Legistar: 130437

To:	Chairperson and Transportation and Safety Committee
From:	Frank Kalisik, Civil Engineer II FK
Through:	Carl S. Goldsmith, Director of Public Works CG
Date:	August 29, 2013
Subject:	Norbury Ave. and Taylor Rd. – Request for a Stop Sign

130437; Request to Install a Stop Sign at the Intersection of Norbury Ave. and Taylor Rd.

A resident has requested the placement of a Stop sign at the intersection of Norbury Avenue and Taylor Road. Currently, the intersection is controlled by a Yield sign on Norbury Avenue. Application of a Stop sign should be in accordance with the guidance of the Manual of Uniform Traffic Control Devices (MUTCD). The following is the information obtained and it's applicability to the MUTCD.

State or local laws written in accordance with the "Uniform Vehicle Code" establish the right of-way rule at intersections having no regulatory traffic control signs such that the driver of a vehicle approaching an intersection must yield the right-of-way to any vehicle or pedestrian already in the intersection. When two vehicles approach an intersection from different streets or highways at approximately the same time, the right-of-way rule requires the driver of the vehicle on the left to yield the right-of-way to the vehicle on the right. The right-of-way can be modified at through streets or highways by placing YIELD signs or STOP signs on one or more approaches.

Guidance:
Engineering judgment should be used to establish intersection control. The following factors should be considered:

A. *Vehicular, bicycle, and pedestrian traffic volumes on all approaches;* *(765 ADT- Vehicles)*
B. *Number and angle of approaches;* *(4 approaches at 90 degrees)*
C. *Approach speeds;* *(Ave speeds of 30 mph with 30 mph posted speed limit)*
D. *Sight distance available on each approach; and* *(There are significant sight triangle issues, such as a vertical curve on Taylor Road to the west, and numerous parkway/private property tree interferences.)*
E. *Reported crash experience.* *(6 Accidents have occurred in the past 5 years; 4 of these cited the inability of the yielding vehicle operator on Norbury Avenue to see approaching cars on Taylor Road, and the other 2 cited the drivers on Norbury Avenue were not aware of the yield sign.)*

YIELD or STOP signs should be used at an intersection if one or more of the following conditions exist:

A. *An intersection of a less important road with a main road where application of the normal right-of-way rule would not be expected to provide reasonable compliance with the law;* *(Not Applicable)*
B. *A street entering a designated through highway or street; and/or* *(Not Applicable)*
C. *An unsignalized intersection in a signalized area.* *(Not Applicable)*

In addition, the use of YIELD or STOP signs should be considered at the intersection of two minor streets or local roads where the intersection has more than three approaches and where one or more of the following conditions exist:

A. *The combined vehicular, bicycle, and pedestrian volume entering the intersection from all approaches averages more than 2,000 units per day;* *(Not Applicable)*
B. *The ability to see conflicting traffic on an approach is not sufficient to allow a road user to stop or yield in compliance with the normal right-of-way rule if such stopping or yielding is necessary; and/or* *(Possible)*
C. *Crash records indicate that five or more crashes that involve the failure to yield the right-of-way at the intersection under the normal right-of-way rule have been reported within a 3-year period, or that three or more such crashes have been reported within a 2-year period.* *(Not Applicable, as 6 reported crashes in the past five years only 3 have been within the past 3 years. However, in 2008, 3 accidents did occur.)*

YIELD or STOP signs should not be used for speed control.

Section 2B.06 STOP Sign Applications

Guidance:

At intersections where a full stop is not necessary at all times, consideration should first be given to using less restrictive measures such as YIELD signs (see Sections 2B.08 and 2B.09).

