Introduction

Parking within Santa Barbara, and especially downtown, can be quite difficult. There is often an impression that there is a chronic shortage of parking spaces near the downtown area. This GIS analysis of parking in Santa Barbara investigates the availability of parking spaces in the downtown regions, both in terms of parking infrastructure as well as curbside parking. The examined the total capacity of parking spaces as well as their location against the existing demands of parking to check whether a parking deficiency exists, and if so where does it exist. Since downtown Santa Barbara serves the dual purpose of a commercial hub for tourists on the weekdays, as well as a place that offers leisure and entertainment for locals and tourists on weekends, we took consideration of such differences and analyzed whether different parking needs lead to different parking behaviors, and how it affected the spatial demand patterns. In addition, we analyzed the existing alternate forms of transportation within the research area to see whether or not it provides sufficient coverage to be a viable alternative to existing modes (cars, L or other modes). Time and data availability, we constrained the project to the downtown area, which we define as the area between Sola Street to the North, Garden Street to the East, Highway 101 to the South, and De La Vina Street to the West.

Methods

- Data was obtained from multiple agencies, including SB MTD, Santa Barbara Public Works, Nelson Nygaard, in addition to studies on pedestrian and driver behavior.
- Utilizing ArcMap, all public parking lots with the study area were digitized with the addition of capacity and usage data courtesy of Downtown Parking Office.
- Street curbs were digitized and capacity data added from estimates by Downtown Curb Inventory 2008.
- Demand usage of street parking for Friday at 1pm and Saturday at 7pm are digitized, based on a survey conducted by the Nelson/Nygaard Consulting Firm.
- The capacity of parking lots were buffered and merged with curb parking capacity to form an overall capacity heat map. The same process was done with demand for both Friday and Saturday.
- The capacity and demand maps were overlayed to create one map.
- The bus data from MTD was digitized, with a distance buffer of 200 feet is added to each stop.
- This buffer data was combined with the capacity/demand maps for Friday, demonstrating our final analysis.

Results

- As shown on the parking demand with capacity heat maps, great parking needs are in the northwest and southwest portion of downtown, which is consistent with the high demand and high capacity (color mixing of the colors red and yellow).
- Purple means that the area has parking capacity (overlaying color red and blue).
- Current bus system has sufficient coverage with the majority of high parking demand in the downtown area within the walkable distance of a bus stop.
- Parking demand was consistent with both Friday’s and Saturday’s heat maps showing similar trends in parking needs distribution. There are, however, some small differences that reflect the different parking needs of audiences. Saturday’s heat map shows stronger demand for parking around areas near the De La Guerra/Chapala intersection and Cabrillo/Anacapa intersection, where many restaurants, shops, and theaters are located.

Conclusion

The two result maps of Santa Barbara’s downtown parking overlaid demand and capacity, heat maps together, which clearly show the regions that have shortages and excesses of parking spaces. These maps reveal, that, in certain areas the city may need to invest more into parking infrastructure improvements and re-evaluate parking hubs. The bus stops and its adjacent walkability parameter map, show that coverage is not an issue in the downtown regions as most of high demand parking areas are within walkable distance of a bus stop. However, scheduling of the bus lines might be an issue to explore, as pertinent buses do not run during certain peak times. Our maps and analysis contain information that the City of Santa Barbara Public Works could use to balance the spread of parking infrastructures in the downtown area. Our project also serves as a jump off point into further investigation on bus-utility.

References & Acknowledgements

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Contact Information

Melissa Jensen: melmarjen@gmail.com
Qingyun Zhang: kinglakersbWWf@yahoo.com
Jiaqi Zhao: jiaqizhao•TWb•(gmailLcom
Chuck Kha: chuckkha@gmail.com

Figure 1: Bounding rectangle showing the study area. Boundaries include Sola Street to the North, Garden Street to the East, Highway 101 to the South, and De La Vina Street to the West.