



Legislation Text

File #: 21-2207, Version: 1

TO: Mayor and Members of City Council

THRU: Doug Hewett, ICMA-CM, City Manager

FROM: Jason Miles, PE, Assistant Public Services Director - Engineering

DATE: September 7, 2021

RE:
City of Fayetteville Pavement Preservation Program

COUNCIL DISTRICT(S):
All

Relationship To Strategic Plan:

Goal I: Safe and Secure Community

Goal II: High Quality Built Environment

Executive Summary:

The Fayetteville street system includes 747.81 center line miles and is one of the City's largest assets impacting every citizen, employee, emergency service personnel, commuter, and visitor. As development progresses and streets are constructed, it is necessary to cost-effectively maintain our roads in good condition. In the past, the pavement maintenance approach was on a "worst-first" basis, similar to most other municipalities. The focus of this approach was on streets that had already failed, but funding cannot keep up with the increasing inventory of failing streets, so the street network as a whole would steadily decline over time. As such, the City has adopted a strategy of "Pavement Preservation" like other progressive cities. This strategy combines re-surfacing (new asphalt) with pavement treatment methodologies such as asphalt rejuvenation or slurry seal to stretch funds and maintain the street network in good condition overall.

Through Powell Bill Program allocations, a state funding program for the building and maintenance of city streets, the City is able to perform substantial re-surfacing and treatment functions in addition to addressing other qualifying needs (ADA ramps, etc.). However, the City recognized that additional funding would be needed to reverse the decline of the overall street network condition, so an additional \$2 mill was allocated for FY22. Staff anticipates the current funding level of \$6.575 mill to provide for 47 miles of re-surfacing (new asphalt) and preventive treatments (slurry and cape seal/rejuvenation) in FY22.

Background:

Each year the state allocates funds through the Powell Bill Program to municipalities throughout North Carolina for the purpose of maintaining municipal street networks. Staff selection of streets for maintenance each fiscal year is largely based on Pavement Condition Rating (PCR)*, but other factors are considered as well such as future utility work, volume of traffic, etc. City Council has established a goal of 75% of City streets to have a minimum PCR of 75 to ensure the City street network remains in good condition. Based on current data, approximately 78% of City streets meet the minimum rating of 75. In order to maintain this level of success, Staff recognized that a modern approach was needed to enhance the City's pavement preservation program and stretch available funds. As such, the City now employs an optimization approach versus the traditional "worst-first" approach from the past. This optimization approach allows for substantially more annual maintenance mileage of the street network than the traditional approach by applying various pavement treatment methodologies at the appropriate time in the life of the pavement. This will result in timely maintenance turnover of the entire City street network and extended life cycle of pavement, saving the City millions of dollars. To get there, City Council must continue to provide appropriate investment in the pavement preservation methodologies deployed by Staff.

Please note that Pavement Condition Rating (PCR)* is the past methodology for rating City streets. The City is now moving toward the use of Pavement Condition Index (PCI) as the methodology of the future which is addressed in further detail in the attached presentation. These rating methodologies are similar in purpose but not correlated. PCI is adopted by the American Public Works Association (APWA) and is based on American Society for Testing and Materials (ASTM) D6433.

Issues/Analysis:

Concerns sometimes arise as to how City streets are selected for pavement preservation. As the Staff presentation will demonstrate, the primary selection factor is the Pavement Condition Rating (PCR), but other factors are considered as well to include future utility work, traffic volume, etc. Based on the pavement preservation work that has been tracked since 2008, the selection of streets has been distributed throughout the City, but the lean has traditionally been toward re-surfacing streets in dire need of repair/rehabilitation. The optimized approach now deployed by Staff allows for re-surfacing and treatment techniques to be performed at the appropriate time in the life cycle of the pavement. With the upgraded pavement condition and asset survey forthcoming in FY22, Staff will have a substantially more robust tool to provide analyses and projections for future street maintenance.

Budget Impact:

Although the annual funds received from the Powell Bill Program typically increase year to year, these funds result in reduced street maintenance due to inflation and higher costs associated with an accelerated decline of pavement network condition. In order to maintain a good overall street network (75% of streets with minimum PCR of 75), it may be necessary for City Council to supplement the Powell Bill funds for a period of time. Staff will be able to provide more accurate projections in future years through analyses utilizing the new pavement condition survey and data management system forthcoming in FY22.

Options:

No options to consider. The FY22 budget is approved, Staff is only presenting the methodologies of the City's pavement preservation program.

Recommended Action:

No recommended action. The FY22 budget is approved, Staff is only presenting the methodologies of the City's pavement preservation program.

Attachments:

Presentation - Pavement Preservation Program Sept 2021