring system for these Local Aid Grants gives priority to roadways with higher Average Daily Traffic (ADT). These grants have been used in prior years for collector roads such as Greenwood, Texas, Ryan, Gordons Corner, Union Hill and Vanderburg. Another example includes the Community Development Block Grant (CDBG) program sponsored by the United States Department of Housing and Urban Development (HUD). These Federal monies are targeted to those Federal census districts with a majority of residents classified as low to moderate income. The only census district that currently qualifies for this CDBG funding is the area encompassing the Greenbriar development off of Robertsville Road. The Township has also received several grants through the Federal Emergency Management Agency (FEMA) and regularly makes application to that agency for infrastructure improvement funding.

- 2) A long range planning report prepared for the Township in the mid 2000s is reviewed to reference the Overall Condition Index (OCI) rating of each roadway. This rating is calculated by a computer program based on various inputs established through a physical inspection of each roadway.

- 3) DPW maintenance record data are layered over the long range planning report OCI ratings so that those roads which require the most in-house maintenance resources are weighted accordingly.

- 4) Customer pothole and road maintenance report records are then factored so that those locations receiving the most requests for service are weighted accordingly. Note customer maintenance requests typically trigger DPW work orders for service (refer to 3 above).
- 5) Engineering conducts core sampling on selected roads prioritized following 1-4 above in order to determine the thickness of the existing asphalt and underlying sub base conditions. These pavement cores are utilized to determine whether a roadway needs to receive a mill and overlay (in areas of adequate base course thickness) or a full depth reconstruction (a more intensive project).
- 6) Engineering performs site visits to the roads prioritized following 1-4 above in order to determine what if any ancillary work (curb, ADA-compliant ramps, sidewalk, drainage) is required for each roadway.
- 7) Engineering calculates an estimate for the roads prioritized following 1-6 above and makes a recommendation based upon the available budget allocation.
- 8) Bid specifications and construction plans are prepared with the list of roads recommended in 7 above. The specifications typically include a base list of roads followed by alternate (optional) roads, and are advertised for public bid in accordance with Local Public Contract Law. The base list represents current year priorities estimated by the Engineer with a high degree of confidence to be accomplished within the available budget. Ultimately, the contract is awarded to the lowest responsible bidder for as many of the roads listed in

the specifications (base list plus alternates) as can be accomplished within the available budget. Roads included as bid "alternates" for which funding is not available in the current year's program budget are automatically prioritized for inclusion in the succeeding capital program year.

- 9) Roadways that are not scheduled for repaving in the current year for which service requests have been made are reviewed by DPW and Engineering. Intensive road repair projects which involve milling and resurfacing of partial sections of roadways are formulated by DPW and Engineering, and accomplished using a combination of internal and contracted resources. These "Mill & Fill" projects are designed to permanently address an issue that is more limited in scope, or in some instances, accomplish a shorter term repair for purposes of 'bridging' to a future road program.

ROADS COMPLETED 2001-2021

The Township has authorized the paving of approximately 322,000 linear feet or 61 miles of roadway since 2009. 173 complete roads and 41 partial roadways have been paved since 2001. The road program continues to reach both local development streets as well as many major corridors in the Township, including the following:

SPRING VALLEY ROAD (TENNETT ROAD TO OLD BRIDGE)
BUCKLEY ROAD (HH TRAIL TO MOORE ROAD)
MARLBORO ROAD (COUNTY ROUTE 520 NORTH OF NJSH 9)
GORDONS CORNER ROAD (NJSH 18 TO COUNTY ROUTE 520)
RYAN ROAD (ROBERTSVILLE TO MANALAPAN)
UNION HILL ROAD (TENNETT ROAD TO NJSH 9)
GREENWOOD ROAD PHASE I (TENNETT ROAD TO TEXAS)
GREENWOOD ROAD PHASE II (TEXAS ROAD TO ABERDEEN)
TEXAS ROAD PHASE I (SPRING VALLEY TO MOUNTAIN LAUREL ROAD)
TEXAS ROAD PHASE II (GREENWOOD ROAD TO SPRING VALLEY ROAD)

TEXAS ROAD PHASE III (GREENWOOD ROAD TO ABERDEEN)
TEXAS ROAD PHASE IV (SPRING VALLEY ROAD TO OLD BRIDGE)
CHURCH ROAD (GORDONS CORNER ROAD TO TENNENT ROAD)

Barring exceptional circumstances, the roadways (or sections of roadway) paved between 2001 and 2021 are not eligible for repaving or reconstruction under the 2022 Pavement Management Program.

