TRAFFIC DEVICE INSTALLATION POLICY

INTERSECTION CONTROL POLICY

PURPOSE

This document outlines policies for determining the location and type of intersection control signage on roadways owned and maintained by the City of St. Anthony Village. The City of St. Anthony Village is implementing this policy for several reasons:

- Effective traffic control is achieved by exercising the least intrusive control to achieve safe traffic flow. When excessive control or unnecessary control is used, motorists feel imposed upon and frequently will ignore the traffic control device. This can lead to severe consequences involving collisions and possibly personal injury.
- Consistent application of intersection control devices increases safety to both motorists and pedestrians within the community.
- Research conducted by the Federal Highway Administration shows that adding stop signs are not effective in addressing the issue of speed. The purpose of stop signs is to assign right-of-way at an intersection, not to control speeding.
- The Federal Highway Administration also concluded that adding stop signs do not necessarily improve safety at an intersection.
- A common misconception is that stop signs at an intersection are needed because an accident has occurred there recently. It is important to keep in mind that accidents are random events. Many collisions are the result of driver error and are not the fault of poor design or insufficient traffic control.
- Public understanding of the function of stop signs is one of the most critical elements in reducing speeding and traffic accidents.

A consistent application of the policy serves both the motorist and resident within the City. Stop signs can be an effective safety measure if properly warranted. However, they should not be installed inappropriately where they may be ignored by drivers, needlessly interrupt traffic flow, and negatively affect fuel consumption, the environment, or cause needless noise.

The traffic control at an intersection is critical to the operation of both intersecting roadways. If incorrect traffic control is installed for the existing traffic conditions and topographic characteristics of the intersection, undue delays and even unnecessary accidents could occur. The traveling public, especially persons not familiar with the area, typically drive based on instinct. Drivers subconsciously evaluate their surroundings to determine if a stop sign should or should not be located on an intersection approach.

PROCESS

City staff will formalize the traffic safety concern or request. City staff will assist concerned residents to complete a "Traffic Study Request Form" (appendix A) and gather the pertinent facts to help clearly define the problem and seek a possible solution. Traffic Study Request forms will be reviewed by the City Manager (or designee), Public Works Director, Police Chief and City Engineer. City staff will complete an "Intersection Control Justification Worksheet" (Appendix C) and share the results with all interested parties. If a disagreement with the decision or additional information and/or facts that are persuasive as related to the City warrants/policies for the requested sign, interested parties may appear at a City Council meeting and present viewpoint. Any subsequent review of the same or similar request is at the discretion of the City Council.

The City Council is the final authority on traffic safety matters, in all cases of traffic control changes to intersections under City of St. Anthony Village jurisdiction, approval by resolution by Council shall be required. Requests for removal of a sign will follow the same process.

POLICY

The following information explains St. Anthony Village's policies on intersection traffic control and the correct use of stop signs.

LOCAL STREET "RESIDENTIAL" STOP SIGNS

The purpose of the local street stop sign policy is to provide fair and uniform treatment of all requests for stop signs in residential areas.

1. The provisions of the Minnesota Manual on Uniform Traffic Control Devices (MUTCD) shall be followed. Relevant speed, volumes, accident records and sight obstructions shall be reviewed when considering the installation of a stop sign. The following MUTCD standards will be applied:
    a. If an intersection experiences five (5) or more right angle accidents in a three (3) year period, stop signs should be considered.
    b. If the presence of a sight obstruction is contributing to accidents at an intersection, removal of the sight obstruction should be sought before considering a stop sign.
    c. If the 85th percentile speed on any leg of an intersection is more than five (5) MPH over the posted speed limit, a stop sign should be considered for the intersecting street.
    d. If traffic volumes exceed 500 vehicles per day on each of the intersecting streets, stop signs should be considered.
2. Absent traffic data which clearly indicates the need for a stop sign, a residential intersection should be left uncontrolled.
3. Residential stop signs shall not be installed in an attempt to control speed.
4. Residential stop signs shall not be installed in an attempt to control volume.
5. Residential stop sign appropriateness will be reviewed as part of any street reconstruction.

COLLECTOR STREET STOP SIGNS

The purpose of the collector street stop sign policy is to provide fair and uniform treatment of all requests for multiway, all way, and 4-way stop signs.

