Crash Analysis Studio

Session 12: Rochester, New York
Held on December 15, 2023

Session Participants

- **Preston Buehrer**, Project Engineer with Toole Design; Specialist in traffic safety rapid response and equitable transportation system design work
- **Evan Lowenstein**, Rochester resident for 25+ years; urban cyclist for 35+ years; safe streets advocate
- **James Dietz**, Advocacy and Policy Manager at Reconnect Rochester; concerned community member and transportation safety enthusiast
- **Edward Erfurt**, Director of Community Action at Strong Towns
- **Tony Harris** (moderator), Action Team Coordinator at Strong Towns

Summary of Crash Event

- The crash occurred at 5:51 p.m. (EST) on December 22, 2022 at the intersection of South Goodman Street and Park Avenue.

- Northbound motorist Master Bevel ran a red light and struck Edgar Santa Cruz and his dog Rosie as they were crossing South Goodman Street on the south side of its intersection with Park Avenue.
    - According to the crash report, Santa Cruz passed away at 6:28 p.m. after being transported to Strong Memorial Hospital. Santa Cruz's dog Rosie also died due to the crash.

    - Bevel fled the scene of the crash and was arrested the next day.

- The crash report also indicates Edgar Santa Cruz was struck on the east crossing segment on the south side of the intersection.

- Weather reports for Rochester on the date of the crash indicate it was cloudy, rainy, and dark that evening.

- Local sources informed us that the speed limit on South Goodman Street was 30 miles per hour (mph) at the time of the crash and has not changed since.

Primary Contributing Factors

The design of South Goodman Street demonstrates inadequate concern for the safety of pedestrians, public transit users, and other non-motorists traveling outside of privately owned

automobiles. These design flaws heighten the likelihood that motorists like Master Bevel will engage in decision-making and risky behavior that result in deadly consequences.

Designers acknowledge the existence of pedestrians at this intersection–located within a compact walkable urban development pattern–by constructing wide sidewalks and including push buttons for pedestrian crossings. Lane widths, dedicated turn lanes, posted speeds and lighting decisions indicate that non-motorist safety, usage, and accessibility are not prioritized as highly as traffic throughput.

Designers have recognized that motorists are fallible and have provided ample margin for error through forgiving design features, including wide through traffic lanes and dedicated left-hand turn lanes. These elements illustrate designers' recognition that Goodman Street–and nearby connectors like Culver and Winton Road–are often used as alternatives to arterial travel.

When evaluating collisions between motorists and cyclists or pedestrians, designers did not elect to create a similar margin for error. South Goodman Street–a roadway with a design speed that substantively surpasses the posted limit–was placed in a compact walkable urban environment consistently frequented by pedestrians, cyclists, and public transit users; this decision illustrates disregard for pedestrian and non-motorist safety. Design elements that decrease clear focus at this intersection substantially increase risk of danger for both drivers and pedestrians.

Design and transportation professionals have chosen to create mobility incompatibilities at this intersection that expose non-motorists to unnecessary risk by placing them in an atmosphere constructed to prioritize high-speed traffic flow on a local street. Substantive changes to South Goodman Street and similar roadways are necessary to reduce fatalities and traumatic injuries.

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

1. **Visibility within the South Goodman Street and Park Avenue intersection is decreased by design aspects of the built environment.**
    a. The traffic signals are not currently outfitted with backplates that increase visibility[1]; signal placement above the roadway and behind the intersection also draw motorists' line of sight upward, rather than directly at the roadway.
    b. Streetlights along Goodman Street shift from pedestrian scale to highway style lighting at this intersection; this shift in lighting style requires the human eye to react and adjust, which may temporarily reduce visibility for motorists.
        i. Motorists see the profiles of pedestrians during approach; lighting placed above the roadway does better illuminating the tops of people than their sides.

[1] The Monroe County Department of Transportation (MCDOT) did recommend backplates be added as part of the 2024 Park Avenue Milling and Resurfacing Project.

c. Photographs illustrate that the view corridor for drivers entering into this intersection is long; the current lighting apparatus in dark and rainy conditions inadequately illuminates pedestrians and creates glare on the roadway that obscures pavement markings.