The use of STOP signs on the minor-street approaches should be considered if engineering judgment indicates that a stop is always required because of one or more of the following conditions:

A. *The vehicular traffic volumes on the through street or highway exceed 6,000 vehicles per day; (Not Applicable)*
B. *A restricted view exists that requires road users to stop in order to adequately observe conflicting traffic on the through street or highway; and/or (Possible)*
C. *Crash records indicate that three or more crashes that are susceptible to correction by the installation of a STOP sign have been reported within a 12-month period, or that five or more such crashes have been reported within a 2-year period. Such crashes include right-angle collisions involving road users on the minor-street approach failing to yield the right-of-way to traffic on the through street or highway. (Not Applicable)*

As demonstrated, a Stop sign may be warranted at this intersection on the basis of visual impediments for vehicles on Norbury Avenue, coupled with a questionable high accident history. Staff recommends modification of the Traffic Code to include replacement the Yield sign on Norbury Avenue at the intersection Taylor Road with a Stop sign. Attached is an aerial photograph of the intersection and most recent traffic analyzer study for your review. The following could be recommended to the Village Board of Trustees as a modification of the Traffic Code:

DELETE:

SCHEDULE V – PREFERENTIAL STREETS

In accordance with Section 10-9-5 and when signs are erected giving notice thereof, drivers of vehicles shall yield the right-of-way to the following streets at the intersections designated.

"Norbury Avenue will yield to Taylor Road."

ADD:

SCHEDULE IV – STOP STREETS

In accordance with Section 10-9-4 and when signs are erected giving notice thereof, drivers of vehicles proceeding on the streets designated below shall stop at the following locations.

Name of Street	Shall Stop At	Name of Street
Norbury Avenue	"	Taylor Road

CC: William Ware; District 6

Nu-Metrics Traffic Analyzer Study
Computer Generated Summary Report
City: Lombard
Street: WB Taylor at Norbury

A study of vehicle traffic was conducted with HI-STAR unit number 7B1740. The study was done in the lane on WB Taylor at Norbury in Lombard, Il in DuPage county. The study began on 08/20/2013 at 02:00 PM and concluded on 08/22/2013 at 02:00 PM, lasting a total of 48 hours. Data was recorded in 60 minute time periods. The total recorded volume of traffic showed 454 vehicles passed through the location with a peak volume of 24 on 08/20/2013 at 07:00 PM and a minimum volume of 0 on 08/21/2013 at 12:00 AM. The AADT Count for this study was 227.

SPEED

Chart 1 lists the values of the speed bins and the total traffic volume for each bin.

Chart 1

0 to 9	10 to 14	15 to 19	20 to 24	25 to 29	30 to 34	35 to 39	40 to 44	45 to 49	50 to 54	55 to 59	60 to 64	65 to 69	70 to 74	75 >
1	3	22	120	204	81	12	4	0	0	0	0	0	0	0

At least half of the vehicles were traveling in the 25 - 29 mph range or a lower speed. The average speed for all classified vehicles was 27 mph with 21.7 percent exceeding the posted speed of 30 mph. The HI-STAR found 0.00 percent of the total vehicles were traveling in excess of 55 mph. The mode speed for this traffic study was 25 mph and the 85th percentile was 31.85 mph.

CLASSIFICATION

Chart 2 lists the values of the eight classification bins and the total traffic volume accumulated for each bin.

Chart 2

0 to 21	22 to 39	40 to 49	50 to 59	60 to 69	70 to 79	80 to 139	140 >
425	19	3	0	0	0	0	0

Most of the vehicles classified during the study were Passenger Cars. The number of Passenger Cars in the study was 425 which represents 95.10 percent of the total classified vehicles. The number of Small Trucks in the study was 19 which represents 4.30 percent of the total classified vehicles. The number of Trucks/Buses in the study was 3 which represents 0.70 percent of the total classified vehicles. The number of Tractor Trailers in the study was 0 which represents 0.00 percent of the total classified vehicles.

HEADWAY

During the peak time period, on 08/20/2013 at 07:00 PM the average headway between the vehicles was 144.0 seconds. The slowest traffic period was on 08/21/2013 at 12:00 AM. During this slowest period, the average headway was 3600.0 seconds.

WEATHER

The roadway surface temperature over the period of the study varied between 74 and 128 degrees Fahrenheit. The HI-STAR determined that the roadway surface was Dry 0.00 percent of the time.

