CITY OF MANHATTAN BEACH DEPARTMENT OF COMMUNITY DEVELOPMENT

TO: Parking and Public Improvements Commission

FROM: Erik Zandvliet, T.E., City Traffic Engineer

DATE: February 28, 2019

SUBJECT: Consider a Request for All-Way Stop Signs at Manhattan Avenue and 26th Street

and at Manhattan Avenue and 27th Street

RECOMMENDATION:

Staff recommends that the Parking and Public Improvements Commission (PPIC) approve a motion to recommend that the City Council adopt a resolution to install stop signs in all directions at the intersections of Manhattan Avenue and 26th Street and at Manhattan Avenue and 27th Street.

BACKGROUND:

In July 2018, the City received a request from Mr. Bedi Singh, a local resident, for the installation of stop signs in all directions at the intersections of Manhattan Avenue and 26th Street and at Manhattan Avenue and 27th Street (Exhibit 1). Mr. Singh states that there is speeding and a need to slow down traffic by Bruce's Beach. In January, Ms. Ellen Kane, a local resident, requested stop signs in all directions at Manhattan Avenue and 27th Street. Both intersection are currently stopped in the eastbound and westbound directions of 26th and 27th Streets only.

In January 2003, the City received a petition from local residents concerned about speeding and safety along Manhattan Avenue, who requested the installation of at least two 4-way stop signs, preferably at 26th Street and 27th Street. On April 24, 2003, the PPIC discussed the evaluation of the City Traffic Engineer in support of four-way stop signs at these locations, reviewed written correspondence, and heard public testimony from nine residents. The PPIC passed a motion to deny the request for stop signs, and to recommend increased Police enforcement, placement of the speed trailer, and installation of speed limit and crosswalk warning signs. On May 20, 2003, the City Council discussed the matter and voted to support the PPIC recommendations.

DISCUSSION:

The intersection of Manhattan Avenue and 26th Street and at Manhattan Avenue and 27th Street are located in a residential area within the Coastal Zone. Manhattan Avenue is a 30 feet wide two-lane local street with a 25mph posted speed limit. Manhattan Avenue is stopped at Marine Avenue to the south and Rosecrans Avenue to the north. Manhattan Avenue runs parallel to Highland Avenue and carries both local resident and beach related traffic. Manhattan Avenue sometimes acts as an alternate to Highland Avenue for destinations along The Strand. 26th Street and 27th Street are 24 feet wide local streets with 25 mph prima facie speed limits. There are two-way stop signs in the eastbound and westbound directions of both streets at Manhattan Avenue. Both streets are improved with curbs, and some sidewalks. Curb parking is allowed on

the north side of 26th and 27th Streets and on the east side of Manhattan Avenue, except for street sweeping restrictions. Curb parking demand is heavy during most times of the day and at full capacity sin summer months.

A public parking lot with 68 metered spaces is located west of Manhattan Avenue between 26th Street and 27th Street. Bruce's Beach park is located east of Manhattan Avenue between 26th Street and 27th Street. 26th Street and 27th Street have vertical slopes rising in the eastbound direction. (Exhibit 3). Pedestrian visibility is somewhat restricted when crossing Manhattan Avenue, due to the vertical curve, buildings and walls on the corners, and parked cars. There are high visibility crosswalk signs and markings on the north side of 26th Street and the south side of 27th Street at Manhattan Avenue to increase driver awareness of crossing pedestrians.

Field Observations

Field observations were made on typical days during peak and non-peak periods. Field observations confirm higher traffic volumes on Manhattan Avenue and other physical characteristics at the intersection as noted above. Driver right-of-way is assigned by stop signs on the two lower volume side streets. Sight distances for motorists on the east and west legs of both 26th Street and 27th Street are somewhat restricted due to existing buildings, parked cars and other roadside improvements along Manhattan Avenue. The downslope sides of 26th Street and 27th Street also reduce driver sight distance due to the lower profile of stopped eastbound vehicles. Restricted sight distance of pedestrians approaching the intersections along Manhattan Avenue was also observed due to these obstructions.

