C11 - PedSafe1

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Problem Definition

- Maryland Route 193/University Boulevard is one of the busiest and deadliest roads in the suburbs of Washington D.C.

- 9 casualties since 2008 due to vehicles impacting pedestrians

- Our task: Analyzing design flaws along the roadway and redesigning the stretch of road accordingly to improve pedestrian safety.

Design Calculations

- Conducted 4 site visits during peak weekday traffic hours
- Observed pedestrian behavior, vehicle interactions, and condition of key infrastructure (ex. sidewalks, crosswalks, traffic signals, and bus stops)
- Used a standardized 1-10 scoring system to rate each element
- All team members scored independently to ensure consistency
- Scores were averaged to identify the most unsafe zones, which helped prioritize areas for improvement

Criteria	Visit 1 – Eddie	Visit 1 – Neha	Visit 1 – Max	Visit 1 – Mia
Walkway Width	10	10	8	10
Cracking	N/A	2	3	6
Deformation/Depressions	N/A	5	3	4
Pedestrian and Driver Separation	N/A	10	7	N/A
Daytime Visibility	10	9	7	7
Nighttime Visibility	N/A	N/A	N/A	N/A
Light Poles Condition	N/A	N/A	N/A	N/A
Other Illuminated Signage Condition	N/A	N/A	N/A	N/A
Signal Visibility	5	1	3	4
Signal Duration	10	9	5	10
Signal Condition	5	5	3	5
Crossing Condition	5	5	3	5

Safety Analysis

- Found that both major intersections (New Hampshire & Riggs Rd) were the most dangerous based on our criteria

- Number of vehicle crashes have stayed relatively consistent in the past 5 years while pedestrian crashes have been declining

- 2023 saw the most pedestrian fatalities since 2009.

Zone	Overall Safety Score
Zone 1	6.88
Zone 2	7.93
Zone 3	7.57
Zone 4	9.96
Zone 5	8.14
Zone 6	8
Zone 7	8.78
Zone 8	7.94
Zone 9	8.05
Zone 10	5.69

Final Design