Nu-Metrics Traffic Analyzer Study
Computer Generated Summary Report
City: Lombard
Street: EB Taylor at Norbury

A study of vehicle traffic was conducted with HI-STAR unit number 7B1744. The study was done in the lane on EB Taylor at Norbury in Lombard, Il in DuPage county. The study began on 08/20/2013 at 02:00 PM and concluded on 08/22/2013 at 02:00 PM, lasting a total of 48 hours. Data was recorded in 60 minute time periods. The total recorded volume of traffic showed 624 vehicles passed through the location with a peak volume of 39 on 08/21/2013 at 05:00 PM and a minimum volume of 0 on 08/22/2013 at 01:00 AM. The AADT Count for this study was 312.

SPEED

Chart 1 lists the values of the speed bins and the total traffic volume for each bin.

Chart 1

0 to 9	10 to 14	15 to 19	20 to 24	25 to 29	30 to 34	35 to 39	40 to 44	45 to 49	50 to 54	55 to 59	60 to 64	65 to 69	70 to 74	75 >
1	4	12	134	277	132	44	8	3	2	1	0	0	0	0

At least half of the vehicles were traveling in the 25 - 29 mph range or a lower speed. The average speed for all classified vehicles was 28 mph with 30.7 percent exceeding the posted speed of 30 mph. The HI-STAR found 0.16 percent of the total vehicles were traveling in excess of 55 mph. The mode speed for this traffic study was 25 mph and the 85th percentile was 33.69 mph.

CLASSIFICATION

Chart 2 lists the values of the eight classification bins and the total traffic volume accumulated for each bin.

Chart 2

0 to 21	22 to 39	40 to 49	50 to 59	60 to 69	70 to 79	80 to 139	140 >
601	15	1	1	0	0	0	0

Most of the vehicles classified during the study were Passenger Cars. The number of Passenger Cars in the study was 601 which represents 97.20 percent of the total classified vehicles. The number of Small Trucks in the study was 15 which represents 2.40 percent of the total classified vehicles. The number of Trucks/Buses in the study was 1 which represents 0.20 percent of the total classified vehicles. The number of Tractor Trailers in the study was 1 which represents 0.20 percent of the total classified vehicles.

HEADWAY

During the peak time period, on 08/21/2013 at 05:00 PM the average headway between the vehicles was 90.0 seconds. The slowest traffic period was on 08/22/2013 at 01:00 AM. During this slowest period, the average headway was 3600.0 seconds.

WEATHER

The roadway surface temperature over the period of the study varied between 70 and 119 degrees Fahrenheit. The HI-STAR determined that the roadway surface was Dry 0.00 percent of the time.

Nu-Metrics Traffic Analyzer Study
Computer Generated Summary Report
City: Lombard
Street: NB Norbury at Taylor

A study of vehicle traffic was conducted with HI-STAR unit number 7B1745. The study was done in the lane on NB Norbury at Taylor in Lombard, Il in DuPage county. The study began on 08/20/2013 at 02:00 PM and concluded on 08/22/2013 at 02:00 PM, lasting a total of 48 hours. Data was recorded in 60 minute time periods. The total recorded volume of traffic showed 160 vehicles passed through the location with a peak volume of 14 on 08/21/2013 at 04:00 PM and a minimum volume of 0 on 08/20/2013 at 02:00 PM. The AADT Count for this study was 80.

SPEED

Chart 1 lists the values of the speed bins and the total traffic volume for each bin.

Chart 1

0 to 9	10 to 14	15 to 19	20 to 24	25 to 29	30 to 34	35 to 39	40 to 44	45 to 49	50 to 54	55 to 59	60 to 64	65 to 69	70 to 74	75 >
7	6	9	30	55	34	7	2	1	2	1	0	0	0	0

At least half of the vehicles were traveling in the 25 - 29 mph range or a lower speed. The average speed for all classified vehicles was 27 mph with 30.5 percent exceeding the posted speed of 30 mph. The HI-STAR found 0.65 percent of the total vehicles were traveling in excess of 55 mph. The mode speed for this traffic study was 25 mph and the 85th percentile was 33.51 mph.