Repaved roadways are maintained through a pothole repair and crack sealing program. As referred to in the "Roadway Prioritization" section above, the cost of maintenance is a fraction of the cost of full depth roadway reconstruction.

The Township has also completed a number of improvements to critical infrastructure to complete sidewalks and address drainage, including:

WYNCREST ROAD AND ROUTE 520 SIDEWALKS
TEXAS ROAD SIDEWALKS AND PEDESTRIAN CROSSWALKS
TAYLOR ROAD DRAINAGE
FRENEAU HEADWALL
RAND COURT HEADWALL
PLEASANT VALLEY ROAD STREAMBANK STABILIZATION
CANADIAN WOODS ROAD (DRAINAGE ONLY)
CLASSIC WAY (DRAINAGE AND ROAD REPAIR)
KENSINGTON DRIVE (DRAINAGE ONLY)
GALLYA GROVE (DRAINAGE AND ROAD REPAIR)
CHURCH ROAD/McCUE DRAINAGE IMPROVEMENTS

ROAD, DRAINAGE AND SIDEWALK IMPROVEMENTS SCHEDULED FOR 2022

There are numerous projects in design or under contract for construction work, as summarized in the section below.

Roads Recently Completed Under 2021 Contract:

GARY DRIVE
NICKI COURT
VICTORIA DRIVE

The following roadways are under contract and scheduled to be completed during 2022:

RECREATION WAY PARKING LOT (DRAINAGE, PAVING, COURTS)
THOMAS LANE
WICKER PLACE
WYNCREST ROAD AND SCHOOL ROAD WEST SIDEWALKS

The following drainage improvements are currently under contract, with construction to be completed in 2022:

BRUNSWICK DRIVE (DRAINAGE ONLY)
PEGASUS COURT (DRAINAGE ONLY)

The design and permitting for the following roadway stabilization project will be completed in 2022:

NOLAN ROAD STREAMBANK STABILIZATION *

* The Township will submit a FEMA Pre-Disaster Mitigation Application for funding for this project.

The following roadway improvement projects have been awarded and scheduled for construction in fall of 2022:

BROOKSIDE CIRCLE*

IMPROVEMENTS TO WYNCREST ROAD (NJSH ROUTE 18 TO MANALAPAN)*

* Project partially funded by NJDOT (See "Funding and Financing" below) which may affect schedule, and subject to completion of water improvements (currently under contract) on Brookside Drive and Wyncrest Road.

The following roadway is in engineering design and will be bid out and scheduled for construction in 2022:

UNION HILL ROAD PHASE II (CLAYTON ROAD TO MANALAPAN)*

* Project partially funded by NJDOT (See "Funding and Financing" below) which may affect schedule.

The following roadways are scheduled for both water main installation and roadway resurfacing starting in 2022:

MOCKINGBIRD LANE*

PEACOCK LANE*

* Water improvements will be completed first (currently under contract) followed by the paving under the 2022 Road Program.

The Township Engineer will be preparing bid specifications for the following roadway and drainage improvement projects that will comprise the BASE BID in 2022:

BROMLEY COURT

CAMBRIDGE COURT

CRINE ROAD (FROM CONDOR ROAD TO STATION ROAD)

ERIC COURT

EVAN DRIVE

HASTINGS ROAD

KNOB HILL ROAD (FROM RAMSGATE DRIVE TO NORTHERN CUL-DE-SAC)

RAMSGATE DRIVE

HARRINGTON TERRACE (DRAINAGE ONLY)

MICKI DRIVE (DRAINAGE ONLY)

SCHOOL ROAD EAST (DRAINAGE ONLY)

ROADS SCHEDULED FOR MILL & FILL* WORK IN 2022

AMBOY ROAD
CONOVER ROAD
GORDONS CORNER ROAD
HARTMAN LANE
MILLAY & UNION HILL ROADS (INTERSECTION)
PLEASANT VALLEY ROAD
ROBERTSVILLE ROAD
TOWNSHIP DRIVE (PARKING LOTS)
VANDERBURG ROAD
WYNCREST ROAD

* May be included in Base Bid.

