Traffic Calming Research On

INTERLOCKING CONCRETE PAVERS

December 1, 2023

TOOLE DESIGN

Street pavers in Atlanta, GA

INTRODUCTION

According to the Insurance Institute for Highway Safety, there are over 40,000 fatalities and 2.5 million injury crashes occurring annually in the US. Understanding the factors that contribute to collisions, fatalities, and serious injury crashes on our streets is essential to developing effective strategies for prevention and improvement.

Motor vehicle speed is the largest risk factor for crash frequency and severity. Slower speeds are safer than faster speeds for several reasons, including better control of the motor vehicle by drivers, shorter stopping distances, higher yield rates, less kinetic energy, and wider fields-of-view by drivers. Streetscaping and traffic calming projects are designed to create slower, safer, and more comfortable environments for all street users. The designers of traffic calming projects may choose from a variety of traffic calming measures such as narrow lane widths, lateral shifts, raised intersections, street trees, and attractive and textured paving materials. The latter, specifically the effect of concrete pavers on motor vehicle speeds, is the subject of this research.

The textured streets are found in a variety of contexts, ranging from residential neighborhoods, to shopping districts, to downtowns. The contexts and composition of traffic calming measures collectively influence driver behavior, which can make it difficult to distinguish the effect of any one measure on motor vehicle speeds. However, Toole Design's research examined, specifically, how concrete pavers influenced motor vehicle speed by: i) collecting field data; ii) controlling for other traffic calming measures; and iii) conducting statistical analyses. The result quantifies the differences in speeds on streets with concrete pavers and streets paved with asphalt, all else being equal.

METHODOLOGY

Toole Design identified 13 pairs of similar streets in cities across the USA. In each pair, one street was paved with interlocking concrete pavers (ICP) and the other street was paved in asphalt, with one exception. One street was paved with smooth concrete. To control other variables, we selected street pairs with similar block sizes, number of lanes, land uses, travel way widths, and speed limits. In other words, the main difference between the streets in each pair was the paving material.

Calibrated radar guns were used to collect the data. The motor vehicle speeds were collected for vehicles that were unencumbered by other vehicles during off-peak hours by an inconspicuous surveyor. The collection point was selected such that the motor vehicle speeds were unaffected by curves or traffic control devices such as stop signs or traffic signals. In all, we collected a total of over 1650 speed samples, at least 60 at all but one site.[1]

Toole Design statistically analyzed the data using one-sided t-tests to examine the differences in the mean speeds of each pair and drew conclusions from the aggregate results.

A traffic sign in Sprague, CT

1 With the exception of the street pair in Connecticut. Low volumes in these residential areas did not facilitate collecting more than 30 samples at each street.

RESULTS

MEAN (AVERAGE) RESULTS

The comparison of the means for each for the pairs of streets are shown in Table 1.

Table 1: Mean Motor Vehicle Speeds on Asphalt and Concrete Paver Streets

STREET PAIRS	PAVER MEAN	ASPHALT MEAN	P-VALUE[2]		PERMEABLE
1	25.67	29.39	2.76E-06	*	YES
2+	15.48	14.16	0.995		NO
3	14.85	14.05	0.9141		NO
4	23.99	26.24	0.000297	*	YES
5	16.59	24.03	2.20E-16	*	YES
6	16.73	13.57	0.9994		YES
7	22.37	23.54	0.059		YES
8	12.1	11.2	0.9544		NO
9	11.14	13.31	8.01E-05	*	YES
10	17.6	15.13	1		NO
11	14.39	15.46	0.005226	*	NO
12	14.6	15.38	0.02146	*	NO
13	12.8	16.11	4.72E-12	*	NO

+ Street pair includes a street with concrete as opposed to asphalt paving.

In seven of the 13 pairs, the p-value showed that the difference in the samples was statistically significant AND we are able to conclude that the mean speed on concrete pavers is lower than that of the mean speed on asphalt. Therefore, we can conclude that speeds on concrete pavers are generally lower for these pairings compared to asphalt streets. In three pairs, the sample difference was statistically significant but the mean speeds on the pavers were higher than on the asphalt. For the remaining three, the differences in the samples were not statistically significant. Our results do not conclusively show that concrete pavers always correlate to lower speeds, however, they do provide evidence that there

2 Results of one-sided t-test. Green results are significantly less, red are significantly different (based on two-sided test), black could not reject the null hypothesis/difference between the means is not statistically significant.

A street paved with asphalt (above) and pavers (below) in Portland, OR

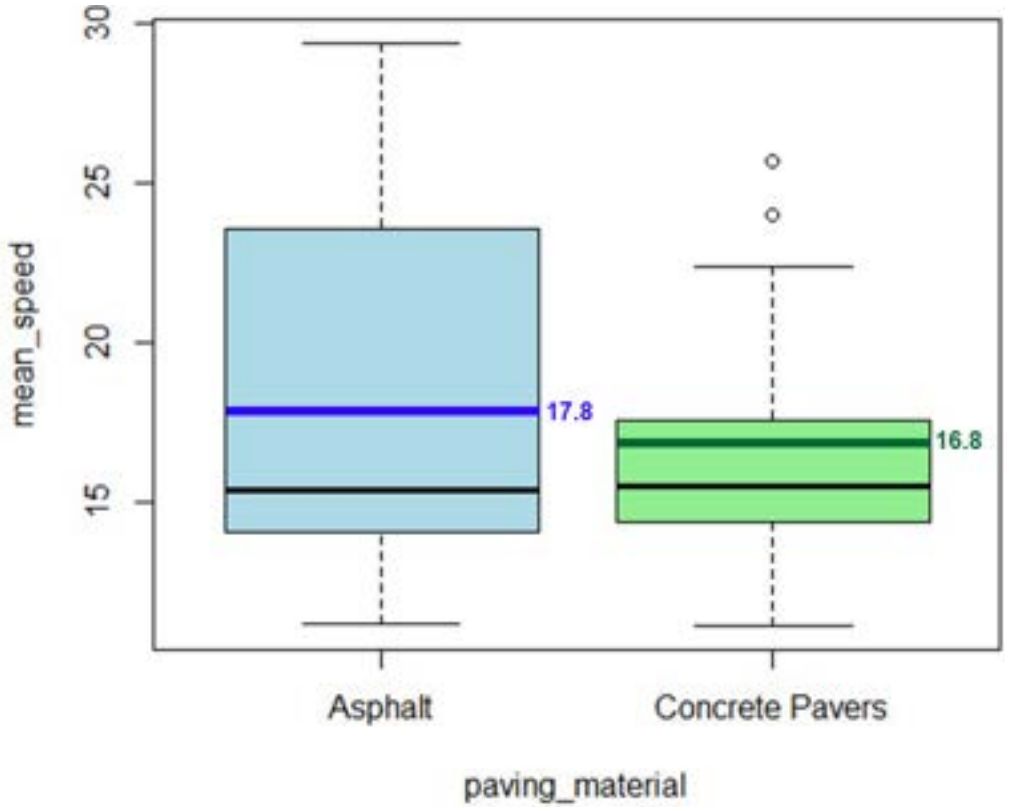
is a relationship with lower speeds on concrete pavers. In addition to the trend in the statistical analysis, evaluating the mean speeds for each pair collectively suggests a similar relationship. The average mean speed on the asphalt streets (i.e., 17.8 mph) was 1 mph higher than the average mean speed on the streets with the concrete pavers (16.8 mph). This suggests a small overall difference in speeds that translates to marginal benefits in terms of severity of crashes.

In addition to the trend in the statistical analysis, evaluating the mean speeds for each pair collectively suggests a similar relationship. The average mean speed on the asphalt streets (i.e., 17.8 mph) was 1 mph higher than the average mean speed on the streets with the concrete pavers (16.8 mph). An even higher mean speed difference was observed (2.3 mph) when comparing asphalt streets to only permeable interlocking concrete pavement (PICP) roadways.

When examining the data in aggregate, in Exhibit 1, we see that the mean speeds on asphalt streets have a greater variance, or wider range, between the

minimum and maximum mean speeds. The distribution of the data suggests that: i) more concrete paver streets have lower mean traveling speeds than asphalt streets; ii) the mean speeds in the upper range (i.e., over 23.5 mph) are lower on streets paved with concrete pavers. In other words, the probability for motorists driving at higher speeds (i.e., above 23.5 mph) is higher on asphalt streets compared to streets paved with concrete pavers.

Exhibit 1: Overall Results



Key for Exhibit 1

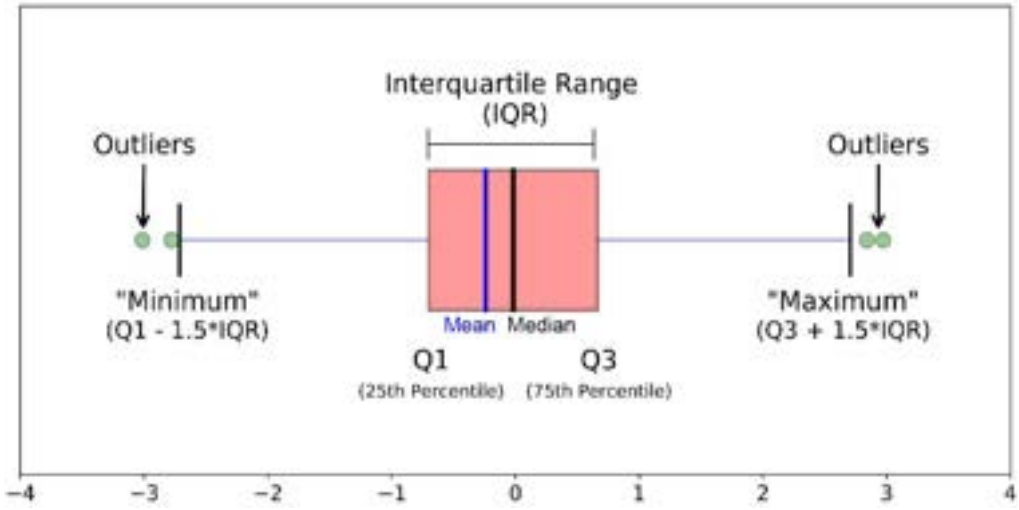
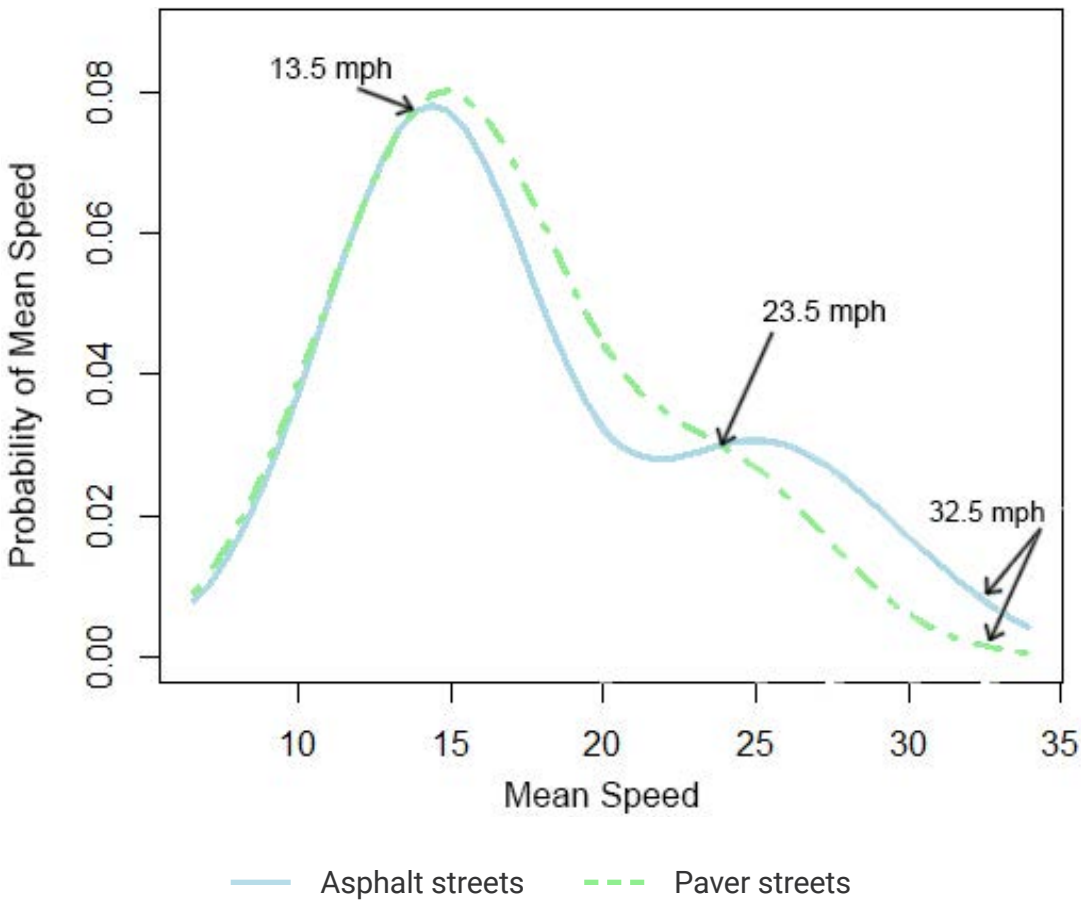


Exhibit 2 shows the overall results in a different way. We see the distribution of the mean speeds, with the mean speed on the X-axis and the density (or probability of a mean speed) shown on the Y-axis. The green dashed line indicates the streets paved with concrete pavers and the blue line indicates the streets paved in asphalt. From a safety perspective, the most important part of Exhibit 2 is at speeds above 23.5 mph. However, at speeds over 23.5 mph, the opposite is the case. Asphalt streets tend to operate faster than streets paved with concrete pavers. At the high-speed end of the results, the probability of mean speeds at or above 30 mph is about double on asphalt streets, compared to streets paved with concrete pavers.

Exhibit 2: Mean Speed and Density (Probability of Mean Speed)

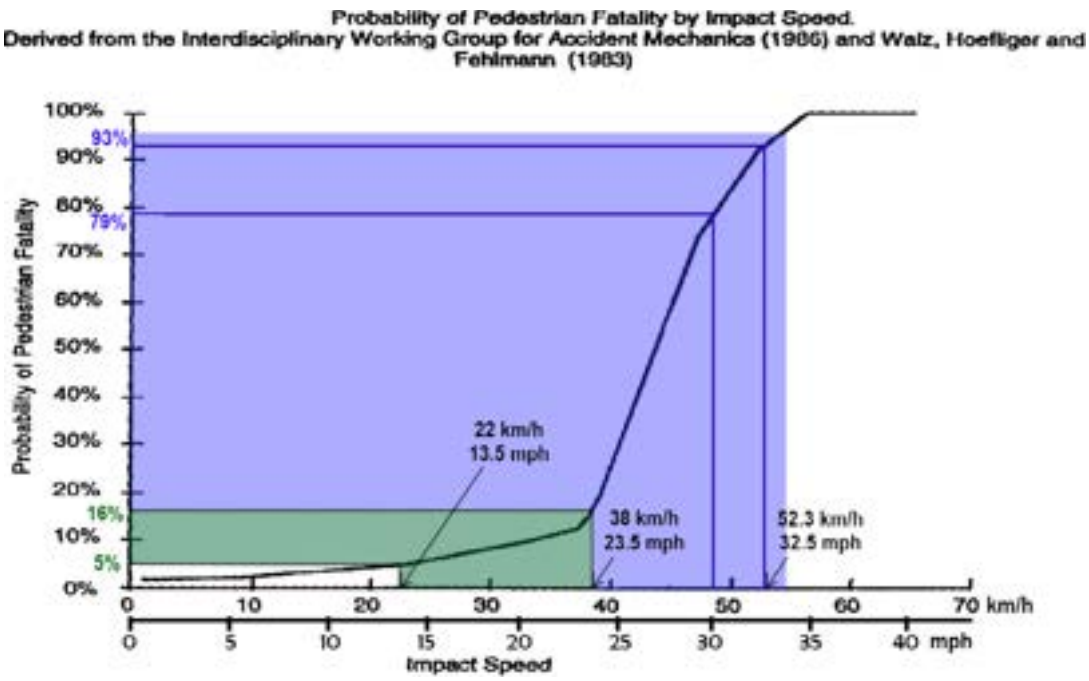


The Y-Axis shows the probability of achieving mean speeds on an asphalt street (the blue line) or a street with pavers (green line). Note that the area under the graph adds up to 100%.

Exhibit 3 shows a well-accepted relationship between motor vehicle impact speed and the probability of a pedestrian being killed. Notice that, at speeds higher than 23.5 mph, the probability of killing a pedestrian rises quickly. That is why the right side of Exhibit 2 is important. To illustrate the point, the probability of killing a pedestrian at 30 and 32.5 mph is 79% and 93% respectively, is shown on the graph. Note that a crash at any speed above about 27 mph has a greater than 50% probability of resulting in a pedestrian fatality.

So, combining a) the finding that the probability of mean speeds at or above 30 mph is about double on asphalt streets, compared to streets paved with concrete pavers; and b) the probability of pedestrian fatalities at impact speeds at or above 30 mph is 79% or higher, suggests that streets paved with concrete pavers will experience fewer pedestrian fatalities due to fewer motorists driving at higher/more dangerous speeds.

Exhibit 3: The Probability of Pedestrian Fatality by Impact Speed, with Some Key Speed Ranges from the Analyses



COMPARING THE RATES OF HIGH SPEEDS

Driving slower saves lives. Drivers, who drive at higher-than-average speeds, are more likely to crash than drivers driving at slower speeds and are more likely to kill someone in that crash. When drivers reach speeds of 30 mph, the likelihood of killing a pedestrian in a crash is 79%. In crashes with pedestrians at speeds of 35 mph or over, the fatality rate is 99% to 100%. So, to shed more light on the safety effects of concrete and asphalt paving materials, the data was analyzed to compare the rates of higher and more dangerous speeds. The results will help cities, counties, and State departments of transportation better target their safety efforts in selecting and implementing traffic calming measures.

By focusing on high speeds, with asphalt and with concrete pavers, we can achieve a more complete understanding of the role of paving texture on safety. In other words, evaluating the effects of different paving materials on average speeds might not capture the improvements in safety, compared to the paving materials ability to reduce faster and more dangerous speeds. The emphasis on excessively fast speeds is essential for shaping evidence-based safety policies and ensuring the well-being of all street users.

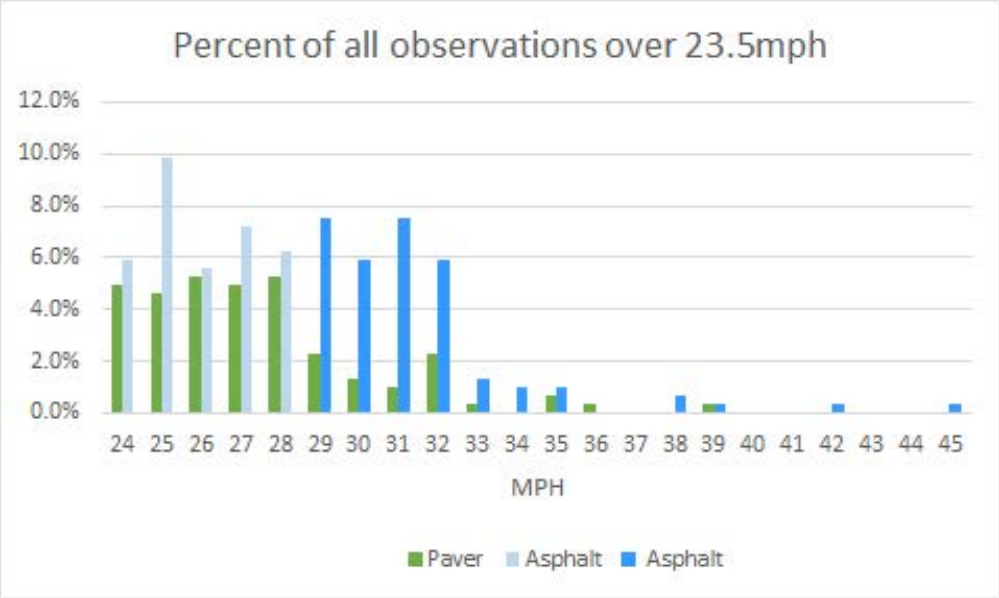


Exhibit 4: The percentages of observations at each speed over 23.5 mph on all streets (The green bars shows the streets paved with concrete pavers, blue bars shows streets paved with asphalt)

About 50% of the study's speed observations were collected on streets paved with concrete pavers and the other 50% were collected on streets paved with asphalt. However, for every observation of a motorist exceeding 23.5 mph on a street paved in concrete pavers, there were two observations of motorists exceeding 23.5 mph on a street paved in asphalt. In other words, as is shown in in Exhibit 4, there is twice as much blue (observations on asphalt streets) as there is green (observations of streets paved with concrete pavers). That is, the rate of motorists exceeding 23.5 mph on asphalt streets is double of that of streets paved in concrete pavers.

Now notice, in Exhibit 4, the darker blue color that begins at 29 mph. At 29 mph and faster, the number of observations of drivers on the asphalt streets greatly outnumbered the observations on streets paved with concrete pavers. The rate of motorists driving at or above 29 mph on asphalt streets is almost quadruple (i.e., 3.6 times) that of streets paved in concrete pavers. That is, compared to streets paved in concrete pavers, asphalt streets had 3.6 times more motorists who have a 79% or higher chance of killing pedestrians in a collision. From a "Vision Zero" perspective, this result is highly significant because increasingly, cities, counties, and departments of transportation are setting goals of zero fatal and serious injury crashes within their jurisdictions. Greatly reducing these faster and more dangerous speeds is necessary for achieve Vision Zero goals.

HEALTH, COMFORT, & QUALITY OF LIFE BENEFITS OF CONCRETE PAVERS

The benefits of the streets paved with concrete pavers go beyond reducing the most dangerous speeds and the related high probabilities of fatalities. The benefits also include increased community health, comfort, and quality of life, and reduction in many costs.

The Physics of Speed: The kinetic energy of a moving vehicle increases exponentially with speed. The World Health Organization in their 2023 publication called, "Pedestrian Safety, a Road Safety Manual for Decision-Makers and Practitioners," stated that a meta-analysis of 20 studies assessing the risk of fatality for pedestrians reported that for every 1 km/hr (0.62 mph) above 30 km/hr (19 mph) that the speed increases, the chance of pedestrian death increases by 11%." The much lower kinetic energy of slower speeds reduces stopping distances. Additionally, it allows drivers to better perceive and recognize their

Pavers on a street in Atlanta, GA

surroundings, including noticing pedestrians, cyclists, and crosswalks. At slower speeds, motorists can maintain better control over their vehicles. This is particularly crucial in busy shopping districts, school zones, neighborhoods, near parks, and other places where unpredictable movements can routinely occur.