2. **The design of South Goodman Street encourages aggressive and risky driving behavior, particularly due to the lack of traffic-calming measures and visual cues.**
    a. A northbound motorist on South Goodman Street encounters no crosswalks, no stop signs, and no stop lights throughout the ~1600 feet approaching the intersection with Park Avenue.
        i. During this approach, motorists also lose the tree canopy, pedestrian scale lighting, curb cuts, parallel parking, and a grass buffer; these are all visual cues that create friction and encourage slower speeds.
    b. South Goodman Street has a dedicated left turn lane at its intersection with Park Avenue. This lane is designed to increase both traffic speed and increase volume by separating turning automobiles from vehicles flowing through the intersection.
    c. Non-directional pedestrian crossings along Park Avenue and South Goodman Street are pushed really close to the intersection; this heightens pedestrian proximity to fast-moving traffic.
    d. South Goodman Street prioritizes the efficient throughput of vehicles over other design objectives, including pedestrian safety and accessibility.

3. **The character of South Goodman Street is that of a compact walkable development pattern, yet this intersection uses arterial design elements that create mobility incompatibilities for motorists and pedestrians.**
    a. Goodman Street, Culver Road, and Winton Road run parallel to each other and all contribute to the larger street network by providing a direct connection for traffic from major roadways, including Interstate 490 and State Route 96.
        i. Their placement within the street network is evident through higher traffic counts compared to other streets in this neighborhood.
        ii. These factors likely increase pressure to facilitate high-speed traffic traveling through and beyond this area.
    b. This intersection invites significant pedestrian foot traffic to multiple popular commercial businesses along wide sidewalks placed dangerously close to traffic moving at lethal speeds.
        i. All patrons to these establishments are required to use the sidewalks to access entry into these establishments.
        ii. Pedestrians may experience a false sense of security navigating here and, as a result, not engage in active risk management.
        iii. The Reconnect Rochester Monroe County crash map illustrates multiple crashes resulting in pedestrian injury have taken place at this intersection in the past ten years.

c. Dedicated turn lanes and a traffic signal are elements introduced at the South Goodman and Park intersection that are not found on other local streets in the neighborhood.
    i. The dedicated turn lanes force the omission of on-street parking that is typical throughout the surrounding area. On-street parking is a source of friction that often calms traffic; without it, higher speed travel is more likely to occur through this segment of South Goodman.
    ii. Though Master Bevel is known to be a local resident, drivers unfamiliar with this street may not realize that this is a signalized intersection. Motorists passing through the area en route to a different destination that lack this awareness may be subject to heightened risk of a collision.

4. **Both the documented travel speed and the design speed of South Goodman Street are incompatible with pedestrian–and likely cyclist–traffic.**
    a. South Goodman Street facilitates automobile travel at speeds inappropriate for a compact walkable area.
        i. Through travel lanes at this intersection are wide enough to make motorists comfortable traveling at a design speed higher than the posted 30 mph limit. The southbound traffic lane is 12’ wide and the northbound through lane where the crash occurred is 12.5’ wide. Lane widths of 12’ or more are typical on high-speed roadways and highways; they exceed the 10’ width deemed appropriate by industry professionals in most urban areas.
        ii. A dedicated left turn lane–even one that is an appropriate width–treats turning traffic as an obstacle to faster-moving through traffic, thus signaling to northbound and southbound motorists that this space is designed to prioritize their usage.
    b. The current speed limit on South Goodman Street is 30 mph.
        i. A speed study indicated that 54% of motorists exceeded the posted limit.
        ii. This study stated the 85th percentile speed, or the speed which 85% of drivers were traveling or below, to be 36 mph.
        iii. The Insurance Institute for Highway Safety states that fatality rates climb for automobile collisions involving pedestrians at 25 mph. When automobile speeds exceed 40 mph, pedestrian collisions are likely to be fatal. Though 30 mph does not qualify as a lethal speed by these criteria, the speeds documented in this area are approaching lethal levels.
        iv. Of the 500 motorists tracked during the study, 21 were driving at or above 40 mph[2]. This data distribution may suggest that this space is communicating to drivers that excessive speeding is a low-risk behavior in this environment.
        v. Even though the crash report indicates that Master Bevel’s estimated speed was unknown, his travel speed was fast enough to result in the death of Edgar Santa Cruz and his dog Rosie.

[2] The one motorist traveling at 64 miles per hour is considered an outlier.

vi. Vehicle travel speeds on South Goodman Street clearly subject non-motorists–including pedestrians and cyclists–to serious danger and risk.

5. **Master Bevel drove through a red light–likely at a speed higher than the posted limit–with disregard for Edgar Santa Cruz and his dog Rosie.**
    a. The police report and the legal system ultimately determined Master Bevel illegally ran through a red light.
    b. South Goodman Street's prioritization of automobile throughput may have made Master Bevel more prone to dangerous–and in this instance, deadly–motorist behavior.

