

Dover, NJ Asphalt Art Project

Survey and Crosswalk Observation Results



Avenues in Motion

Improving Community Transportation Options

Report by Avenues in Motion

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Avenues in Motion is a nonprofit organization and is one of eight Transportation Management Associations (TMA) in New Jersey. The TMAs are tasked with implementing strategies and programs that address traffic congestion, economic development, air quality, roadway user safety and livability issues. Each TMA is responsible for a designated service area, with Avenues in Motion being responsible for the northwestern area of the state. This area encompasses all of Morris, Warren and Sussex counties, as well as suburban Essex, Passaic and Union counties.

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OVERVIEW

Avenues in Motion partnered with the Town of Dover to conduct a pre- / post-project evaluation of their Asphalt Art Project. The Asphalt Art Project featured artistic paint designs along Chestnut Street in Dover from Academy Street to Orchard Street. This is a popular area that is in close proximity to downtown Dover, Academy Street School, the Dover Train Station, and local bus stops on Blackwell Street. Crescent Field is a park in Dover that features soccer fields, basketball courts, playgrounds, and a walking path. Chestnut Street runs directly through Crescent Field separating the park into two pieces and the sections are connected by a midblock crosswalk.

Avenues in Motion utilized a survey and a crosswalk observation of the midblock crosswalk to evaluate the safety perceptions, attitudes, and driving behaviors both before and after the Asphalt Art Project was installed on Chestnut Street. Avenues in Motion also intended to conduct a pre-/post-project speed study of the area using a sign-mounted radar device to determine if the Asphalt Art would slow driver speeds, however the radar sign experienced a malfunction during the study and had to be repaired. Avenues in Motion can revisit the area to conduct future speed studies in partnership with Dover.

The Asphalt Art Project was completed and unveiled on Saturday, August 26th, 2023, during the Dover Arts Festival that took place on Chestnut Street and Crescent Field. Rounds of surveys and crosswalk observations took place both before and after the final artwork was completed.

Survey results showed that participants perceived that the presence of the Asphalt Art Project would reduce drivers' speed on Chestnut Street and increase the rate of drivers stopping for pedestrians at the midblock crosswalk. Results also showed that most participants felt that the Asphalt Art Project would make the area more attractive and they intended to walk to visit the area more often because of the artwork. Notable survey results include:

- ◆ In the post-project survey, 41% of participants believed people will drive slower on Chestnut Street with the presence of the Asphalt Art Project, compared to 16% in the pre-project survey, a 25% increase in perceived slower driving speeds.
- ◆ In the post-project survey, 72% of participants believed it was 'Likely' or 'Very Likely' for drivers to stop for pedestrians crossing at the midblock crosswalk on Chestnut Street after the project was complete.
- ◆ In the post-project survey, 82% of participants believed the project made the area more attractive.
- ◆ In the post-project survey, 66% of participants said that Dover's Asphalt Art Project on Chestnut Street made them want to walk to visit the area more often.

Results from the crosswalk observation showed that there was a small sample size of driver and pedestrian conflicts at the midblock crosswalk during the observations. There was a high rate of drivers stopping for pedestrians in the pre-project observation, and that rate remained high in the post-project observation. Although results showed that there was little difference in driver compliance from the pre-project to the post-project observation, it should be noted that the midblock crosswalk features many crosswalk safety enhancements that are likely increasing safe behaviors at this location that the Asphalt Art complements.



Artwork along Chestnut Street near midblock crosswalk



Artwork along Chestnut Street



Artwork at Chestnut Street & Orchard Street



Artwork at Second Street & Academy Street

SURVEY

Avenues in Motion conducted a pre-project survey before the Asphalt Art Project's installation and a post-project survey after the program was completed. The survey was designed similarly to surveys for other demonstration projects conducted in New Jersey¹. Surveys were available in both English and Spanish and both in-person and online promotion methods were used to gather responses. Four in-person survey promotion sessions were held at Crescent Field where participants had the option to complete paper versions of the survey or respond online using a QR code. In addition, yard signs were placed at Crescent Field to promote both the pre- and post-project surveys.

Avenues in Motion worked with several partners to promote the survey on local social media pages. The Dover Police Department, Connecting Dover, Dover School District, Dover Health Department, Dover Department of Recreation, as well as local sports teams that frequently practice at Crescent Field shared social media posts promoting the survey.

The surveys featured a total of 15 questions including an agreement to participate question, an option to provide email for future participation in transportation-related projects in Dover and an option to provide additional comments about the project or traffic safety in Dover. Results below show responses to multiple choice or check all that apply style questions. There were a total of 309 responses to the pre-project survey (208 in English and 101 in Spanish) and 237 total responses to the post-project survey (174 English and 63 Spanish).

The pre-project survey was available from July 14th, 2023 until August 21st, 2023 and the post-project survey was available starting August 26th, 2023 (the day the Asphalt Art project was completed) until November 15th, 2023.