Active Modes of Transportation: Promoting lower speeds via streets paved with concrete pavers aligns well with the broader goal of encouraging sustainable transportation modes, such as walking, cycling, and transit. Slower and safer streets foster pedestrian-friendly environments, encouraging people to opt for active modes of transport. Lower speeds promote the creation of vibrant, walkable neighborhoods and shopping districts that are conducive to both safety and community participation. Furthermore, slower speeds contribute to reduced noise pollution, positively affecting the quality of life for residents, shoppers, walkers, or anybody else with a relationship with the street. Hard accelerating and decelerating are less common on slower streets, helping to reduce noise further, making places more pleasant to live, play, and work.

Crossing the Street: Streets paved with concrete pavers typically indicate to drivers the presence of other streets users and to watch for pedestrians, cy-

clists, and transit users. The slower speeds also help with something called “gap acceptance.” Gap acceptance is crucial decision-making process for pedestrians to find a safe opportunity to cross the street. It differs significantly between streets with low speeds and those with high speeds. Streets with low speeds offer pedestrians more favorable conditions for gap acceptance. According to the National Highway Traffic Safety Administration (NHTSA) in their 2018 “Pedestrian Traffic Safety Facts, on streets with speed limits below 30 mph, approximately 95% of drivers yield to pedestrians during crossings, providing them with adequate time to cross. The reduced speeds and increased awareness enable drivers to notice pedestrians earlier and respond accordingly, leading to a safer outcomes. On streets with speed limits exceeding 40 mph, half or fewer drivers yield to pedestrians during crossings, leading to a reduced sense of comfort/security and a higher likelihood of pedestrian hesitating or rushing to make their crossing, neither of which is desirable. With too many negative experiences with gap acceptance, pedestrians will not cross, and the street will be a barrier. That is unless the pedestrian has no choice, like crossing to a bus stop. Such “captive crossers” have an increased risk of a collision.

Maintenance Costs: At an infrastructure level, concrete pavers can last 40 years or more which, in contrast, asphalt typically requires resurfacing every 10 to 15 years. The reduced need for frequent maintenance and resurfacing with concrete pavers translates into lower lifecycle costs over the long run. Furthermore, when individual pavers become damaged, they can be easily replaced without disturbing the entire pavement. Asphalt repairs, on the other hand, often require extensive patching or resurfacing. The modular nature of concrete pavers allows easy access to underground utilities, reducing maintenance costs and disruptions due to construction. The pavers that were removed, to allow access to underground utilities, can typically be reused.

Aesthetics and Value: In short, streets paved with concrete pavers look better than asphalt streets. In fact, as streets, paved in concrete pavers, age, they gain an attractive patina, while an asphalt streets’ appearance deteriorate with age. Concrete pavers offer design flexibility, enabling various patterns, colors, and textures to be combined to create visually appealing streets. The use of concrete pavers also: i) allows easy design integration with adjacent open spaces; ii) can complement the surrounding architecture; and iii) promotes a sense of identity and community pride. In contrast, asphalt has limited design possibilities and opportunity for distinction. Streets paved with concrete pavers attract

more foot traffic, leading to increased retail success for businesses along those streets. The enhanced aesthetics and pedestrian-friendly environment encourage people to spend more time and money, contributing to the economic growth of the area. Properties located on streets paved with concrete pavers generally experience higher property values, compared to similar properties on asphalt streets. Well-designed and visually appealing streets positively influence property prices and attract more customers.

Exhibit 5: New Broad Street in Orlando, Florida. Note the multiple traffic calming measures used in conjunction with the concrete pavers (e.g., valley gutter, on-street parking, narrow lanes, street trees, human scale lighting, curb extensions, and buildings close to the street.

Compatibility with Other Traffic Calming Measures and Environmental Features: Though this study focused on the effects of concrete pavers on speeds, the safety benefits are experienced when combined with other traffic calming measures, such as street trees, narrow lanes, curb extensions, valley gutters, medians, etc. Like concrete pavers, additional traffic calming measures tend to increase the value of the place too. Concrete pavers have no detrimental effect on response times for emergency vehicles. Consequently, concrete pavers can be incorporated into any traffic calming project, ranging from projects on residential streets, to downtowns streets, to Main Streets, to arterial street calming. Note that "periodic traffic calming measures" such as speed humps, mini-traffic circles, speed cushions, chicanes, etc. are normally not used on emergency routes. Concrete pavers are a versatile and effective traffic calming measure unto themselves. The slower

driving speeds result in shorter stopping distances which is enhanced further due to their slip-resistant surfaces over concrete pavers. That, in turn, further reduces the risk of crashes, especially in inclement weather.

Permeable Interlocking Concrete Pavement (PICP) use in roadways is growing throughout North America. PICP promotes stormwater infiltration, unlike impervious asphalt surfaces. They allow rainwater to percolate through the joints, replenishing groundwater and reducing surface runoff, which helps in mitigating flooding. Combined with storm water benefits of other traffic calming measures, such as rain garden in curb extensions, street narrowing, and tree planting, a street with concrete pavers can perform very well for the environment.

CONCLUSIONS

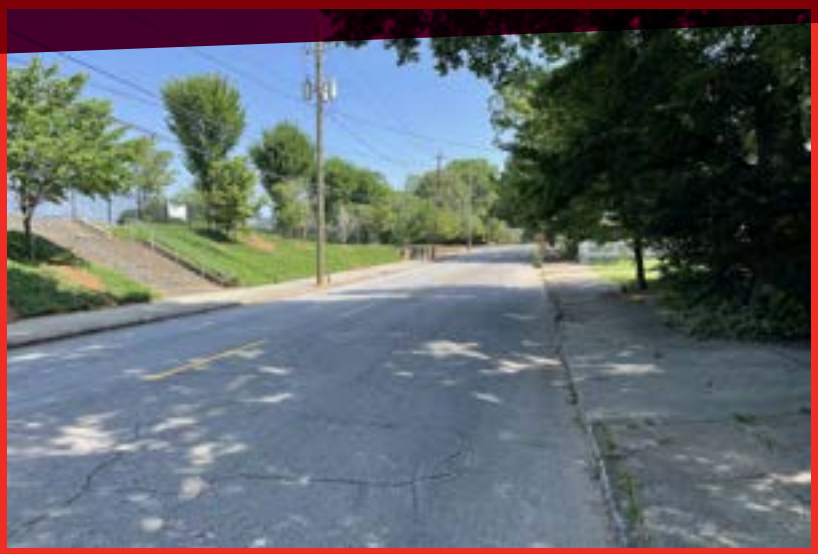
- In 7 of the 13 street pairs, we are able to conclude that the mean speed on concrete pavers is lower than that of the mean speed on asphalt.
- The difference in the overall mean, comparing 13 pairs of streets, was 1 mph lower on the concrete pavers streets than streets paved with asphalt.
- The probability of streets paved with concrete pavers achieving mean speeds of 27 mph or more is about half of the probability for streets paved with asphalt. The effect at the higher speed range is important for safety because the probability of killing a pedestrian or cyclist is about 50 percent with an impact of 27 mph and that probability grows quickly to 79 percent at 30 mph.
- The rate of motorists exceeding 23.5 mph on asphalt streets is double of that of streets paved in concrete pavers.
- The rate of drivers at 29 mph and faster on the asphalt streets is 3.6 times that of streets paved with concrete pavers. That is, compared to streets paved in concrete pavers, asphalt streets result in 3.6 times more motorists who have a 79% or higher chance of killing pedestrians during collisions.
- From a “Vision Zero” perspective, speeds on streets paved in concrete pavers tend to be slower, reducing the faster and more dangerous speeds, which is necessary for achieve Vision Zero goals.
- Paving streets with concrete pavers has a relationship with motor vehicle speeds, and is an effective traffic calming measure, particularly at higher/more dangerous speeds.

- Streets paved with concrete pavers have other safety and social effects including: increasing drivers' ability to recognize their surroundings (e.g., pedestrians, cyclists, and crosswalks); encouraging sustainable transportation modes; increasing vibrancy; reducing noise pollution; indicating the presence of pedestrians, cyclists, and transit users; improving gap acceptance; reducing health care costs; reducing lifecycle and maintenance costs; improving aesthetics and integration with open spaces and architecture; increasing property values; attracting customers; integrating with other traffic calming measures; and increasing permeability.

A concrete-paved street in Atlanta, GA

RECOMMENDATIONS

- Whenever feasible, it is recommended that **concrete pavers be used alone and, ideally, in combination with other traffic calming measures**, to help increase safety and achieve several other societal benefits on city streets of all types.



Streets paved with asphalt and concrete pavers in Washington, D.C. (top) and Atlanta, GA (bottom)

APPENDICES

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Street Pair #2 ..... **45**
Austin, TX

Street Pair #3 ..... **55**
Austin, TX

Street Pair #4 ..... **67**
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Street Pair #5 ..... **81**
Columbus, OH

Street Pair #6 ..... **95**
Sprague, CT
Norwich, CT

Street Pair #7 ..... **108**
New Albany, OH

Street Pair #8 ..... **121**
Portland, OR

Street Pair #9 ..... **136**
Portland, OR

Street Pair #10 ..... **151**
San Antonio, TX

Street Pair #11 ..... **160**
San Antonio, TX

Street Pair #12 ..... **178**
San Antonio, TX

Street Pair #13 ..... **188**
Washington, DC

APPENDIX A
Methodology

METHODOLOGY

Toole Design identified 13 pairs of similar streets in cities across the USA. In each pair, one street was paved with concrete pavers and the other street was paved in asphalt, with one exception. One street was paved with smooth concrete. To control other variables, we selected street pairs with similar block sizes, number of lanes, land uses, travel way widths, and speed limits. In other words, the main difference between the streets in each pair was the paving material.

Calibrated radar guns were used to collect the data. The motor vehicle speeds were collected for vehicles that were unencumbered by other vehicles during off-peak hours by an inconspicuous surveyor. The collection point was selected such that the motor vehicle speeds were unaffected by curves or traffic control devices such as stop signs or traffic signals. In all, we collected a total of over 1650 speed samples, at least 60 at all but one site[1].

Toole Design statistically analyzed the data using one-sided t-tests to examine the differences in the mean speeds of each pair and drew conclusions from the aggregate results.

[1] With the exception of the street pair in Connecticut. Low volumes in these residential areas did not facilitate collecting more than 30 samples at each street.

APPENDIX B
Survey Instructions

Spot Speed Survey Form for Concrete Paver Study

Toole Design is conducting independent research, comparing speeds on pairs of similar streets, except one street is paved with concrete pavers and the other street is paved with asphalt. The idea is to eliminate as many differences that might affect speeds, as feasible, between each pair's two streets. We are selecting pairs of streets in cities, from around North America, that are typical city streets (i.e., streets that have real applications as opposed to a laboratory-type or test street not in regular use by the public. Some offices will be collecting data for one pair of streets and other offices will be collecting data from two or more pairs of streets. The data collection and reporting methods will be identical for all the pairs of streets. The data will be submitted to our Data Science Group and they will objectively determine the effects of concrete pavers on speeds through various analyses. The results will help cities and street designers make more informed design decisions about paving materials, advance the understanding of texture and pavers for traffic calming purposes, and contribute to vision zero and storm water infiltration efforts. The funding for this research is being provided by the research arm of the Interlocking Concrete Paving Institute.

Preparation Before Survey Day

1. Select a Survey Day on a Tuesday, Wednesday, or Thursday

2. Identify and check the target street with the concrete pavers via Google Earth and a site visit to the street prior to the survey:

- Limit your selection to 2-way, two-lane, streets.
- The "uncontrolled length" of the target street (i.e., distance between the two intersections with traffic control devices that affect the target street) should be 300' (91m) or more.
- At a midblock location, select a "landmark" (e.g., a specific tree, light pole, driveway, etc.) which you will use to record the speeds, as the vehicles pass the landmark.
- In the vicinity of the landmark, the street should be straight for about 300' (91m) or more.
- There should not be a school zone within that 300' (91m).
- Select a safe and public location from which you will record the speeds as the vehicles approach you. You could either be sitting in a legally parked car or on a lawn chair, bench, rock… located well off the street and not blocking a sidewalk or driveway. Pick a location where the approaching drivers won't notice you until after they pass your landmark. Note that your radar gun has a long range.
- Your radar gun does not have an internal battery. So, it needs to be plugged into a 12 Volt power source, like the one in a car, or like the one on a portable battery. Having a portable battery gives you more flexibility if you don't have a car, or if on-street parking does not exist or if it is fully occupied where you need to conduct the survey. A portable

battery is also handy for power outages at the office because they usually come with a 120 Volt outlet for a laptop and USB ports for your phone.

3. Visit the "comparable street" that is paved with asphalt:

- Select a street, with an uncontrolled street length, that is as similar as feasible to the target street (i.e., length, speed limit, and land use composition). Ideally, it is in the same neighborhood or part of the city. As a guide, the comparable street should have an uncontrolled length of no less than 300' (91m) and can be up to 50% longer that the target street or 33% shorter than the target street.
- At the midblock location, select a landmark (e.g., a specific tree, driveway, light pole, etc.) which you will use to record the speeds as the vehicles pass the landmark.
- Select a safe and public location from which you can record the speeds of vehicles as they approach you. Don't record the speed of vehicles driving away from you. You could either be sitting in a legally parked car or on a lawn chair, bench, rock… well off the street and not blocking a sidewalk or driveway. Pick a location where the drivers won't notice you until after they pass your landmark.

4. Call the local police, well in advance of the Survey Day, and let them know: a) that Toole Design Group will be conducting a safety research project, involving recording speeds; b) when, c) where, and then email the local police and City Hall the completed information form. See the information form for what you will tell the police and then send via email. Address the notification form to the Mayor (because his or her name is easy to find).

Survey Day, before Departing for the Survey Sites

1. Reschedule if there is precipitation (i.e., snow, rain, fog…). The streets need to be dry.

2. Make sure you have all your equipment, including:

- these instructions,
- your radar gun, portable battery, and car-power outlet (if you are using a car),
- six copies of the information form,
- your i.d. and several business cards,
- your car or lawn chair,
- a pen and a spare pen,
- a clip board,
- your survey form,
- a 12-inch/30 cm ruler or scale,
- a watch or smart phone,
- your safety vest and closed-toe shoes, and
- a camera or smartphone.

If you are using a lawn chair or bench, dress for the weather, wear a sun hat, and wear your safety vest.

3. Flip a coin to randomly determine which street, from your pair, you will survey first. Survey the first street between 9:30 a.m. and 11:00 a.m. and the second street between 1:30 to 3:00 p.m. Let someone know where you will be and your timings.

Survey Site 1

1. Arrive at 9:00 a.m. at Survey Site 1 and prepare for the survey. Fill out the survey form: date, location, the address nearest your location, posted or default speed, weather, the street attributes, and start time (i.e., 9:30 a.m.)

2. Texture picture: When it is safe to do so, place the survey form (with the data entered as per above) and your ruler/scale (so they can both be read on the photograph) on the typical paver surface or asphalt surface, near the edge of the street. Photograph the survey form so at least three whole pavers are shown in the same photo as the survey form and ruler/scale, in plan-view (i.e., looking straight down from a standing position). It is o.k. of your feet are in the photo. On the asphalt street, make sure that about the same area of asphalt (about the same area as the three pavers) is shown in the photo.

3. Context pictures: Photograph the street/your view from the vantage point of your survey location (i.e., towards the direction that your radar gun will be pointing). Note on your survey form what you used as your landmark. Photograph your survey location from far enough away that it could be located again from Google Earth or by someone else who might wish to repeat the survey a year later. Take four photos of the street; what is on both sides, view up the street, and a view the other way, down the street. Take all of the photos at the highest resolution that your camera or smart phone has.

4. Start recording speeds, starting at 9:30 a.m.:

- Record only vehicles coming toward you, as they pass the midblock landmark.
- Be as discrete as you can, even though you'll have a safety vest on. If people speak with you or ask you questions, be polite, brief, and let them know that you need to focus on your survey.
- Only pull the trigger, on the radar gun, as the target-vehicle passes the midblock landmark. Otherwise, motorists with radar detectors will slow down prior to arriving at the midblock landmark and it will throw off the data.
- Only record vehicles that are alone or are in the lead of one or more other vehicles. Do not record vehicles that are following other vehicles because their speed will be a function of the leading vehicles and not independently determined by the driver of the target-vehicle. Do not record the speeds of vehicles that begin or end their journey on the block (e.g., either entering or leaving a driveway or parking space).
- Do not record the speeds of trucks, busses, or any vehicle pulling a trailer. For our purposes, a truck is any vehicle with at two wheels on each end of the same axle. Record the speeds of cars, vans, motorcycles.

- After you've pulled the trigger and your radar gun displays the speed, lower your radar gun and write down the speed on your survey form. Don't worry if you miss other vehicles while recording the speed on your survey form. After you've written down the speed wait for your next target-vehicle and so on.

- Record a minimum of 60 speeds on your survey form. If you have time for more during your survey period, record some more but no more than 100 speeds.

- When you are done surveying, record your ending time.

- Pack up, leave, and get some lunch.

Survey Site 2

1. Arrive at 1:00 p.m. to Survey Site 2 and prepare for the survey. Fill out the survey form: date, location, posted speed, weather, and start time (i.e., 1:30 p.m.)

2. Follow the same Steps 2, 3, and 4 as you did for Site 1.

After the Survey Day

1. Email the photographs and pdf scans of the survey forms to Stefanie Brodie and copy Andrea Ostrodka and Ian Lockwood.

2. Complete the data entry on your Excel template and e-mail it to Stefanie Brodie.

3. Rest assured that you have contributed to some valuable, independent, research, and wait eagerly to learn the results.

APPENDIX C
Speed Survey Form

Spot Speed Survey Form for Paver Study

Surveyor's First & Last Name: _____ Start Time (circle one): 9:30 a.m. 1:30 p.m.

Month: _____ Day: ____ Year: 2022 Day of Week (circle one): Tues. Wed. Thurs.

Street Address (adjacent to where you are sitting): _____ City: _____ State/Prov: _____

Landmark description: _____

Heading of Target vehicles (circle one): N NE E SE S SW W NW

Paving Material (circle one): concrete pavers asphalt

Posted or Default Speed Limit: _____ Units (circle one): mph km/h

Speeds (Rounded to the nearest one decimal point, like 24.4):

1)	__ __ . __	16)	__ __ . __	31)	__ __ . __	46)	__ __ . __	61)	__ __ . __	76)	__ __ . __	91)	__ __ . __
2)	__ __ . __	17)	__ __ . __	32)	__ __ . __	47)	__ __ . __	62)	__ __ . __	77)	__ __ . __	92)	__ __ . __
3)	__ __ . __	18)	__ __ . __	33)	__ __ . __	48)	__ __ . __	63)	__ __ . __	78)	__ __ . __	93)	__ __ . __
4)	__ __ . __	19)	__ __ . __	34)	__ __ . __	49)	__ __ . __	64)	__ __ . __	79)	__ __ . __	94)	__ __ . __
5)	__ __ . __	20)	__ __ . __	35)	__ __ . __	50)	__ __ . __	65)	__ __ . __	80)	__ __ . __	95)	__ __ . __
6)	__ __ . __	21)	__ __ . __	36)	__ __ . __	51)	__ __ . __	66)	__ __ . __	81)	__ __ . __	96)	__ __ . __
7)	__ __ . __	22)	__ __ . __	37)	__ __ . __	52)	__ __ . __	67)	__ __ . __	82)	__ __ . __	97)	__ __ . __
8)	__ __ . __	23)	__ __ . __	38)	__ __ . __	53)	__ __ . __	68)	__ __ . __	83)	__ __ . __	98)	__ __ . __
9)	__ __ . __	24)	__ __ . __	39)	__ __ . __	54)	__ __ . __	69)	__ __ . __	84)	__ __ . __	99)	__ __ . __
10)	__ __ . __	25)	__ __ . __	40)	__ __ . __	55)	__ __ . __	70)	__ __ . __	85)	__ __ . __	100)	__ __ . __
11)	__ __ . __	26)	__ __ . __	41)	__ __ . __	56)	__ __ . __	71)	__ __ . __	86)	__ __ . __	End Time:	
12)	__ __ . __	27)	__ __ . __	42)	__ __ . __	57)	__ __ . __	72)	__ __ . __	87)	__ __ . __	_____ a.m.	
13)	__ __ . __	28)	__ __ . __	43)	__ __ . __	58)	__ __ . __	73)	__ __ . __	88)	__ __ . __	or _____ p.m.	
14)	__ __ . __	29)	__ __ . __	44)	__ __ . __	59)	__ __ . __	74)	__ __ . __	89)	__ __ . __		
15)	__ __ . __	30)	__ __ . __	45)	__ __ . __	60)	__ __ . __	75)	__ __ . __	90)	__ __ . __		

Notes and Street Description (e.g., on-street parking/ 1 or 2 sides, rough setback distances, street trees, land use, activity level):

