

DRIVER REPORT CARD

RESEARCH STUDY SUMMARY

October 2022

Executive Summary

This report provides an overview of the results of the driver report card research study conducted at 14 intersections in Seattle during the Spring and Summer of 2022. The overarching goal was to improve driver compliance at problematic intersections and gain a better understanding of driver compliance rates to inform the broader campaign as well as inform SDOT policy and practice around improving driver stopping behavior.

At the conclusion of the study, we found that the driver report cards, posted weekly at subject intersections to inform drivers of driver compliance rates, did not result in a significant improvement in driver behavior. We did not observe a consistent week over week improvement that we hypothesized. We did find, however, that drivers were consistently more likely to stop at marked crosswalks as opposed to those that were unmarked. This may indicate that drivers are unaware that they are required by Washington State law to stop at unmarked crosswalks for pedestrians to cross.

Background

SDOT received funding from the Vision Zero and Pedestrian Master Plan programs in addition to a \$250,000 grant from the Washington Traffic Safety Commission to conduct an educational campaign to raise awareness that nearly every intersection is a legal pedestrian crossing. In year 1 of the grant, we worked with community to identify 14 problematic crossing locations and either community members or SDOT collected weekly data on driver compliance for six consecutive weeks. Weekly numbers were posted at the intersection and updated with new figures on the Friday of the week when data collection took place. This was based on a [similar study conducted in St Paul](#). The research intended to include data on driver's racial bias by comparing stop rates for white and BIPOC pedestrians, however given several constraints and obstacles, adequate data was not collected in which to form any conclusions.

