

# Project Background

In 2017, the City of Alexandria adopted the Vision Zero Action Plan to eliminate traffic fatalities and severe injuries. The City also employs a safe system approach when planning and engineering for traffic safety, which aligns with the U.S. Department of Transportation’s National Roadway Safety Strategy and involves taking preventative action to minimize crashes.

In 2022, the City completed an updated citywide crash analysis to identify crash hotspots and trends to guide future safety work. That study identified the intersections of Duke Street/South Patrick Street and Duke Street/South Henry Street (together referred to as Duke Street/Route 1) as among the City’s high-crash intersections. That same year, the City received a technical assistance grant from the Metropolitan Washington Council of Governments Regional Roadway Safety Program to perform intersection safety audits for Duke Street/Route 1 and develop conceptual designs to improve safety.

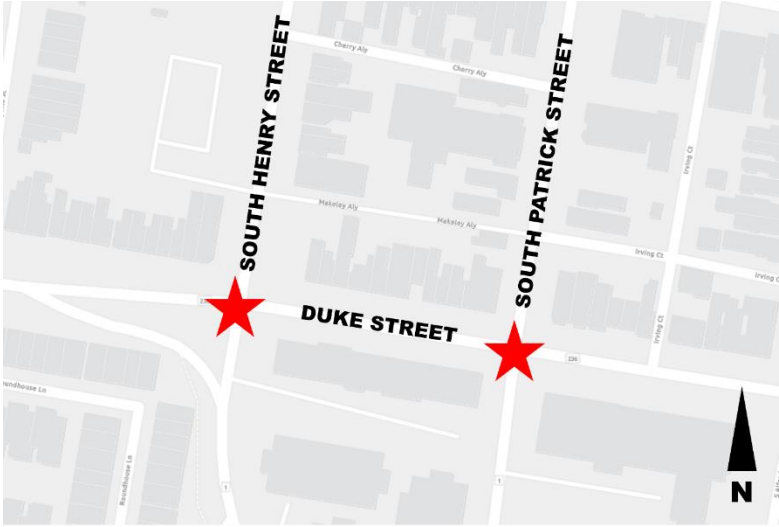
Crash History: Duke Street and South Henry Street

Intersection	Year	Crash Severity				Collision Type							Weather Condition			Total
		Severe	Visible	Nonvisible	Property Damage Only	Rear End	Pedestrian	Backed Into	Other	Angle	Sideswipe - Same Direction	Fixed Object - Off Road	No Adverse Condition (Clear/Cloudy)	Rain	Snow	
Duke Street at Henry Street	2015	0	2	0	7	0	0	0	0	4	4	1	7	2	0	9
	2016	0	0	0	2	1	0	0	0	0	1	0	2	0	0	2
	2017	1	1	1	3	2	1	0	0	2	1	0	6	0	0	6
	2018	0	0	1	6	0	0	1	0	3	3	0	7	0	0	7
	2019	0	1	0	1	0	0	0	0	1	0	1	2	0	0	2
	2020	0	0	0	4	1	0	0	0	1	2	0	3	1	0	4
	2021	0	0	0	3	1	0	0	0	2	0	0	3	0	0	3
	2022	0	2	0	2	0	1	0	0	1	2	0	4	0	0	4
<b>Total</b>		1	6	2	28	5	2	1	0	14	13	2	34	3	0	37
<b>Annual Average</b>		0.125	0.75	0.25	3.5	0.625	0.25	0.125	0	1.75	1.625	0.25	4.25	0.375	0	4.63

