27th Street Traffic & Activity Study

Response for GENERAL ORDINANCE NO. 3, 2022

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Purpose

The purpose of this study is to provide factual, recorded observations and activities from 27th Street between Oak Street and Wilson Street in Terre Haute, IN. Placement of a camera at 2649 Oak Street was used to record observations of activities during the 7/4/2022 – 7/27/2022 timeframe. This study is to help provide statistics, recommendations, and clarity for the future of the street in question for "GENERAL ORDINANCE NO. 3, 2022, an ordinance modifying certain provisions of the Terre Haute City Code related to one-way street designation and speed limit on 27th Street from Wilson Street to Oak Street."

Parameters of the Study

Tools for Observation

All activities were recorded with a Ring Stick Up Cam Elite. Observations were recorded with the permission of 2649 Oak Street. To ensure best video quality and reliability, the camera was always connected directly to the Internet with an ethernet cable and received power directly from the home. No wireless or solar technologies were utilized during this study. The camera was configured with maximum sensitivity to ensure any motion captured by the camera was recorded. Recorded video events were stored on Ring's cloud-based storage system.

Timing & Recording

The study was started during the evening of 7/4/2022 and continues to be monitored at the time of this report. As with many Ring devices, recordings are captured based on a motion-activated event. Once motion is detected, recording will continue for a short time after the initial motion.

Microsoft Excel was used as the repository for recording events and performing statistical analysis. Dimensions for justifying a record included vehicle, pedestrian, and non-motorized vehicle (i.e. bicycle) usage. Wildlife such as squirrels and rabbits were observed but did not justify a record in Excel. In an effort to provide a more concise analytical representation, mechanical bicycles, E-Bikes, Powerwheels, Segways, etc. were classified as "Bicycle" and logged using the "Riding" Activity. Any other activity not directly occurring on 27th Street (i.e. activity on 2703 Oak Street's driveway) was recorded by the camera, but not logged in the Microsoft Excel study.

The following dimensions were logged in each qualifying recording event:

- Date – Date recorded by the camera.
- Time – Time of day recorded by the camera.
- Direction – Direction (North or South) travelled by the recorded subject.
- Adult – Quantity of adult subjects recorded during the event.
- Child – Quantity of child (or perceived children) subjects recorded during the event.
- Pet – Quantity of animals on leashes observed during the recorded event.
- Car – Quantity of sedans or coupes recorded during the event.
- Truck – Quantity of light duty pickup trucks or delivery vehicles recorded during the event.
- SUV – Quantity of sport utility vehicles recorded during the event.
- Jeep – Quantity of 2 or 4 door Jeep or similar style of vehicle recorded during the event.

- Heavy Construction Vehicle – Quantity of flatbed truck, trailer, backhoe, or other construction related vehicle.
- Color – Perceived color of vehicle.
- Motorcycle – Quantity of motorcycle (licensed) recorded during the event.
- Bicycle – Quantity of bicycle, E-Bike, skateboard, child ride-on (Powerwheels) or similar device not requiring a license plate.
- Observed Weather – Perceived weather using similar terminology as recorded at Terre Haute Regional Airport.
- Activity – Construction, Driving, Riding, Running, Walking

Area of Observation

The area of observation for this study was 27th Street between Oak Street and Wilson Street. A camera was positioned on the property of 2649 Oak Street facing East towards the properties of 2703 Oak Street and 2700 Wilson. The direction of the camera was positioned so as much activity would be captured for the event-based study. Although the viewing angle of the camera does not capture the entire street (including the area related to the ordinance), it does capture vehicles, people, pets, etc. entering and exiting the area in question (Figure 1).