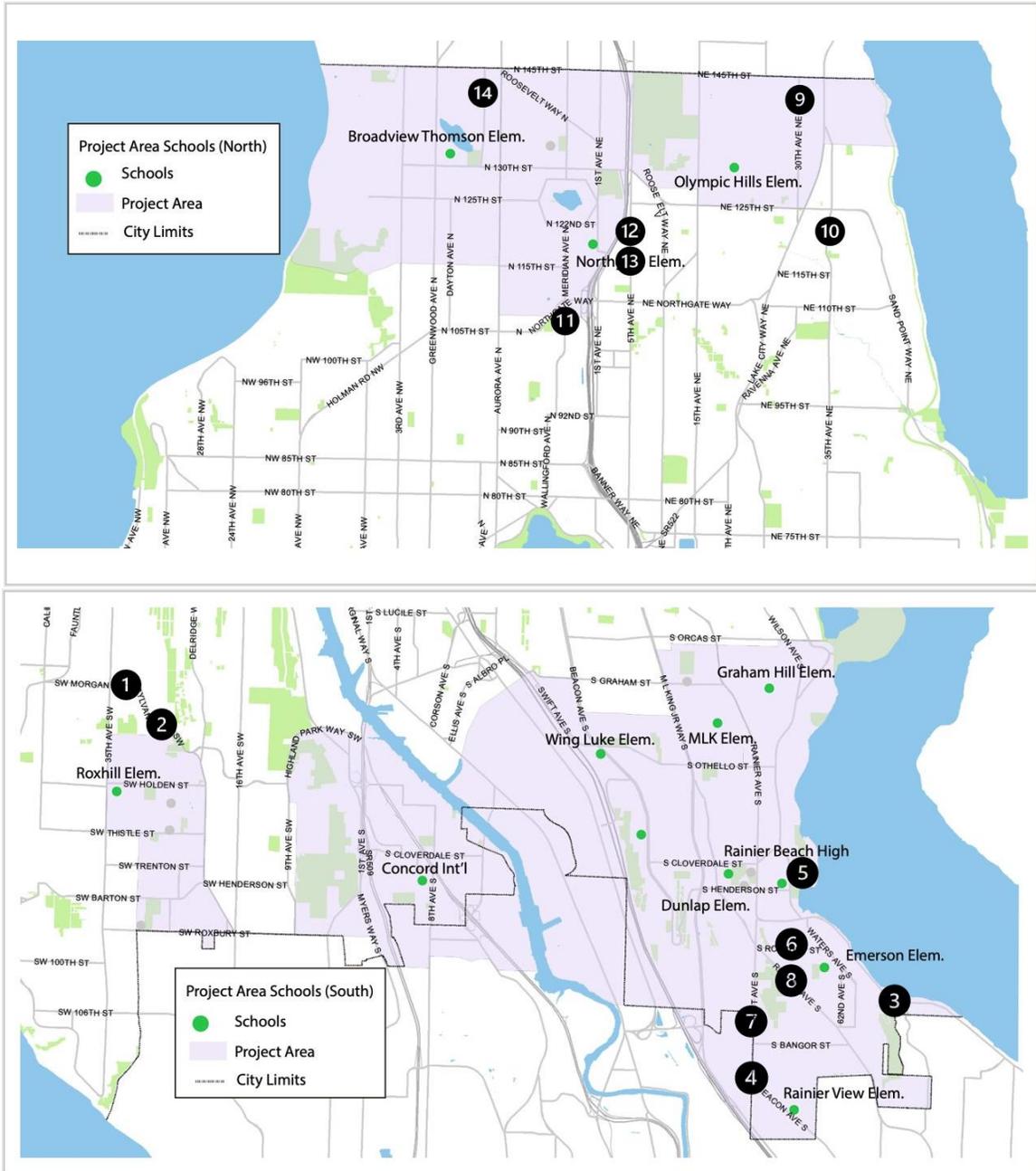
Study Locations

In partnership with the SDOT Transportation Operations Division, researchers identified the following criteria when selecting an intersection for the study:

- NOT in school zones
- Arterial
- Two travel lane max (center turn lane okay)
- Near destinations/ adequate crossing demand
- Mix of marked and unmarked locations
- Low signage density (avoid areas with visual clutter)

The 14 study intersections are shown below, the numbers on the map correspond to the locations in the table on page 4. Nearly all intersections were located within the attendance boundary for Seattle Public Schools with higher than citywide average rates for free and reduced lunch, students of color, and

Limited English proficiency (shown in purple), per the requirement of the grant. They are also parts of the city that have experienced historic disinvestment in transportation infrastructure, such as sidewalks.



Signage

Each week, the average rate of driver stop compliance for all researchers was reported via signage, as well as the best to date at that location. New data was collected and shared with SDOT on Tuesdays, and crews updated the signage with the week's data each Friday. The driver report card signs started at 30x30 for round 1, but were deemed to be too small so were increased to 36x36 for all other rounds and locations with the exception of the Rainier Ave S and S Cornell intersection where the sign was 40x40 given the width of the roadway and higher than average driver speeds. Signs were placed approximately

100' from the crosswalk and the QR code signs were 4x4 and posted at chest level on the backside of the post/ poll. These were intended to inform pedestrians interested in learning more and linked to the [SDOT Blog](#).



Methodology

SDOT's methodology generally followed "Protocol For Driver Yielding To Crossing Pedestrians" developed by researchers at the Texas A&M Transportation Institute but did not include the use of camcorders. This included staged crossings (active data collection not passive) where researchers approached the crosswalk when drivers approached and placed one foot in the crosswalk, then waited to see if the approaching driver(s) did or did not stop. By placing one foot in the crosswalk, the researcher is occupying the crosswalk. The other researcher recorded results away from the intersection and out of immediate sight from drivers.

The first round of research was collected by pairs of high school students in partnership with Delridge Neighborhood Development Association. Subsequent data collection was collected by pairs of SDOT staff. These individuals were roughly the same age, gender, and similar in dress to control for external factors to the study. They appeared in plain clothes (not wearing a reflective vest or other "official" attire) which may have included a personal bag/purse, but were asked to not actively using a phone, headphones, or other items that may make drivers believe they are distracted.

Data collection was conducted on days with clear weather and during daylight hours. The goal was for each researcher to collect compliance on at least 25 approaching drivers. If the intersection had a low volume of drivers, a timer was set for 15 minutes, and the data collected within that timeframe was used in the weekly data report.

Results

It is unclear whether the educational campaign improved driver compliance rates due to limited duration and scope of this study and the challenges with measuring the awareness, attitudes, and beliefs of drivers.

The below table summarizes the dates data was collected, location of intersections, if signage was posted on one vehicle approach or both, whether the location had a marked or unmarked crosswalk, and the average weekly compliance rate. The highest average at each location is highlighted in yellow.

					Average Weekly Compliance Rate					
Dates	Number	Location	Signage Approach	Marked Crosswalk (Y/N)	WEEK 1	WEEK 2	WEEK 3	WEEK 4	WEEK 5	WEEK 6
Round 1 3/2/22- 4/20/22	1	SW Morgan St & 34 th Ave SW	One	Y	49%	28%	44%	22%	27%	26%
	2	Sylvan Way SW & SW Sylvan Heights Dr	One	N	0%	10%	11%	17%	9%	10%
Round 2 5/3/22- 6/7/22	3	Rainier Ave S & Cornell Ave S	One	Y	11%	13%	6%	10%	5%	11%
	4	Beacon Ave S & S Leo St	One	N	2%	4%	8%	2%	4%	2%
	5	Seward Park Ave S & Wabash Ave S	Both	N	18%	18%	10%	17%	16%	8%
	6	54th Ave S & S Roxbury St	Both	N	12%	22%	20%	12%	22%	19%
	7	51st Ave S & S Creston St	Both	Y	14%	18%	26%	24%	17%	18%
	8	55th Ave S & Renton Ave S	Both	Y	25%	23%	21%	24%	22%	25%
Round 3 7/5/22- 8/10/22	9	30th Ave NE & NE 140th St	Both	Y	28%	27%	34%	36%	31%	46%
	10	35th Ave NE & NE 123rd St	Both	N	0%	5%	5%	1%	6%	3%
	11	Meridian Ave N & N 107th St	Both	N	1%	4%	2%	4%	0%	8%
	12	5th Ave NE & NE 120th St	Both	N	2%	1%	10%	15%	10%	10%
	13	5th Ave NE & NE 117th St	Both	Y	20%	20%	24%	37%	30%	35%
	14	Linden Ave N & N 141st St	One	N	8%	9%	7%	8%	6%	32%