Pre-project Survey in-person promotion



Pre-project Survey promotion signs



Post-project Survey promotion at Dover Arts Festival



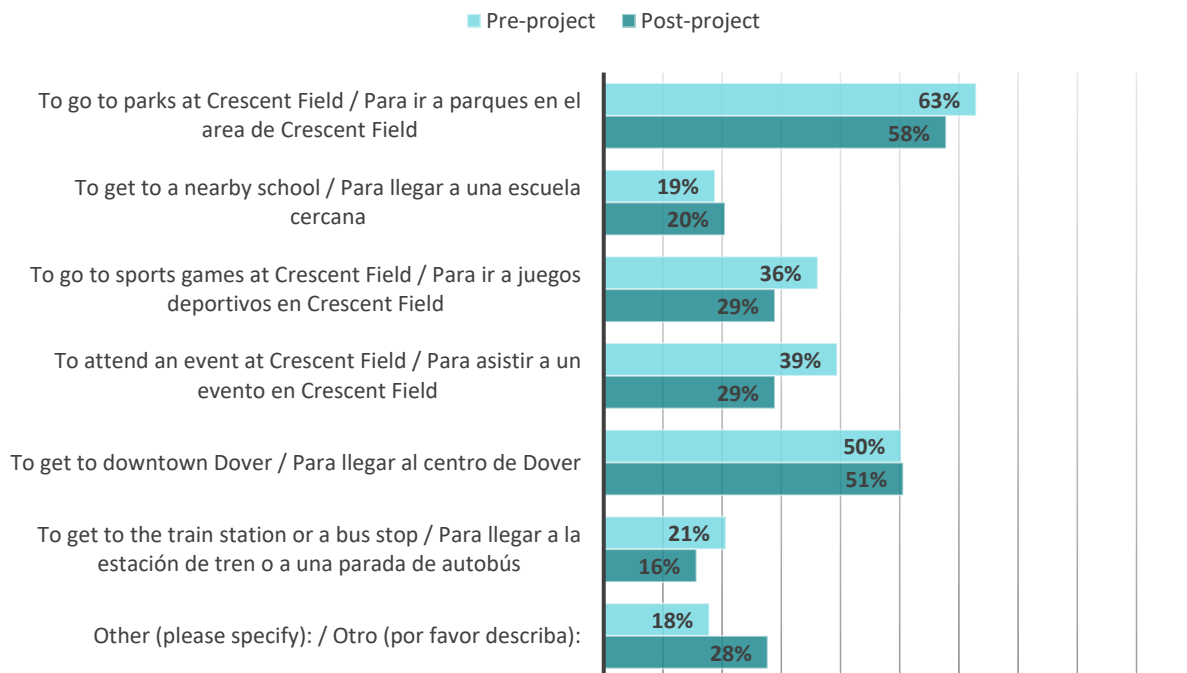
Post-project Survey promotion signs

¹ North Jersey Transportation Planning Authority, Alan M. Voorhees Transportation Center, & Sustainable Jersey. (2019). Pedestrian Safety Demonstration Project: Borough of Milltown, Middlesex County, NJ. <https://njbikeped.org/milltown-pedestrian-safety-demonstration-project-2019/>

Survey Results

1.) What brings you to this area? (Check all that apply)

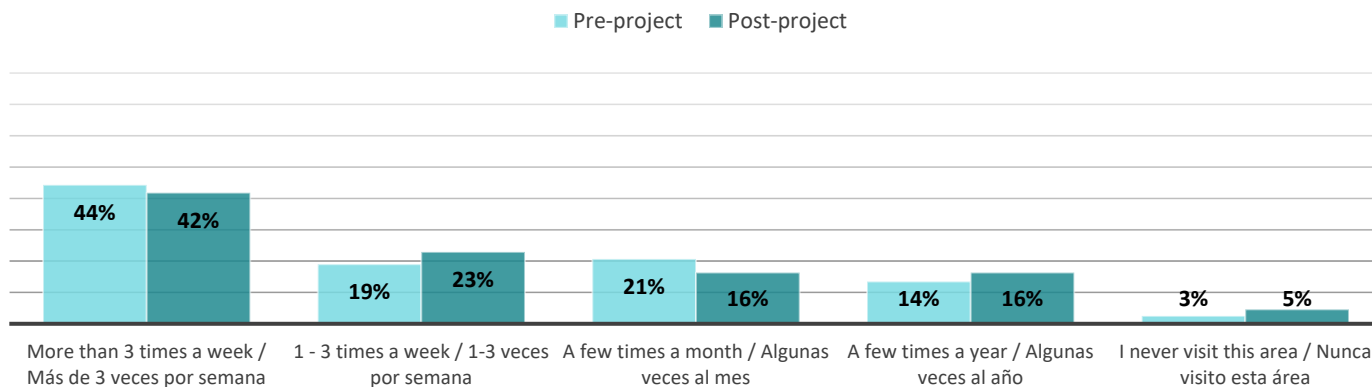
Qué te trae por esta zona? (Marque todo lo que corresponda)



- ◆ In both surveys, participants reported the most common reasons they visit the Chestnut Street area is to go to the parks at Crescent Field or to get to downtown Dover.

