Student Arrival and Departure Tallies in New Jersey

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RUTGERS–NEW BRUNSWICK
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NEW JERSEY Safe Routes

DEPARTMENT OF TRANSPORTATION
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Acknowledgements

The New Jersey Safe Routes Program, supported by the New Jersey Department of Transportation, is a statewide initiative with a mission to partner with schools and communities to prioritize and implement opportunities for people to walk, bike, or travel by other wheeled devices. By focusing on improvements to support active travel by youth, we can create safe, healthy, equitable, and appealing conditions for all.

The New Jersey Safe Routes Resource Center assists public officials, transportation and health professionals, and the general public in creating safer and more accessible walking and bicycling environments for children in New Jersey through education, training, and research.

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I. Background Regarding Student Travel Tallies in New Jersey

In 2005, the Safe Routes to School (SRTS) program was launched as a federal initiative under the SAFETEA-LU transportation bill, providing more than $1 billion in funding through 2012 for state infrastructure and non-infrastructure projects. The National Center for Safe Routes to School was established in 2006 as the program's Clearinghouse to offer technical assistance to local SRTS programs and coordinators. Part of the University of North Carolina Highway Safety Research Center, the National Center was funded by the U.S. Department of Transportation Federal Highway Administration to support the Federal SRTS Program. Early in the program's implementation, the SRTS Clearinghouse developed a voluntary data collection system with input from states, providing standardized tools like the Student Arrival and Departure Travel Tally and Parent Survey to help programs gather baseline data and understand transportation trends.

From the start of the statewide SRTS program in New Jersey, the NJ Department of Transportation (NJDOT), the NJ Safe Routes Resource Center (NJ SRRC), and Transportation Management Associations (TMAs) have worked with schools, asking teachers to complete the Student Arrival and Departure Travel Tally during class to provide insights into what mode of transportation students used to get to and from school. Completing these tallies had been a requirement for the 2016 and 2018 grant rounds for schools in municipalities applying for Safe Routes to School infrastructure grants through NJDOT. However, this requirement was removed in 2020 at the onset of the COVID-19 pandemic. New Jersey has relied on the National Center for Safe Routes to School (NCSRTS) data system to implement student travel tallies. This system provided a standardized paper tally sheet, which was then entered into the National Center data system for report generation. To maintain data integrity and to ensure NJDOT has access to all New Jersey data, the NJ SRRC received all tallies completed by TMAs and their partners; staff then entered the data into the national system.

After seventeen years in operation, the National Center data system was shut down in 2024. In its absence, users of the National Center data system have been left with decisions regarding future data evaluation for their SRTS programs, namely, should they try to recreate their own version of the National Center data system or explore new data collection methods?

II. Challenges with Data Collection/Student Travel Tallies

We identified several challenges with using student travel tallies as a method to evaluate SRTS projects: (1) these place a burden on schools and teachers, particularly in disadvantaged communities; (2) data collection may not be the most accurate as teachers (and students) are not trained in survey methodology, (3) there is no actual evaluation after project completion, as the travel tallies are rarely done a second time, and (4) travel tallies themselves, which measure mode choice, may not be the best measure of improvements in safety.

Burden on teachers

Several decades of research show that teachers are generally burnt out and/or suffer from emotional exhaustion (Brouwers & Tomic, 2000; Chang, 2009; Hakanen et al., 2006; Kokkinos, 2007; Skaalvik & Skaalvik, 2011). The National Education Association reports that the COVID-19 pandemic has exacerbated burnout. Many districts report shortages of classroom teachers. Administering Travel Tallies during limited class time adds an additional duty for classroom teachers who already face significant time constraints.

