



CALIFORNIA STATE SCIENCE FAIR 2017 PROJECT SUMMARY

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Project Title Investigating Handicap Accessibility Compliance at North County Bus Stops	
<p style="text-align: center;">Abstract</p> <p>Objectives/Goals Our public transportation system must be able to provide affordable and accessible services for those with disabilities. The focus of my study was to review my area bus stops to determine if they comply with standards to make the system usable for those with disabilities.</p> <p>Methods/Materials For this study, I focused on the important element of a bus stop which is the boarding and alighting area. It is important that this area be paved, free of obstructions and have a flat surface to avoid unsafe situations for people who are in a wheelchair. I selected a bus route (Bus 304) from our local North County Transit District that had a varied terrain through downtown Encinitas through roads with limited pedestrian access, and services areas that are both new and old. For this study, I reviewed all the eight (8) published stops for this route and sampled half of the many unpublished stops (13). I assembled tools to make measurements including a tape measure, a smart *phone app for collecting degree of slope, and a camera including a standardized form for consistent data collection.</p> <p>Results The results show that the bus stops are not 100% usable for people with disabilities with 9.5% of the sampled stops not being usable by ADA specifications. This is based on the adherence to the standards for the boarding and alighting area. For the optional features such as the bus bench and bus shelter, these were found to not be compliant with ADA specifications. For bus benches, 83.3% of the stops equipped with benches were not usable and for shelters, 50% were not considered usable. These are not mandatory, but from these results these features are not provided for ADA usability but for general passenger convenience.</p> <p>Conclusions/Discussion The stops that had the most violations of the specification (no pavement or grading at the stop) were in fairly remote locations that did not connect to any major point of interest such that the impact on people with disabilities is very minimal. The bus stops that served businesses, the community college, the City of Encinitas Transit Center were all compliant making the system usable for major points of interest.</p>	
Summary Statement I reviewed public bus stops to measure compliance with standards to support those with disabilities to ensure a usable transportation system.	
Help Received I requested standards from a Transportation Engineering Company (TranSystems Corporation) to provide a template for my study	