2.) On average, how often do you visit Chestnut Street and Crescent Field?

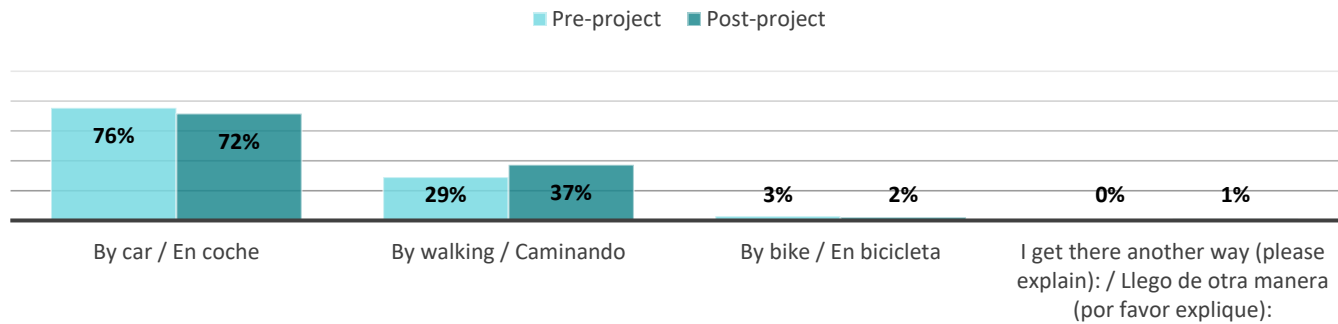
En promedio, ¿con cuanta frecuencia visita la calle Chestnut y Crescent Field?



- ◆ In both surveys, the majority of survey participants reported that they are frequent visitors to the Chestnut Street and Crescent Field area with more than 40% reporting they visit 3 or more times a week.

3.) How do you usually get to Chestnut Street and Crescent Field?

¿Cómo suele llegar a Chestnut Street y Crescent Field?



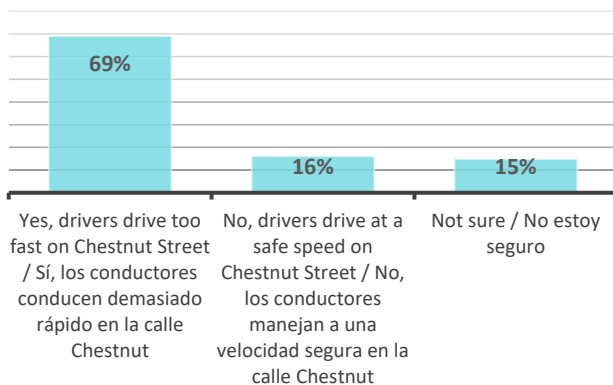
- ◆ Most participants say they get to this area by car while there was an 8% increase in participants saying they walk to get to the area in the post-project survey.

4.)

Before Project

Do you believe people driving on Chestnut Street drive too fast?

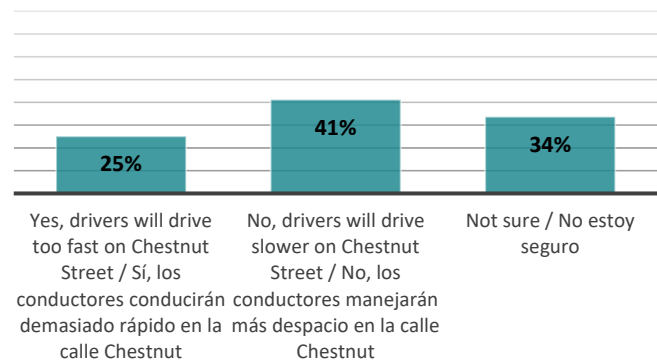
¿Cree que las personas que conducen en Chestnut Street conducen demasiado rápido?



After Project

With the roadway art project on Chestnut Street, do you believe people driving will drive too fast on Chestnut Street?

Con el proyecto de arte vial en la calle Chestnut, ¿crees que las personas que manejan conducirán demasiado rápido en la calle Chestnut?



- ◆ The wording of the question and answer options related to perception of speeding on Chestnut Street varied from the pre-project survey to post-project survey to account for the Asphalt Art Project's presence on the roadway.
- ◆ In the pre-project survey, 69% of respondents believed that people drove too fast on Chestnut Street while 16% believed people drove at a safe speed.
- ◆ In the post-project survey, 25% of participants believed that drivers will drive too fast on Chestnut Street with the presence of the Asphalt Art Project, a 44% decrease from the pre-project survey. Additionally, 41% of participants believed people will drive slower on Chestnut Street with the presence of the Asphalt Art Project, compared to 16% in the pre-project survey, a 25% increase in perceived slower driving speeds.
- ◆ There was also a 19% increase in the post-project survey of participants responding that they were unsure of the speeding behaviors on Chestnut Street.

