TRAFFIC STUDY

27th Avenue NE / Pahl Avenue NE Area

October 1, 2018

City of St Anthony Village
3301 Silver Lake Road NE
St Anthony Village, MN 55418

WSB PROJECT NO. 12064-000

27th Avenue NE / Pahl Avenue NE Area
Traffic Study

For:

City of St Anthony Village
3301 Silver Lake Road NE
St Anthony Village, MN 55418

October 1, 2018

Prepared By:

WSB & Associates, Inc.
701 Xenia Ave. South, Suite 300
Minneapolis, MN, 55416
(763) 541-4800
(763) 541-1700 (Fax)

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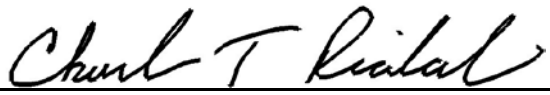
- **FHWA Vehicle Classifications**

Certification

I hereby certify that this plan, specification or report was prepared by me or under my direct supervision and that I am a duly registered professional engineer under the laws of the State of Minnesota.



Charles T. Rickart, P.E.

Date: October 1, 2018 Reg. No. 26082

Introduction / Background

St. Anthony Village residents within the neighborhood located immediately east of St. Charles Borromeo Church along 27th Avenue NE, Pahl Avenue NE, Roosevelt Street NE, Wilson Street NE and Coolidge Street NE have raised concerns with the speed and volume traffic on these roadways. As a result, the St Anthony Village City Council requested a Traffic Study be prepared to evaluate the existing traffic conditions and recommend possible improvements for the 27th Avenue NE / Pahl Avenue NE area.

To address the residents' concerns WSB collected necessary traffic volume, pedestrian and speed data, and; identify and evaluate traffic improvements/measures to improve the safety and operation on the area streets. In addition, data from the recently completed Lowery Grove EAW Traffic Study was used to document the traffic conditions on Stinson Boulevard and St. Antony Boulevard.

The evaluation process focused on determining if and where traffic issues exist and if they could be improved or eliminated by the application of alternative traffic improvements. The Minnesota Manual on Uniform Traffic Control Devices (MnMUTCD); Minnesota Department of Transportation (MnDOT) Design and Traffic Engineering Manuals; and traffic engineering standard practices and principal were used as the basis for the evaluation process. The steps in the process included:

1. Documenting that a problem exists such as excessive traffic volumes and/or speeds or vehicle crashes
2. Determine the frequency or recurring nature of the problem and that it is not a random or isolated event.
3. Identifying potential measures that would improve or eliminate the problem. This includes intersection controls and/or addressing other conditions at the problem locations.

Any recommendations for changes in the 27th Avenue NE / Pahl Avenue NE area have been developed keeping the following goals in mind:

- Improvement to vehicle and pedestrian safety.
- Application of least restrictive control type possible.
- Traffic control consistency within the area.
- Would not promote cut-through or diversion of traffic to other streets in the area.
- Would not promote speeding on streets within the area.

The 27th Avenue NE / Pahl Avenue NE area for the purposes of this study is bounded by St Anthony Boulevard on the north, 27th Avenue on the south, Stinson Parkway on the west and Kenzie Terrace on the east. The Project Location is shown in ***Figure 1***.

The following sections of this report document the existing traffic data collected, analysis of the data, improvement alternatives and recommended improvements.

Figure 1
Project Location
27th Avenue NE / Pahl Avenue NE Traffic Study
Saint Anthony Village, Minnesota
Saint Anthony Village
N
Kenzie Terrace
Coolidge Street
Wilson Street
Roosevelt Street
Stinson Parkway
St Anthony Blvd
Pahl Avenue
27th Avenue
Wilson Street
Roosevelt Street
Stinson Parkway
Date: Printed: 9/19/2018
MSB Filename: K:\012064-000\Cad\Exhibits\Traffic Study\12064-000_fig-01Project Location.dgn

Public Input

Public input is a critical element in the identification of issues and concerns in the area. For the 27th Avenue NE / Pahl Avenue NE Traffic Study a public information meeting was held on July 16, 2018 at the St Anthony Village City Hall. There were 17 residents that signed in at the meeting. The primary purpose of the open house was to update the residents on the data collection, discuss the identified issues and concerns, outline the potential opportunities and, to receive input on the issues and concerns. The primary comments received include:

- Need for pedestrian / school zone improvements
- Need for blinker signs in the corridor
- Need for additional traffic counts on Roosevelt Street
- Concern with the posted speed limit
- Concern with traffic rolling through stop signs

Copies of the meeting notice, sign-in sheets and presentation materials is included in the ***Appendix***. Also included are all comment cards received at the Open House meet, comment cards mailed to the City and phone/email comments received.

Existing Traffic Characteristics

In order to evaluate the current safety and operational conditions in the 27th Avenue NE / Pahl Avenue NE area, the existing traffic characteristics were collected. This included:

- Traffic volumes (hourly and daily)
- Heavy vehicle volumes
- Pedestrian volumes
- Crash history
- Vehicle speeds
- Current traffic control (signing, pavement markings, sidewalks, etc.).

Traffic Volumes

Hourly turning movement and daily traffic volumes were collected over a two-week period from May 18, 2018 to May 31, 2018 for most of the area roadway system. Based on comments at the public information meeting additional traffic counts were collected over a one-week period from September 5, 2018 to September 11th, 2018. In both cases the counts were conducted when school was in session to assure a worst-case condition. In general, the counts show that the volumes in the area are at those of typical residential neighborhood streets. Typical residential streets will have traffic volumes between 500 and 1000 vehicles per day(vpd). The ADT volumes on the streets in the 27th Avenue NE / Pahl Avenue NE area range from less than 100 to 750vpd

Figure 2 shows the Average Daily Traffic (ADT) volumes for an average weekday, average Saturday and average Sunday in area. Included in the ***Appendix*** is a table showing a summary of the ADT traffic volumes per day.

Figure 3 shows the hourly traffic volumes on an average weekday for the AM peak hour (7:15am-8:15am), PM peak hour (4:30pm-5:30pm) and school peak hour (3:15pm – 4:15pm). ***Figure 4*** the hourly traffic volumes on an average Saturday peak hour and average Sunday peak hour.

Heavy Vehicle Volumes

Heavy vehicle traffic volumes were collected in conjunction with the average daily traffic counts. The vehicle classification was based on the Federal Highway Administration (FHWA) standard vehicle splits. The standard FHWA Vehicle Classification table is included in the ***Appendix***. ***Figure 5*** shows the percent vehicles, percent single unit trucks / buses and percent of heavy trucks. Typical residential streets will have heavy vehicle traffic ranging from 2% to 5%. The percent heavy vehicles in the 27th Avenue NE / Pahl Avenue NE area range from 0 to 4.7%.

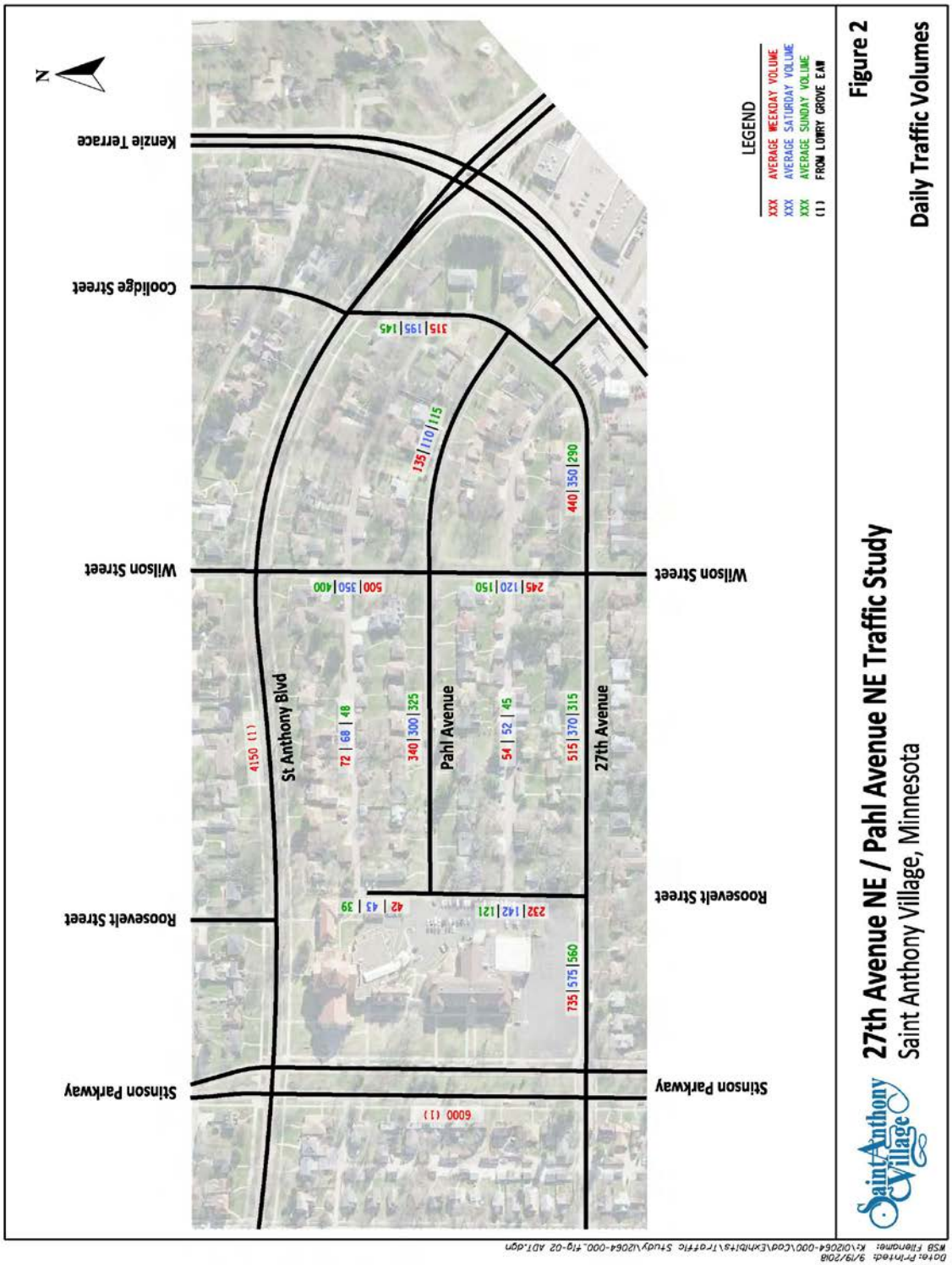


Figure 2
Daily Traffic Volumes
27th Avenue NE / Pahl Avenue NE Traffic Study
Saint Anthony Village, Minnesota
LEGEND
XXX AVERAGE WEEKDAY VOLUME
XXX AVERAGE SATURDAY VOLUME
XXX AVERAGE SUNDAY VOLUME
( ) FROM LORRY GROVE EAM
N
Kenzie Terrace
Coolidge Street
Wilson Street
Roosevelt Street
Stinson Parkway
St Anthony Blvd
Pahl Avenue
27th Avenue
315 | 195 | 145
135 | 110 | 115
440 | 350 | 290
500 | 350 | 400
245 | 120 | 150
4150 (1)
72 | 68 | 48
340 | 300 | 325
54 | 52 | 45
515 | 370 | 315
42 | 43 | 39
232 | 142 | 121
735 | 575 | 560
6000 (1)