1. The provisions of the Minnesota Manual on Uniform Traffic Control Devices (MUTCD) shall be followed. Relevant speed, volumes, accident records and sight obstructions shall be reviewed by City Staff when considering the installation of a stop sign.
2. Any of the following conditions may warrant a multiway stop sign installation:
    a. An accident problem, as indicated by five or more reported accidents in a 12-month period of a type susceptible to correction by a multiway stop installation. Such accidents include right- and left-turn collisions as well as right angle collisions.
    b. Minimum traffic volumes:
        1) The total vehicular volume entering the intersection from all approaches must average at least 500 vehicles per hour for any 8 hours of an average day, and
        2) The combined vehicular and pedestrian volume from the minor street or highway must average 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 maximum hours, but
        3) When the 85-percentile approach speed of the major street traffic exceeds 40 miles per hour, the minimum vehicular volume warrant is 70 percent of the above requirements.
3. Multiway stop signs shall not be installed in an attempt to control speed.
4. Multiway stop signs shall not be installed in an attempt to control volume.
5. Absent traffic data, which clearly indicates the need for a multiway stop sign, control devices at an intersection will remain unchanged.
6. Multiway stop sign appropriateness will be reviewed as part of any street reconstruction.

DRIVER FEEDBACK SIGN INSTALLATION POLICY

PURPOSE

The purpose of this policy is to outline the processes and procedures for installing Driver Feedback (DFB) signs as a traffic calming device. The City of St. Anthony Village is implementing this policy for several reasons:

- Currently local City streets in the City of St. Anthony Village have a speed limit of 30 mph. On some of these streets the speed of traffic is a concern that maybe actual or perceived.
- Driver feedback signs are traffic calming devices designed to slow speeders down by alerting them of their speed. They are designed to increase driver speed awareness and roadway safety in residential communities, schools, hospital zones, business parks, highway and road construction sites, police enforcement zones or just about anywhere speeding is a problem.
- Vehicle speeds on local City streets are determined based upon guidelines from Minnesota Statutes, Minnesota Department of Transportation (MnDOT) policies and Minnesota Manual on Uniform Traffic Control Devices (MnMUTCD) (see Appendix B).
- DFB signs display the speed of approaching vehicles, making speeding drivers aware that they are exceeding the speed limit.
- DFB signs may be used to address excessive mean speed and 85th percentile speed issues. Studies have shown that: speeders will slow down up to 80% of the time when alerted by a radar sign; typical speed reductions are from 10-20%, and; overall compliance with the posted speed limit will go up by 30-60%.

PROCESS

City staff will have primary responsibility for determining the need for installation of DFB's on St Anthony Village city streets. City staff will assist concerned residents to complete a "Traffic Study Request Form" (Appendix A) and gather the pertinent facts to help clearly define the problem and seek a possible solution. Traffic Study Request forms will be reviewed by the City Manager (or designee), Public Works Director, Police Chief and City Engineer.

It is the policy of the City of St Anthony Village to follow the guidelines and recommendations contained in the most current approved Minnesota Manual on Uniform Traffic Control Devices (MnMUTCD) to make decisions on design, locations, installation and maintenance of signs, pavement markings and traffic calming devices. Minnesota State Statute 169.06, Sub. 3 states, "All traffic control devices erected shall conform to the state manual and specifications." (Appendix B)

Following a determination that the street segment meets the eligibility guidelines; City staff will complete a Driver Feedback sign justification and share the results with all interested parties. If a disagreement with the decision or additional information and/or facts that are persuasive as related to the City warrants/policies for the requested installation, interested parties may appear at a City Council meeting and present viewpoint. Any subsequent review of the same or similar request is at the discretion of the City Council.

The City Engineer or designee is responsible for coordinating with other agencies (park board, state and county) when a traffic evaluation request is received regarding a park board, state or county roadway within the city limits.

The City Council is the final authority on traffic safety matters, in all cases of traffic changes to streets under City of St. Anthony Village jurisdiction, approval by resolution by Council shall be required. Requests for removal of a sign will follow the same process.

EVALUATION
If a speed concern is identified where a Driver Feedback (DFB) sign is an appropriate solution, the following guidelines should be followed:

Step 1 - Eligibility:

In order for a roadway to be eligible for consideration of a DFB, it needs to meet the following minimum criteria.

- Classified as a local or collector street
- Length greater than 1,000 feet
- Traffic volumes greater than 1,000 vehicles per day
- Posted speed of 30 mph
- Cannot be a cul-de-sac

Step 2 - Data Collection:

For eligible roadway segments, available data should be collected including:

- Average Daily Traffic Volume
- Crash History
- Pedestrian Traffic Volumes (if applicable)
- Vehicle Speeds
- Site Topography

Step 3 - Evaluation Process:

If the roadway is eligible for consideration for a DFB sign, a study will be conducted using the collected data. In analyzing the speed data, the 85th percentile speed and Pace of the traffic of the collected data will be calculated. Pace and 85th Percentile speed are defined as follows:

- Pace – The 10 MPH range of speeds containing the largest number of observations
- 85th Percentile Speed – The speed at or below which 85 percent of the traffic is moving.

