

**CITY OF LA VISTA
MAYOR AND CITY COUNCIL REPORT
APRIL 6, 2021 AGENDA**

Subject:	Type:	Submitted By:
PAVEMENT MANAGEMENT PLAN	RESOLUTION ORDINANCE ◆ RECEIVE/FILE	JEFF CALENTINE DEPUTY DIRECTOR OF PUBLIC WORKS

SYNOPSIS

The Pavement Management Plan was presented to the Mayor & Council during their annual retreat on 3/27/21.

FISCAL IMPACT

N/A

RECOMMENDATION

N/A

BACKGROUND

The Pavement Management Plan formalizes and establishes an efficient and effective strategy for preserving and maintaining the City's street infrastructure. It sets out a defined strategy, basis, and an annual process to consistently evaluate, select, design, and implement pavement projects.

City of La Vista

Pavement Management Plan



Introduction/Background

The Pavement Management Plan formalizes and establishes an efficient and effective strategy for preserving and maintaining the City's street infrastructure. It sets out a defined strategy, basis, and an annual process to consistently evaluate, select, design, and implement pavement projects.

Benefits of a Pavement Management Plan include:

- Transparent schedule and priorities for residents and decision makers
- Consistent project delivery
- Prioritizes cost effective pavement preservation treatments
- Mobilization costs may be minimized through geographic concentration of projects and larger contract amounts (economies of scale)
- Early advertising of construction projects for more competitive bid pricing

In 2020 Lamp Rynearson & Associates conducted a detailed pavement assessment of the City's roadways and created base maps and inventories of infrastructure and related components. The assessment rated the overall pavement condition within La Vista as satisfactory, assigning a City-wide Pavement Condition Index (PCI) rating of 77 out of a possible 100 points.

Using the PCI rating system as the basis for evaluation, the Plan establishes performance measures to monitor pavement conditions over time. This will enable the City to track and set targets for improving and/or maintaining pavement conditions city-wide. It will also help staff and decision makers annually evaluate the allocation of resources for maintaining pavement infrastructure.

Based on the process outlined above, projects will be identified and subsequently evaluated on specific criteria. The leading criteria include:

- Pavement Condition
- Roadway Functional Classification
- Safety
- Average Daily Traffic (ADT)
- Preventive and Corrective Maintenance Requirements
- Coordination with Other Agencies

Finally, a five-year plan will be developed that feeds into the City's One and Six Year Road Plan as well as the Capital Improvement Program (CIP) for funding in the City's biennial budget. The budget funds two years of the CIP, however these projects are reevaluated annually in order to identify any necessary adjustments due to project schedules, emergencies, etc. The Pavement Plan likewise calls for annual evaluation of pavement conditions to ensure project priorities are accurate.

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Pavement Condition Targets

Using the Pavement Condition Index (PCI) rating, the City will be able to set targets for improving pavement conditions. Target setting will help staff and decision makers evaluate the allocation of resources for maintaining pavement infrastructure.

By focusing on pavement condition, the PCI rating allows staff to target the most effective time to perform pavement preservation treatments. Pavement preservation treatments are the most efficient use of the City's limited resources, because the treatments are typically low cost and preserve past investment in infrastructure. The pavement condition targets below align with the most effective time to perform preservation treatments and are established as the City's target ratings.

Target Ratings:

- Pavement Condition Index (PCI) Rating for **Arterial/Collector Roads – 75**
- Pavement Condition Index (PCI) Rating for **Local Roads – 70**

Current Ratings:

- Pavement Condition Index (PCI) Rating for **Arterial/Collector Roads – 80**
- Pavement Condition Index (PCI) Rating for **Local Roads – 72**

Roadway Functional Classification

The functional classification of roadways defines the role of each individual facility within the larger City-wide roadway network. Functional classification carries with it requirements and expectations for roadway design, including: speed, capacity, and relationship to existing and future land use development. Federal legislation continues to use functional classification in determining eligibility for funding under the Federal-aid program.

