Building Equitable Student Transit (BEST)

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Equity and Accessibility to Neighborhood Schools by Public Transit

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EXECUTIVE SUMMARY

Affordable, convenient, and reliable transportation is fundamentally important to ensure that students can attend school and perform at their best. If students are unable to readily get to and from school, they will be at a greater risk for negative outcomes, including chronic absence, dropout, and ill health. Historically, the link between students and schools was provided by the iconic yellow bus. But in an environment of school district budget cuts, school bus services across California have in many places been scaled back or cut entirely. According to the 2010-2012 California Household Travel Survey, across the state about 8% of students use public transit to get to school, roughly the same proportion who rely on the school bus. The proportion of students relying on public transit is likely to grow over time, as school bus service continues its decline.

In this research brief, we examine how well public transit serves neighborhood schools and students who reside within their attendance boundaries in the San Diego Unified School District (SDUSD). We bring together information about school attendance boundaries, local demographics, and transit service, to understand the extent to which public transit is a viable option for neighborhood school attendance, as well as the demographics of those places that are well-served.[1] This district-wide analysis shows very little evidence of racial/ethnic transit inequity and also highlights that many young people in the district reside within a reasonable public transit commute of their neighborhood school. These results reveal the substantial existing potential of MTS to serve students' school trips if students attend neighborhood schools.

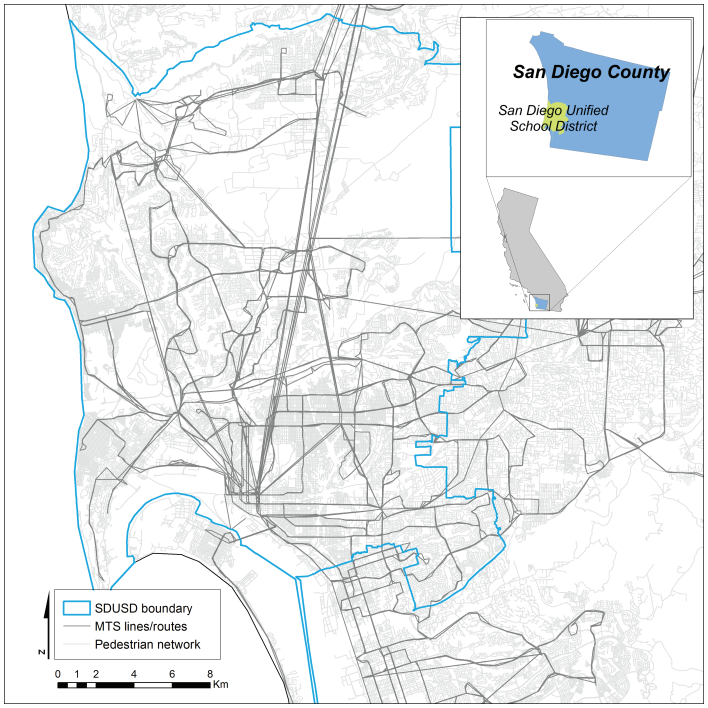

Figure 1. SDUSD boundary and MTS routes.

RESEARCH METHODS

We calculated an expected travel time to the neighborhood elementary, middle, and high school, using information on transit routes and schedules operated by the San Diego Metropolitan Transit System (MTS) as of September 2, 2014. Travel times include walking to a transit stop, waiting for the vehicle, riding the vehicle, and walking to the destination. An average travel time during the morning peak period (6:30am – 8:30am) was calculated for each census block in the district. In cases where walking to school would be faster than public transit, travel times reflect only walking speed. District boundaries and MTS routes are shown in Figure 1.

[1] This analysis is limited by a lack of information about which students actually rely on public transit. However, Research Brief 2 in this series highlights locations in the district that are especially likely to have a high demand for transit service.