CLASSIFICATION

Chart 2 lists the values of the eight classification bins and the total traffic volume accumulated for each bin.

Chart 2

0 to 21	22 to 39	40 to 49	50 to 59	60 to 69	70 to 79	80 to 139	140 >
145	7	1	0	0	0	1	0

Most of the vehicles classified during the study were Passenger Cars. The number of Passenger Cars in the study was 145 which represents 94.20 percent of the total classified vehicles. The number of Small Trucks in the study was 7 which represents 4.50 percent of the total classified vehicles. The number of Trucks/Buses in the study was 1 which represents 0.60 percent of the total classified vehicles. The number of Tractor Trailers in the study was 1 which represents 0.60 percent of the total classified vehicles.

HEADWAY

During the peak time period, on 08/21/2013 at 04:00 PM the average headway between the vehicles was 240.0 seconds. The slowest traffic period was on 08/20/2013 at 02:00 PM. During this slowest period, the average headway was 3600.0 seconds.

WEATHER

The roadway surface temperature over the period of the study varied between 74 and 125 degrees Fahrenheit. The HI-STAR determined that the roadway surface was Dry 0.00 percent of the time.

Nu-Metrics Traffic Analyzer Study
Computer Generated Summary Report
City: Lombard
Street: S.B.Norbury at Taylor

A study of vehicle traffic was conducted with HI-STAR unit number 811. The study was done in the lane on S.B.Norbury at Taylor in Lombard, Il in DuPage county. The study began on 04/01/2008 at 11:00 AM and concluded on 04/03/2008 at 11:00 AM, lasting a total of 48 hours. Data was recorded in 60 minute time periods. The total recorded volume of traffic showed 292 vehicles passed through the location with a peak volume of 18 on 04/01/2008 at 04:00 PM and a minimum volume of 0 on 04/02/2008 at 12:00 AM. The AADT Count for this study was 146.

SPEED

Chart 1 lists the values of the speed bins and the total traffic volume for each bin.

Chart 1

0 to 9	10 to 14	15 to 19	20 to 24	25 to 29	30 to 34	35 to 39	40 to 44	45 to 49	50 to 54	55 to 59	60 to 64	65 to 69	70 to 74	75 >
0	31	186	50	10	3	4	0	0	1	1	1	0	0	2

At least half of the vehicles were traveling in the 15 - 19 mph range or a lower speed. The average speed for all classified vehicles was 19 mph with 4.15 percent exceeding the posted speed of 30 mph. The HI-STAR found 1.38 percent of the total vehicles were traveling in excess of 55 mph. The mode speed for this traffic study was 15 mph and the 85th percentile was 22.87 mph.

CLASSIFICATION

Chart 2 lists the values of the eight classification bins and the total traffic volume accumulated for each bin.

Chart 2

0 to 20	21 to 27	28 to 39	40 to 49	50 to 59	60 to 69	70 to 79	80 >
268	13	7	1	0	0	0	0

Most of the vehicles classified during the study were Passenger Cars. The number of Passenger Cars in the study was 281 which represents 97.20 percent of the total classified vehicles. The number of Small Trucks in the study was 7 which represents 2.40 percent of the total classified vehicles. The number of Trucks/Buses in the study was 1 which represents 0.30 percent of the total classified vehicles. The number of Tractor Trailers in the study was 0 which represents 0.00 percent of the total classified vehicles.

HEADWAY

During the peak time period, on 04/01/2008 at 04:00 PM the average headway between the vehicles was 189.47 seconds. The slowest traffic period was on 04/02/2008 at 12:00 AM. During this slowest period, the average headway was 3600.0 seconds.

WEATHER

The roadway surface temperature over the period of the study varied between 29 and 91 degrees Fahrenheit. The HI-STAR determined that the roadway surface was Dry 100.00 percent of the time.