CITY OF NAPERVILLE
MEMORANDUM

DATE: November 13, 2024

TO: Doug Krieger, City Manager
William J. Novack, Director of TED Business Group

FROM: Michael Prousa, Transportation Manager

SUBJECT: Evaluation of Traffic Concerns on Jackson Avenue and Jefferson Avenue

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PURPOSE:
The purpose of this memorandum is to transmit a report evaluating traffic concerns on Jackson Avenue and Jefferson Avenue to the Mayor and City Council.

INFORMATION:
At the September 17th, 2024, City Council meeting, Council requested that staff evaluate Jefferson Avenue for speeding, along with evaluating Jefferson Avenue and West Street, Jefferson Avenue and Ewing Street, and Jackson Avenue and Ewing Street for stop control and bring to the Transportation Advisory Board (TAB). Staff brought the attached agenda item to TAB at the November 7th, 2024, meeting. Also attached is the public comment received regarding this item.

RECOMMENDATION:
Please share this information with the Mayor and City Council through the November 13, 2024 Manager's Memorandum.

File #: 24-1250, **Version:** 1 **Meeting Date:** 11/7/2024

TRANSPORTATION ADVISORY BOARD AGENDA ITEM

ACTION REQUESTED:
Receive the evaluation of traffic concerns on Jackson Avenue and Jefferson Avenue

DEPARTMENT: Transportation, Engineering and Development

SUBMITTED BY: Michael Prousa, Transportation Manager

BACKGROUND:
In 2019, an evaluation of traffic along Jefferson Avenue from the river to Webster Street was conducted by staff, along with a consultant, as part of a traffic study for the West Side neighborhood. This section of Jefferson Avenue was included in that study. Speeds and volumes were collected at the intersection with West Street along with mid-block locations on Jefferson Avenue. The study showed speeds and volumes that were within or below the City's typical thresholds for a collector street. The study also found that Jefferson Avenue and West Street did not meet the Manual on Uniform Traffic Control Devices (MUTCD) warrants for all-way stop installation.

Due to the intersection being a seasonal primary pedestrian crossing, the study recommended that curb extensions be installed on the west leg of the intersection of Jefferson Avenue and West Street to reduce the crossing distance, improve sight lines, and force slower vehicular movements.

In November of 2023, a resident reached out to the Transportation, Engineering and Development (TED) Business Group with concerns regarding speeding and requesting stop control on Jefferson Avenue at West Street. The planned curb extensions were under design for construction during 2024. Speed data was collected on Jefferson Avenue in December of 2023 to establish a recent baseline prior to construction of the curb extensions and to be responsive to the resident concern. The data collected indicated speeds are within the typical thresholds for a collector street.

In the summer of 2024, the resident reached back out to staff along with the City Council to express more concerns about perceived speeding on Jefferson Avenue. At the September 17th, 2024, City Council meeting, Council requested that staff evaluate Jefferson Avenue for speeding, along with evaluating Jefferson Avenue and West Street, Jefferson Avenue and Ewing Street, and Jackson Avenue and Ewing Street for stop control.

DISCUSSION:
Speed and Volume Evaluation
When reviewing speed data on a street, the 85th percentile speed is the primary consideration. Per the Institute of Transportation Engineers, the 85th percentile speed is the speed at which 85 percent

of free-flowing vehicles are traveling at or below. Use of the 85th percentile speed is based on the theory that the large majority of drivers are reasonable and prudent, do not want to have a crash, and desire to reach their destination in the shortest time possible.

The City's Master Thoroughfare Plan classifies streets based upon their function, access, and connectivity. Jackson Avenue is classified as a Local Street (provides access to residences and businesses within a neighborhood). Jefferson Avenue is classified as a collector street (connect local and neighborhood connector through or adjacent to multiple neighborhoods and have continuity between arterial streets). The City has been collecting annual speed and volume data on 40-50 segments of road for the past 25 years. With this data, staff has established typical speeds and volumes for most road classifications.

Below is a table of the city-wide typical speeds and volumes.