Recommendations

City leadership, technical staff, and the Monroe County Department of Transportation (MCDOT) should agree upon the desired user behavior along South Goodman Street–particularly at its intersection with Park Avenue–as the first step toward improving safety at the collision location for all road users.

To make sufficient provisions for the safety of people walking and biking along South Goodman Street, specifically at the location of the crash, policy-level decisions need to be made regarding the intent and goals of the area. Elected officials need to provide direction and guidance on whether Goodman Street is to be treated as a local neighborhood street safe for all users that prioritizes safety, or a connector prioritizing the efficient throughput (volume) of vehicles over other design objectives.

City staff members have indicated that Park Avenue through this intersection is due for a Milling & Resurfacing Project in 2024. MCDOT has made the following recommendations as part of this repaving project supports the character of a street safe for all users:

- Replace crosswalks with high-visibility Type L crosswalk markings
- Add reflective backplates to traffic signals to improve visibility
- Install accessible pedestrian signal buttons

The crosswalk marking replacements are in fact scheduled to take place during this upcoming project. During the preparation of this session and report, MCDOT had not recommended further changes to lane configuration or traffic signals. Policy direction from elected officials on the desired outcomes for Park Avenue and South Goodman Street may inspire further recommendations that would be easy to implement that guarantee the safety of all users moving along this corridor.

If the expectation is that South Goodman Street and its intersection with Park Avenue will accommodate pedestrians, public transit users, cyclists, and vehicles, the following practices should be adopted:

Immediate:

1. Elected officials should provide direction and guidance that South Goodman Street is to be treated as a local neighborhood street safe for all users.
2. Lower the posted speed limit from 30 mph to 20 or 25 mph.
3. Use temporary measures to reduce the lane widths and increase the visibility of the crosswalks.
4. Accelerate MCDOT recommendation implementation by incorporating the following design recommendations into the repaving project:
    a. Immediately completing crosswalk striping replacements using retro reflective thermoplastic and high visibility road markings.
    b. Changing out signal heads at this intersection to include bright LED lighting and adding reflective backplates to the traffic signals.
    c. Installing accessible pedestrian signal buttons.
5. Ensure that the repaving project includes appropriate pedestrian street crossings and pedestrian signals are readily accessible to and usable by pedestrians with disabilities in accordance with Public Right-of-Way Accessibility Guidelines (PROWAG) as directed by the Department of Justice/Department of Transportation Joint Technical Assistance Guidance[3].
6. Use paint to stripe additional, temporary crossings along the South Goodman corridor–ideally a few blocks north and south of this intersection–to prioritize pedestrian walkability.
7. Deploy an interdisciplinary team of city staff to act as rapid responders to vehicle collisions. For this crash, charge the team with initiating additional temporary modifications to the intersection that can be implemented quickly with the resources available that will increase safety and accessibility for all users, especially non-motorists. To start, this team should review and implement the immediate recommendations found in this report.

Near Term (within the next 12 months):

8. Use the milling and resurfacing project on Park Avenue as an opportunity to revise curb lines, tighten curb radii, and align the urban landscape with PROWAG.
9. Evaluate the necessity of dedicated left turn lanes on Park Avenue and South Goodman Street.
10. Improve existing street lighting–both at this intersection and along the South Goodman corridor–to adhere with best practices for illuminating pedestrians.
11. Shift parking availability from one side of the street to the other, block by block, to create more deflection that interrupts drivers' current long sight line.

Long Term and Systematic:

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[3] Department of Justice/Department of Transportation Joint Technical Assistance[1] on the Title II of the Americans with Disabilities Act Requirements to Provide Curb Ramps when Streets, Roads, or Highways are Altered through Resurfacing

12. Engage community members, engineers, city staff, and transportation safety professionals in ongoing dialogue that:
    a. Raises awareness about lighting issues and nighttime crashes.
    b. Educates the public about car-centric development and compatible mobility for a wider variety of road users.
13. Use evaluations of left turn lanes to initiate redesigns of Park Avenue and/or South Goodman Street that allow levels of congestion typical within compact walkable environments to occur.

Concluding Statement

The series of design flaws present along South Goodman Street and at the crash location are dangerous and commonplace, both within Rochester and beyond. Design emphasis that prioritizes traffic flow at high speeds over non-motorist safety and usability has caused injuries and deaths in communities across the state of New York and in locations throughout North America.

By evaluating the numerous factors that contribute to a crash, we believe that designers, decision-makers, and the general public 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 cared for. In Rochester, we believe substantive changes to this intersection should prioritize non-motorist safety and accessibility alongside roadway usage by motorists.