Crash Analysis Studio

Session 5: Bradenton, Florida
Held on May 26, 2023

Session Participants:

- **Ellen Zavisca**, Principal Transportation Planner (PTP) at Knoxville Regional Transportation Planning Organization; Master of Urban Planning, University of Illinois Chicago
- **Danny Williams**, Information Technology Consultant; Business Owner; Public Transit Advisory Board Member
- **Loren Lysen**, General Manager of adjacent, resident-owned community Gold Tree Co-Op
- **Carl Jones**, Bradenton resident nearby crash location; concerned citizen
- **Charles Marohn**, President of Strong Towns
- **Rachel Quednau** (moderator), Program Director at Strong Towns

Summary of Crash Event

- The crash occurred at 9:09 a.m. (EST) on January 2, 2023 at the intersection of Lockwood Ridge Road and 57th Avenue East in Bradenton, Florida.
    - The Florida Department of Highway Safety and Motor Vehicles granted access to the crash report after the 60 day, post-filing hold period passed.

- An 80-year-old motorist struck a 76-year-old Bradenton man as he was headed west - with no marked crosswalk - from 57th Avenue East across Lockwood Ridge Road. The pedestrian was declared dead on the scene at 9:19 a.m.

- The police report states the following:
    - The motorist was traveling in the left, inner northbound lane of Lockwood Ridge Road when the collision occurred.

    - The pedestrian's body came to final rest in the right, outer northbound lane of Lockwood Ridge Road.

    - The motorist sustained minor injuries; no charges or citations were noted.

    - Impairment tests were not administered to the pedestrian or the motorist.

- Two witnesses were present at the crash; neither statements from them nor the motorist were included in the crash report.

- The crash report and media all list the posted speed limit on Lockwood Ridge Road as 40 miles per hour (mph).

- Media sources also did not mention charges or citations.

Primary Contributing Factors

The design of Lockwood Ridge Road demonstrates indifference to the safety of people walking, biking, and otherwise traveling without the aid of a privately-owned vehicle or automobile.

The designers acknowledge the existence of pedestrians by constructing sidewalks; the designers acknowledge the presence of people biking by constructing dedicated bike lanes.

Despite acknowledging the existence of these non-motorists utilizing the roadway, the designers have created an environment that places pedestrians and cyclists in peril. These are intentionally executed design choices.

When it comes to drivers crashing into other automobiles, the designers have recognized that humans make mistakes and, therefore, have provided ample margin for error. Wide lanes and dedicated left-turn lanes are forgiving roadway features that attest to designers' caution regarding automobile-on-automobile collisions

When evaluating motorists colliding with pedestrians and cyclists, the designers have chosen to not create a similar margin for mistakes. Unprotected bike lanes mere feet from traffic traveling at lethal speeds incorrectly assume perfect behavior by all users at all times. Spacing crosswalks more than a mile apart and having them span wide crossing distances incorrectly assumes drivers continuously possess heightened awareness. For pedestrians and cyclists, the design demands flawless decision-making by drivers, a condition the designers recognize -- through their professional decisions -- is not reality.

The designers of Lockwood Ridge Road are aware that the automobile design speed for the road is lethal for pedestrians and cyclists; however, they have intentionally chosen to place non-motorists in this environment in a way that exposes them to significant risk.

This design expresses conscious indifference to the safety of people walking and biking. That indifference is the underlying cause of the collision that killed the pedestrian crossing Lockwood Ridge Road. Without major changes to Lockwood Ridge and other similarly designed roadways in Bradenton, tragedies like this one will remain statistically inevitable.