Roadway Classification	City-wide Typical 85th-Percentile Speed Range	City-wide Typical Weekday Volume (Two-way)
Collector Street	29 - 34 mph	5,000 - 12,000 vpd
Neighborhood Connector	29 - 34 mph	500 - 5,000 vpd
Local Street	27 - 32 mph	0 - 1,500 vpd

In response to the concerns raised, TED staff conducted speed studies on Jackson Avenue and Jefferson Avenue at four locations:

- Jackson Avenue between West Street and Ewing Street
- Jefferson Avenue between Parkway Drive and West Street
- Jefferson Avenue between West Street and Ewing Street
- Jefferson Avenue between Ewing Street and Mill Street

The table below details the speed and volume data collected at each location on Jackson Avenue and Jefferson Avenue. See attachments for the speed data locations.

Jackson Avenue between West Street and Ewing Street	
Eastbound 85th percentile speed	31 mph
Westbound 85th percentile speed	31 mph
Vehicles per day	2,875
Study Date	7/22/2024 - 7/26/2024

Jefferson Avenue between Parkway Drive and West Street	
Eastbound 85th percentile speed	29 mph
Westbound 85th percentile speed	31 mph
Vehicles per day	5,984
Study Date	10/3/2024 - 10/10/2024

Jefferson Avenue between West Street and Ewing Street	
Eastbound 85th percentile speed	29 mph
Westbound 85th percentile speed	31 mph
Vehicles per day	5,366
Study Date	9/26/2024 - 10/3/2024

Jefferson Avenue between Ewing Street and Mill Street	
Eastbound 85th percentile speed	29 mph
Westbound 85th percentile speed	29 mph
Vehicles per day	5,237
Study Date	9/26/2024 - 10/3/2024

The tables show that Jackson Avenue and Jefferson Avenue have speeds that are within the typical threshold ranges for their street classifications.

The volume on Jackson Avenue is higher than the typical range for a local street. Data was collected on Jackson Avenue during the summer when Centennial Beach is open and higher traffic is expected during those three months.

When looking at tools that can be used to reduce vehicle speeds, the City uses the Traffic Calming Toolkit that was approved by City Council in 2021. Based on the data collected, City staff does not recommend implementing any traffic calming measures along Jackson Avenue or Jefferson Avenue at this time.

Stop Control Evaluation

City staff also reviewed Jackson Avenue and Ewing Street, Jefferson Avenue and West Street, and Jefferson Avenue and Ewing Street for all-way stop control.

Stop signs are used to assign right-of-way control and not to prevent speeding. Drivers typically go faster in between stop signs to make up for lost time. Unwarranted stop signs also create stop compliance issues because of the lack of conflict with vehicles. For these reasons, stop controls are only recommended when defined warrants are met.

Jackson Avenue is a local street, which according to the section 11-1-4 of the City's Municipal Code, "Intersections involving residential all-way stop signs shall conform with the policy provisions of the City's current residential all-way stop warrant." The residential all-way stop sign warrants look at crash history, vehicle volumes, bicycle and pedestrian volumes, and other factors to determine if an all-way stop sign is warranted. Based upon the data and analysis, Jackson Avenue and Ewing Street did not meet the thresholds for consideration of an all-way stop.

Jefferson Avenue is a collector street, which according to section 11-1-4 of the City's Municipal Code, "The placement and erection of all-way stop signs at intersections involving collector and arterials

streets, as identified in the City's master thoroughfare plan, shall conform with the regular MUTCD warrant." For Jefferson Avenue and West Street and Jefferson Avenue and Ewing Street, staff used the Multi-Way Stop Application in Section 2B.07 of the MUTCD for the evaluation. Based upon the data and analysis, Jefferson Avenue and West Street and Jefferson Avenue and Ewing Street did not meet the thresholds in the MUTCD for consideration of an all-way stop.

Curb Extension Evaluation

The curb extensions were installed at Jefferson Avenue and West Street in August 2024 to shorten the pedestrian crossing distance and calm vehicular traffic. When traffic calming measures are installed, staff typically waits six months to one year to evaluate the impact on vehicle speeds. However, data was collected one month after installation to be responsive to the request from City Council. As previously noted, in December of 2023, staff completed a speed study at Jefferson Avenue and West Street before the curb extensions were installed to establish a baseline. The results of that study compared to the recent study are shown in the table below.