APPENDIX D
Survey Results

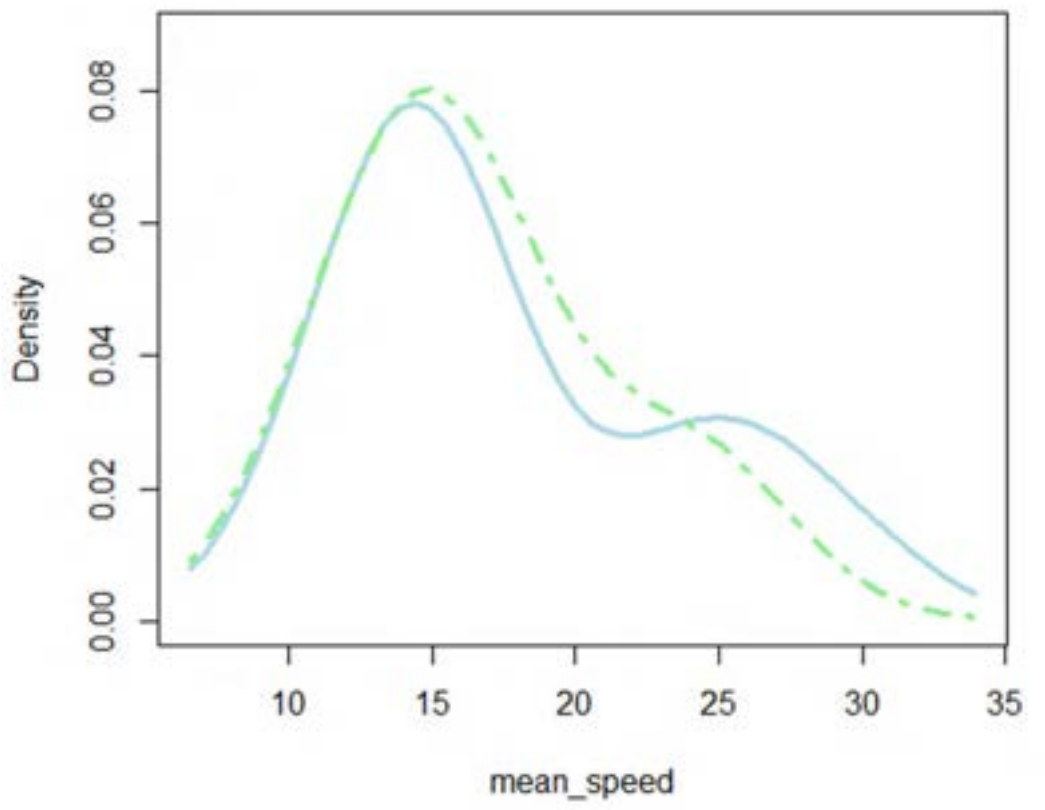
Survey Results Summary

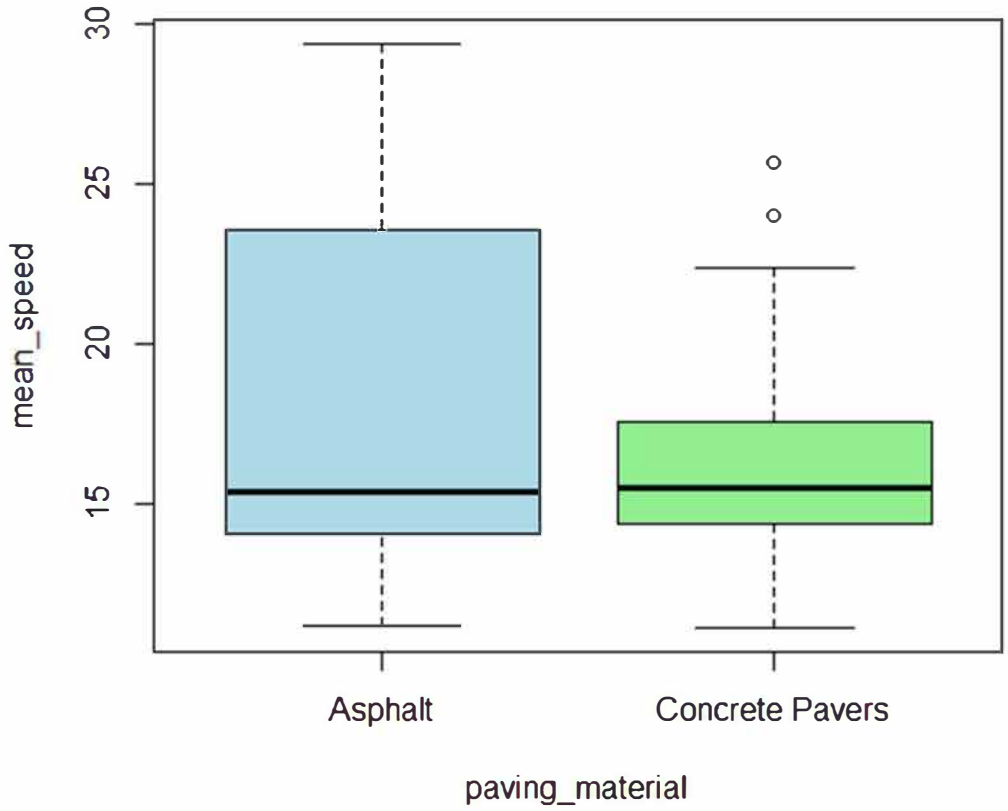
Street Pairs	City	State/ Province	Street Name	Street Address	Paving Material	Date	Start Time	End Time	Day of Week	Speed Limit	Mean Speed
1	Alanta	GA	Connally Street SE	575 Connally St SE	Concrete Pavers	6/15/2022	1:30 PM	4:01 PM	Wednesday	25	25.67
	Alanta	GA	Hill Street SE	272 Milledge Ave	Asphalt	6/15/2022	9:30 AM	10:39 AM	Wednesday	25	29.39
2	Austin	Tx	Red River St	Between 2nd & 3rd	Concrete Pavers	5/31/2022	1:30 PM	2:45 PM	Tuesday	25	15.48
	Austin	Tx	Brazos St	Between 3rd & 4th	Asphalt	5/31/2022	9:45 AM	11:30 AM	Tuesday	25	14.16
3	Austin	Tx	Gracie Kiltz Ln	Between Austin Ln & Domain Pkwy	Concrete Pavers	6/2/2022	1:30 PM	3:00 PM	Thursday	17	14.85
	Austin	Tx	Kramer Ln	Between Austin Ln & Alterra Pkwy	Asphalt	6/2/2022	9:50 AM	11:15 AM	Thursday	20	14.05
4	Columbus	OH	East Dominion Boulevard	143 E. Dominion Blvd	Concrete Pavers	8/24/2022	8:15 AM	11:00 AM	Wednesday	25	23.99
	Columbus	OH	East Beaumont Road	156 E. Beaumont Rd	Asphalt	8/24/2022	12:30 PM	4:30 PM	Wednesday	25	26.24
5	Columbus	OH	Cooke Way	4316 N. High Street (in back)	Concrete Pavers	9/29/2022	8:35 AM	10:00 AM	Thursday	25	16.59
	Columbus	OH	Arbor Village Drive	4944 Arbor Village Drive	Asphalt	8/31/2022	8:45 AM	1:45 PM	Wednesday	25	24.03
6	Sprague	CT	River Street	97 River St	Concrete Pavers	10/20/2022	11:30 AM	1:45 PM	Wednesday	15	16.73
	Norwich	CT	Treadway Ave	22 Treadway Ave	Asphalt	10/20/2022	2:00 PM	6:00 PM	Thursday	25	13.57
7	New Albany	OH	Third Street	25 Third Street	Concrete Pavers	9/14/2022	9:30 AM	1:45 PM	Wednesday	25	22.37
	New Albany	OH	Village Hall Road	near 50 Village Hall Road	Asphalt	9/14/2022	2:30 PM	7:30 PM	Wednesday	25	23.54

Survey Results Summary

Street Pairs	City	State/ Province	Street Name	Street Address	Paving Material	Date	Start Time	End Time	Day of Week	Speed Limit	Mean Speed
8	Portland	OR	SW 9th Avenue	911 SW Taylor St; 828 SW 9th Ave	Concrete Pavers	7/20/2022; 7/27/2022	9:30am	11am	Wednesday	25	12.098
	Portland	OR	SW 9th Avenue	916 SW 9th Ave; 901 SW Salmon (sitting on 9th)	Asphalt	7/20/2022; 7/27/2022	1:30pm	3pm	Wednesday	25	11.195
9	Portland	OR	SW Park Avenue	838 SW Park Ave; NE corner of Director Park	Concrete Pavers	7/21/2022; 7/28/2022	9:30am	11am	Thursday	25	11.14
	Portland	OR	SW Park Avenue	SE corner of Director Park	Asphalt	7/21/2022; 7/28/2022	1:30pm	3pm	Thursday	25	13.31
10	San Antonio	TX	W Commerce St	Between S St Marys St & Navarro St	Concrete Pavers	11/15/2022	8:30 AM	10:20 AM	Tuesday	35	17.6
	San Antonio	TX	E Commerce St	Between S Alamo St & Bowie St	Asphalt	11/15/2022	2:30 PM	3:15 PM	Tuesday	35	15.13
11	San Antonio	TX	E Market St	Between S St Marys St & Navarro St	Concrete Pavers	11/15/2022	10:45 AM	12:40 PM	Tuesday	30	14.39
	San Antonio	TX	E Market St	Between S Alamo St & Bowie St	Asphalt	11/15/2022	3:20 PM	4:35 PM	Tuesday	30	15.46
12	San Antonio	TX	E Houston St	Between S St Marys St & Navarro St	Concrete Pavers	11/16/2022	8:35 AM	11:20 AM	Wednesday	30	14.6
	San Antonio	TX	E Travis St	Between S St Marys St & Navarro St	Asphalt	11/16/2022	12:50 PM	3:40 PM	Wednesday	30	15.38
13	Washington	DC	C Street SE	750 C Street SE	Concrete Pavers	11/23/2021	10:30 AM	11:45 AM	Tuesday	20	12.8
	Washington	DC	7th Street SE	317 7th Street SE	Asphalt	5/5/2022	1:30 PM	3:15 PM	Thursday	20	16.11

Full Mean Sample

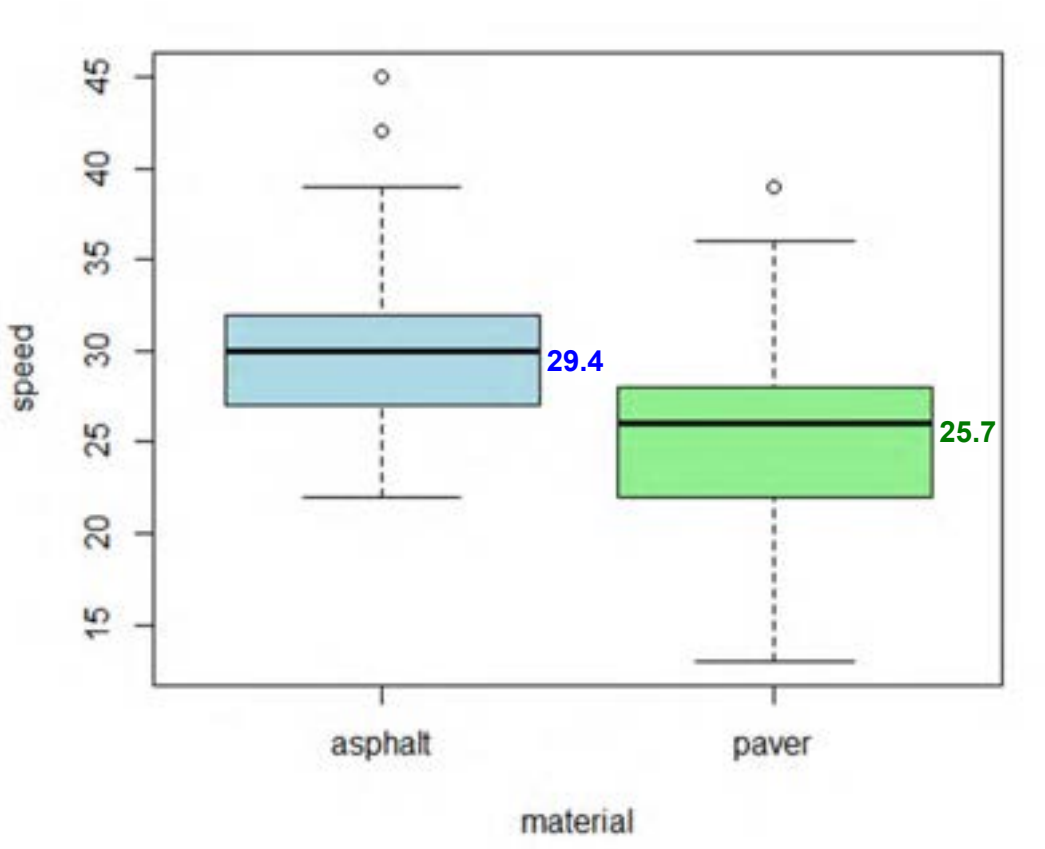



mean_speed
30
25
20
15
Asphalt
Concrete Pavers
paving_material

STREET PAIR #1
Atlanta, GA

Connally Street SE (PICP)
Hill Street SE (Asphalt)

Street Pair 1 (Atlanta, GA)



Spot Speed Survey Form for Paver Study

Surveyor's First & Last Name: Joel Hudson Start Time (circle one): 9:30 a.m. (1:30 p.m.)

Month: June Day: 15 Year: 2022 Day of Week (circle one): Tues. (Wed.) Thurs.

Street Address (adjacent to where you are sitting): 575 Connally St SE City: Atlanta State/Prov: GA

Landmark description: Bioswale on E. side of street

Heading of Target vehicles (circle one): (N) NE E SE S SW W NW

Paving Material (circle one): (concrete pavers) asphalt

Posted or Default Speed Limit: 25 Units (circle one): (mph) km/h

Speeds (Rounded to the nearest one decimal point, like 24.4):

1)	23.0	16)	27.0	31)	25.0	46)	17.0	61)	___.__	76)	___.__	91)	___.__
2)	15.0	17)	35.0	32)	29.0	47)	22.0	62)	___.__	77)	___.__	92)	___.__
3)	28.0	18)	30.0	33)	24.0	48)	31.0	63)	___.__	78)	___.__	93)	___.__
4)	28.0	19)	21.0	34)	28.0	49)	25.0	64)	___.__	79)	___.__	94)	___.__
5)	35.0	20)	31.0	35)	28.0	50)	26.0	65)	___.__	80)	___.__	95)	___.__
6)	22.0	21)	21.0	36)	20.0	51)	28.0	66)	___.__	81)	___.__	96)	___.__
7)	26.0	22)	25.0	37)	19.0	52)	22.0	67)	___.__	82)	___.__	97)	___.__
8)	13.0	23)	32.0	38)	23.0	53)	26.0	68)	___.__	83)	___.__	98)	___.__
9)	21.0	24)	22.0	39)	25.0	54)	18.0	69)	___.__	84)	___.__	99)	___.__
10)	20.0	25)	30.0	40)	30.0	55)	25.0	70)	___.__	85)	___.__	100)	___.__
11)	28.0	26)	18.0	41)	20.0	56)	28.0	71)	___.__	86)	___.__	End Time:	
12)	24.0	27)	23.0	42)	32.0	57)	28.0	72)	___.__	87)	___.__	____ a.m.	
13)	32.0	28)	36.0	43)	22.0	58)	26.0	73)	___.__	88)	___.__	or 406 p.m.	
14)	39.0	29)	25.0	44)	32.0	59)	26.0	74)	___.__	89)	___.__		
15)	27.0	30)	27.0	45)	28.0	60)	25.0	75)	___.__	90)	___.__		

Notes and Street Description (e.g., on-street parking/ 1 or 2 sides, rough setback distances, street trees, land use, activity level):

On-street parking both sides, green space in the ROW, residential on the W, street trees in bio swales, low vehicular activity, very low non-motorized

Spot Speed Survey Form for Paver Study

Surveyor's First & Last Name: Joel Hudson Start Time (circle one): (9:30 a.m.) 1:30 p.m.

Month: June Day: 15 Year: 2022 Day of Week (circle one): Tues. (Wed.) Thurs.

Street Address (adjacent to where you are sitting): 272 Milledge Ave City: Athens State/Prov: GA

Landmark description: Silver hydrant on W side of Hill St.

Heading of Target vehicles (circle one): N NE E SE (S) SW W NW

Paving Material (circle one): concrete pavers (asphalt)

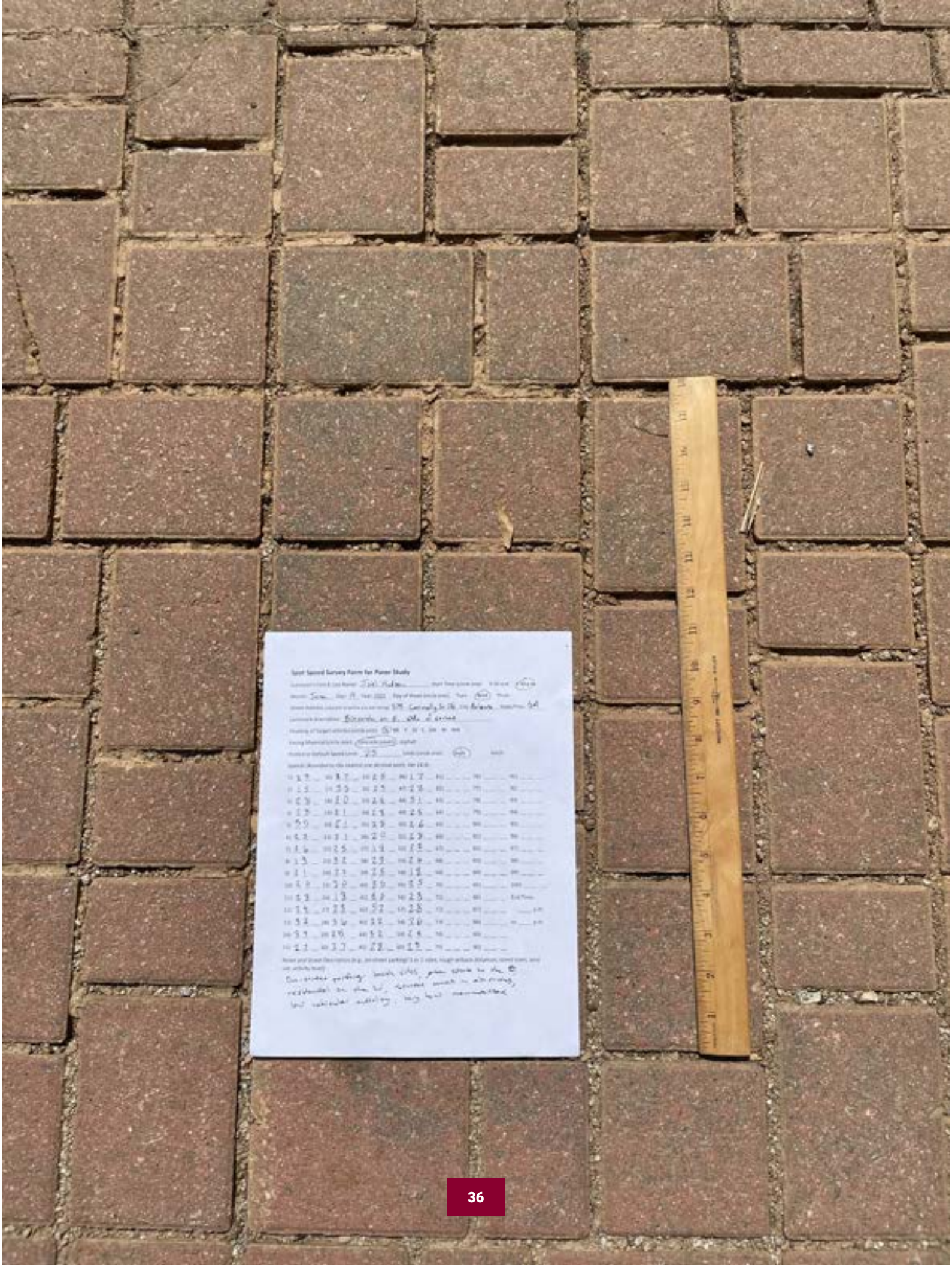
Posted or Default Speed Limit: 25 Units (circle one): (mph) km/h

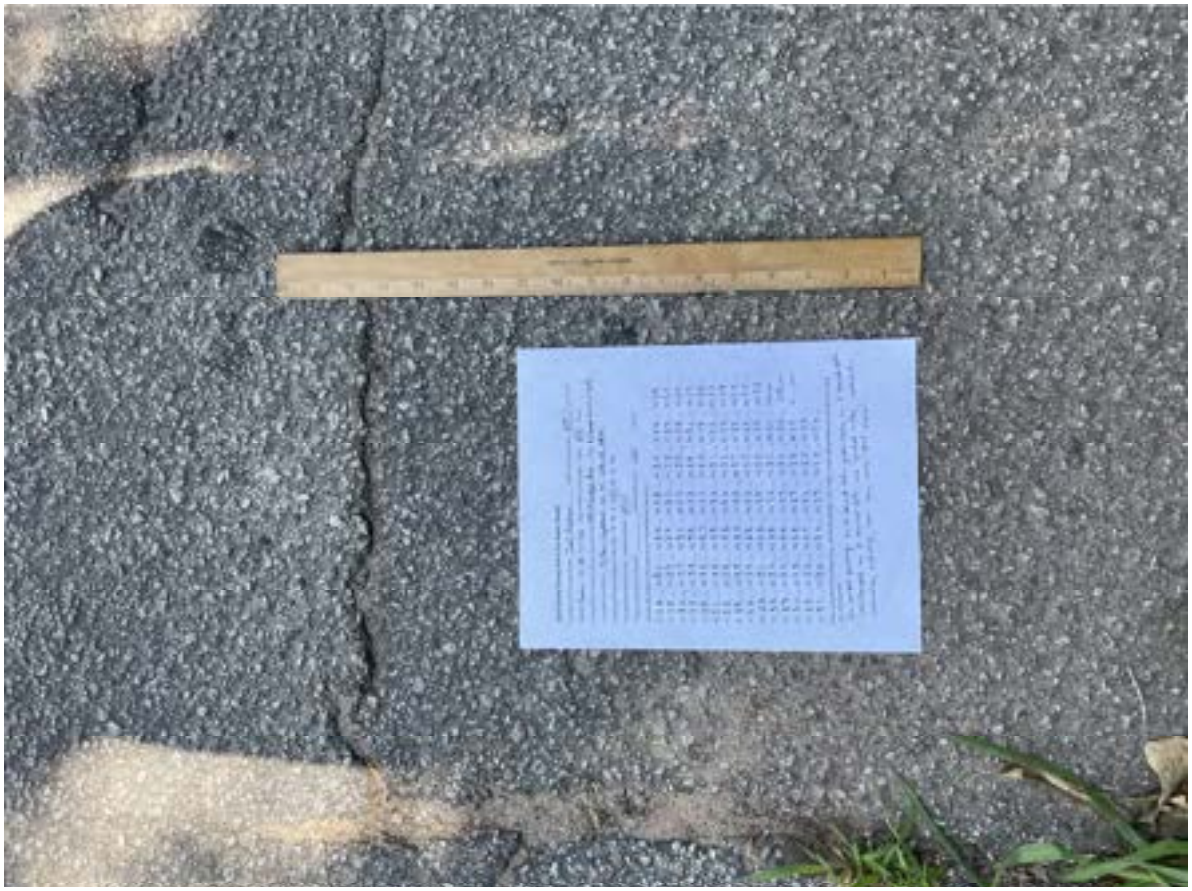
Speeds (Rounded to the nearest one decimal point, like 24.4):

1)	22.0	16)	31.0	31)	34.0	46)	25.0	61)	30.0	76)	42.0	91)	39.0
2)	27.0	17)	33.0	32)	29.0	47)	31.0	62)	28.0	77)	28.0	92)	25.0
3)	30.0	18)	27.0	33)	31.0	48)	25.0	63)	35.0	78)	34.0	93)	25.0
4)	29.0	19)	32.0	34)	32.0	49)	22.0	64)	38.0	79)	31.0	94)	25.0
5)	35.0	20)	29.0	35)	27.0	50)	27.0	65)	24.0	80)	29.0	95)	32.0
6)	31.0	21)	25.0	36)	28.0	51)	30.0	66)	31.0	81)	32.0	96)	32.0
7)	32.0	22)	25.0	37)	32.0	52)	30.0	67)	31.0	82)	28.0	97)	28.0
8)	33.0	23)	33.0	38)	30.0	53)	32.0	68)	27.0	83)	32.0	98)	29.0
9)	26.0	24)	25.0	39)	22.0	54)	25.0	69)	27.0	84)	29.0	99)	30.0
10)	28.0	25)	31.0	40)	29.0	55)	25.0	70)	32.0	85)	25.0	100)	32.0
11)	32.0	26)	30.0	41)	25.0	56)	32.0	71)	31.0	86)	31.0	End Time:	
12)	28.0	27)	27.0	42)	34.0	57)	23.0	72)	32.0	87)	25.0	10:39 a.m.	
13)	30.0	28)	45.0	43)	28.0	58)	23.0	73)	28.0	88)	32.0	or ____ p.m.	
14)	23.0	29)	26.0	44)	27.0	59)	30.0	74)	30.0	89)	28.0		
15)	31.0	30)	30.0	45)	30.0	60)	33.0	75)	29.0	90)	26.0		

Notes and Street Description (e.g., on-street parking/ 1 or 2 sides, rough setback distances, street trees, land use, activity level):

On-street parking on N-bound side, green space on S-bound side residential on N-bound side, no street trees, moderate vehicular activity, low non-motorized travel.


