

Project Scope

**Background:** MD-193 is a major corridor with heavy pedestrian use and a history of pedestrian-vehicle conflicts. The segment between New Hampshire Ave and Riggs Rd is a nationally recognized pedestrian fatality hotspot (Schneider et al., 2021).

**Goal:** Improve pedestrian safety along MD-193 during and after Purple Line construction.

**Objective:** Increase Pedestrian Level of Service (PLOS) by 30% through targeted safety upgrades based on crosswalk visibility, path accessibility, signalization, and traffic data.

Site Photos



Data Analysis and Decision Matrix

We evaluated the roadway using a Pedestrian Level of Service (PLOS) grading scale and determined it scored a D, reflecting several pedestrian-related issues. Below is a breakdown of each category, along with the point distribution and weighted criteria that contributed to the final LOS score for the pedestrian environment.

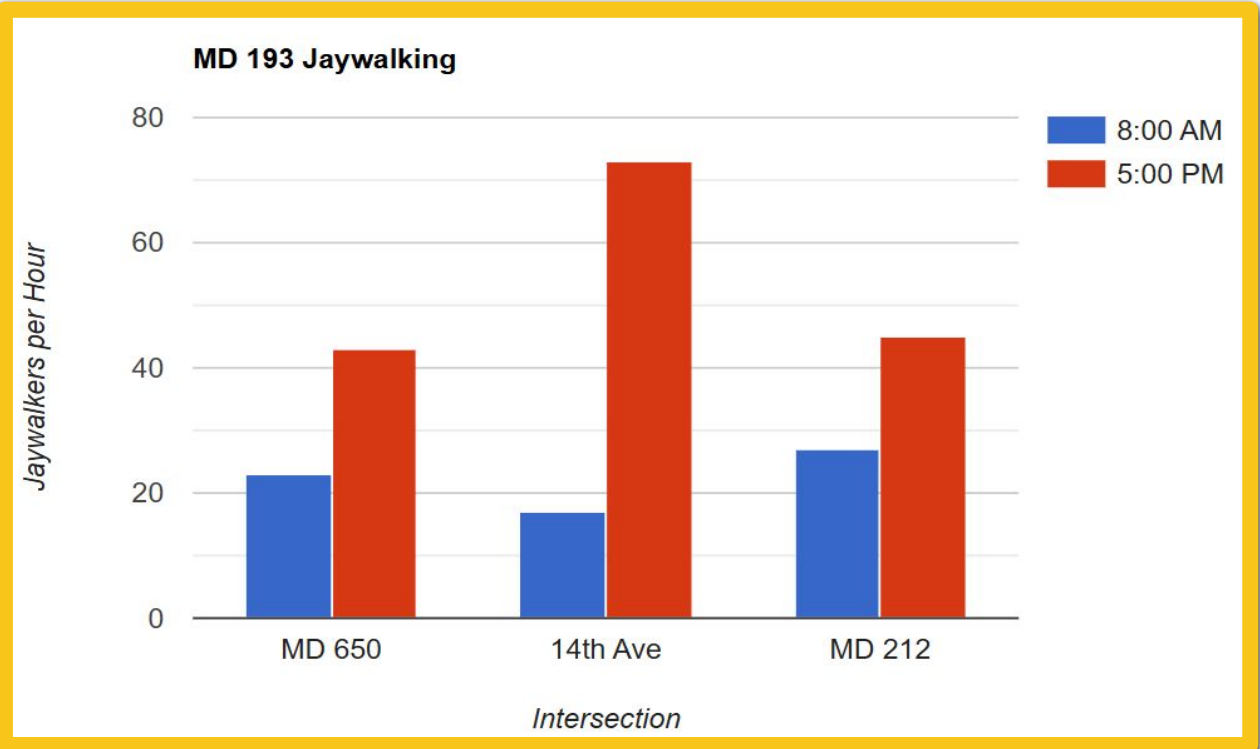
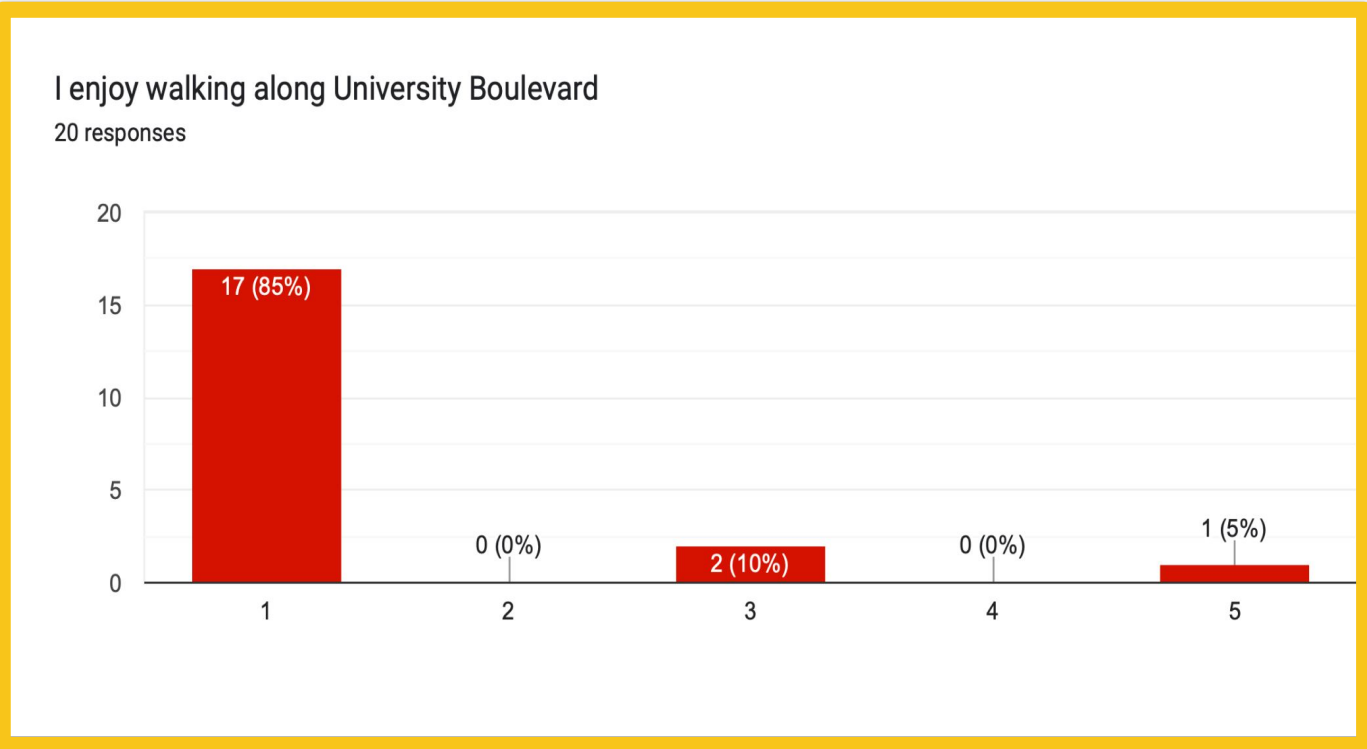
Existing Conditions PLOS