Typically, the 85th Percentile Speed is within two miles per hour of the upper limit of the Pace. A normal speed distribution will contain approximately 70% of the sample within the Pace with 15% above and 15% below.

Based on the data collected for streets with a posted speed limit of 30 mph the following criteria will be used to determine if a DFB sign or other mitigations should be considered:

1. 85% Speed less than 30 mph with less than 15% over the Pace:
    - No further action required

2. 85% Speed between 30 mph and 33 mph with less than 15% over the Pace:
    - Continue to monitor location
    - Additional enforcement

3. 85% Speed between 33 mph and 35 mph with more than 15% over the Pace:
    - Installation of Driver Feedback Signs

4. 85% Speed is greater than 35 mph with more than 15% over the Pace:
    - Installation of Driver Feedback Signs
    - Consider evaluation for potential engineering solutions.

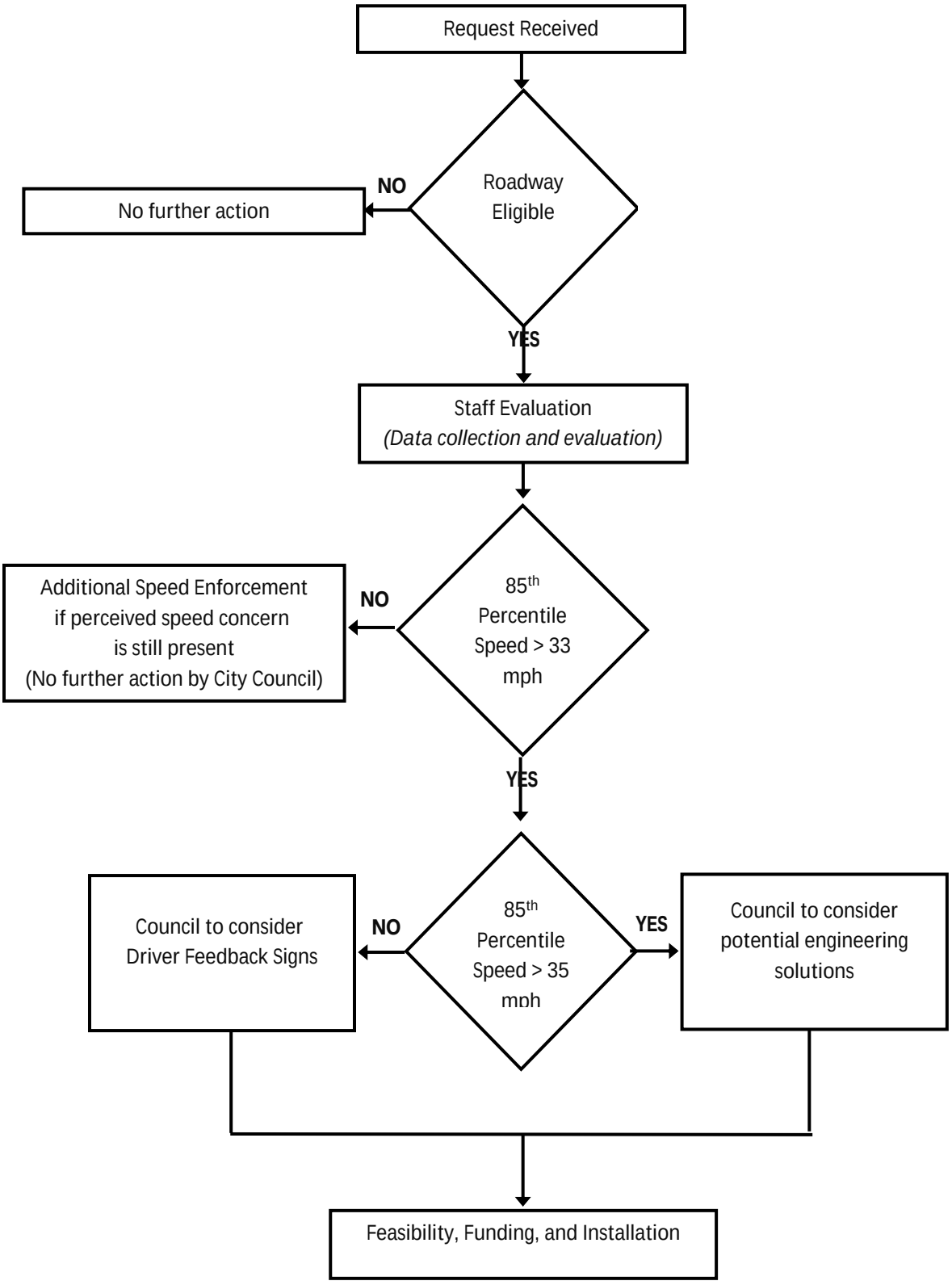
Step 4 – Implementation/Funding:

Upon the recommendation of City staff and approval by the City Council, the appropriate measures will be implemented by the City once funding is secured. Possible funding sources include:

- Inclusion in the City's Capital Improvement Plan (CIP)
- Special request from the City Council
- Assessment process

Figure 1 represents the decision diagram used in the speed concern evaluation process.

Figure 1 – Driver Feedback Sign Evaluation Process



Appendix A

Traffic Study Request Form

Date:_____

Requested by (Name, Address, & Phone Number):

_____

_____

_____

Description of the Problem:

_____

_____

_____

_____

_____

_____

Time of Day Problem Occurs:

_____

_____

_____

Requested Action of the City:

_____

_____

_____

Sketch intersection of roadway segment showing where the problem occurs:

Return form to City Hall
3301 Silver Lake Rd NE
St. Anthony, MN 55418

Appendix B

SPEED LIMIT DETERMINATION

The City of St Anthony Village will address speed limit related concerns based upon guidelines from Minnesota Statutes, Minnesota Department of Transportation (MnDOT) policies, Minnesota Manual on Uniform Traffic Control Devices (MnMUTCD), and engineering judgement.

The basis for setting a speed limit follows the Minnesota State Statutes and the MnMUTCD. The following segments of information were taken from the Minnesota Statutes and MnMUTCD, those of which apply to the City of St Anthony Village. A exert from the FHWA discussing best practices is also included showing how engineering studies are used to set new speed limits or change existing ones.

Minnesota Statues:

169.011 DEFINITIONS

Subdivision 64. Residential Roadway

A "residential roadway" is a city street or town road whose length is up to a half-mile.

169.14 SPEED LIMITS, ZONES; RADAR.

Subdivision 1. Duty to drive with due care.

No person shall drive a vehicle on a highway at a speed greater than is reasonable and prudent under the conditions. Every driver is responsible for becoming and remaining aware of the actual and potential hazards then existing on the highway and must use due care in operating a vehicle.

In every event speed shall be so restricted as may be necessary to avoid colliding with any person, vehicle or other conveyance on or entering the highway in compliance with legal requirements and the duty of all persons to use due care.

Subdivision 2. Speed limits.

(a) Where no special hazard exists the following speeds shall be lawful, but any speeds in excess of such limits shall be prima facie evidence that the speed is not reasonable or prudent and that it is unlawful; except that the speed limit within any municipality shall be a maximum limit and any speed in excess thereof shall be unlawful:

(1) 30 miles per hour in an urban district;

(Subdivisions 2.2-2.7 do not apply here, therefore were excluded)

(8) 35 miles per hour in a rural residential district if adopted by the road authority having jurisdiction over the rural residential district.

(c) A speed limit adopted under paragraph (a), clause (8), is not effective unless the road authority has erected signs designating the speed limit and indicating the beginning and end of the rural residential district for the roadway on which the speed limit applies.

MnMUTCD:

2B.13 Speed Limit Sign

A Standard: Speed zones (other than statutory speed limits) shall only be established on the basis of an engineering study that has been performed in accordance with traffic engineering practices.

The engineering study shall include an analysis of the current speed distribution of free-flowing vehicles.

The speed limit (R2-1) sign shall display the limit established by law, ordinance, regulation, or as adopted by the authorized agency based on the engineering study. The speed limits displayed shall be in multiples of 5 mph. Speed Limit signs, indicating speed limits for which posting is required by law, shall be located at the points of change from one speed limit to another.

An Option: Other factors that may be considered when establishing speed limits are the following:

- Road characteristics, shoulder condition, grade, alignment, and sight distance
- The pace speed
- Roadside development (nearby school) and environment
- Parking practices and pedestrian activity (mainly children)
- Reported crash experience for at least a 12-month period

Methods and Practices for Setting Speed Limits: An Informational Report by the FHWA Safety Program:

Most engineering approaches to speed limit setting are based on the 85th percentile speed—the speed at which 85 percent of free-flowing traffic is traveling at or below. The typical procedure is to set the speed limit at or near the 85th percentile speed of free-flow traffic. Adjustments to either increase or decrease the speed limits may be made depending on infrastructure and traffic conditions.