TRAVEL TIMES TO NEIGHBORHOOD ELEMENTARY SCHOOLS

Travel times to SDUSD neighborhood elementary schools by walking or walking/public transit are shown in Figure 2. Darker shades indicate longer travel times, ranging from a less than 15 minute trip to school to greater than a 45 minute trip. Not surprisingly, travel times are lower in the vicinity of each school and increase when approaching the neighborhood attendance boundary.

The map allows us to see geographic differences in travel times to school. To assess how these differences play out across various racial/ethnic groups, we combined our travel time information with demographics taken from the 2010 US Census.[2]

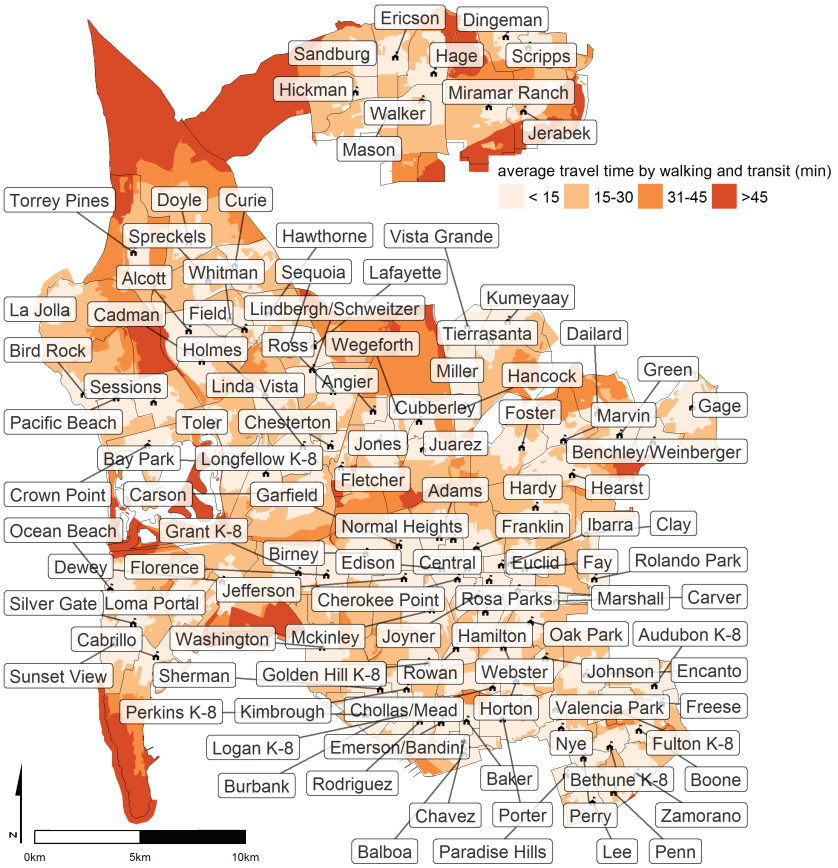

Figure 2. Travel times to SDUSD neighborhood elementary schools by walking or walking/public transit.

Table 1 shows the number of potential students that reside within each travel time category, with separate results for each racial/ethnic group. The equity of public transit service can be assessed by comparing the proportions of students residing within each category for each demographic group with the same proportions for all potential students. The results for each group demonstrate some deviation from the overall distribution of students across the district. In general, students of color are more likely to reside in census blocks with shorter travel times to neighborhood schools, while white students are more likely to reside further away. Approximately two-thirds of potential students reside within a 15 minute trip of their neighborhood school by walking or walking/public transit.

Table 1. Travel time to SDUSD neighborhood elementary schools by total students in each race/ethnicity category.

Travel time (min)	All potential students		White		Black		Asian		American Indian		Latino		POC	
<15	36,076	67%	8,212	56%	3,461	72%	4,288	62%	270	76%	18,133	76%	27,864	72%
15-30	14,123	26%	4,729	32%	1,149	24%	2,102	30%	75	21%	5,003	21%	9,394	24%
31-45	2,305	4%	1,129	8%	158	3%	313	5%	9	3%	484	2%	1,176	3%
>45	962	2%	493	3%	14	0%	226	3%	1	0%	146	1%	469	1%
Total	53,466		14,563		4,782		6,929		355		23,766		38,903	

Note: White = non-Hispanic/Latino, White alone. POC = people of color, total population minus White. Other categories do not differentiate by Hispanic/Latino status.