Higher pedestrian volumes were noted near 26th Street and 27th Street adjacent to the park and public parking lot, in comparison to other walk street intersections, particularly in the summer months. Both streets provide public beach parking and pedestrian beach access. Pedestrian crossing Manhattan Avenue from 26th Street and 27th Street may be difficult to see for drivers approaching the intersection due to the visibility obstructions noted above. It was also observed that pedestrians had an expectation that vehicles should stop at both intersections. The reduced sight visibility in combination with the greater chance of pedestrian-vehicle conflicts would justify stop signs at both intersections.

It was noted that the land use along this segment of Manhattan Avenue changes from residential to public use (park, parking lot and beach access). Vehicle speeds on Manhattan Avenue can be higher than expected for typical residential streets, likely due to the wider street width in comparison to other surrounding streets. (Average = 27mph, 85th Percentile = 31mph) The Traffic Engineer observed that the higher speed may not be expected by motorists waiting at the stop signs on 26th Street and 27th Street.

The traffic collision history between January 1, 2011 and December 31, 2017 was analyzed for both intersections. According to City records, there have been no collisions reported near the intersection during this eight (8) year period.

A vehicle volume count on Manhattan Avenue was last conducted on June 16, 2009, on a typical day. A summary of the peak hour and daily volumes are provided below:

VEHICLES DIRECTION	AM PEAK HOUR	PM PEAK HOUR	DAILY
Northbound (Manhattan Avenue)	157	225	1,070
Southbound (Manhattan Avenue)	<u>92</u>	<u>140</u>	<u>1,213</u>
Subtotal	249	365	2,283

Multi-way Stop Signs

The State of California has established guidelines for the installation of stop signs. These criteria have been widely accepted and are used by the City of Manhattan Beach. Multi-way or all-way stop controls are generally recommended when one or more of the State criteria are satisfied and indicate the existing traffic control devices are not sufficient to assign proper right-of-way or cannot be remedied through other means.

Stop sign warrant checklist were completed that indicate multi-way stop signs are warranted at both intersections (Exhibit 4). Both intersections has sufficient right-of-way controls with two-way stop signs, do not meet minimum traffic volumes and have no reported collision history. However, the sight distance of approaching vehicles is significantly restricted due to the existing buildings, walls, and parked cars on Manhattan Avenue. Drivers waiting at the stop signs on 26th Street and 27th Street may have difficulty seeing vehicles approaching at higher than expected speeds on Manhattan Avenue. Similarly, drivers on Manhattan Avenue may have difficulty seeing pedestrians about to cross the street at 26th Street and 27th Street.

Stop signs in all directions would improve overall safety by ensuring that drivers and pedestrians have sufficient awareness of approaching vehicles before crossing Manhattan Avenue. The prior addition of high visibility signs and markings was helpful, but have not proven to adequately warn drivers of pedestrians or to reduce prevailing speeds sufficiently for waiting drivers and pedestrians to adequately judge sufficient traffic gaps on Manhattan Avenue. Parking prohibitions alone would not remedy the sight distance restrictions caused by the existing visibility obstructions at the intersections. Therefore, the Traffic Engineer has determined that stop signs in all directions are justified at both intersections based on these special conditions.

Public Notice

Residents and property owners in an area bounded by 25th Street, The Strand, Bayview Drive, and 28th Street were notified by mail of the proposed stop sign request and were invited to give input to the Commission. This meeting was also posted in the standard public notice locations.

CONCLUSION:

Based on State guidelines, multi-way stop signs are justified at the intersections of Manhattan Avenue and 26th Street and at Manhattan Avenue and 27th Street at this time. It is recommended that the Commission approve a motion to recommend that the City Council adopt a resolution to install stop signs in all directions at the intersections of Manhattan Avenue and 26th Street and at Manhattan Avenue and 27th Street.

Exhibits: 1. Citizen Request

- 2. Aerial Photo and Location Map
- 3. Site Photos
- 4. Stop Sign Warrant Checklist

EHZ

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Erik Zandvliet

From: Bedi Singh <bsingh2059@gmail.com>
Sent: Wednesday, December 12, 2018 9:21 AM

To: Erik Zandvliet

Cc: Bruce Moe; Anne McIntosh; Steve Napolitano

Subject: Re: Traffic Issues-Manhattan Avenue at 23rd, 26th and 27th Streets

Hi Erik

I very much appreciate your reply.

