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May 25, 2017

Steve Vaccaro
Law Office of Vaccaro & White
17 Battery Place, Suite 204
New York, NY 10004

Re: Iijima, Mayumi administrator for Estate of Ryo Oyamada v. New York City
U.S. District Court, Eastern District of New York
Index #: 13CV2688 (ARR)
DOL: 2/21/2013
ARCCA File No.: 4828-004

Dear Mr. Vaccaro:

ARCCA is pleased to submit a report based on engineering research, analysis, and written materials reviewed. This summary is considered preliminary in advance of a review of other written materials, depositions, and/or discovery materials to be acquired in the future. This summary contains opinions based on the background, education, and experience of Mr. Peter Chen (See attached CV and Trial and Deposition list, Attachments A and B), in addition to the written material reviewed to date. Opinions are subject to change based on new materials.

Mr. Peter Chen is a salaried employee of ARCCA, Inc., 2288 Second Street Pike, Penns Park, PA, and resides in the county of Hartford, in the State of Connecticut. Mr. Chen receives no compensation based on the outcome of any of the cases in which he is assigned. ARCCA, Inc. bills \$275 per hour for engineering work and \$325 per hour for depositions and trials for Mr. Chen's services.

BACKGROUND

On or about Thursday, February 21, 2013, at 00:45 hours (12:45 a.m.), Mr. Ryo Oyamada was struck and killed on 40th Avenue east of 10th Street, Borough of Queens in New York City, NY. Mr. Oyamada was struck by a marked Police car driven by Officer Darren Ilardi. ARCCA was asked to review the written materials and attempt to determine any objective conclusions given the information provided.

WRITTEN MATERIALS REVIEWED

- Security Camera Videos of the incident
- Bystander Video of the incident
- NYPD AIS File, index of documents attached as Attachment C.
- NYPD Internal Affairs File, index of documents attached as Attachment D.
- EDR Digital File
- Depositions of:
 - Officer Darren Ilardi, Driver (Operator), dated February 4, 2016



- Officer Jason Carmen, Passenger (Recorder), dated February 3, 2016
 - Detective Robert Saporito, dated December 16, 2015
 - Detective Mitacchione, dated January 21, 2016
 - Captain Frank Tarantola, Duty Captain, dated January 19, 2016
 - Deputy Inspector Sylvester Ge, Internal Affairs, dated December 7, 2015
 - Roger Regis, Custodian of Tape and Records, dated April 7, 2016
 - Sergeant Eynat Naor, Internal Affairs, dated March 7, 2016
 - Officer Smith Dorsant, Operator for Sgt. Fletcher, dated August 23, 2016
 - Sergeant Fletcher, Patrol Supervisor, dated December 10, 2015
 - Tsukasa Oyamada, Father of Ryo Oyamada dated December 3, 2013
 - Megumi Ono, Friend of Ryo Oyamada, dated December 31, 2013.
- IAB Transcript of Officer Carman, dated February 21, 2013
 - New York State Vehicle and Traffic (VAT) Laws
 - New York City Department of Transportation Traffic Rules
 - New York City Production, cover letter dated, December 12, 2014.

VIDEO ANALYSIS

Videos provided the following information:

- Videos were available via a link to the Gothamist, dated August 20, 2014.
- The video links to Vimeo which contained two video camera views contained within the same video: Camera 1 and Camera 2.
- Camera 1 (left in view) was mounted at the southeast corner of 40th Avenue and 10th Street, while Camera 2 (right in view) was mounted on the southwest corner of 40th Avenue and 12th Street.
- At the start of the video, Camera 1 had a date and time stamp of 02/21/2013 00:42:01, while Camera 2 had a date and time stamp of 02/21/2013 00:42:02.
- At 00:42:05, the Camera times start to diverge in clock speed.
- At 00:42:07 (Camera 1) and 00:42:13 (Camera 2), Mr. Oyamada first comes into view walking west on the south side of 40th Avenue.



- Mr. Oyamada entered the crosswalk on 12th Street at 00:42:21 and left the crosswalk at 00:42:27 (See Figure 1).