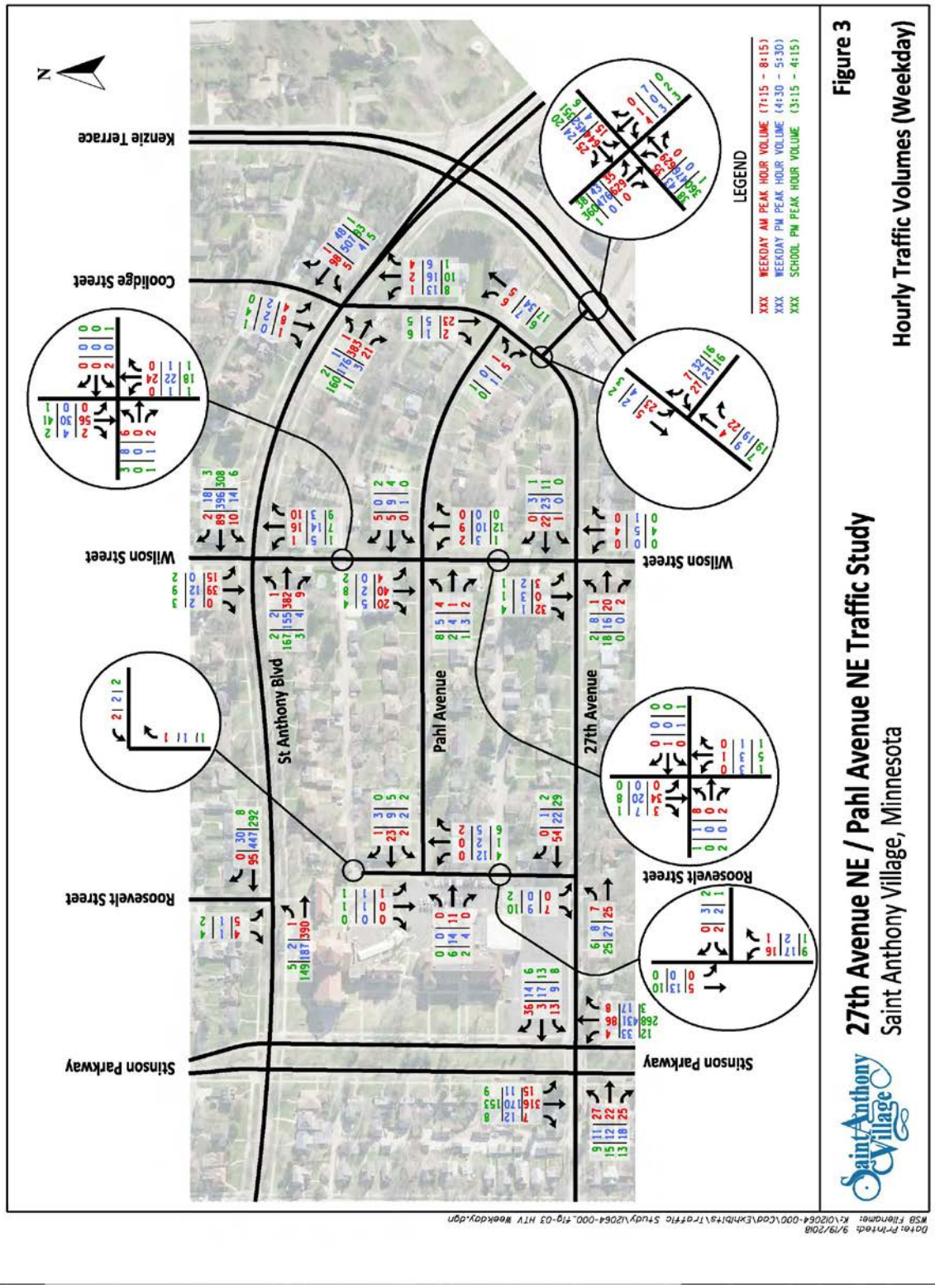


Figure 3
Hourly Traffic Volumes (Weekday)
27th Avenue NE / Pahl Avenue NE Traffic Study
Saint Anthony Village, Minnesota
LEGEND
XXX WEEKDAY AM PEAK HOUR VOLUME (7:15 - 8:15)
XXX WEEKDAY PM PEAK HOUR VOLUME (4:30 - 5:30)
XXX SCHOOL PM PEAK HOUR VOLUME (3:15 - 4:15)
Kenzie Terrace
Coolidge Street
Wilson Street
Roosevelt Street
Stinson Parkway
St Anthony Blvd
Pahl Avenue
27th Avenue
N

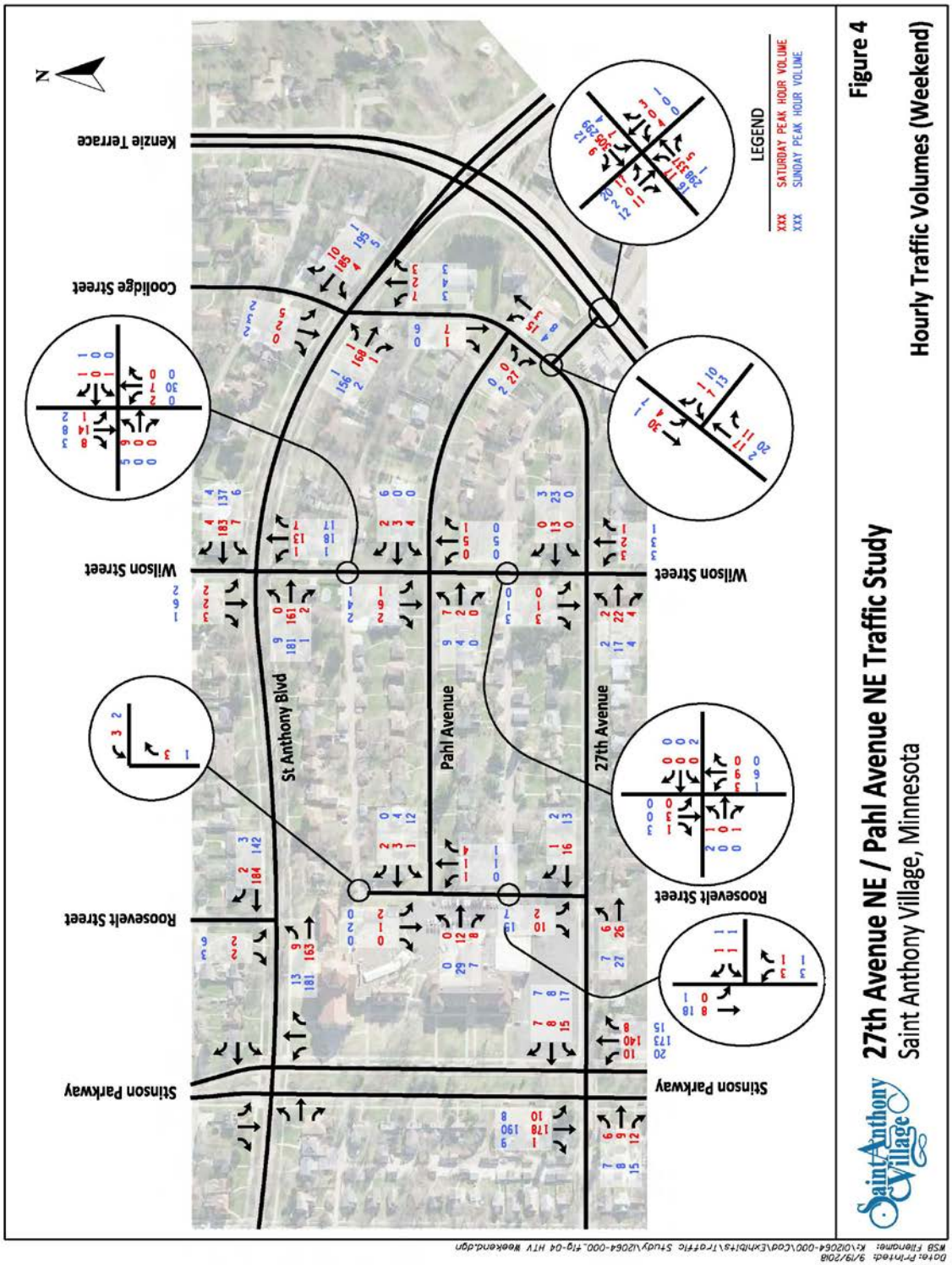


Figure 4
27th Avenue NE / Pahl Avenue NE Traffic Study
Saint Anthony Village, Minnesota
Hourly Traffic Volumes (Weekend)
LEGEND
XXX SATURDAY PEAK HOUR VOLUME
XXX SUNDAY PEAK HOUR VOLUME
N
Kenzie Terrace
Coolidge Street
Wilson Street
Roosevelt Street
Stinson Parkway
St Anthony Blvd
Pahl Avenue
27th Avenue

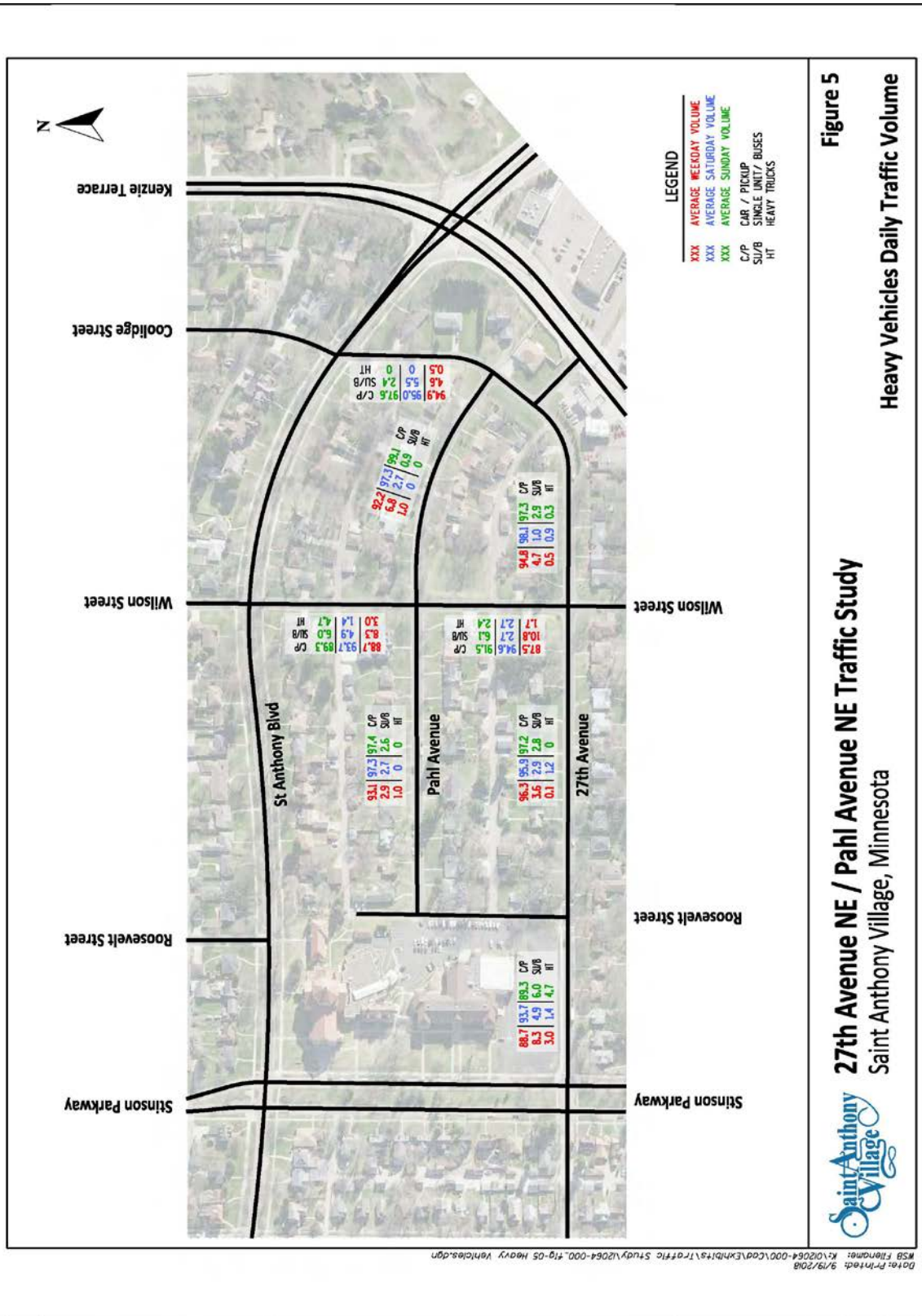


Figure 5
Heavy Vehicles Daily Traffic Volume
27th Avenue NE / Pahl Avenue NE Traffic Study
Saint Anthony Village, Minnesota
LEGEND
XXX AVERAGE WEEKDAY VOLUME
XXX AVERAGE SATURDAY VOLUME
XXX AVERAGE SUNDAY VOLUME
C/P CAR / PICKUP
SU/B SINGLE UNIT/ BUSES
HT HEAVY TRUCKS
N
Kenzie Terrace
Coolidge Street
Wilson Street
Roosevelt Street
Stinson Parkway
St Anthony Blvd
Pahl Avenue
27th Avenue

Pedestrian Volumes

Pedestrian volumes were collected with the hourly turning movement counts conducted at the intersections in the study area. The data indicates that the pedestrian volumes are slightly higher during the afternoon school peak hour time. The heaviest volumes were recorded: along Roosevelt Street adjacent to the school; at the Stinson Parkway crossing at 27th Avenue NE, and; at the Roosevelt Street crossing at St Anthony Boulevard.

Figure 6 shows the hourly pedestrian volumes on an average weekday for the AM peak hour (7:15am-8:15am), PM peak hour (4:30pm-5:30pm) and school peak hour (3:15pm – 4:15pm). ***Figure 7*** shows the hourly traffic volumes on an average Saturday peak hour and average Sunday peak hour.

Vehicle Speeds

In conjunction with the daily traffic counts, vehicle speeds were also collected. Vehicle speed data is typically given as the 85% speed. The 85% speed represents the speed at which 85% percent of the counted vehicles are traveling at or below. Research indicates that this value is where most drivers will operate their vehicle in a reasonable manor. The posted speed limit on the area roadways is 30 mph which is the typical speed limit on most residential streets.

The data indicates that most streets in the study area have vehicles that are traveling at or below the posted speed. The 85% speed ranges from 25.0mph to 32.4mph. ***Figure 8*** shows the average 85% vehicle speed for the average weekday and weekend on the streets within the 27th Avenue NE / Pahl Avenue NE area. Included in the ***Appendix*** is a table showing a summary of the vehicle speeds per day.

Crash History

Using the State of Minnesota Crash Mapping Analysis Tool (CMAT), crash data from the past 5 years (2011-2015) was documented. The data shows that over the past five years five locations have had at least one crash. The locations that have had more than one crash are at the intersections outside the study area including: Stinson Parkway at 27th Avenue NE; St Anthony Boulevard at Wilson Street, and; Kenzie Terrace at 27th Avenue NE. NE. Of the crashes reported the majority have been either rear-end or sideswipe type crashes.

Figure 9 shows the location of the crashes from 2011-2015 in the 27th Avenue NE / Pahl Avenue NE area. ***Table 1*** show the crash data by year for each location. ***Table 2*** shows the type of crash by location.