The 85th percentile speed method is also attractive because it reflects the collective judgment of the vast majority of drivers as to a reasonable speed for given traffic and roadway conditions.

This is aligned with the general policy sentiment that laws (i.e., speed limits) should not make people acting reasonably into law-breakers. Setting a speed limit even 5 mph below the 85th percentile speed can make almost half the drivers illegal; setting a speed limit 5 mph above the 85th percentile speed will likely make few additional drivers legal.

Under the operating speed method of setting speed limits, the first approximation of the speed limit is to set the speed limit at the 85th percentile speed. The MnMUTCD recommends that the speed limit be within 5 mph of the 85th percentile speed of free-flowing traffic. The posted speed limit shall be in multiples of 5 mph.

While the MnMUTCD recommends setting the posted speed limits near the 85th percentile speed, and traffic engineers say that agencies are using the 85th percentile speed to set speed limits, the speed limit is often set much lower. At these locations, the 85th percentile operating speeds exceed the posted speed limits; and, in many cases, the 50th percentile operating speed is either near or exceeds that posted speed limit as well. Many agencies deviate from their agency's written guidelines and instead post lower speed limits. According to an ITE Engineering Council Technical Committee survey, these reduced speed limits are often the result of political pressures.

NOTE: Federal and State speed limit guidelines define the 85th percentile speed as a "reasonable speed" or the speed in which 85% of motorists travel at or below. Experience has shown that the 85th Percentile Speed most closely provides for a safe and reasonable speed limit. Therefore, it can be expected that on a typical roadway, approximately 15 percent of the vehicles may be traveling at speeds greater than the posted speed limit.

It is important to note that setting speed limits lower than 85th percentile speed does not encourage compliance with the posted speed limit.

Appendix C

RESIDENTIAL STREET ALL-WAY STOP CONTROL JUSTIFICATION WORKSHEET

INTERSECTION LOCATION: _____

EXISTING TRAFFIC CONTROL: _____ **DATE:** _____

This Residential Street Stop Control Justification Worksheet is applicable only to intersections of residential streets with speed limits of 30 miles Per hour. This procedure is "not" to be applied to the intersection of a local residential street with a major collector or arterial street as identified in the City's Transportation Plan.

APPROACH SPEEDS

			1		2
Uncontrolled approach speed. Check two boxes, one for the 85th percentile approach speed group and one for the highest recorded speed group with two or more observations.		30 miles per hour or less	0 points	☐	☐
		31 to 35 miles per hour	10 points	☐	☐
_____ 1	= 85th percentile approach speed (highest approach)	36 to 38 miles per hour	20 points	☐	☐
		39 to 42 miles per hour	30 points	☐	☐
_____ 2	= highest recorded speed group with two or more observations.	43 to 45 miles per hour	40 points	☐	☐
		46 miles per hour or more	50 points	☐	☐

TRAFFIC VOLUMES

			1		2
Intersection approach daily traffic volume. Check one box for the total major street approach volume and one box for the highest minor street leg.		Less than 250 vehicles per day	0 points	☐	☐
		250 to 450 vehicles per day	10 points	☐	☐
_____ 1	= total daily traffic volume for both major street approaches	450 to 700 vehicles per day	20 points	☐	☐
		700 to 1000 vehicles per day	30 points	☐	☐
_____ 2	= highest minor street approach daily traffic volume (times two).	More than 1000 vehicles per day	40 points	☐	☐

SIGHT DISTANCE RESTRICTION

The safe stopping sight distance on any uncontrolled approach is restricted to less than 300 feet by horizontal and/or vertical roadway alignment, or by other "permanent" obstructions to sight distance. (See Figure 1)	50 points	☐
The safe stopping sight distance on any uncontrolled approach is greater than 300 feet but less than 450 feet due to horizontal and/or vertical roadway alignment, or other "permanent" obstructions to sight distance. (See Figure 1)	10 points	☐

OTHER CONDITIONS

The number of reported traffic accidents at the subject intersection within the past 12 months	_= _____x 10 points =_____	
School, park, bus stop or other major pedestrian generator causing many pedestrians to cross the subject intersection.	20 points	☐

PREPARED BY: _____ **Total Points** ☐

***If the worksheet point total is greater than or equal to 100 points, all-way stop control may be "justified" at the subject intersection.**