

Automated Roadway Survey Assessment & Asset Data Collection



Louisville Metro Public Works
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Louisville Metro Public Works

Vanessa Burns, Director

Our Mission

The Department of Public Works will effectively and efficiently maintain Metro's infrastructure; improve roadway systems; support progressive environmental initiatives; deliver superior external and internal customer service and tirelessly explore innovative processes that allow us to more efficiently serve the public.

What We Do...

- Road construction and maintenance
- Manage Metro Government road construction projects
- Transportation Planning
- Snow Removal on 2,709 2-lane miles
- Manage Solid Waste removal and recycling
- Operate and maintain 647 Traffic Signals



Pavement Management Plan

The Pavement Management Plan formalizes and documents a standard procedure for assessing the pavement condition and prioritizing repairs so as to maximize resources.

The overall steps in the plan:

1. Develop a street inventory with attributes
2. Survey the pavement condition to determine required maintenance
3. Develop preliminary engineering costs for maintenance
4. Rank projects
5. Complete projects
6. Inspect and update pavement condition inventory



Asset Collection with 2020 Survey

Assets collected as a part of the 2020 pavement rating project:

- Roadway Survey with PCI
- Pavement Marking Assessment
- Sign Assessment
- Guardrail Assessment
- Alley Assessment
- Retaining Wall Inventory
- PAVER paving plan



Pavement Condition Index

Each road is assigned a Pavement Condition Index (PCI) between 0 & 100 depending on the number and type of distresses across the roadway segment. This method, developed by the Army Corps of Engineers and standardized by ASTM D6433-11, objectively indicates the condition of the roadway.



Pavement Condition Index

Condition	Description
Very Good-Excellent (PCI = 86-100)	Newly constructed for resurfaced pavement with few signs of distress.
Good (PCI = 71-85)	
Fair (PCI = 56-70)	Pavement requiring mostly preventive maintenance and showing only low levels of distress.
Poor (PCI = 41-55)	
Very Poor (PCI = 40-0)	Pavement at the low end of this range is significantly distressed and may require a combination of rehabilitation and preventive maintenance.
	Deteriorated pavement requiring immediate attention, including rehabilitative work.
	Pavement showing extensive distress and requiring major rehabilitation or reconstruction.



Roadway Inventory by Classification

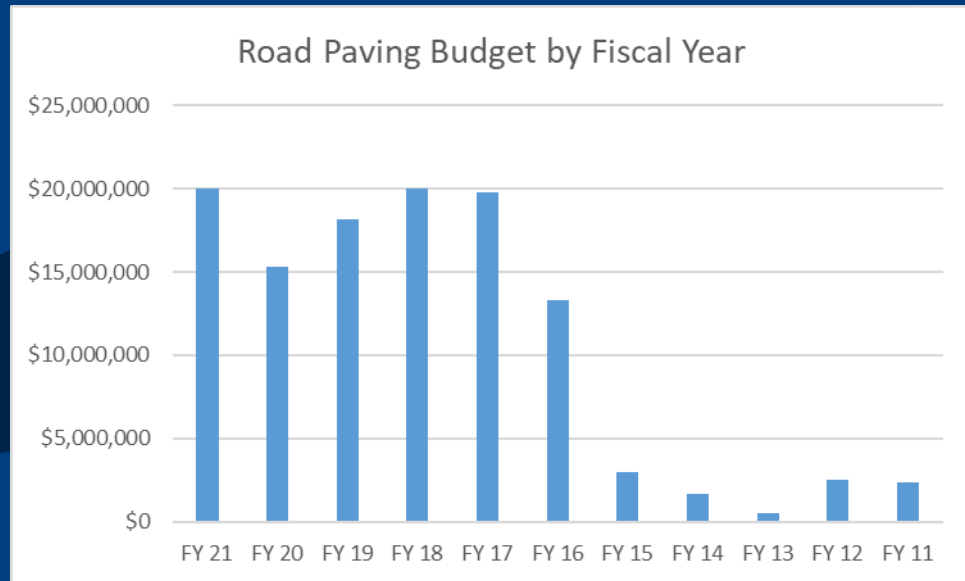
Classification	Centerline Miles	Lane Miles
Arterial	129	428
Collector	356	743
Local	1,696	3,392
TOTAL	2,181	4,563



Historic Funding

Road Paving

FY 21	\$20,000,000
FY 20	\$15,280,400
FY 19	\$18,200,000
FY 18	\$20,000,000
FY 17	\$19,800,000
FY 16	\$13,279,000
FY 15	\$3,020,000
FY 14	\$1,640,700
FY 13	\$500,000
FY 12	\$2,531,300
FY 11	\$2,361,200