Table 1: Crash Summary by Year

Location	Crashes										
	2011		2012		2013		2014		2015		Total Crashes
	PD	PI	PD	PI	PD	PI	PD	PI	PD	PI	
Stinson Parkway at 27th Ave NE	0	0	0	0	1	0	0	0	1	1	3
27th Ave NE at Roosevelt St	0	0	0	0	0	0	0	0	1	0	1
Wilson St at Pahl Ave NE	0	0	0	0	1	0	0	0	0	0	1
St Anthony Blvd at Wilson St	1	0	1	0	0	0	0	0	0	0	2
Kenzie Terrace at 27th Ave NE	1	0	1	0	2	1	2	0	0	0	7

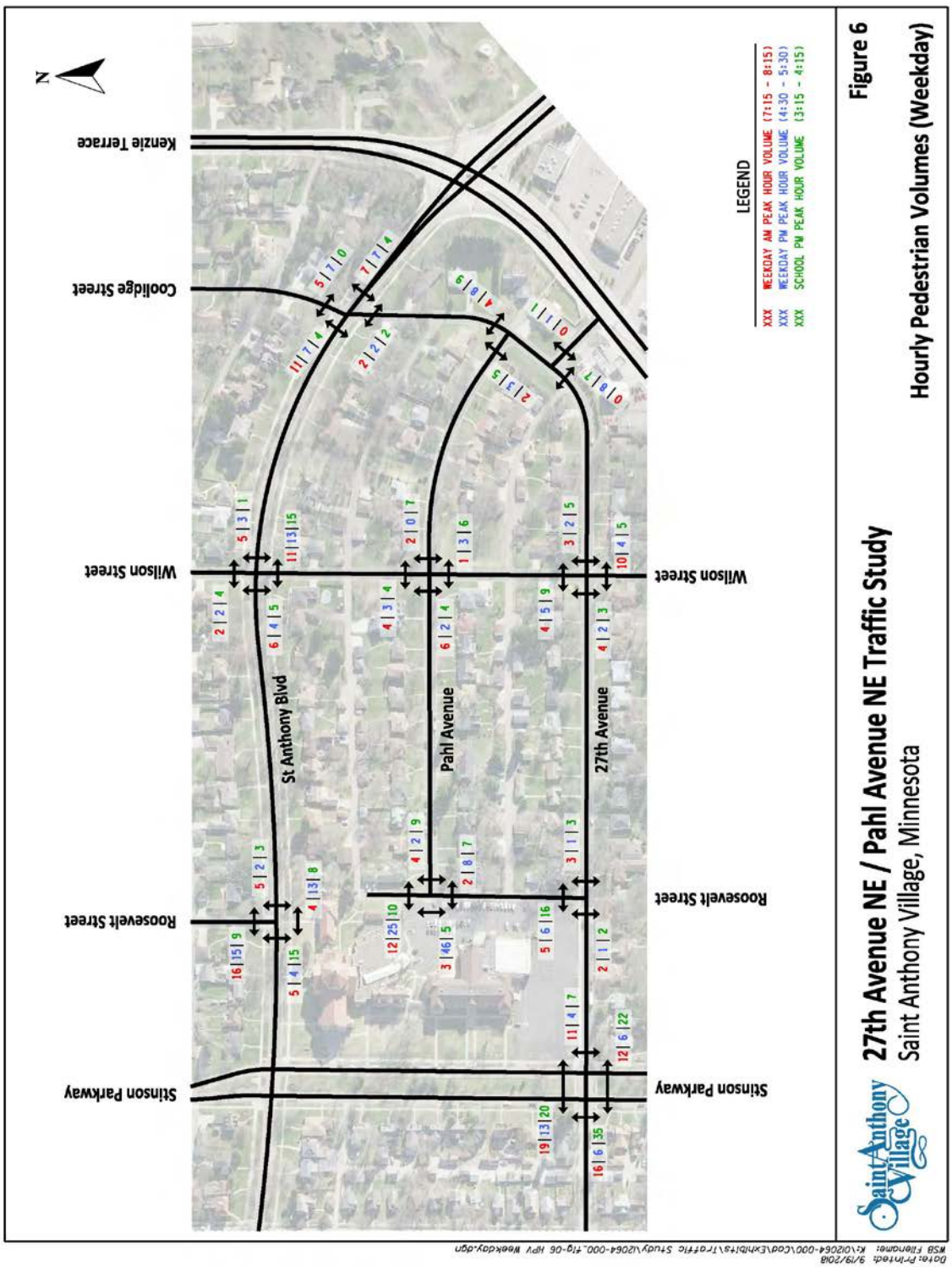
PD = Property Damage
PI = Personal Injury

Table 2: Crash Summary by Type

Location	Type					Total Crashes
	Sideswipe	Right Turn	Rear End	Right Angle	Unknown	
Stinson Parkway at 27th Ave NE	0	1	2	0	0	3
27th Ave NE at Roosevelt St	1	0	0	0	0	1
Wilson St at Pahl Ave NE	1	0	0	0	0	1
St Anthony Blvd at Wilson St	1	0	0	0	1	2
Kenzie Terrace at 27th Ave NE	1	0	3	2	1	7

Existing Conditions/Traffic Control Devices

The existing traffic control was documented within the study area. This included location of; warning signs, stop signs, speed limit signs, no-parking signs and pedestrian crosswalks. ***Figure 10*** shows the existing conditions in the 27th Avenue NE / Pahl Avenue NE study area.


N
Kenzie Terrace
Coolidge Street
Wilson Street
Roosevelt Street
Stinson Parkway
St Anthony Blvd
Pahl Avenue
27th Avenue
LEGEND
XXX WEEKDAY AM PEAK HOUR VOLUME (7:15 - 8:15)
XXX WEEKDAY PM PEAK HOUR VOLUME (4:30 - 5:30)
XXX SCHOOL PM PEAK HOUR VOLUME (3:15 - 4:15)
Figure 6
Hourly Pedestrian Volumes (Weekday)
27th Avenue NE / Pahl Avenue NE Traffic Study
Saint Anthony Village, Minnesota
Saint Anthony Village
Date: Printed: 9/19/2008
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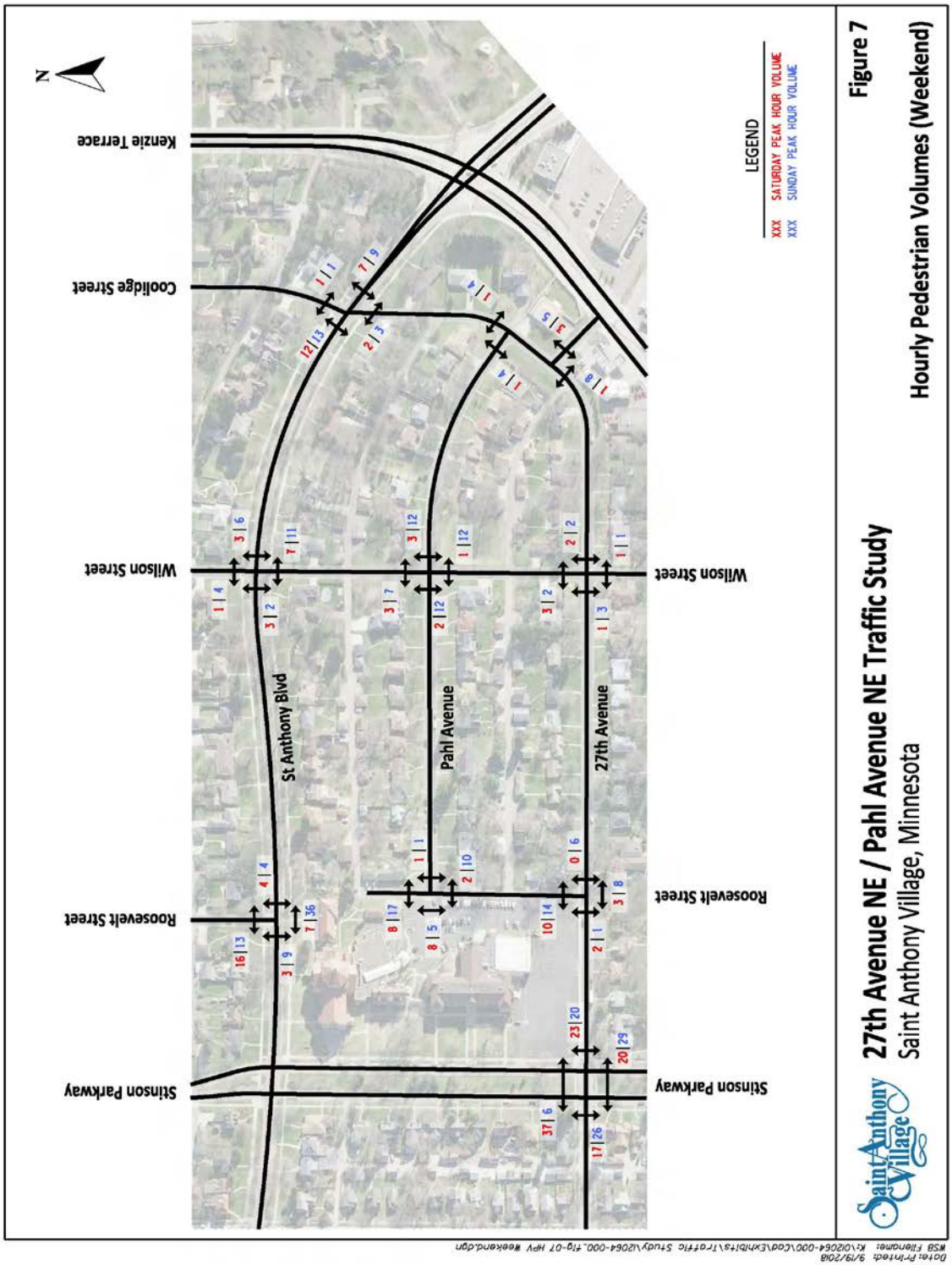


Figure 7
Hourly Pedestrian Volumes (Weekend)
27th Avenue NE / Pahl Avenue NE Traffic Study
Saint Anthony Village, Minnesota
LEGEND
XXX SATURDAY PEAK HOUR VOLUME
XXX SUNDAY PEAK HOUR VOLUME
N
Kenzie Terrace
Coolidge Street
Wilson Street
Roosevelt Street
Stinson Parkway
St Anthony Blvd
Pahl Avenue
27th Avenue

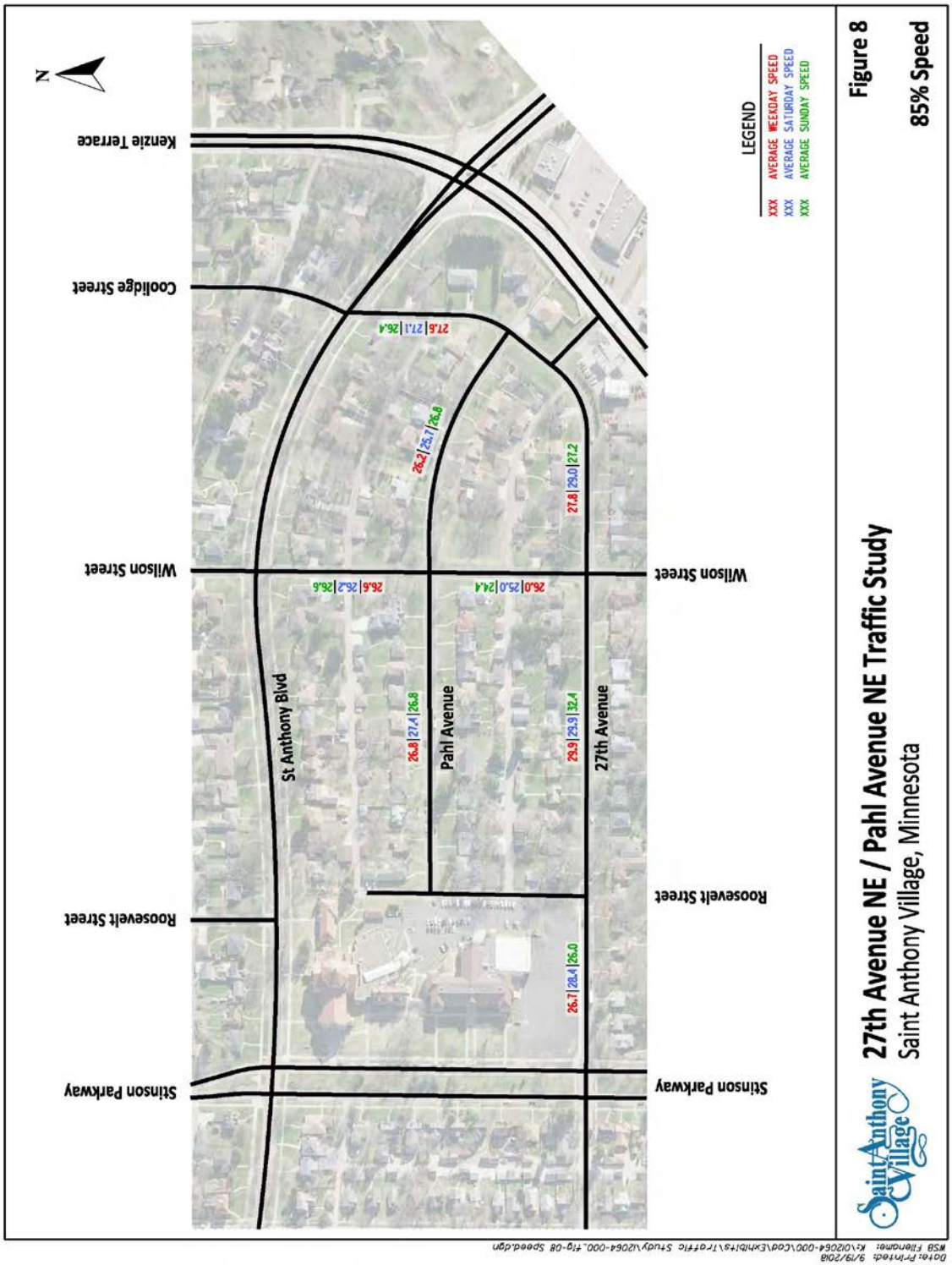
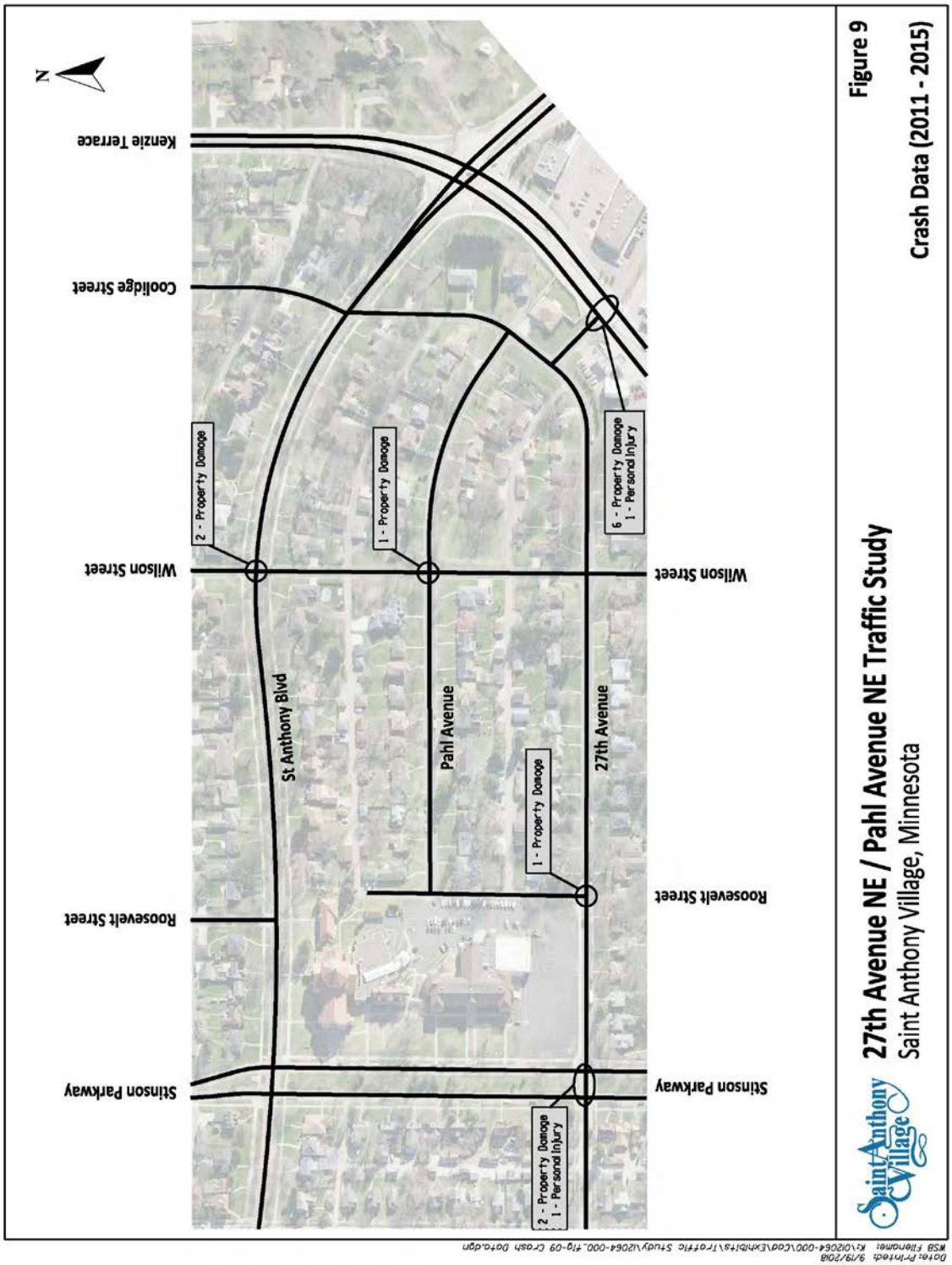


