

Organizational Development
 FY25 Paving and Traffic Calming Program
 July 1, 2024



Department of Public Works

Executive Summary



MISSION

To provide a clean, safe and healthy environment

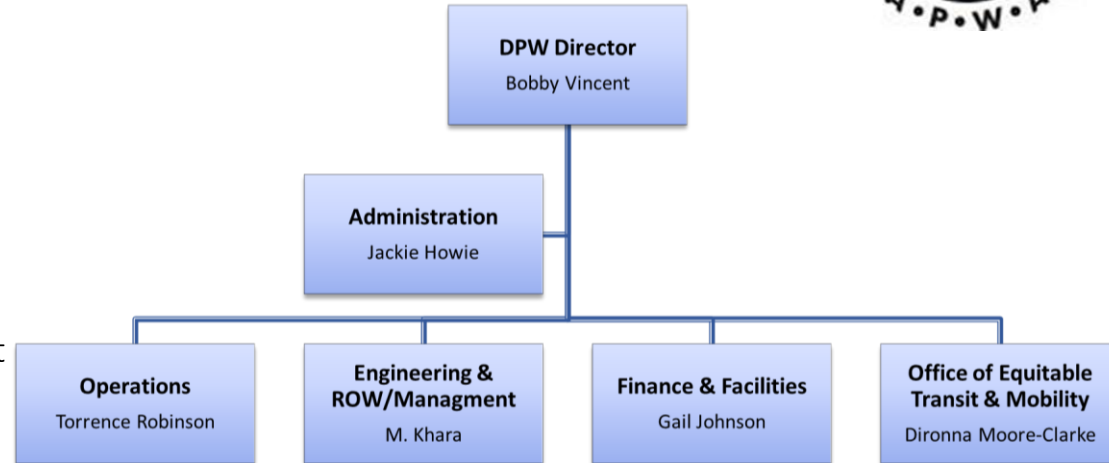
VISION

To become the organizational leader in customer satisfaction by improving communication, assuring organizational alignment and affecting positive change while preserving our national accreditation

OPERATING DIVISIONS

Bridge Maintenance
Capital Projects/Engineering
Office of Equitable Transit & Mobility
Facilities Management
Grounds Maintenance
Paving Infrastructure
Right of Way Management
Roadway Maintenance

Solid Waste Management
Street Cleaning
Street Lighting
Traffic Engineering
Urban Forestry





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RVA Stats, Public Information and Q&A

Geographical Size:

City Population:

Metropolitan Area Population:

Lane Miles of Roads:

Miles of Sidewalks:

Miles of Alleys:

Tree sites within Public ROW:

Bridges and Structures:

Streetlights:

Signals & Flashers

Bike Lanes:

62.5 square miles

231,782 (Ranked 100th) *worldpopulationreview.com*

1,314,434 (Ranked 44th) *2020 Census*

1,835 lane miles (2,626 w/parking & turning lanes)

836 lane miles

210 miles

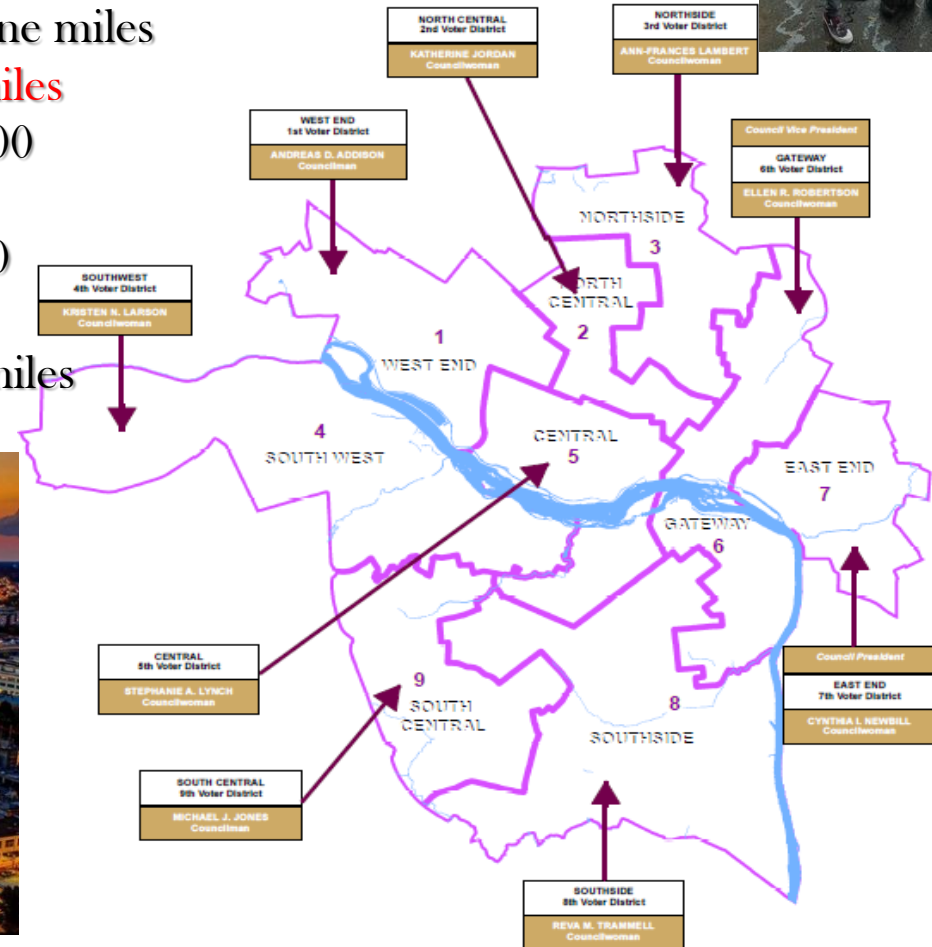
120,000

84

42,780

521

70.7 miles

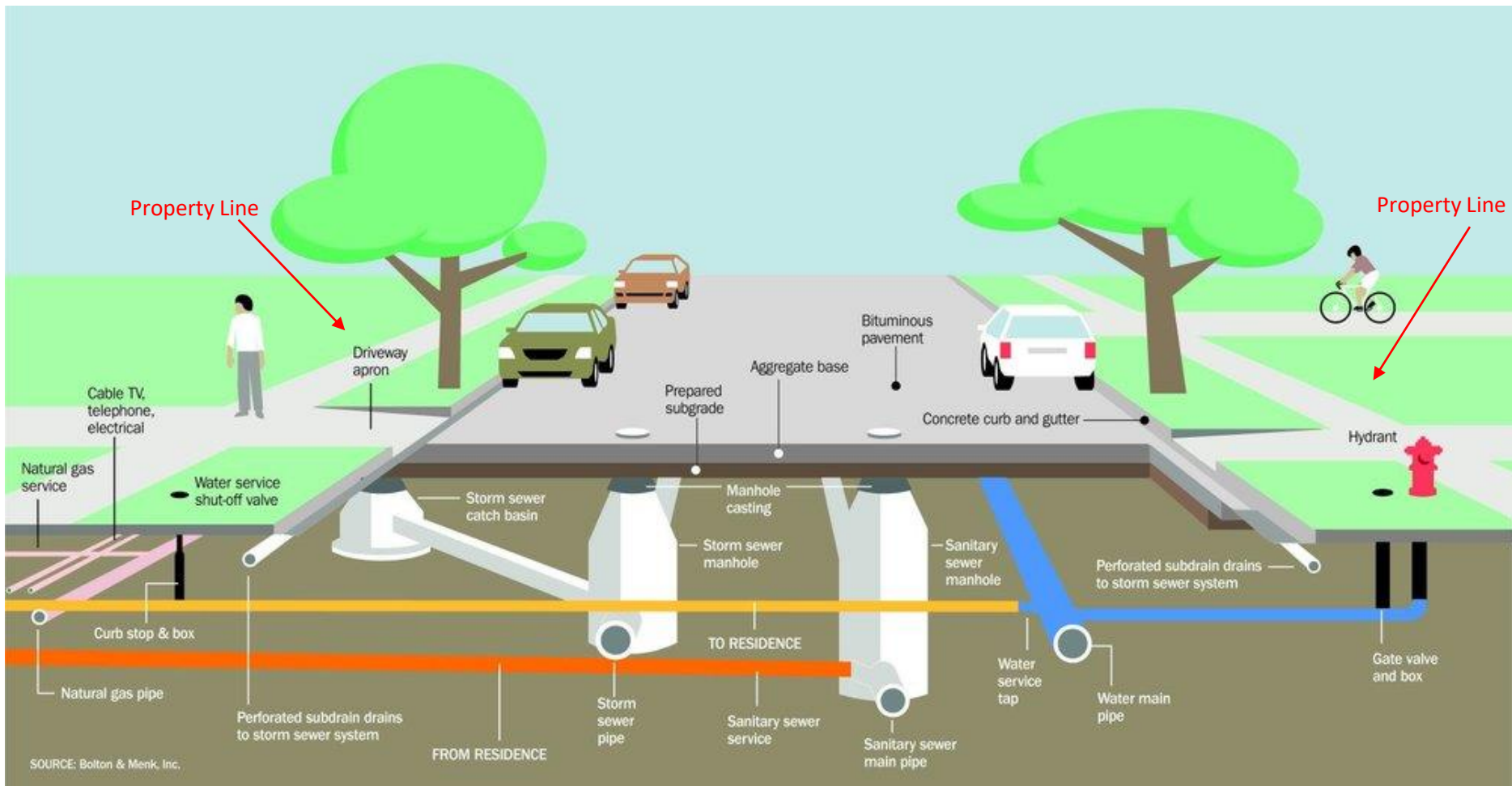


City of Richmond's Public Right of Way

Typical Street Layout w/in an Urban Area



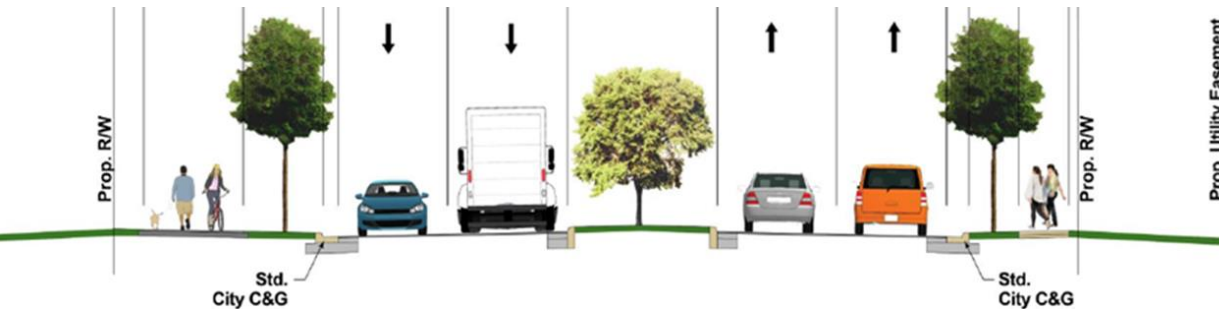
When paving occurs, milling & overlay projects average 2" in depth. In the City of Richmond streets, even on local streets, there are several utilities that run underground within the public right of way. The main line pipes and conduits run at depths from 4' (48") to 20'+ (240"). Each main line has laterals at various depths to each property. Due to excavations, cavitations and upgrades, the earth around each of these can become compromised at any given time.





Complete Streets FY25

An investment of **\$21 million in paving, streets, and sidewalks** is now aggregated in a capital project titled Complete Streets.