Jefferson Avenue between West Street and Ewing Street		
	December 2023	September/October 2024
Eastbound 85th Percen	28 mph	29 mph
Westbound 85th Percer	34 mph	31 mph

The data collected shows a small increase in speeds for eastbound traffic and a large decrease in speeds for the westbound traffic. While this data looks promising for the impact of the curb extensions, staff will collect additional data in 2025 to conduct a full evaluation of the impacts of the curb extensions at Jefferson Avenue and West Street, as well as at Mill Street and Douglas Avenue. These curb extensions were also installed in 2024 based on the recommendation from the West Side neighborhood study.

Speed and Volume Study Locations

City of Naperville

Residential All-Way Stop Warrant Worksheet

This worksheet and its comprehensive evaluation methodology is the City of Naperville's policy for establishing an all-way stop at the intersection of local/residential streets in accordance with Section 11-1-4 (2.1) of the Municipal Code.

Study Date: Data was collected in the summer for Jackson Avenue and the fall for Ewing Street

Intersection of and: Jackson Avenue and Ewing Street, Ewing Street stops for Jackson Avenue. This is a a three-way intersection

Existing Traffic Control: _____

Last Study date: _____

This Residential All-Way Stop Warrant Worksheet is applicable only to the intersection of residential streets with speed limit of not greater than 30 miles per hour. Per this policy, if a STOP control study is completed within two years of a request, no further studies will be performed unless significant changes have occurred in the immediate area. This procedure is not to be applied to the intersection of a residential street with a collector or arterial street as identified in the City's Master Thoroughfare Plan. In these cases, the intersection must meet warrants established for all-way stop control in the Manual on Uniform Traffic Control Devices.

1. Crash Experience

Collisions within past 12 months that would have been correctable if a stop control were present (vehicle, pedestrian or bicycle) - 75 points each 0 x 75 = 0

A right angle collision is one type of accident that may be corrected by the presence of a stop control.

Subtotal Item 1---------- [0]

2. Pedestrians

Select the hour of the pedestrian volume study based on the following:
☐ School crossing period
☐ Peak travel hour
☐ As observed and defined by requestor

Time of Day: 8:00-9:00 ☐AM ☐ PM

2A. Pedestrian Count
If a stop control exists at the study intersection, count only pedestrian movements on the uncontrolled leg(s) of intersection.

If no stop control(s) exists at the study intersection, count pedestrian movements on all leg(s) of intersection.

Pedestrians of elementary school age or less - 2 points each 0 x 2 = 0

Pedestrians of middle school age or greater - 1 point each 4

2B. Proximity of Intersection to School
This factor may be applied to either one or the other, but not both.

☐ Intersection is primary crossing at an elementary or middle school, 200 points 0

In general, a primary crossing is a location where the majority of school pedestrians are directed to cross, as defined in the school's walk route plan. These primary crossings are typically located in front of a school or very close proximity. Crossing guards are often assigned to primary crossings.

☐ Intersection is adjacent to an elementary or middle school, 100 points 0

Subtotal Item 2A---------- [4]

Subtotal Item 2B---------- [0]

Subtotal Item 2---------- [4]

3. Atypical Conditions

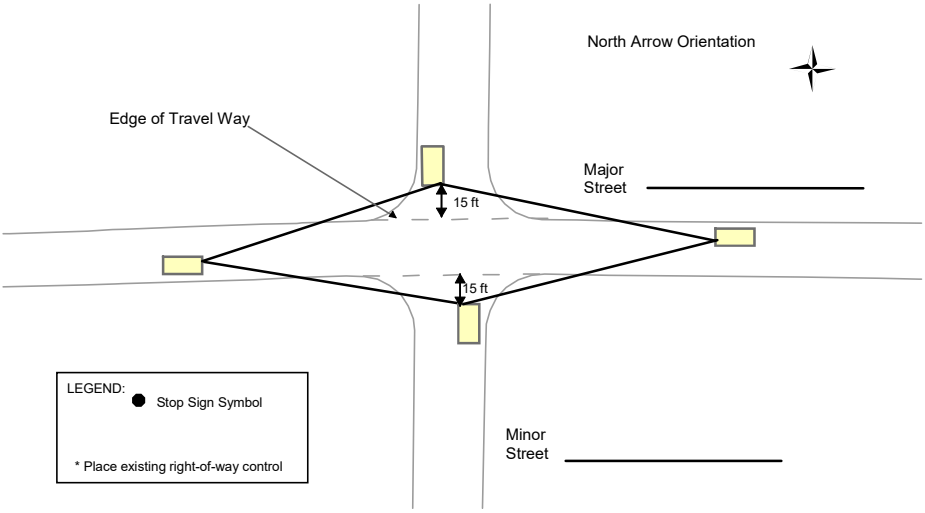
If any of the conditions listed below exist, other correctable measures may be applied per state and local standards and practices.