Figure 8
85% Speed
27th Avenue NE / Pahl Avenue NE Traffic Study
Saint Anthony Village, Minnesota
LEGEND
XXX AVERAGE WEEKDAY SPEED
XXX AVERAGE SATURDAY SPEED
XXX AVERAGE SUNDAY SPEED
N
Kenzie Terrace
Coolidge Street
Wilson Street
Roosevelt Street
Stinson Parkway
St Anthony Blvd
Pahl Avenue
27th Avenue
27.5 | 27.1 | 26.4
26.2 | 25.7 | 26.0
27.8 | 29.0 | 27.2
26.5 | 26.2 | 26.5
26.0 | 25.0 | 24.4
26.8 | 27.4 | 26.8
29.9 | 29.9 | 32.4
26.7 | 28.4 | 26.0


N
Kenzie Terrace
Coolidge Street
Wilson Street
Roosevelt Street
Stinson Parkway
St Anthony Blvd
Pahl Avenue
27th Avenue
2 - Property Damage
1 - Property Damage
6 - Property Damage
1 - Personal Injury
1 - Property Damage
2 - Property Damage
1 - Personal Injury
Figure 9
Crash Data (2011 - 2015)
27th Avenue NE / Pahl Avenue NE Traffic Study
Saint Anthony Village, Minnesota
Saint Anthony Village
Date: Printed: 9/19/2016
MSB Filename: K:\12064-000\Cad\Exhibits\Traffic Study\12064-000_fig-09 Crash Data.dgn

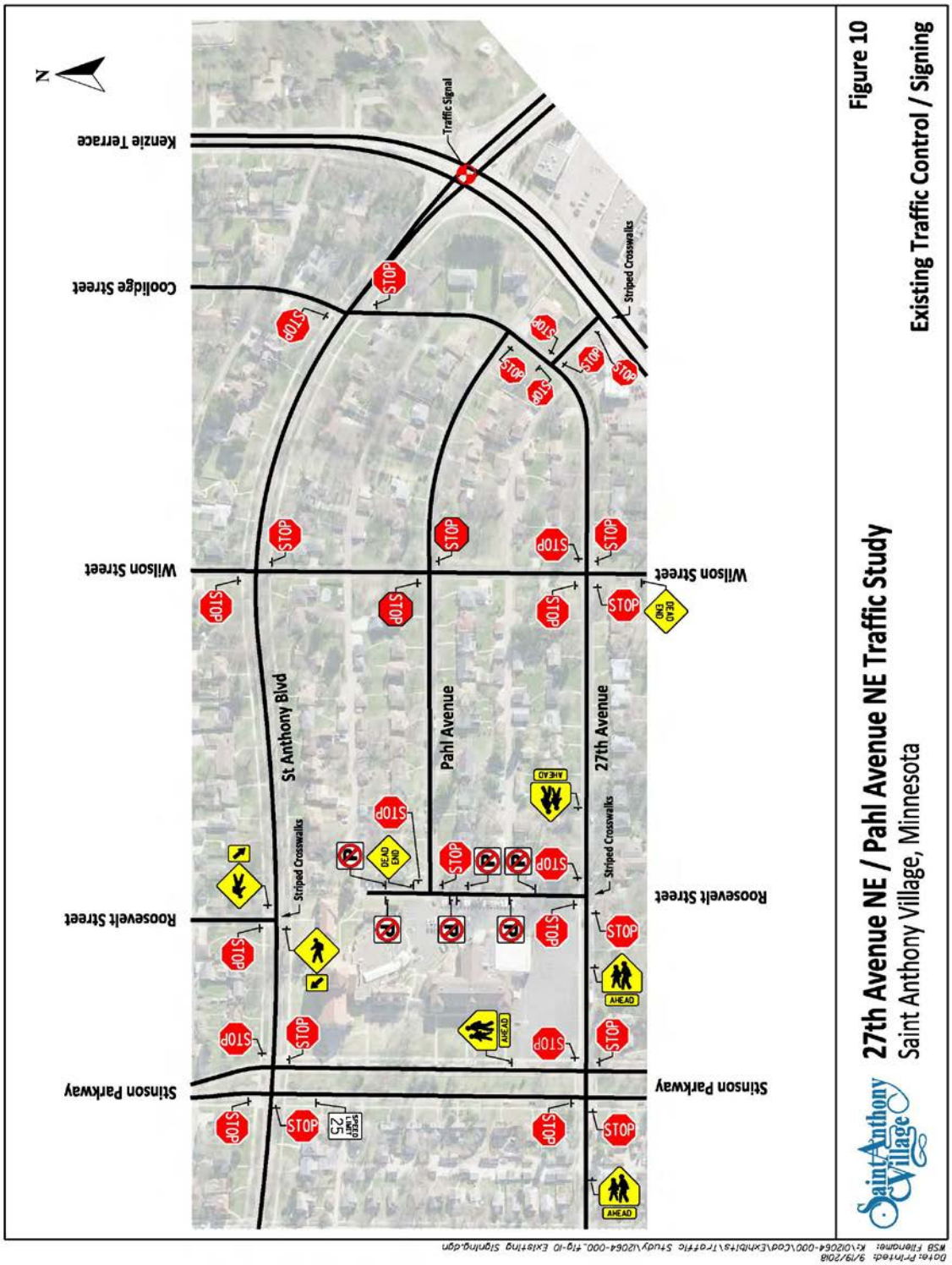


Figure 10
Existing Traffic Control / Signing
27th Avenue NE / Pahl Avenue NE Traffic Study
Saint Anthony Village, Minnesota
Kenzie Terrace
Coolidge Street
Wilson Street
Roosevelt Street
Stinson Parkway
St Anthony Blvd
Pahl Avenue
27th Avenue
Traffic Signal
Striped Crosswalks
STOP
AHEAD
DEAD END
SPEED LIMIT 25
N

Identified Issues

Issues were identified based on two primary sources including neighborhood input and the data collected. The issues and concerns identified include:

1. Vehicle traffic volumes
2. Speeding
3. Cut-through traffic
4. Pedestrian and bicycle traffic / circulation
5. School traffic
6. Adjacent development

Based on the data collected three primary issues were reviewed including, safety, speed and cut-through traffic. In order to determine the magnitude of the issues and the level of improvements needed, screening criteria was developed and discussed below.

Safety

The safety of an intersection or roadway segment is defined by the number, frequency and type of crashes at a location. An intersection or roadway segment is not considered to have a safety issue if there have only been one or two crashes during any multiyear analysis period. However, if there have been more than three crashes the following criteria should be used to trigger further study of an intersection or roadway segment.

- One (1) crash per year for three or more years, or
- More than three (3) crashes in one year.

Based on these criteria the only location in the study area that was identified for additional study is the intersection of Kenzie Terrace at 27th Avenue NE with 7 reported crashes. All other intersections or roadway segments had three crashes or less in the 5-year period.

Speed

The 85% speed is used as the primary measure of the speed on a segment of street. If the 85% speed is greater than the posted (30mph) speed limit, then the street segment should be further studied. Based on this criterion the only roadway segment that had a 85% speed over 30mph was 27th Avenue NE between Roosevelt Street and Wilson Street at 32.4mph.

Cut-Through Traffic

The potential for cut-through traffic was evaluated for the 27th Avenue NE / Pahl Avenue NE area. The study area is fairly captive with a limited number of street accesses in and out. Based on a review of the area there are approximately 92 homes in the study area that could use the area streets to St Anthony Boulevard, Stinson Parkway or Kenzie Terrace.

By using standard Institute of Transportation (ITE) trip generation factors for residential homes the number of estimated daily trips that could use the area roadway was determined to be approximately 920 vehicles per day (vpd). Comparing this the existing traffic count on the adjacent streets in and out of the area, it can be concluded that the level of traffic entering or exiting the area does not indicate a cut-through issue.

However, reviewing the hourly peak hour turning movement counts there appears to be two routes that may be experiencing some cut-through traffic. The first route is between St Anthony Boulevard and Kenzie Terrace using Coolidge Street to 27th Avenue NE. The second is between St Anthony Boulevard and Stinson Parkway using Wilson Street to 27th Avenue.

Improvement Opportunities

For each of the identified issues there are several low cost, low impact improvement opportunities that could be implemented depending on further analysis of the conditions and data. Discussed below are some of the possible improvement opportunities and the criteria for implementations.

Vehicle Safety Improvements

Safety improvements include items that could provide potential benefits by reducing the number of crashes. These improvements would include:

1. **Removing obstructions –** When the analysis indicates that a sight line issue is present at an intersection; where possible the sight line triangle should be cleared of obstructions. Based on a typical 25mph/30 mph city street the sight triangle is a distance between 30' and 50' (depending on right of way width) measured along the right of way line at the intersection. This distance should be based on calculations from the AASHTO "A Policy on Geometric Design of Highways and Streets" Green Book. If clearing the obstruction is not possible, further consideration to other intersection control should be explored.

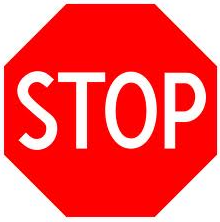
2. **Advance warning signs** – Advance warning signs could include "Stop Ahead", "Intersection Ahead", etc. These signs would be installed where intersection control is typically in place and/or crashes indicate that sight lines to the intersection may be an issue.

3. **"Blinker" signs** – Blinker signs are typically used where vehicles need additional warning or in extreme cases with limited sight distance and higher traffic volumes. They can be used on either warning signs (advanced signs) or regulatory signs (stop or yield signs).

4. **Pavement markings** – This could include either center line or edge line markings. They would typically be used where crashes indicate issues with vehicles staying in their own lane.

5. **Lighting** – Intersection lighting could be used to clearly locate an intersection at night. Typically, lighting could be installed where there are a significant number of crashes occurring at night.

6. **Yield signs** – Yield signs are typically used in locations where there is confusion on which vehicle approaching the intersection has the right of way. These signs can be used to help clearly assign the right-of-way at an intersection with a balanced traffic flow on all approaches.



7. **Stop signs** – The Minnesota Manual on Uniform Traffic Control Devices outlines warrants for the installation of stop signs. These warrants include criteria for installation of both all-way or 2-way stops. In addition, stop signs could be considered where sight distance cannot be improved.

