



**LEXINGTON**

# **PAVEMENT MANAGEMENT PLAN**

**April 18, 2023**

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## Mission Statement

The Pavement Management Plan creates a strategic and data-driven approach to maintaining the 2,355 lane miles of city-owned roads by utilizing metrics such as overall condition index (OCI).

## Goals

### 1. Develop a policy for maintenance of LFUCG streets

- a. Utilize pavement condition data, including overall condition index (OCI) and predicted pavement performance, to make informed decisions regarding capital projects for pavement maintenance and rehabilitation.
- b. Establish roles and responsibilities related to the pavement management process.
- c. Develop a plan for data collection (recommendation: entire network every three years).

### 2. Differentiate project development responsibility by roadway functional classification

- a. EQPW staff shall be responsible for making project recommendations for Minor/Major Arterials, Collectors, and Industrial/Service Roads as well as related base failure and preventive maintenance activities. Council Member input shall be integrated into the decision-making process.
- b. Council Members, with EQPW assistance, shall be responsible for making recommendations for Local Class Roads as well as related base failures.
- c. Council Members shall have a list of prioritized paving projects representing 200% of the total Council Office paving budget submitted to EQPW by October 15<sup>th</sup> annually.
- d. Annual budget allocations shall be defined based on functional classification with a separate allocation for preventative maintenance.
- e. Local roadway budget allocations shall be based on lane miles in each council district with an OCI rating below 60.
  - i. Districts that do not allocate paving funds and therefore have increased low OCI ratings below 60 should not receive higher budget allocations.

### 3. Develop capital improvement plan for Minor/Major Arterials and Collectors, including preventive maintenance and base failure repair

### 4. Develop annual capital improvement plan for Local/Residential streets

- a. Establish a recommended process for making project recommendations.
- b. Paving project data and maps to be provided by EQPW staff.

## Overall Condition Index (OCI)

The Overall Condition Index (OCI) is the primary metric used to determine the condition of a pavement section based on all the collected data available for that section. The OCI scores range from 0 to 100, with a '0' OCI indicating failed pavement and a '100' OCI indicating perfect pavement. The OCI score is a combination of a surface distress rating and rideability. Surface distress is measured using the Pavement Condition Index (PCI) methodology, which reflects surface condition, rutting, and structural cracking. Rideability is measured using the International Roughness Index (IRI), which reflects ride quality.

OCI is calculated using a weighted average:  $OCI = (0.80PCI) + (0.20IRI)$

This equation applies weighting factors to the PCI (80%) and IRI (20%) so that the OCI properly represents the impact of both indices on pavement performance.

A pavement treatment matrix is provided below outlining how the OCI rating corresponds to potentially needed repairs:

		<b>Asphalt Surfaced Arterial-Collectors</b>	<b>Asphalt Surfaced Locals</b>	<b>Concrete</b>
Overall Condition Index (OCI)	100			
	80	Very Good	Defer Maintenance	Defer Maintenance
	60	Good	Crack Seal & Asphalt Rejuvenator	Crack & Joint Sealing
	40	Fair	Thin Overlay	Concrete Pavement Repairs
	20	Poor	Resurfacing	Full-Depth Repairs & Asphalt Overlay
0	Very Poor	Resurfacing with Base Repairs	Resurfacing with Basic Base Repairs	Reconstruction with Asphalt Pavement
		Reconstruction with Asphalt Pavement	Resurfacing with Major Base Repairs	

## Roles and Responsibilities

Role	Responsibilities
Mayor and Urban County Council	Establish and adopt annual budget for pavement management activities.
Urban County Council	<ul style="list-style-type: none"> <li>• Analyze data, establish priorities, and recommend annual paving projects for Local Class Roads to EQPW Commissioner’s Office by October 15th of each year.</li> <li>• Review plan annually in EQPW Committee.</li> </ul>
Commissioner, Environmental Quality & Public Works	<ul style="list-style-type: none"> <li>• Provide general oversight of administrative operations of pavement management process.</li> <li>• Coordinate with council offices.</li> <li>• Monitor quality control issues and EQPW compliance with this Pavement Management Plan.</li> </ul>
Commissioner, Finance	Provide guidance to Mayor and Urban County Council regarding annual budget for pavement management activities.
Director, Streets & Roads	<ul style="list-style-type: none"> <li>• Establish construction project schedule.</li> <li>• Establish weekly coordination meetings with contractor during construction to include relevant staff from Streets &amp; Roads, EQPW Commissioner’s office and Traffic Engineering.</li> </ul>
Administrative Officer, EQPW Commissioner’s Office	<ul style="list-style-type: none"> <li>• Maintain pavement management dataset of record.</li> <li>• Update data annually at a minimum to reflect segments paved/treated.</li> <li>• Distribute data to each Council District by August 15th of each year.</li> <li>• Analyze data and utilize pavement management software to guide project recommendations for Major/Minor Arterials and Collectors.</li> <li>• Develop maps showing planned paving projects in Fayette County.</li> <li>• Ensure that quality control of data has been performed and is documented.</li> <li>• Provide quarterly budget status updates to Council.</li> <li>• Keep Council Districts informed of paving schedule and relevant changes.</li> </ul>