Category	Factor	Measurement/Value	Number of Points	Weight	Weighted Score
Design Factors	Path Width	1.5m	2	4	8
	Surface Quality	reasonable quality	3	5	15
	Obstructions	More than 21 obstructions per km	0	3	0
	Crossing Opportunities	none provided, difficult to cross	0	4	0
Location Factors	Support Facilities	few provided and poorly located	1	2	2
	Connectivity	poor	1	4	4
	Path Environment	unpleasant environment, close to vehicular traffic	0	2	0
User Factors	Potential for Vehicle Conflict	16 - 25 conflict points per km	1	3	3
	Pedestrian Volume	more than 350 per day	0	3	0
	Mix Path of Users	less than 20% non-pedestrians	3	4	12
Personal Security	Personal Security	poor	1	4	4
LOS D			TOTAL: 48		

Purple Line PLOS

Category	Factor	Measurement/Value	Number of Points	Weight	Weighted Score
Design Factors	Path Width	2.47m	4	4	16
	Surface Quality	reasonable quality	3	5	15
	Obstructions	between 5 and 10 obstructions per km	2	3	6
	Crossing Opportunities	none provided, difficult to cross	1	4	4
Location Factors	Support Facilities	few provided and poorly located	2	2	4
	Connectivity	poor	1	4	4
	Path Environment	Reasonable environment, between 2-3m from curb	3	2	6
User Factors	Potential for Vehicle Conflict	16 - 25 conflict points per km	1	3	3
	Pedestrian Volume	more than 350 per day	0	3	0
	Mix Path of Users	Pedestrians only	4	4	16
Personal Security	Personal Security	excellent security provided	4	4	16
LOS C			TOTAL: 90		

Design	Design criteria and constraints							Total
	Time (3)	Connectivity (2)	Decreased Potential for vehicle conflict (4)	J-walking prevention (5)	Aggressive driving reduction (4)	Implementation Feasibility (5)	Traffic Flow (1)	
No-Build	5	2	1	2	0	5	1	59
Crosswalk Efficiency	5	4	2	2.5	2	2	1	62.5
Vehicle/Pedestrian interaction Reduction	2	2	5	5	5	4	3	98



Final Recommendation

We proposed baseline improvements and three alternatives: no-build, conflict reduction, and temporary crossings. The decision matrix above showed that reducing vehicle/pedestrian conflicts was the most effective, scoring 98 for its safety benefits. The following is a list of our recommended designs:

Baseline Improvements	Ped-Veh Interaction Reduction
Crosswalk Visibility	Driveway Consolidation
Signalized Crossings	Channelized Turn Removal
Support Facilities: Bus shelters	Red Light Cameras
Pathway Obstruction Reduction	Speed Cameras
Wayfinding Signage	Pedestrian Fencing

The addition of these safety measures will increase the PLOS grade to 98, enhancing the safety, comfort, and accessibility for pedestrians. This achieves our goal of a 30% improvement in the PLOS score.

