

# Pedestrian and Bicycle Safety Visualization tool in Chula Vista

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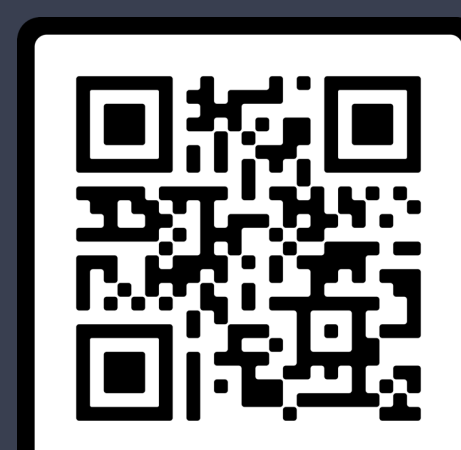
## About Me



My Name is Bitu and I'm working on Traffic Safety of Pedestrian and Bicycle Safety of under 18 children in the Chula Vista, CA. To support Safe Routes to School program in Chula Vista, I developed a dashboard to see how different factors may be related to these accidents. In the next step, we are aiming to develop an educational tool to teach them safe traffic behaviors. Check out the dashboard and project video here:



SCAN ME  
Dashboard



SCAN ME  
Video

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## Background

The city of Chula Vista being the second most populated city in San Diego county, is home to more than **66K under 18 children**. Out of 56 schools located in this city, more than half of them have participated in Safe Routes to School program throughout these years. Considering the Chula Vista's **high child obesity rate (41.5%)** promoting active transportation can be beneficial to reduce the obesity trend and help students to meet their daily recommended dose of activity.



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## Abstract

Active transportation to school (walking or cycling as the means of transportation) is highly associated to provide numerous physical and mental health benefits for students. Given the rising rate of obesity in children, walking and cycling to school can provide their daily recommended dose of exercise. In addition, the affordability of active transportation makes it a perfect way to transport in less socioeconomically advantaged neighborhoods. However, the active school traveling trend is drastically decreasing, impacted by different factors including traffic safety. Traffic accidents are the fourth most common cause of death in the US. Hence, identifying safe routes for walking and cycling can be a key mechanism to enhance active transportation in students.

Safe routes to school (SR2S) is a federally funded program which promotes active transportation through 6 E's (Engagement, Education, Encouragement, Engineering, Evaluation, and Equity). The city of Chula Vista, being the second most populated city in San Diego County, is home to almost 270,000 people, 25% of which are children under eighteen. This dashboard aims to identify the contributing factors to bicycle and pedestrian accidents in the city of Chula Vista, and visualize these accidents.

## Problem Statement

Routes to School started its journey in 2007 in the city of Chula Vista, and has been actively investing in the project ever since. SR2S promotes active school travel through infrastructure improvements and educational programs. Holding numerous sessions of safety assemblies and bicycle rodeos, the city has proved its willingness into this program. However, records indicate there were more than 1400 pedestrian/bicycle accidents in the city from 2010 to 2021, 15% of which were fatal or severe. Considering this statistics, is Chula Vista a safe city for students to walk/cycle in? when and where most crashes happen in this city? What are the contributing factors?

