

Pedestrian Environmental Quality Index in Downtown Watsonville

Hazel Choi, Diego Romero, Manny Uche, and Weichi Chu |URBP 279|Master of Urban and Regional Planning|San Jose State University|May 27, 2020



PEQI Intersections and Street Segments Scores in Downtown Watsonville



Introduction

The Pedestrian Environmental Quality Index in Downtown Watsonville Project pertains to Watsonville's *Downtown Complete Streets Plans* in order to provide safer, more walkable, and accessible streets for all users, including pedestrians, bicyclists, and transit riders in downtown Watsonville. The San Jose State University Student Team measured the level of service for approximately 40 Intersections and 60 Street Segments within the downtown using a Pedestrian Environmental Quality Index (PEQI). The team would like to contribute to the development of downtown Watsonville focusing on walkability, safety, and the decrease in automobile dependency through this PEQI project.

Methodology

The student team conducted methodical audits of pedestrian conditions and collected data using the PEQI. The PEQI form consists of obstacles, bike lane presence or absence, cracked pavements, sidewalk widths, and traffic speeds. The next step is entering the collected data into a spreadsheet to develop the PEQI. In this step, the student team referred to "Walkability & Pedestrian Safety In Boyle Heights," from UCLA Center for Occupational and Environmental Health, when creating the scores and calculating the weighted values for both Intersections and Street Segments in order to convert the checkboxes into usable numeric data. In sequence, the student team calculated the overall score for each segment and intersection, and then the weighted scores were added together to determine the overall score of them. The team also estimated the maximum and minimum scores for Intersections and Street Segments in order to determine the range of the ratings. Finally, the student team visualized the final scores through ArcGIS, as shown on the left side.

Modes of Transportation To Work in Downtown Watsonville



63.9%



15.1%



1.5%



2.4%

Arcgis Community Analyst, Commute Profile, accessed May 22, 2020



Collecting data through methodical audits of pedestrian conditions

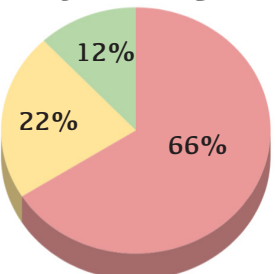


Converting the collected data to numeric data and performing data entry

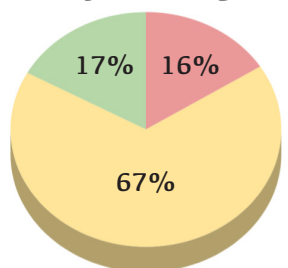


Calculating scores of 40 Intersections and 60 Street Segments and visualizing the final scores

Intersections Scores By Percentage



Street Segments Scores By Percentage



- More than Poor Pedestrians Conditions
- Basic Pedestrians Conditions
- More than Reasonable Pedestrians Conditions

Findings/ Limitations

After analyzing the data, the student team was able to sort out the intersections and streets ranging from lowest to highest in visualization. As a result, the student team was able to determine that 66 percent of intersections are insufficient pedestrian conditions, while 67 percent of Street Segments meet underlying requirements for pedestrians. While performing this project, the student team realized that the PEQI calculates Intersections and Street Segments as two separate subjects in a vacuum. For example, a few Streets without stop signs have significantly low traffic volume and easy to cross. However, the PEQI considers the Streets different from the Intersections so that several Intersections scored lower than they should have. On the other hand, a few Intersections have high vehicle traffic but still received good scores because they have more amenities than other Intersections even though pedestrians do not feel as safe or walkable.

Reference

Arc GIS Community Analysis, Commute Profile, accessed May 22, 2020
City of Watsonville, Downtown Watsonville Complete Streets Plan, November 11th 2019, accessed November 20th, 2019, <https://www.cityofwatsonville.org/1620/Downtown-Complete-Streets-Plan>.
City of Watsonville, Downtown Watsonville Specific Plan, 2019, accessed October 20th, 2019, <https://www.cityofwatsonville.org/DocumentCenter/View/8087/Downtown-Specific-Plan-RFP?bidId=>.
UCLA Center for Occupational and Environmental Health, "Walkability & Pedestrian Safety In Boyle, 2015, accessed October 2nd, 2019, <https://nacto.org/wp-content/uploads/2015/04/Pedestrian-Environmental-Quality-Index-Part-1.pdf>.

