Bonita Springs is a city in southwest Florida. It’s known for its Gulf Coast beaches and parks. Terry Street specifically has a median age of 43 (ages range from 0-85+). Sixty-eight percent of the people that live there are families while 33% of the population is single. At least 28% of the people living in this area have a college degree. Construction in this area began before 1950 and continues today with 1993 the median year of home construction. The newest addition to the area is the Old 41 Road and Terry Street roundabout which began in summer 2017 and is now completed and is being used to help the flow of traffic. On this street alone, there is one middle school (Bonita Springs Middle Center for the Arts) and one preschool (Educare Academy) within walking distance of homes. Dollar Tree, Benson’s Grocery, and Regi Universal Supermarket are some of the few grocery options within 1-3 miles of the street. There are also close to 20 restaurants that are also within 1-3 miles of the street. Because of the spread-out nature of the area, 95% of the people living there drive to commute by car.
Sidewalks

Sidewalks are an important factor when contemplating the sustainability of an area. A sustainable area has space for all modes of transportation. More importantly, it allows individuals the opportunity to participate in a healthier more active lifestyle. To achieve this, sidewalks must create a safe path for pedestrians to travel, away from motor vehicles. This involves minimizing the interaction between motor vehicles and pedestrians. For a sidewalk to be sustainable, it must include a variety of components that make it safe, reliable, and enjoyable.

Safety

The most obvious and potentially hazardous factor affecting sidewalk safety is traffic. This involves motorized vehicles and bicycles. It is essential that pedestrians can walk along a sidewalk without fearing that a car might hit them. For this to be achieved, the sidewalk must sit off the road with a barrier between it and the road. A barrier could be a wide patch of grass, a ditch, trees, bushes, or any structure that could stop or slow down a car before it reaches the sidewalk. Pedestrians are also affected by bicyclists. If a road does not have a bike lane built in, walkers are faced with the challenge of avoiding a collision from either direction. An easy example of this would be a pedestrian listening to music while they walk. A bicyclist might approach the walker from behind assuming they have enough sidewalk space to pass the walker safely. The pedestrian, having not heard the bike approach, could make an unpredicted movement cause the biker to run right into them.
Reliability

For a sidewalk to be reliable, it must uphold its purpose. The sidewalk must stretch from point A to point B without missing sections or broken areas, it must be well kept and maintained, and it must be usable day or night. A sidewalk that is missing section or contains broken areas are hazardous to pedestrian. Walkers could be forced to walk off the sidewalk into the road to bypass the troubled area or forced to walk through the area risking an injury due to tripping and falling. The stretch of sidewalk must be properly kept and maintained. This included renovation when the sidewalk become too degraded and grooming of shrubbery. The overgrowth of plant life is another hazard forcing walkers to evaluate the sidewalk. It is not plausible to expect a walker to push a downed tree branch out of the way while walking. Even if the overgrowth is only affecting a small width of the sidewalk, it should be able to accommodate at least two pedestrians walking side by side. Reliability also related to the ability to use the sidewalk at all hours of the day. This includes evening strolls after the sun goes down. For example, a couple decides to walk to a restaurant for dinner located just outside their neighborhood. When they begin there stroll, the sun is still lighting the sidewalk properly. However, on their way home, the sun is no longer lighting their path. It is essential to have light post evenly spaced along a sidewalk to supply walkers with guidance at night. If not, the couple would have probably driven to the
restaurant knowing it wouldn’t be safe walking home. Without reliability, pedestrians will not risk their safety on the sidewalk.