Spot Speed Survey Form for Pilot Study

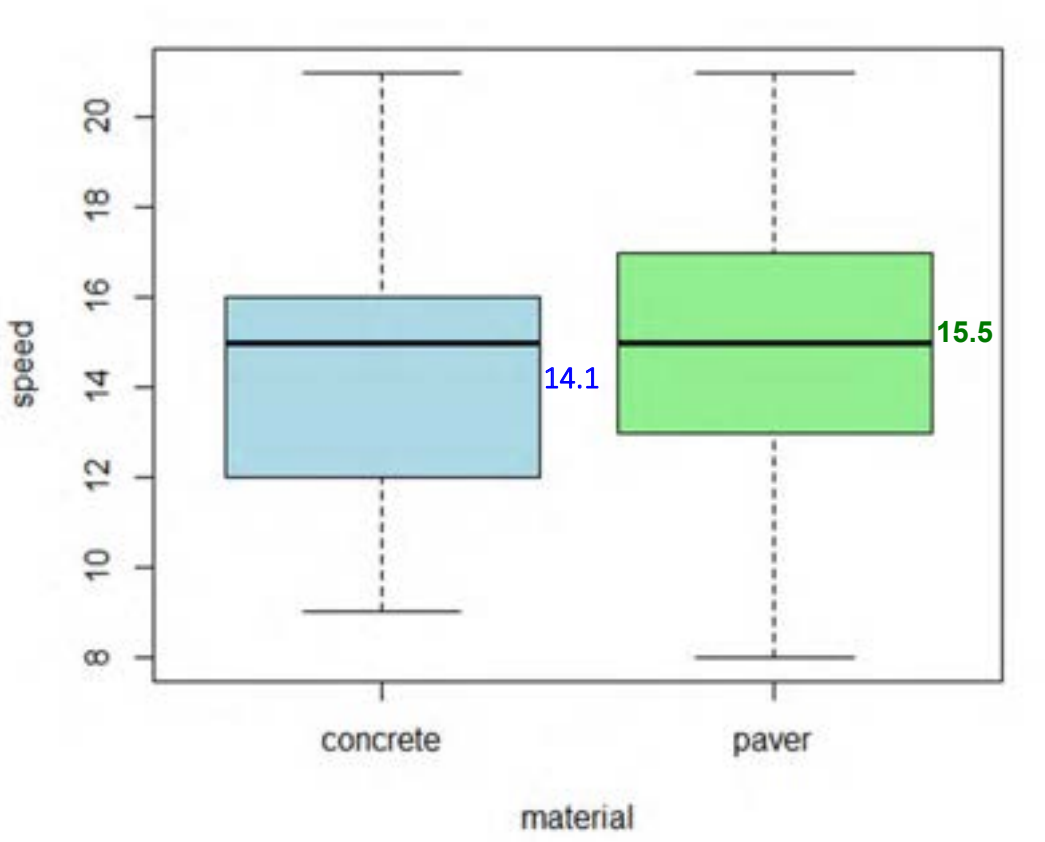



875

STREET PAIR #2
Austin, TX

Red River St (ICP)
Brazos St (Asphalt)

Street Pair 2 (Austin, TX)



W Commerce St
Between 2nd & 3rd
Austin
5/31/2022
1:30 PM to 2:45 PM
Tuesday
Concrete Pavers
25 mph
survey by Kamryn Long

observation	speed
1	12
2	15
3	12
4	13
5	11
6	14
7	13
8	12
9	14
10	13
11	14
12	14
13	14
14	15
15	13
16	21
17	14
18	16
19	19
20	15

observation	speed
21	8
22	19
23	15
24	14
25	15
26	16
27	16
28	12
29	19
30	14
31	17
32	19
33	20
34	20
35	17
36	12
37	17
38	21
39	20
40	13

observation	speed
41	20
42	21
43	12
44	17
45	19
46	11
47	19
48	18
49	18
50	12
51	17
52	17
53	14
54	16
55	15
56	17
57	17
58	15
59	13
60	13

observation	speed
61	17
62	12
63	16
64	17
65	15
66	15
67	16
68	
69	
70	
71	
72	
73	
74	
75	
76	
77	
78	
79	
80	

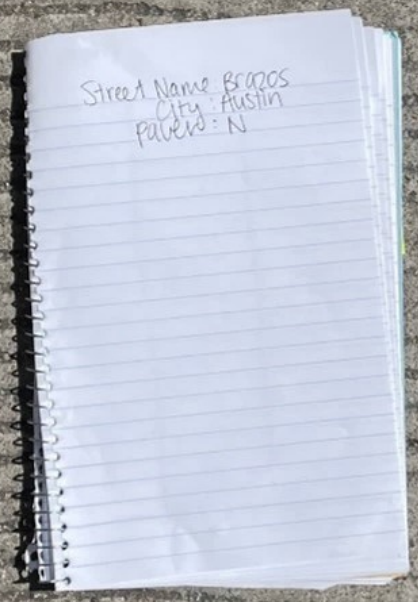
W Commerce St
Between 3rd and 4th
Austin
5/31/2022
9:45 AM to 11:30 AM
Tuesday
Asphalt
25 mph
survey by Kamryn Long

observation	speed
1	12
2	12
3	19
4	14
5	12
6	11
7	17
8	15
9	11
10	14
11	21
12	18
13	16
14	16
15	9
16	15
17	10
18	15
19	19
20	15

observation	speed
21	19
22	16
23	10
24	15
25	12
26	15
27	11
28	18
29	16
30	18
31	13
32	16
33	11
34	10
35	14
36	10
37	16
38	10
39	13
40	15

observation	speed
41	17
42	14
43	18
44	12
45	15
46	15
47	17
48	10
49	15
50	15
51	11
52	11
53	12
54	11
55	14
56	12
57	16
58	15
59	12
60	17

observation	speed
61	18
62	12
63	
64	
65	
66	
67	
68	
69	
70	
71	
72	
73	
74	
75	
76	
77	
78	
79	
80	


Street Name: Bravos
City: Austin
Paved: N

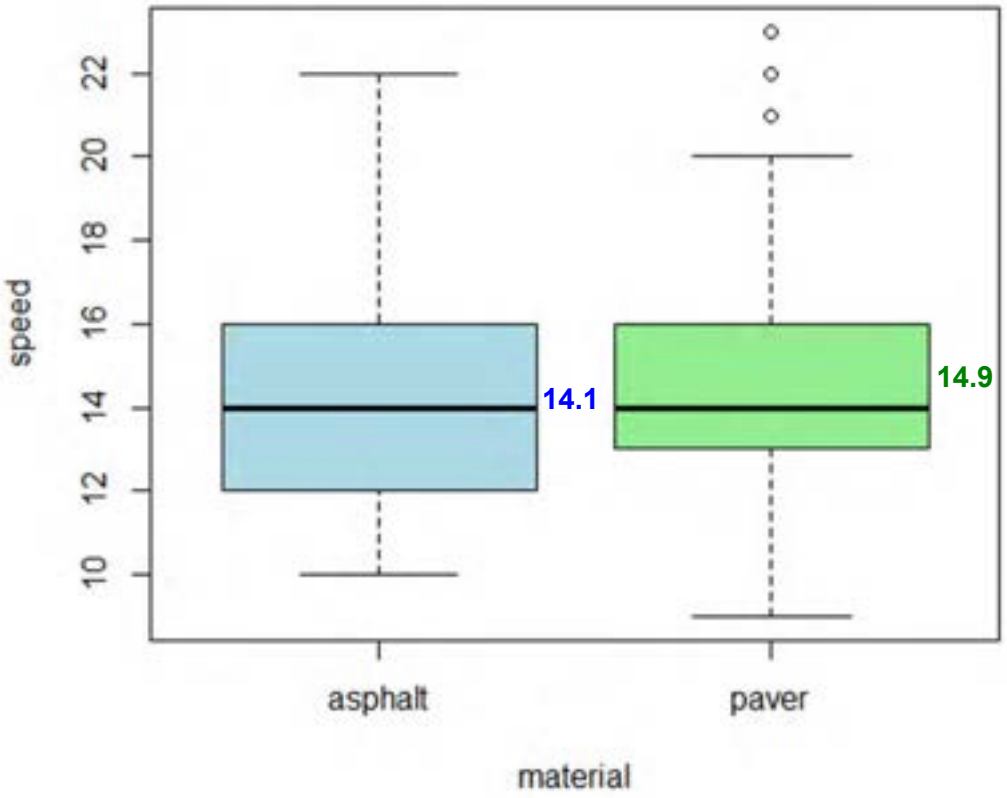

TARGET
SPEED
FALCON


SPEED LIMIT 3
STOP

STREET PAIR #3
Austin, TX

Gracie Kiltz Lane (ICP)
Kramer Lane (Asphalt)

Street Pair 3 (Austin, TX)



Gracie Kiltz Lane
Between Austin Lane & Domain Parkway
Austin
6/2/2022
1:30 PM to 3:00 PM
Thursday
Concrete Pavers
17 mph
survey by Kamryn Long

observation	speed
1	17
2	16
3	12
4	15
5	15
6	16
7	22
8	13
9	15
10	15
11	14
12	21
13	16
14	15
15	17
16	9
17	11
18	16
19	16
20	13

observation	speed
21	23
22	12
23	12
24	9
25	14
26	18
27	12
28	16
29	12
30	13
31	14
32	21
33	13
34	15
35	13
36	10
37	14
38	16
39	20
40	18

observation	speed
41	17
42	14
43	12
44	17
45	14
46	14
47	11
48	14
49	18
50	12
51	14
52	
53	
54	
55	
56	
57	
58	
59	
60	

Kramer Lane
Between Austin Lane & Domain Parkway
Austin
6/2/2022
9:50 AM to 11:15 AM
Thursday
Asphalt
20 mph
survey by Kamryn Long

observation	speed
1	10
2	17
3	16
4	16
5	10
6	22
7	13
8	19
9	17
10	14
11	12
12	12
13	14
14	11
15	14
16	12
17	18
18	19
19	11
20	12

observation	speed
21	15
22	18
23	14
24	10
25	12
26	16
27	15
28	10
29	12
30	14
31	12
32	14
33	13
34	14
35	15
36	16
37	15
38	15
39	16
40	17

observation	speed
41	12
42	11
43	15
44	10
45	16
46	12
47	15
48	12
49	11
50	10
51	19
52	16
53	12
54	18
55	10
56	12
57	14
58	16
59	12
60	18


Street Name: Gravel
City: Austin
Paved: Y


FIRE LANE TOW AWAY ZONE


Street Name: Kramer
City: Austin
Paved: N

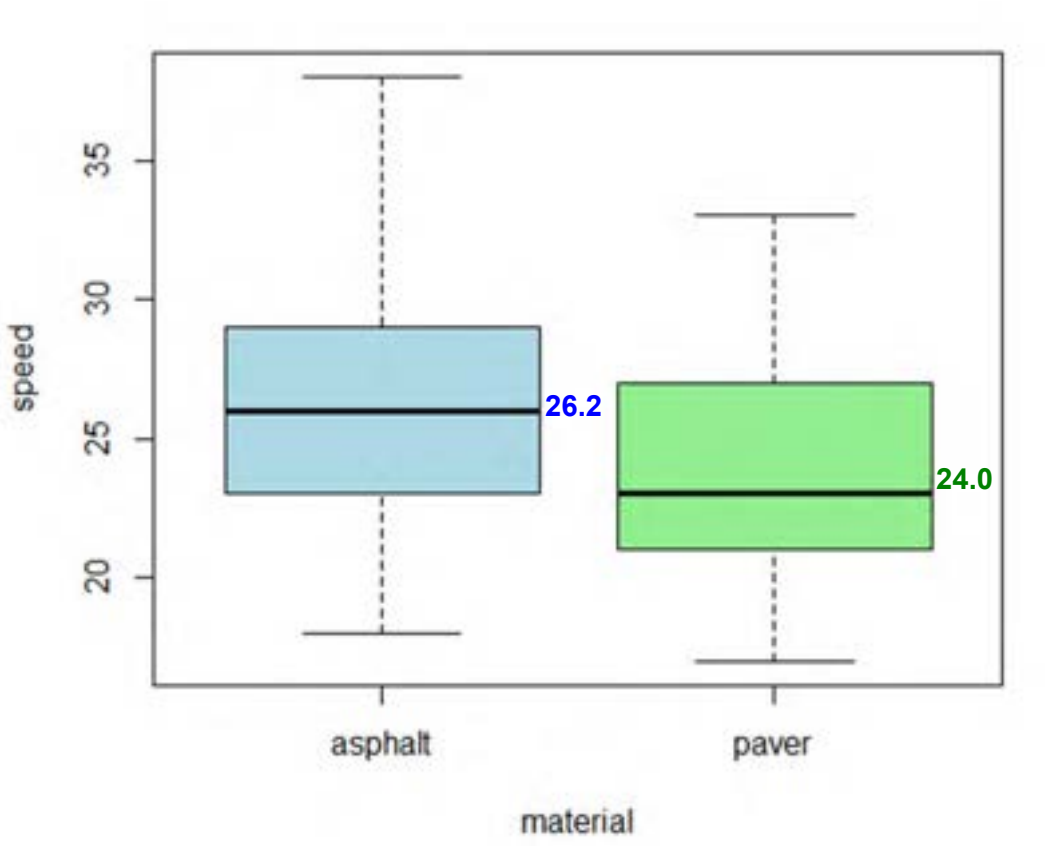

FIRE LANE


FIRE LANE TOW AWAY ZONE

STREET PAIR #4
Columbus, OH

East Dominion Boulevard (PICP)
East Beaumont Road (Asphalt)

Street Pair 4 (Columbus, OH)



Spot Speed Survey Form for Paver Study

8:15 AM

Surveyor's First & Last Name: Mariam Massoud Start Time (circle one): ~~9:30 a.m.~~ ~~1:30 p.m.~~

Month: Aug Day: 24 Year: 2022 Day of Week (circle one): Tues. (Wed.) Thurs.

Street Address (adjacent to where you are sitting): 143 E Dominion Blvd. City: Columbus State/Prov: OH

Landmark description: orange fire hydrant

Heading of Target vehicles (circle one): N NE E SE S SW (W) NW

Paving Material (circle one): (concrete pavers) asphalt

Posted or Default Speed Limit: 25 Units (circle one): (mph) km/h

Speeds (Rounded to the nearest one decimal point, like 24.4):

1)	22.0	16)	19.0	31)	27.0	46)	27.0	61)	22.0	76)	___.___	91)	___.___		
2)	20.0	17)	20.0	32)	27.0	47)	20.0	62)	28.0	77)	___.___	92)	___.___		
3)	23.0	18)	23.0	33)	19.0	48)	26.0	63)	21.0	78)	___.___	93)	___.___		
4)	22.0	19)	28.0	34)	33.0	49)	27.0	64)	20.0	79)	___.___	94)	___.___		
5)	25.0	20)	29.0	35)	25.0	50)	27.0	65)	26.0	80)	___.___	95)	___.___		
6)	21.0	21)	32.0	36)	25.0	51)	22.0	66)	29.0	81)	___.___	96)	___.___		
7)	26.0	22)	23.0	37)	22.0	52)	22.0	67)	21.0	82)	___.___	97)	___.___		
8)	25.0	23)	23.0	38)	25.0	53)	29.0	68)	___.___	83)	___.___	98)	___.___		
9)	29.0	24)	20.0	39)	26.0	54)	27.0	69)	___.___	84)	___.___	99)	___.___		
10)	28.0	25)	19.0	40)	19.0	55)	22.0	70)	___.___	85)	___.___	100)	___.___		
11)	23.0	26)	21.0	41)	28.0	56)	32.0	71)	___.___	86)	___.___	End Time:			
12)	23.0	27)	19.0	42)	23.0	57)	20.0	72)	___.___	87)	___.___	11:00 a.m.			
13)	24.0	28)	23.0	43)	26.0	58)	21.0	73)	___.___	88)	___.___	or ____ p.m.			
14)	22.0	29)	17.0	44)	27.0	59)	24.0	74)	___.___	89)	___.___				
15)	19.0	30)	26.0	45)	29.0	60)	19.0	75)	___.___	90)	___.___				

Notes and Street Description (e.g., on-street parking/ 1 or 2 sides, rough setback distances, street trees, land use, activity level):

Sunny, dry road conditions
on-street parking allowed on both sides
street trees present, some quite old/large
few people walking observed (w/ dogs, strollers)
few cyclists observed (fewer than # of people walking)
residential

Spot Speed Survey Form for Paver Study

12:30 PM

Surveyor's First & Last Name: Mariam Massoud Start Time (circle one): ~~9:30 a.m.~~ ~~1:30 p.m.~~

Month: Aug Day: 24 Year: 2022 Day of Week (circle one): Tues. (Wed) Thurs.

Street Address (adjacent to where you are sitting): 156 E Beaumont Rd City: Columbus State/Prov: OH

Landmark description: tree

Heading of Target vehicles (circle one): N NE (E) SE S SW W NW

Paving Material (circle one): concrete pavers (asphalt)

Posted or Default Speed Limit: 25 Units (circle one): (mph) km/h

Speeds (Rounded to the nearest one decimal point, like 24.4):

1)	38.0	16)	22.0	31)	31.0	46)	29.0	61)	35.0	76)	___.___	91)	___.___
2)	24.0	17)	23.0	32)	27.0	47)	30.0	62)	28.0	77)	___.___	92)	___.___
3)	29.0	18)	29.0	33)	20.0	48)	28.0	63)	24.0	78)	___.___	93)	___.___
4)	25.0	19)	27.0	34)	26.0	49)	25.0	64)	22.0	79)	___.___	94)	___.___
5)	21.0	20)	32.0	35)	26.0	50)	27.0	65)	30.0	80)	___.___	95)	___.___
6)	22.0	21)	25.0	36)	28.0	51)	23.0	66)	25.0	81)	___.___	96)	___.___
7)	22.0	22)	20.0	37)	30.0	52)	29.0	67)	___.___	82)	___.___	97)	___.___
8)	29.0	23)	23.0	38)	23.0	53)	23.0	68)	___.___	83)	___.___	98)	___.___
9)	27.0	24)	32.0	39)	31.0	54)	30.0	69)	___.___	84)	___.___	99)	___.___
10)	24.0	25)	26.0	40)	23.0	55)	27.0	70)	___.___	85)	___.___	100)	___.___
11)	30.0	26)	20.0	41)	26.0	56)	31.0	71)	___.___	86)	___.___	End Time:	
12)	23.0	27)	24.0	42)	27.0	57)	26.0	72)	___.___	87)	___.___	____ a.m.	
13)	18.0	28)	22.0	43)	25.0	58)	25.0	73)	___.___	88)	___.___	or 4:30 p.m.	
14)	28.0	29)	27.0	44)	26.0	59)	24.0	74)	___.___	89)	___.___		
15)	28.0	30)	27.0	45)	26.0	60)	29.0	75)	___.___	90)	___.___		