- Arterial Roadways - provide service for trips of moderate length, serve geographic areas that are smaller than their higher classified roadways and offer connectivity to the larger, regional roadway. In an urban context, provide inter- and intra-community continuity.
- Collector Roadways - serve a critical role in the roadway network by gathering traffic from local roads and funneling them to the arterial network.
- Local Roadways - account for the largest percentage of roadway in terms of mileage. They are not intended for use in long distance travel, except at the origin or destination end of the trip.

Approach to Funding

The Plan's approach to funding provides a predictable use of roadway funding while maintaining flexibility for annual changes in revenues, conditions and grant opportunities. Currently, two City budgets fund the maintenance and capital improvements for the City's transportation network. The two budget funds are the General Fund and the Capital Fund.

The Pavement Management Plan establishes a five-year plan that feeds into the City's Capital Improvement Program (CIP), which funds both short and long-term road projects through the Capital budget. The Plan also guides maintenance activities through the General Fund to be used for activities, such as crack filling, asphalt patching, minor concrete repair, street sweeping, and striping City-wide.

If supplemental funds are allocated to the program within the five-year cycle, as a one-time allocation or as a grant opportunity, projects will be recommended for implementation in accordance with the project selection and cost saving strategies outlined in the Plan. Any additional funding will be used in the allocated fiscal year and staff will document how and where funding is used.

Annual Implementation Schedule

Pavement Condition Evaluations	March – May
Project Evaluation/Recommendations	April – May
Council Adopts One & Six Road Plan	June
Council Adopts Road Projects in CIP	July
Project Design	October – January
Advertise Project(s) for Bidding	November – December
Project Execution/Notice to Proceed	February – March
Project Construction	March – October

Pavement Condition Evaluations (March–May)

All City streets will be analyzed by a data collection van every three (3) years to update the PCI data and track the overall progress of the Pavement Management Plan.

Visual pavement condition evaluations will be conducted annually by City staff prior to providing recommended street improvement projects. Reliance on these evaluations will play a critical role in identifying changes resulting from the winter season and facilitates a feasible approach for continuous maintenance of the City's transportation infrastructure.

Project Evaluation/Recommendations (April–May)

In June of each year, road projects will be presented to the La Vista City Council as a component of the One & Six Road Plan for approval. Recommended projects will be based on the project evaluation factors discussed in the previous section with consideration given to available funding. Final approval of road projects takes place with the City Council's adoption of the Capital Improvement Program in conjunction with the budget process.

Pavement projects will be recommended based on multiple evaluation factors. One of these factors is the pavement condition index (PCI) rating. The City uses the following PCI ranges to categorize the relative condition of a roadway:

- 86 to 100 Good
- 71 to 85 Satisfactory
- 56 to 70 Fair
- 41 to 55 Poor
- 26 to 40 Very Poor
- 11 to 25 Serious
- Less than 11 Failed

The PCI rating is calculated using standards developed by the U.S. Army Corps of Engineers and measures the type, extent, and severity of pavement surface distresses and smoothness of the road. The PCI helps to evaluate the rate of pavement deterioration and to develop an appropriate preventive maintenance strategy.