5.)

Before Project



New Jersey law states that drivers must stop for pedestrians at crosswalks that do not have a traffic light or stop sign. How likely is it for drivers to stop for pedestrians to cross at this crosswalk on Chestnut Street between the two parks?

La ley de Nueva Jersey establece que los conductores deben detenerse ante el peatón en los cruces peatonales que no tienen semáforo o señal de alto. ¿Cuál es la probabilidad de que los conductores se detengan para que los peatones crucen en este cruce de peatones en la calle Chestnut entre las dos canchas de fútbol?

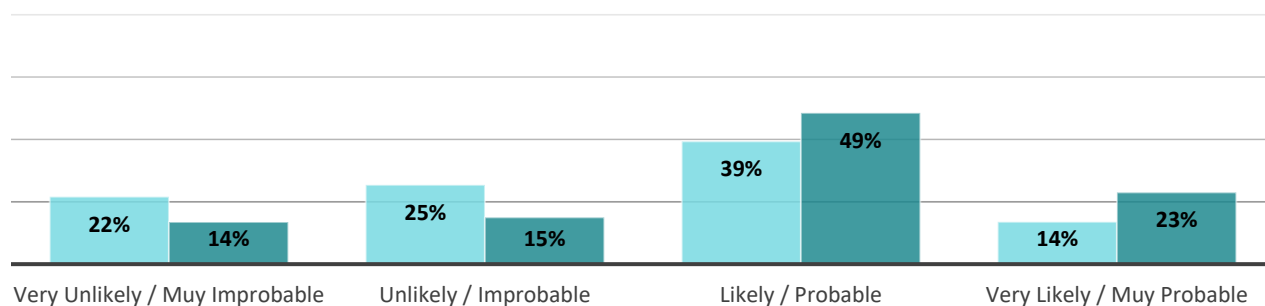
After Project



New Jersey law states that drivers must stop for pedestrians at crosswalks that do not have a traffic light or stop sign. With the roadway art project on Chestnut Street, how likely is it that drivers will stop for pedestrians to cross at this crosswalk on Chestnut Street between the two parks?

La ley de Nueva Jersey establece que los conductores deben detenerse ante el peatón en los cruces peatonales que no tienen semáforo o señal de alto. Con el proyecto de arte vial en la calle Chestnut, ¿cuál es la probabilidad de que los conductores se detengan para que los peatones crucen en este cruce de peatones en la calle de Chestnut entre las dos canchas de fútbol?

■ Pre-project ■ Post-project



- ◆ The wording of the question options related to perception of drivers stopping for pedestrians at the mid-block crosswalk on Chestnut Street varied from the pre-project survey to post-project survey to account for the Asphalt Art Project's presence on the roadway.
- ◆ In the post-project survey, 72% of participants believed it was 'Likely' or 'Very Likely' for drivers to stop for pedestrians crossing at the mid-block crosswalk on Chestnut Street after the project was complete.
- ◆ In the post-project survey, there was a 10% increase in survey participants believing drivers were 'Likely' to stop for pedestrians at the mid-block crosswalk, and a 9% increase in survey participants believing drivers were 'Very Likely' to stop for pedestrians at the midblock crosswalk.

6.)

Before Project



Would a roadway art project like the one pictured above make this area:

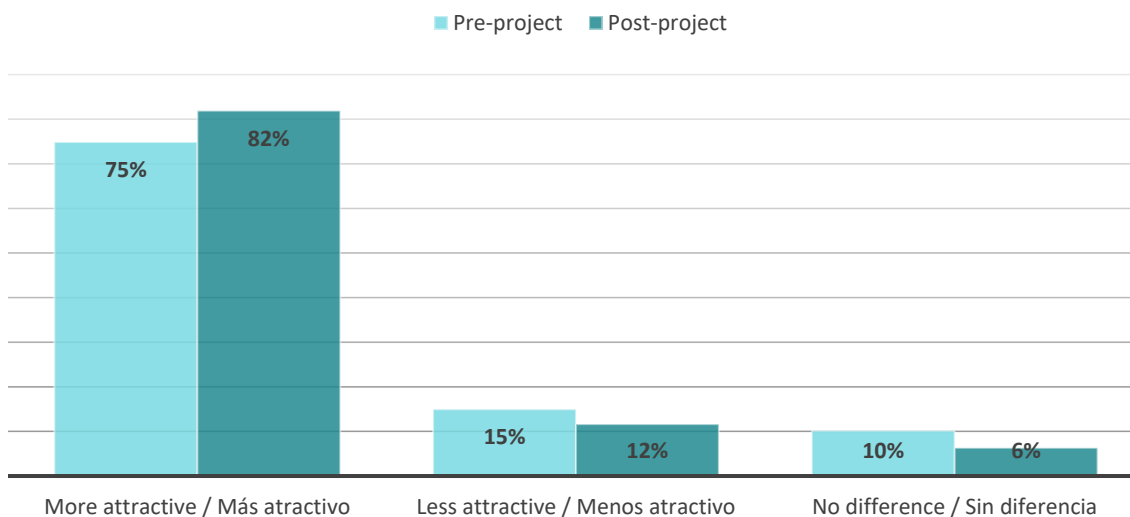
¿Un proyecto de arte vial como el que se muestra arriba haría que esta área?:

After Project



Does the new roadway art on Chestnut Street in Dover make this area:

¿El nuevo arte vial en Chestnut Street en Dover hace que esta área se vea:



- ◆ The wording of the question options related to the attractiveness of an asphalt art project on Chestnut Street varied from the pre-project survey to post-project survey to account for the Asphalt Art Project's presence on the roadway.
- ◆ Before the installation of Dover's Asphalt Art Project, 75% of the pre-project survey participants believed an asphalt art project would make the area of Chestnut Street more attractive.
- ◆ After the installation of Dover's Asphalt Art Project, 82% of post-project survey participants believed the asphalt art project made the area more attractive.

7.)

Before Project



Would a roadway art project like the one pictured above make you want to walk to visit the area of Chestnut Street and Crescent Field more or less often?

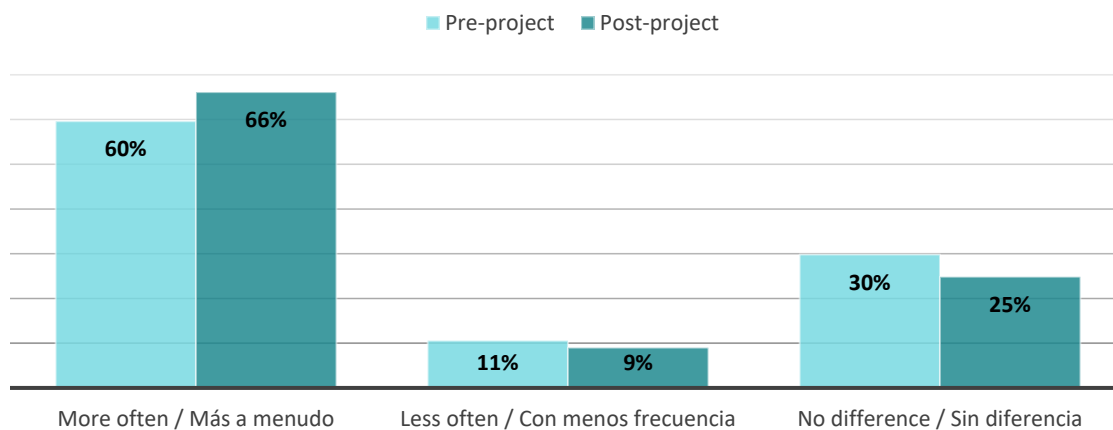
¿Un proyecto de arte vial como el que se muestra arriba promovería el caminar visitar esta área con más o menos frecuencia?:

After Project



Does the new roadway art in Dover make you want to walk to the area of Chestnut Street and Crescent Field more or less often?

¿El nuevo arte vial en Dover te hace querer caminar para visitar esta área con más o menos frecuencia?:



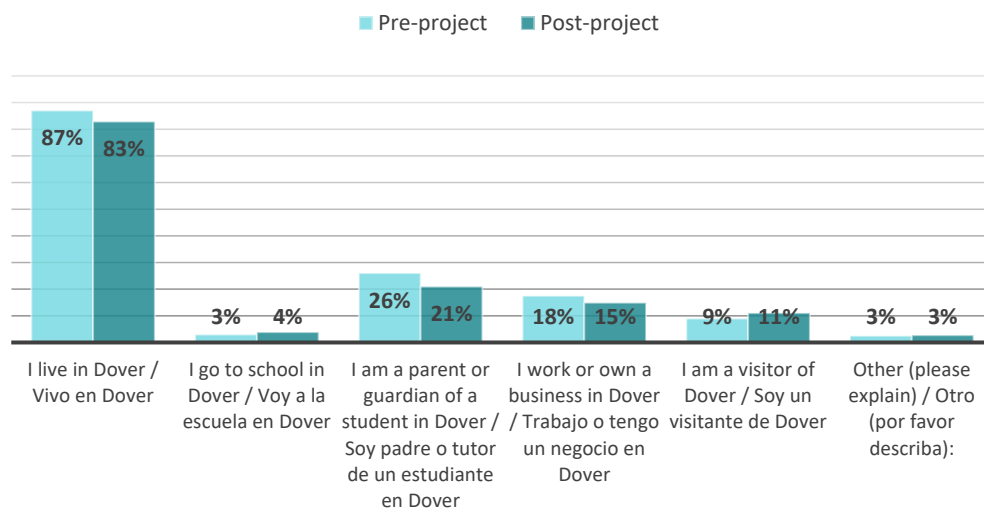
- ◆ The wording of the question options related to if an asphalt art project would make the survey participants want to visit the area more varied from the pre-project survey to post-project survey to account for the Asphalt Art Project's presence on the roadway.
- ◆ Before the installation of Dover's Asphalt Art Project, 60% of survey participant said that an asphalt art project would make them want to walk to visit the area more often.
- ◆ After the installation of Dover's Asphalt Art Project, 66% of survey participants said that Dover's Asphalt Art Project on Chestnut Street made them want to walk to visit the area more often, a 6% increase from the pre-project survey.