Notes and Street Description (e.g., on-street parking/ 1 or 2 sides, rough setback distances, street trees, land use, activity level):

sunny. road is dry

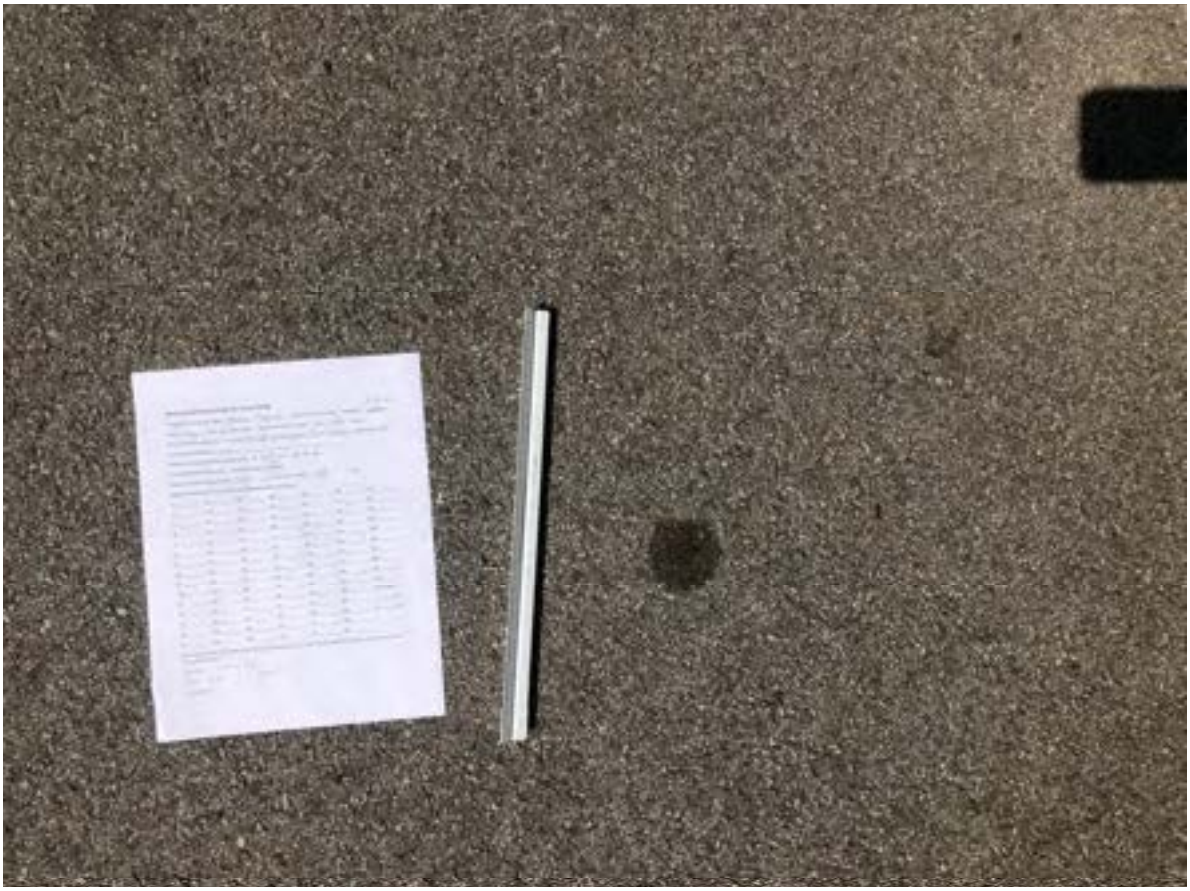
some street trees present

residential

parking allowed on both sides, but not heavily utilized

set back approx. 30'-50' (estimate, not measured)

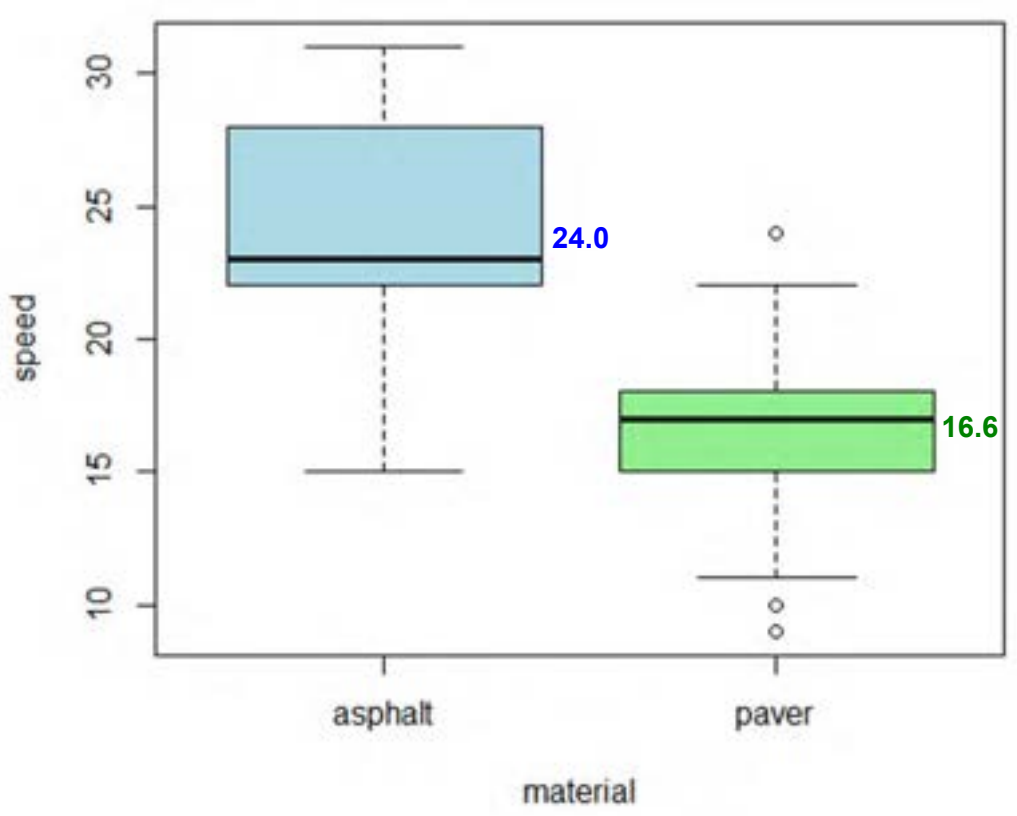
several people walking



STREET PAIR #5
Columbus, OH

Cooke Way (PICP)
Arbor Village Drive (Asphalt)

Street Pair 5 (Columbus, OH)



Spot Speed Survey Form for Paver Study

8:45 AM

Surveyor's First & Last Name: Mariam Massond Start Time (circle one): ~~9:30 a.m.~~ ~~1:30 p.m.~~

Month: 8 Aug. Day: 31 Year: 2022 Day of Week (circle one): Tues. (Wed.) Thurs.

Street Address (adjacent to where you are sitting): 4944 Arbor Village Dr. City: Columbus State/Prov: OH

Landmark description: tree

Heading of Target vehicles (circle one): N NE E SE (S) SW W NW

Paving Material (circle one): concrete pavers (asphalt)

Posted or Default Speed Limit: 25 Units (circle one): (mph) km/h

Speeds (Rounded to the nearest one decimal point, like 24.4):

1)	23.0	16)	18.0	31)	27.0	46)	31.0	61)	31.0	76)	___.__	91)	___.__
2)	22.0	17)	29.0	32)	31.0	47)	21.0	62)	___.__	77)	___.__	92)	___.__
3)	27.0	18)	23.0	33)	31.0	48)	29.0	63)	___.__	78)	___.__	93)	___.__
4)	22.0	19)	22.0	34)	24.0	49)	17.0	64)	___.__	79)	___.__	94)	___.__
5)	25.0	20)	24.0	35)	21.0	50)	28.0	65)	___.__	80)	___.__	95)	___.__
6)	22.0	21)	24.0	36)	31.0	51)	22.0	66)	___.__	81)	___.__	96)	___.__
7)	25.0	22)	29.0	37)	28.0	52)	24.0	67)	___.__	82)	___.__	97)	___.__
8)	21.0	23)	19.0	38)	29.0	53)	29.0	68)	___.__	83)	___.__	98)	___.__
9)	22.0	24)	19.0	39)	16.0	54)	15.0	69)	___.__	84)	___.__	99)	___.__
10)	22.0	25)	22.0	40)	30.0	55)	26.0	70)	___.__	85)	___.__	100)	___.__
11)	19.0	26)	22.0	41)	25.0	56)	31.0	71)	___.__	86)	___.__	End Time:	
12)	20.0	27)	31.0	42)	23.0	57)	15.0	72)	___.__	87)	___.__	____ a.m.	
13)	22.0	28)	21.0	43)	27.0	58)	25.0	73)	___.__	88)	___.__	or ____ p.m.	
14)	24.0	29)	23.0	44)	23.0	59)	19.0	74)	___.__	89)	___.__		
15)	24.0	30)	23.0	45)	31.0	60)	17.0	75)	___.__	90)	___.__		

Notes and Street Description (e.g., on-street parking/ 1 or 2 sides, rough setback distances, street trees, land use, activity level):

parking on one side

no sidewalks

some people walking

residential (small apt. buildings, 2-3 stories)

some trees present

Spot Speed Survey Form for Paver Study

~~8:AM~~ 8:35 AM - 10 AM

Surveyor's First & Last Name: Mariam Massoud Start Time (circle one): ~~9:30 a.m. 1:30 p.m.~~

Month: Sept. Day: 29 Year: 2022 Day of Week (circle one): Tues. Wed. (Thurs)

Street Address (adjacent to where you are sitting): 4316 N. High St City: Columbus State/Prov: OH
4 in back, Cooke Way side

Landmark description: green dumpster

Heading of Target vehicles (circle one): N NE E SE (S) SW W NW

Paving Material (circle one): (concrete pavers) asphalt

Posted or Default Speed Limit: 25 Units (circle one): (mph) km/h (

Speeds (Rounded to the nearest one decimal point, like 24.4):

1)	13.0	16)	18.0	31)	16.0	46)	16.0	61)	16.0	76)	17.0	91)	___.___		
2)	16.0	17)	15.0	32)	15.0	47)	14.0	62)	18.0	77)	13.0	92)	___.___		
3)	20.0	18)	20.0	33)	17.0	48)	16.0	63)	12.0	78)	15.0	93)	___.___		
4)	24.0	19)	17.0	34)	18.0	49)	19.0	64)	15.0	79)	13.0	94)	___.___		
5)	14.0	20)	17.0	35)	15.0	50)	17.0	65)	20.0	80)	14.0	95)	___.___		
6)	13.0	21)	17.0	36)	13.0	51)	14.0	66)	19.0	81)	19.0	96)	___.___		
7)	10.0	22)	18.0	37)	9.0	52)	17.0	67)	14.0	82)	18.0	97)	___.___		
8)	19.0	23)	22.0	38)	14.0	53)	11.0	68)	18.0	83)	14.0	98)	___.___		
9)	19.0	24)	24.0	39)	17.0	54)	15.0	69)	19.0	84)	___.___	99)	___.___		
10)	15.0	25)	12.0	40)	20.0	55)	14.0	70)	15.0	85)	___.___	100)	___.___		
11)	16.0	26)	18.0	41)	20.0	56)	19.0	71)	18.0	86)	___.___	End Time:			
12)	18.0	27)	17.0	42)	18.0	57)	15.0	72)	20.0	87)	___.___	____ a.m.			
13)	15.0	28)	17.0	43)	18.0	58)	20.0	73)	15.0	88)	___.___	or ____ p.m.			
14)	24.0	29)	20.0	44)	17.0	59)	20.0	74)	18.0	89)	___.___				
15)	18.0	30)	10.0	45)	15.0	60)	16.0	75)	16.0	90)	___.___				

Notes and Street Description (e.g., on-street parking/ 1 or 2 sides, rough setback distances, street trees, land use, activity level):

parking on-street prohibited, residential land use on east side. commercial on west

partly cloudy. road is dry

some people walking (not many)


ONE
WAY

STREET PAIR #6

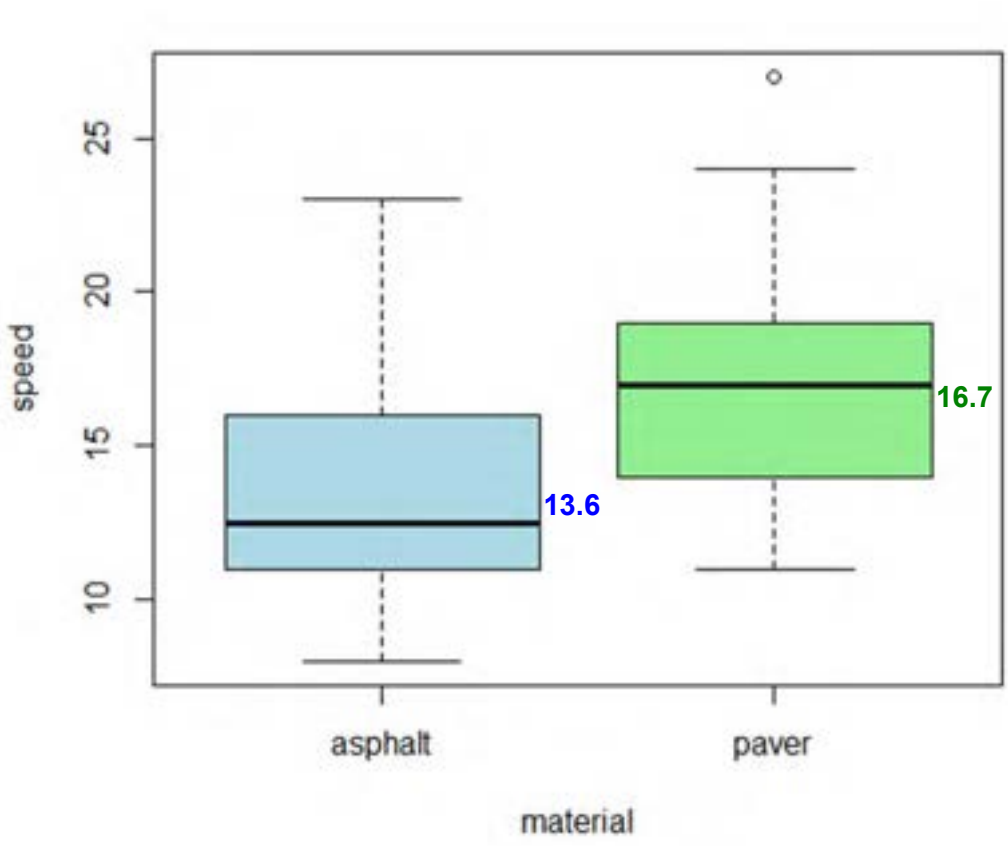
Sprague, CT

River Street (PICP)

Norwich, CT

Treadway Avenue (Asphalt)

Street Pair 6 (Connecticut)



Spot Speed Survey Form for Concrete Paver Study

2pm

Surveyor's First & Last Name: Shawna Kitsman Start Time (circle one): 9:30 a.m. 1:30 p.m.

Month: 10 Day: 20 Year: 2022 Day of Week (circle one): Tues. Wed. (Thurs.)

Street Address (adjacent to where you are sitting): 22 Tredway Ave City: Norwich State/Prov: CT

Landmark description: residential stone wall

Heading of Target vehicles (circle one): N NE E SE S SW W NW

Paving Material (circle one): concrete pavers (asphalt)

Posted or Default Speed Limit: n/a Units (circle one): (mph) km/h

Speeds (Rounded to the nearest one decimal point, like 24.4):

1)	13.	16)	14.	31)	__.__	46)	__.__	61)	__.__	76)	__.__	91)	__.__		
2)	12.	17)	11.	32)	__.__	47)	__.__	62)	__.__	77)	__.__	92)	__.__		
3)	16.	18)	16.	33)	__.__	48)	__.__	63)	__.__	78)	__.__	93)	__.__		
4)	19.	19)	11.	34)	__.__	49)	__.__	64)	__.__	79)	__.__	94)	__.__		
5)	11.	20)	16.	35)	__.__	50)	__.__	65)	__.__	80)	__.__	95)	__.__		
6)	17.	21)	12.	36)	__.__	51)	__.__	66)	__.__	81)	__.__	96)	__.__		
7)	14.	22)	23.	37)	__.__	52)	__.__	67)	__.__	82)	__.__	97)	__.__		
8)	16.	23)	11.	38)	__.__	53)	__.__	68)	__.__	83)	__.__	98)	__.__		
9)	10.	24)	15.	39)	__.__	54)	__.__	69)	__.__	84)	__.__	99)	__.__		
10)	11.	25)	9.	40)	__.__	55)	__.__	70)	__.__	85)	__.__	100)	__.__		
11)	8.	26)	11.	41)	__.__	56)	__.__	71)	__.__	86)	__.__	End Time:			
12)	11.	27)	14.	42)	__.__	57)	__.__	72)	__.__	87)	__.__	____ a.m.			
13)	15.	28)	11.	43)	__.__	58)	__.__	73)	__.__	88)	__.__	or 6 p.m			
14)	12.	29)	__.__	44)	__.__	59)	__.__	74)	__.__	89)	__.__				
15)	11.	30)	__.__	45)	__.__	60)	__.__	75)	__.__	90)	__.__				

Notes and Street Description (e.g., on-street parking/ 1 or 2 sides, rough setback distances, street trees, land use, activity level):

residential 1-way street with 1-side of parking

Spot Speed Survey Form for Concrete Paver Study

Surveyor's First & Last Name: Shawna Kitemore Start Time (circle one): 9:30 a.m. 1:30 p.m. 11:30 am

Month: 10 Day: 20 Year: 2022 Day of Week (circle one): Tues. (Wed.) Thurs.

Street Address (adjacent to where you are sitting): 97 River St City: Sprague State/Prov: CT

Landmark description: Bob Labbe Field parking lot

Heading of Target vehicles (circle one): N NE E SE S SW (W) NW

Paving Material (circle one): (concrete pavers) asphalt

Posted or Default Speed Limit: 15 Units (circle one): (mph) km/h

Speeds (Rounded to the nearest one decimal point, like 24.4):

1)	15.0	16)	11.0	31)	___.___	46)	___.___	61)	___.___	76)	___.___	91)	___.___
2)	15.0	17)	19.0	32)	___.___	47)	___.___	62)	___.___	77)	___.___	92)	___.___
3)	17.0	18)	18.0	33)	___.___	48)	___.___	63)	___.___	78)	___.___	93)	___.___
4)	17.0	19)	22.0	34)	___.___	49)	___.___	64)	___.___	79)	___.___	94)	___.___
5)	19.0	20)	17.0	35)	___.___	50)	___.___	65)	___.___	80)	___.___	95)	___.___
6)	16.0	21)	13.0	36)	___.___	51)	___.___	66)	___.___	81)	___.___	96)	___.___
7)	24.0	22)	11.0	37)	___.___	52)	___.___	67)	___.___	82)	___.___	97)	___.___
8)	16.0	23)	13.0	38)	___.___	53)	___.___	68)	___.___	83)	___.___	98)	___.___
9)	17.0	24)	13.0	39)	___.___	54)	___.___	69)	___.___	84)	___.___	99)	___.___
10)	17.0	25)	15.0	40)	___.___	55)	___.___	70)	___.___	85)	___.___	100)	___.___
11)	17.0	26)	14.0	41)	___.___	56)	___.___	71)	___.___	86)	___.___	End Time:	
12)	27.0	27)	20.0	42)	___.___	57)	___.___	72)	___.___	87)	___.___	____ a.m.	
13)	18.0	28)	14.0	43)	___.___	58)	___.___	73)	___.___	88)	___.___	or 1:43 p.m	
14)	12.0	29)	19.0	44)	___.___	59)	___.___	74)	___.___	89)	___.___		
15)	16.0	30)	20.0	45)	___.___	60)	___.___	75)	___.___	90)	___.___		

Notes and Street Description (e.g., on-street parking/ 1 or 2 sides, rough setback distances, street trees, land use, activity level): 1-side on street parking

Spot Speed Survey Form for Concrete Paver Study

Surveyor's First & Last Name: Shawna Kitemore Start Time (circle one): 9:30 a.m. 1:30 p.m. 11:30 am

Month: 10 Day: 20 Year: 2022 Day of Week (circle one): Tues. (Wed.) Thurs.

Street Address (adjacent to where you are sitting): 97 River St City: Sprague State/Prov: CT

Landmark description: Bob Labbe Field parking lot

Heading of Target vehicles (circle one): N NE E SE S SW (W) NW

Paving Material (circle one): (concrete pavers) asphalt

Posted or Default Speed Limit: _____ Units (circle one): (mph) km/h

Speeds (Rounded to the nearest one decimal point, like 24.4):

1) 15.__	16) __.__	31) __.__	46) __.__	61) __.__	76) __.__	91) __.__
2) 15.__	17) __.__	32) __.__	47) __.__	62) __.__	77) __.__	92) __.__
3) 17.__	18) __.__	33) __.__	48) __.__	63) __.__	78) __.__	93) __.__
4) 17.__	19) __.__	34) __.__	49) __.__	64) __.__	79) __.__	94) __.__
5) 19.__	20) __.__	35) __.__	50) __.__	65) __.__	80) __.__	95) __.__
6) 16.__	21) __.__	36) __.__	51) __.__	66) __.__	81) __.__	96) __.__
7) 24.__	22) __.__	37) __.__	52) __.__	67) __.__	82) __.__	97) __.__
8) 16.__	23) __.__	38) __.__	53) __.__	68) __.__	83) __.__	98) __.__
9) 17.__	24) __.__	39) __.__	54) __.__	69) __.__	84) __.__	99) __.__
10) 17.__	25) __.__	40) __.__	55) __.__	70) __.__	85) __.__	100) __.__
11) 17.__	26) __.__	41) __.__	56) __.__	71) __.__	86) __.__	End Time:
12) __.__	27) __.__	42) __.__	57) __.__	72) __.__	87) __.__	____ a.m.
13) __.__	28) __.__	43) __.__	58) __.__	73) __.__	88) __.__	or ____ p.m.
14) __.__	29) __.__	44) __.__	59) __.__	74) __.__	89) __.__	
15) __.__	30) __.__	45) __.__	60) __.__	75) __.__	90) __.__	

Notes and Street T… R., on-street parking/ 1 or 2 sides, rough setback distances, street trees, land use, activity lev… side on street parking

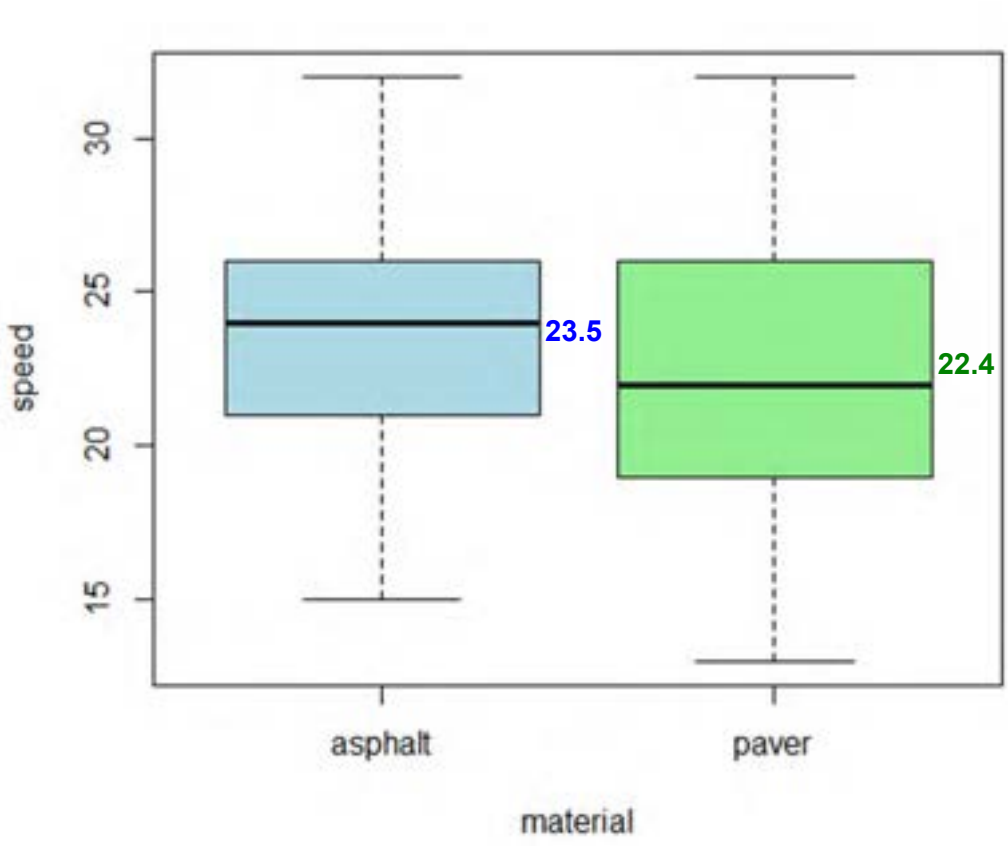

SPEED
LIMIT
15
SLOW
CHILDREN


Bob Labbe Field

STREET PAIR #7
New Albany, OH

Third St (PICP)
Village Hall Road (Asphalt)

Street Pair 7 (New Albany, OH)



9:30 – 1:45

Spot Speed Survey Form for Paver Study

Surveyor's First & Last Name: Mariam Massoud Start Time (circle one): (9:30 a.m.) 1:30 p.m.