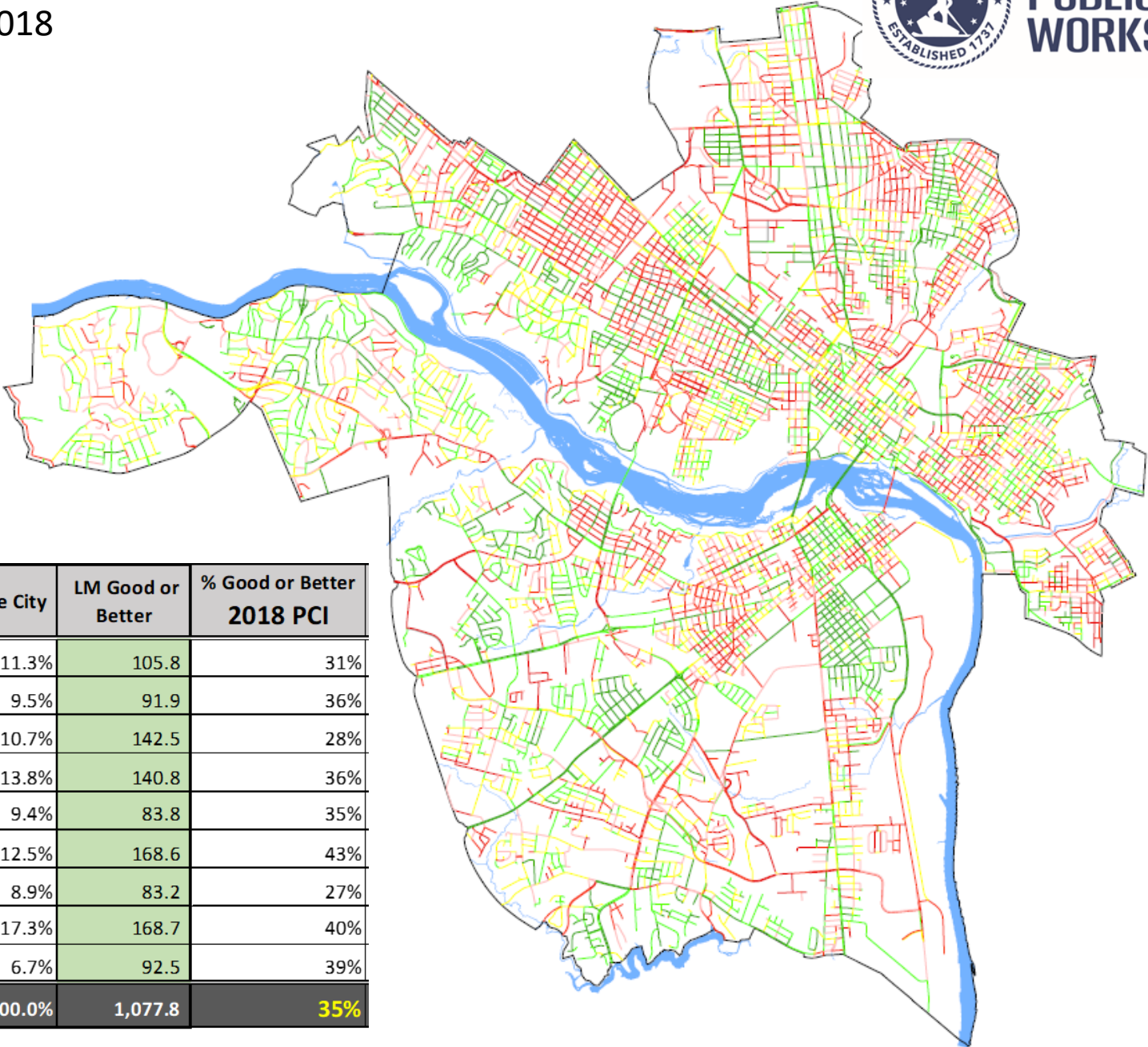
Area of Responsibility	Complete Streets	Description
Paving	\$ 15,000,000	FY25 Milling, Overlay, Heat Scarification, and Slurry Program
TED	\$ 1,500,000	Speed Tables, Traffic Calming, and Traffic Pole Replacement Projects
CIP	\$ 3,000,000	Jahnke Road complete street CIP project
Operations	\$ 1,500,000	Sidewalk Maintenance and CIP Investment.
Total	\$ 21,000,000	

Paving Condition Index (PCI)

City of Richmond 2018



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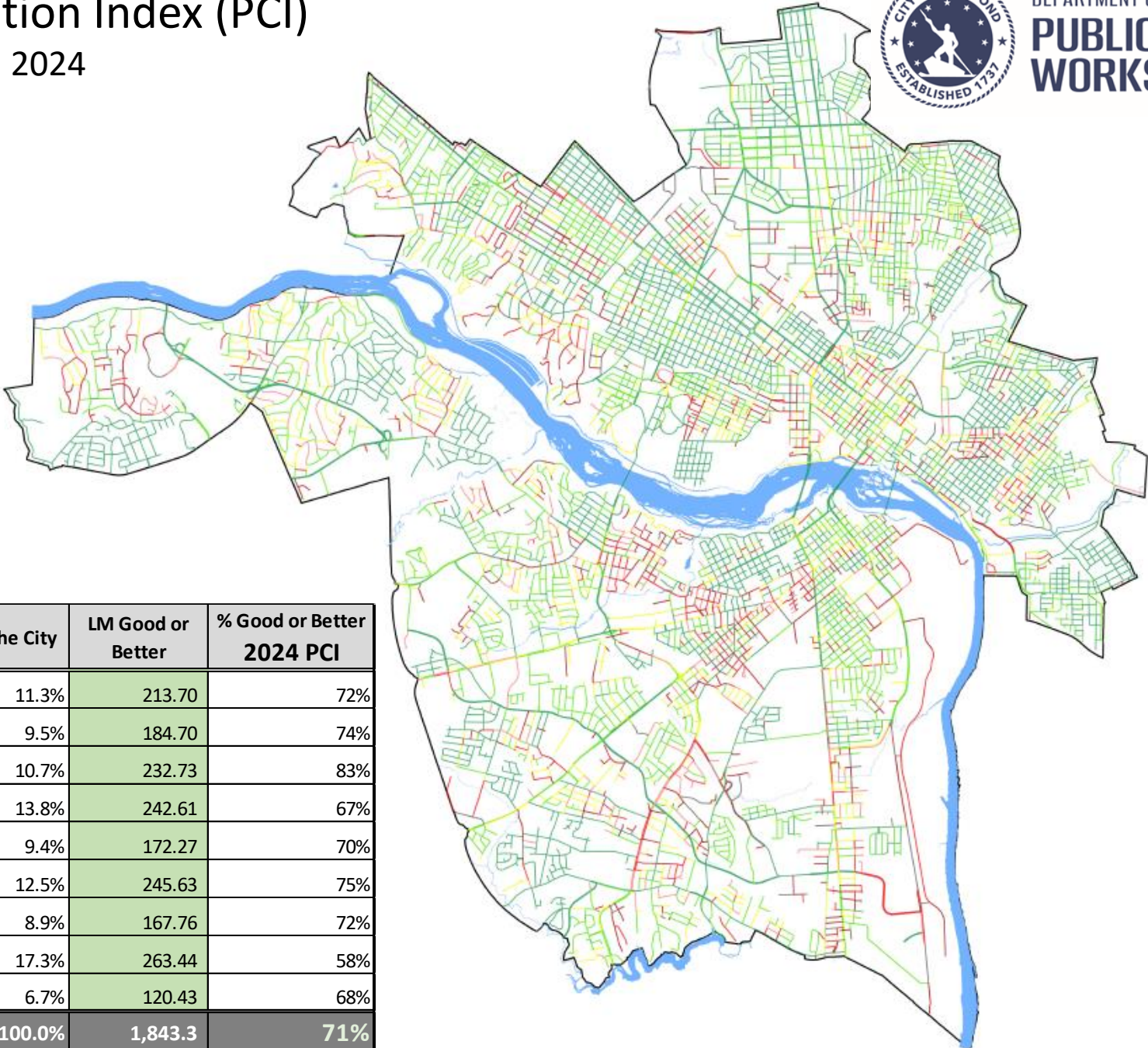
CD	Lane Miles	% of the City	LM Good or Better	% Good or Better 2018 PCI
1	296.8	11.3%	105.8	31%
2	249.6	9.5%	91.9	36%
3	280.4	10.7%	142.5	28%
4	362.1	13.8%	140.8	36%
5	246.1	9.4%	83.8	35%
6	327.5	12.5%	168.6	43%
7	233.0	8.9%	83.2	27%
8	454.2	17.3%	168.7	40%
9	177.1	6.7%	92.5	39%
Totals	2,626.8	100.0%	1,077.8	35%

Paving Condition Index (PCI)

City of Richmond 2024



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CD	Lane Miles	% of the City	LM Good or Better	% Good or Better 2024 PCI
1	296.8	11.3%	213.70	72%
2	249.6	9.5%	184.70	74%
3	280.4	10.7%	232.73	83%
4	362.1	13.8%	242.61	67%
5	246.1	9.4%	172.27	70%
6	327.5	12.5%	245.63	75%
7	233.0	8.9%	167.76	72%
8	454.2	17.3%	263.44	58%
9	177.1	6.7%	120.43	68%
Totals	2,626.8	100.0%	1,843.3	71%

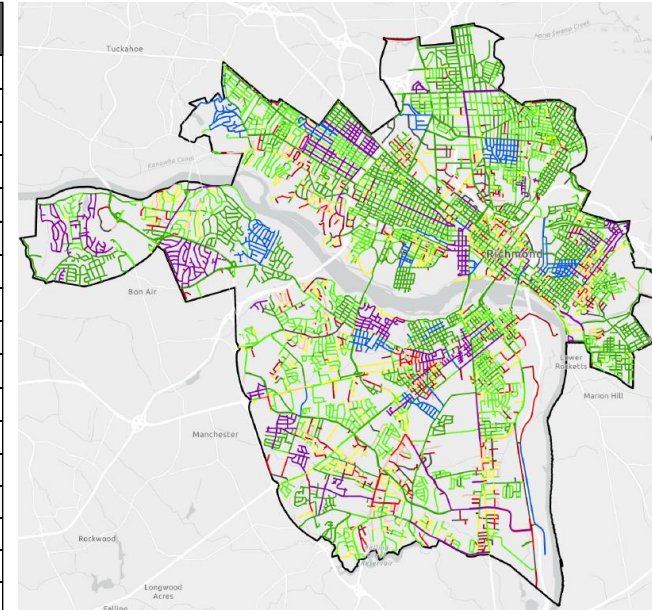
Paving Program FY2025

To be placed on DPW website within the next few weeks



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CD	FACILITY NAME	FROM	TO	SY	MLM	Unit Cost	Total
1	U of R Area	Boatwright Dr	Three Chopt Road	62,261.7	9.6	\$13.10	\$ 815,770.83
1	Winsor Farms	Portland Place	Canterbury	60,000.0	9.3	\$12.50	\$ 750,000.00
1	Westmoreland Place	Cary Street	Charmian	20,000.0	3.1	\$17.00	\$ 340,000.00
1	Willow Lawn Area	Park Avenue	Willow Lawn Drive	49,794.4	7.7	\$12.50	\$ 622,430.56
2	Diamond Area	Seddon Way	Rosedale	43,046.9	6.7	\$12.50	\$ 538,086.11
2	W Franklin	Belvidere	N Harrison St	8,982.2	1.4	\$17.00	\$ 152,697.78
3	Leigh Street	N Lombardy St	Arthur Ashe Blvd	34,954.3	5.4	\$17.00	\$ 594,223.67
3	N. Barton Heights	Hawthorne Avenue	North Avenue	86,850.6	13.5	\$9.75	\$ 846,792.92
4	Stratford Hills Area	Hathaway Road	Riverside Drive	87,579.2	13.6	\$12.50	\$ 1,094,740.28
4	Forest Hill Terrace	W. 48th Street	Forest Hill Avenue	64,716.2	10.0	\$9.75	\$ 630,983.17
5	Byrd Park Area	Meadow Street	Appomattox Street	31,897.3	4.9	\$12.50	\$ 398,716.67
5	Gamble Hill	Belvidere	Byrd Street	29,155.3	4.5	\$12.50	\$ 364,441.67
6	Hull Street	Richmond Highway	Commerce Rd	12,573.3	1.9	\$17.00	\$ 213,746.67
6	Bellemeade Area	Harwood	Lone	26,450.0	4.1	\$17.00	\$ 449,650.00
7	N 25th St	M St	Dead End	16,420.2	2.5	\$17.00	\$ 279,143.78
7	Jefferson Ave	N25th St	E Marshall St	7,902.2	1.2	\$4.10	\$ 134,337.78
7	Oliver Hill Way	Broad St	Hospital	32,800.0	5.1	\$36.87	\$ 656,000.00
7	18th St	Broad St	Oliver Hill Way	17,791.1	2.8	\$24.51	\$ 355,822.22
7	N 14th Street	Broad St	Dock	14,520.0	2.3	\$20.00	\$ 290,400.00
7	Union Hill	Cedar Street	N. 25th Street	78,908.2	12.2	\$9.75	\$ 769,355.17
8	Holly Spring Ave	N Hopkins	Stockton St	10,484.0	1.6	\$17.00	\$ 178,228.00
8	E Broad Rock Rd	Lawson	Decatur	3,568.0	0.6	\$17.00	\$ 60,656.00
8	E Clopton	Maury St	Bainbridge St	9,818.0	1.5	\$17.00	\$ 166,913.56
8	Jeff-Davis Neighborhood	Richmond Hwy E/W	Bellmeade-Walmsley	150,000.0	23.2	\$12.50	\$ 1,875,000.00
8	Deep Water Terminal Road	Port of Richmond	Dead End	49,660.4	7.7	\$20.00	\$ 993,208.89
8	Belt Blvd	Broadrock	Twyman Road	40,000.0	6.2	\$17.00	\$ 680,000.00
8	McGuire Area	McGuire Drive	E. Broad Rock Blvd	46,525.0	7.2	\$9.75	\$ 453,599.25
9	South Garden	Broad Rock - Orcutt	Hull St - Bryce Lane	20,000.0	3.1	\$9.75	\$ 453,599.25
9	E German School Rd	Midlothian	Warwick Rd	17,667.0	2.7	\$17.00	\$ 300,333.33
					-		
				1,134,325.6	175.8		\$ 15,458,877.56



