Overview

Our project, Communities in Transition Community Walking Audits, aimed to improve road safety for pedestrians, bicyclists, and drivers through tactical urbanism. The intervention model has gained much popularity due to its practical advantages over larger scale planning and execution of road safety improvements. It is low-cost, it is implemented quickly and easily, and focuses on the communities in need. At the beginning of our project, we first conducted a series of surveys, which consisted of carefully and thoroughly observing several places within the southwest region of Lee County. Based on survey data and recommendations made by the county, we decided to focus on the intersection of Shangri-La Rd and River Rock Blvd located behind Bonita Springs High School.

After choosing the sites, we began collecting extensive prerequisite data to understand what existing issues were present. We surveyed each area collecting data like the posted speed limit, actual speeds of drivers, number of pedestrians, number of bicyclists, who uses crosswalks, and more. Our team researched and planned tactical urbanism designs (temporary improvements) specific to the area. The provisional designs were aimed at mitigating the safety issues that were observed. After our meeting with official members of the city of Bonita Springs, the course of the project changed in its entirety. As a result, we were unable to implement our proposed tactical urbanization plan, however, we continued to assess the site. Although the development of our project was not carried out as envisioned, we obtained valuable and useful information, which the city should make use of in the future.

Methodology

To assess and have an accurate representation of the intersection of Shangri-La and River Rock Road our team made use of the app Survey 123. The app contained five surveys - What Would Make This Area Better For Walking?; Sidewalks; Who Travels in This Area?; Getting to Know Your Area; and Intersections: Crossing the Street. All surveys were used in the initial stage of the project to assess the conditions of the area. After that, we continued to use the Who travels in this area survey on a regular basis. When collecting information for our surveys, we made use of a radar gun to track vehicle speed, a click counter in order to keep track of the number of people using the area, reflective vest were worn for safety, and personal cell phones were used to access the surveys.

For the Who Travels in This Area survey, we recorded the number of pedestrians, bicyclists, the number of people using public transit, the number of people crossing without a crosswalk, the number of people using assistive devices such as canes, wheelchairs,
walkers, and/or scooters, the speed limit, the number of cars speeding, and the number of people walking with children and/or strollers.

For the Sidewalks survey, we measured the width of the sidewalk, the conditions of the sidewalk, and if sections of the sidewalk were missing. We took note of any cracks or broken sections, litter around the area, and any obstacles that obstruct the pedestrian path. We determined whether the sidewalk is wide enough for two people - which is a minimum of 5 feet. If there were curbs, their conditions and buffers were examined. We looked for places to rest, shady areas, roadway lighting and safety hazards in the immediate area. In addition, we took note of the conditions of the bus stops, if there were any exclusive lanes for cyclists, and/or if the bicyclists share the same space with walking pedestrians.

In the What Would Make This Area Better For Walking? survey, questions were posed about what would be beneficial for pedestrians. The format was simple and easy. The survey also asked questions about things that could be adopted in order to improve the area. It includes specific questions, such as if slow or less traffic would help; if more, wider and/or better crosswalks for pedestrians would help; if the idea of having buffers between sidewalk and road would help; whether shaded and protected places to sit helped; and if better lighting was necessary. It also asked about the conditions of bus stops, whether there was access to bathrooms in the area, and if placing bicycles off the sidewalk would be better for walking in the area.

The Getting to Know Your Area survey evaluates the community within the area of the chosen site. The questionnaire focused on aspects such as the proximity of grocery stores, schools which ranged from daycare(s) to secondary school(s), bus stops, small businesses, franchises, and if there were mixed-use buildings in use by availability. It also contained questions on public spaces, parks, protected areas, environmental conditions, etc. The important thing was to determine if people within this community are able to eat, work and play within a .25-mile radius of their homes.

The Intersections - Crossing the Street survey evaluated the general conditions of the intersections of each given site. Each corner of the intersection was evaluated on the same standard. It asked for information about pedestrian markings on the ground, how visible the pedestrian, markings were, and the conditions of the pedestrian markings. It also asked if there was a pedestrian crossing signal, whether the pedestrian crossing had push button available, if the pedestrian crossing was in working condition, and whether it had available visual and audible features for the disabled. It also asked if the pederian signal was long enough for pedestrians to safely...
cross with additional requests to record the time. The survey also measured the behavior of motorists, such as whether they stopped in front and/or after the crosswalk lanes, if the drivers yield to pedestrians and/or speed up. Towards the end of the survey, there is a question about how safe it was to cross the street.