I would be happy to participate and provide input. I have observed a number of near misses and its especially the case in the summer months...when traffic volumes and pedestrian traffic is at its highest. There is no doubt that with increase in population and cars this will only get worse in the years to come.

You are right in that cross traffic visibility is limited at these junctions and we also have trees blocking the pedestrian signs in some cases.

Bedi

On Wed, Dec 12, 2018 at 5:22 AM Erik Zandvliet <<u>ezandvliet@citymb.info</u>> wrote:

Hello Mr. Singh,

I apologize for the long delay in the ongoing stop sign evaluation.

The City must follow the State Stop Sign warrants (guidelines) for establishing 4-way stop signs (See attached). The criteria include volumes, collisions, and the physical conditions at the intersection. Speeding is not a factor in determining whether a stop sign should be installed, but it can be a contributing factor if it is related to the available sight distance at the intersection.

In reviewing the criteria, I found there was no collision history at the intersections of Manhattan Avenue at 23rd, 26th, and 27th Streets for the past 6 years (It is understood some collisions may not be reported but can't be counted)

Side street volumes are far too low to justify stopping the higher-volume street. However, there are special circumstances at Manhattan Avenue at 26th Street and 27th Street that limit sight distance for drivers approaching the intersection, and a high pedestrian crossing volume with limited visibility due to high walls around the public parking lot, buildings and private vegetation.

As such, I am preparing an Engineering Study to consider 4-way stop signs at the intersections of Manhattan Avenue at 26th Street and Manhattan Avenue at 27th Street, to be presented to the Parking and Public Improvements Commission at an upcoming meeting. I will be inviting the neighbors along Manhattan Avenue and yourself to this meeting to solicit public comments. If recommended by the Commission, the matter will then be forwarded to the City Council to pass a resolution establishing new stop signs.

Feel free to contact me if you have any questions.

Erik

Erik Zandvliet Traffic Engineer

P: (310) 802-5522







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From: Bedi Singh < bsingh2059@gmail.com > Sent: Monday, December 10, 2018 7:25 AM

To: Steve Napolitano < snapolitano@citymb.info >

Cc: Bruce Moe < bmoe@citymb.info >; Erik Zandvliet < ezandvliet@citymb.info >

Subject: Re: Traffic Issues

Thanks...btw great job with the fireworks yesterday!!

Very much appreciate the City doing these!

Sent from my iPhone

On Dec 9, 2018, at 10:42 PM, Steve Napolitano < snapolitano@citymb.info > wrote:

Our traffic engineer will advise as to process, thanks!

Steve Napolitano

Mayor

City of Manhattan Beach

Steve Napolitano

Mayor

P: (310) 880-7500

E: snapolitano@citymb.info



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From: Bedi Singh < bsingh2059@gmail.com > Sent: Sunday, December 9, 2018 9:11 AM

To: Steve Napolitano
Cc: Bruce Moe

Subject: Re: Traffic Issues

Thank you for that Steve.

Please advise on how one goes about gathering up a petition for this...we don't have any HoA here or any sort of community mechanism so am not sure how to do it?

On Dec 9, 2018, at 8:58 AM, Steve Napolitano snapolitano@citymb.info wrote:

Hi--the city manager is correct. Introducing new stop signs involves a process that includes a review by the traffic engineer as well as the public works commission so that everyone can weigh in. Usually it takes a petition to trigger such reviews as it often times turns out that what one person wants, others may not. So the process is to create the best outcome based on public input and a review of the data...

Hope this clarifies things...

Steve Napolitano

Mayor

City of Manhattan Beach

Steve Napolitano

Mayor

P: (310) 880-7500

E: snapolitano@citymb.info



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From: Bruce Moe

Sent: Sunday, December 9, 2018 8:00 AM

To: Bedi Singh
Cc: List - City Council
Subject: Re: Traffic Issues

Hi Bedi,

I will check with the traffic engineer and get back to you. Placement of a new sign often takes a number of weeks to be reviewed for appropriateness and is not necessarily a quick turnaround but I will see where it stands and get back with you.