FY2025 Paving Program					
CD	SY	LM	Cost	%	PCI
1	192,056.1	29.8	\$ 2,528,201.39	16.9%	72%
2	52,029.1	8.1	\$ 690,783.89	4.6%	74%
3	121,804.9	18.9	\$ 1,441,016.59	10.7%	83%
4	152,295.4	23.6	\$ 1,725,723.45	13.4%	67%
5	61,052.6	9.5	\$ 763,158.34	5.4%	70%
6	39,023.3	6.0	\$ 663,396.67	3.4%	75%
7	168,341.8	26.1	\$ 2,485,058.95	14.8%	72%
8	310,055.4	48.0	\$ 4,407,605.70	27.3%	58%
9	37,667.0	5.8	\$ 753,932.58	3.3%	68%
Total	1,134,325.6	175.8	\$ 15,458,877.56	100.0%	

Paving Coordination and Maintenance



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DPW and DPU Coordination Efforts

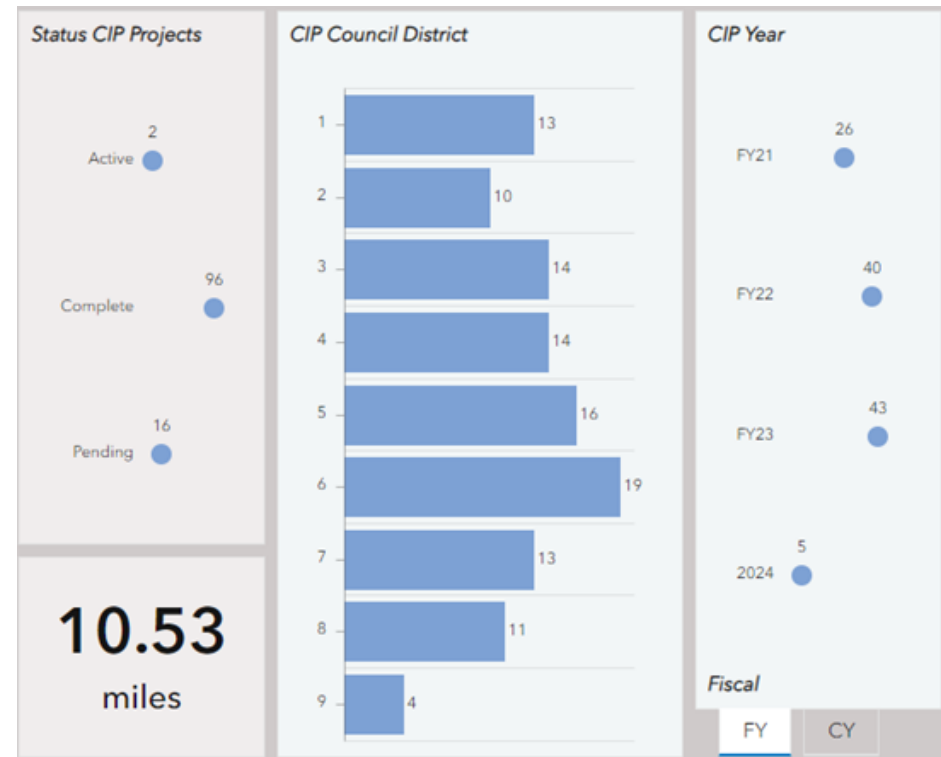
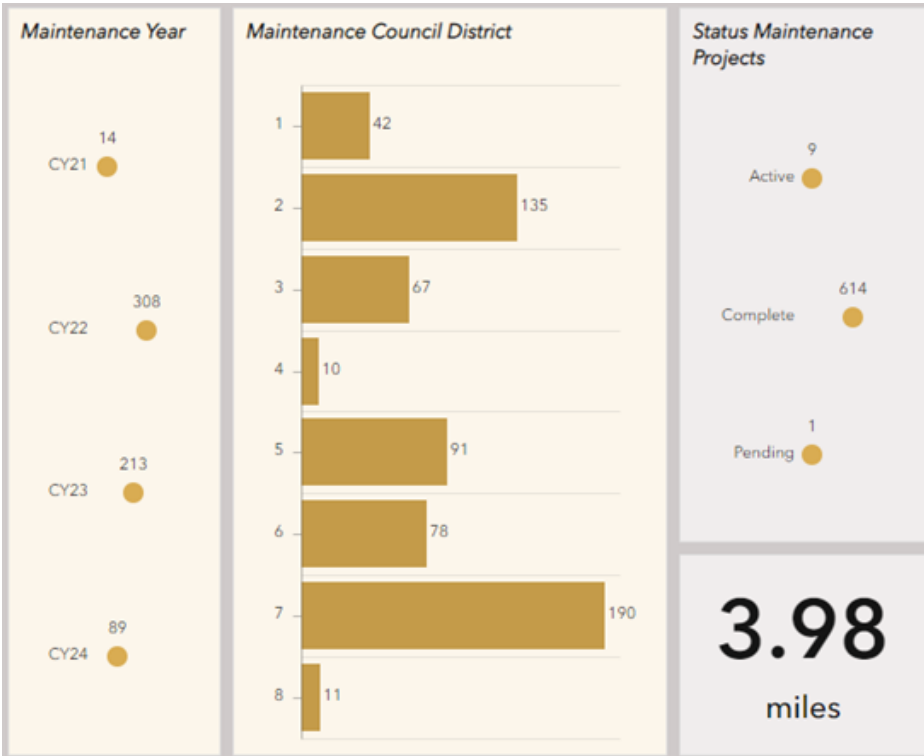
- DPW and DPU have been coordinating paving projects and saving money in the process.
- DPU contributes an additional \$5-6M annually to provide final restoration in neighborhoods that have undergone recent construction.
- DPW pays \$15/SY vs DPU \$30/SY



Types of Paving Applications

1. Milling and Overlay
 - Milling 1-2" and reapplying asphalt
2. Heat Scarification
 - Super heating of existing asphalt, rejuvenate it with oil and reapply it in place.
3. Slurry Seal Application
 - Thin asphalt emulsion overlay onto scarified surface.

Sidewalk CIP and Maintenance



The CIP Sidewalk program completed **100 Contractual projects**, and **600 Maintenance "In-House" projects** being completed, by DPW Sidewalk Maintenance.

Sidewalk CIP and Maintenance



In 2021, DPW presented a plan to the Administration and Council to increase the amount of sidewalk maintenance resources.

Prior to this point, DPW had 1 concrete crew, 1 brick crew, and \$1-2M in CIP funds.

In working with the dollars received through CVTA funding, DPW now has more than tripled in sidewalk staffing and increased its CIP funding to \$2-3M annually. We now have 1 breakout crew, 3 frame/pour crews, and 2 brick crews.



FY2023 Sidewalk Program	
CD	Cost
1	\$ -
2	\$ 327,590.19
3	\$ 591,820.57
4	\$ 332,260.88
5	\$ 249,729.14
6	\$ 58,713.00
7	\$ 418,457.52
8	\$ 85,618.05
9	\$ -
Total	\$ 2,064,189.36

Council District	% of the City	Lane Miles per District
1	13.8%	104.673
2	11.9%	90.220
3	13.9%	105.454
4	3.8%	28.969
5	13.6%	103.476
6	15.7%	119.226
7	15.3%	116.554
8	9.2%	69.909
9	3.0%	22.479
Total LM		760.960

FY2024 Sidewalk Program	
CD	Cost
1	\$748,498.69
2	\$323,788.82
3	
4	\$418,586.67
5	\$620,127.01
6	\$359,487.35
7	
8	\$371,059.26
9	\$23,211.61
Total	\$ 2,864,759.41

VDOT High Injury Network KA Crash Data – Richmond 2015 - 2023



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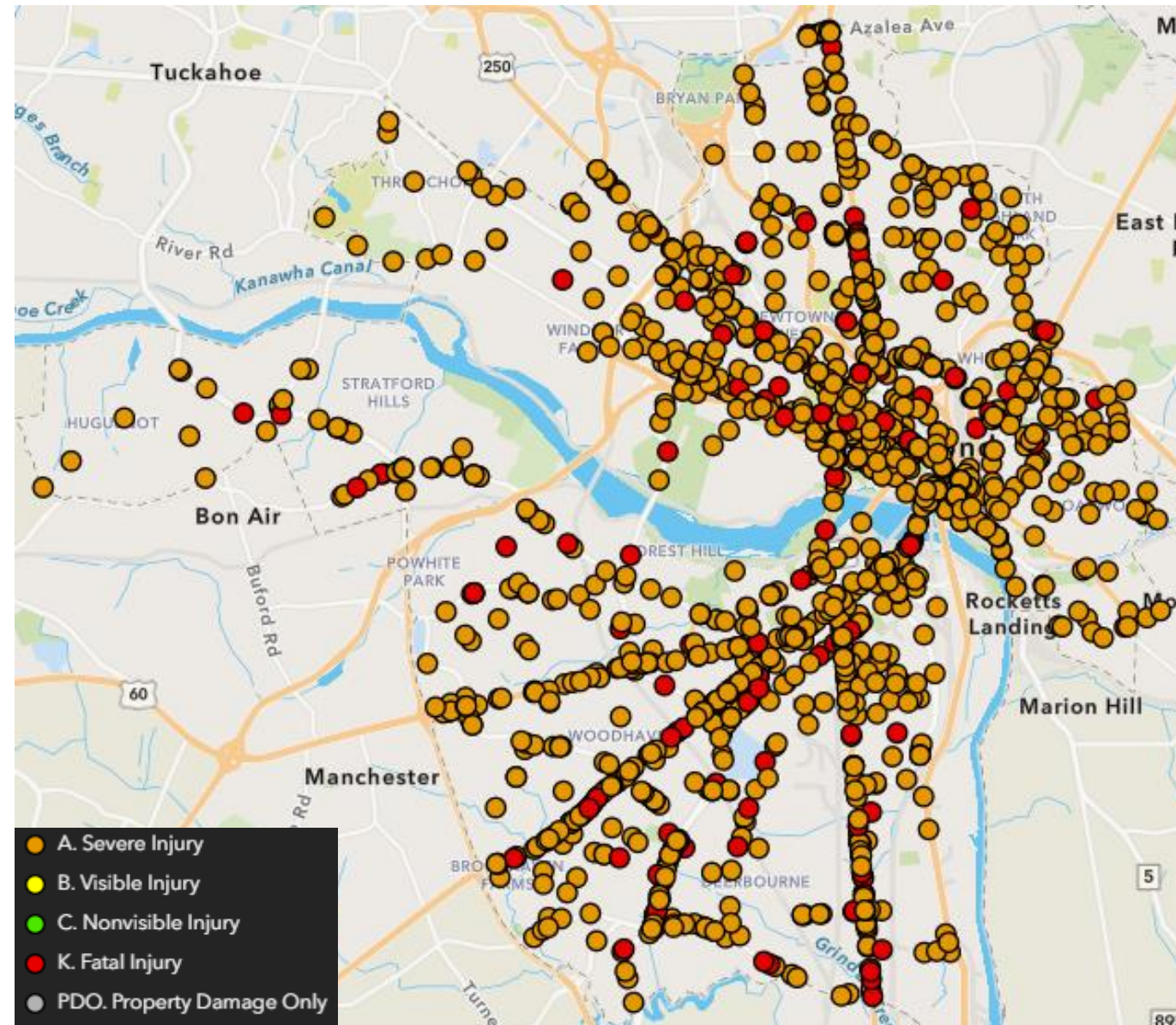
City/VDOT Accident Data