Enjoyable

Nobody will ever chose to walk somewhere over driving if the walk isn’t enjoyable. In Florida, the first sign of an environment being enjoyable on a long walk is shade. There should never be a mile stretch of sidewalk without a generous portion of shade. This amenity comes from big, beautiful trees that do not have palm fronds. Along with shade, it is very enjoyable to have a nice place to sit and rest. When walking for leisure or for a purpose, it is often nice to sit for a minute to regroup or to take in the sights around you. This cannot be done if sitting on a curb is the only option for the entire trip.
The sidewalk along Terry Street connecting Bonita Springs Middle School to the gas station has several needs for improvement. There are two distinct sections connecting the different locations. The first section goes from the gas station to the beginning of the school property. The second section stretches across the front of the school. Each section needs improvement in its safety, reliability, and amenities to make more enjoyable. The first section is the worst of the two. It is located directly on the edge of the road, it is badly cracked and in need of renovation, it is overgrown with shrubbery, and it is baking in direct sunlight. As a group, it was hard to walk side by side as we walked along the sidewalk only stretching five feet from the road. Terry Street has a large motor vehicle presence forcing walkers to be uncomfortable to close to the edge. It was also discovered that the main form of transportation on the sidewalk is biking. The need to constantly move out of the way and off the sidewalk was dangerous considering the traffic. Shrubbery also infringing on the limited sidewalk space made walking even more difficult. Not to mention, the endless amount of sunlight. The only area to access shade was at the bus stop half way between the gas station and the school. To remedy these problems, the sidewalk should be redeveloped at least three or four feet off the road. With the added space between the two modes of transportation, trees could be planted to benefit the area with shade and a barrier to protect walkers from possible accidents. An unpredicted safety hazard we came across on this stretch of sidewalk was trash and an
abundance of broken glass. This is almost entirely due to the lack of trash cans and recycling bins. Though the bus station has a trashcan, it would be in the best interest of this area to introduce more disposal locations. The second stretch of sidewalk lining the school property was in better shape; however, it lacked reliability and the amenities to be enjoyable. Unlike the first section of sidewalk, the second section is located about thirty feet off the road and contained only a minimal amount of cracks and overgrowth. These two improvements increases pedestrian safety as it was easier to travel side by side while walking along this stretch. However, the lack of shade and a place to rest perpetuated the same issues found in the first section of sidewalk. There are several big trees located off the sidewalk about twenty feet that would be a beneficial location to install benches for sitting. However, a ditch separated the two locations require the addition of another walkway to make the solution plausible. Of the two sections of sidewalk, renovation and detail would make walking safer, more reliable, and more enjoyable. However, the purpose of this sidewalk is questionable. If the purpose of the sidewalk was to connect the school to the gas stations and various businesses on the same side of the road, then it would be successful once redeveloped. However, the school is not connected to the residential area across the street. It could be assumed that many of the school’s students reside in the neighborhood opposite the campus. It is puzzling that the students were not given a side walk to walk along as they make their way to the school crosswalk. Students are forced to walk through other people’s yards to get to a designated location to cross the street. Therefore, it would make sense for the area to develop a mirroring sidewalk across the street to fulfill the purpose of the school zone. If that were accomplished, the reliability of the section of sidewalk in front of the school would be increased.
Intersections

The main purpose of an intersection is to facilitate the flow of traffic as multiple lanes cross each other. In most cases, an intersection has a stop light that manages the continuous flow of traffic in an orderly fashion. In other cases, there are four-way stop signs giving drivers the authority to decide who gets to go through the intersection. In rare cases, intersections can be facilitated by roundabouts. This type of intersection utilizes yield signs at entry point, rather than stop signs or lights, as vehicles travel the intersection in a counterclockwise manner. The safest way to facilitate traffic in an intersections is up for debate. However, for an intersection to be sustainable, it must be: accessible to multiple forms of transportation, safe for all modes of traffic, and convenient.

Accessibility

The main modes of transportation through an intersection is by motor vehicle, bicycle, and walking. Due to all three types of transportation coming together at the same time, it is essential that there are
designated areas for each mode to travel separate from the others. It is common for roads to be built for
cars instead of pedestrians or bikers. This type of design prevent individuals from wanting to travel
through intersection by anyway other than driving. A sustainable way to remedy this is to create
intersections that include a well-defined crosswalk that connects two stretches of sidewalks together and
bicycle lanes that properly direct bikers to the appropriate crossing point on either side of the road. With
this, each mode of transportation will know where their place is in the crossing of traffic.