☐ Bridge or underpass within one block - 25 points 0
☐ Curve or hill within 300 feet, which obscures view of intersection - 25 points 0
☐ Acute intersection angle – 50 points 0
☐ Roll curb in any approach – 25 points 0
☐ No street lighting – 25 points 0
☐ On street parking within 50 feet of any approach – 25 points 25
Other – (Example: Multi-use path) - 25 points
☐ Describe: On-Street Bike Path on Jackson 25

Subtotal Item 3---------- [50]

4. Stopping Sight Distance

In most cases, an all-way stop is requested at intersections that already have the side street stopping. This factor is applied to the "through street" that does not stop. The through street driver needs a certain distance to recognize, perceive, react and then come to a stop. This is the stopping sight distance and it is based on the posted speed limit plus 10 mph (normally 35 mph). At this speed, a stopped motorist on the side street should have clear sight distance of 250 feet in each direction taken from a point 15 feet behind the intersecting street line. This is the same distance the through street motorist needs to stop if a vehicle pulls out.



☐ Adequate Sight Distance Exists - 0 points

☐ Adequate Sight Distance Does Not Exist

- ☐ The condition is correctable (examples include tree trimming and sign relocation) – 0 points
- ☐ The condition is not correctable
  - ☐ 200 feet of sight distance – 20 points
  - ☐ 155 feet of sight distance – 40 points
  - ☐ Less than or equal to 115 feet – 60 points

Subtotal Item 4---------- [0]

5.Nearby Public Facilities

Public facilities include but are not limited to churches, parks, swim clubs, libraries, and shopping centers located within 300 feet of intersection - 25 points each 2 x 25 = 50

Note, schools are not included in this section as they are studied in detail in Section 2.

List public facility (facilities) relevant to this study: Downtown Proximity and Centennial Beach

Subtotal Item 5---------- [50]

6. Speed of Traffic

Per the Institute of Transportation Engineers Traffic Engineering Handbook, the 85th percentile speed is the speed at which 85 percent of free-flowing vehicles are traveling at or below. Use of the 85th percentile speed is based on the theory that the large majority of drivers are reasonable and prudent, do not want to have a crash, and desire to reach their destination in the shortest time possible.

The highest 85th percentile speed, on Jackson Avenue is 31 mph.

- ☐ 0 points for 15.0 to 31 mph 25
- ☐ points for 32 to 37 mph 60
- ☐ points for 38 to 42 mph 120
- ☐ points for 43 to 50.0+ mph

Subtotal Item 6---------- [0]

7. Traffic Volumes

Major Street Volume – the highest 8-hour combined volume average of approaching vehicles on the Major Street within a 24 hour same day period, (total of both approaches highest average 8-hour count).

Major Street volume - 1 pt. per vehicle +286

This deduction is based on the assumption that if the side street volume is so low, the likelihood of an adequate gap in through street traffic exists to alleviate any unreasonable delays on the secondary street.

Minor Street Volume – the highest 8-hour combined volume average of approaching vehicles on the Minor Street (total of both approaches highest average 8-hour count).

Minor Street Volume 17

Minor Leg Adjustment (check one)

- ☐ Greater than 160, subtract 0
- ☐ 120 to 159, subtract 50
- ☐ 100 to 119, subtract 100
- ☐ 75 to 99, subtract 120
- ☐ Less than or equal to 74, subtract 150

Subtract Minor Leg Adjustment from Major Street Volume -136

Subtotal Item 7---------- [136]

8. Adjacent Traffic Control

A basic goal of the MUTCD is to stop the least amount of traffic and promote the free flow of traffic. Controlling speed is not the goal.

The intersection adjacent to or within 1500' of the subject uncontrolled street is controlled by an all-way stop or traffic signal is Jackson/West and Mill/Jackson
Mill

Subtract 100 points

Subtotal Item 8 ---------- - 100

Residential All-Way Stop Warrant Worksheet

Study Date _____

Intersection of _____

and _____

Existing Traffic Control _____

Item 1: Crash Experience	0
Item 2: Pedestrians	4
Item 3: Atypical Conditions	50
Item 4: Stopping Sight Distance	0
Item 5: Nearby Public Facilities	50
Item 6: Speed of Traffic	0
Item 7: Traffic Volumes	136
Item 8: Adjacent Traffic Control	-100
Total of all items	140

If point total of all items is greater than or equal to 500, the intersection qualifies for installation of all-way stop control.