- 39,331 Accidents
- 1,564 Severe Injuries
- 146 Fatalities



Factors in Prioritizing Calming Projects:

- » Crash history;
- » Traffic volumes;
- » Road speed profile
- » Length of road segment
- » Distance to the nearest traffic control device



High Density Neighborhood Crash Data

The Fan Neighborhood 2015 - 2023



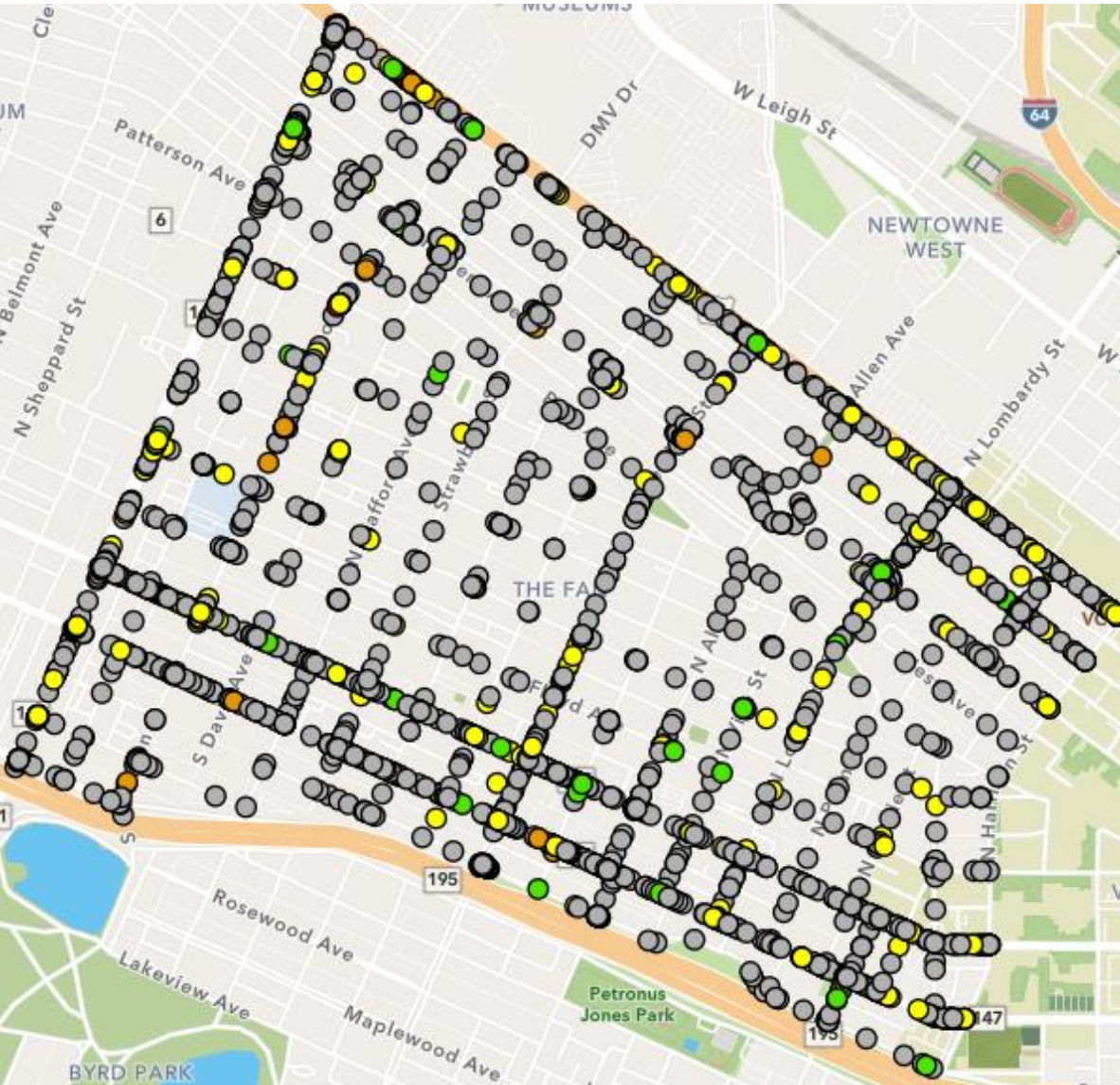
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Fan Area Accidents: 2,776

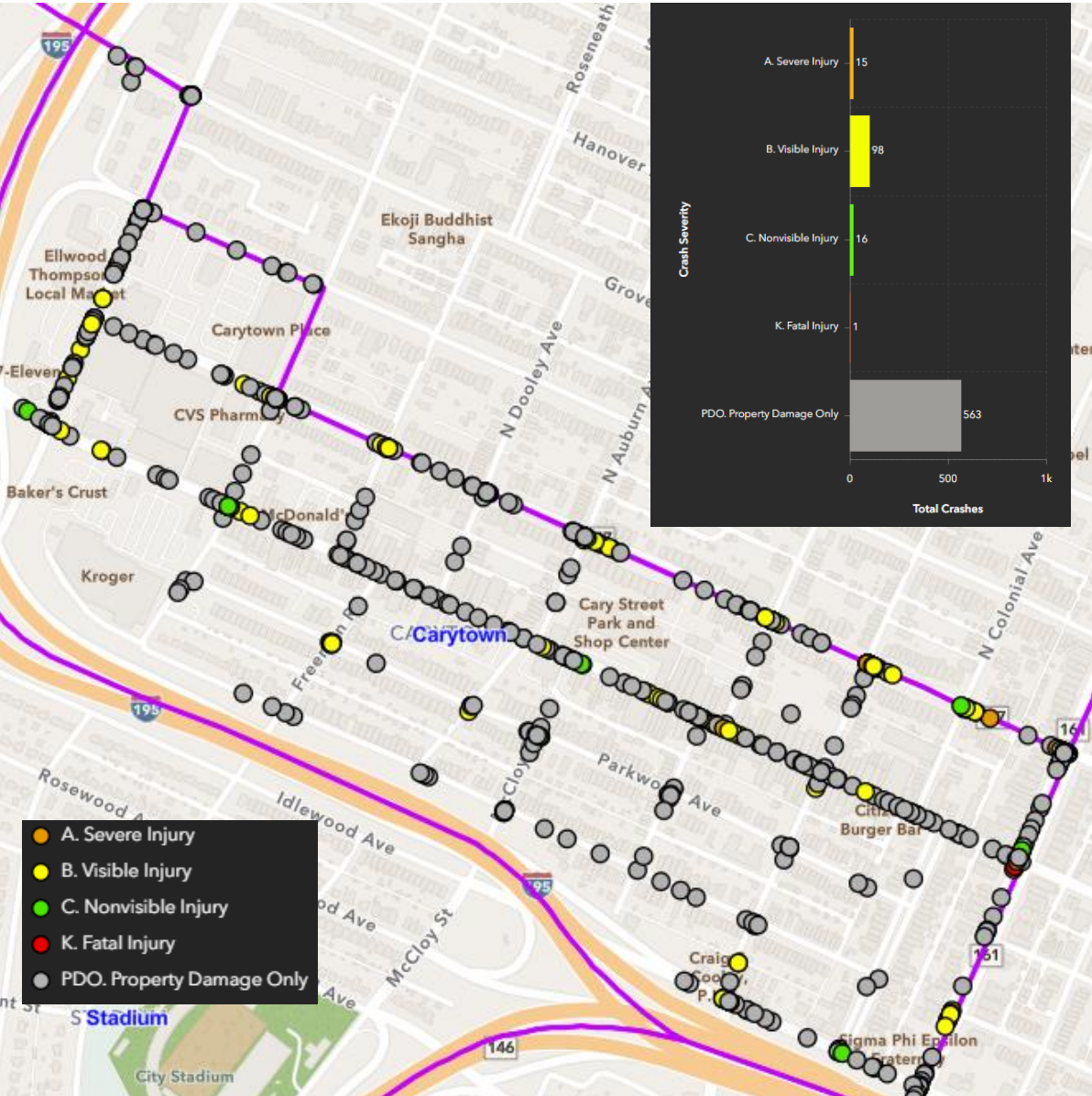
K. Fatal Injury: 7

A. Severe Injury: 68



Commercial Area Crash Data

2015 - 2023

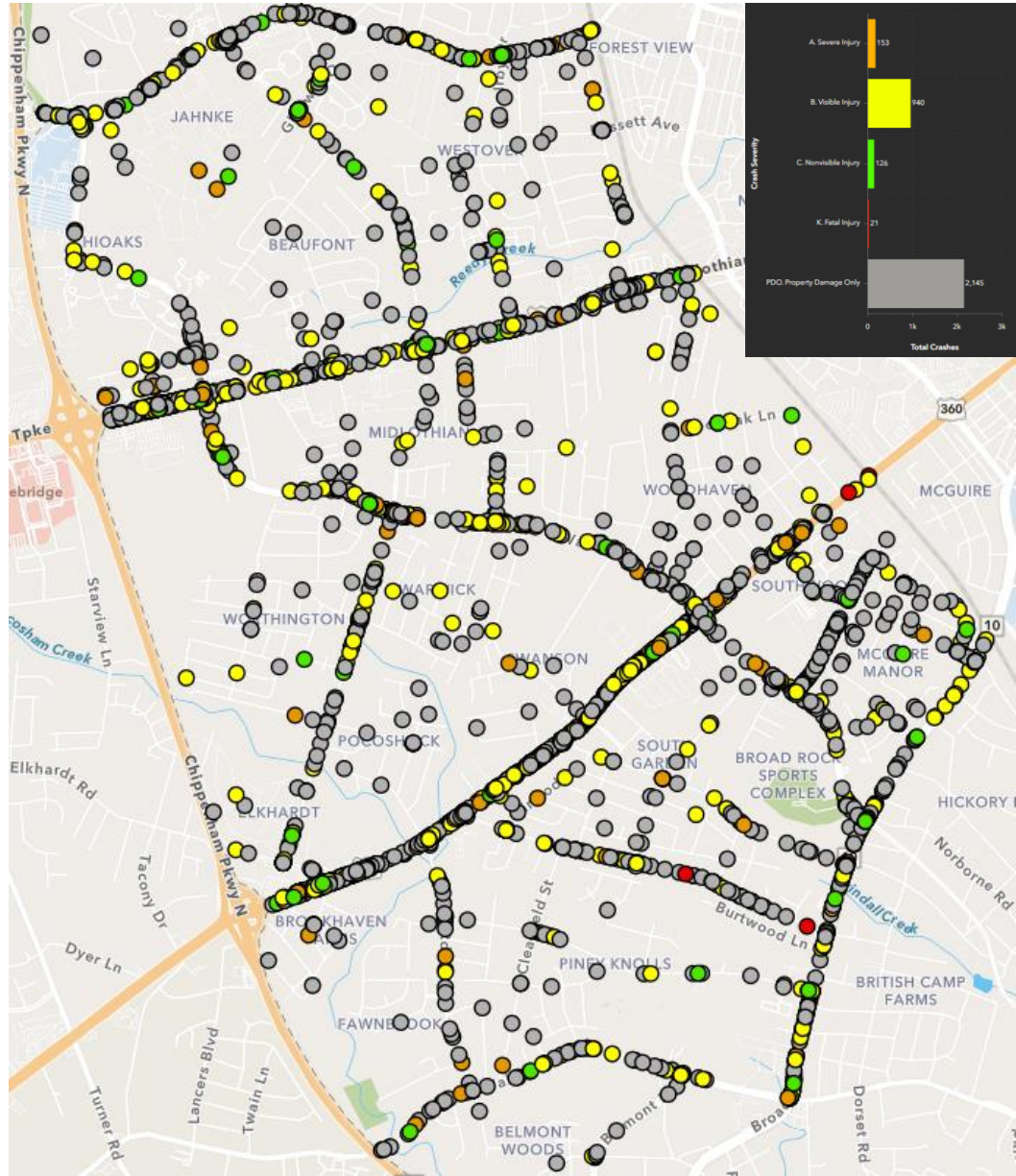


Carytown Area – 693 Total
1 fatality: Arthur Ashe Blvd – 2021
90.2% on Cary Street Rd