The highest rate of compliance (49% in Week 1 and 33% overall average) was observed at the Neighborhood Greenway crossing at SW Morgan St & 34th Ave SW where two marked crosswalks, two pedestrian refuge islands are present, and school crossings signage.



Google map image of the crossing at SW Morgan St & 34th Ave SW

The lowest rates of compliance were observed at two locations – Meridian Ave N & N 107th St and 35th Ave NE & NE 123rd St – both with 0% (Week 5 and Week 1 respectively). Overall, the compliance at these two locations averaged out to be just 3% overall.

Meridian Ave N & N 107th St has two general purpose lanes, a center turn lane, separated bikes lanes and a parking lane on the west side of the roadway. There is an advanced pedestrian warning with a sign that indicates “Seniors X-ing” and clear sightlines, but no marked crosswalk.



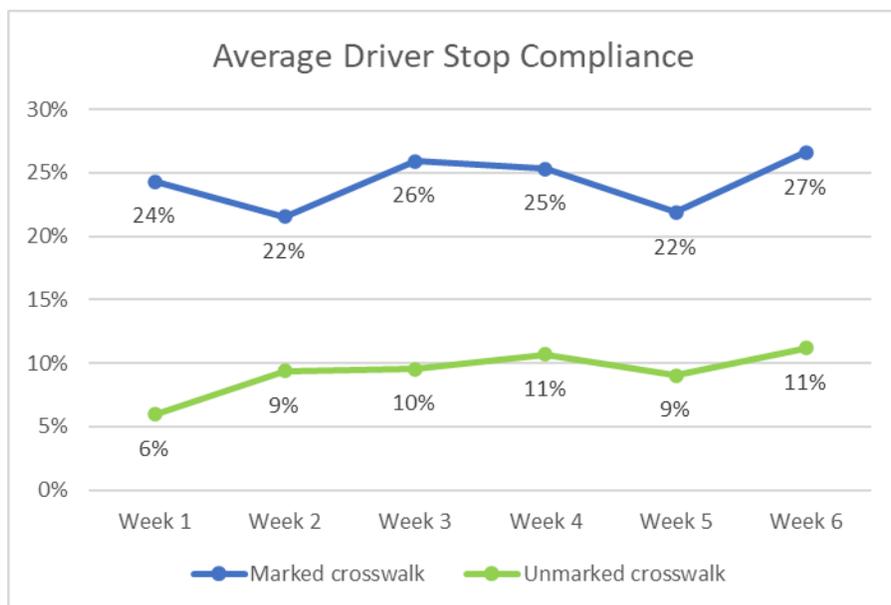
Google map image of the crossing at Meridian Ave N & N 107th St

35th Ave NE & NE 123rd St is a wide road with two general purpose lanes, transit stops on the SW and NE corners making for clear sightlines, and no marked crosswalk.