8. **Turn Lanes/By-Pass Lanes** – The Minnesota Department of Transportation (MnDOT) Road Design Manual and Local Road Research Board have established criteria for the addition of turn lanes or by-pass lanes based on traffic volumes and crash data. Specifically, the number of turning vehicles vs opposing vehicles and/or rear-end type crashes.

Speed Reduction Improvements

Speed improvements include items that would provide potential benefits by reducing speeding in the neighborhood. These improvements could include:

1. **Speed limit signs** – In locations where the ADT volume is over 750 vehicles per day and there is currently not a posted speed limit sign and the 85% speed is over the posted speed limit, consideration should be given to installing speed limit signs.

2. **Driver feed-back (dynamic) speed signs** – Driver feed-back signs are signs that display the actual speed of a vehicle as it drives by the location. On neighborhood streets where the 85% speed is determined to be greater than 3mph above the posted speed limit, a driver feed-back sign could be used to warn the driver that they are speeding.

3. **Additional enforcement –** Based on the traffic speed data collected if the 85% speed is up to 3mph over the posted speed limit, consideration should be given to requesting additional police enforcement.

Pedestrian Safety Improvements

Pedestrian safety improvements include items that would provide potential benefits by reducing conflicts between vehicles and pedestrians or increasing awareness of pedestrians in the neighborhood. These improvements could include:

1. **School Speed Zone Signing –** The City may establish school speed limits within a school zone of public or non-public school on a basis of engineering and traffic investigations based on the following parameters: The school speed zone shall only be in effect when children are present going to or leaving the school; school speed zones cannot lower the posted speed zone more than 30 mph and shall not be established below 15 mph; school zones are defined as a segment of street or highway that abuts school grounds where children have access to the roadway or where a school crossing is in place; school speed zone signing and stripping must be in accordance with the Minnesota Manual on Uniform Traffic Control Devices (MMUTCD), and; any traffic violations of a school speed limit are subject to a double fine.

2. **Pedestrian-activated Flashing LEDs in the Border of a Warning Sign -** Section 2A.07 in the MnMUTCD describes the use of flashing white or yellow LEDs in the border of a pedestrian crossing warning sign. The flashing LEDs may be pedestrian activated to increase their effectiveness in making the crossing sign more conspicuous when pedestrians desire to cross the roadway.

3. **Signed and Marked Crosswalks –** Signed and marked pedestrian crosswalks may be used to delineate preferred pedestrian paths across roadways under the following conditions: at locations with stop signs or traffic signals to direct pedestrians to those crossing locations and to prevent vehicular traffic from blocking the pedestrian path when stopping for a stop sign or red light; at non-signalized street crossing locations in designated school zones, or; at non-signalized locations where engineering judgment dictates that the number of motor vehicle lanes, pedestrian exposure, average daily traffic (ADT), posted speed limit, and geometry of the location would make the use of specially designated crosswalks desirable for traffic/pedestrian safety and mobility.

4. **Sidewalk / Path Construction –** In areas where pedestrian volumes and vehicle volumes are at a level where safety of the pedestrian is jeopardized, construction of a separated sidewalk or path can be considered. Sidewalks or paths provide many benefits including safety, mobility, and healthier communities. In addition to reducing walking along roadway crashes, sidewalks reduce other pedestrian crashes. Providing walkways for pedestrians dramatically increases how well pedestrians perceive their needs are being met along roadways.

Issue Analysis/Conclusions

Based on the identified issues and the criteria discussed above for each improvement opportunity, the following analysis conclusions were made:

- **Safety Issues:** As indicated, the only location that was identified with safety (crash) issues is the intersection of Kenzie Terrace at 27th Avenue NE. The majority of the crashes are northbound or southbound on Kenzie Terrace. There are no other trends with the crashes such as time of day or day or week or time of year. Based on the number of vehicles on Kenzie Terrace and with the type and number of crashes a request should be made to Hennepin County to consider a safety improvements at the intersection.

- **Speeding Issues:** As indicated by the neighborhood concerns and verified with the collected data, the speed of traffic on 27th Avenue between Roosevelt Street and Wilson Street has an 85% speed over the posted 30mph limit. Based on the traffic volume review it was documented that most of the traffic on these streets is local to the neighborhood. These should be people that know the area and what the speed limit and road conditions are.

  Based on the review of the alternatives available there are two improvements that could be considered.

  1. Additional Enforcement – With the majority of the streets in the 27th Avenue NE / Pahl Avenue NE area having an 85% speed below the posted 30mph speed limit, and; with the majority of the traffic being local to the area, and; with the recommended installation of the School Speed Zone (see below); additional enforcement should be implemented. The streets should continue to be monitored and evaluated to determine if the speed limit is reduced.
  2. Driver Feed-Back (DFB) Signs – Should the 85% speed not be reduced with the additional enforcement. DFB signs could be considered. Research has shown that installation of DFB signs can reduce the 85th speed by up to 3mph. This would reduce the 85% speed on 27th Avenue NE to below the posted speed limit. If this alternative is implemented, a temporary DFB should be installed as a test to determine if the installation provides the benefit anticipated.

- **Pedestrian Safety:** Based on the pedestrian and vehicle data collected consideration should be given to providing accommodation and/or awareness of pedestrians, especially adjacent to the St. Charles Borromeo Church and School. There are two primary options for improving the safety for pedestrian traffic in the area.

1. School Speed Zone Establishment – Based on the State requirements and the MnMUTCD the City can establish a school speed zone adjacent to the St. Charles Borromeo School on 27th Avenue NE between Stinson Parkway and Roosevelt Street. Based on the traffic volumes and speeds a 20mph school speed zone is recommended as a solution to improve safety of the students and pedestrians adjacent to 27th Avenue NE.
2. Construction of a Sidewalk Connection – Currently there is sidewalk connections in the 27th Avenue NE / Pahl Avenue NE area located: on the north side of 27th Avenue NE between Stinson Parkway and Roosevelt Street adjacent to the St Charles Borromeo Church and School; on both sides of Stinson Parkway between 27th Avenue NE and St Anthony Boulevard adjacent to St Charles Borromeo Church and School; on both sides of St Anthony Boulevard between Stinson Parkway and Kenzie Terrace. Based on pedestrian data collected and standard practices construction of sidewalk connections could be considered in the area. This would need to be requested by the adjacent land owners.

- **Cut-Through Traffic:** As discussed in the issues identification section most of the traffic in the 27th Avenue NE / Pahl Avenue NE area is local from the neighborhood. However, based on a review of the traffic volume data there appears to be to two possible cut-through routes.

    1. Between St Anthony Boulevard and Kenzie Terrace using Coolidge Street to 27th Avenue NE. – The traffic using this cut-through route appears to be trying to avoid the traffic signal at St Anthony Boulevard and Kenzie Terrace. In order to discourage this cut-through route it will require making it less desirable. An option to address this issue would be to install "Stop" signs on Coolidge Street at the Pahl Avenue NE intersection making it an all-way stop consistent with the adjacent intersection.
    2. Between St Anthony Boulevard and Stinson Parkway using Wilson Street to 27th Avenue – The traffic using this route appears to be avoiding the intersection of St. Anthony Boulevard and Stinson Parkway. It is unclear if this traffic is actually cutting through or destined for St Charles Borromeo Church and School. One of the concerns is with this traffic using the alleys between Wilson Street and Roosevelt Street. An option to address this issue would be to install "No Thru Traffic" signs on both ends of the two alleys between Wilson Street and Roosevelt Street.

    Concern has also been raised that as the adjacent area continues to develop, traffic will used 27th Avenue NE as a cut-through. Based on the Traffic Study completed for the Lowry Grove project the majority of the traffic (approximately 85%) is entering and exiting the area from the south and west. The remining traffic will access the Lowry Grove site from Stinson Parkway or Kenzie Terrace. There is no advantage for traffic to cut-through on 27th Avenue to access the Lowry Grove site.

Recommendations

Based on the issues analysis and the analysis conclusions, the following low impact, low cost improvements are recommended for the 27th Avenue NE / Pahl Avenue NE area. ***Figure 11*** shows the location for the proposed improvements.

Safety Improvements

- Continue working with Hennepin County on the future improvements at Kenzie Terrace and 27th Avenue NE.

Speed Improvements

- Provide additional speed enforcement in the area.
- Develop a policy for the use of and possible installation of driver feed-back signs in the City.

Pedestrian Improvements

- Develop City policy for the location of a School Speed Zone (20mph). This may be applied to 27th Avenue NE and Stinson Boulevard.
- Changes to Stinson Boulevard will require approval from the Minneapolis Park Board.

Cut-Through Traffic

- Review additional signage on northbound and southbound Coolidge Street at Pahl Avenue NE.
- Consider "No Thru Traffic" signs on both ends of the alleys between Wilson Street and Roosevelt Street.
- Continue to monitor the traffic in the 27th Avenue NE / Pahl Avenue NE area as the adjacent development continues.

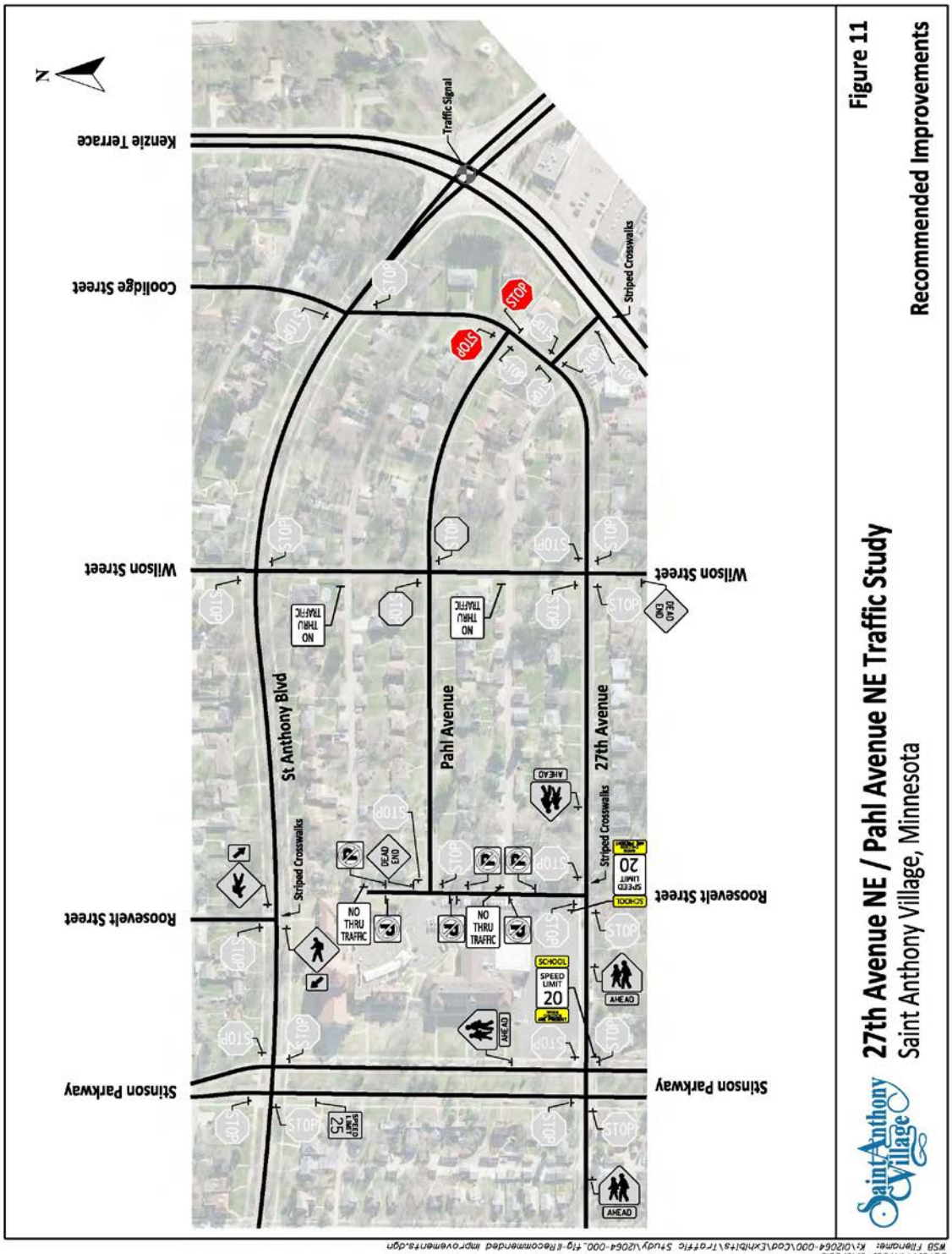


Figure 11
Recommended Improvements
27th Avenue NE / Pahl Avenue NE Traffic Study
Saint Anthony Village, Minnesota
Saint Anthony Village
Kenzie Terrace
Coolidge Street
Wilson Street
Roosevelt Street
Stinson Parkway
St Anthony Blvd
Pahl Avenue
27th Avenue
Traffic Signal
Striped Crosswalks
STOP
NO THRU TRAFFIC
DEAD END
SCHOOL SPEED LIMIT 20
AHEAD
SPEED LIMIT 25
N