Additionally, session participants identified the following primary factors that contributed to this crash:

1. **Lockwood Ridge Road displays blatant disregard for non-motorists.**

a. The design of Lockwood Ridge Road includes design elements for non-motorists such as sidewalks and dedicated bike lanes.
    i. Sidewalks are constructed along both sides of Lockwood Ridge Road; at the same time, the engineers have placed marked crosswalks more than a mile apart.
    ii. Bike lanes are striped adjacent to the outer lanes of Lockwood Road where posted speed is 40 mph. These lanes feature no protection from through traffic of automobiles.
b. According to the Insurance Institute for Highway Safety, the posted speed limit and the automobile design speed for the road are lethal for pedestrians and cyclists. Anyone struck by a motor vehicle traveling at the 85th percentile speed of 46 mph or at the posted speed of 40 mph is unlikely to survive; if they do survive, severe injury is likely.
    i. The intentional choice to keep pedestrians and cyclists in this environment exposes them and, to a lesser extent, motorists, to dangerous risk.
c. Design-sanctioned disregard for people walking across Lockwood Ridge Road is an underlying cause of this collision that killed a pedestrian. Although multiple streets intersect Lockwood Ridge Road, marked pedestrian crossings and accommodations are only provided at intervals over one mile apart.
    i. Repetition of this tragedy is statistically inevitable. A serious collision occurred two blocks north of this intersection, three weeks after the analyzed crash occurred.

2. **Lockwood Ridge Road features only a narrow margin of error for all users, especially pedestrians.**
    a. The design engineer has acknowledged that motorists are fallible humans who will likely make mistakes by building in features that create margin for error. Wide through traffic lanes and dedicated turn lanes create forgiveness for driver behavior.
    b. Dedicated and marked bike lanes assume all parties - including those traveling at the 40 mph speed limit - will execute flawless behavior at all times.
    c. The wide crossing distance on Lockwood Ridge Road inaccurately assumes motorists continually operate with heightened awareness. For pedestrians, cyclists, and non-motorists, the design assumes drivers are perfect in their decision making; designers recognize – through their design decisions – that such perfection is not realistic.

3. **Lockwood Ridge Road prioritizes high speed automobile travel over all other design objectives, especially pedestrian safety and accessibility.**
    a. All obstacles that would slow the movement of traffic have been eliminated along this portion of road.
        i. Dedicated right and left turn lanes, along with wide curb radii remove the natural congestion created with the turning of cars.

ii. There are no controlled intersections although there are several residential developments that rely on Lockwood Ridge Road as their only means of egress.
iii. There are no marked crosswalks although there are sidewalks on both sides of the street and into the majority of residential developments.

b. Pedestrian crosswalks are located more than a mile apart.
c. The signalized intersections closest to the crash location feature crossing distances and high-speed traffic volume that also make them unfriendly to pedestrians.

4. **Width of lanes across Lockwood Ridge Road create a false sense of safety for motorists and force non-motorists to make difficult judgment calls when crossing.**
    a. Travel lanes are 11.5-feet wide; this is 1.5 feet wider than the standard 10 foot width used in urban settings.
    b. Overall road width demands crossing pedestrians and cyclists judge gaps across four to five lanes at once.
        i. This requires road users to simultaneously assess oncoming vehicle speed and estimate their ability to move in between and beyond said vehicles.
        ii. A healthy adult human walking at an average speed of three miles per hour would endure approximately 27 seconds of exposure to traffic while fully crossing Lockwood Ridge Road. In the scenario that took place, the 76-year-old pedestrian would have likely walked closer to 2.1 miles per hour and endured 38 seconds of exposure during crossing.

5. **The design speed, and the documented travel speed, of Lockwood Ridge Road is incompatible with people traveling by foot or bike.**
    a. Lockwood Ridge Road facilitates high speed motor vehicle travel.
        i. Lane widths are large enough to make drivers comfortable traveling at a design speed that is higher than the posted 40 mph limit.
        ii. Four through lanes allow for fast-moving traffic to pass slow-moving traffic, even during short periods of congestion.
        iii. At the intersection of 57th Avenue East, there is a left turn lane in each travel direction. These left turn lanes are designed to remove turning automobiles from the stream so they do not impede through traffic.
    b. The current speed limit on Lockwood Ridge Road is 40 mph.
        i. A speed study indicates that over 50% of drivers exceed the posted limit; the Insurance Institute for Highway Safety states many pedestrian collisions beyond 40 mph are fatal.
        ii. The 85th percentile speed - exceeded by only 15% of drivers - is 46 mph.