Month: Sept. Day: 14 Year: 2022 Day of Week (circle one): Tues. (Wed.) Thurs.

Street Address (adjacent to where you are sitting): 25 3rd Street City: New Albany State/Prov: OH

Landmark description: red fire hydrant

Heading of Target vehicles (circle one): (N) NE E SE S SW W NW

Paving Material (circle one): (concrete pavers) asphalt

Posted or Default Speed Limit: 25 mph Units (circle one): (mph) km/h

Speeds (Rounded to the nearest one decimal point, like 24.4):

1)	19.0	16)	25.0	31)	16.0	46)	28.0	61)	18.0	76)	___.___	91)	___.___		
2)	31.0	17)	20.0	32)	26.0	47)	27.0	62)	19.0	77)	___.___	92)	___.___		
3)	20.0	18)	28.0	33)	22.0	48)	20.0	63)	___.___	78)	___.___	93)	___.___		
4)	26.0	19)	20.0	34)	18.0	49)	22.0	64)	___.___	79)	___.___	94)	___.___		
5)	19.0	20)	16.0	35)	19.0	50)	21.0	65)	___.___	80)	___.___	95)	___.___		
6)	27.0	21)	29.0	36)	13.0	51)	22.0	66)	___.___	81)	___.___	96)	___.___		
7)	23.0	22)	28.0	37)	22.0	52)	24.0	67)	___.___	82)	___.___	97)	___.___		
8)	25.0	23)	18.0	38)	19.0	53)	18.0	68)	___.___	83)	___.___	98)	___.___		
9)	26.0	24)	22.0	39)	26.0	54)	22.0	69)	___.___	84)	___.___	99)	___.___		
10)	32.0	25)	25.0	40)	22.0	55)	26.0	70)	___.___	85)	___.___	100)	___.___		
11)	24.0	26)	16.0	41)	21.0	56)	30.0	71)	___.___	86)	___.___	End Time:			
12)	24.0	27)	18.0	42)	22.0	57)	24.0	72)	___.___	87)	___.___	____ a.m.			
13)	23.0	28)	23.0	43)	20.0	58)	27.0	73)	___.___	88)	___.___	or ____ p.m.			
14)	21.0	29)	16.0	44)	27.0	59)	24.0	74)	___.___	89)	___.___				
15)	20.0	30)	18.0	45)	20.0	60)	20.0	75)	___.___	90)	___.___				

Notes and Street Description (e.g., on-street parking/ 1 or 2 sides, rough setback distances, street trees, land use, activity level):

residential on W side, setback is about 20'
church w/ parking lot on E side
sidewalks on both sides, street trees b/w street & sidewalk
kids playing in church playground, but no one really walking on street
road condition: dry
partly cloudy

GPD Group
MS Consultants

Spot Speed Survey Form for Paver Study

2:15 ~~PM~~ 2:30 PM

Surveyor's First & Last Name: Mariam Massoud Start Time (circle one): ~~9:30 a.m. 1:30 p.m.~~

Month: Sept. Day: 14 Year: 2022 Day of Week (circle one): Tues. (Wed) Thurs.

Street Address (adjacent to where you are sitting): Village Hall Road City: New Albany State/Prov: OH

Landmark description: two-hr parking sign

Heading of Target vehicles (circle one): N NE E (SE) S SW ~~W~~ NW

Paving Material (circle one): concrete pavers (asphalt)

Posted or Default Speed Limit: 25 Units (circle one): (mph) km/h

Speeds (Rounded to the nearest one decimal point, like 24.4):

1)	21.0	16)	27.0	31)	27.0	46)	26.0	61)	___.__	76)	___.__	91)	___.__
2)	19.0	17)	24.0	32)	21.0	47)	21.0	62)	___.__	77)	___.__	92)	___.__
3)	23.0	18)	24.0	33)	31.0	48)	22.0	63)	___.__	78)	___.__	93)	___.__
4)	28.0	19)	20.0	34)	22.0	49)	25.0	64)	___.__	79)	___.__	94)	___.__
5)	25.0	20)	22.0	35)	22.0	50)	22.0	65)	___.__	80)	___.__	95)	___.__
6)	18.0	21)	24.0	36)	23.0	51)	28.0	66)	___.__	81)	___.__	96)	___.__
7)	21.0	22)	29.0	37)	26.0	52)	23.0	67)	___.__	82)	___.__	97)	___.__
8)	21.0	23)	25.0	38)	26.0	53)	25.0	68)	___.__	83)	___.__	98)	___.__
9)	18.0	24)	25.0	39)	26.0	54)	16.0	69)	___.__	84)	___.__	99)	___.__
10)	24.0	25)	26.0	40)	23.0	55)	___.__	70)	___.__	85)	___.__	100)	___.__
11)	32.0	26)	19.0	41)	29.0	56)	___.__	71)	___.__	86)	___.__	End Time:	
12)	19.0	27)	25.0	42)	26.0	57)	___.__	72)	___.__	87)	___.__	____ a.m.	
13)	18.0	28)	15.0	43)	19.0	58)	___.__	73)	___.__	88)	___.__	or ____ p.m.	
14)	17.0	29)	27.0	44)	29.0	59)	___.__	74)	___.__	89)	___.__		
15)	29.0	30)	25.0	45)	23.0	60)	___.__	75)	___.__	90)	___.__		

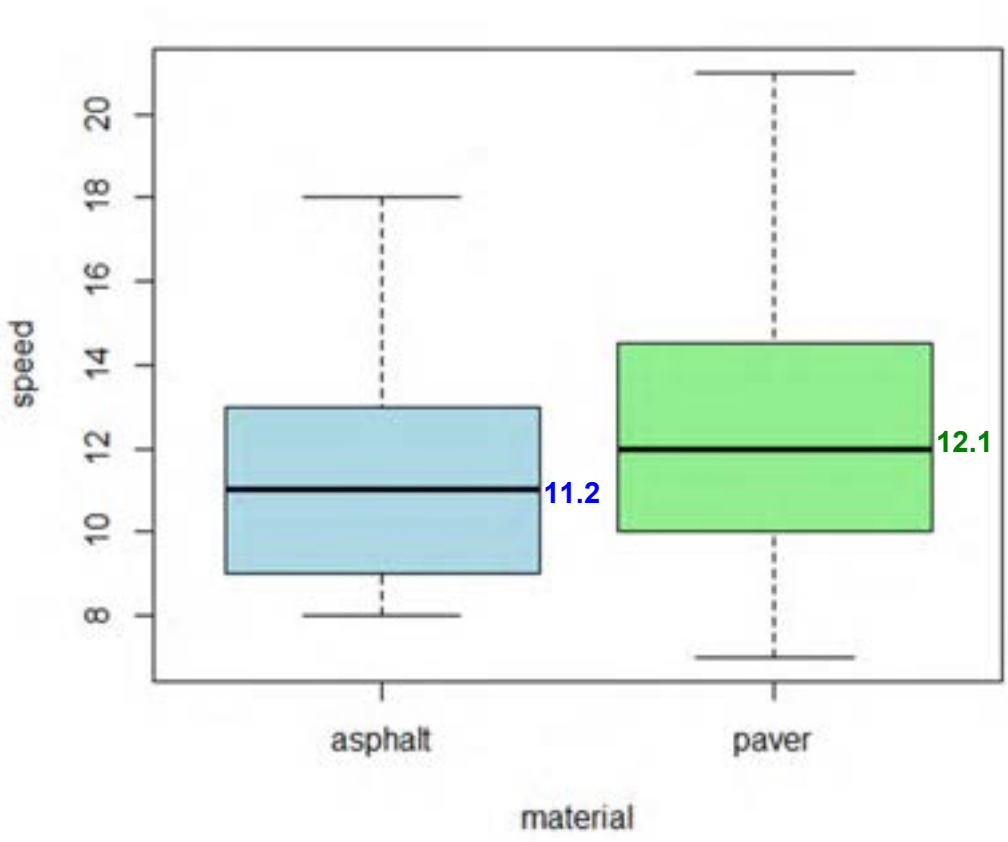
Notes and Street Description (e.g., on-street parking/ 1 or 2 sides, rough setback distances, street trees, land use, activity level):

road condition: dry
partly cloudy
parking restricted on one side
sidewalks & street trees on both sides
a few businesses, spaced out w/ lots of trees/foresty area between them. police station is also on this street
very few people walking

STREET PAIR #8
Portland, OR

SW 9th Ave (ICP)
SW 9th Ave (Asphalt)

Street Pair 8 (Portland, OR)



Spot Speed Survey Form for Paver Study

Surveyor's First & Last Name: Gwen Shaw Start Time (circle one): (9:30 a.m.) 1:30 p.m.

Month: July Day: 20 Year: 2022 Day of Week (circle one): Tues. (Wed.) Thurs.

Street Address (adjacent to where you are sitting): 911 SW Taylor St. City: Portland State/Prov: OR

Landmark description: 7th Bollard (which is before to drain grate)

Heading of Target vehicles (circle one): N NE E SE (S) SW W NW

Paving Material (circle one): (concrete pavers) asphalt

Posted or Default Speed Limit: 25 Units (circle one): (mph) km/h

Speeds (Rounded to the nearest one decimal point, like 24.4):

1)	17.0	16)	21.0	31)	__.__	46)	__.__	61)	__.__	76)	__.__	91)	__.__
2)	16.0	17)	12.0	32)	__.__	47)	__.__	62)	__.__	77)	__.__	92)	__.__
3)	15.0	18)	__.__	33)	__.__	48)	__.__	63)	__.__	78)	__.__	93)	__.__
4)	16.0	19)	__.__	34)	__.__	49)	__.__	64)	__.__	79)	__.__	94)	__.__
5)	20.0	20)	__.__	35)	__.__	50)	__.__	65)	__.__	80)	__.__	95)	__.__
6)	16.0	21)	__.__	36)	__.__	51)	__.__	66)	__.__	81)	__.__	96)	__.__
7)	11.0	22)	__.__	37)	__.__	52)	__.__	67)	__.__	82)	__.__	97)	__.__
8)	13.0	23)	__.__	38)	__.__	53)	__.__	68)	__.__	83)	__.__	98)	__.__
9)	10.0	24)	__.__	39)	__.__	54)	__.__	69)	__.__	84)	__.__	99)	__.__
10)	15.0	25)	__.__	40)	__.__	55)	__.__	70)	__.__	85)	__.__	100)	__.__
11)	19.0	26)	__.__	41)	__.__	56)	__.__	71)	__.__	86)	__.__	End Time:	
12)	12.0	27)	__.__	42)	__.__	57)	__.__	72)	__.__	87)	__.__	____ a.m.	
13)	14.0	28)	__.__	43)	__.__	58)	__.__	73)	__.__	88)	__.__	or ____ p.m.	
14)	13.0	29)	__.__	44)	__.__	59)	__.__	74)	__.__	89)	__.__		
15)	15.0	30)	__.__	45)	__.__	60)	__.__	75)	__.__	90)	__.__		

Notes and Street Description (e.g., on-street parking/ 1 or 2 sides, rough setback distances, street trees, land use, activity level):

Parking on right, bollards on left - level surface/no curbs w/ tree wells

Low volumes + speeds typical for downtown environment - all sorts of activity

Spot Speed Survey Form for Paver Study

Surveyor's First & Last Name: FREDDIE WINTER Start Time (circle one): 9:30 a.m. 1:30 p.m.

Month: 7 Day: 27 Year: 2022 Day of Week (circle one): Tues. Wed. Thurs.

Street Address (adjacent to where you are sitting): 828 SW 9TH AVE City: PORTLAND State/Prov: OR

Landmark description: PARKING KIOSK

Heading of Target vehicles (circle one): N NE E SE S SW W NW

Paving Material (circle one): concrete pavers asphalt

Posted or Default Speed Limit: 25 Units (circle one): mph km/h

Speeds (Rounded to the nearest one decimal point, like 24.4):

~~1)~~ 7.__	16) 8.__	31) 10.__	46) __.__	61) __.__	76) __.__	91) __.__
2) 10.__	17) 12.__	32) 9.__	47) __.__	62) __.__	77) __.__	92) __.__
3) 14.__	18) 15.__	33) 11.__	48) __.__	63) __.__	78) __.__	93) __.__
4) 12.__	19) 8.__	34) 12.__	49) __.__	64) __.__	79) __.__	94) __.__
5) 8.__	20) 15.__	35) 10.__	50) __.__	65) __.__	80) __.__	95) __.__
6) 7.__	21) 8.__	36) 15.__	51) __.__	66) __.__	81) __.__	96) __.__
7) 8.__	22) 14.__	37) __.__	52) __.__	67) __.__	82) __.__	97) __.__
8) 14.__	23) 12.__	38) __.__	53) __.__	68) __.__	83) __.__	98) __.__
9) 11.__	24) 8.__	39) __.__	54) __.__	69) __.__	84) __.__	99) __.__
10) 12.__	25) 8.__	40) __.__	55) __.__	70) __.__	85) __.__	100) __.__
11) 8.__	26) 12.__	41) __.__	56) __.__	71) __.__	86) __.__	End Time:
12) 10.__	27) 9.__	42) __.__	57) __.__	72) __.__	87) __.__	_____ a.m.
~~13)~~ 9.__	28) 10.__	43) __.__	58) __.__	73) __.__	88) __.__	or _____ p.m.
14) 14.__	29) 7.__	44) __.__	59) __.__	74) __.__	89) __.__	
15) 10.__	30) 11.__	45) __.__	60) __.__	75) __.__	90) __.__	

Notes and Street Description (e.g., on-street parking/ 1 or 2 sides, rough setback distances, street trees, land use, activity level):

6 TREES (3 ON EACH SIDE) W/ LOW & SPARSE CANOPY. PARK ADJACENT & CURBLESS. MEDIUM PED ACTIVITY. BOLLARDS ONESIDE * PARKING OPPOSITE SIDE. PEDS CROSSING NOT AT XW

Spot Speed Survey Form for Paver Study

Surveyor's First & Last Name: FREDDIE WINTER Start Time (circle one): 9:30 a.m. ~~1:30 p.m.~~

Month: 7 Day: 20 Year: 2022 Day of Week (circle one): Tues. (Wed.) Thurs.

Street Address (adjacent to where you are sitting): 916 SW 9TH AVE City: PORTLAND State/Prov: OR

Landmark description: DOGWOOD TREE

Heading of Target vehicles (circle one): N NE E SE S (SW) W NW

Paving Material (circle one): concrete pavers asphalt

Posted or Default Speed Limit: 25 Units (circle one): (mph) km/h

Speeds (Rounded to the nearest one decimal point, like 24.4):

~~1)~~ 13.__	16) 9.__	31) 11.__	46) __.__	61) __.__	76) __.__	91) __.__
2) 12.__	17) 11.__	32) 15.__	47) __.__	62) __.__	77) __.__	92) __.__
3) 9.__	18) 9.__	33) 10.__	48) __.__	63) __.__	78) __.__	93) __.__
~~4)~~ 21.__	19) 12.__	34) 13.__	49) __.__	64) __.__	79) __.__	94) __.__
5) 15.__	20) 15.__	35) 11.__	50) __.__	65) __.__	80) __.__	95) __.__
6) 11.__	21) 12.__	36) 10.__	51) __.__	66) __.__	81) __.__	96) __.__
7) 14.__	~~22)~~ 8.__	37) 12.__	52) __.__	67) __.__	82) __.__	97) __.__
8) 15.__	~~23)~~ 9.__	38) 8.__	53) __.__	68) __.__	83) __.__	98) __.__
9) 14.__	24) 12.__	39) 11.__	54) __.__	69) __.__	84) __.__	99) __.__
10) 13.__	25) 11.__	40) 11.__	55) __.__	70) __.__	85) __.__	100) __.__
11) 11.__	26) 15.__	41) 11.__	56) __.__	71) __.__	86) __.__	End Time:
12) 13.__	27) 13.__	42) __.__	57) __.__	72) __.__	87) __.__	____ a.m.
13) 11.__	28) 12.__	43) __.__	58) __.__	73) __.__	88) __.__	or 3 p.m.
14) 10.__	29) 11.__	44) __.__	59) __.__	74) __.__	89) __.__	
15) 10.__	30) 16.__	45) __.__	60) __.__	75) __.__	90) __.__	

Notes and Street Description (e.g., on-street parking/ 1 or 2 sides, rough setback distances, street trees, land use, activity level):

ON STREET PARKING BOTH SIDES. 4-5 TREES EACH SIDE.

CENTRAL BUSINESS & RESIDENTIAL

9th Ave btwn Taylor & Salmon

Spot Speed Survey Form for Paver Study

Surveyor's First & Last Name: PERRIN FAULKNER Start Time (circle one): 9:30 a.m. (1:30 p.m.)

Month: July Day: 27 Year: 2022 Day of Week (circle one): Tues. (Wed.) Thurs.

Street Address (adjacent to where you are sitting): 901 SW Salmon (sitting on 9th) City: Portland State/Prov: OR

Landmark description: KIOSK for parking

Heading of Target vehicles (circle one): N NE E SE S (SW) W NW

Paving Material (circle one): concrete pavers (asphalt)

Posted or Default Speed Limit: 25 Units (circle one): (mph) km/h

Speeds (Rounded to the nearest one decimal point, like 24.4):

1)	18.0	16)	13.0	31)	12.0	46)	11.0	61)	___.___	76)	___.___	91)	___.___
2)	15.0	17)	9.0	32)	9.0	47)	9.0	62)	___.___	77)	___.___	92)	___.___
3)	11.0	18)	13.0	33)	9.0	48)	8.0	63)	___.___	78)	___.___	93)	___.___
4)	11.0	19)	16.0	34)	13.0	49)	8.0	64)	___.___	79)	___.___	94)	___.___
5)	14.0	20)	11.0	35)	12.0	50)	10.0	65)	___.___	80)	___.___	95)	___.___
6)	11.0	21)	09.0	36)	8.0	51)	10.0	66)	___.___	81)	___.___	96)	___.___
7)	13.0	22)	18.0	37)	11.0	52)	10.0	67)	___.___	82)	___.___	97)	___.___
8)	9.0	23)	10.0	38)	10.0	53)	10.0	68)	___.___	83)	___.___	98)	___.___
9)	12.0	24)	9.0	39)	9.0	54)	12.0	69)	___.___	84)	___.___	99)	___.___
10)	8.0	25)	8.0	40)	12.0	55)	8.0	70)	___.___	85)	___.___	100)	___.___
11)	11.0	26)	10.0	41)	11.0	56)	12.0	71)	___.___	86)	___.___	End Time:	
12)	9.0	27)	8.0	42)	7.0	57)	10.0	72)	___.___	87)	___.___	____ a.m.	
13)	14.0	28)	9.0	43)	8.0	58)	12.0	73)	___.___	88)	___.___	or 3:10 p.m.	
14)	13.0	29)	8.0	44)	14.0	59)	14.0	74)	___.___	89)	___.___		
15)	16.0	30)	9.0	45)	13.0	60)	2.0	75)	___.___	90)	___.___		

Notes and Street Description (e.g., on-street parking/ 1 or 2 sides, rough setback distances, street trees, land use, activity level):

- Farmer's mkt going on 1 block south, lots of ped activity
- medium high tree canopy, trees every 20' or so → 7 total 4 eastside 3 westside
- almost fully parked both sides
- was unable to capture first few mins of measurements so about 75 vehicles passed
- vantage point was obvious so could've caused some bias by inattentives seeing yellow vest/gun and slowing down

- many commercial restaurants, cafes, hotels

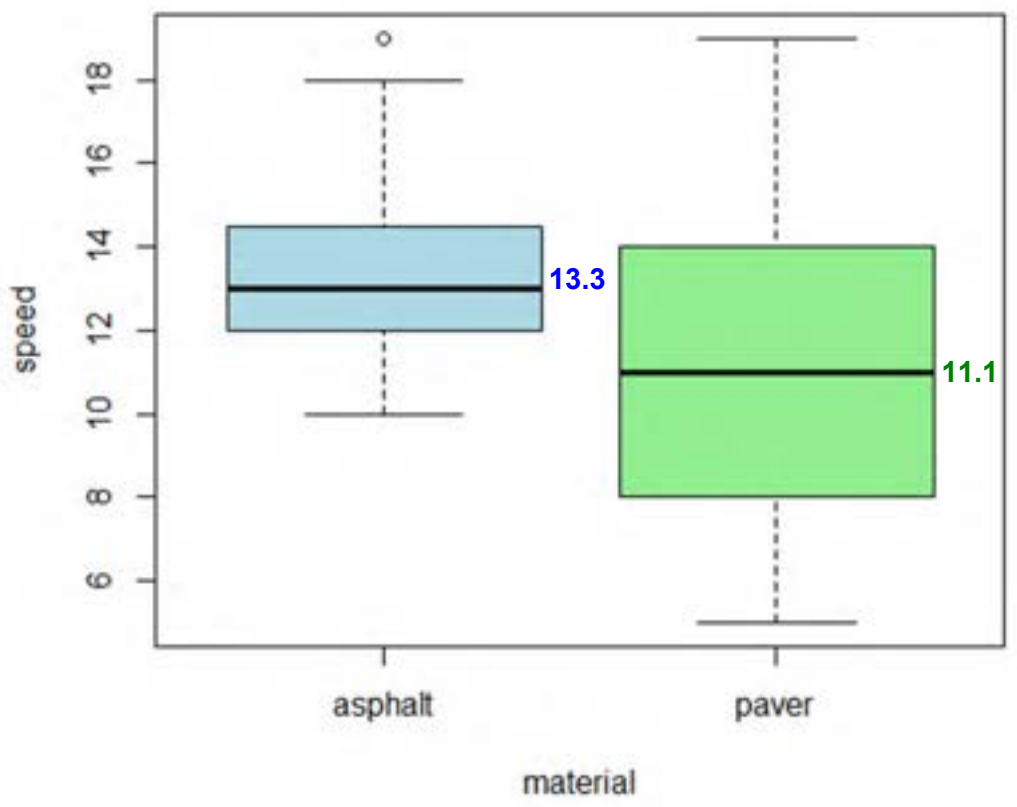

PRO ART


Guild Guild Theatre

STREET PAIR #9
Portland, OR

SW Park Avenue (PICP)
SW Park Avenue (Asphalt)

Street Pair 9 (Portland, OR)



Spot Speed Survey Form for Paver Study

Surveyor's First & Last Name: FREDDIE WINTER Start Time (circle one): ~~9:30~~ a.m. 1:30 p.m.