APPENDIX

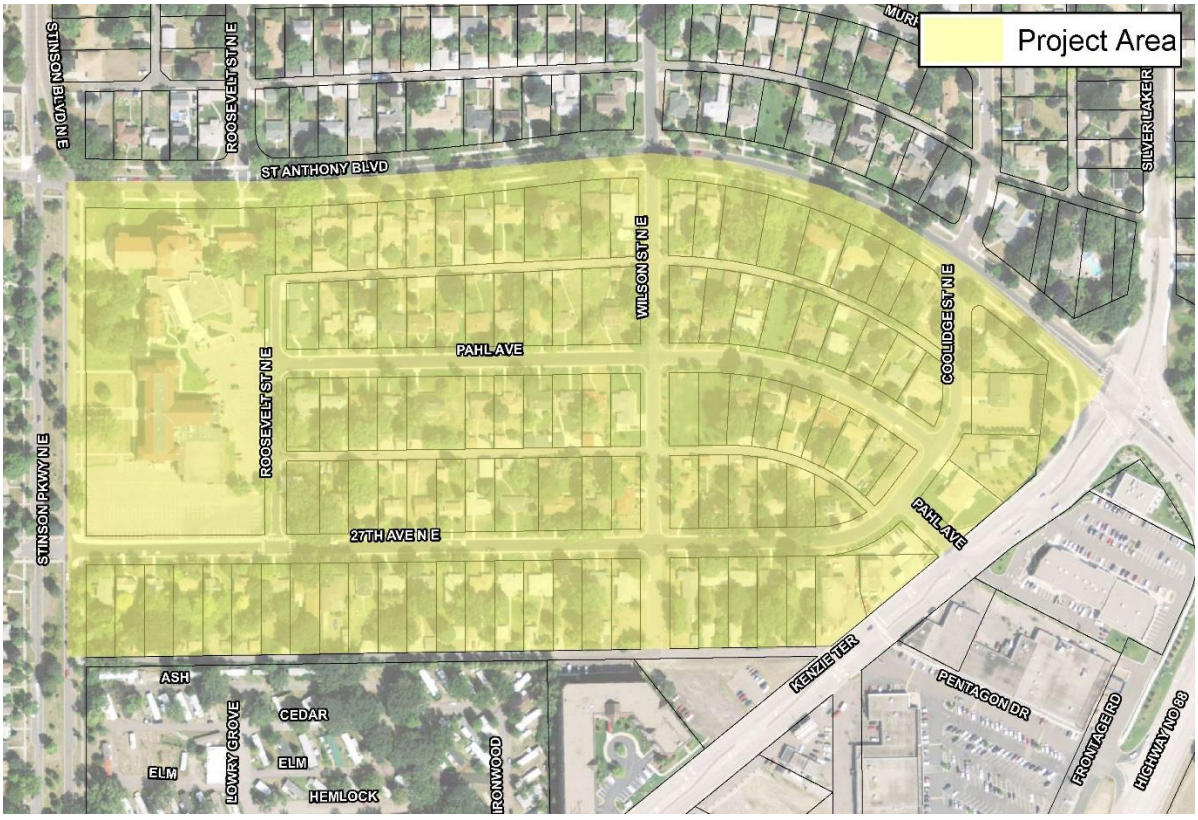
27th Avenue NE / Pahl Avenue NE Area Traffic Study
Public Information Meeting
July 16th, 2018
6:00 PM to 7:00 PM

The City of St Anthony Village has initiated a Traffic Study for the neighborhood located immediately east of St. Charles Borromeo Church along 27th Avenue NE, Pahl Avenue NE, Roosevelt Street NE, Wilson Street NE and Coolidge Street NE. The map below shows the project study area. The study is being prepared to address residents' concerns with traffic and pedestrian safety related to the speed and volume of traffic on these roadways.

The traffic data has now been collected and tabulated and the initial review has been completed. In order to prepare the draft study, the City wishes to get public input. A Public Information Meeting is scheduled for July 16th, 2018. The meeting will be held at the St. Anthony Village Hall beginning at 6:00 pm with a short presentation beginning at 6:15 pm.

The purpose of the meeting will be to review the traffic data collected, discuss the traffic calming and safety improvement options and to receive input from adjacent property owners on their issues and concerns. Following the meeting a final report will be prepared with final conclusions and recommendations.

If you are unable to attend the Public Information meeting and are in interested in providing input please contact the City's consultant engineer Chuck Rickart at (612) 360-1283 or crickart@wsbeng.com.

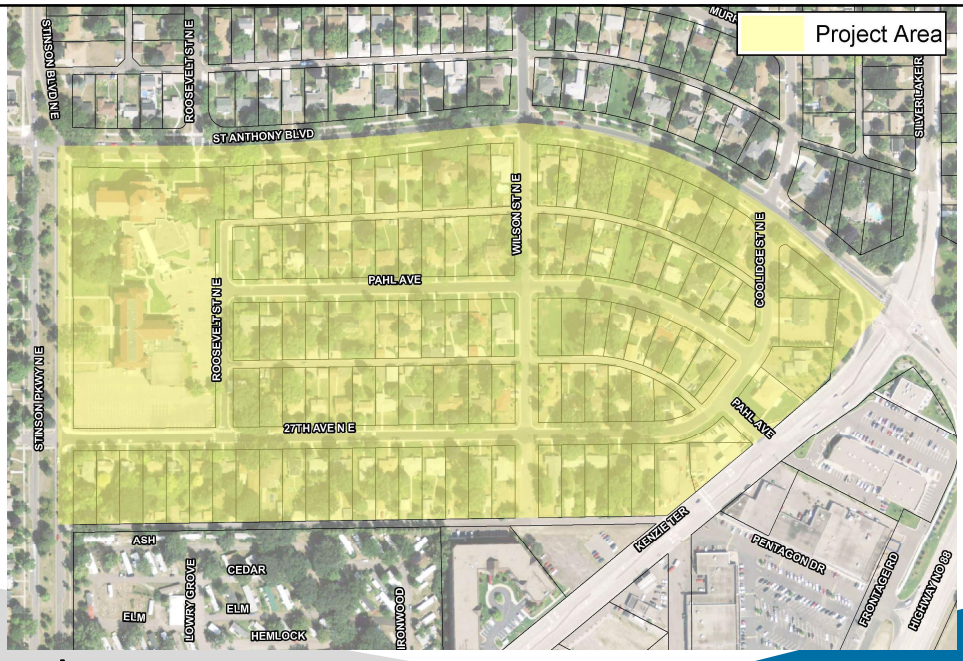


27th Avenue NE/Pahl Avenue Area NE Traffic Study

Public Information Meeting

July 16, 2018

6:00 PM



Study Location Map

Purpose of the Meeting

- Review Study Purpose, Objectives and Process
- Discus data collection
- Discuss identified neighborhood traffic issues and concerns
- Discuss alternative solutions
- Receive public input on issues and solutions

Study Objectives

- Improve vehicle and pedestrian safety
- Apply least restrictive control type possible
- Traffic control consistency
- Not to promote cut-through traffic or diversion of traffic
- Not to promote speeding

Study Purpose

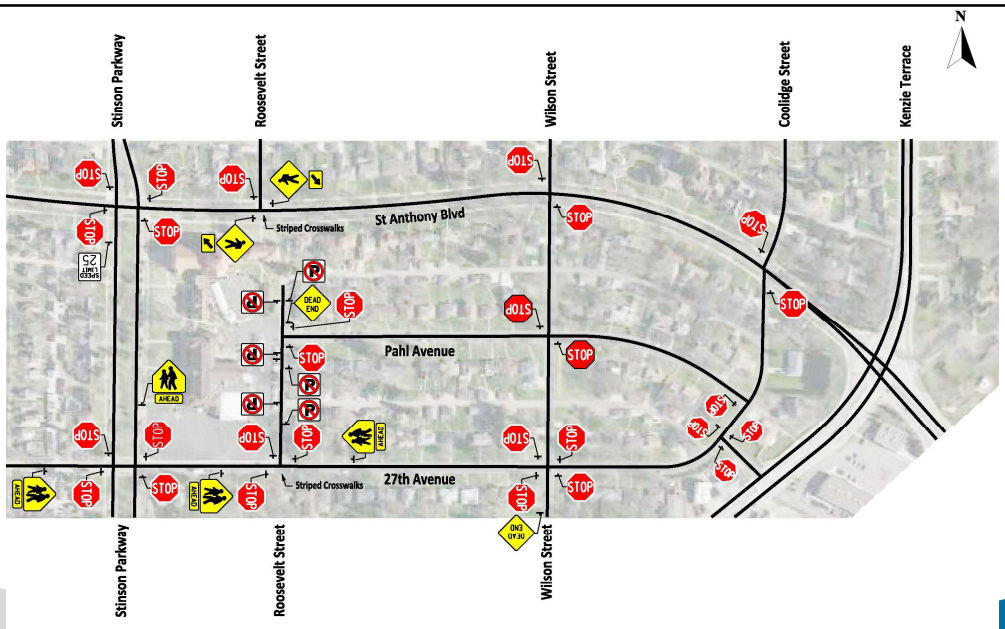
- Identify neighborhood issues:
  1. Traffic operations (signing, pavement markings, pedestrians, sight distance, etc.)
  2. Speeding
  3. Cut-through traffic
- Determine potential low impact, low cost improvements

Study Process

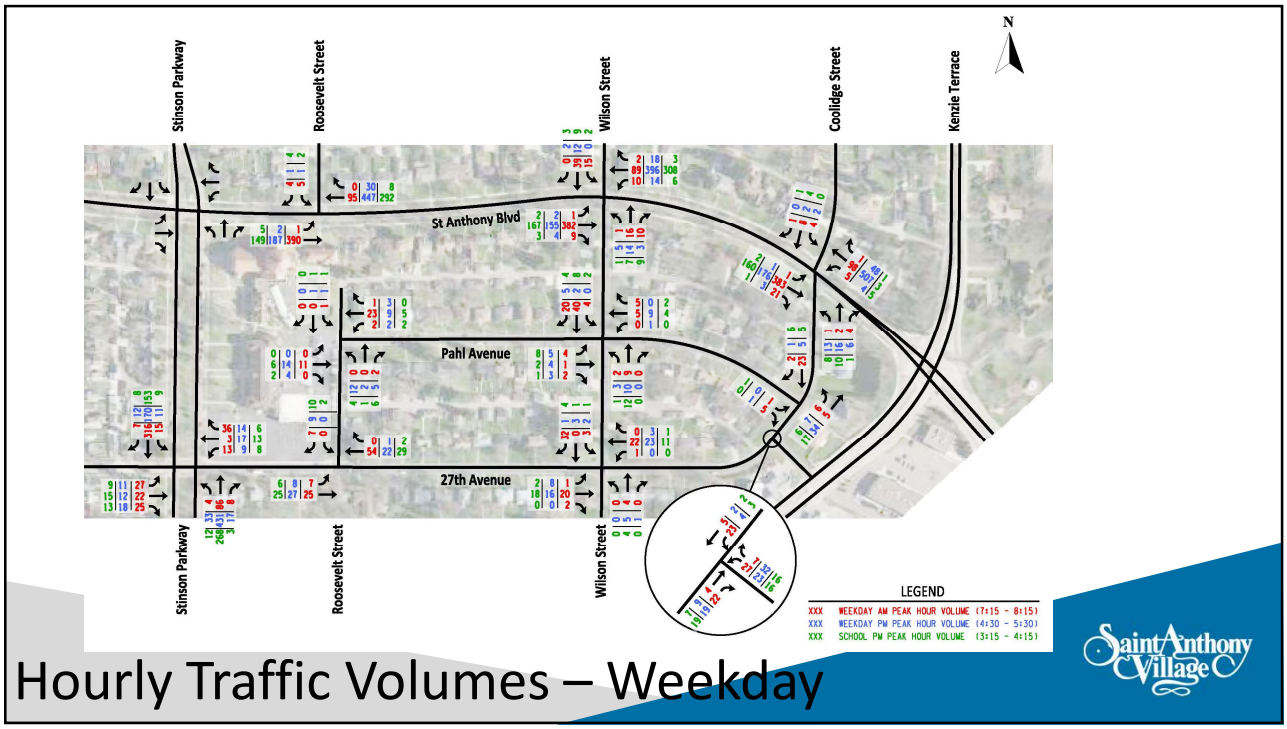
- Collect existing data – Completed
- Gather neighborhood input – Tonight
- Collect additional data if needed
- Conduct preliminary analysis
- Present findings to City Council
- Prepare final report and recommendations
- Present findings to neighborhood for additional input

Data Collection

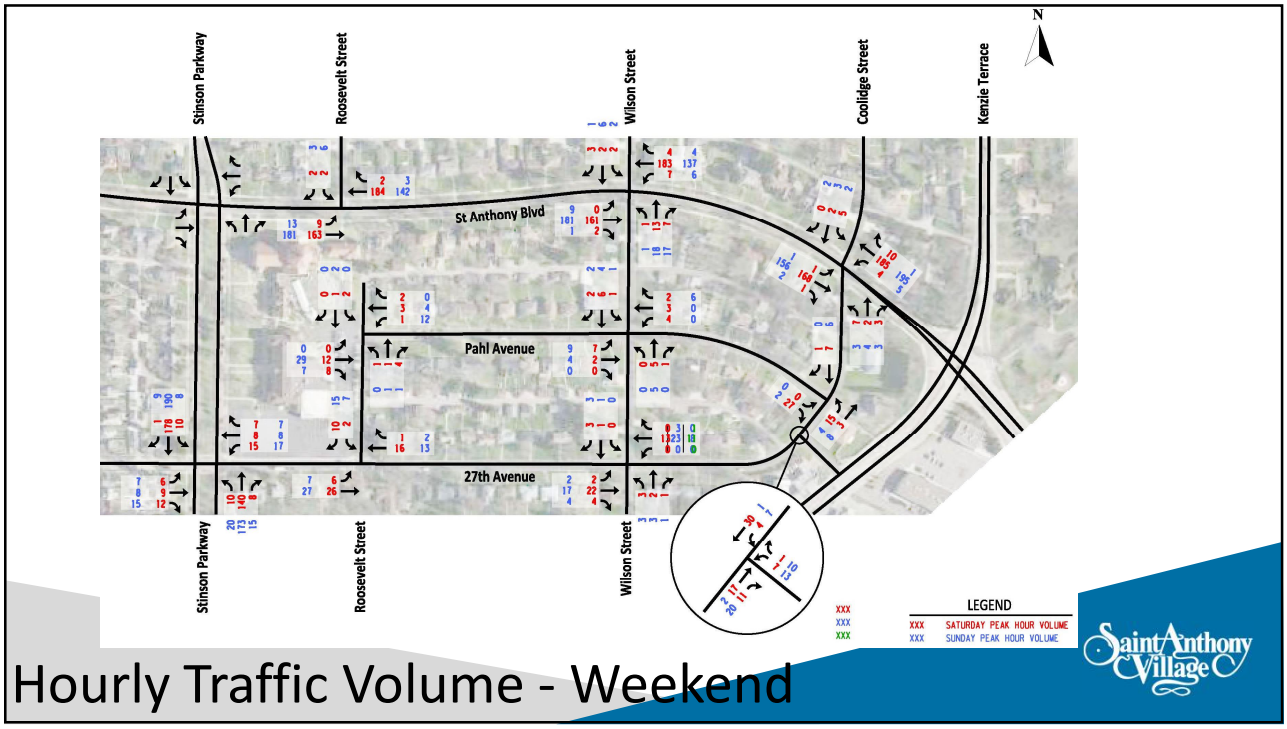
- Existing Traffic Control / Signing
- Traffic Volumes
  1. Weekday hourly peak hours (AM, PM, School)
  2. Weekend hourly peak hours (Saturday, Sunday)
  3. Daily
- Pedestrian Volumes
- Speed
- Vehicle Classification (Heavy Vehicles)