Crash History: Duke Street and South Patrick Street

Intersection	Year	Crash Severity				Collision Type							Weather Condition			Total
		Severe	Visible	Nonvisible	Property Damage Only	Rear End	Pedestrian	Backed Into	Other	Angle	Sideswipe - Same Direction	Fixed Object - Off Road	No Adverse Condition (Clear/Cloudy)	Rain	Snow	
Duke Street at Patrick Street	2015	0	1	0	3	1	1	0	0	1	1	0	3	0	1	4
	2016	1	2	1	6	2	1	0	0	5	2	0	10	0	0	10
	2017	1	1	1	5	2	0	0	1	5	0	0	5	3	0	8
	2018	0	1	1	2	3	0	0	0	0	0	1	3	1	0	4
	2019	0	0	0	5	1	0	0	0	1	3	0	5	0	0	5
	2020	0	0	0	2	1	0	0	0	1	0	0	1	1	0	2
	2021	0	1	0	3	1	0	0	0	2	1	0	4	0	0	4
	2022	0	0	0	3	0	0	0	0	2	0	1	3	0	0	3
<b>Total</b>		2	6	3	29	11	2	0	1	17	7	2	34	5	1	40
<b>Annual Average</b>		0.25	0.75	0.375	3.625	1.375	0.25	0	0.125	2.125	0.875	0.25	4.25	0.625	0.125	5.00

# Project Boundaries



Duke Street and South Henry Street, looking north



Duke Street and South Patrick Street, looking north



# Project Engagement Summary

In spring 2023, the City conducted a community engagement period to better understand people's experiences at both intersections. Staff shared the feedback opportunity via eNews, social media, signs at the intersections, and emails to local neighborhood organizations. High-level findings based on over 340 responses include:

- 67% said the intersection of South Henry Street is unsafe or very unsafe, while 47% said the same about South Patrick Street.
- Top concerns include driver speed, unsafe turns, and people disregarding signs and signals, and drivers blocking the intersection.

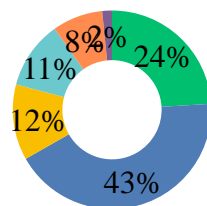
Staff developed concept designs based on community feedback and the results of the existing conditions analysis. The concept designs were then shared with the community for feedback in February 2024. Below is a summary of what design features residents liked about the concepts based on 48 responses:

- 72% like the No Turn on Red restrictions and Leading Pedestrian Intervals.
- 60% like the downsized slip lane.
- 62% like the curb extensions.
- 65% like the median islands.

## Community Feedback - Spring 2023

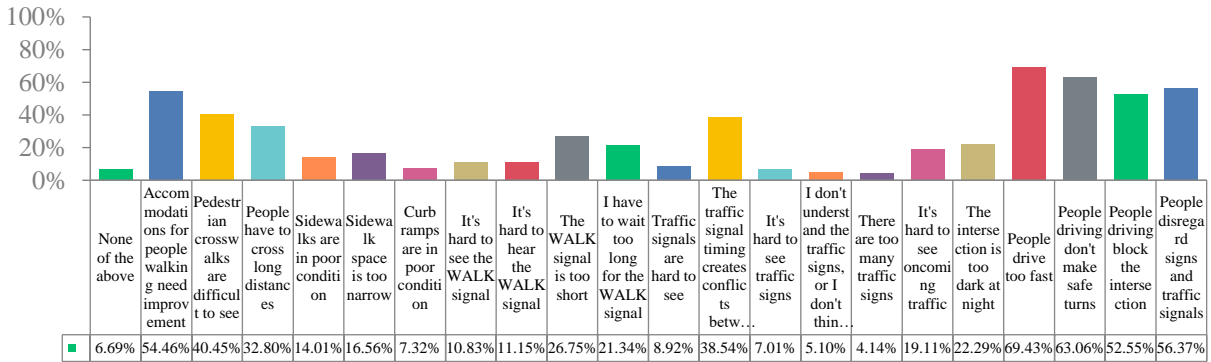
### Duke Street and South Henry Street

**On a scale of 1-5, how safe do you feel at this intersection?**



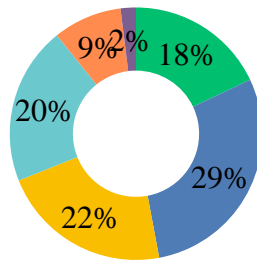
■ 1 (Very Unsafe)   ■ 2 (Somewhat Unsafe)   ■ 3 (Neutral)  
■ 4 (Somewhat Safe)   ■ 5 (Very Safe)   ■ N/A or I Don't Know