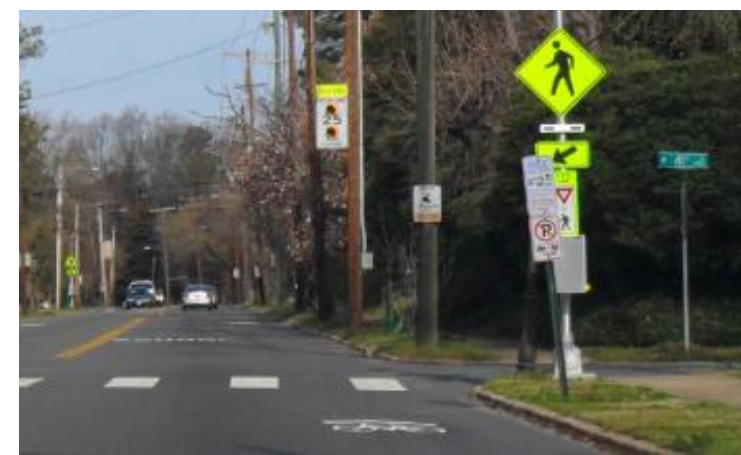
Neighborhood/Collector/Arterial Crash Data

2015 - 2023



9th District Accidents: 3,385

K. Fatal Injury: 21
A. Severe Injury: 153

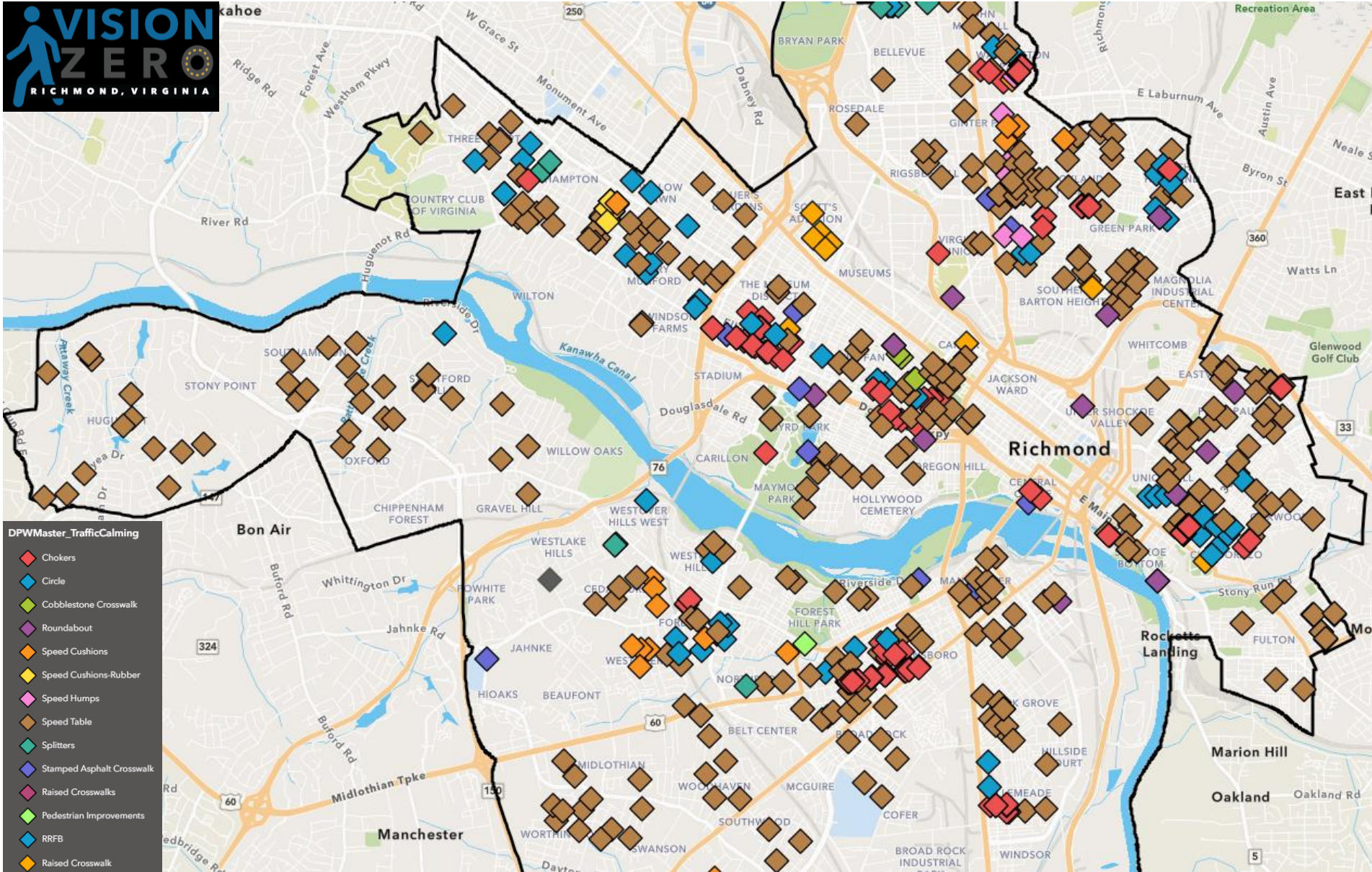


Speed Tables and Traffic Calming Citywide

Education, Enforcement, and Engineering



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Geometric Design and MUTCD Guidelines

NTMP Information

Table 1. Summary of Traffic Calming Strategies

	Strategies	Page #	Residential Roads		Typical Cost
			Average Daily Traffic (ADT)	Posted Speed Limit	
LEVEL 1	Education	14	NA	Any	Low
	Enforcement	16	≥500 vpd	Any	Medium
	Signing	19		Placed in accordance with the MUTCD**	Low
	Enhanced Speed Program*	23	Any	Any	Low
LEVEL 2	Speed Tables	24	≤7,500 vpd	≤30 MPH	Medium (in coordination with paving program) - High (individual project)
	Raised Crosswalks	26	≤7,500 vpd	≤30 MPH	Medium (in coordination with paving program) - High (individual project)
	Neighborhood Traffic Circles	27	≤7,500 vpd	≤35 MPH	High
	Curb Extensions	29	≤16,000 vpd	≤35MPH	High
	Roadway Reconfiguration /Road Diet	31	<16,000 VPD	Varies	High
	Traffic Signal Retiming	33	Signalized corridors	Signalized corridors	Medium

* certain criteria as established by Richmond City Council must be met and then requires a City Council Resolution.

** MUTCD - Manual on Uniform Traffic Control Devices

NOTE: For FY25, an additional \$1,000,000 will be invested. \$500,000 for raised crosswalks for RPS crossing guards, and \$500,000 for 45 (5 per CD and 5 for DPW).

Traffic Calming Devices

Speed Tables – 200+
Chokers – 128
Traffic Circles - 59
Roundabouts – 17



In Service	In Service	Planned	Under Review	Totals
CD1	5	23	5	33
CD2	9	12		21
CD3		14		14
CD4	23			23
CD5	24			24
CD6		14		14
CD7	32			32
CD8	23			23
CD9	18			18
MISC				0
Totals	134	63	5	202
Remaining Balance FY24			\$ 680,000.00	
Expenditures in FY24			\$ 1,340,000.00	

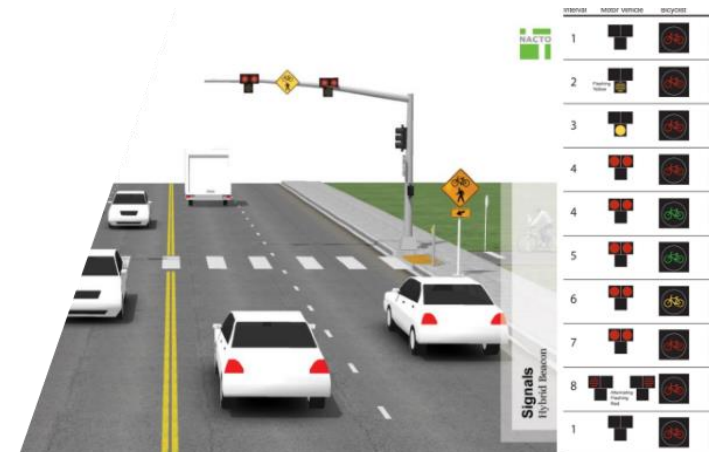


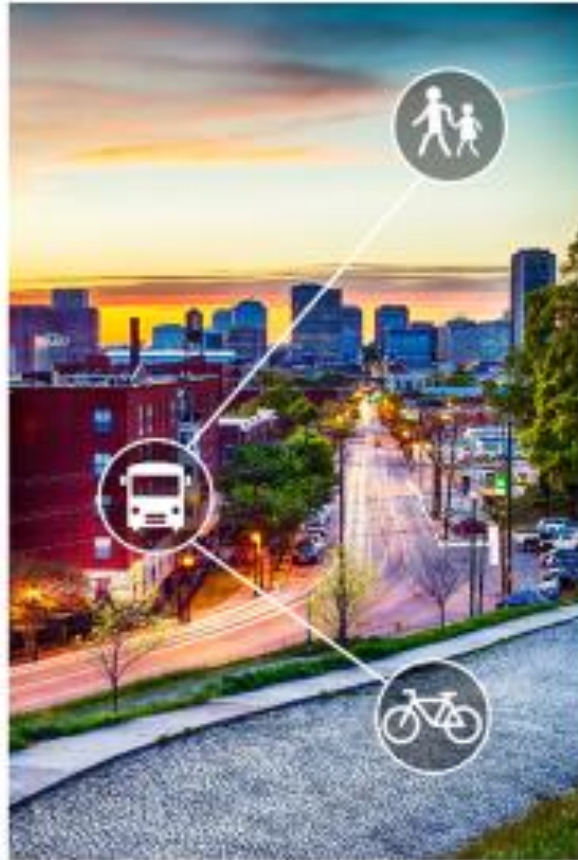
Project Manager	Project Description	Council District	Estimated Amount
Adel	James River Branch Trail Project CN Phase	4	\$ 9,000,000.00
Adel	Tredegar street sidewalk Project	6	\$ 750,000.00
Adel	Shockoe Valley Streets	7	\$ 46,500,000.00
Adel	Gillies Creek Greenway Phases II and III	7	\$ 1,350,000.00
Adel	VCT canal walk Project Phase II	7	\$ 550,000.00
Adel	Deepwater Terminal Road Extention to Goodes St	8	\$ 7,750,000.00
Adel	Brookland Park Blvd Streetscape (Revenue sharing)	3,6	\$ 2,000,000.00
Adel	Hull Street Road Improvement phase 1	8,9	\$ 34,000,000.00
Adel	Richmond Henrico Turnpike	6	\$ 2,000,000.00
Bruce	Scott's Addtion GreenSpace	2	\$ 1,106,000.00
Bruce	Scott's Addition BRT Streetscape	2	\$ 1,612,000.00
Bruce	Maymont S/W Phase II	5	\$ 430,000.00
Bruce	Riverfront/Orleans BRT streetscape	7	\$ 4,900,000.00
Bruce	Maury Street Streetscape phase II	8	\$ 4,618,000.00
Bruce	Southwood Parkway	8	\$ 300,000.00
Bruce	Green ES Sidewalk Phase II	9	\$ 756,849.00
Phillips	Laburnum Ave Median Imp	3	\$ 1,075,000.00
Phillips	Jahnke Road Imp (federal) 100570	4	\$ 22,331,391.00
Phillips	Semmes Ave, Forest Hill, Dundee Ped Safety	5	\$ 1,799,563.00
Phillips	Hull St Streetscape	6	\$ 4,910,138.00
Phillips	Main St/Williamsburg Rd Intersection	7	\$ 3,203,673.00
Phillips	Government Rd /Chimborazo Park Slope Repair	8	\$ 8,679,400.00
Phillips	Hull Street Gateway Sign Ph II	9	\$ 400,000.00
Phillips	Hey Road (Revenue Sharing)	9	\$ 15,240,026.00
Phillips	Belvidere Gateway Phase IV	2,3,5	\$ 1,086,174.00
Wang	Westhampton Phase II	1	\$ 200,000.00
Wang	BRT Shared UsePath to Science Museum	2	\$ 2,992,480.00
Wang	Arthur Ashe Bridge Replacement (Federal)	2	\$ 23,000,000.00
Wang	Maymont Sidewalk (Federal)-Phase I	5	\$ 412,507.00
Wang	Bainbridge Pedestrian Access Improvements	5	\$ 250,000.00
Wang	Biotech Phase III -Leigh St. Streetscape	6	\$ 6,608,000.00
Wang	Kanahwa Plaza Smartscale	6	\$ 3,308,614.00
Wang	Broad Street Streetscape (Federal)	1,2,3,6	\$ 6,020,287.00
Westbrook	Lombardy Bridge over CSXT (Federal)	3	\$ 21,000,000.00
Westbrook	Commerce Road (Federal)	6	\$ 36,350,000.00
Westbrook	Broad Street Bridge over abandoned RR spur (Federal)	6	\$ 3,900,000.00
Westbrook	MLK Bridge	6	\$ 6,000,000.00
Westbrook	E. Richmond Rd over Stoney Run	6	\$ 3,050,000.00
Westbrook	E. Richmond Rd over Gillies Creek (Federal)	6	\$ 3,050,000.00
Westbrook	Hull Street over Manchester Canal (Federal)	6	\$ 10,800,000.00
Westbrook	Lynhaven Ave Bridge (Federal)	8	\$ 2,500,000.00
Westbrook	Columbia St over Goodes Creek	8	\$ 2,500,000.00
Westbrook	Transit Stop Access Sidewalks (Federal)	Various	\$ 960,000.00
Total CIP			\$ 309,250,102.00



