CITY OF OXNARD CALIFORNIA

CITY COUNCIL AGENDA REPORT

REPORTS
AGENDA ITEM NO. K.2

DATE: April 2, 2024

TO: City Council

FROM: Michael Wolfe, Public Works Director, (805) 385-8055, michael.wolfe@oxnard.org

SUBJECT: Citywide Pavement Management Program Overview. (20 minutes)

RECOMMENDATION

That the City Council receive and file a report on the Citywide Pavement Management Program Overview.

(Public Works & Transportation Committee approved 3-0 on March 12, 2024.)

Please click the following link to view the required Measure M pre-recorded presentation video: https://youtu.be/gJqiE9RCOlg

BACKGROUND

Oxnard's streets and alleyways are among its most valuable assets, with a present replacement value of approximately $988.9M. Because of this high value, combined with the need to address continuous pavement wear and degradation, it is imperative to perform corrective and preventive maintenance via a strategic multi-year, multi-phase plan. This plan is implemented through individual construction projects utilizing a "toolbox" of paving methods. Such treatments generally include removal and replacement (R&R), cold milling with asphalt concrete (A/C) overlays, portland cement concrete (PCC) patching and reconstruction, and sealing (crack, slurry, cape, and micro-surfacing). Seals are typically seen as preventive maintenance (also commonly termed pavement preservation) techniques, as they do not add structural capacity to the existing pavement.

The City currently owns and maintains approximately 440.5 total centerline miles across all functional street classifications, as follows:

- Arterial and Collector – 128.6 centerline miles
- Residential – 246.8 lane miles centerline miles
- Alley – 65.1 centerline miles

This equates to a total of 95,450,658 square feet of pavement in the City's network, as calculated by the City's pavement management software, StreetSaver. This application, sourced from and managed by the Metropolitan Transportation Commission (MTC), is a planning tool used to monitor, analyze, and forecast Oxnard's overall Pavement Management Program (PMP) and is critical to establishing a proper, phased multi-year paving cycle. Projections and computations regarding change in pavement condition versus annual funding investment are typically made over a 10-year span; for budget planning and capital project programming purposes, staff develops a phased paving project plan based on a rolling 5-year horizon, termed the Citywide Pavement Management Program.

It should be noted that the current lawsuit against the City filed by Aaron Starr and his political corporation "Moving Oxnard Forward" precludes the use of lease revenue bonds for funding pavement projects. Such bonding, commonly used for high-cost projects like street paving, is a financing mechanism traditionally used by all American cities, counties,

and states, that provide for funding consistency and predictability necessary for the development of a strategic, multi-year paving program. A funding source like this allows for both corrective and preventive paving work to be planned and executed predictably, with the goal of stretching the limited available funding as far as possible.

DISCUSSION

The key pavement health metric used by Oxnard is the Pavement Condition Index (PCI), which provides a snapshot of the pavement health of a road through a surface condition-based visual analysis algorithm. It is reported on a scale of 0 to 100 (0 being worst, 100 best). Oxnard's PCI assessments are made yearly by a contracted pavement engineering consultant. According to the most recent PMP report (utilizing inspections from 2023), the average PCI of the City's entire road network is 67; broken into roadway functional classifications, this equates to PCIs of 73 for Arterials, 69 for Collectors, 68 for Residential, and 29 for Alleys.

The Citywide Pavement Management Program is a planning and project programming roadmap for Oxnard's paving needs over a rolling multi-year horizon, and is further broken down into project phases. Each phase is a collection of street locations that is determined by prioritization (explained below), anticipated budget, grouping of locations for construction efficiency, and other technical factors. The phases are implemented mainly through three discrete projects within the present Capital Improvement Program (CIP). Projects are separated into alleys, residential streets, and arterial streets as discussed in more detail below.

Planning over a multi-year horizon is critical for budgeting resources – both staff and financial. Adopting a capital pavement program allows Engineering staff to schedule projects according to anticipated revenues and staff workload capacity. This also makes the Council's priorities clear to staff as grant opportunities arise that may be applicable to the planned projects.

Being a multi-year funding roadmap, there is flexibility such that new projects or street segments could be added as unforeseen year-to-year circumstances arise such as funding amounts, materials costs, accelerated pavement degradation, etc.

Prioritization

Since there are more needs than funding or staff resources to meet those needs, projects must be prioritized. A further consideration for prioritization is moving the overall pavement condition forward toward "good" (generally considered a PCI value of at least 70) and, once there, maintaining at least that level over time. City staff has developed a methodology for prioritizing and programming paving projects to meet these constraints. Generally, projects are divided into three subcategories, namely residential streets, arterial streets, and alleyways; these generally correspond with the three named paving projects in the CIP. Each subcategory has somewhat different prioritization parameters, as follows:

Project priorities for **residential streets** are determined by:

> The average PCI and the number of lane miles are calculated for each neighborhood (Only for poor-condition streets, i.e. PCI<55). High priority is given to neighborhoods with low average Pavement Condition Index (PCI), a high number of lane miles, and a high concentration of pothole repair work.

Project priorities for **arterial** streets are determined by,

> Average PCI and Average Daily Traffic (ADT), representing the number of vehicles using the street each day are calculated for each arterial project. High priority is given to arterial streets with low PCI, high ADT, and high number of pothole repairs.

Project priorities for **alleys** are determined by:

> Low PCI, high population density, schools, parks, businesses, and the number of potholes repaired.
> A high priority is given to alleys with low PCI, high pothole repair count, high population density, and close proximity to schools, parks, and businesses.