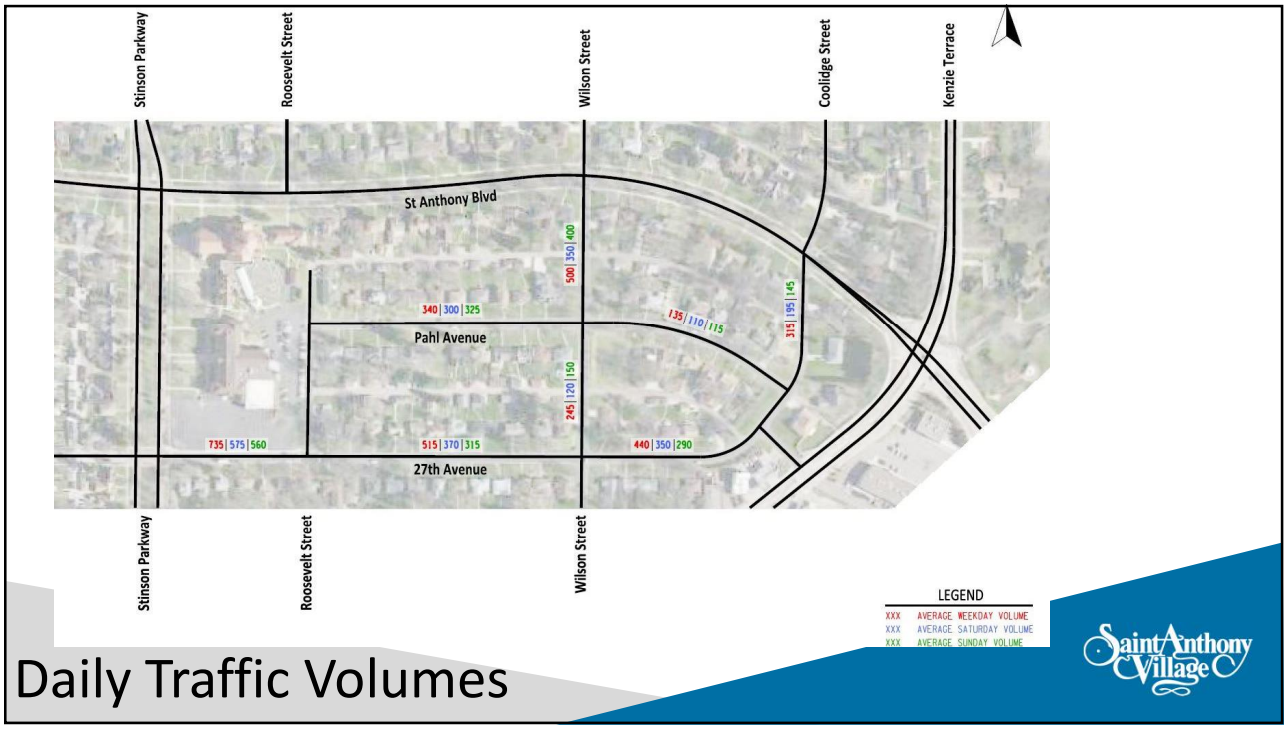
Traffic Control / Signing



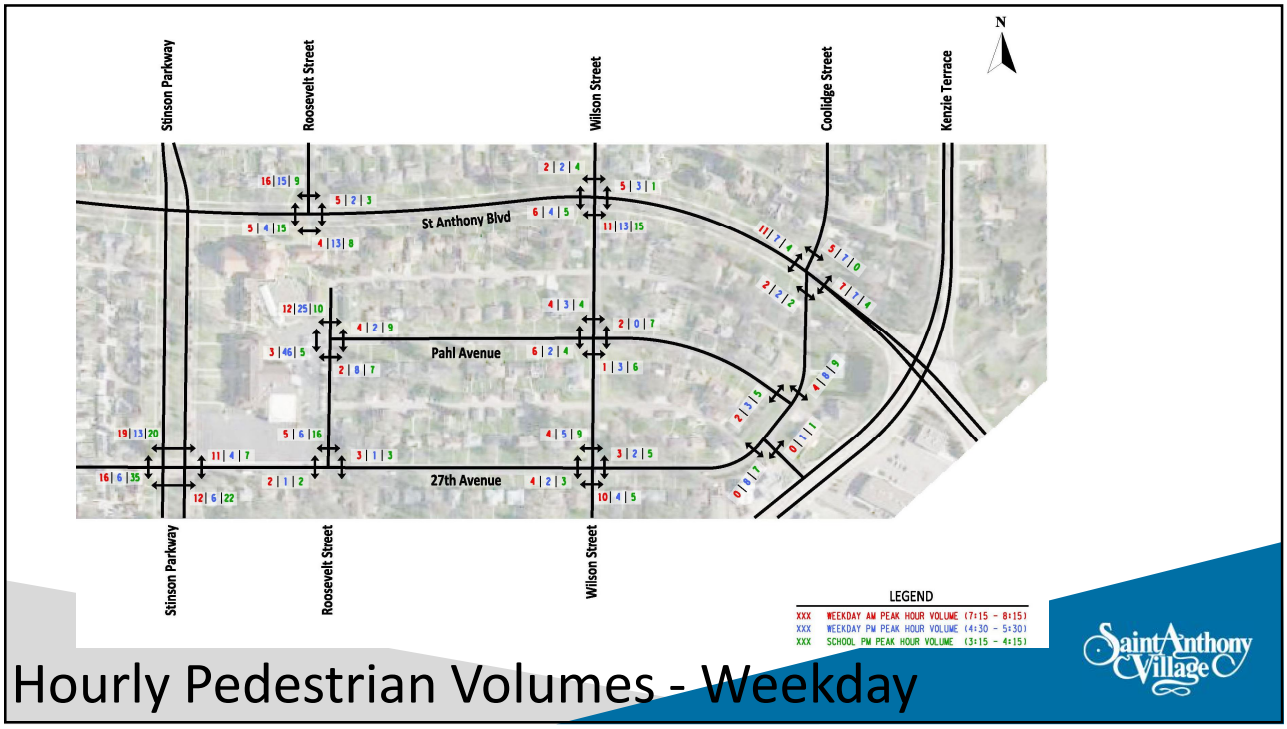
Hourly Traffic Volumes – Weekday



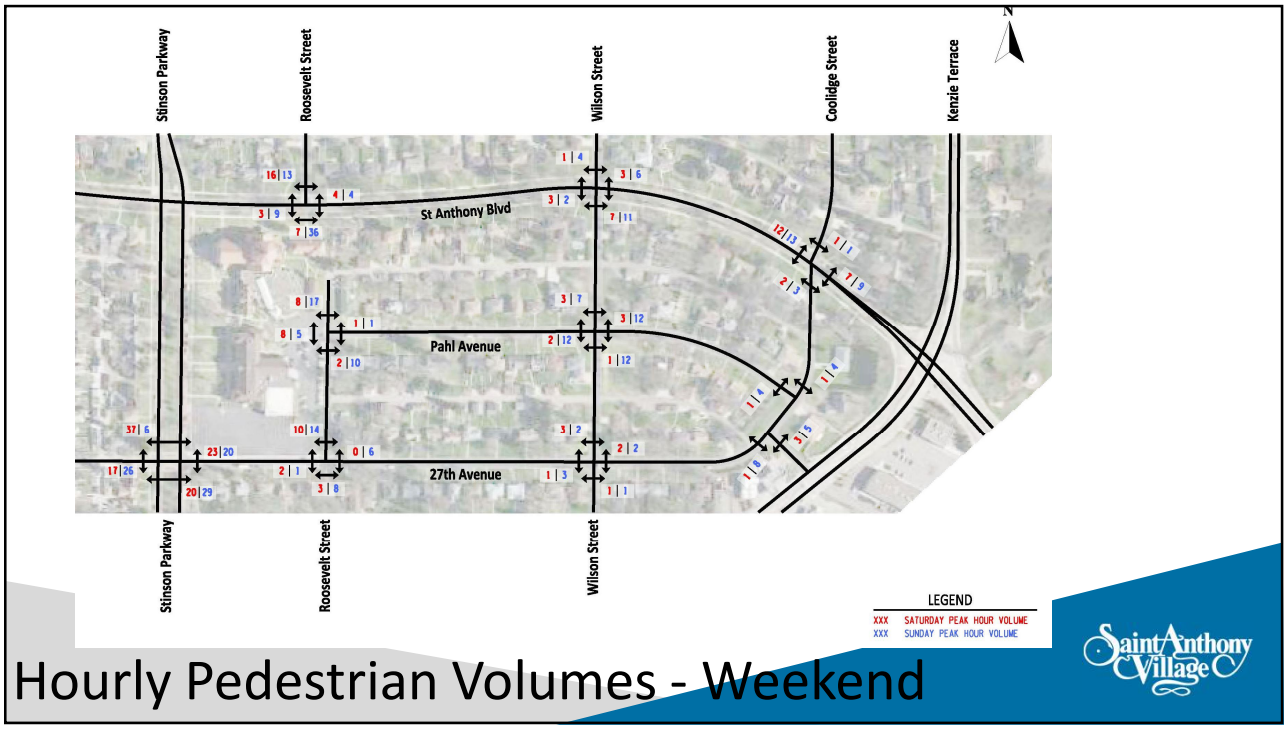
Hourly Traffic Volume - Weekend



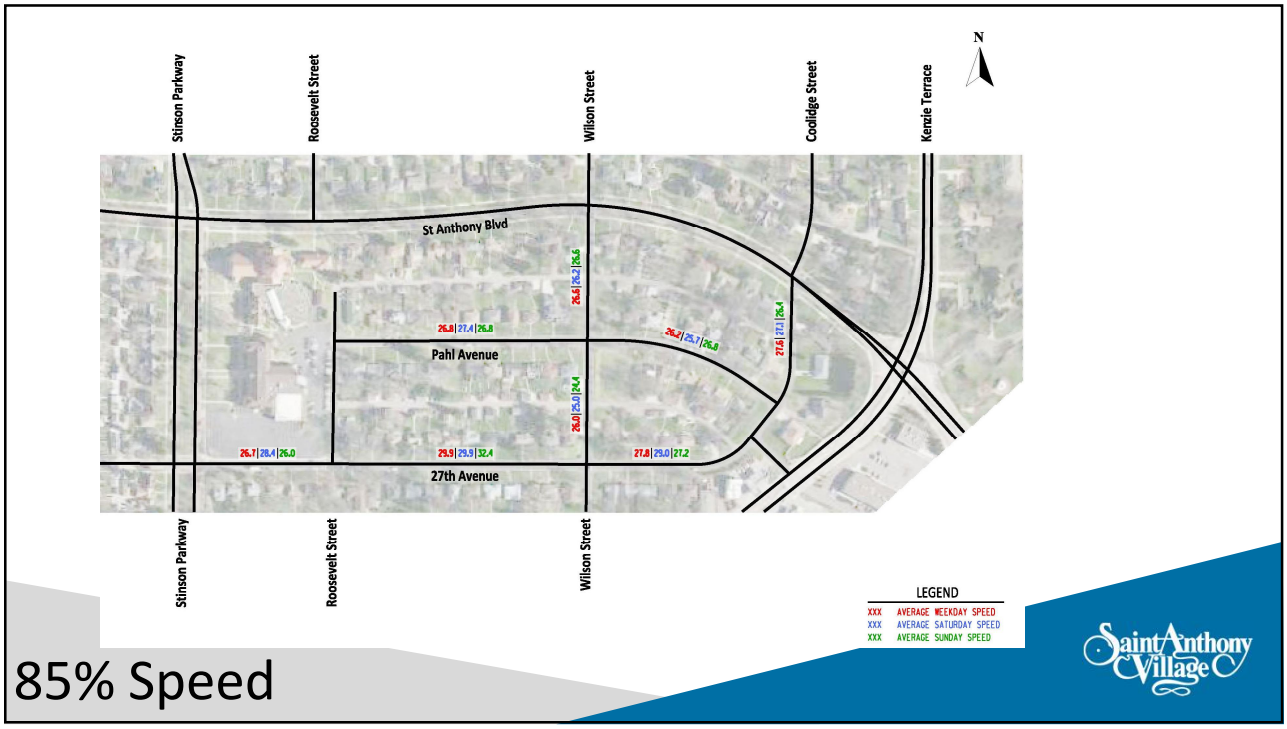
Daily Traffic Volumes



Hourly Pedestrian Volumes - Weekday



Hourly Pedestrian Volumes - Weekend



85% Speed

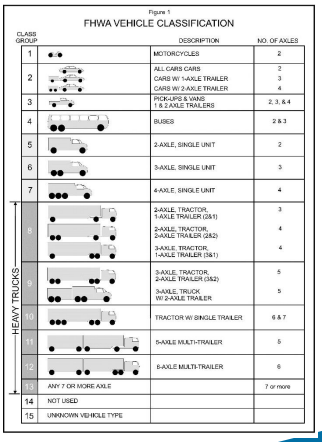
Vehicle Classification

Identified Issues

- Vehicle traffic volumes
- Speeding
- Cut-through traffic
- Pedestrian and bicycle traffic / Circulation
- School traffic
- Adjacent development

Issues Review – Traffic Volumes

- Traffic is Local to the Neighborhood
  - Typical residential street 500 – 1000vpd
  - Volumes range from 110 to 750vpd
- Heavy vehicles
  - Typical residential street 2%-5% trucks
  - % trucks range from 0% to 4.7%



Issues Review – Speed

- Guideline - 85% Speed
- Typical speed limit on neighborhood streets is 30mph
- Existing 85% speed ranges from 25.0 to 32.4

Issues Review – Cut Through Traffic

- Study Area captive with limited number of streets
- Standard ITE Traffic Generation rate of approximately 10 trips/day
- Approximately 92 homes in area or 920 trips from the residential area
- Travel time with stop signs
- Traffic volumes show possible cut through
  - Wilson St/27th St
  - Coolidge St/Pahl Ave

Possible Low Cost/Low Impact Examples

- Traffic control changes
- Revised / additional signing
- Revised pavement markings
- Technology (driver feedback signs, blinker signs, etc.)