PRELIMINARY FUTURE PLAN (2023)

The Township Engineer is in the process of preparing bid specifications for the following roadways that will comprise the ALTERNATE BID. To the extent funding is available after the BASE BID award, the following roads will be awarded and scheduled in 2022 with the balance to be completed in 2023.

AMHERST ROAD
CARTER DRIVE
COLLINGWOOD ROAD
DUNN FRIVE
LEE COURT
MELISSA COURT
MERLE COURT
SANDBURG DRIVE
TRUMAN DRIVE

HARNESS LANE*
MEADOW LANE*
STONE LANE*

* Water improvements by the Gordons Corner Water Company will be completed first (currently scheduled for Summer 2022) followed by the paving.

The following roadway is awaiting permits to be issued by the New Jersey Department of Environmental Protection (NJDEP) and is now scheduled for construction in 2023:

HARBOR ROAD

The Township has received a NJDOT Local Aid Grant for the following roadway. Engineering design authorization is anticipated in the summer of 2022, with construction to be scheduled in 2023:

RYAN ROAD (NJSH ROUTE 79 TO ROBERTSVILLE ROAD) *

* Project partially funded by NJDOT (See "Funding and Financing" below) which may affect schedule.

The following roadways are under review for consideration for 2023:

ANDREWS DRIVE
ANVIL COURT
BAUERS LANE
BERNADETTE ROAD (TICETOWN ROAD TO PERRY STREET)
BRUCE ROAD
CANNONADE DRIVE (RIVA RIDGE TO DAMASCUS DRIVE)
CLUBHOUSE LANE PH II (COVENTRY TO MURRAY HILL) *
CONOVER ROAD (NJSH ROUTE 79 TO PLEASANT VALLEY ROAD)
CRINE ROAD (TENNETT ROAD TO CONDOR ROAD)
EGRET LANE
FLETCHER DRIVE
FORGE COURT
GALLYA GROVE
IMBRIE PLACE
JACK LANE
JACKIE DRIVE
JAMIE COURT
JUSTIN COURT
LAREDO DRIVE
MCCUE ROAD (MACKENZIE TERRACE TO VANCOUVER ROAD)
MCDONALD ROAD
MENZEL LANE
MICKI DRIVE

MURRAY HILL TERRACE*
NELSON STREET
OPATUT COURT
ORCHARD HILLS ROAD
OSPREY COURT
PRINCE EDWARD ROAD
RACHAEL DRIVE
ROBINSON ROAD
SAMANTHA DRIVE
SCHOOL ROAD EAST (DUTCH LANE ROAD TO FREEHOLD TWP BORDER)
SCOTT DRIVE
STONY HILL ROAD
SUFFOLK WAY CUL DE SAC
SYNGLE WAY
TICETOWN ROAD (OLD BRIDGE BORDER TO GREENWOOD ROAD)
WESTBROOK DRIVE
WILSON AVENUE
WINDFALL LANE
WOODLAND TERRACE

* Application to be made to the Community Development Block Grant (CDBG) program for funding.

The following drainage and road improvement project is being completed under a separate shared services agreement with Monmouth County:

Station Road Phase II is a full roadway reconstruction and drainage project between Briarcliff Drive and Crine Road. The project was incorporated into the Township's multi-year capital plan and authorized by the governing body in 2011. The reconstruction project will include the installation of drainage inlets to collect stormwater runoff with discharge to existing culverts, and full depth reconstruction of the roadway with a consistent pavement width. This area of Station Road traverses three (3) Monmouth County drainage structures ("culverts") which are in need of reconstruction. The current invert elevation and alignment of the culverts result in siltation and blockages which lead to high frequency flooding as well as the deterioration and undermining of

the adjacent roadway. This agreement was updated in May 2018 to include additional design services for the design and permitting of culverts ML-18 and ML-19 to modify the size of the proposed culverts and to address existing siltation and erosion occurring at these culverts. The Township Engineer's office has completed the roadway design plans for the roadway and has provided preliminary culvert construction plans to the County for review. Once the design plans are complete, land use applications will be submitted to the NJDEP for freshwater wetlands and flood hazard permits. These permits take approximately six (6) months to receive from the NJDEP. The permit applications have been submitted to the County with construction anticipated to begin in summer or fall 2023. The preliminary engineer's estimate for the project is \$1,600,000 to be shared between the County and Township.