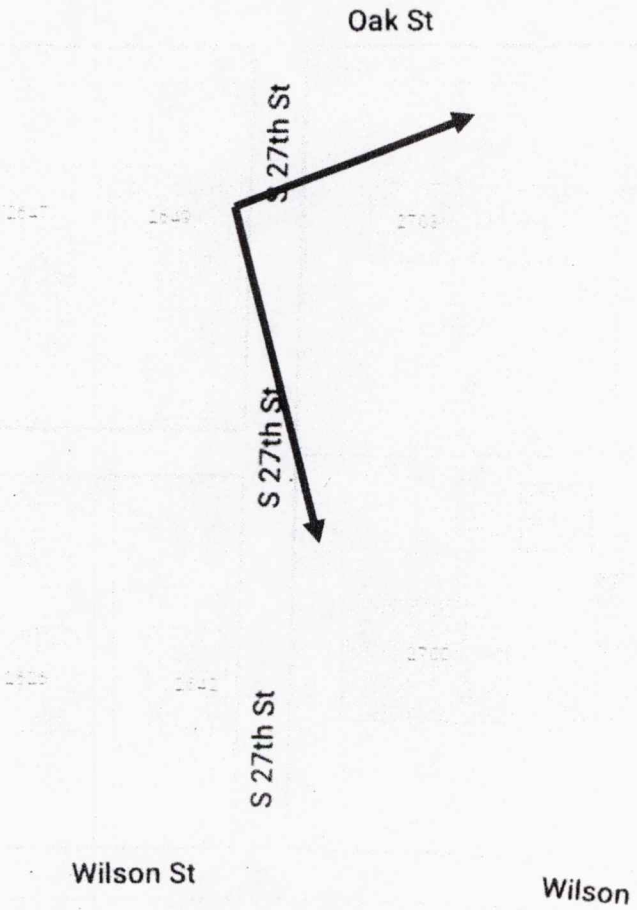

Figure 1

As seen in Figure 2, the placement of the camera was placed indoors behind a window to provide concealment and protection from weather. Residents of the neighborhood were not notified (with the exception of the select property owners) of the camera's placement to protect the integrity of the study and not skew the recorded results.

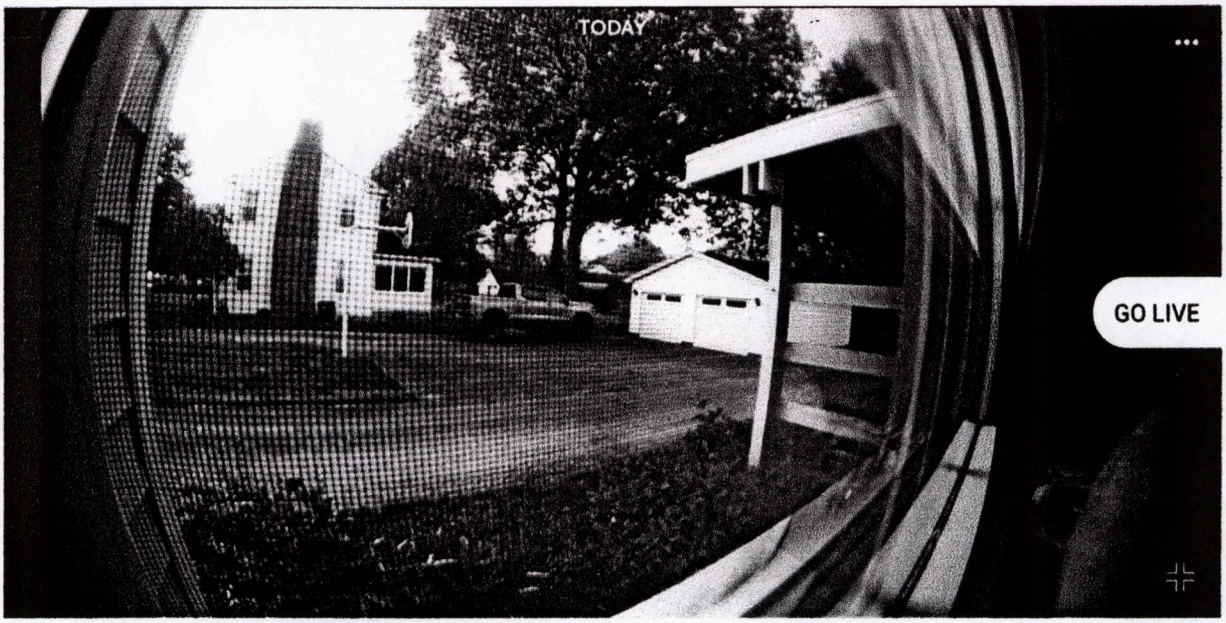

Figure 2

In the event where a "Driving" Activity was recorded, an "Adult" value of "1" was always recorded. This assumption and approach was taken because at least one adult would be operating the vehicle while on the road. The same approach was also taken for other vehicle types (Truck, Heavy Construction Vehicle, Motorcycle, etc.). When "Bicycle" was the observed vehicle for the "Riding" Activity, the "Adult" or "Child" field was used.