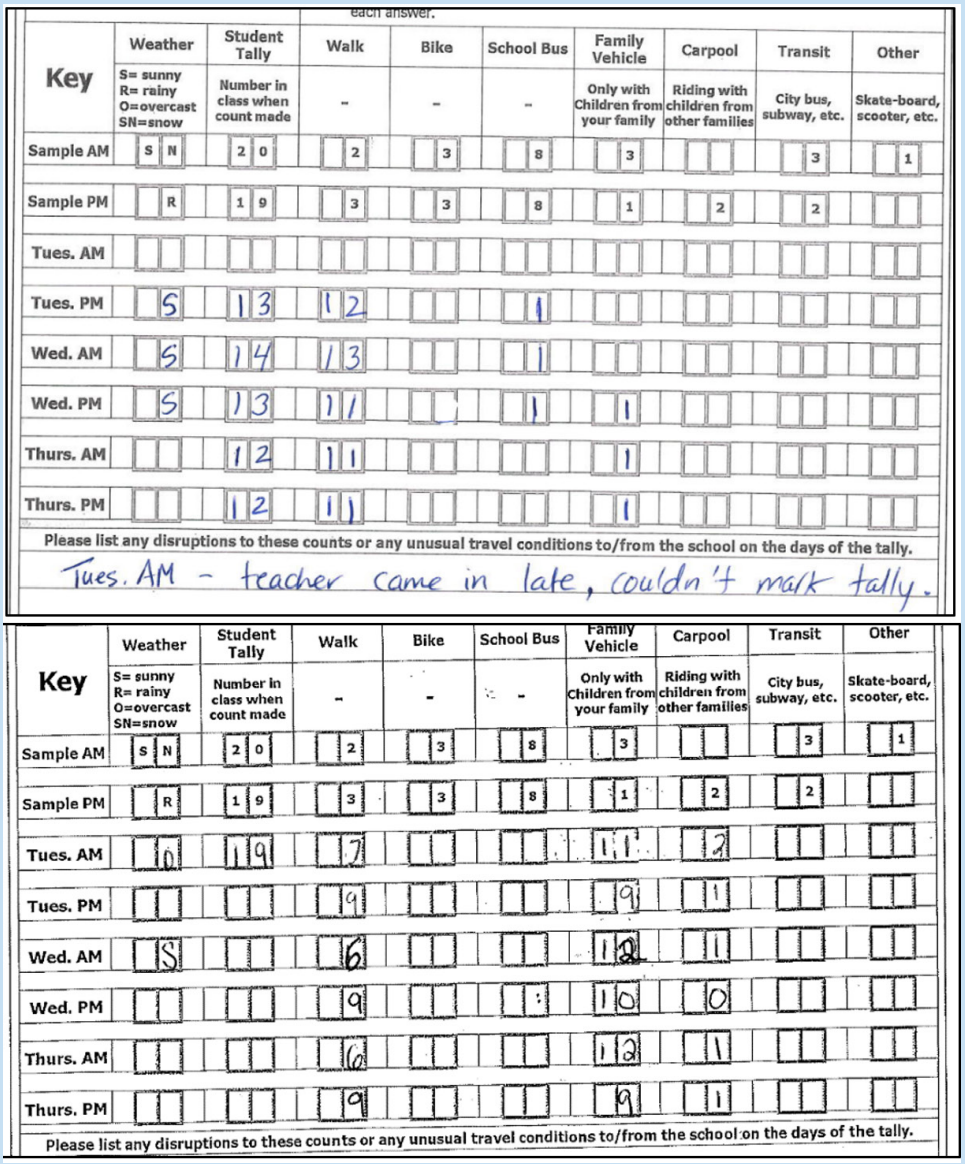
There have been efforts to collect mode choice data by other means, such as by tallies collected by parents (Evenson et al., 2008; McDonald et al., 2011) or by drone technology (Hodgson & Chang, 2023), but the issues with mode choice as an evaluation measure for SRTS programs persist

Incompleteness of travel tallies

Research focusing on the accuracy of student travel tallies is limited. Evenson et al. (2008) compared the reliability of student travel tallies by comparing parents' responses to those of students and found that 88% of responses were in agreement (Evenson et al., 2008). In a different study with the same methodology, between 87% and 91% of responses were in agreement (McDonald et al., 2011). The main caveat with these studies is that they only focus on completed responses. However, there is evidence that not all travel tallies are fully completed. Moreover, these studies compared tallies for elementary school students, not high school students, who may not accurately answer surveys (Fan et al., 2006).