**Please indicate your experience with the intersection of Duke Street and South Henry Street (select all that apply):**



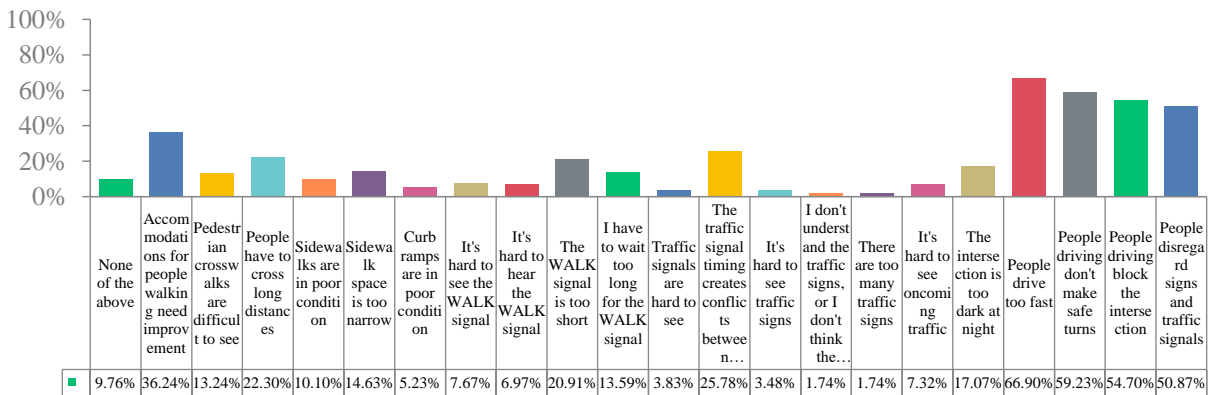
**Duke Street and South Patrick Street**

**On a scale of 1-5, how safe do you feel at this intersection?**

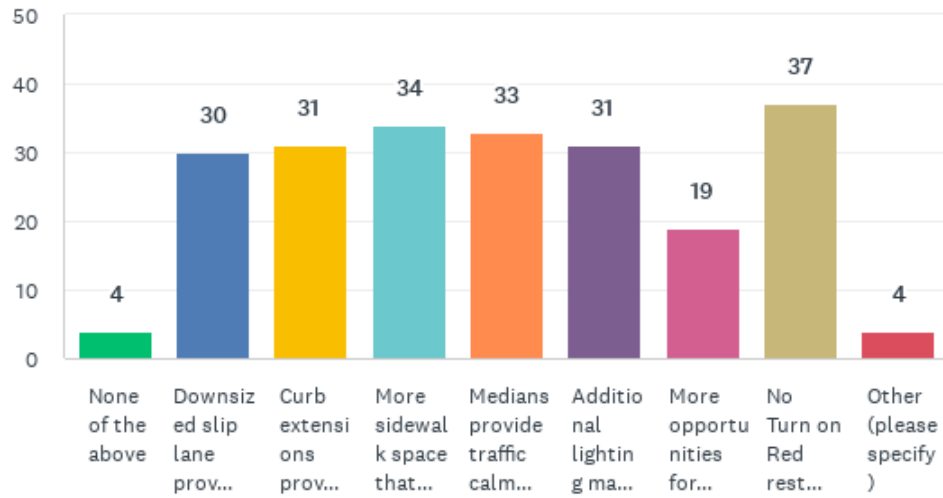


- 1 (Very Unsafe)
- 2 (Somewhat Unsafe)
- 3 (Neutral)
- 4 (Somewhat Safe)
- 5 (Very Safe)
- N/A or I Don't Know