CIP Engineering Projects \$300M+:

- Transportation Multimodal Planning
- Traffic Signalization Projects
- Bridge Repairs/Replacement
- Complete Street Designs





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Connecting with the Community



CITY OF
RICHMOND



Richmond Connects “Big Moves”

1. **Rethink** Essential Transit Infrastructure: Bus Stops Dignified as a Placemaking Opportunity
2. **Act Quick**: Responsive Lighter, Quicker, Cheaper projects to address safety NOW
3. **Achieve Spatial Justice** Through Transit: Transportation access is a Civil Right and all Richmonder’s deserve access.
4. **Close the Gaps**: Address accessibility and affordability through recommended equity-centered programming and actions
5. **Sidewalks, Sidewalks, Sidewalks**: Restore and close gaps in the sidewalk network as a means of mending the fabric of social connectivity





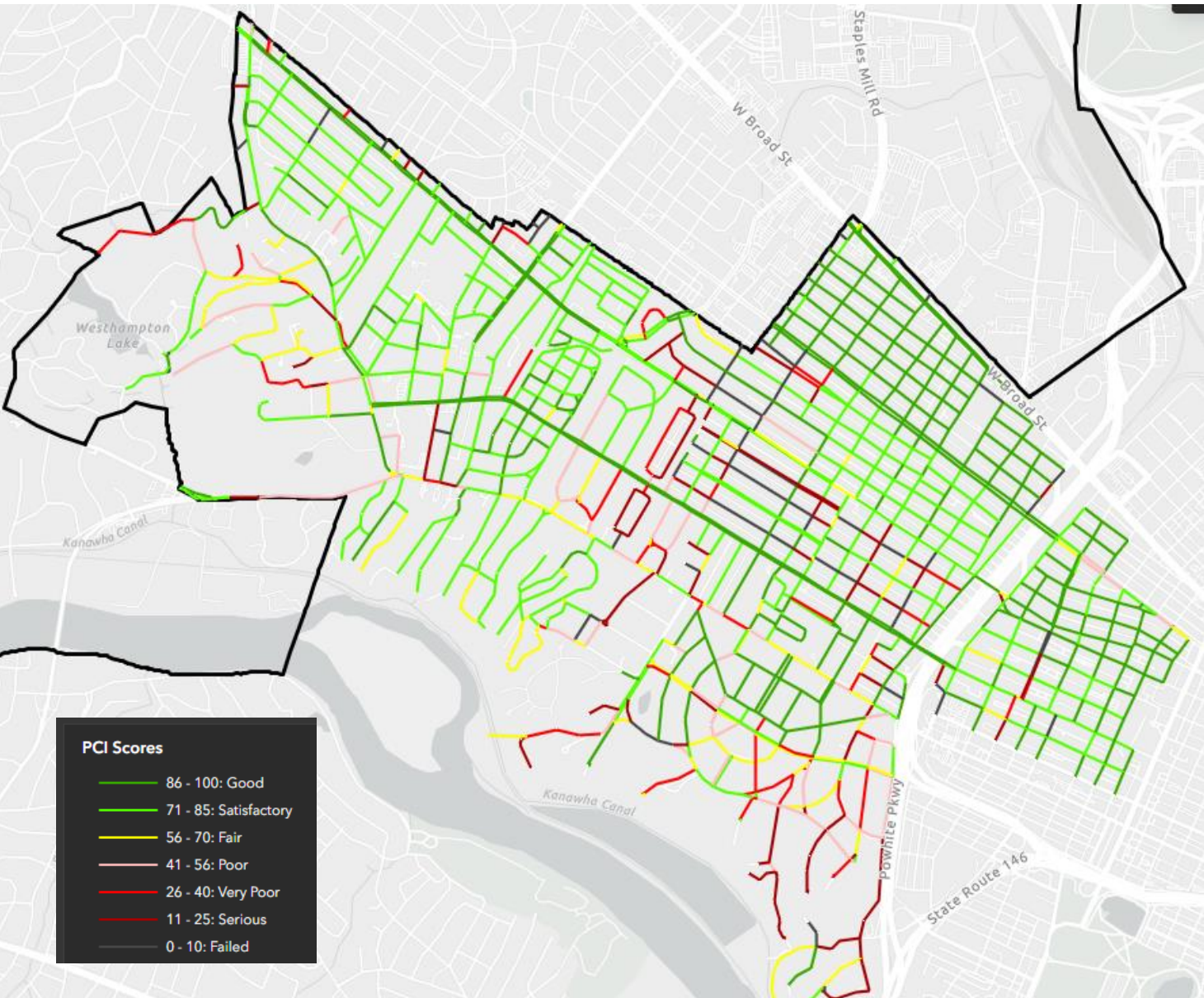
Questions and
Comments



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Pavement Condition Rating (PCI)

1st District - City of Richmond



PCI Scores	
Green	86 - 100: Good
Light Green	71 - 85: Satisfactory
Yellow	56 - 70: Fair
Orange	41 - 56: Poor
Red	26 - 40: Very Poor
Dark Red	11 - 25: Serious
Black	0 - 10: Failed

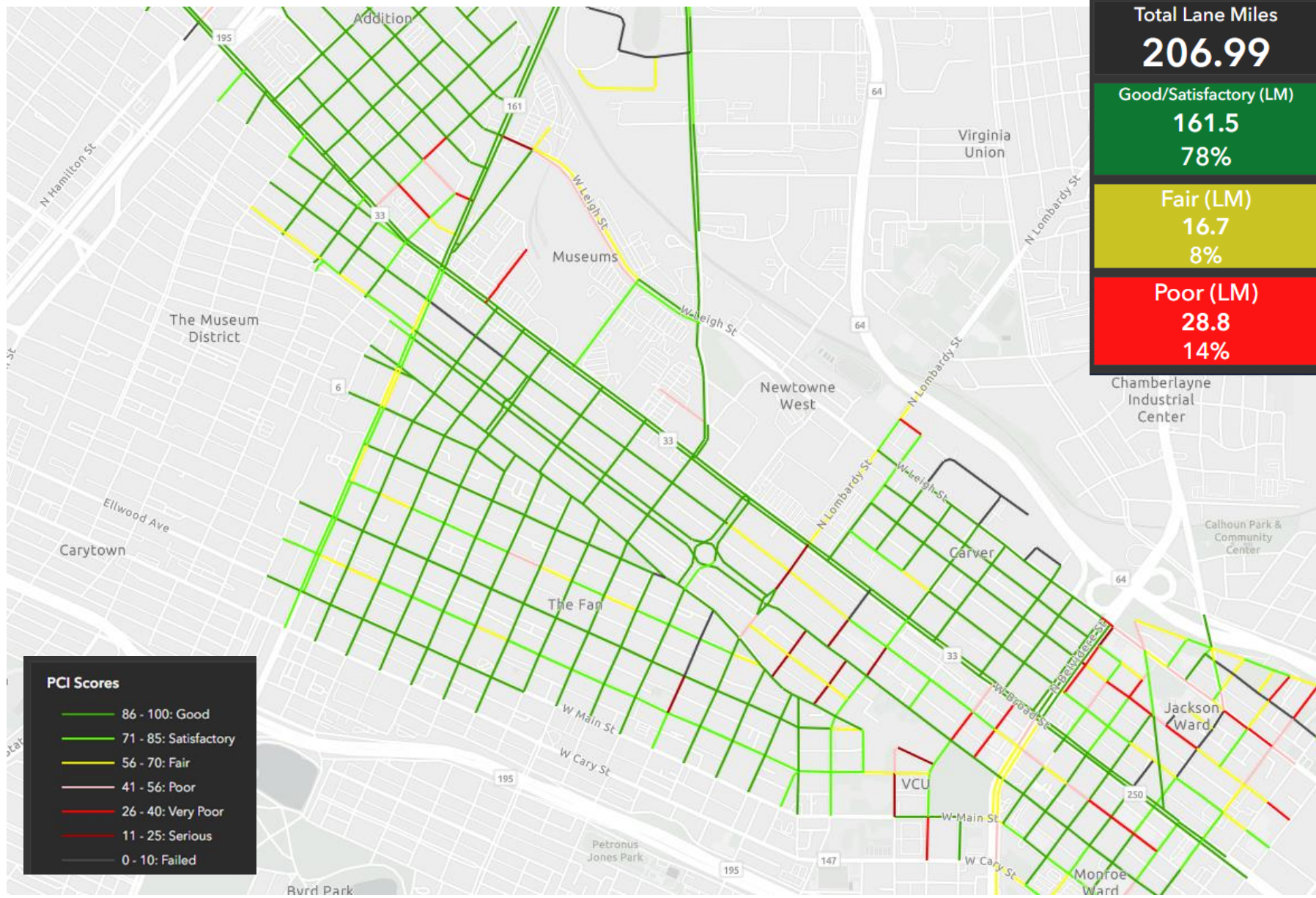
Total Lane Miles	302.79
Good/Satisfactory (LM)	222.3 73%
Fair (LM)	19.7 7%
Poor (LM)	60.8 20%



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Pavement Condition Rating (PCI)

2nd District - City of Richmond



Total Lane Miles	206.99
Good/Satisfactory (LM)	161.5 78%
Fair (LM)	16.7 8%
Poor (LM)	28.8 14%