**Bonita Site**

Figures 1 and 2: Images show the Bonita Site. These images were extracted from Google maps prior to the High School being built.
Background

The intersection of Shangri-La Rd and River Rock Blvd is located behind the recently built Bonita Springs High School, which has more than 700 students. To the south, there is the gated Hawthorne community, which consists of 307 single-family homes and 156 condominiums. On the east side, there is a highly congested road called Imperial Parkway, where the speed limit is 45 mph. Then, traveling east to west on Shangri-La Road, there is a quiet, medium-sized house neighborhood with a speed limit of 30 mph. During the school season, approximately 40 students use this route because it offers a faster way to get on and off the school premises.

Issues and Observations

While evaluating the area and gathering information about the intersection, many safety issues arose. One of the biggest concerns was the number of pedestrians crossing Shangri-La Rd, which is a four-lane road without a crosswalk. During our time at the site, we noticed that many of the pedestrians who crossed the intersection of Shangri-La Rd and River Rock Blvd were high school students entering and leaving the school. Vehicle speeds ranged from 30 to 53 mph, which reveals that speed is a serious issue in this area. On top of that, there were no pedestrian crossing signs or markings for motorists to transit with caution. Certainly, not having a crosswalk presented an imminent danger to pedestrians. There were also many community members, including students, who used bicycles as a means of transportation and/or for recreational purposes. These individuals were also impacted by the lack of exclusive lanes or crosswalks available for safe use.
Figures 3 to 8: Images show pedestrians and bicyclists crossing Shangri-La Rd. without a crosswalk. In the first three images, many of the pedestrians are students leaving Bonita Springs High School.

Figure 9: Image to the left shows the posted speed limit further down Shangri-La Rd. past the Bonita Springs High School.
Figures 10 to 15: Show some recorded speeds on Shangri-La Rd.
Figure 16: The image to the left shows a speed recorded on Imperial Parkway. The highest speed recorded on Imperial Parkway was 82 mph. From our data speeding is higher at the Imperial Parkway and Shangri-La Rd. intersection, than the intersection of Shangri-La Rd and River Rock Blvd.

Goals

After observing these issues, we decided on some improvements for the area. We wanted to implement a crosswalk to make it safer for pedestrians to cross. To do this, we wanted to inform drivers of an upcoming crosswalk and/or slow zone with signage and rumble strips/reflective tape. We also aimed to customize the crosswalk by incorporating the high school mascot into our design. Furthermore, we wanted to create an area of refuge ideally between the four lanes to provide protection to pedestrians and bicyclists.
Tactical Urbanization Plan

Figures 17 and 18: Show the tactical urbanism design we created for the Bonita site and a key to increase understanding.
Challenges We Ran Into

During our project we dealt with a few challenges. There were concerns with our first design regarding liability associated with a temporary changes on Shangri-La Rd. As a result of these concerns, we were unable to implement our tactical urbanism design. However, we continued to collect data on the site. In addition, we dealt with inclement weather conditions. Data collection was conducted during the summer, a time when it rains and storms almost everyday starting mid June. Additionally, temperatures ranged between 75 and 90 degrees Fahrenheit. During times of severe storms with thunder and lightning, and typically heavy rain, we were unable to collect data properly, as this altered the levels of pedestrians and bicyclists.

Suggestions

Below are recommendations for the area based on the data collected.

Short-term recommendations (1 month to 1 year):
- Construct a crosswalk across Shangri-La Rd.
- Place proper signage along Shangri-La Rd. (speed limit, school zone, yield to pedestrians, etc)
- Improve existing crosswalks parallel to Imperial Parkway in the vicinity of the school
- Implement road markings (school zone, bike lane, slow down, etc)
- Provide trash/recycling bins between sidewalks

Midterm recommendations (1 to 5 years):
- Decrease the speed limit to 25 MPH around the school or at least during school hours
- Improve sidewalks ensuring they meet the needs of people with disabilities
- Provide shaded areas and benches for students and community members

Long-term recommendations (5 to 10 years):
- Create a median or permanent area of refuge between the 4 lanes of traffic for students/pedestrians using crosswalks
- Extend bike lane starting on Imperial Pkwy down Shangri-La Rd.
Final Remarks

In general, this area has a lot of potential for great things. There are many changes that can and should be done to better this area. Increasing safety for the amount of pedestrians and bicyclists (mainly students) should be priority, as they seem to be the most vulnerable to injury or fatality in this area. It will be very exciting to see how this particular intersection will develop and transform in the near and distant future. This is a great opportunity to make improvements and impact the community, and we believe this report will serve as a starting point to take action.

Acknowledgements

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