Next Steps

- Collect additional data, conduct analysis, prepare preliminary findings
- Final report
- City Council meeting
- Neighborhood meeting #2
- Implement approved recommendation (based on funding availability)

Contacts/Additional Information

Jay Hartman – City of St Anthony

612-782-3314

jhartman@savmn.com

Charles Rickart – WSB & Associates

612-360-1283

crickart@wsbeng.com

Questions / Comments

Saint Anthony Village

27th Avenue NE / Pahl Avenue NE
Traffic Study

PUBLIC INFORMATION MEETING
July 16, 2018 - 6:00 PM
SIGN-UP FORM

Name	Complete Mailing Address	Phone (Include Area Code)	E-mail Address
Preston Williams	2805 Pahl Ave Mpls, MN 55418	612-789-8081	pwilli805@gmail.com
Jesse & William Pikturna	2616 27th Ave NE St. Anthony 55418		
Jennifer Ennen	2500 Pahl NE		
Nancy Miller	2501 27th Ave NE	612-706-9774	millernaloney@...net
JOHN MALONEY	3408 ROOSEVELT ST. NE ST. ANTHONY, MN 55418	612-706-0264	JANDAMALONEY@GMAIL.CO
Thomas Isaacson	2604 Pahl Ave St. Anthony, MN 55418	718.915.5042	thomas.isaacson@gmail.com
Mary Wappes	2520 Pahl Ave 55418		jmwappes@gmail.com
Betsie Sawyer	2521 27th Ave NE 55418	612-202-4569	betsiekopsog@hotmail
Casey Scott	2501 Pahl Ave NE 55418	612-719-5038	caseyscott52@gmail.com
Tony Cole	2420 27th Ave NE St. Anthony, MN 55418	702-561-0053	anthonyacole@gmail.c

Saint Anthony Village

27th Avenue NE / Pahl Avenue NE Traffic Study

PUBLIC INFORMATION MEETING
July 16, 2018 - 6:00 PM
SIGN-UP FORM

Name	Complete Mailing Address	Phone (Include Area Code)	E-mail Address
DAR GERBER	2243 ROOSEVELT ST. NE	612-834-3478	dgerbera@centurylink.net
Brian Kallio	2816 St. Anthony Blvd	651-260-6809	bfkallio@yahoo.com
Tom Harden	2612 St. A. Blvd	612 910-7419	
CHAD GILLARD	2524 PAHL AVE	612.709.1992	CHAD.GILLARD@GMAIL
Lee Zurfelhofer	2509 Pahl	612 702 9065	
Carol Weiler	2812 St Anthony Pkwy		

27TH AVENUE / PAHL AVENUE TRAFFIC STUDY
PUBLIC INFORMATION MEETING – July 16, 2018 – 6:00 PM

PLEASE COMMENT ON ANY ISSUES THE CITY SHOULD CONSIDER WHEN COMPLETING THE TRAFFIC STUDY?

I would like to see a school zone limit of 20-25 mph set to encourage safer and slower driving. It seems to have minimal negative effects compared to other alternatives.

Thank you!

Your Name Thomas Isaacson
Address 2604 Pahl Ave
Phone 718.915.5462
E-mail thomas.isaacson@gmail.com

Saint Anthony Village

27TH AVENUE / PAHL AVENUE TRAFFIC STUDY
PUBLIC INFORMATION MEETING – July 16, 2018 – 6:00 PM

PLEASE COMMENT ON ANY ISSUES THE CITY SHOULD CONSIDER WHEN COMPLETING THE TRAFFIC STUDY?

Please Check ~~to~~ / Wilson at St A. B for People Not Stopping at Sign

Blinker Speed Signs on St. Anthony Blvd

Your Name
Address
Phone
E-mail

Saint Anthony Village

27TH AVENUE / PAHL AVENUE TRAFFIC STUDY
PUBLIC INFORMATION MEETING – July 16, 2018 – 6:00 PM

PLEASE COMMENT ON ANY ISSUES THE CITY SHOULD CONSIDER WHEN COMPLETING THE TRAFFIC STUDY?

At Roosevelt & Pahl — I believe it is a 2 way stop — Would it make sense to put a sign "cross traffic does not stop" there?

Thanks

Your Name Mary Wappes
Address 2520 Pahl
Phone
E-mail jmwappes@gmail.com

Saint Anthony Village

27TH AVENUE / PAHL AVENUE TRAFFIC STUDY
PUBLIC INFORMATION MEETING – July 16, 2018 – 6:00 PM

PLEASE COMMENT ON ANY ISSUES THE CITY SHOULD CONSIDER WHEN COMPLETING THE TRAFFIC STUDY?

If St Anthony has a goal of being a walkable city, more streets should have a sidewalk including Pahl & 27th Ave. There is not a safe place to walk.

Your Name Carol Weiler
Address 2312 St Anthony Pkwy
Phone 612 788 5286
E-mail dcweiler4@comcast.net

Saint Anthony Village

27TH AVENUE / PAHL AVENUE TRAFFIC STUDY
PUBLIC INFORMATION MEETING – July 16, 2018 – 6:00 PM

PLEASE COMMENT ON ANY ISSUES THE CITY SHOULD CONSIDER WHEN COMPLETING THE TRAFFIC STUDY?

⇒ I would be interested in the daily volumes on Roosevelt & both sections

⇒ I would be interested to know the number / % of cars rolling through stop signs

⇒ I would be interested in seeing the 85th % speed updated at the 2 mph increments by volume

Your Name Casey Scott
Address 2501 Pahl Ave NE
Phone 612-719-5038
E-mail caseyscott52@gmail.com

Saint Anthony Village

⇒ 27th is set @ 30 mph, 50 is silver Lake Rd. These do not seem to be comparable design's St Anthony Blvd also is posted 30 mph. I would be interested in seeing the physical comparisons.

over

⇒ what was the impact of adding a blinking stop sign on 29th?

WSB & Associates Inc.
701 Xenia Avenue South
Suite 300
Minneapolis, MN 55416

27TH AVENUE / PAHL AVENUE TRAFFIC STUDY
PUBLIC INFORMATION MEETING – July 16, 2018 – 6:00 PM

PLEASE COMMENT ON ANY ISSUES THE CITY SHOULD CONSIDER WHEN COMPLETING THE TRAFFIC STUDY?

Thank you for the meeting to discuss the preliminary results of the study. In moving forward & your planning for a potential + in vehicle traffic in the area, my hope is for: 1.) the ongoing safety of individuals walking, biking, etc. in our peaceful neighborhood 2.) Not substituting flashing stop signs for those in place @ Roosevelt + 27th.

Your Name Nancy Miller
Address 2501 27th Ave N.E.
Phone 612-706-9794
E-mail millerna@comcast.net

Saint Anthony Village

Chuck Rickart

From: Nora <Nora_and_Kent@yahoo.com>
Sent: Monday, July 16, 2018 12:06 PM
To: Chuck Rickart
Subject: Traffic study of 27th Avenue NE in St. Anthony Village

We are unable to attend the public information meeting tonight, but we would like to provide our comments on the traffic study. We reside at
2520 27th AVE NE in St. Anthony. Our house is on the south side of the street, so our alley will be across from the new development. We are thankful that the new plan does not have exits into our alley from the development. One concern that we have is that drivers may be tempted to use our alley from Stinson to Kenzie Terrace as a way to avoid the three stop signs that are on 27th Avenue. Currently, the alley allows two-way traffic even though it is only one lane wide. On the rare occasions that we meet another car in the alley, one car can easily pull off into one of the driveways while the other car passes. This works fine for now because there is so little traffic in the alley, but it will be a problem if traffic increases due to the new development. There are also many families on the street with young children or grandchildren. Additional traffic on the alley would make it less safe for those children to play in their backyards or ride their bikes down the alley.

Making the alley one-way east-to-west might solve the "shortcut"
problem, although it would be an inconvenience for those of us who live on the alley. Speed bumps would be another way to discourage drivers from cutting through to avoid 27th Avenue, but we understand that speed bumps can cause additional noise and pollution as cars slow and speed up. We would be interested to know if there are other options for discouraging drivers from using the alley as a shortcut. We appreciate that the City of St. Anthony Village is working on this issue.

Nora Hoaglund and Kent Myhrman

July 10, 2018

TO Chuck Rickart

FROM Dorothy Petrowski
2709 Coolidge ST NE
ST ANTHONY VILLAGE MN 55418
612-789-2080

RE 27th Avenue NE / Pahl Avenue NE Area Traffic Study

I am glad you are conducting this traffic study especially since there are more and more little kids here. I cannot attend the meeting on July 16 and would like to make you aware of dangerous traffic problems in my neighborhood.

Pahl Avenue could be designed to dead-end at Coolidge. Or we need a stoplight at Pahl and Coolidge. Kids on their bikes riding east on Pahl Avenue come out onto Coolidge. The street curves for Coolidge cross traffic and it is impossible to see these kids coming to the intersection of Pahl and Coolidge. My address is 2709 Coolidge, and my front window faces this intersection.

Making this intersection even more dangerous is cars cutting through on Coolidge to avoid the congestion at the convergence of St. Anthony Boulevard, Silver Lake Road and Highway 88. Speeding and ignoring stop signs is common.

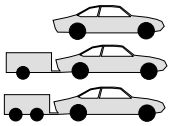
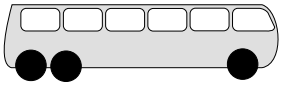
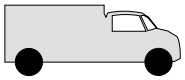
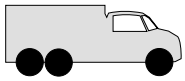
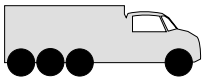
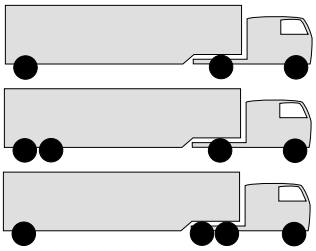
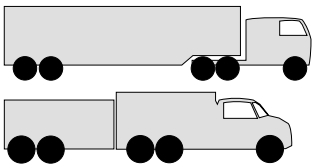
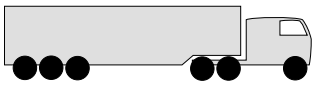
One other problem that needs to be fixed; I live at 2709 Coolidge, and the street sign in front of my house says 27th Avenue. 27th ends at the Mobil Gas Station, and then becomes Coolidge. Please fix the street signs because deliveries are a constant problem.

Hoping you have a successful meeting resulting in changes that will prevent tragedy.

Thank you,
Dorothy Petrowski
612-789-2080

Figure 1

FHWA VEHICLE CLASSIFICATION

CLASS GROUP		DESCRIPTION	NO. OF AXLES
1		MOTORCYCLES	2
2		ALL CARS CARS CARS W/ 1-AXLE TRAILER CARS W/ 2-AXLE TRAILER	2 3 4
3		PICK-UPS & VANS 1 & 2 AXLE TRAILERS	2, 3, & 4
4		BUSES	2 & 3
5		2-AXLE, SINGLE UNIT	2
6		3-AXLE, SINGLE UNIT	3
7		4-AXLE, SINGLE UNIT	4
8		2-AXLE, TRACTOR, 1-AXLE TRAILER (2&1) 2-AXLE, TRACTOR, 2-AXLE TRAILER (2&2) 3-AXLE, TRACTOR, 1-AXLE TRAILER (3&1)	3 4 4
9		3-AXLE, TRACTOR, 2-AXLE TRAILER (3&2) 3-AXLE, TRUCK W/ 2-AXLE TRAILER	5 5
10		TRACTOR W/ SINGLE TRAILER	6 & 7
11		5-AXLE MULTI-TRAILER	5
12		6-AXLE MULTI-TRAILER	6
13	ANY 7 OR MORE AXLE		7 or more
14	NOT USED		
15	UNKNOWN VEHICLE TYPE		

HEAVY TRUCKS