If this study does not warrant an all-way stop, then the City will not perform another in-depth study at this intersection for two years unless significant and identifiable changes in local area characteristics are realized such as a land development alteration.

Jefferson Avenue and West Street

Multi-Way Stop Application:

Section 2B.07 Multi-Way Stop Application
Support:

1. Multi-way stop control can be useful as a safety measure at intersections if certain traffic conditions exist. Safety concerns associated with multi-way stops include pedestrians, bicyclists, and all road users expecting other road users to stop. Multi-way stop control is used where the volume of traffic on the intersecting roads is approximately equal.
2. The restrictions on the use of STOP signs described in Section 2B.04 also apply to multi-way stop applications.

Guidance:

3. The decision to install multi-way stop control should be based on an engineering study.
4. The following criteria should be considered in the engineering study for a multi-way STOP sign installation:
    A. Where traffic control signals are justified, the multi-way stop is an interim measure that can be installed quickly to control traffic while arrangements are being made for the installation of the traffic control signal.
        Not Justified
    B. Five or more reported crashes in a 12-month period that are susceptible to correction by a multi-way stop installation. Such crashes include right-turn and left-turn collisions as well as right-angle collisions.
        Does not meet. 1 crash in 2024, 1 crash in 2023, 3 crashes in 2022, 1 crash in 2021. These are crashes that would have been correctable.
    C. Minimum volumes:
        1. The vehicular volume entering the intersection from the major street approaches (total of both approaches) averages at least 300 vehicles per hour for any 8 hours of an average day; and
            Yes (455 units per hour)
        2. The combined vehicular, pedestrian, and bicycle volume entering the intersection from the minor street approaches (total of both approaches) averages at least 200 units per hour for the same 8 hours, with an average delay to minor-street vehicular traffic of at least 30 seconds per vehicle during the highest hours; but
            No (76 units per hour)
        3. If the 85th percentile approach speed of a major-street traffic exceeds 40 mph, the minimum vehicular volume warrants are 70 percent of the values provided in Items 1 and 2.
            85th percentile speed is not higher than 40 mph.
    D. Where no single criterion is satisfied, but where Criteria B, C.1, and C.2 are all satisfied to 80 percent of the minimum values. Criterion C.3 is excluded from this condition.
        No, does not meet.

Option:

Other criteria that may be considered in an engineering study include:

A. The need to control left-turn conflicts;

No significant pattern for left-turn conflicts

B. The need to control vehicle/pedestrian conflicts near locations that generate high pedestrian volumes;

   Pedestrian volumes are higher in the summer months. The recently installed curb extensions will positively impact the crossing.

C. Locations where a road user, after stopping, cannot see conflicting traffic and is not able to negotiate the intersection unless conflicting cross traffic is also required to stop; and

   No sight distance concerns

D. An intersection of two residential neighborhood collector (through) streets of similar design and operating characteristics where multi-way stop control would improve traffic operational characteristics of the intersection.

   Jefferson Avenue and West Street are not similar classifications.

Jefferson Avenue and Ewing Street

Multi-Way Stop Application:

Section 2B.07 Multi-Way Stop Application
Support:

1. Multi-way stop control can be useful as a safety measure at intersections if certain traffic conditions exist. Safety concerns associated with multi-way stops include pedestrians, bicyclists, and all road users expecting other road users to stop. Multi-way stop control is used where the volume of traffic on the intersecting roads is approximately equal.
2. The restrictions on the use of STOP signs described in Section 2B.04 also apply to multi-way stop applications.