6. **The development pattern around Lockwood Ridge Road forces pedestrians and cyclists to travel along or cross Lockwood Ridge Road, despite the known danger.**

a. Lockwood Ridge Road is surrounded by hundreds of residences in multiple neighborhoods, many of which are gated and have little to no interconnectivity. These conditions create complexity of travel with many people using this road as part of their regular travel patterns. It is impossible to avoid Lockwood Ridge Road through alternate routes.
b. The development pattern in the vicinity of this crash location is suburban, with many communities funneling traffic onto collector roads which, in turn, terminate at Lockwood Ridge Road and other arterial roadways, such as Honore Avenue.

7. **The design of Lockwood Ridge Road does not signal motorists to engage in risk management.**
    a. Humans generally experience driving as a system 1 activity. Certain driving conditions may trigger active risk management - an analytical, system 2 activity that can only be sustained for shorter periods of time.
    b. Lockwood Ridge Road further encourages passive driver behavior due to the speed limit, multiple wide lanes for through traffic, and the absence of traffic calming measures.

Related Contributing Factors

Session participants identified the following related factors that contributed to this crash:

8. **Both the pedestrian and the motorist may have experienced mobility, accessibility, and visibility issues.**
    a. Both the motorist and the pedestrian were over 75 years old. Both parties may have had slower reaction times due to their age; this could have influenced the behavior of either or both parties.
    b. The motorist was driving a car that allegedly had no daytime running lights.
    c. Vendor trucks that may obstruct the vision of drivers and pedestrians regularly move through this area.

Recommendations

To address the conscience indifference to the safety of people biking and walking in the area where this crash took place, a policy-level decision needs to be made regarding the goals and intent of the area. Elected officials need to give clear guidance and direction on whether Lockwood Ridge Road is to be a high-speed, high-capacity roadway or whether the roadway classification is that of a residential neighborhood where residents will routinely bike and walk along and across the roadway.

If the expectation is that Lockwood Ridge Road is going to be a high-speed, high-capacity roadway, expensive and arguably complex modifications will need to be made. First, all current sidewalks and bike lanes should be removed from the road. In this scenario, well-marked and robust alternative options such as multi-use paths (MUPs) would need to be provided between

and through existing neighborhoods. Pedestrian overpasses and/or underpasses would need to be strategically installed to facilitate crossing Lockwood Ridge Road.

If the expectation is that Lockwood Ridge Road is going to accommodate people walking and biking, then to make that safe, the following needs to be done:

Immediate:

1. Narrow travel lanes, shorten dedicated turn lanes, and tighten turn radii to decrease the 85th percentile speed of automobile traffic along Lockwood Ridge Road.
2. Use construction cones or delineators to create wider, protected bike lanes.
3. Install additional high visibility, mid-block crossings that include pedestrian refuges in the center median.
4. Install temporary signage at this intersection that heightens driver awareness of pedestrians and cyclists.
5. Begin landscaping the sides and center median of Lockwood Ridge Road to optically narrow the roadway, creating a greater sense of enclosure.

Near Term (within the next 12 months):

6. Engage elected leaders and transportation officials to pursue policy improvements that would change the classification of this roadway to a context-based street classification that encourages lower speeds and accommodates all users.
7. Engage neighborhood organizations and elected officials for opportunities to strategically open up alternate routes, especially pedestrian and cyclist connections, between communities as an alternative to Lockwood Ridge Road.

Long Term and Systematic:

8. Replace temporary bollards and cones with a permanent redesign that creates protection for cyclists and normalizes slower traffic flow - inclusive of a decreased 85th percentile speed. This could be achieved through a road diet that reduces Lockwood Ridge Road to one lane in each direction; fewer lanes translate to fewer gap judgments by pedestrians and cyclists.

Concluding Statement

The series of design flaws present along Lockwood Ridge Road and at the crash location are problematic and commonplace, both within and beyond the state of Florida. Design emphasis that prioritizes traffic flow at high speeds over the safety of - and accessibility for - pedestrians and cyclists has caused injuries and deaths in places like Bradenton and communities throughout much of North America.

By evaluating the many factors that contribute to a crash, we believe that decision-makers, the public, and designers can move beyond the current approach, which seeks only to assign blame to involved parties, to a model that helps change the way these spaces are designed,

developed, and maintained. In Bradenton, we believe ongoing changes to this location should focus on improving the pedestrian experience within this area.