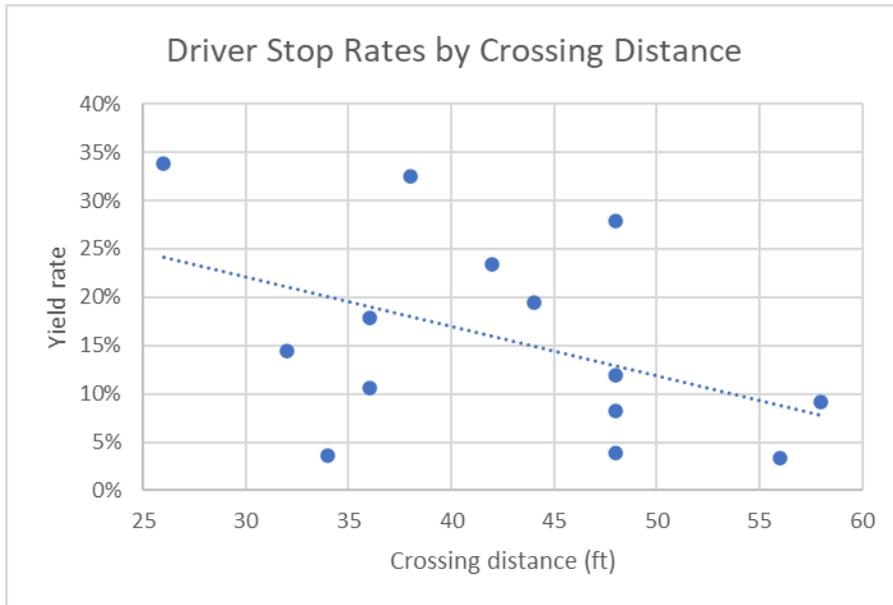


Google map image of the crossing at 35th Ave NE & NE 123rd St

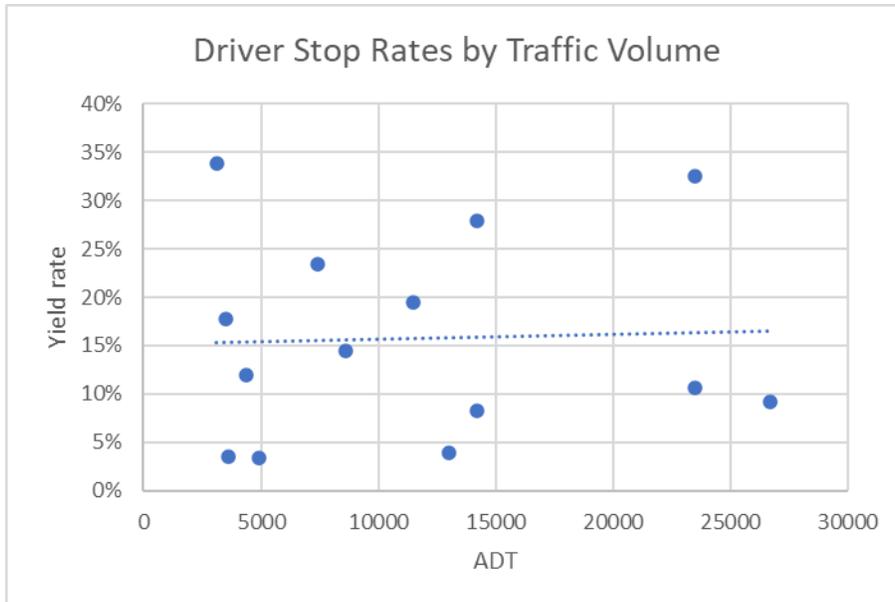
The line graph below illustrates that there was not a dramatic increase in driver stopping compliance over the course of the six-week study, but there may be a modest overall increase at unmarked crossings. However, it does indicate that driver stop compliance was strongly tied to whether a crossing was marked. This could indicate that drivers are unaware that they are required by Washington State law to stop for pedestrians at unmarked crosswalks.



We can also glean from the data a potential correlation between the rate of driver compliance and the width of the roadway at the crossing. This is the distance a pedestrian must walk or roll in which they are vulnerable to vehicles, known as the “conflict zone.”



Lastly, traffic volumes - as measured by average daily traffic – was not a strong indicator of whether drivers stopped for pedestrians.



Caveats

- In Round 1, we did not ask high school students to place one foot in the crosswalk due to concerns for safety. Instead, we asked them to stand on the edge of the curb and attempt to make eye contact with drivers.
- During Week 6 of Round 3, one of the primary researchers was unavailable so another researcher, who was not similar in appearance, served as a substitute.
- During Week 4 of Round 3, the researchers opted to collect data earlier in the day to avoid potential illness during a heat wave.
- Researchers did not collect *passive* pedestrian counts, meaning counting the number of pedestrians at a location who were not part of this research study. This may have been useful to determine if drivers are more likely to stop at marked crosswalks because pedestrian volumes are consistently higher at those locations and drivers anticipate them and are more likely to stop.

Recommendations

- Drivers are significantly more likely to comply at marked crosswalks. Marking crosswalks is pivotal to improving driver compliance and thus pedestrian mobility and safety.
- SDOT should create an easy way for community members to request a crosswalk, including what criteria SDOT uses when making their determination. The resources should be translated into Tier 1 languages.
- This study highlighted a need for SDOT to do a broad reaching educational campaign to inform drivers they are required to stop at all crosswalks, even those that are not marked.
- SDOT should provide communities resources to collect and share data on driver stop compliance within their local community.
- Safety considerations, including proper knowledge of the parameters of the study, researcher responsibilities, and resources should be at the forefront of designing studies like this one, in particular when partnering with high school students, in order to promote physical and emotional safety for all participants.
- SDOT should have standard safety protocols in place for when staff working outside the office encounter harassment from members of the public, in particular in instances where sexism and racism are likely factors.