Bruce

Sent from my iPhone

Bruce Moe City Manager P: (310) 802-5552

P: (310) 802-5552 E: <u>bmoe@citymb.info</u>



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On Dec 9, 2018, at 7:06 AM, Bedi Singh < bsingh 2059@gmail.com wrote:

Hi Bruce

Its been a few months now and i wondered if there was any conclusion reached ??

There has been no improvements to traffic here and in fact there are more horn blowing incidents and near misses daily.

The situation is not helped by the fact that Manhattan Avenue between Marine and Rosecrans has become a massive construction zone with numerous reconstructions taking place.

The quality of living here has completely deteriorated.

I would urge the city to do something.

Thanks

Bedi

On Aug 15, 2018, at 8:09 AM, Bruce Moe < box documents wrote:

Hi Bedi,

I followed up with the Traffic Engineer, and he said he is reviewing the stop sign request.

Thanks,

Bruce

Bruce Moe City Manager

P: (310) 802-5552 E: <u>bmoe@citymb.info</u>



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From: Bedi Singh < bsingh2059@gmail.com > Sent: Friday, August 10, 2018 1:17 PM
To: Bruce Moe < bmoe@citymb.info >

Subject: Re: Traffic Issues

Thanks Bruce

The use of this part of the road as a freeway continues unabated. Within the last few days i have been honked at whilst doing 25MPH and then dangerously overtaken by speedsters. Either they don't know the limit on the road or they don't care as they think they can get away with it. I fear there will be fatalities as we have numerous pedestrians crossing to get to the beach and cars crossing.

Sent from my iPhone

On Aug 10, 2018, at 8:24 AM, Bruce Moe

bmoe@citymb.info wrote:

Hi Bedi,

Let me check in on this and get back to you.

Thanks,

Bruce

From: Bedi Singh < bsingh2059@gmail.com > Sent: Thursday, August 9, 2018 6:35 PM
To: Michael G. Boyes < mboyes@citymb.info >

Cc: Scott Combs < scombs@citymb.info>; Bruce Moe < bmoe@citymb.info>

Subject: Re: Traffic Issues

Hello Bruce

I was following up on my email of couple of weeks ago and wondered if there was any update of things City might consider regarding the 4 way stop signs at the intersections i highlighted below?

It would also be helpful to know if the Police are still considering any of the measures noted by Michael?

Thanks

Bedi

On Wed, Jul 25, 2018 at 10:40 PM, Bedi Singh < bsingh 2059@gmail.com > wrote:

Hello Michael

Thanks for your prompt reply.

I would say that Marine to 2800 block is where i observed most of the issues in both directions.....however it also carries on from there to Rosecrans....around 3300 block also. The most common times are mornings and evenings...

With regards to more permanent traffic calming measures such as 4 way stop signs as noted in my earlier email, i am copying in Bruce Moe who was also kind enough to get involved earlier. He may want to involve

Erik Zandvliet as you suggested below.

Bedi

On Wed, Jul 25, 2018 at 8:17 AM, Michael G. Boyes <mboyes@citymb.info> wrote:

Hello Sir,

As you already know, I was out of the office last week and just returned Monday. I finally cleared out my email inbox late last night.

Just to confirm, it seems the general complaint is speed in the 2300-2800 block of Highland Avenue? I will see about getting the speed trailer deployed in that area as well as work that area for speed over the next few weeks. There are only 2 Motors that are currently working the city of Manhattan Beach and we have many complaints of speed issues throughout the city that we have to handle, along with traffic collisions, and any other calls for service that come up in the day. With that being said, is there a specific time that these issues are more frequent for us to narrow down the time these violations are observed so that I can make the best impact to these drivers? Is it north and southbound traffic, or just a specific direction?

The stop sign concerns/ideas need to go through the city traffic engineer (Erik Zandvliet). He can be reached at the city website or via phone (310-802-5522). He would be the one to determine if stop signs could be installed or not.

We obviously cannot monitor this area all day long, so I want to be the most effective that I can be. E-mail is the best form of communication, since I am in and out of the office all day. If you see me out there monitoring Highland, please feel free to say hello and speak with me then.