TRAVEL TIMES TO NEIGHBORHOOD MIDDLE SCHOOLS

Figure 3 shows travel times to SDUSD neighborhood middle schools by walking or walking/public transit. The results are similar to those for the neighborhood elementary schools, but much larger portions of the map are colored darker shades, indicating longer travel times. Travel times are longer because there are simply fewer middle schools than elementary schools.

[2] For each census block, we identified the number of potential students and their race/ethnicity. Elementary school students were considered to be ages 5-9.

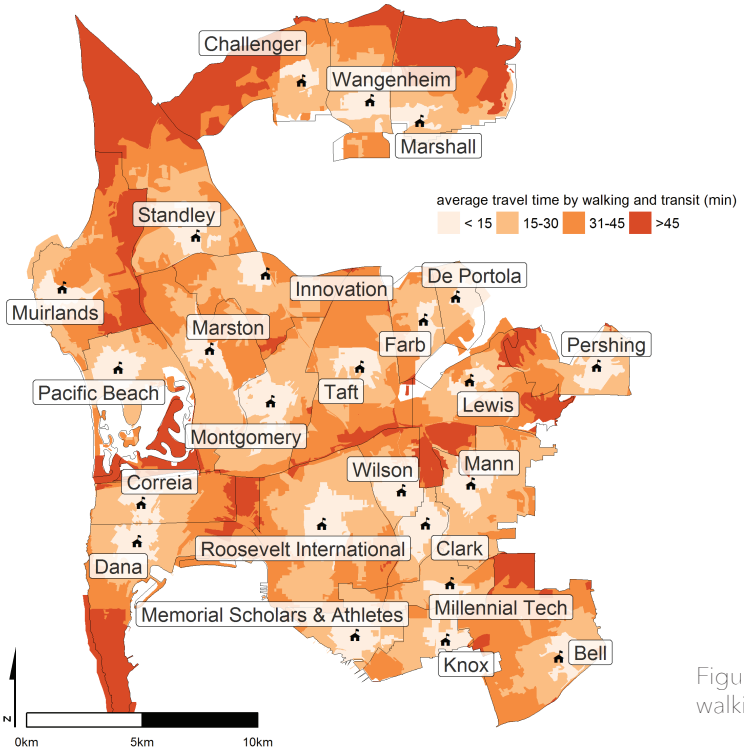

Figure 3. Travel times to SDUSD neighborhood middle schools by walking or walking/public transit.

Table 2 shows the number of potential students that reside within each travel time category, with separate results for each racial/ethnic group.[3] Similar to the elementary school results, students of color are slightly more likely to reside in census blocks with shorter travel times to neighborhood middle schools, while white students are more likely to reside further away.

The table reflects the results shown in the map—larger numbers of potential students reside in areas with longer travel times to middle schools, compared to the elementary school analysis.

Table 2. Travel time to SDUSD neighborhood middle schools by total students in each race/ethnicity category.

Travel time (min)	All potential students		White		Black		Asian		American Indian		Latino		POC	
<15	13,390	25%	2,313	17%	1,381	25%	1,663	24%	104	29%	7,513	32%	11,077	29%
15-30	23,742	45%	5,958	43%	2,522	46%	3,221	46%	148	41%	10,815	46%	17,784	46%
31-45	11,891	23%	3,593	26%	1,367	25%	1,593	23%	87	24%	4,549	19%	8,298	21%
>45	3,622	7%	1,922	14%	181	3%	578	8%	23	6%	671	3%	1,700	4%
Total	52,645		13,786		5,451		7,055		362		23,548		38,859	

Note: White = non-Hispanic/Latino, White alone. POC = people of color, total population minus White. Other categories do not differentiate by Hispanic/Latino status.