Month: 7 Day: 21 Year: 2022 Day of Week (circle one): Tues. Wed. (Thurs)

Street Address (adjacent to where you are sitting): 838 SW PARK AVE City: PORTLAND State/Prov: OR

Landmark description: LUMINAIRE

Heading of Target vehicles (circle one): N (NE) E SE S SW W NW

Paving Material (circle one): (concrete pavers) asphalt

Posted or Default Speed Limit: _____ Units (circle one): (mph) km/h

Speeds (Rounded to the nearest one decimal point, like 24.4):

X 21.1	16) 14.1	31) 8.1	46) __.__	61) __.__	76) __.__	91) __.__
2) 8.1	17) 7.1	32) 7.1	47) __.__	62) __.__	77) __.__	92) __.__
3) 8.1	18) 11.1	33) 6.1	48) __.__	63) __.__	78) __.__	93) __.__
4) 14.1	19) 10.1	34) 6.1	49) __.__	64) __.__	79) __.__	94) __.__
5) 11.1	20) 9.1	35) 12.1	50) __.__	65) __.__	80) __.__	95) __.__
6) 10.1	21) 10.1	36) 7.1	51) __.__	66) __.__	81) __.__	96) __.__
7) 8.1	22) 8.1	37) 8.1	52) __.__	67) __.__	82) __.__	97) __.__
8) 9.1	23) 12.1	38) 8.1	53) __.__	68) __.__	83) __.__	98) __.__
9) 10.1	24) 6.1	39) 10.1	54) __.__	69) __.__	84) __.__	99) __.__
10) 6.1	25) 8.1	40) 5.1	55) __.__	70) __.__	85) __.__	100) __.__
11) 6.1	26) 9.1	41) 10.1	56) __.__	71) __.__	86) __.__	End Time:
12) 8.1	27) 16.1	42) 8.1	57) __.__	72) __.__	87) __.__	11 a.m.
13) 12.1	28) 10.1	43) __.__	58) __.__	73) __.__	88) __.__	or ____ p.m.
14) 13.1	29) 9.1	44) __.__	59) __.__	74) __.__	89) __.__	
15) 13.1	30) 10.1	45) __.__	60) __.__	75) __.__	90) __.__	

Notes and Street Description (e.g., on-street parking/ 1 or 2 sides, rough setback distances, street trees, land use, activity level):

CURB-LESS & PARK ADJACENT. 2-4 TREES EACH SIDE. BOLLARDS PRESENT BOTH SIDES. DOWNWARD GRADE. FREQUENT PED CROSSINGS

Spot Speed Survey Form for Paver Study

Surveyor's First & Last Name: Gwen Shaw Start Time (circle one): (9:30 a.m.) 1:30 p.m.

Month: July Day: 28 Year: 2022 Day of Week (circle one): Tues. Wed. (Thurs.)

Street Address (adjacent to where you are sitting): NE corner of Dir. Park City: Portland State/Prov: OR

Landmark description: Luminaire

Heading of Target vehicles (circle one): (N) NE E SE S SW W NW

Paving Material (circle one): (concrete pavers) asphalt

Posted or Default Speed Limit: 25 Units (circle one): (mph) km/h

Speeds (Rounded to the nearest one decimal point, like 24.4):

1)	13.0	16)	15.0	31)	__.__	46)	__.__	61)	__.__	76)	__.__	91)	__.__
2)	16.0	17)	15.0	32)	__.__	47)	__.__	62)	__.__	77)	__.__	92)	__.__
3)	15.0	18)	18.0	33)	__.__	48)	__.__	63)	__.__	78)	__.__	93)	__.__
4)	15.0	19)	14.0	34)	__.__	49)	__.__	64)	__.__	79)	__.__	94)	__.__
5)	11.0	20)	18.0	35)	__.__	50)	__.__	65)	__.__	80)	__.__	95)	__.__
6)	19.0	21)	15.0	36)	__.__	51)	__.__	66)	__.__	81)	__.__	96)	__.__
7)	12.0	22)	12.0	37)	__.__	52)	__.__	67)	__.__	82)	__.__	97)	__.__
8)	14.0	23)	12.0	38)	__.__	53)	__.__	68)	__.__	83)	__.__	98)	__.__
9)	16.0	24)	12.0	39)	__.__	54)	__.__	69)	__.__	84)	__.__	99)	__.__
10)	12.0	25)	__.__	40)	__.__	55)	__.__	70)	__.__	85)	__.__	100)	__.__
11)	13.0	26)	__.__	41)	__.__	56)	__.__	71)	__.__	86)	__.__	End Time:	
12)	14.0	27)	__.__	42)	__.__	57)	__.__	72)	__.__	87)	__.__	____ a.m.	
13)	11.0	28)	__.__	43)	__.__	58)	__.__	73)	__.__	88)	__.__	or ____ p.m.	
14)	17.0	29)	__.__	44)	__.__	59)	__.__	74)	__.__	89)	__.__		
15)	15.0	30)	__.__	45)	__.__	60)	__.__	75)	__.__	90)	__.__		

Notes and Street Description (e.g., on-street parking/ 1 or 2 sides, rough setback distances, street trees, land use, activity level): Low activity. Look at 7/21/22 form for physical description.

Spot Speed Survey Form for Paver Study

Surveyor's First & Last Name: Gwen Shaw Start Time (circle one): 9:30 a.m. (1:30 p.m.)

Month: July Day: 28 Year: 2022 Day of Week (circle one): Tues. Wed. (Thurs.)

Street Address (adjacent to where you are sitting): SE corner Dir. Park City: Portland State/Prov: OR

Landmark description: Same as July 21

Heading of Target vehicles (circle one): (N) NE E SE S SW W NW

Paving Material (circle one): concrete pavers (asphalt)

Posted or Default Speed Limit: 25 Units (circle one): (mph) km/h

Speeds (Rounded to the nearest one decimal point, like 24.4):

1)	15.0	16)	13.0	31)	___.__	46)	___.__	61)	___.__	76)	___.__	91)	___.__
2)	16.0	17)	15.0	32)	___.__	47)	___.__	62)	___.__	77)	___.__	92)	___.__
3)	14.0	18)	___.__	33)	___.__	48)	___.__	63)	___.__	78)	___.__	93)	___.__
4)	18.0	19)	___.__	34)	___.__	49)	___.__	64)	___.__	79)	___.__	94)	___.__
5)	10.0	20)	___.__	35)	___.__	50)	___.__	65)	___.__	80)	___.__	95)	___.__
6)	13.0	21)	___.__	36)	___.__	51)	___.__	66)	___.__	81)	___.__	96)	___.__
7)	19.0	22)	___.__	37)	___.__	52)	___.__	67)	___.__	82)	___.__	97)	___.__
8)	11.0	23)	___.__	38)	___.__	53)	___.__	68)	___.__	83)	___.__	98)	___.__
9)	14.0	24)	___.__	39)	___.__	54)	___.__	69)	___.__	84)	___.__	99)	___.__
10)	15.0	25)	___.__	40)	___.__	55)	___.__	70)	___.__	85)	___.__	100)	___.__
11)	10.0	26)	___.__	41)	___.__	56)	___.__	71)	___.__	86)	___.__	End Time:	
12)	13.0	27)	___.__	42)	___.__	57)	___.__	72)	___.__	87)	___.__	_____ a.m.	
13)	13.0	28)	___.__	43)	___.__	58)	___.__	73)	___.__	88)	___.__	or _____ p.m.	
14)	14.0	29)	___.__	44)	___.__	59)	___.__	74)	___.__	89)	___.__		
15)	15.0	30)	___.__	45)	___.__	60)	___.__	75)	___.__	90)	___.__		

Notes and Street Description (e.g., on-street parking/ 1 or 2 sides, rough setback distances, street trees, land use, activity level): See sheet from 7/21 for physical descript.

Spot Speed Survey Form for Paver Study

Surveyor's First & Last Name: Gwen Shaw Start Time (circle one): 9:30 a.m. (1:30 p.m.)

Month: July Day: 21 Year: 2022 Day of Week (circle one): Tues. Wed. (Thurs.)

Street Address (adjacent to where you are sitting): _____ City: _____ State/Prov: _____

Landmark description: 3rd tree (counting from Director Park side)

Heading of Target vehicles (circle one): (N) NE E SE S SW W NW

Paving Material (circle one): concrete pavers (asphalt)

Posted or Default Speed Limit: 25 Units (circle one): (mph) km/h

Speeds (Rounded to the nearest one decimal point, like 24.4):

1)	13.0	16)	12.0	31)	__.__	46)	__.__	61)	__.__	76)	__.__	91)	__.__
2)	13.0	17)	12.0	32)	__.__	47)	__.__	62)	__.__	77)	__.__	92)	__.__
3)	13.0	18)	14.0	33)	__.__	48)	__.__	63)	__.__	78)	__.__	93)	__.__
4)	14.0	19)	11.0	34)	__.__	49)	__.__	64)	__.__	79)	__.__	94)	__.__
5)	11.0	20)	__.__	35)	__.__	50)	__.__	65)	__.__	80)	__.__	95)	__.__
6)	13.0	21)	__.__	36)	__.__	51)	__.__	66)	__.__	81)	__.__	96)	__.__
7)	11.0	22)	__.__	37)	__.__	52)	__.__	67)	__.__	82)	__.__	97)	__.__
8)	11.0	23)	__.__	38)	__.__	53)	__.__	68)	__.__	83)	__.__	98)	__.__
9)	13.0	24)	__.__	39)	__.__	54)	__.__	69)	__.__	84)	__.__	99)	__.__
10)	12.0	25)	__.__	40)	__.__	55)	__.__	70)	__.__	85)	__.__	100)	__.__
11)	15.0	26)	__.__	41)	__.__	56)	__.__	71)	__.__	86)	__.__	End Time:	
12)	13.0	27)	__.__	42)	__.__	57)	__.__	72)	__.__	87)	__.__	_____ a.m.	
13)	17.0	28)	__.__	43)	__.__	58)	__.__	73)	__.__	88)	__.__	or _____ p.m.	
14)	11.0	29)	__.__	44)	__.__	59)	__.__	74)	__.__	89)	__.__		
15)	12.0	30)	__.__	45)	__.__	60)	__.__	75)	__.__	90)	__.__		

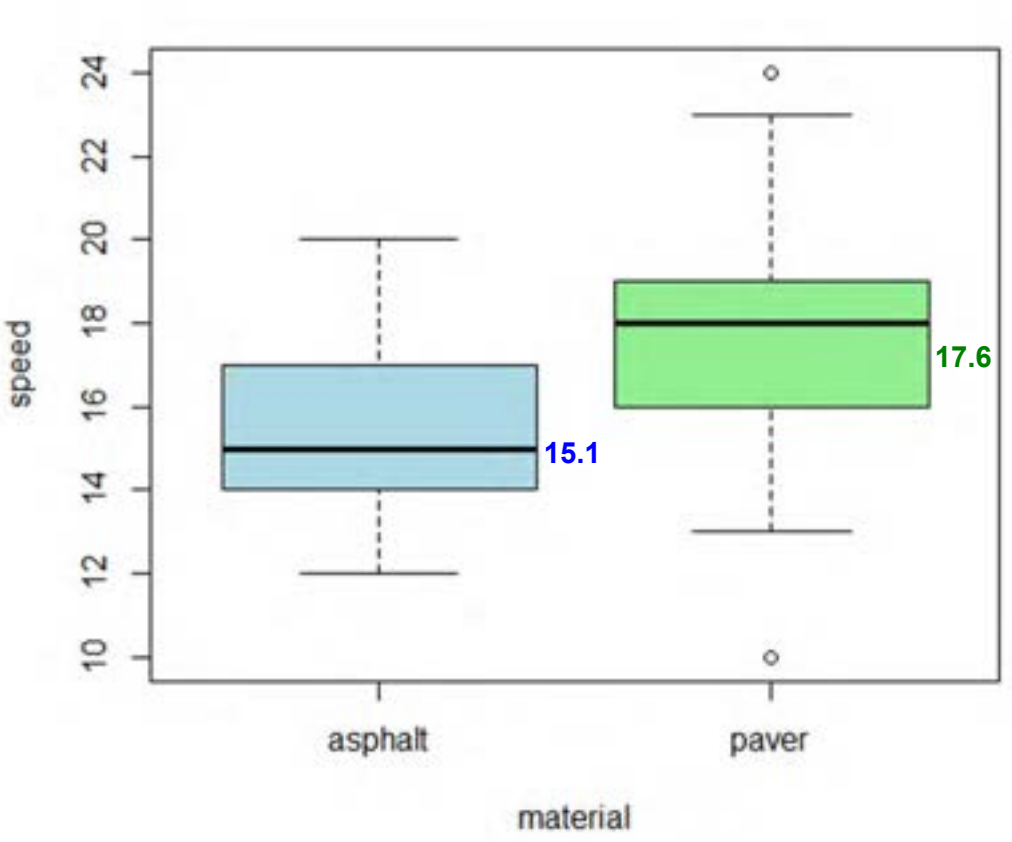
Notes and Street Description (e.g., on-street parking/ 1 or 2 sides, rough setback distances, street trees, land use, activity level):

Heavily utilized on-street parking on both sides. Tree wells on 15' sidewalk
Buildings all up to back of sidewalk.
Lots of activity, parking turnover specifically

STREET PAIR #10
San Antonio, TX

W Commerce Street (ICP)
E Commerce Street (Asphalt)

Street Pair 10 (San Antonio, TX)



W Commerce St
San Antonio
Between S St Marys St & Navarro St
11/15/2022
8:30 AM to 10:20 AM
Tuesday
Concrete Pavers
35 mph
survey by Kamryn Long

observation	speed
1	13
2	13
3	18
4	18
5	20
6	17
7	17
8	10
9	13
10	14
11	15
12	17
13	18
14	18
15	19
16	20
17	16
18	17
19	21
20	16

observation	speed
21	19
22	18
23	20
24	19
25	19
26	17
27	16
28	17
29	19
30	18
31	19
32	19
33	20
34	24
35	18
36	19
37	18
38	20
39	16
40	15

observation	speed
41	16
42	15
43	16
44	16
45	23
46	18
47	14
48	24
49	19
50	15
51	18
52	15
53	20
54	21
55	15
56	15
57	17
58	16
59	20
60	22

observation	speed
61	18
62	21
63	15
64	
65	
66	
67	
68	
69	
70	
71	
72	
73	
74	
75	
76	
77	
78	
79	
80	

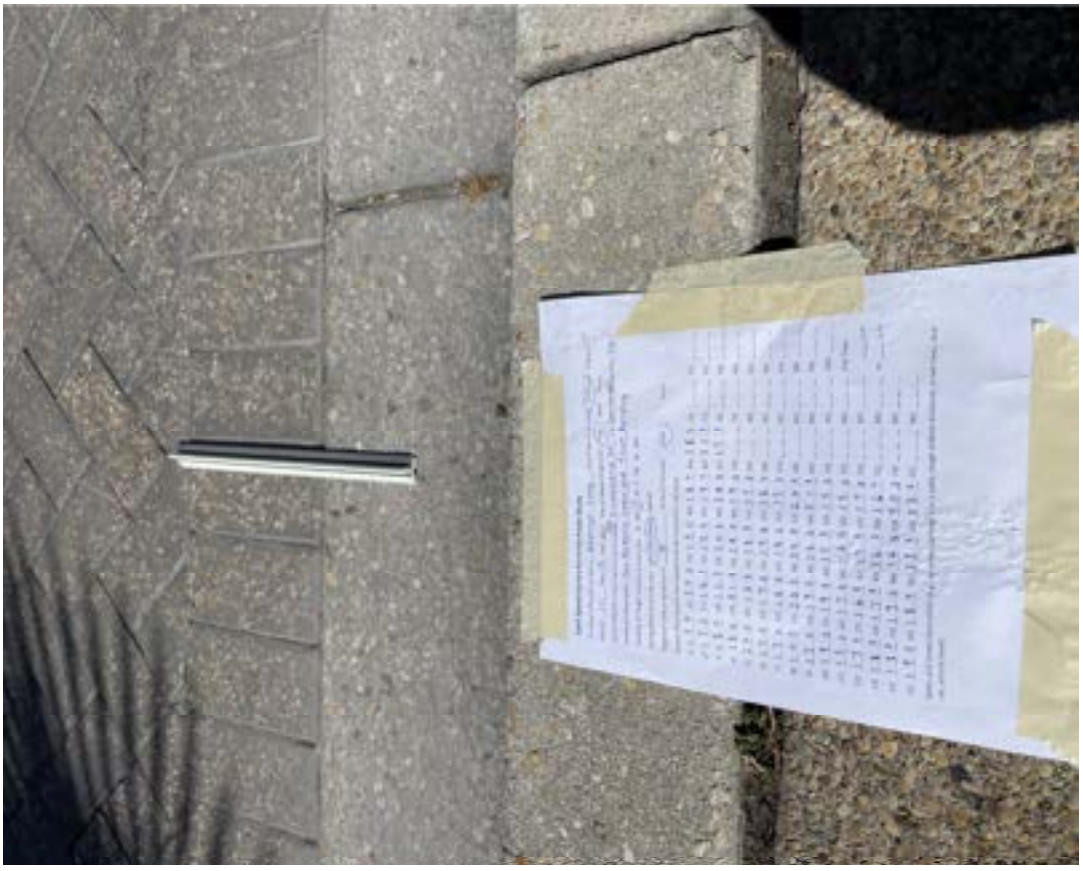
E Commerce St
San Antonio
Between S Alamo St & Bowie St
11/15/2022
2:30 PM to 3:15 PM
Tuesday
Asphalt
35 mph
survey by Kamryn Long

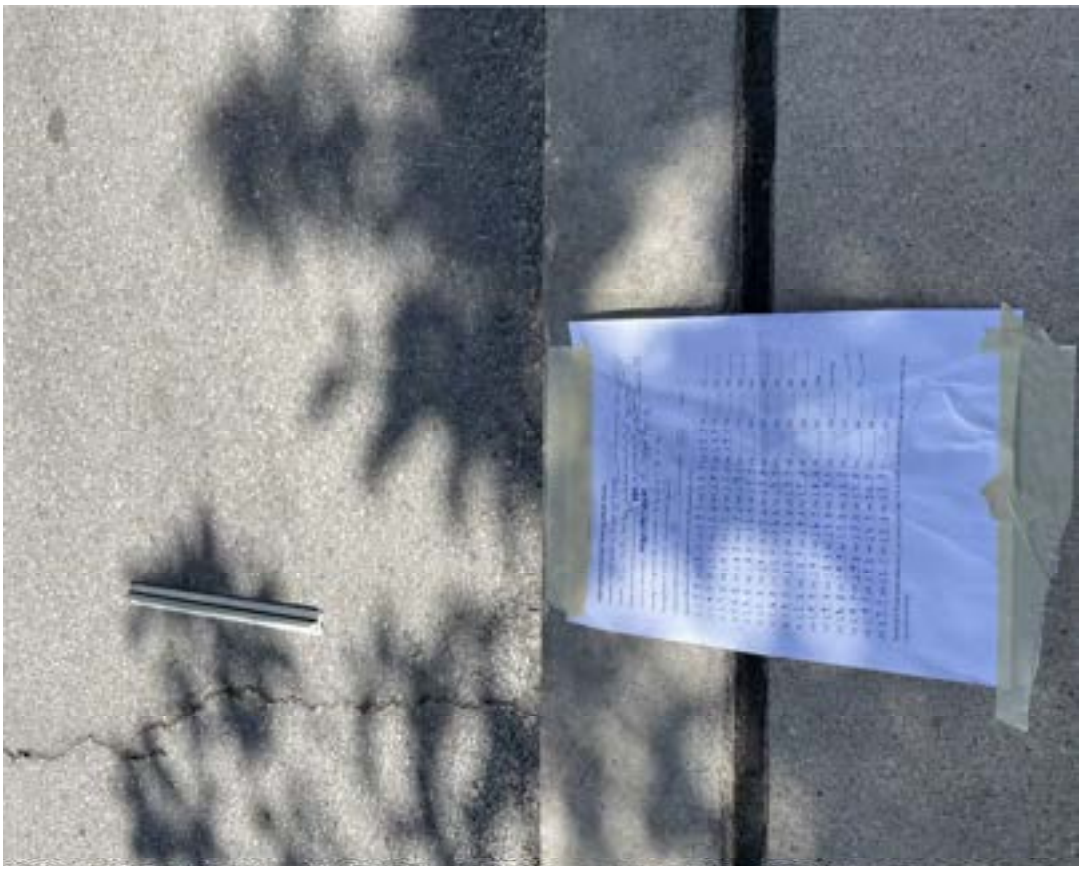
observation	speed
1	13
2	19
3	17
4	16
5	16
6	15
7	16
8	18
9	13
10	14
11	14
12	18
13	14
14	14
15	17
16	13
17	15
18	14
19	14
20	14

observation	speed
21	14
22	12
23	12
24	18
25	14
26	18
27	14
28	14
29	14
30	12
31	14
32	13
33	15
34	17
35	16
36	17
37	16
38	18
39	14
40	16

observation	speed
41	12
42	12
43	15
44	12
45	17
46	19
47	14
48	12
49	19
50	15
51	13
52	15
53	17
54	15
55	18
56	14
57	13
58	15
59	20
60	13

observation	speed
61	15
62	17
63	19
64	
65	
66	
67	
68	
69	
70	
71	
72	
73	
74	
75	
76	
77	
78	
79	
80	