Participant Demographics

Participants were reminded that all questions were optional and they were able to skip any question they were not comfortable answering.

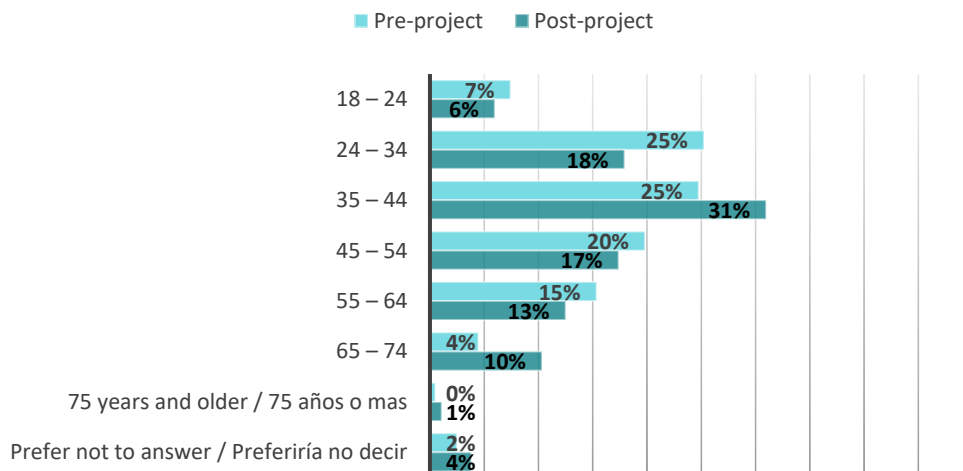
8.) Check all the options below that best describes you:

Marque todas las opciones a continuación que mejor lo describan:



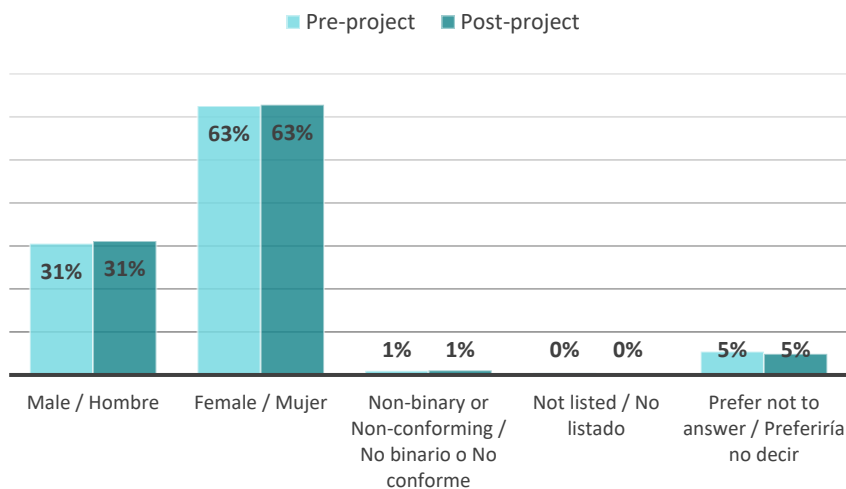
9.) What is your age?

¿Cuántos años tiene?



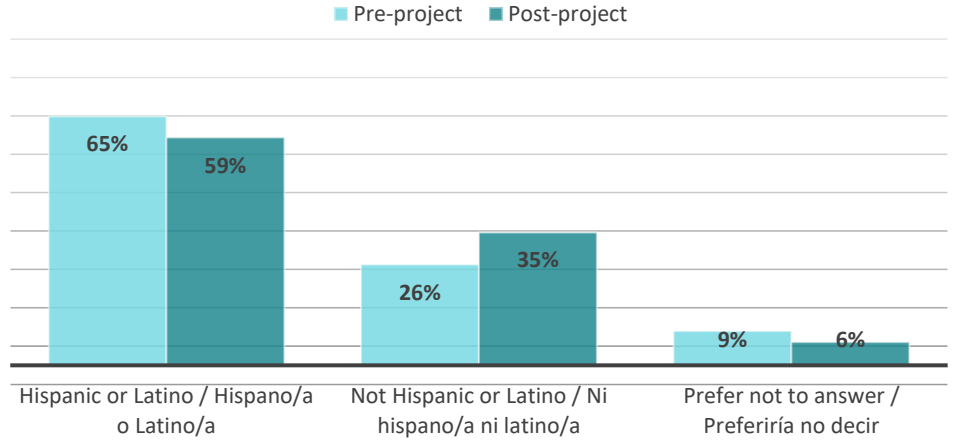
10.) Gender: How do you identify?

