

VILLAGE OF DOWNERS GROVE
REPORT FOR THE VILLAGE COUNCIL MEETING
JULY 13, 2010 AGENDA

SUBJECT:	TYPE:	SUBMITTED BY:
All-Way Stop Sign Installation: Middaugh Avenue at Grant Street	✓ Resolution Ordinance Motion Discussion Only	Nan Newlon, P.E. Director of Public Works

SYNOPSIS

An ordinance has been prepared to amend sections of the Municipal Code concerning the upgrade to All-Way STOP control at the intersection of Middaugh Avenue and Grant Street, in the vicinity of Herrick Middle School.

STRATEGIC PLAN ALIGNMENT

The Five Year Plan and Goals for identified *Exceptional Services and Communication*.

FISCAL IMPACT

N/A

RECOMMENDATION

Approval on the July 20, 2010, active agenda.

BACKGROUND

The intersection of Middaugh Avenue and Grant Street is currently controlled by a “Two-Way” stop sign, which regulates northbound and southbound traffic on Middaugh. Staff received a request from concerned residents inquiring about vehicular and pedestrian safety at this location.

Staff conducted an intersection warrant analysis to determine the merits of modifying the stop sign control at this location. There are a series of physical, operational, and neighborhood factors that contribute to the overall performance at this location. First, the close proximity of Herrick Middle School is a major factor. Second, the close presence of Pierce Downer School also results in parking and pedestrian activity extending to this location. Thirdly, the existence of North High School several blocks to the east contributes to the traffic mix.

Based on the intersection warrant analysis, staff determined this location meets or exceeds the minimal criteria for modification. Staff recommends the installation of “All-Way” stop sign at the intersection of Middaugh Avenue and Grant Street. This item was not presented to the Transportation and Parking Commission due to the fact that staff’s analysis of the intersection found that a traffic control device was necessary at the location. Staff recommends approval.

ATTACHMENTS

- Ordinance
- Exhibit
- Warrant

ORDINANCE NO. _____

AN ORDINANCE AMENDING TRAFFIC PROVISIONS FOR A FOUR-WAY STOP AT THE INTERSECTION OF GRANT AND MIDDAUGH

BE IT ORDAINED by the Village Council of the Village of Downers Grove in DuPage County, Illinois, as follows: (Additions are indicated by **shading/underline**; deletions by ~~strikeout~~):

Section 1. That Section 14.80 is hereby amended to read as follows:

14.80 Isolated stop signs.

There shall be erected in conspicuous places as hereinafter designated, signs lettered with the word "Stop", which signs shall be so located as to direct vehicular traffic on the specified streets to come to a full stop before proceeding into or across the intersecting streets:

* * *

~~*Middaugh Avenue.* At the intersection of Middaugh Avenue and Grant Street, to direct traffic proceeding northerly or southerly on Middaugh Avenue to come to a full stop before proceeding across or into Grant Street.~~

* * *

Section 2. That Section 14.80.1. is hereby amended to read as follows:

14.80.1. Four-way stop signs.

There shall be erected in conspicuous places at the following intersections signs lettered with the words "4-Way Stop", which signs shall be so located as to direct all traffic to come to a full stop before proceeding into the intersection:

* * *

Grant Street and Middaugh Avenue.

* * *

Section #3. That all ordinances or parts of ordinances in conflict with the provisions of this ordinance are hereby repealed.

Section #4. That this ordinance shall be in full force and effect from and after its passage and publication in the manner provided by law.

Mayor

Passed:
Published:
Attest: _____
Village Clerk



Herrick
Middle
School

1100 ADT

567 vpd
24.50 mph

532 vpd
23.86 mph

429 vpd
22.59 mph

606 vpd
30.04 mph

820 ADT

GRANT ST

1020 ADT

393 vpd
29.85 mph

416 vpd
31.54 mph

OAKWOOD AVE

428 vpd
28.06 mph



407 vpd
28.41 mph

840 ADT

LINCOLN ST

LINSCOTT AVE

Legend

-  = Existing
-  = Proposed

vpd = vehicles per day
ADT = Average Daily
(24-hr) Traffic
mph = miles per hour

STOP Sign Warrant Data
Middaugh Ave. at Grant St.
June, 2010



VILLAGE OF DOWNERS GROVE RESIDENTIAL ALL-WAY STOP WARRANT WORKSHEET

This worksheet has been developed to comprehensively address the concerns of residents toward determining the appropriate type of traffic control for the intersection of residential streets.

This Residential All-Way Stop Warrant Worksheet is applicable to the intersection of only residential streets with speed limits of 25 miles per hour or less. This procedure is not to be applied to the intersection of a residential street with a collector or arterial street as identified in the Village's Roadway Classification Map.

Location: **Middaugh Ave. & Grant St.** **DATA** **POINTS**

FACTOR

1. **Functional classification** and designation of intersecting streets as residential with speed limits not greater than 30 m.p.h.

STOP – This procedure is not applicable
If one of the streets of the intersection
Is a collector or arterials street as
Identified in the Village's Master Thoroughfare Plan

2. **Highest measured average of vehicle** speed (85th percentile recorded speed) of the approaches.