A special case exists for the above prioritization system, namely locations where there are aging, buried cast iron pipes that are historically troublesome and prone to failure. These tend to be located in alleyways, and in these places the pipe ideally should be removed and replaced before the paving work occurs. For the present multi-phase paving plan, a number of the project locations (see attachments) for the first two phases recommend the replacement of cast iron pipe ahead of the paving work. To accomplish this, funding will need to be identified and programmed separately for the CIP project titled "Water Distribution: Neighborhood Street Cast Iron Pipe Replacement".

A high degree of weight will be placed on locations requiring a significant amount of pothole repair work. The City's pothole repair team is the same staff that does sidewalk repair, curb/gutter repair, street sign maintenance and repair, street striping, right-of-way clean-up, etc. Pothole repair work is temporary, costly, and requires dedicated resources (i.e. staffing and equipment) for little long-term benefit. As such, the more street segments with a high pothole repair need that can be addressed with long-term corrective/preventive paving work, the better the Public Works team can leverage its limited resources. As mentioned above, there are a range of pavement treatments available, and a "mix of fixes" is usually the ideal way to proceed with a given year's paving project. Staff has determined that, for this present multi-phase plan, the most effective paving budget split will be approximately 80% for rehabilitation (A/C mill-and-overlays, PCC concrete) and 20% for preventive maintenance (also called pavement preservation, such as slurry seals, cape seals, and micro-surfacing). Over time, as the City's overall PCI goes up, this split will change to reflect less of a "worst first" approach that prioritizes rehabilitation, to one of "keeping good pavements good" that emphasizes maintenance and preservation.

The concept of "mix of fixes" is important to elaborate on since at first glance it may seem counter-intuitive. It is easy to think that the best way to address paving work is to fix the worst street segments (that is, streets with the lowest PCI) first. However, that approach is flawed for two general reasons. First, the degradation of asphalt concrete is not linear. As PCI scores approach around 70-65 or less, asphalt concrete degrades exponentially. Second, the cost to do corrective work such as R&R and mill-and-overlay (generally used when the PCI is less than 65-70) is 6-10 times more than the cost to do preventive/preservation work such as seals and microsurfacing (normally used where the PCI is greater than 70). Said another way, if the worst streets are the only ones done in each phase, then the streets with higher PCIs will continue to degrade untreated down past a PCI of 70, and cost 6-10 times more to fix in the future. Therefore, it's imperative to maximize the use of pavement preservation techniques in every phase; this approach results in the least-cost per square foot, and stretches the limited amount of funding for maximum benefit. This is why Public Works staff will make recommendations to conduct paving work on several street segments in each phase with higher PCIs than other streets that have lower PCIs.

Pavement Maintenance Program Phasing

A traditional pavement management program (PMP) is separated by fiscal years to include the identification of the total amount of paving work (e.g. street segments) that can be done in each fiscal year with the known or required funding amount. However, with the Aaron Starr lawsuit, bonding is not currently available to Oxnard. The City prevailed in the lawsuit at the trial court level, but Aaron Starr immediately filed an appeal. The appeal process could take a year for the case to be briefed and argued, and for the court to issue a ruling. As such, planning for street paving work must be modified until such time the lawsuit process is complete.

The City's 2023 pavement management report indicates that $19.4M dollars (hard construction costs) should be spent each fiscal year to maintain the current PCI. When adding in the soft costs (design, inspection, material testing, etc) the estimated total amount per year is $23.3M dollars. However, with bond funding unavailable, the long-term planning for pavement rehabilitation and maintenance is hampered. The amount of new annual Gas Tax for CIP paving projects, in addition to the anticipated Measure O funding for alley work, amounts to $6.25M for next Fiscal Year instead of the $23.3M per year to maintain the current PCI. Therefore, Public Works has organized the PMP into phases rather than fiscal years. Using a phased approach allows for the flexibility to adjust funding amounts (higher or lower) to avoid unrealistic expectations from the public about when streets will be paved. It should be noted that any funds remaining once current paving construction projects are completed will be carried over to next fiscal year and can be used for Phase 1 work.

STRATEGIC PRIORITIES

This agenda item supports the Infrastructure and Natural Resources strategy. The purpose of the Infrastructure and Natural Resources strategy is to preserve and improve our roads, utilities, parks, trees, water supply and natural resources through effective planning, prioritization, and an equitable and efficient use of available funding.

FINANCIAL IMPACT

There is no direct financial impact to receive and file this report and provide input. Depending on input and direction from the City Council during the annual Operating and CIP budget process, there are several issues to address. Presently, due to the City's current inability to bond for projects resulting from the Aaron Starr lawsuit, the new funding specifically available for street paving for next Fiscal Year is solely from gas tax and anticipated Measure O revenue in the amount of approximately $6.25M. With this amount, the City can pave only one residential street project and a few alleyways identified in Phase 1. Should there be an opportunity to provide more funding, additional streets from Phase 1 may be included in this year's project scope.

COMMITTEE OUTCOME

The Public Works and Transportation Committee approved 3-0 on March 12, 2024 to approve the staff recommendation and to forward the item to the City Council as a receive and file report.

Prepared by: Morgan Kessler, City Engineer

ATTACHMENTS

1. Proposed Arterial Street Construction Projects Phase I & Phase II
2. Proposed Arterial Street Construction Projects Phase III, Phase IV and Phase V
3. Proposed Alley Construction Projects Phase I and Phase II
4. Proposed Alley Construction Projects Phase III, Phase IV and Phase V
5. Proposed Residential Street Construction Projects Phase I & Phase II
6. Proposed Residential Street Construction Projects Phase III, Phase IV and Phase V
7. Presentation