Respectfully,

M. Boyes

Michael G. Boyes Police Officer Motor

P: (310) 802-5100 E: <u>mboyes@citymb.info</u>



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Bruce Moe City Manager

P: (310) 802-5552 E: <u>bmoe@citymb.info</u>



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From: Bedi Singh [mailto:bsingh2059@gmail.com]

Sent: Friday, July 20, 2018 9:45 AM

To: Scott Combs < scombs@citymb.info >
Cc: Michael G. Boyes < mboyes@citymb.info >

Subject: Re: Traffic Issues

Hello Scott and Mike

Just a couple of suggestions in the meantime for you to consider...

I think instead of the current 2 way Stops having a 4 way Stop at the junctions of Manhattan Avenue and 23rd as well as 26th and 27th streets on either side of Bruce Beach park will help considerably. I have seen these as the places there is most risk and horn blowing...this will calm traffic for quite a stretch.

Also placing electronic speed indicators near the Marine and Rosecrans ends of Manhattan Avenue may be a good reminder for folks as they commence their journey.

Regularly checking speeds at random times with a speed gun and handing out tickets will also help.

Look forward to hearing back when Mike returns.

Thanks again for your help with this

Bedi

On Jul 17, 2018, at 3:00 PM, Scott Combs <scombs@citymb.info> wrote:

The Officer assigned to your area is Ofc. Mike Boyes. His email is listed below.

mboyes@citymb.info

His number is 310-802-7502.

Scott Combs Traffic Sergeant P: (310) 802-5166

E: scombs@citymb.info



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Erik Zandvliet

From: ellen kane <ekane52@yahoo.com>
Sent: Wednesday, January 30, 2019 3:29 PM

To: Erik Zandvliet

Subject: Re: Upcoming construction related to pedestrian safety

Hey Erik, thanks for the email. A 4 way stop would be awesome! Please use my comments.

Ellen

On Wednesday, January 30, 2019, 11:54:18 AM PST, Erik Zandvliet wrote:

Hi Ellen,

We've had a request to consider stop signs in all directions at the intersection of Manhattan Avenue and 27th Street.

I am conducting an investigation and comparing the conditions against the State Stop Sign Warrants.

If justified, we will present this to the Parking and Public Improvements Commission for a recommendation, and then to City Council for a resolution to install stop signs.

I will add your comments in this email to the public comments if that is OK with you.

You will also be invited to both public meetings to provide public comments if you like.

Of course, if the stop signs are installed, there is no need for flashing beacons.

Feel free to contact me if you have any questions.

Erik

Erik Zandvliet Traffic Engineer

P: (310) 802-5522 E: ezandvliet@citymb.info



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From: ellen kane

Sent: Tuesday, January 29, 2019 2:27 PM

To: Erik Zandvliet

Subject: Fw: Upcoming construction related to pedestrian safety

Hello Erik, I'm being referred to you by Gilbert Gamboa, please see my email below.

Thank you!

Ellen Kane

---- Forwarded Message -----

From: Gilbert Gamboa < ggamboa@citymb.info >

To: ellen kane <ekane52@yahoo.com>

Sent: Tuesday, January 29, 2019, 2:21:28 PM PST

Subject: RE: Upcoming construction related to pedestrian safety

Dear Mrs. Kane,

I understand your concern with the intersection of 27th and Manhattan Ave and this location has raised some attention in which the City's Traffic Engineer is looking into these concerns.

However, the specific scope of work associated with the current pedestrian improvements project along Highland Ave is tied to a Federal / State Safe Routes to School Grant Funding with specific locations previously approved in the application process.

If you would like to discuss the intersection of 27th Street and Manhattan Ave with the City's Traffic Engineer you may contact him at the following:

Erik Zandvliet

310-802-5522

ezandvliet@citymb.info

Thank you,

Gilbert Gamboa Senior Civil Engineer

P: (310) 802-5356 E: ggamboa@citymb.info



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From: ellen kane [mailto:ekane52@yahoo.com]
Sent: Saturday, January 26, 2019 3:08 PM
To: Gilbert Gamboa <ggamboa@citymb.info>

Subject: Upcoming construction related to pedestrian safety

Hi Mr. Gamboa,

I live right across the street from Bruces Beach and each day and I mean everyday, there is almost an accident on the corner of 27th street and Manhattan ave and 27th and Highland. So while reading this notice of the new updates today I thought maybe while the workers are out there on Highland they could also add **2 Flashing Stop Signs** on **27th and Manhattan Ave**?