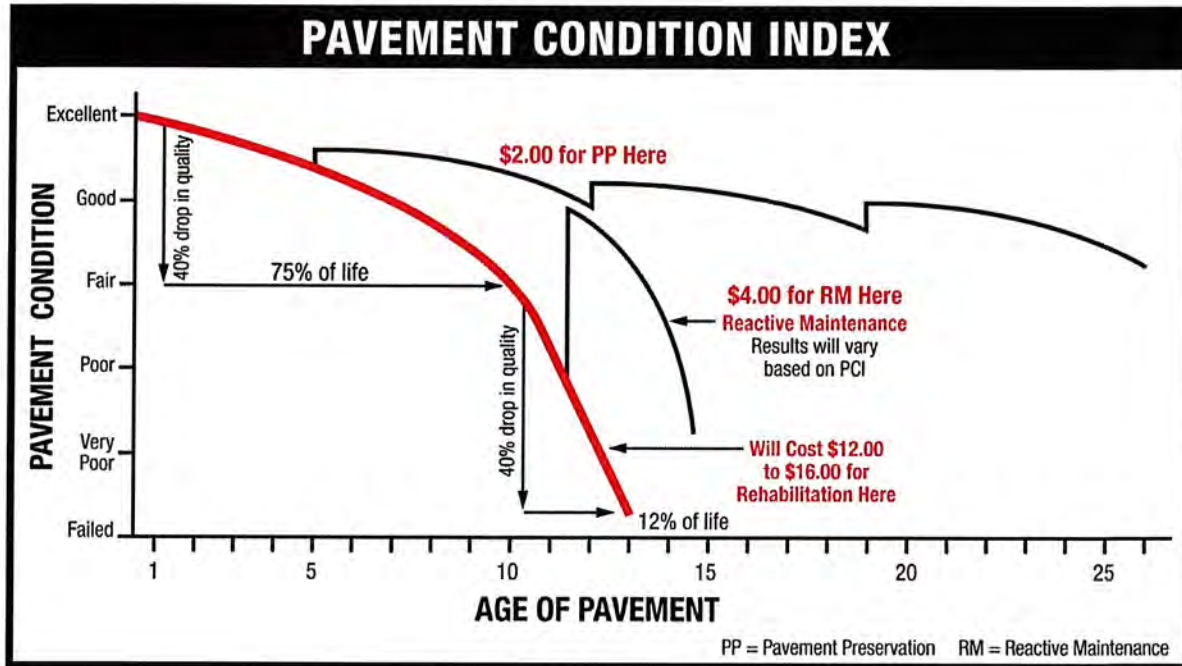
The following PCI ranges are used to help determine the appropriate pavement treatment:

- | | |
|-------------------------|--|
| • PCI of 85 or greater | Corrective Maintenance (Crack Sealing, Joint Repairs) |
| • PCI between 66 and 84 | Surface Preservation/Treatments (Chip Seal, UBAS) |
| • PCI between 41 and 65 | Surface Rehabilitation (Mill & Overlay) |
| • PCI between 26 and 40 | Major Rehabilitation (Extensive Panel Replacement) |
| • PCI less than 25 | Reconstruction (Full Depth Replacement) |

Remaining factors used to further prioritize projects:

- Roadway Functional Classification
- Safety
- Average Daily Traffic (ADT)
- Preventive and Corrective Maintenance Requirements
- Coordination with Other Agencies

Preventive and corrective maintenance projects are a high priority of the Plan. When streets begin to fail, they fail quickly and the costs to repair them increase dramatically. Focusing on maintaining streets in good condition provides the most efficient use of the City's limited resources.



To capitalize on opportunities for construction cost savings, large projects with a particular type of pavement treatment within a consolidated geographic area are likely to be recommended over smaller dispersed projects for which the City would have multiple contractors. This approach reduces mobilization costs and capitalizes on economies of scale.

Project Design (October–January)

Project design begins after City Council approval of the CIP and when funding becomes available in the new fiscal year. The length of time required to design is very dependent on the type of project. Preventative maintenance projects typically have a shorter design phase compared to a reconstruction project. Some maintenance projects can necessitate a comprehensive design because each project requires staff evaluation of potential opportunities to upgrade outdated facilities or to address issues such as ADA accessibility, poor street design, or failing storm drainage infrastructure.

Advertise Project(s) for Bidding (November–December)

Once the design phase is complete, construction projects will be advertised for private construction firms to submit proposals consistent with City of La Vista purchasing and contract policies. Cost proposals fluctuate with market conditions. If cost proposals are above estimates, projects may need to be scaled down or the number of projects reduced.

Project Execution/Notice to Proceed (February–March)

Once cost proposals are accepted, City staff will initiate/negotiate a contract for the construction services in accordance with the City's Purchasing and Contracts Policies and Procedures.

Project Construction (March–October)

Once a contract is executed, construction can begin. The actual start date will depend on a variety of factors, but primarily contractor availability and weather. Residences and businesses abutting the construction area will be notified prior to construction activity.

Appendix A