Estimated Funding Required

ALL ROADS				
Fiscal Year	Annual Maint.	Budget	Unmet Need	Growth Rate
2022	\$ 22,738,562	\$ 30,411,899	\$ 61,386,663	4%
2023	\$ 23,648,105	\$ 31,628,375	\$ 55,861,859	
2024	\$ 24,594,029	\$ 32,893,510	\$ 49,796,853	
2025	\$ 25,577,790	\$ 34,209,250	\$ 43,157,266	
2026	\$ 26,600,902	\$ 35,577,621	\$ 35,906,838	
2027	\$ 27,664,938	\$ 37,000,725	\$ 28,007,324	
2028	\$ 28,771,535	\$ 38,480,754	\$ 19,418,398	
2029	\$ 29,922,397	\$ 40,019,985	\$ 10,097,546	
2030	\$ 31,119,293	\$ 41,620,784	\$ 0	



Roadway Condition Goal

Arterial & Collector

Avg PCI > 55 on at least 80%

Avg PCI < 40 on no more than 2%

Local

Avg PCI > 55 on at least 72%

Avg PCI < 40 on no more than 10%



Pavement Condition by Classification

Condition of Roadways by Classification					
PCI	Local	Primary Collector	Secondary Collector	Minor Arterial	Major Arterial
100 - 86	22%	46%	42%	51%	40%
85 - 71	23%	21%	13%	20%	27%
70 - 56	20%	13%	10%	11%	25%
55 - 41	15%	10%	18%	8%	5%
40 - 0	20%	10%	17%	10%	3%
>55	64%	80%	65%	82%	91%
<40	19%	10%	17%	8%	3%



Average Pavement Condition

Weighted Avg PCI			
Classification	2013	2015	2020
Local	65	N/A	64
Secondary Collector	68	68	70
Primary Collector	66	66	76
Minor Arterial	60	60	78
Major Arterial	65	65	78
Alley	N/A	N/A	22
Frontage	N/A	N/A	69



Metro Paving Reviewer



<https://lojic.maps.arcgis.com/apps/View/index.html?appid=7ea7f41f7a174becacb3b37912698b2d>



Overall Alley Assessment

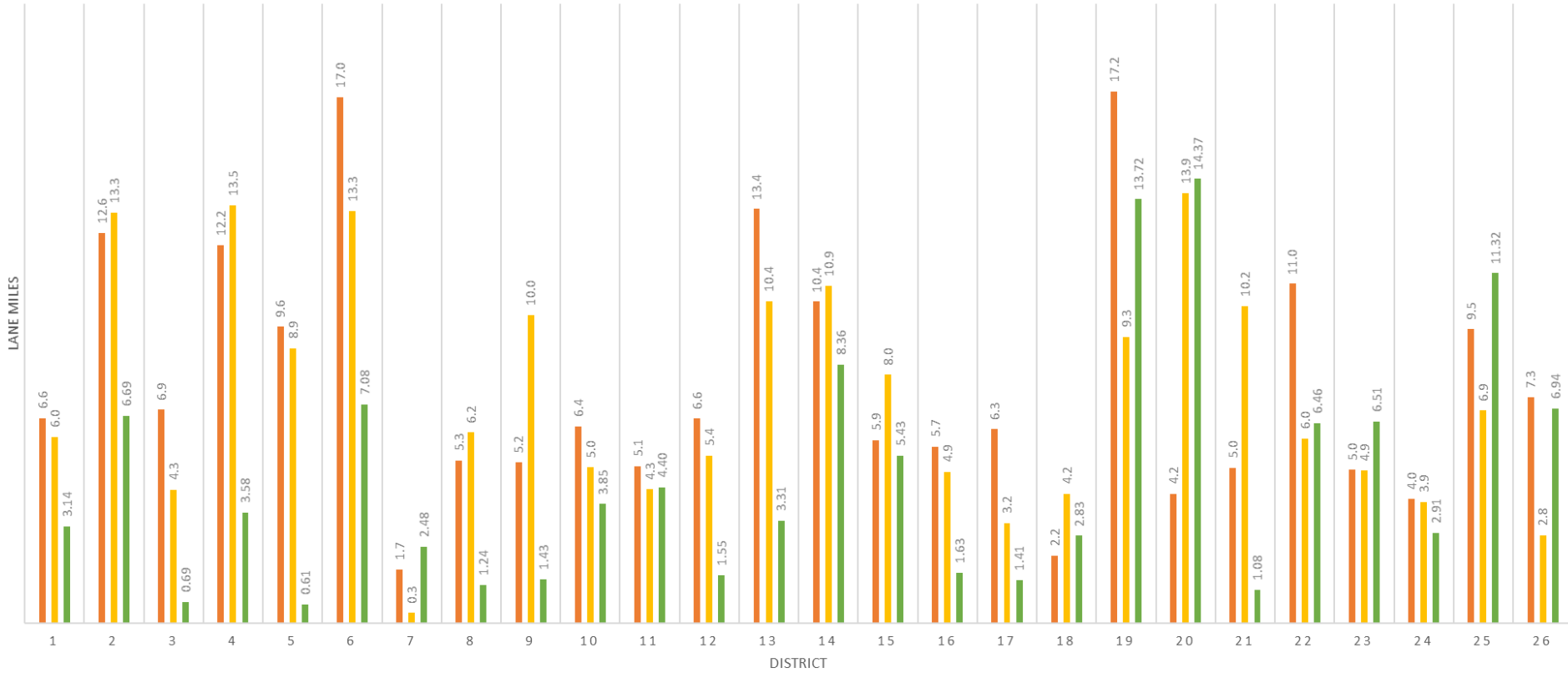
Alley Surface Types (est. sq ft)						
Classification	BRICK	AC	PCC	GRAVEL	0	#N/A
Alley	857,268	12,279,047	880,156	30,846	4,281,655	13,120
est. repair cost	\$25,718,034	\$15,348,808	\$10,561,867			