![Image of crosswalk and traffic signs](image)

*Safety*

Though sidewalks and bike lanes may have a designated crossing point in an intersection, more detail
must be added for the interaction between traffic to be safe. Motor vehicles travel at a faster rate than
either of the other two types of transportation. Therefore, most safety details should be directed towards
drivers. Proper pedestrian and bicycle crossing signs should be placed before the intersection so that
drivers have a heads-up. Crosswalks should be given a different color or texture, such as brick or white
paint, than the road to give drivers another alert to a potential crossing. Push-to-walk signals should be implemented to give drivers a confirmed alert that someone is trying to cross the intersection. If an intersection contains four-lanes of traffic or more on each side, a median should be included half way across the road to give pedestrians a place to stop when crossing a busy road. Big bushes or trees should not be placed in a location where visibility is cut off between walkers, bikers, or driver. Stop signs and yield signs should be available for pedestrians to see and determine if oncoming traffic is supposed to stop. The safest intersection in one where everyone knows what is going on and everyone is visible to one another.

*Convenience*

The biggest deterrent for safe transportation is when road traveling doesn’t make sense. If a crosswalk is placed in a location that is not logical for the intersection, pedestrians are liable to cross at unmarked locations. If bike lanes do not properly direct bikers across an intersection or just end all together, bikers
are liable to infringe on either pedestrian or motor vehicle space. Therefore, convenience is the key to keeping travelers safe in a sustainable environment. Push-to-walk pedestrian signals are a great way to alert oncoming traffic that someone is trying to cross the road. These signals motivate pedestrian to watch for traffic and drivers to watch for pedestrians. If these signals are not working properly or take too much time to turn on, pedestrians will most likely attempt to cross the intersection without warning. It is essential that these signals are adequately maintained and calibrated in order to fulfill their purpose. For example, if the road is wide, the signal should be calibrated to give an individual enough time to cross the road walking at an average speed. It is also important that road signs are placed in appropriate locations. Pedestrian and bike crossing signs must be placed before a crosswalk. It is also important that stop signs and yield signs are not placed directly at the crosswalk. This encourages drivers to stop midway through a crosswalk cutting off pedestrian travel.
The intersection between Old 41 Road and East Terry Street is home to a roundabout. This intersection is fairly new with a modern design. It has proper sidewalks, crosswalks, and yield signs. In building this intersection, a two-toned road design was utilized by implementing brick for sidewalks and a regular cement color for the roads. Four directions of traffic come together in this intersection. Each direction contains four lanes, two lanes for each direction, with a brick median divider for pedestrians crossing. The decoration of thin palm trees around the intersection allowed for good visibility of oncoming traffic. Cross walks were properly labeled with bright yellow signs adequately placed before the crossing point. Push-to-walk signs were available. However, they are used to turn on little yellow lights on the sign to alert traffic. Because the lights are so small, they are very difficult to see during the day, but it can be assumed that they work well at night. It was discovered that drivers were more inclined to stop for pedestrians before they entered the intersections rather than stopping as they exit the intersection. It was concluded that this was due to pedestrian signs only being directed towards outside traffic coming into the intersection rather than cars already in the roundabout. Yield signs were placed after the crosswalk on each side of the roundabout. Though there seemed to be enough space for car to yield after making it past the crosswalk, it was alarming how fast some cars pulled through the crossing area to the yielding area. It was concluded that one out of every five drivers did not seem to take notice of the pedestrian crossing sign as they sped up to make it into the roundabout. The implementation of speed bumps before the crosswalk might motivate drivers to slow down and look for pedestrians. This area had a very large population of bikers. During observation portion of this audit, it was determined that there was a 3:1 ratio of bicycle to walks. Due to this conclusion, it is puzzling that this neither street nor intersection had bike lanes. As pedestrians, we constantly had to watch out for bikers crossing the road with us. The effort to implement bike lanes and bike boxes would not be wasted in this area. The roundabout as a whole seemed to manage the high levels of motor vehicles without complication. It is also a very pedestrian friendly intersection with the exception of bicyclists.
References:

10150 W Terry St, Bonita Springs, FL 34135-Estimate and Home Details Trulia. *Trulia Real Estate Search.*