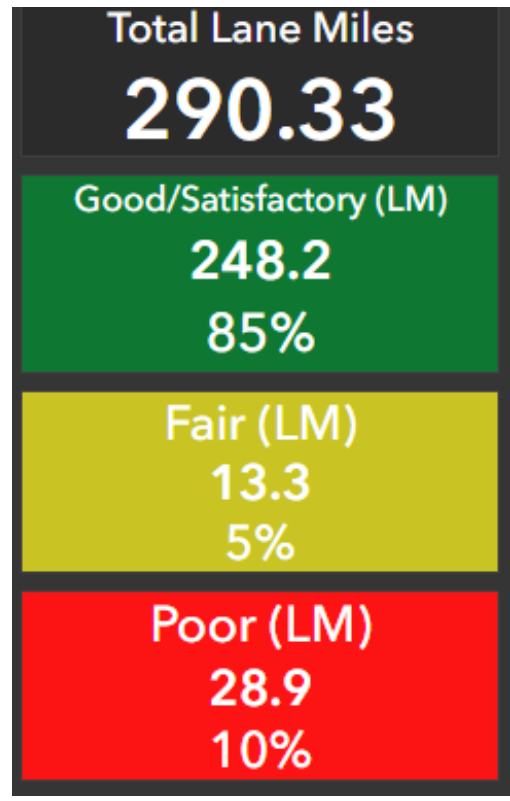
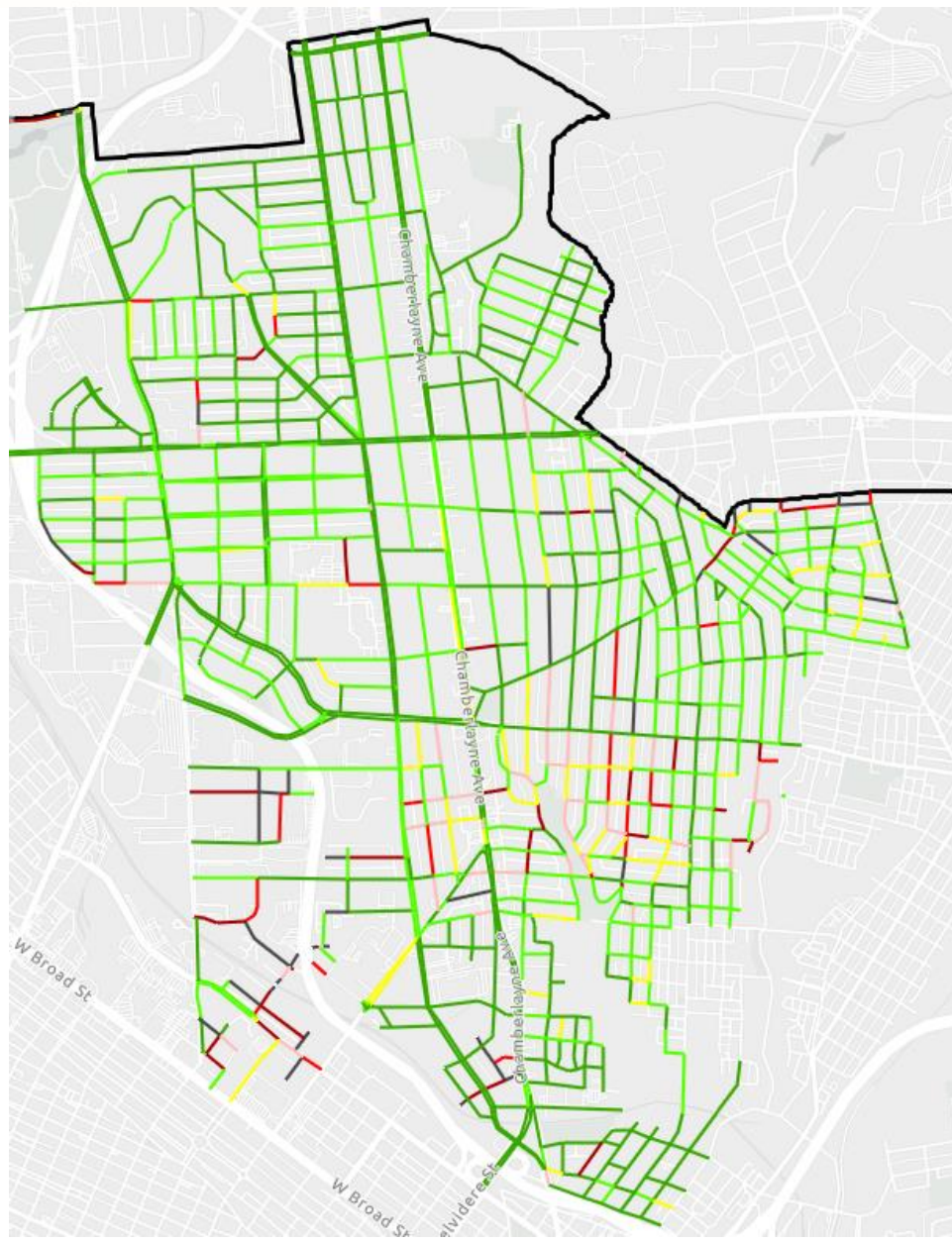
PCI Scores	
Green	86 - 100: Good
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Pavement Condition Rating (PCI)

3rd District - City of Richmond

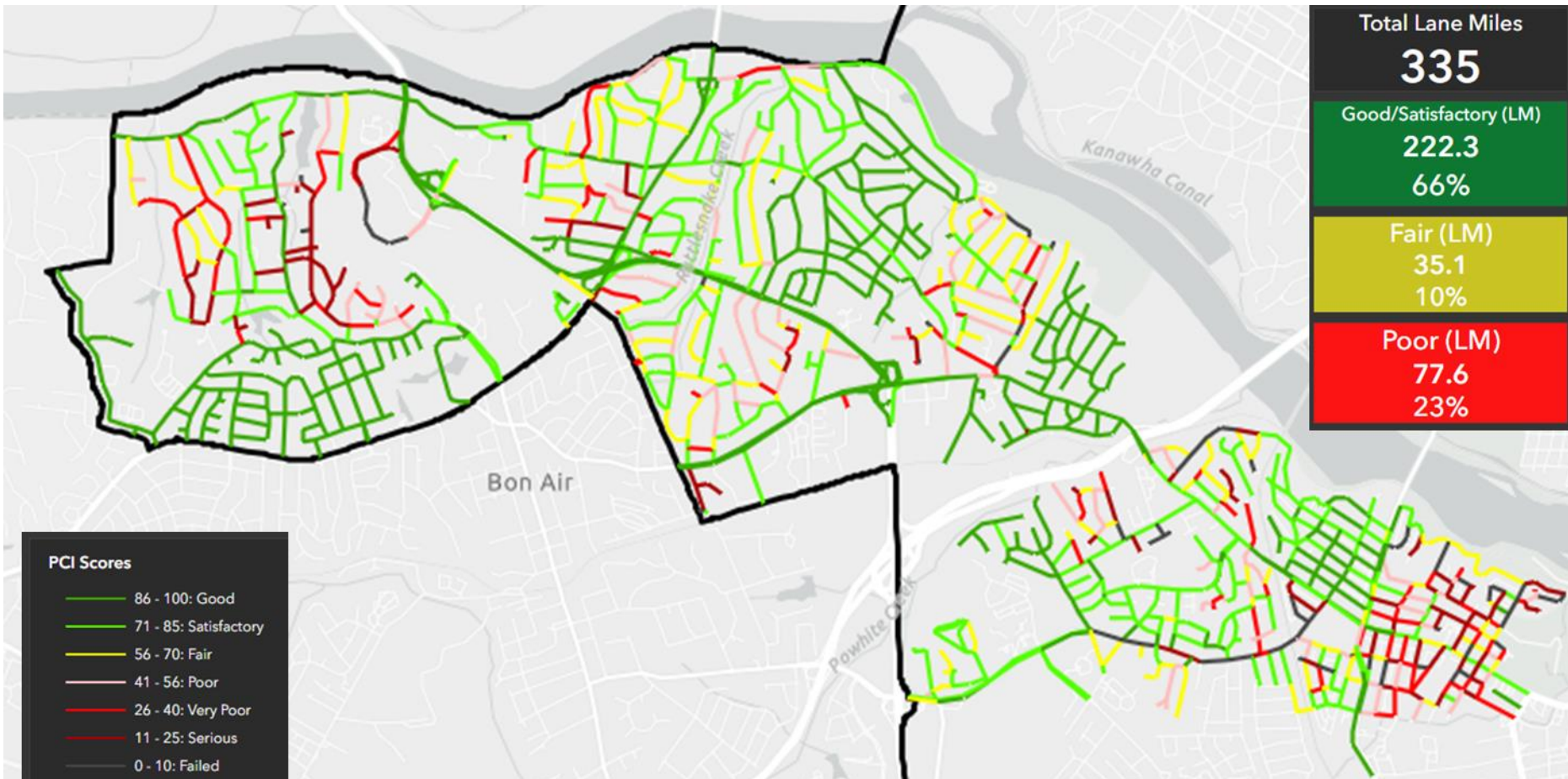




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Pavement Condition Rating (PCI)

4th District - City of Richmond

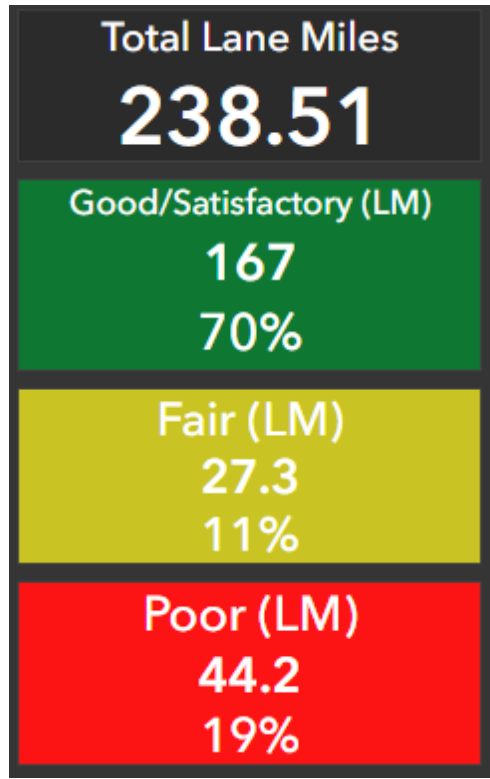
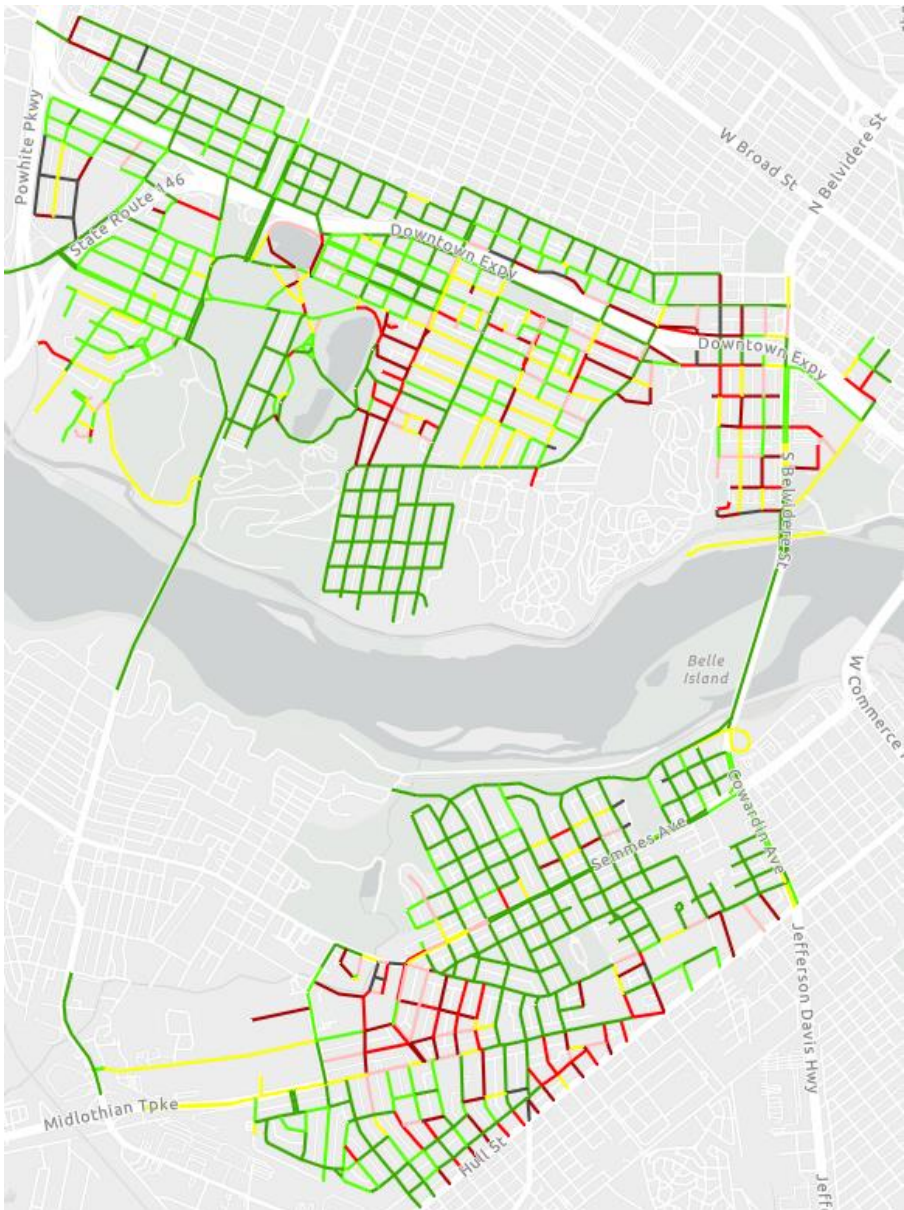