Role	Responsibilities
Director, Traffic Engineering	Reviews proposed paving projects and identifies pavement marking changes. Changes are documented and sent to Director, Streets & Roads for coordination with contractor.
Director, Engineering	Reviews proposed paving projects and identifies conflicts with roadway capital projects and local utility company projects. Conflicts are documented and sent to Director, Streets & Roads and Commissioner EQPW for review.
Director, Water Quality	Reviews proposed paving projects and identifies conflicts with DWQ capital projects. Conflicts are documented and sent to Director, Streets & Roads and Commissioner EQPW for review.
Bicycle and Pedestrian Coordinator	Reviews proposed paving projects and identifies opportunities for bicycle lane and crosswalk markings. Changes are coordinated with the Division of Traffic Engineering and sent to Director, Streets & Roads for coordination with contractor.
Geographic Information Systems (GIS)	<ul style="list-style-type: none"> <li>• Responsible for providing new roadway segments to EQPW Administrative Officer by February 1<sup>st</sup> of each year.</li> <li>• Responsible for GIS data quality control.</li> </ul>
Paving Contractor	<ul style="list-style-type: none"> <li>• Meet project schedule established by Director, Streets &amp; Roads.</li> <li>• Attend weekly coordination meetings during construction.</li> <li>• Provide project list for distribution.</li> <li>• Advertise paving on roadways 48 hours in advance.</li> </ul>

## Calendar Year Paving Timeline

- **Late February/Early March** – Council Members and/or Aides meet with EQPW for updates and review of paving priorities
- **April 1** – Paving begins
- **August 15** – Data distributed to Council District offices from EQPW
- **October 15** – Priority paving list are submitted to EQPW for vetting
- **Mid-December** – Paving plants close for the season

## Annual Budget Allocations

Fiscal year budget allocations are recommended as a percentage of the total paving budget, based on roadway functional classification with 10% of total funding reserved for maintenance. Whenever possible, the utilization of operating funds is preferable to bonded dollars for resources related to the routine paving and maintenance of Lexington-Fayette County roadways.

Budget Category by Functional Classification*	Budget Allocation
Major/Minor Arterials, Service/Industrial Roads	25%
Collectors	25%
Local Roads	40%
Preventative Maintenance	10%
<b>TOTAL</b>	<b>100%</b>

*\* Funds may be allocated for ADA ramp construction on roads not included on a project list*

## Process for Development of Priority Projects Lists

Process Step	Description
1	EQPW distributes data, including cost estimates and OCI scoring, with color-coded mapping.
2	<p>Council Offices develop a priority paving project list using the following tools:</p> <ol style="list-style-type: none"> <li>1. <b>Data</b> – Segments that have the lowest Overall Condition Index (OCI) score are in the worst condition. Segments with an OCI score greater than or equal to 60 are unlikely to warrant repaving.</li> <li>2. <b>Reported Field Observations</b> – Reports by constituents, field observations by staff, and/or areas with a high number of wet weather crashes can provide additional insights into project prioritization.</li> <li>3. <b>Mapping</b> – Color-coded maps help identify and group <b>contiguous</b> segments with OCI scores less than 60. <ol style="list-style-type: none"> <li>a. Segments with an OCI of 0 – 19 are in the worst condition and color-coded as red.</li> <li>b. Segments with an OCI of 20-39 are color-coded as orange</li> <li>c. Segments with an OCI of 40-59 are color-coded as yellow</li> <li>d. Segments with an OCI of 60-79 are color-coded as light green and are unlikely to need repaving</li> <li>e. Segments with an OCI of 80-100 are color-coded as dark green and are unlikely to need repaving</li> </ol> </li> </ol>
3	Council Offices develop a priorities list with a total cost estimate equal to a minimum of 200% of available funding. If there are concerns with determining prioritization, consult with EQPW staff as needed for further analysis regarding weighing projects.
4	Council Offices submit project lists to EQPW Administrative Officer for review and coordination activities.
5	Streets & Roads staff cross-check proposed priority lists with internal and external partners. Projects are reviewed for pavement marking changes.
6	Streets & Roads staff provide project lists to contractor for implementation.
7	Contractor provides lists of work to be completed for distribution.