Género: ¿Cómo te identificas?



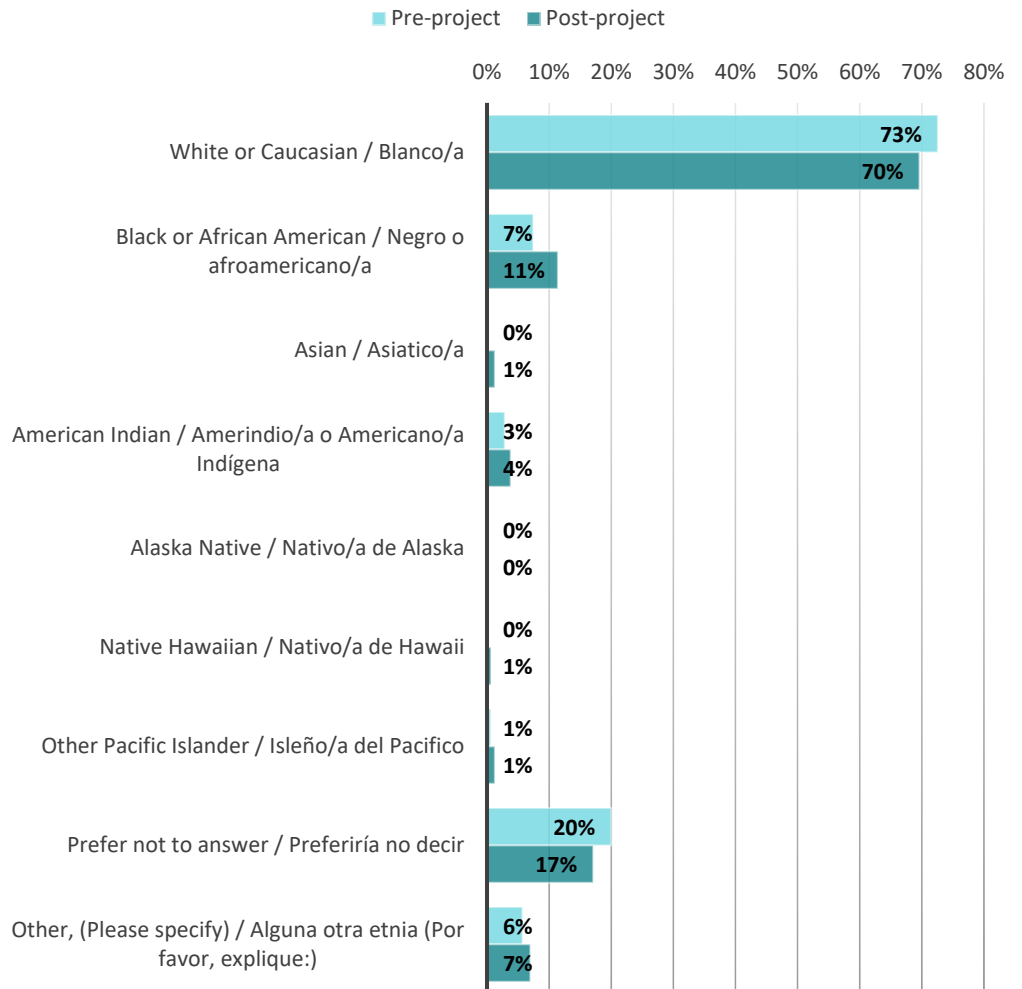
11.) What is your ethnicity?

¿Cual es su etnia?



12.) What is your race? (check all that apply)

¿Cual es su raza? (marque todos los que apliquen)



CROSSWALK OBSERVATION

Avenues in Motion conducted crosswalk observations on Chestnut Street in Dover in August 2023 before the installation of the Asphalt Art and again in September 2023 after the installation of the Asphalt Art. The crosswalk observation was conducted to assess if the Asphalt Art impacted the behaviors of drivers stopping for pedestrians at the midblock crosswalk on Chestnut Street.



Map of area and camera setup. Image Source: Google Earth

Prior to conducting the crosswalk observations, Avenues in Motion was informed of increased pedestrian and driver activity in the area during the late afternoons and early evenings. This likely coincides with increased pedestrian activity visiting the area on foot during after-school hours along with increased driving traffic during evening commute hours.

To assess the impacts of the Asphalt Art Project on driver and pedestrian conflicts, Avenues in Motion discretely set up a GoPro camera to record the behaviors of drivers to determine if drivers were more likely to stop for pedestrians at the midblock crosswalk after the completion of the Asphalt Art Project. Both observations were conducted during a two-hour time period from 3:30 p.m. to 5:30 p.m. on Tuesdays. The pre-project observation was conducted on August 8th, 2023 and the post-project observation was conducted on September 12th, 2023. Both observations were conducted approximately two and half weeks before and after completion of the Asphalt Art project's completion on Chestnut Street on August 26th.