Findings & Statistics

Diversity of Activities

Throughout the duration of the traffic study, a wide variety of activities were observed. While vehicle traffic was prominent during the weekdays and rainy weather, residents of the neighborhood opted more for bicycles and walking during the weekends. Throughout many of the clear weather days, residents were observed walking their pets before their morning commutes and again in the early evening hours. The study also observed heavy construction vehicles (flatbed trucks, backhoes, etc.) using the street in both directions. This was due to utility maintenance on Wilson Street.

Who It Serves

Of the over 960 recorded events observed in the study, 27th Street services nearly 44 adults, 5 children, and 17 pets per full day average. Weekend usage for children increases significantly.

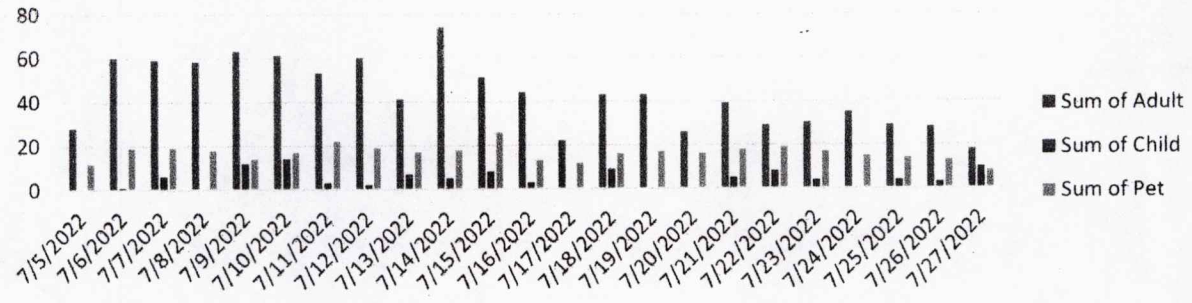

Figure 3

Times Used

The timing where 27th Street is most used typically ranges from just after 6am to 10pm. Only three recorded events were observed after 10pm during the study. In all cases, these were individuals walking. The typical morning activity observed during the study was individuals walking their pets. As stated earlier, vehicle traffic is most prominent during the commuting hours. Individuals can be found walking on the street consistently throughout the typical clear weather day.

Directions Used

When evaluating all activities observed during the study, 54.2% of the activity was Southbound (45.8% Northbound). Although when evaluating vehicular traffic only, nearly 78% of all recorded activity was Southbound.

Figure 4 (illustrated below) displays the Northbound activities observed over the course of the study period. It clearly shows that minimal Driving activity occurs in the Northbound direction, whereas other activity types (Riding, Walking, etc.) are the more frequent activity in that direction.