0 points for 15.0 to 32.5 mph	24.50, 30.04, 29.85, 28.41 <u> 0 </u>
25 points for 32.6 to 37.5 mph	_____
60 points for 37.6 to 42.5 mph	_____
120 points for 42.6 to 50.0 mph	_____

Subtotal for Factor 2 ----- 0



VILLAGE OF DOWNERS GROVE
RESIDENTIAL ALL-WAY STOP WARRANT WORKSHEET

FACTOR

	<u>DATA</u>	<u>POINTS</u>
<p>3. SafeWalking School Route – – Go to (b) in this section if intersection is currently protected by adult school crossing guard</p>		
<p>a. Numbers of walking School Children on Safe Walking School Pedestrian Route (Highest crossing 1 hour period/average day)</p>		
<p>2 points for each elementary child crossing the intersection (separate from pedestrians as applied under Factor 4)</p>	_____	_____
<p>1 point for each Junior High School child crossing the intersection (separate from pedestrians as applied under Factor 4)</p>	_____	_____
<p>b. Proximity of Intersection to School</p>		
<p>200 points if intersection is primary walking school route crossing at an elementary or junior high school)</p>	_____	__200__
<p>100 points if intersection is adjacent to an elementary or junior high school but is not the primary crossing intersection at the school) (Pierce Downer School)</p>	_____	__100__
<p>Subtotal for Factor 3</p>		300



VILLAGE OF DOWNERS GROVE
RESIDENTIAL ALL-WAY STOP WARRANT WORKSHEET

FACTOR

	<u>DATA</u>	<u>POINTS</u>
4. Pedestrians/Bicyclists (other than school)		
1 point for each pedestrian/bicyclist crossing the intersection per average hour of highest four hours (weekdays – Monday through Friday)	_____	_____
2 points for each pedestrian/bicyclist younger than 13 crossing the intersection per average hour of highest two hours)	_____	_____
50 points for each visually/physically/aurally impaired pedestrian with special needs crossing the intersection per average hour of the highest two hours	_____	_____
10 points for each approach without a sidewalk	_____	__10__
Subtotal for Factor 4		10

	<u>DATA</u>	<u>POINTS</u>
5. Traffic crash experience and types of Crashes		
75 points for each right angle collision during the last 12 months correctable by All-Way STOP control	__0__	__0__
20 points for each collision other than right angle as noted above	__0__	__0__
Subtotal for Factor 5		0



VILLAGE OF DOWNERS GROVE
RESIDENTIAL ALL-WAY STOP WARRANT WORKSHEET

FACTOR

	<u>DATA</u>	<u>POINTS</u>
6. Sight obstructions and adequacy of sight distance – The lowest of the Critical Approach Speeds (CAS) of each approach		
__20__, __20__, __20__, __20__		
20 points per CAS less than 20 mph	_____	__80__
or		
50 points per CAS less than 10 mph	_____	_____
or		
75 points per CAS less than 5 mph	_____	_____
Subtotal for Factor 6 -----		80

	<u>DATA</u>	<u>POINTS</u>
7. Unexpected and unusual traffic hazards and their proximity to a residential intersection		
20 points for any bridge/underpass within 1 block	_____	__0__
50 points for any at-grade railroad crossing within 300 feet	_____	__0__
50 points for any curve/hill within 300 feet which restricts view of the intersection	_____	__0__
25 – 50 points for any other unique situation not noted above (unusual geometrics, human factors, etc.)	_____	__0__
Subtotal for Factor 7 -----		0



VILLAGE OF DOWNERS GROVE
RESIDENTIAL ALL-WAY STOP WARRANT WORKSHEET

FACTOR

	<u>DATA</u>	<u>POINTS</u>
8. Proximity of parks , churches, libraries, shopping centers, bus stops, YMCA's, swim & racket clubs		
25 points for each adjacent (or within 300 feet) public use facility	_____	__0__
Subtotal for Factor 8		0

	<u>DATA</u>	<u>POINTS</u>
9. Current conditions of the intersection, the approaching streets, their width, presence of shoulders and their width, street lighting, parking		
25 points for street width < 22 feet If street width > 36 feet	__	__0__
Note #1: Stop control of any approach wider Than 36 feet will experience operational problems and present a special hazard.		
15 points for street approaches with roll curbs, or no curbs.	No curbs	__15__
20 points for no street lighting	_____	__0__
10 points for on-street parking within 50 feet on any of approach	__	__40__
Subtotal for Factor 9		55



VILLAGE OF DOWNERS GROVE
RESIDENTIAL ALL-WAY STOP WARRANT WORKSHEET

FACTOR

10. Traffic volumes	<u>DATA</u>	<u>POINTS</u>
a. Total of all approach traffic volumes		
1 point for each vehicle approaching intersection during average hour of 8 hours of an average weekday	74+112+117+90 _393_	 _393_
b. Adjustment for unequal approach volumes		
Subtract following points for unequal Approach volumes (total of minor street Less than average of 160 vehicles per hour):	74+112	
0 points for minor volume greater than 160	_186_	_0_
50 points for minor volumes of 120 to 159	_____	_____
100 points for minor volumes of 100 to 119	_____	_____
120 points for minor volumes of 75 to 99	_____	_____
150 points for minor volumes of 40 to 74	_____	_____
Subtotal for Factor 10 -----		393

11. Adjacent All-Way Stops	<u>DATA</u>	<u>POINTS</u>
Subtract 100 points if any adjacent Intersection has All-Way STOP or signal control	_____	_-100_
Subtract 50 points if any adjacent Intersection stops or yields same Street	_____	_-50_
Subtotal for Factor 11 -----		-150

SUM of TOTAL POINTS OF FACTORS → **688**

Sum Less than 500 points _____ YES

Sum 500 or More points X YES

IF SUM EXCEEDS 500 POINTS, Residential All-Way Stop Control WARRANT IS SATISFIED, AND STAFF RECOMMENDS All-Way STOP signs be Installed.