Last night I was literally at the corner (27th and Manhattan Ave), it was dark and a car coming up from the ocean almost hit a bicyclist (with lights) going south on Manhattan ave. There was lots of profanity from the guy on his bike and literally rode his bike around the corner so he could go after the woman driver!

We as neighbors have talked about speed bumps and many other alternatives but those on that corner don't want a speed bump, safer we think to just make the stop signs extremely visible like flashing them.

Summer is coming and it only gets worse. Any other suggestions from your team on improving the safety at that corner is welcome:)

Thanks Mr. Gamboa!

Ellen Kane

221 27th Street

Manhattan Beach, CA 90266

EXHIBIT 2AERIAL PHOTO AND LOCATION MAP
Manhattan Avenue at 26th and 27th Streets





EXHIBIT 3 SITE PHOTOS



26th Street West of Manhattan Avenue Looking North



26th Street West of Manhattan Avenue Looking South



26th Street East of Manhattan Avenue Looking North



26th Street East of Manhattan Avenue Looking South



27th Street West of Manhattan Avenue Looking North



27th Street West of Manhattan Avenue Looking South



27th Street East of Manhattan Avenue Looking North



27th Street East of Manhattan Avenue Looking South

STOP

EXHIBIT 4

STOP SIGN WARRANT CHECKLIST

MAJOR STREET:	Manhattan Avenue	MINOR STREET:	26 th Street
REQUESTED BY:	Citizen Request	DATE:	2/20/2019
REVIEWED BY:	Erik Zandvliet		
Warranted?			
SINGLE STREET	STOP SIGN WARRANTS		
On a less imporprovide reasona	rtant road where the normal ble compliance with the law.	right-of-way rules wo	uld not be expected to
On a street ente	ring a legally established thro	ugh highway or street.	
At an unsignalize	ed intersection in a signalized	area.	
At other intersection for control by a s	tions where high speeds, res top sign.	tricted view, or crash i	record indicates a need
MULTI-WAY STOR	SIGN WARRANTS		
	gnals are warranted, and sto ile the signal is installed.	op signs are used as	an interim measure to
-	problem exists, as indicated b a type correctable by a multi-\	•	d accidents within a 12
least 300 vehic pedestrian volun the same 8 hou per vehicle durir	vehicular volume entering from the minor street approximates, with an average delay to the highest hour, and if the eeds 40 MPH, the minimum vents.	s, and the combined paches <u>average</u> at leas the minor street traffic e 85 th percentile appro	vehicular, bicycle and st 200 units per hour for is at least 30 seconds ach speed of the major
	r or more reported accidents to top sign, and the average may		
Other locations v	where multi-way stop signs ar	e justified based on an	engineering study.

MULTI-WAY STOP SIGN WORKSHEET

85TH SPEED: MAJOR STREET: Manhattan Avenue 32 MPH

26th Street MINOR STREET: DATE: 5/19/2015

TRAFFIC VOLUMES

WARRANTED YES

If the 85th percentile speed of the major street exceeds 40 MPH, use 70% volume.

	Min	•										
Street	Volume	70%	80%	Ave.				Hour / '	Volume			
					7am	8am	9am	10am	11am	1pm	5pm	6pm
Major	300	210	240	169	175	225	150	140	146	163	163	190
Minor	200	140	160	-	-	-	-	-	-	-	-	-

And, does the minor street have an average delay of at least 30 seconds in the peak hour?

Peak Average Delay < 10 sec.

COLLISION RECORD

WARRANTED

YES NO

NO

Are there five or more reported collisions within a 12 month period of a type correctable by a multi-way stop sign?