We observed that some tally forms were incomplete. While some forms were missing data for either the arrival or departure of students, some forms did not provide the total number of students in the class. Some schools did not complete the tallies for a full week, as specified in the directions, and filled tally forms for only one day. This makes it challenging to identify the percentage of students using active travel modes. This results in incomplete or unreliable data, which affects the validity of the results and makes it difficult to assess whether an intervention led to modal change, let alone safety impacts.

Teachers are responsible for filling out student travel tally forms. Students are asked to raise their hands to answer a question about what mode they travel by. However, it was observed that the forms contained inaccurate data in some cases. For example, in one of the cases, counts were not completed. The students who did not commute by bus were all put into the category of walk, including those whom their parents or caregivers drove. Students might not recall or describe their travel patterns adequately or give responses they believe to be more socially acceptable, such as saying they rode their bicycles or walked to school when they did not.



each answer.

Key	Weather S= sunny R= rainy O=overcast SN=snow	Student Tally Number in class when count made	Walk -	Bike -	School Bus -	Family Vehicle Only with Children from your family	Carpool Riding with children from other families	Transit City bus, subway, etc.	Other Skate-board, scooter, etc.
Sample AM	S N	20	2	3	8	3		3	1
Sample PM	R	19	3	3	8	1	2	2	
Tues. AM									
Tues. PM	S	13	12		1				
Wed. AM	S	14	13		1				
Wed. PM	S	13	11		1	1			
Thurs. AM		12	11			1			
Thurs. PM		12	11			1			

Please list any disruptions to these counts or any unusual travel conditions to/from the school on the days of the tally.

Tues. AM - teacher came in late, couldn't mark tally.

Key	Weather S= sunny R= rainy O=overcast SN=snow	Student Tally Number in class when count made	Walk -	Bike -	School Bus -	Family Vehicle Only with Children from your family	Carpool Riding with children from other families	Transit City bus, subway, etc.	Other Skate-board, scooter, etc.
Sample AM	S N	20	2	3	8	3		3	1
Sample PM	R	19	3	3	8	1	2	2	
Tues. AM	0	19	7			11	2		
Tues. PM			9			9	1		
Wed. AM	S		6			12	1		
Wed. PM			9			10	0		
Thurs. AM			6			12	1		
Thurs. PM			9			9	1		

Please list any disruptions to these counts or any unusual travel conditions to/from the school on the days of the tally.

Figure 1: Student Travel Tallies

In addition, the student travel tallies do not allow for multi-modal trips – for instance, a student may walk a few minutes to get to their bus stop, or a student may walk to a friend's house nearby but be picked up by their parent by car later on, or drive and be dropped off a block from school. There is no room for more complex trips in these tallies.

Finally, it was observed while collecting data for the SRTS program that many schools resubmitted old student travel tally forms from past years. The outdated forms from previous years make comparing and analyzing data impossible.

No post-project tallies

If the student travel tallies are correctly completed, they can provide a snapshot of mode choice, and when compared to parent tallies, they are relatively accurate (Evenson et al., 2008). However, student travel tallies are rarely conducted after the completion of the project, providing no post-project comparison. Even if collected after the completion of an SRTS project, such projects may take half a decade or more to complete so that the comparison will be for entirely different students, and many other factors may have affected mode choice decisions in the intervening years. For example, mode choice could be affected by residential and commercial development and road construction, leading to the impact of the SRTS project not being easily isolated. A new development may be built within walking distance, impacting the number of students walking or cycling to school; alternately, a new development may be built within a school district but a few miles away, adding students commuting to school by bus or car. Thus, whether valuable data can be obtained even if the post-project tally is completed is unclear.