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Pavement Condition Rating (PCI)

5th District - City of Richmond

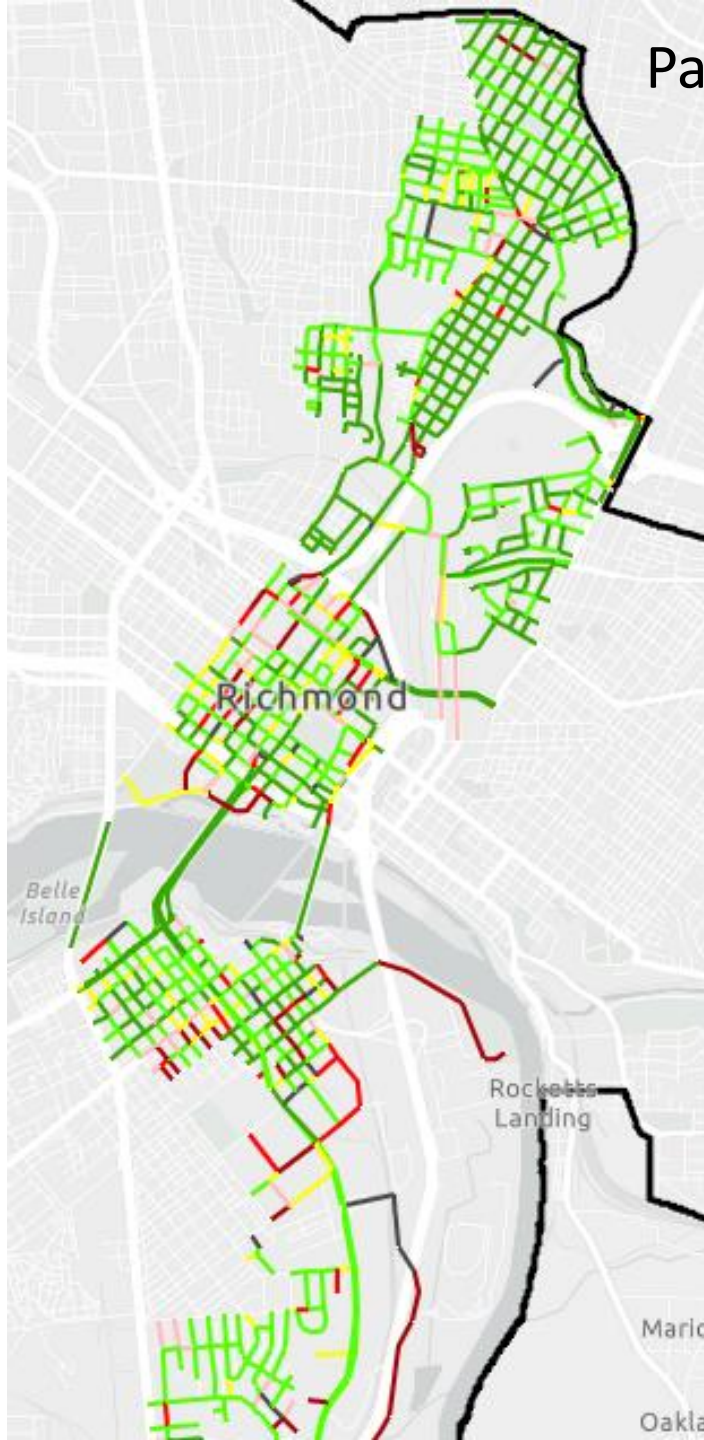




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Pavement Condition Rating (PCI)

6th District - City of Richmond



Total Lane Miles

311.7

Good/Satisfactory (LM)

240.5

77%

Fair (LM)

21.4

7%

Poor (LM)

49.8

16%

PCI Scores

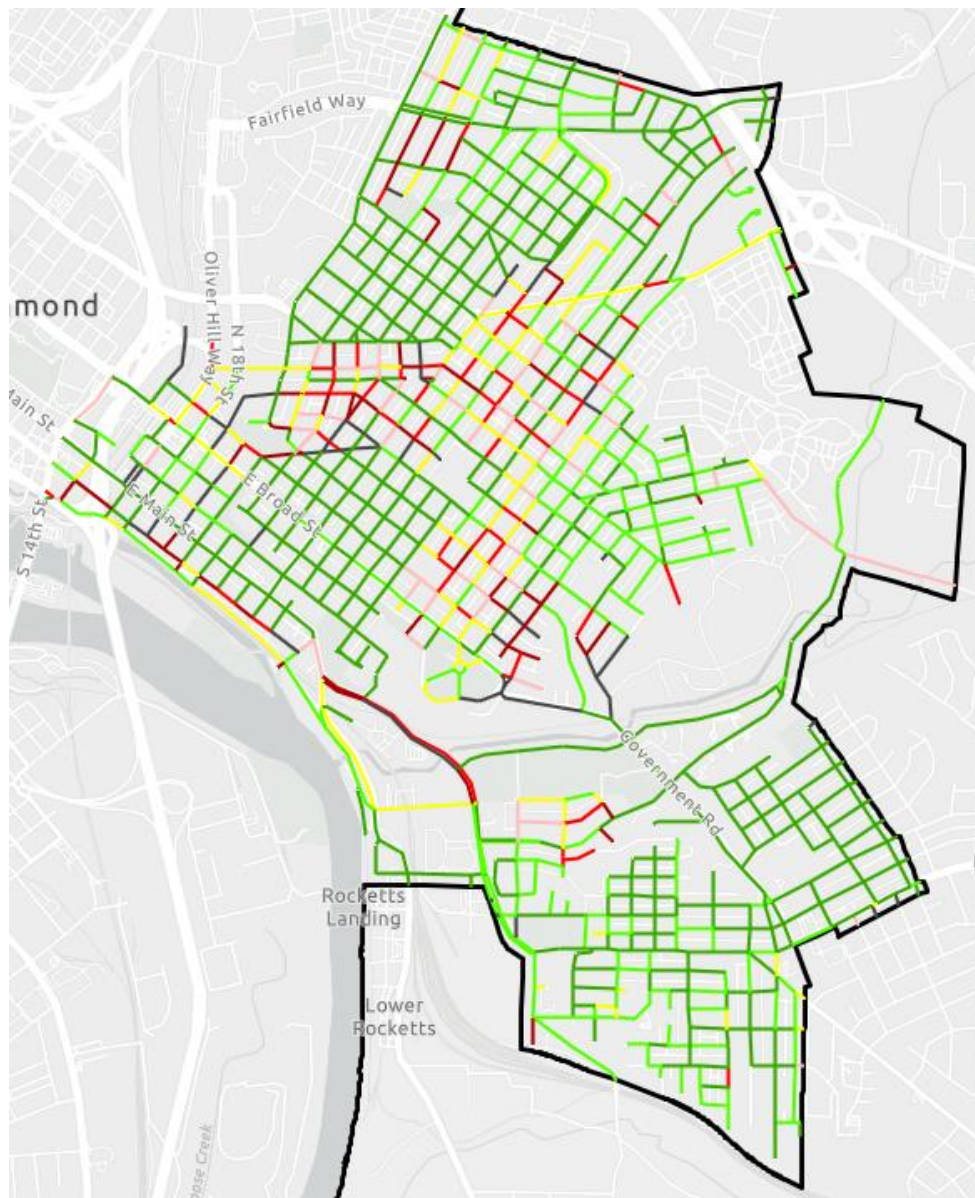
- 86 - 100: Good
- 71 - 85: Satisfactory
- 56 - 70: Fair
- 41 - 56: Poor
- 26 - 40: Very Poor
- 11 - 25: Serious
- 0 - 10: Failed



DEPARTMENT OF
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Pavement Condition Rating (PCI)

7th District - City of Richmond



Total Lane Miles

246.81

Good/Satisfactory (LM)

177.3

72%

Fair (LM)

22.1

9%

Poor (LM)

47.5

19%

PCI Scores

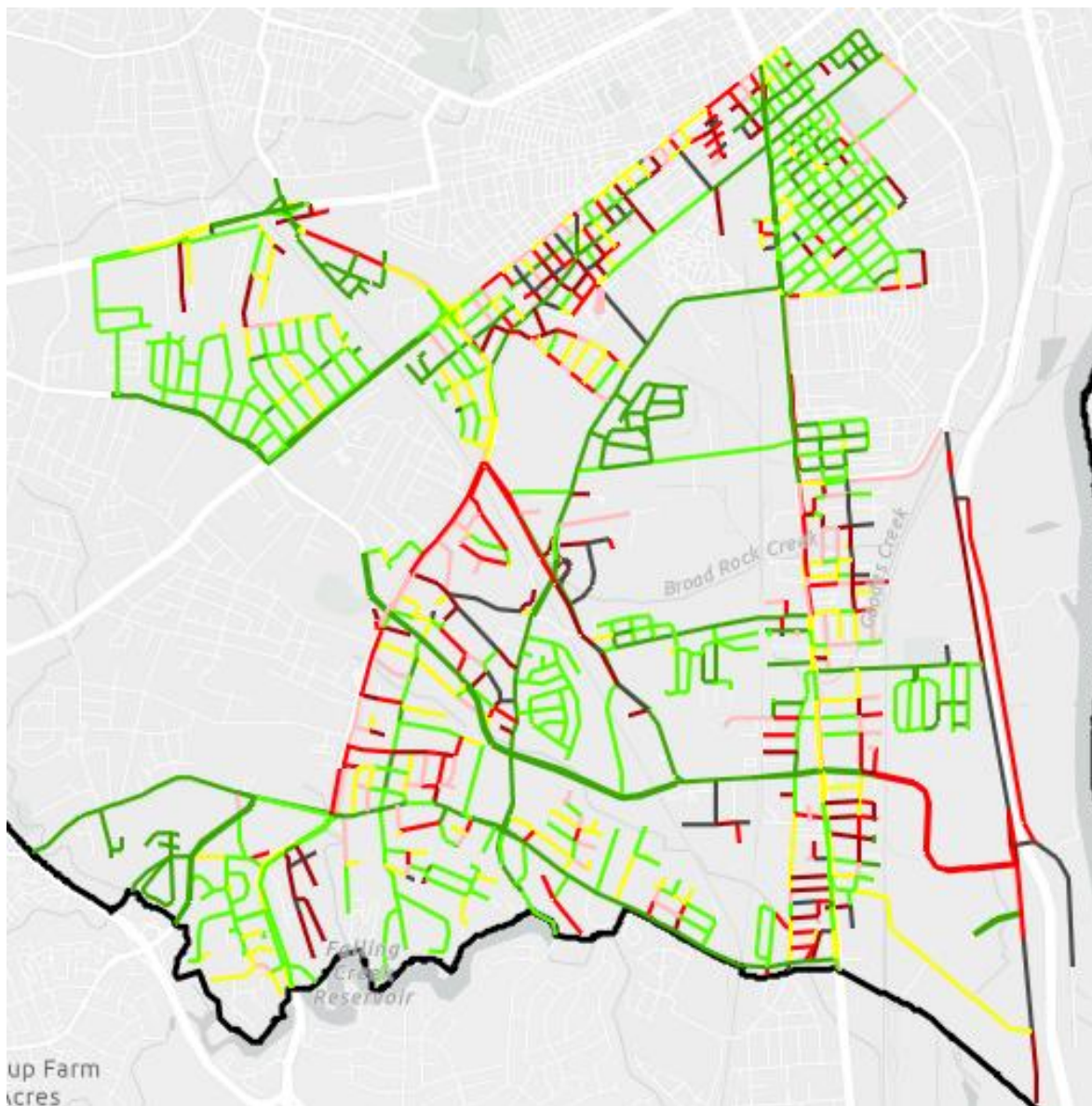
- 86 - 100: Good
- 71 - 85: Satisfactory
- 56 - 70: Fair
- 41 - 56: Poor
- 26 - 40: Very Poor
- 11 - 25: Serious
- 0 - 10: Failed



DEPARTMENT OF
**PUBLIC
WORKS**

Pavement Condition Rating (PCI)

8th District - City of Richmond





DEPARTMENT OF
**PUBLIC
WORKS**

Pavement Condition Rating (PCI)

9th District - City of Richmond