DATE	TIME	DIRECTION	TYPE	CAUSE
2017	-	None	-	-
2016	-	None	-	-
2015	-	None	-	-
2014	-	None	-	-
2015	-	None	-	-
2016	-	None	-	-
2017	-	None	-	-

YES NO **80% COMBINATION** WARRANTED

Are there four or more reported accidents within a 12 month period of a type correctable by a multi-way stop sign, and

Average major and minor street volumes are at least 80% of the minimum values?

MES NO OTHER MULTI-WAY STOP CONDITIONS WARRANTED

A. Need to control left turn conflicts

YES

10

B. Need to control vehicle/pedestrian conflicts at high ped locations

NO

C. Visibility obstruction after stopping on minor street approach

NO NO

D. Two similar neighborhood collector streets that would improve operation Other: Unexpected speeds and vertical curvature or a school zone.

G:\Traffic Engineering\Forms\stopwarrants-MUTCD.doc

STOP

EXHIBIT 4

STOP SIGN WARRANT CHECKLIST

MAJOR STREET:	Manhattan Avenue	MINOR STREET:	27 th Street
REQUESTED BY:	Citizen Request	DATE:	2/20/2019
REVIEWED BY:	Erik Zandvliet		
Warranted?			
SINGLE STREET	STOP SIGN WARRANTS		
On a less imporprovide reasonal	rtant road where the normal ble compliance with the law.	right-of-way rules wo	uld not be expected to
On a street ente	ring a legally established thro	ugh highway or street.	
At an unsignalize	ed intersection in a signalized	area.	
At other intersection for control by a s	tions where high speeds, res top sign.	tricted view, or crash	record indicates a need
MULTI-WAY STOP	SIGN WARRANTS		
	gnals are warranted, and sto ile the signal is installed.	op signs are used as	an interim measure to
-	problem exists, as indicated be a type correctable by a multi-v	•	d accidents within a 12
least 300 vehic pedestrian volun the same 8 hou per vehicle durir	vehicular volume entering from the minor street approximates, with an average delay to the highest hour, and if the eeds 40 MPH, the minimum vents.	s, and the combined paches <u>average</u> at leas the minor street traffic e 85 th percentile appro	vehicular, bicycle and st 200 units per hour for is at least 30 seconds ach speed of the major
	r or more reported accidents to top sign, and the average may		
Other locations v	where multi-way stop signs ar	e justified based on an	engineering study.

MULTI-WAY STOP SIGN WORKSHEET

85TH SPEED: MAJOR STREET: Manhattan Avenue 32 MPH

27th Street MINOR STREET: DATE: 2/20/2019

TRAFFIC VOLUMES

WARRANTED

If the 85th percentile speed of the major street exceeds 40 MPH, use 70% volume.

	Min	•										
Street	Volume	70%	80%	Ave.				Hour / '	Volume			
					7am	8am	9am	10am	11am	1pm	5pm	6pm
Major	300	210	240	169	175	225	150	140	146	163	163	190
Minor	200	140	160	-	-	-	-	-	-	-	-	-

And, does the minor street have an average delay of at least 30 seconds in the peak hour? Peak Average Delay < 10 sec.

COLLISION RECORD

WARRANTED

YES NO

Are there five or more reported collisions within a 12 month period of a type correctable by a multi-way stop sign?

DATE	TIME	DIRECTION	TYPE	CAUSE
2017	-	None	-	-
2016	-	None	-	-
2015	-	None	-	-
2014	-	None	-	-
2013	-	None	-	-
2012	-	None	-	-
2011	-	None	-	-

80% COMBINATION

WARRANTED

YES

NO

Are there four or more reported accidents within a 12 month period of a type correctable by a multi-way stop sign, and

Average major and minor street volumes are at least 80% of the minimum values?

OTHER MULTI-WAY STOP CONDITIONS	WARRANTED YES	_NO
A. Need to control left turn conflicts	YES	NO 8
B. Need to control vehicle/pedestrian conflicts at high ped lo	ocations YES	NO
C. Visibility obstruction after stopping on minor street appro	ach YES	NO
D. Two similar neighborhood collector streets that would im	prove operation \overline{YES}	NO
Other: Unexpected speeds and vertical curvature or a school	ol zone. YES	NO

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