Weighted Avg PCI for Alleys by Surface Types (est. sq ft)						
Classification	BRICK	AC	PCC	GRAVEL	0	#N/A
Alley	0	29	61	0	0	0

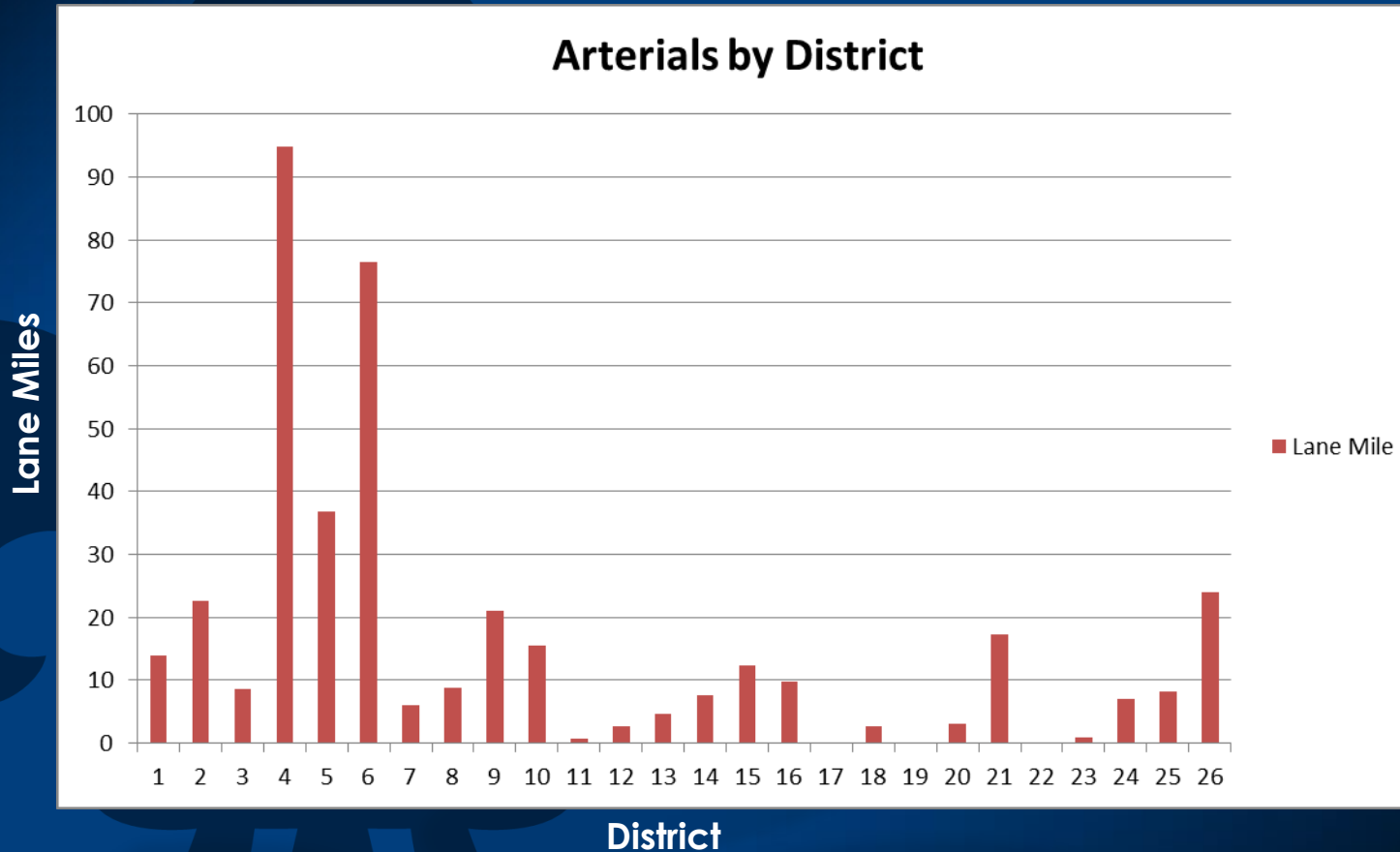


LANE MILES TO BE PAVED BY DISTRICT PER FISCAL YEAR