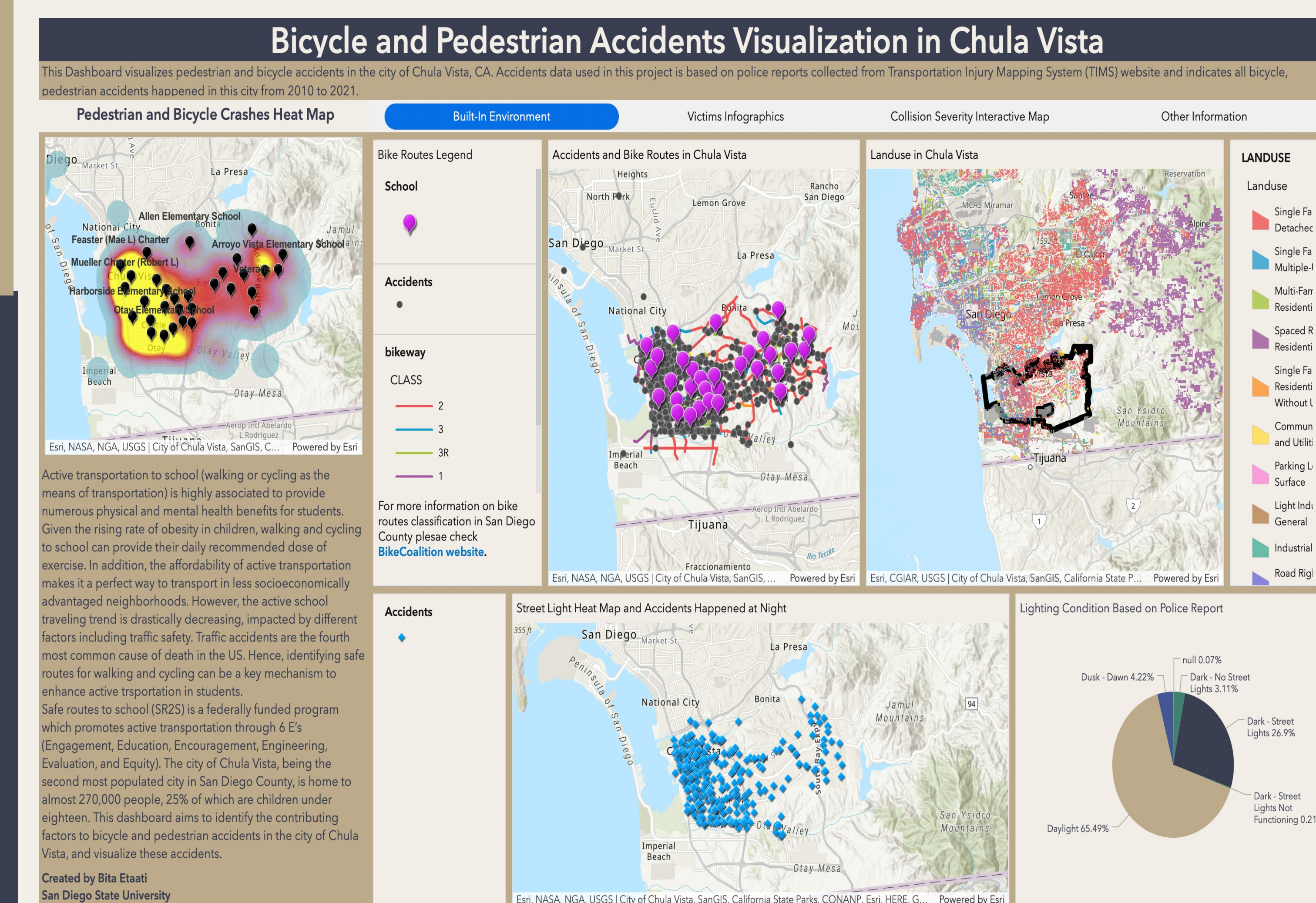
## SDG Goals

This study focuses on promoting active transportation to school by analyzing pedestrian and bicycle crashes in Chula Vista and trying to identify its contributing factors. Safe Routes to School focuses on **SDG 3 (good health and well being)** by highlighting health benefits of active school transportation. In addition, this research focuses on **SDGs 9 and 11** by analyzing infrastructure, built environment and accidents data to ensure safe environment for children to walk and cycle in.

## Dashboard

This dashboard is based on TIMS dataset of pedestrian and bicycle crashes in Chula Vista from **2010 to 2021** based on police reports and contains more than **1400 crash reports**. Using shapefiles provided by SANDAG and Chula Vista government, numerous different indicators has been taken into considerations.

This dashboard includes information on **built-in environment** (speed limit, streetlights, available bike routes), **victims infographic** (gender, race, age), an **interactive map** indicating accidents based on **collision severity** and lastly **other available information on TIMS data** includes date, weekday, road condition and road surface of each reported crash. In addition to all these information, a heat map of accidents near each school is shown on the top left part of the dashboard.



**3** GOOD HEALTH AND WELL-BEING



**9** INDUSTRY, INNOVATION AND INFRASTRUCTURE



**11** SUSTAINABLE CITIES AND COMMUNITIES