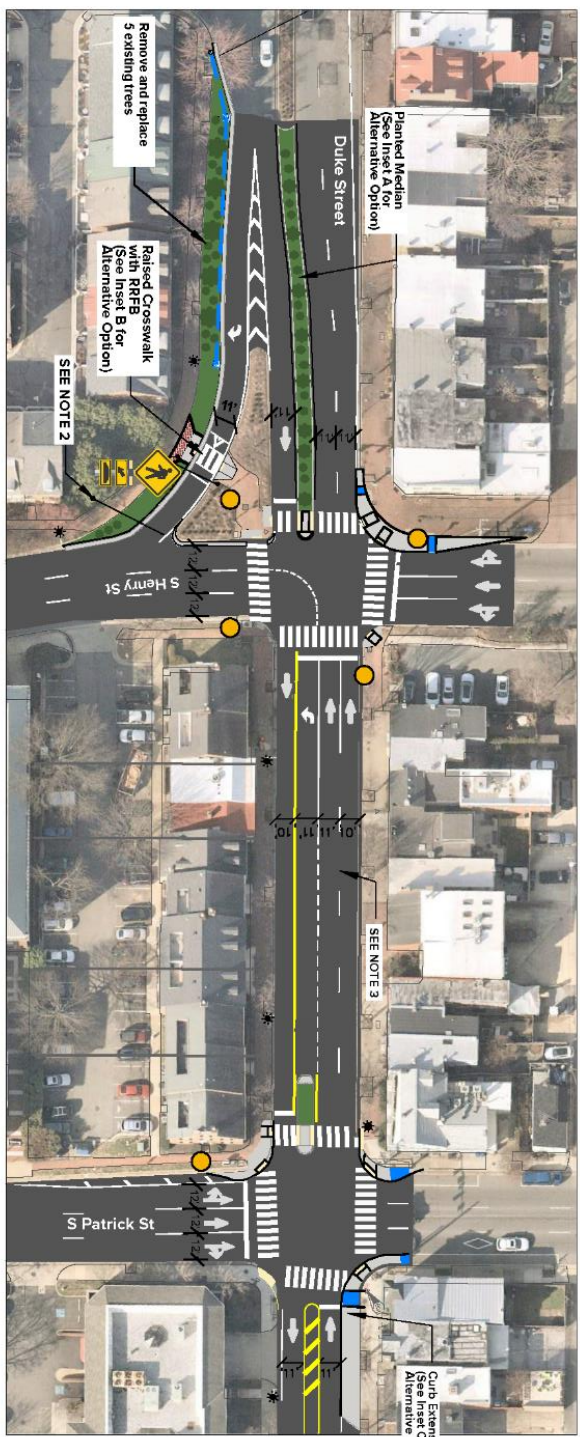
**Please indicate your experience with the intersection of Duke Street and South Patrick Street (select all that apply):**



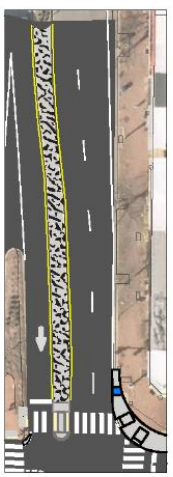
### Q3 What do you like about this concept design?



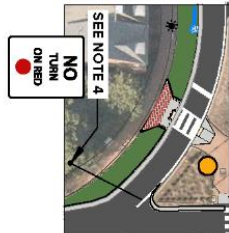
# Conceptual Designs



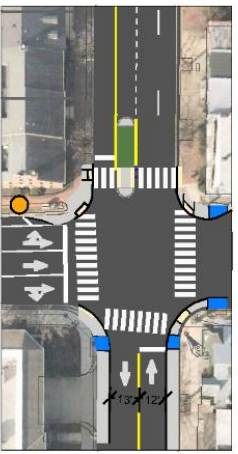
INSET A: Artistic Median Option at S. Henry



INSET B: Alternative Crosswalk Option at S. Henry



INSET C: Alternative East Leg Curb Extensions at S. Patrick



**NOTES**

1. Leading pedestrian intervals to be implemented at S. Henry St. and S. Patrick St. signalized crossings
2. Signal infrastructure and signal operations to be removed
3. Lane widths match existing conditions
4. Signal infrastructure to remain
5. Emergency Vehicle preemption to be included at all approaches



Kimley»Horn

Duke Street Safety Improvements  
Proposed Safety Concept

**LEGEND**

- Asphalt Art Opportunity
- Tactile Surface
- Concrete Fill
- Proposed Brick Fill
- Proposed Landscape Fill
- Proposed Light Pole
- Existing Light Pole
- Proposed Stormwater Pipe /Inlet
- Proposed Tree