TRAVEL TIMES TO NEIGHBORHOOD HIGH SCHOOLS

Figure 4 shows travel times by public transit to SDUSD neighborhood high schools. With only 16 such schools, travel times by walking and public are longer than those observed for elementary and middle schools.

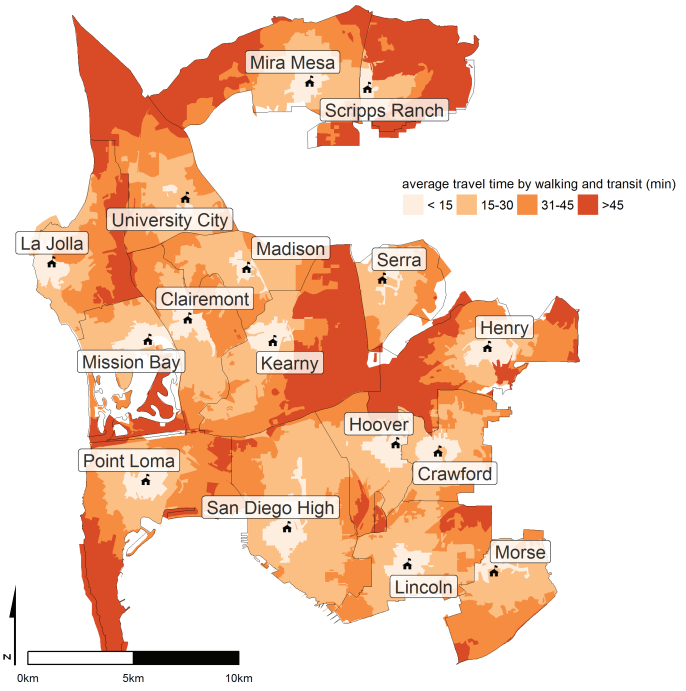

Figure 4. Travel times to SDUSD neighborhood high schools by walking or walking/public transit.

[3] The number of potential students and their race/ethnicity reflect data from the 2010 US Census; middle school students were considered to be ages 10-14.

The travel times shown in Table 3[4] reveals that approximately 40% of high-school-aged students would have to travel more than 30 minutes to get to their neighborhood school by walking or walking/public transit, regardless of demographic group. But between 50 and 75% of students can reach their neighborhood high school in less than 30 minutes. For these students, public transit may be a convenient option, notwithstanding considerations related to cost.

Table 3. Travel time to SDUSD neighborhood high schools by total students in each race/ethnicity category.

Travel time (min)	All potential students		White		Black		Asian		American Indian		Latino		POC	
<15	7,447	11%	1,583	7%	994	15%	1,102	10%	58	11%	3,476	13%	5,864	12%
15-30	34,190	50%	8,472	39%	3,638	56%	4,763	44%	265	51%	15,989	60%	25,718	55%
31-45	21,166	31%	8,146	38%	1,510	23%	4,346	40%	146	28%	6,049	23%	13,020	28%
>45	5,789	8%	3,308	15%	324	5%	604	6%	50	10%	1,195	4%	2,481	5%
Total	68,592		21,509		6,466		10,815		519		26,709		47,083	

Note: White = non-Hispanic/Latino, White alone. POC = people of color, total population minus White. Other categories do not differentiate by Hispanic/Latino status.

CONCLUSION

This district-wide analysis shows very little evidence of racial/ethnic transit inequity with respect to SDUSD neighborhood schools and potential students residing within their attendance boundaries. In general, the proximity of potential students to their neighborhood schools and the public transit options available to them is similar across racial/ethnic groups.

While the analysis highlights the substantial travel times that would be faced by many students—especially at the middle and high school levels—who choose to, or have no choice but to, take public transit, it also illustrates that many young people in the district reside within a reasonable public transit commute of their neighborhood school. These results reveal the substantial existing potential of MTS to serve students' school trips if students attend neighborhood schools.

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[4] The number of potential students and their race/ethnicity reflects data from the 2010 US Census; high school students were considered to be aged 15-19.