Guidance:

3. The decision to install multi-way stop control should be based on an engineering study.
4. The following criteria should be considered in the engineering study for a multi-way STOP sign installation:
    A. Where traffic control signals are justified, the multi-way stop is an interim measure that can be installed quickly to control traffic while arrangements are being made for the installation of the traffic control signal.
        Not Justified
    B. Five or more reported crashes in a 12-month period that are susceptible to correction by a multi-way stop installation. Such crashes include right-turn and left-turn collisions as well as right-angle collisions.
        Does not meet. 0 crashes in 2024, 2 crashes in 2023, 1 crash in 2022, 0 crashes in 2021. These are crashes that would have been correctable.
    C. Minimum volumes:
        1. The vehicular volume entering the intersection from the major street approaches (total of both approaches) averages at least 300 vehicles per hour for any 8 hours of an average day; and
            Yes (410 units per hour)
        2. The combined vehicular, pedestrian, and bicycle volume entering the intersection from the minor street approaches (total of both approaches) averages at least 200 units per hour for the same 8 hours, with an average delay to minor-street vehicular traffic of at least 30 seconds per vehicle during the highest hours; but
            No (44 units per hour)
        3. If the 85th percentile approach speed of a major-street traffic exceeds 40 mph, the minimum vehicular volume warrants are 70 percent of the values provided in Items 1 and 2.
            85th percentile speed is not higher than 40 mph.
    D. Where no single criterion is satisfied, but where Criteria B, C.1, and C.2 are all satisfied to 80 percent of the minimum values. Criterion C.3 is excluded from this condition.
        No, does not meet.

Option:

Other criteria that may be considered in an engineering study include:

A. The need to control left-turn conflicts;

No significant pattern for left-turn conflicts

B. The need to control vehicle/pedestrian conflicts near locations that generate high pedestrian volumes;

   Pedestrian and bicycle volumes are higher in the summer months. Not high enough to warrant an all-way stop.

C. Locations where a road user, after stopping, cannot see conflicting traffic and is not able to negotiate the intersection unless conflicting cross traffic is also required to stop; and

   No sight distance concerns

D. An intersection of two residential neighborhood collector (through) streets of similar design and operating characteristics where multi-way stop control would improve traffic operational characteristics of the intersection.

   Jefferson Avenue and Ewing Street are not similar classifications.

Public Comments on TAB Agenda Item #24-1250

Unfortunately I will be unable to attend the TAB meeting on November 7th. I am currently out of town, so I'm not sure if any of my neighbors are planning to attend. Would you consider submitting my email to be part of the written record for this meeting?

"My name is Todd Schutte, and my wife (Mira) and I live at 520 W Jefferson Avenue. For the past year we have witnessed speeding and reckless driving along Jefferson Avenue in front of our house. Going West from the stop sign at Eagle, vehicles continually accelerate reaching speeds in excess of the posted 25mph speed limit. The curb extension at West and Jefferson has done nothing to lessen vehicular speed, and frankly appears to be a waste of our tax money.

Going East from the stop sign at River Road there is no deterrent to slow vehicles down, and the 25mph speed limit signs rarely adhered to. People cannot safely cross the street, and vehicles pay little attention to pedestrians trying to do so. Personally, I should not have to be scared every time I mow our parkway because vehicles are traveling at speeds well in excess of 25mph. In addition, I have also witnessed two near misses at Jefferson and Ewing that could easily resulted in fatal T-bone crashes. Root cause: vehicles traveling way too fast.

Cars, motorcycles, trucks, city vehicles and school buses all exceed the posted 25mph speed limit. I have shared several videos supporting this statement. It is a matter of time until something bad happens, and given the poor driving habits/behaviors myself and my neighbors have observed it will definitely happen sooner rather than later. We all would regret having this happen on 'our watch'; especially with the knowledge that we could have done something to prevent it.

We need stop signs at the corners of West and Jefferson **AND** Ewing and Jefferson to force vehicles to slow down. This is a residential neighborhood and not a drag strip. People live here and want to feel safe pulling out of their driveway or crossing the street.

We have lived in several neighborhoods across the US, and stop signs and/or speed bumps in residential areas DO work to slow down vehicles that ignore posted speed limits. If the TAB doesn't believe it, or continues to choose making their decision on a small sampling of data (which may not represent the true picture), then install these stop signs on a temporary basis and observe what happens. Without the ability for vehicles to accelerate and reach excessive speeds, along with strict, visual police enforcement, Naperville will be sending a clear message to those who choose to speed and drive unsafe.

Speeding, drag racing, loud muffler and motorcycle noise detract from Naperville's appeal. We would appreciate if the mayor, city council, TAB, and police would take action to make our streets and downtown safer for the residents who live here."

Best regards,
Todd Schutte