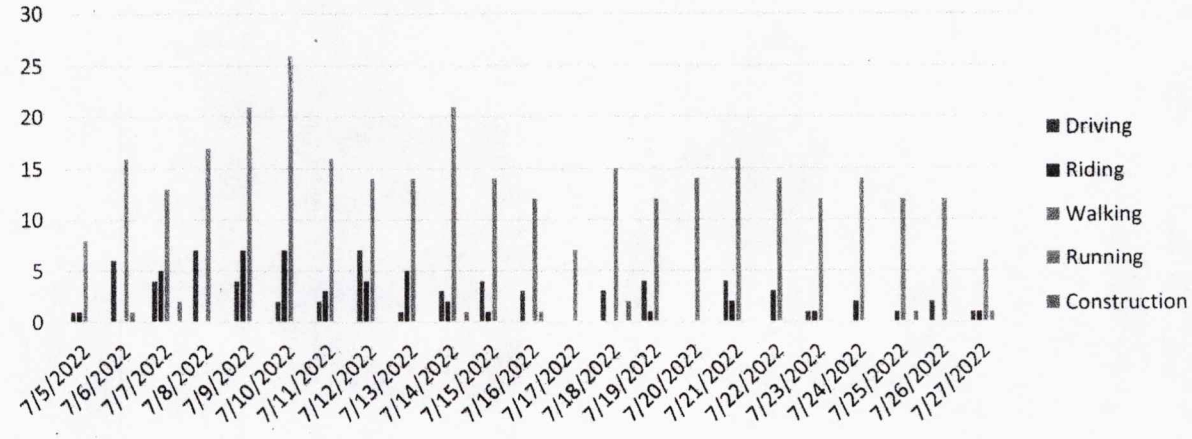

Figure 4

Figure 5 (illustrated below) displays the Southbound activities observed over the course of study period. It clearly shows a significant increase in vehicular activity when compared to its Northbound counterpart.

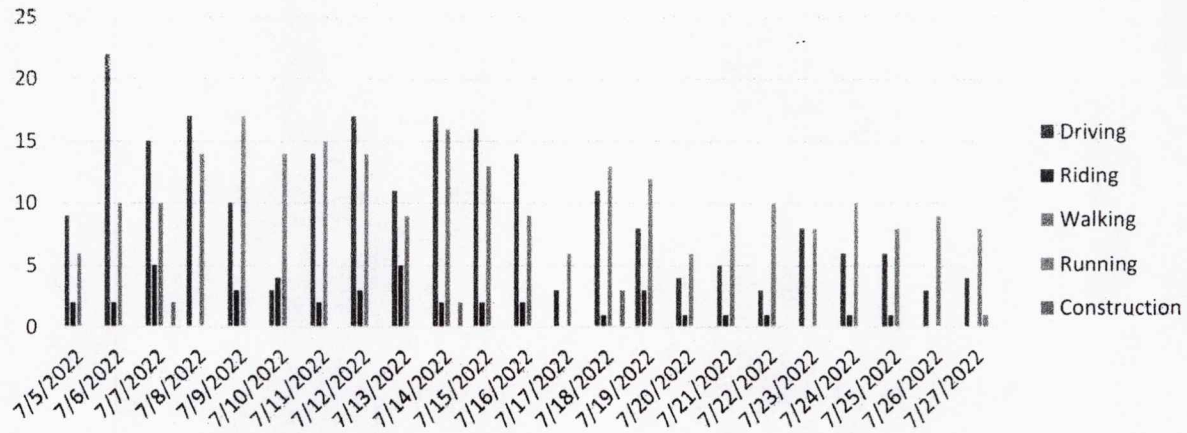

Figure 5

Summary & Recommendations

Summarization

Based on the findings from the study, it is evident that 27th Street experiences a broad and diverse array of activities throughout the observed study period. For such a small stretch of street, it experiences a significant amount of activity without providing an observable safety risk to the residents of the community. It is heavily used by walkers throughout the day, either as individuals or those walking their pets. It is also used significantly in both directions by vehicle traffic during the commuting hours of the day. Although residents of the community use the street frequently throughout the week, activity flow was observed to be optimal and non-disruptive.

Recommendations

It would be advised against converting 27th Street to a one-way Northbound Street, as much of the vehicular activity observed was Southbound in nature (nearly 78%). Although converting to a one-way Northbound Street would still allow for property owners to access their garages and carports, this solution approach opposes the data and findings of the study.

It would be advised against converting 27th Street to a one-way Southbound Street, as property owners would be unable to safely access their existing carports and garages from that direction. Although nearly 78% of recorded vehicular traffic was Southbound, when evaluating all recorded activities (Walking, Driving, Riding, Running, Construction), over 45% of all recorded activities are Northbound. Converting the street to one-way would be asking a significant number of residents to ride their bikes or walk their dogs in the wrong direction of the street.

To continue to properly serve the best interests of the neighborhood residents, the observations and results of this study would lead to a recommendation of leaving 27th Street as a two-lane road. Although no unsafe driving activity was observed over the duration of the study, the introduction of appropriate speed limit signage may encourage safer usage of the street. In addition, appropriate marking of curbs

near the intersections of 27th Street and Wilson Street & 27th Street and Oak Street per current Indiana codes would enforce proper curbside street parking near these intersections. Parking enforcements would provide higher visibility for traffic negotiating these intersections and would ultimately result in lower probability for incident.