FY 22 Lane Miles FY 23 Lane Miles FY 24 Lane Miles

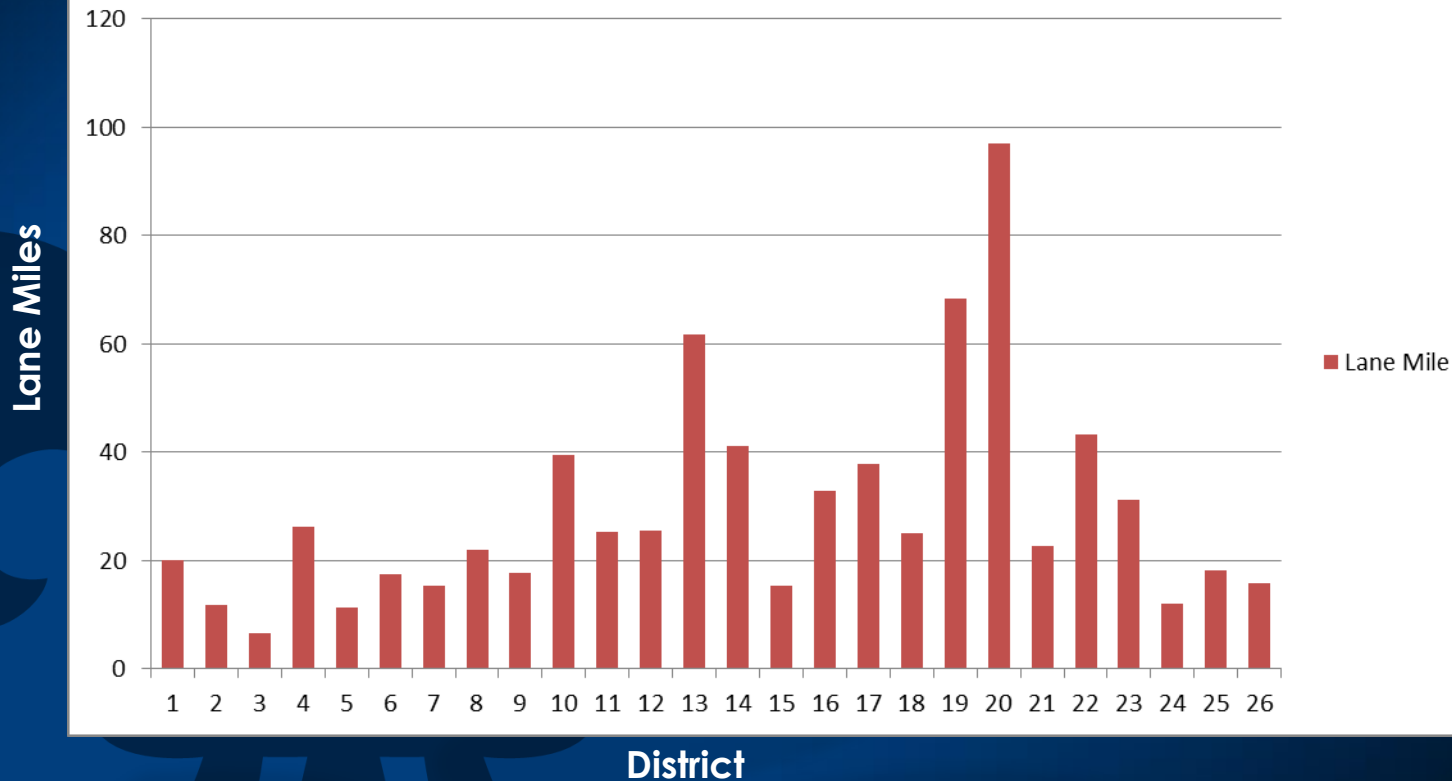


Roadway Distribution by District



Roadway Distribution by District

Collectors by District



Roadway Distribution by District