View from GoPro Camera



GoPro camera clipped to fence

Crosswalk Observation Results

After reviewing the video footage gathered during the crosswalk observations, results showed that conflicts between drivers and pedestrians were already low in the pre-project observation and remained low in the post-project observation with a relatively high rate of driver compliance in stopping for pedestrians at the midblock crosswalk.

Table 1 shows that in the pre-project observation on August 8th, 22 drivers were compliant in stopping for pedestrians at the midblock crosswalk while six drivers did not stop for pedestrians. In the post-project observation on September 12th, 17 drivers were compliant in stopping for pedestrians at the midblock crosswalk while five drivers did not stop for pedestrians. Results show that there was little to no change in driver behavior after the Asphalt Art project's completion. This is likely due to the low sample size of observed driver and pedestrian conflicts, the high rate of compliance in both the pre-project and post-project crosswalk observations, and the current crosswalk visibility enhancements at the midblock crosswalk.



Chestnut Street midblock crosswalk before Asphalt Art Project



Chestnut Street midblock crosswalk after Asphalt Art Project

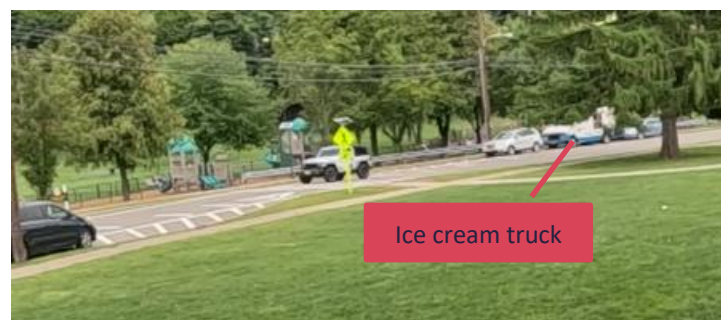
Table 1 Crosswalk Observation Results

	Pre-Project: August 8, 2023			Post-Project: September 12, 2023			% Change
	Compliant	Not Compliant	% Non-Compliant	Compliant	Not Compliant	% Non-Compliant	
Drivers failing to stop for pedestrians crossing Chestnut Street	22	6	21.4%	17	5	22.7%	+1.3%

The midblock crosswalk on Chestnut Street is currently equipped with infrastructure that enhances crosswalk and pedestrian visibility including curb extensions, flashing pedestrian signage, pavement markings, a raised crosswalk and speed table². This infrastructure is meant to slow drivers while increasing visibility of pedestrians and the crosswalk. The current crosswalk visibility enhancing infrastructure at the midblock crosswalk on Chestnut Street may be leading to increased driver compliance in stopping for pedestrians while reducing conflicts between drivers and pedestrians. It is possible that the Asphalt Art Project will complement the current safe behaviors at this crosswalk.

² Federal Highway Administration. (2018, July 18). Guide for Improving Pedestrian Safety at Uncontrolled Crossing Locations. https://www.fhwa.dot.gov/innovation/everydaycounts/edc_5/docs/STEP-guide-improving-ped-safety.pdf

Other variables that may have influenced results of the observation include the project's alignment with the school calendar. The Asphalt Art Project was completed on August 26th just before the start of Dover School District's school year, which includes Academy Street Elementary school located less than 0.3 miles away from the project area. Therefore, the pre-project observation had to take place before the start of the school year and the post-project observation took place during the school year. This may have impacted walking and driving patterns in the area. In addition, an ice cream truck



Ice cream truck parked near Chestnut Street midblock crosswalk

regularly parks on Chestnut Street near the midblock crosswalk. Some drivers were observed stopping or slowing for the ice cream truck just before approaching the midblock crosswalk. Ice cream truck's presence may have reduced driver speeds and increased the likelihood of also stopping for a pedestrian at the crosswalk. The ice cream truck was present for both the pre-project observation and the post-project observation.

CONCLUSION

Dover's Asphalt Art Project created a colorful and vibrant space in a popular area in Dover's community while drawing attention to public art, placemaking strategies, roadway infrastructure, and road use behaviors. Many survey participants believed that the Asphalt Art increased the likelihood that drivers will stop for pedestrians at the midblock crosswalk on Chestnut Street as well as slow driver speeds. Avenues in Motion's intended to conduct a speed study to confirm if the Asphalt Art impacted driver speeds, however the speed radar device malfunctioned during the study and had to be repaired so speed data was unable to be included in this study. The survey results also showed that most participants reported positive perceptions of the project with 82% of participants reporting that they felt the completed project made the area more attractive and 66% reporting that they plan to walk to visit the area more often. Results from the crosswalk observations showed that many drivers stopped for pedestrians at the midblock crosswalk before the Asphalt Art Project and a similar result was found after the project was complete. It is possible that the artwork may enhance the crosswalk visibility infrastructure already in place at this location.

Avenues in Motion applauds Dover's efforts in planning and executing the first Asphalt Art Project in Morris County and plans to support Dover in future projects to advance roadway safety and placemaking activities on the roadway system.