



Staff Report

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Yountville Town Council Staff Report

DATE: May 5, 2020

TO: Mayor and Town Council

FROM: Joe Tagliaboschi, Public Works Director

TITLE

Bi- Annual Pavement Condition Index (PCI) Update.

DISCUSSION/BACKGROUND

The Town of Yountville currently maintains approximately 8.28 centerline miles of roads representing 1,396,420 square feet of pavement with an asset replacement value of approximately \$25,436,000 as calculated by StreetSaver®.

Quality Engineering Solutions Inc. (QES) has updated the Town's Pavement Management System using the Metropolitan Transportation Commission's (MTC) StreetSaver® program. The purpose of a Pavement Management System is to track inventory, store work history and furnish budget estimates to optimize funding for improving the city's pavement system. It is one of many tools used to help make decisions regarding pavement management and maintenance. The tool also provides a Pavement Condition Index (PCI) Score.

INTRODUCTION

A Pavement Management System has several distinctive uses:

As a budgeting tool, a Pavement Management System uses treatment costs that are based on recently bid projects, from recent Town projects, so these budgets reflect historical costs for this agency.

As an inventory tool, a Pavement Management System provides a quick and easy reference for pavement areas and use.

As a pavement condition record, a Pavement Management System provides age, load-related, non-load related, and climate-related pavement condition and deterioration information. The Pavement Management System uses pavement deterioration curves, based on nationwide research, which allow the program to predict a pavement's future condition.

A Pavement Management System is not capable of providing detailed engineering designs for a street. The Pavement Management System instead helps the user identify candidate streets for potential repair and maintenance. Project level pavement analysis and engineering is an essential feature of future pavement maintenance and rehabilitation projects.

Additional investigation, or project level analysis, can optimize the Town's pavement management dollars.

Project level engineering examines the pavements in significantly more detail than the visual evaluation required for the Pavement Management System Update and optimizes designs for all of the peculiar constraints of a set of project streets.

When updating the Pavement Management System for the Town of Yountville, QES had two primary goals:

1. Provide an accurate and complete inventory of the Town's pavements and their condition.
2. Identify and quantify maintenance and rehabilitation needs and estimated costs for the street system.

WORK PERFORMED:

Pavement Distress Survey and Database Update

For this update, Quality Engineering Solutions (QES) performed inspections on all Town-maintained streets. Field inspections were completed in September and October 2019.

QES measured the following distress types as part of their review: alligator cracking (fatigue), block cracking, distortions, longitudinal & transverse cracking, patching & utility cut patching, rutting & depressions, weathering, and raveling. The work was performed in conformance to ASTM 06433. All the collected data was entered into the Town's StreetSaver® database as required by Metropolitan Transportation Commission (MTC).

Each segment was visually reviewed to determine if the StreetSaver® calculated PCI was representative of the observed overall pavement condition for that road segment. Once the initial ratings were completed, the field crew performed a 2nd rating on a randomly selected 10% of the segments. This 2nd rating is intended as a consistency check, which ensures that our raters are performing evaluations consistent with our allowable range of +/- 5 PCI points. Any segments that were found to be outside of +/- 5 PCI point range were re-rated by The Project Manager. Following the 10% Field Crew consistency check, an additional randomly selected 5% of segments were reviewed by The Project Manager. Additionally, QES performed a quality control (QC) check on their work. QES QC check typically consists of performing a field review of any street segment where the PCI showed a decrease of 3 or more points per year or an increase of 5 or more PCI points when compared to the last inspection for the same road segment.

Findings

The updated Pavement Management System showed that the Town's overall average PCI is 78. This is up 3 points from the Town's last bi annual review in FY 17/18. The breakdown by functional classification is as follows.

| Class | Miles | AVG PCI |
|-------------|-------|---------|
| Arterial | 1.68 | 73 |
| Collector | 1.36 | 87 |
| Residential | 5.25 | 77 |
| Totals | 8.28 | 78 |

CONCLUSIONS AND RECOMMENDATIONS

This Staff Report provides a review of the 2019 Pavement Management System Update performed by QES. QES inspected and performed QC on all of the road segments in the Town. The average overall PCI for the Town is 78.

To maintain the system at its current overall PCI of 78, the Town will need to spend an average of \$209K

annually over the next 5 years. Implementing a Five Year Maintenance Plan averaging \$560K/Yr. will result in a PCI increase of 1 point in 5 years to a PCI of 80. This amount funding (500K/Yr.) roughly correlates with anticipated funding from Measure T, Gas tax/HUTA, and SB1 funds when they are functioning normally (Non COVID 19 or other economic condition).

A review of the Town's street system, by functional classification, shows that the Collector streets have the highest average PCI of 87, followed by the Residential streets, which have an average PCI of 77. The last of the three is the Arterial streets with an average PCI of 73.

Moving forward, it is recommended the Town implement a 5 year plan that will carefully evaluate the overall annual budget to determine the amount the Town will commit to pavement maintenance and rehabilitation projects. A good goal would be to maintain the current PCI score at current levels and if funds allow a longer term goal of a PCI score of 80.

This Pavement Management System will assist the Town in its efforts to monitor treatments and track the effectiveness and help the Town in setting future priorities and treatment policies, and plans. As the Town maintains and updates its Pavement Management System, the program will become a valuable tool in its efforts to maximize performance and minimize the spending for pavements. Additionally, as noted earlier MTC policy requires a Bi-Annual inspection and update to comply with state and federal law. This program is funded through grant with a small matching portion from the Town. An additional plan would be to fund a Pavement inspection annually, this is done to provide a more consistent PCI score and avoid the surprises that sometimes accompany the Bi - Annual inspection process.

Future plans call for the continued use of the Measure T, Gas tax/HUTA and SB1 funds which will be used to support the Annual Paving program with anticipated funding in the \$500,000 range. This should help the Town achieve the goal of a PCI of 80 in five years.

ENVIRONMENTAL REVIEW

NA

FISCAL IMPACT

Is there a Fiscal Impact? No

Is it Currently Budgeted? Yes

Where is it Budgeted? 01-4301-4210 Admin/Engineering -Contract Services

Is it Mandatory or Discretionary? Mandatory

Is there a Staff Resource Impact? Nominal

STRATEGIC PLAN GOAL

Is item Identified in Strategic Plan? Yes

If yes, Identify Strategic Goal and Objective. **Responsible Fiscal Policy:** The Town maintains its fiscal health through policies designed to maximize economic opportunities, manage expenses, and ensure prudent reserves.

Briefly Explain Relationship to Strategic Plan Goal and Objective. The Pavement Condition Index is a measurement of the condition of paving in the town. The survey is required by to qualify for State and Federal funds and is partially funded through state grants. This allows the Town to leverage General Funds for State and Federal Funds

ALTERNATIVES

NA

RECOMMENDATION

Receive Report from staff and direct questions and comments to staff.