Mode choice may not be an indicator of safety

SRTS infrastructure grants aim to make conditions safer for students walking and cycling. Parents and children will be more likely to walk or cycle to school if they perceive the built environment safer. Perceptions of safety are largely associated with how comfortable people feel walking or cycling, irrespective of actual risk. This is often associated with the speed of vehicles and whether there is sufficient buffer between the road and the sidewalk. The ability to safely cross a street is another component of perceived risks. Many school districts may have students who use active modes of travel because their families do not own a car, particularly in disadvantaged communities. These students may have no choice but to walk even if conditions are perceived to be less than ideal. Rural communities may have fewer students who can walk or cycle to school, even if the built environment is favorable due to distance. Thus, walking and cycling rates do not necessarily indicate that road conditions are safe.

III. An alternative measure to evaluate SRTS infrastructure projects

Given the burden on schools and teachers, the incompleteness of data, the lack of post-project data and whether it measures changes due to an SRTS project, and whether changes in active travel really measure safety improvements, we argue that coming up with a new method to continue student travel tallies would not be the most effective measure for evaluating SRTS projects in New Jersey. We contend that there are better measures to evaluate the effectiveness of SRTS infrastructure projects. Motor-vehicle speed is one of the significant factors in pedestrian and bicyclist fatalities and injuries

(Pal, 2022; Rodionova et al., 2021; Tjahjono et al., 2021; Hannah Younes et al., 2023). We propose that SRTS infrastructure projects be evaluated based on the extent to which the speeds of motor vehicles are reduced, especially in school zones.

"Safer speeds" is one of the Safe System Approach (SSA) elements, focusing on reducing fatalities and serious injuries to zero. The SSA promotes safer speeds in all roadway environments and believes that addressing and managing speeding issues will improve safety. It has been established that high speeds contribute to deaths on the nation's roadways, especially for pedestrians and bicyclists. High speed and increased traffic volume are found to correlate with the comfort level of pedestrians (Kweon, Rosenblatt-Naderi, Ellis, Shin, & Danies, 2021). Both these factors reduce the pedestrian's decision to walk or the willingness of the parent to allow their child to walk to school. The lower speeds, on the other hand, help to improve the safety, accessibility, and walkability perception of pedestrians as well as bike users.

Studies show that with a reduction in speed on the neighborhood streets, there is an increase in walking and biking rates (McCabe, Schoneman, & Arcaya, 2013). The decline in speed is either achieved through traffic calming measures or regulatory changes. Traffic calming initiatives frequently target residential neighborhoods to make streets safer for walkers, bicyclists, and individuals with special needs, including children, older adults, and those with physical problems and disabilities (Hawaii Department of Transportation). By reducing traffic speeds and volumes, these initiatives increase street safety for all road users. The slower speeds also promote physical activity and improve quality of life. Streets with slower speeds increase the comfort level of pedestrians and bike users, and thus, with an increase in walking and biking rates, there is a reduction in obesity and other health-related problems in the community (McCabe, Schoneman, & Arcaya, 2013).

IV. Conclusion

There are significant challenges in relying on student arrival and departure travel tallies as a primary metric for evaluating Safe Routes to School projects. While these tallies offer a snapshot of mode choice, their limitations—including burdens on schools, lack of post-project data, and questionable reliability—underscore the need for more robust evaluation methods. As motor-vehicle speed strongly correlates with pedestrian and cyclist safety, shifting focus to speed reduction metrics within school zones presents a promising alternative. Additionally, the growing eligibility of high schools for SRTS funding calls for updated methodologies for adolescent autonomy and new transportation modes. By exploring these avenues, SRTS evaluations can more effectively measure safety improvements and support sustainable, evidence-based interventions that prioritize the well-being of vulnerable road users.

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