

PAVEMENT MANAGEMENT PLAN ROADWAY PRIORITIZATION

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 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 approximately \$500,000 per mile.

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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 repair in the area of \$95 per linear foot. At the other end, structural improvements and base rehabilitation can exceed \$175 per linear foot.

Bid priorities for the annual road improvement capital program are formulated by 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 Texas, Vanderburg and Union Hill. 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) Department of Public Works (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.