Route 79 Sidewalk Extension Project:

Funded by approximately \$1.37 million in grants through the New Jersey Department of Transportation (NJDOT), this project addresses yet another area identified in the Township's 2009 Pedestrian Access Plan. Specifically, this project involves the installation of new sidewalk on State Highway 79 between Wyncrest Road and County Route 520. The sidewalk improvements will dovetail with work already initiated by the Township through NJDOT for intersection improvements at both Route 79 and CR 520 and Route 79 and Wyncrest Road, and street lighting upgrades through JCP&L on Route 79. The project is slated for completion in 2024.

2022 DATA UPDATE

Since the initial OCI data were collected in 2004, the Township has conducted in-field visual inspections and targeted core

sampling. In addition, call for service and road opening permit data have been incorporated into the analysis for purposes of identifying problem areas and evaluating wear over time. Call for service and road opening permit data are closely monitored throughout the year for purposes of establishing prioritization in future year road improvement programs.

COORDINATION WITH OTHER PROGRAMS

The Township adopted Ordinance 2018-12 establishing a moratorium for roadway openings for a period of five (5) years after the resurfacing of a roadway. Excavations on moratorium streets are discouraged, and when allowed under emergency circumstances as determined by the Township Engineer and Public Works Director, require a full width roadway restoration with the limits exceeding the area of excavation.

Consistent with this policy for private services and to make the most efficient use of resources, the Township coordinates with the Planning Board and public utilities to time improvements such that the need for road re-openings are minimized. For example, the drainage and roadway improvements completed on Buckley Road were dependent upon the completion of a stormwater detention facility constructed by a private entity. In another example, the Greenwood Road Phase I contract was awarded only after a private stormwater collection pipe, a gas main replacement by New Jersey Natural Gas, and the Western Monmouth Utilities Authority's (WMUA) sewer pump station rehabilitation projects were all completed.

FUNDING AND FINANCING

The Township appropriated a total of \$16 million towards roads in the 2018 - 2021 capital improvement authorizations. The Township's credit rating (AAA-Standard and Poor's and Aaa-Moody's) ensures that capital improvements are financed at the lowest rates available.

The Township applied for and received funding under both the FY 17 and FY 19 CDBG programs for paving in the Greenbriar development and will submit another application in the FY 23 round.

The Township is also utilizing several grants awarded by the NJDOT to supplement its road program as follows:

Township Road	Grant Year	Award
RYAN ROAD (ROBERTSVILLE ROAD TO NJSH ROUTE 79)	State FY 22	\$251,900
UNION HILL ROAD (CLAYTON ROAD TO MANALAPAN BORDER)	State FY 21	\$205,000
WYNCREST ROAD (NJSH 18 TO ROBERTSVILLE ROAD)	State FY 20	\$215,000

The Township expects to apply for funding for Improvements to Ticetown Road between Greenwood Road and the Old Bridge border in the State NJDOT FY 2023 grant cycle.

In 2022, the number of requests for service during the first four (4) months of the year declined by 18% over the same period in 2019 and 22% over the same period in 2018.² In addition, the requests for service are concentrated on fewer streets, a reduction of 28% over 2019 and 33% over 2018. This is attributable in large

² The years 2020 and 2021 have been excluded from this analysis due to the pandemic restrictions that were in effect.

part to the significant amount of road reconstruction work performed between 2018 and 2021 on roads requiring more frequent requests for maintenance. The 2022 program is similarly focused on addressing high-maintenance roadways. The Township continues to monitor requests for service data to ensure that the Paving Management Plan is addressing maintenance priorities.

The Pavement Management Plan will be re-evaluated during the Fall of 2022 as part of the Township's 2023 Capital Budget process.