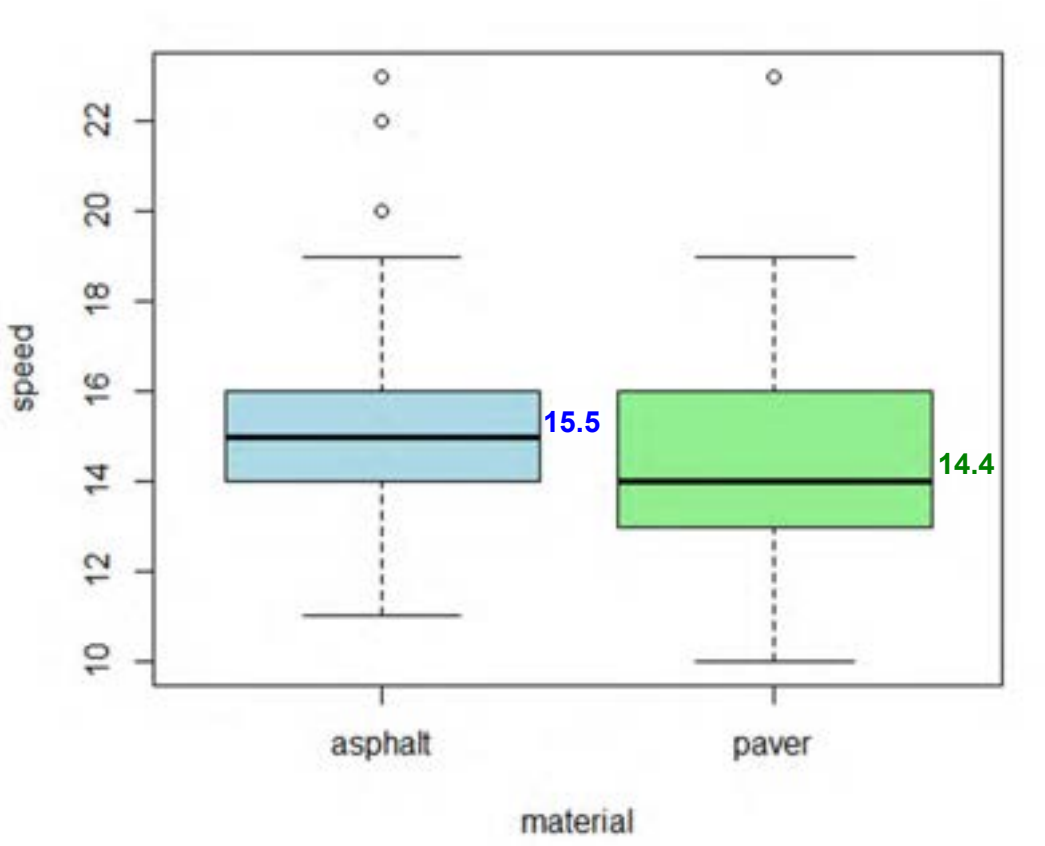



IMA

STREET PAIR #11
San Antonio, TX

E Market Street (ICP)
E Market Street (Asphalt)

Street Pair 11 (San Antonio, TX)



E Market Street
San Antonio
Between S Alamo St & Bowie St
11/15/2022
10:45 AM to 12:40 PM
Tuesday
Concrete Pavers
30 mph
survey by Kamryn Long

observation	speed
1	17
2	23
3	16
4	14
5	16
6	16
7	12
8	13
9	15
10	14
11	14
12	11
13	11
14	11
15	15
16	17
17	13
18	11
19	16
20	15

observation	speed
21	19
22	14
23	14
24	19
25	16
26	12
27	12
28	18
29	16
30	15
31	12
32	13
33	15
34	12
35	13
36	14
37	13
38	14
39	11
40	10

observation	speed
41	18
42	14
43	12
44	15
45	11
46	14
47	15
48	13
49	14
50	14
51	15
52	13
53	16
54	18
55	19
56	15
57	12
58	14
59	16
60	18

observation	speed
61	14
62	17
63	10
64	13
65	14
66	13
67	15
68	
69	
70	
71	
72	
73	
74	
75	
76	
77	
78	
79	
80	

E Market Street
San Antonio
Between S Alamo St & Bowie St
11/15/2022
3:20 PM to 4:35 PM
Tuesday
Asphalt
30 mph
survey by Kamryn Long

observation	speed
1	15
2	16
3	14
4	14
5	18
6	15
7	15
8	17
9	15
10	14
11	14
12	14
13	18
14	16
15	12
16	15
17	16
18	15
19	13
20	18

observation	speed
21	17
22	14
23	16
24	19
25	16
26	16
27	17
28	13
29	13
30	23
31	15
32	20
33	22
34	15
35	16
36	14
37	14
38	20
39	15
40	12

observation	speed
41	16
42	17
43	14
44	13
45	15
46	15
47	15
48	13
49	18
50	15
51	16
52	13
53	14
54	17
55	13
56	16
57	16
58	20
59	16
60	15

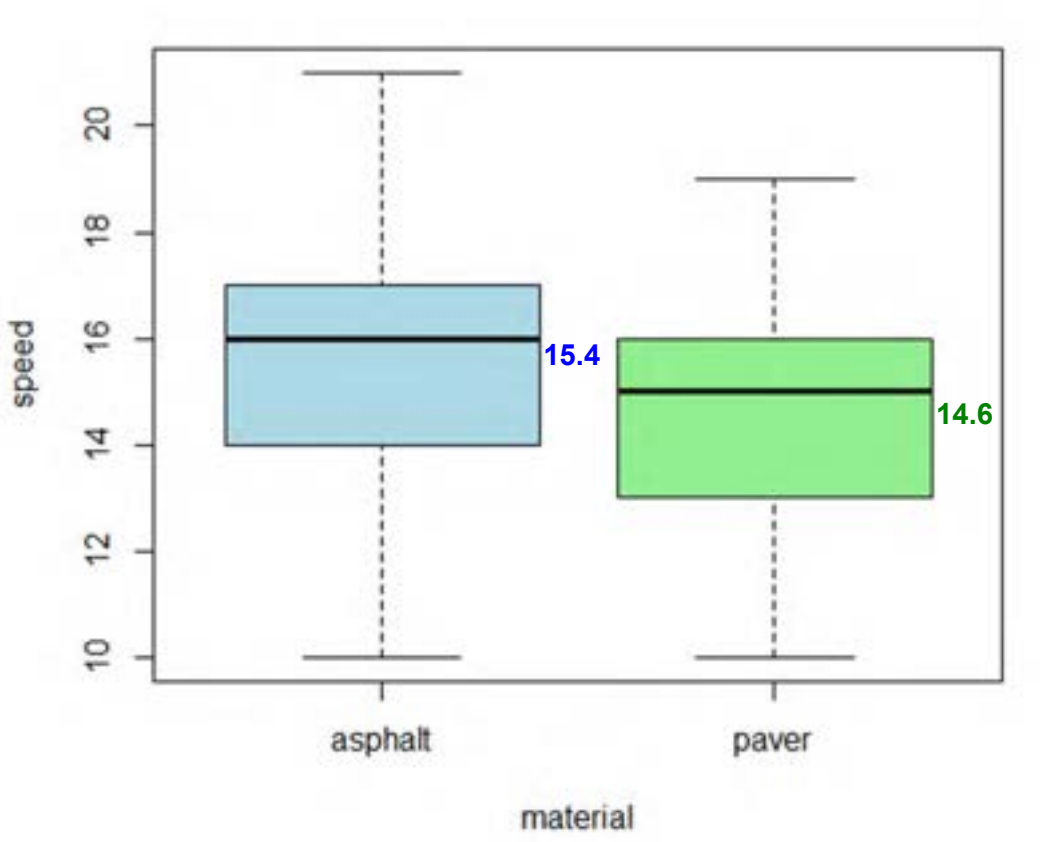
observation	speed
61	20
62	15
63	14
64	13
65	11
66	17
67	15
68	12
69	12
70	15
71	
72	
73	
74	
75	
76	
77	
78	
79	
80	


Market

STREET PAIR #12
San Antonio, TX

E Houston Street (ICP)
E Travis St (Asphalt)

Street Pair 12 (San Antonio, TX)



E Houston Street
San Antonio
Between S St Marys St & Navarro St
11/16/2022
8:35 AM to 11:20 PM
Wednesday
Concrete Pavers
30 mph
survey by Kamryn Long

observation	speed
1	17
2	16
3	15
4	14
5	13
6	15
7	15
8	10
9	12
10	13
11	10
12	15
13	16
14	16
15	15
16	13
17	18
18	12
19	15
20	16

observation	speed
21	18
22	14
23	14
24	12
25	16
26	16
27	17
28	14
29	15
30	17
31	15
32	15
33	14
34	19
35	14
36	15
37	14
38	12
39	14
40	13

observation	speed
41	13
42	11
43	16
44	15
45	16
46	17
47	16
48	18
49	14
50	16
51	14
52	13
53	16
54	15
55	12
56	10
57	18
58	12
59	15
60	15

E Travis Street
San Antonio
Between S St Marys St & Navarro St
11/16/2022
12:50 PM to 3:40 PM
Wednesday
Asphalt
30 mph
survey by Kamryn Long

observation	speed
1	16
2	16
3	15
4	16
5	17
6	14
7	13
8	10
9	18
10	17
11	17
12	15
13	13
14	12
15	14
16	14
17	16
18	17
19	12
20	14

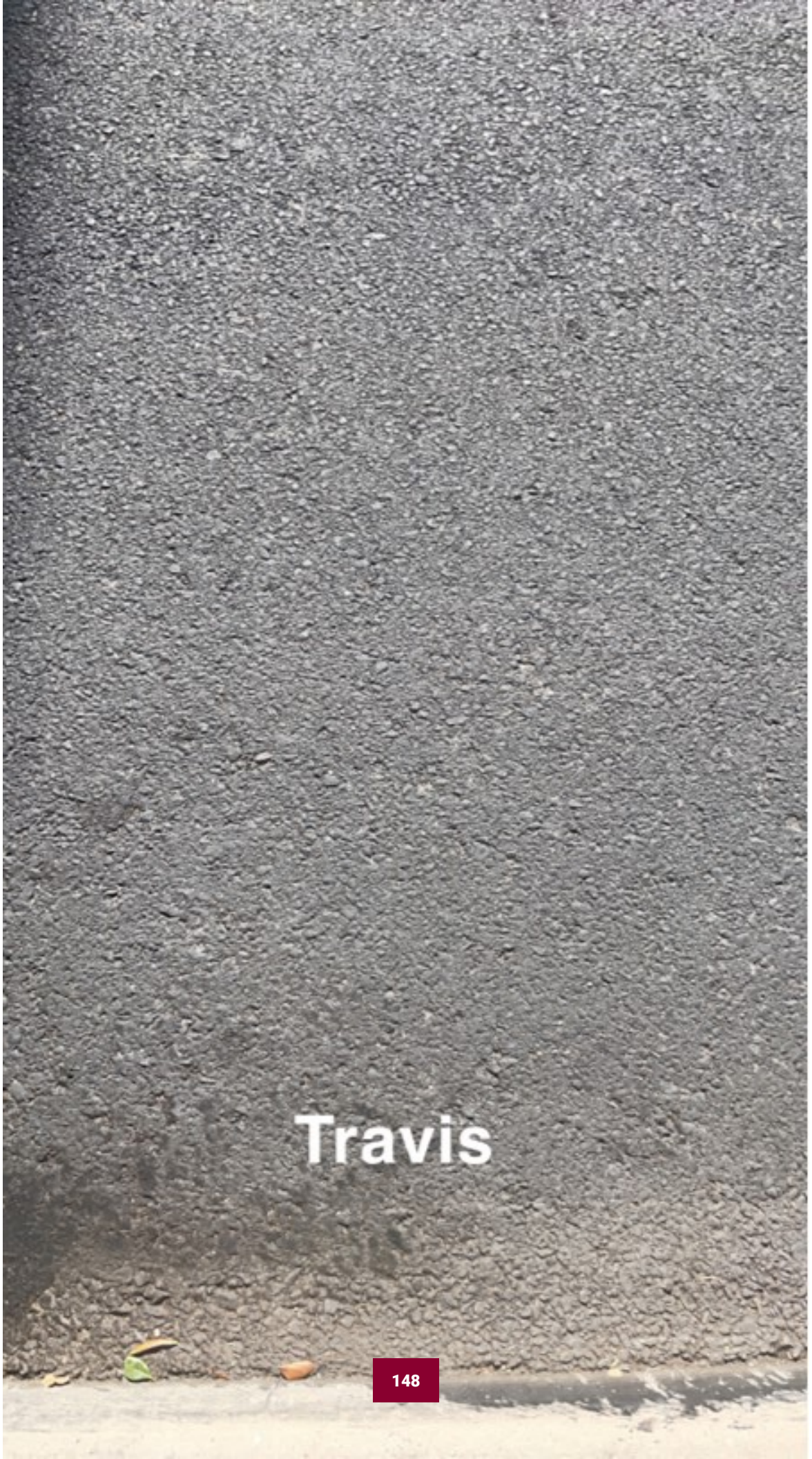
observation	speed
21	14
22	17
23	19
24	10
25	14
26	16
27	17
28	14
29	17
30	16
31	18
32	18
33	14
34	16
35	15
36	16
37	14
38	15
39	18
40	16

observation	speed
41	12
42	13
43	16
44	17
45	19
46	21
47	15
48	16
49	14
50	19
51	14
52	15
53	16
54	16
55	17
56	13
57	13
58	16
59	15
60	16


Houston


NO

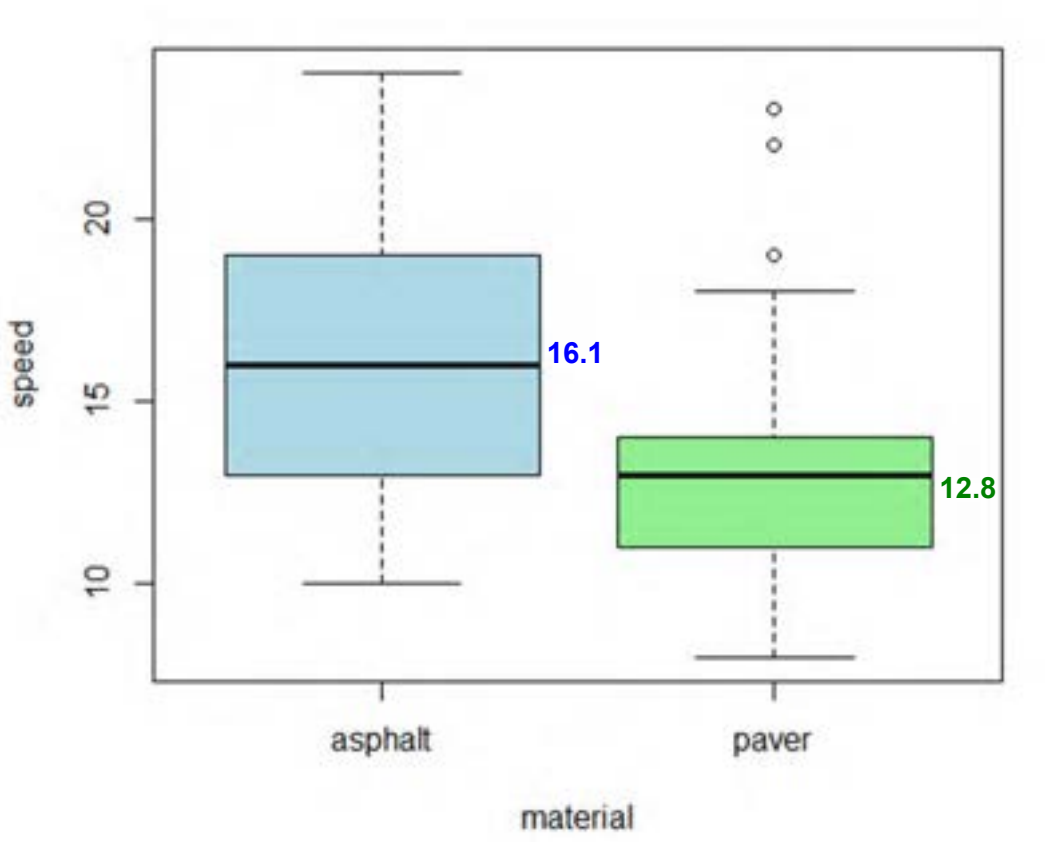

NO


Travis

STREET PAIR #13
Washington, DC

C Street SE (ICP)
7th Street SE (Asphalt)

Street Pair 13 (Washington, DC)



1:45-5
commercial area
parking both sides
few mid block crossings
wide sidewalks / set backs
parking garage
traffic signal

Spot Speed Survey Form for Concrete Paver Study

Surveyor's First & Last Name: STEFANIE BRODIE

City: WASHINGTON State/Province: DC

Street Name: 7TH STREET SE

Random Street Address: _____

Speed Units (circle one): (mph) km/h

Paving Material (circle one): concrete pavers (asphalt)

Day of the week (circle one): (Tuesday) Wednesday Thursday

Date: Month: 23 November Day: 23 Year: 2021

Posted or Default Speed Limit: _____

Start Time (circle one): 9:30 a.m. (1:30) p.m. (don't forget to take the photos)

Speeds (Rounded to the nearest one decimal point, like 24.4):

1)	19.0	16)	12.0	31)	11.0	46)	15.0	61)	11.0	76)	17.0	91)	17.0
2)	12.0	17)	12.0	32)	15.0	47)	22.0	62)	11.0	77)	21.0	92)	19.0
3)	17.0	18)	13.0	33)	13.0	48)	10.0	63)	12.0	78)	16.0	93)	16.0
4)	17.0	19)	15.0	34)	19.0	49)	19.0	64)	10.0	79)	17.0	94)	20.0
5)	15.0	20)	15.0	35)	14.0	50)	26.0	65)	14.0	80)	12.0	95)	13.0
6)	10.0	21)	21.0	36)	23.0	51)	16.0	66)	15.0	81)	14.0	96)	10.0
7)	16.0	22)	26.0	37)	10.0	52)	18.0	67)	16.0	82)	17.0	97)	16.0
8)	18.0	23)	16.0	38)	11.0	53)	16.0	68)	13.0	83)	14.0	98)	19.0
9)	16.0	24)	16.0	39)	14.0	54)	11.0	69)	14.0	84)	14.0	99)	10.0
10)	22.0	25)	17.0	40)	17.0	55)	12.0	70)	14.0	85)	13.0	100)	13.0
11)	18.0	26)	14.0	41)	14.0	56)	14.0	71)	19.0	86)	15.0		
12)	10.0	27)	16.0	42)	19.0	57)	12.0	72)	19.0	87)	14.0		
13)	12.0	28)	17.0	43)	13.0	58)	15.0	73)	16.0	88)	13.0		
14)	13.0	29)	12.0	44)	11.0	59)	16.0	74)	17.0	89)	10.0		
15)	21.0	30)	20.0	45)	20.0	60)	18.0	75)	18.0	90)	15.0		

HHT HH
HHT

Spot Speed Survey Form for Concrete Paver Study

Surveyor's First & Last Name: Stefanie Brooie

City: Washington State/Province: DC

Street Name: 7th Street

Random Street Address: 317 7th Street SE

Speed Units (circle one): (mph) km/h

Paving Material (circle one): concrete pavers (asphalt)

Day of the week (circle one): Tuesday Wednesday (Thursday)

Date: Month: May Day: 5 Year: 2022

Posted or Default Speed Limit: _____

Start Time (circle one): 9:30 a.m. (1:30 p.m.) (don't forget to take the photos)

Speeds (Rounded to the nearest one decimal point, like 24.4):

1)	19.0	16)	16.0	31)	10.0	46)	11.0	61)	20.0	76)	13.0	91)	12.0	
2)	18.0	17)	18.0	32)	12.0	47)	10.0	62)	20.0	77)	17.0	92)	24.0	
3)	13.0	18)	19.0	33)	14.0	48)	11.0	63)	18.0	78)	19.0	93)	15.0	
4)	18.0	19)	13.0	34)	20.0	49)	18.0	64)	15.0	79)	21.0	94)	13.0	
5)	18.0	20)	18.0	35)	18.0	50)	14.0	65)	19.0	80)	14.0	95)	19.0	
6)	22.0	21)	21.0	36)	14.0	51)	24.0	66)	18.0	81)	10.0	96)	16.0	
7)	16.0	22)	16.0	37)	22.0	52)	17.0	67)	11.0	82)	22.0	97)	17.0	
8)	11.0	23)	16.0	38)	14.0	53)	12.0	68)	22.0	83)	19.0	98)	22.0	
9)	11.0	24)	13.0	39)	18.0	54)	20.0	69)	12.0	84)	20.0	99)	15.0	
10)	15.0	25)	19.0	40)	16.0	55)	17.0	70)	16.0	85)	14.0	100)	16.0	
11)	23.0	26)	13.0	41)	22.0	56)	14.0	71)	17.0	86)	13.0			
12)	22.0	27)	13.0	42)	22.0	57)	13.0	72)	11.0	87)	14.0			
13)	15.0	28)	12.0	43)	11.0	58)	17.0	73)	13.0	88)	13.0			
14)	12.0	29)	15.0	44)	17.0	59)	22.0	74)	15.0	89)	17.0			
15)	17.0	30)	13.0	45)	17.0	60)	19.0	75)	11.0	90)	12.0			

HH 1