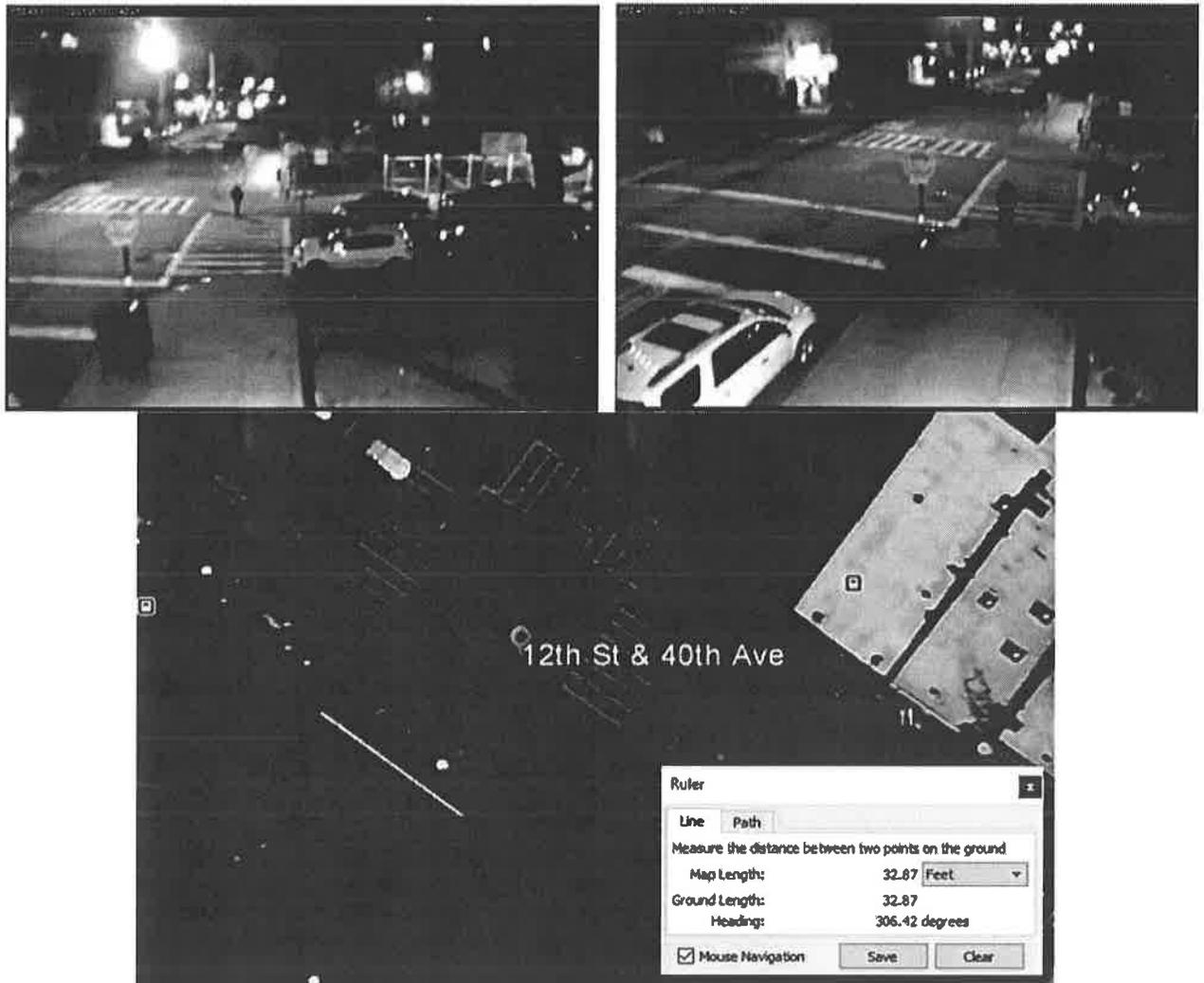


Figure 1: Pedestrian Crossing across 12th Street, South Side

From Satellite analysis of the intersection and video analysis, Mr. Oyamada took approximately 6 seconds to cover 32.9 feet, which would result in a pedestrian walking a speed of 5.5 feet per second.

5.5 feet per second is within the normal pedestrian walking speed of 4 to 6 feet per second.

- At 00:42:52 (Camera 1) and 00:42:34 (Camera 2), Mr. Oyamada crossed 12th Street and was walking proximate to the location of Camera 2.



- The entire time Mr. Oyamada appears walking in sight of Camera 2, Mr. Oyamada walks at a steady pace, in a straight path, and in a controlled manner.
- From this point forward, Mr. Oyamada ceases to appear on video.
- At 00:43:40 (Camera 1) and 00:43:17 (Camera 2), the front of the neighborhood store was captured in view as Camera 1 began to swing to look west. There were 3 pedestrians in view, with the right-most pedestrian seen walking to the group on the left.



- At 00:44:01 (Camera 2), the Police car headlights appear in view on Camera 1, which is now facing west. The Police car just crossed the pedestrian crosswalk located at the intersection of Vernon Blvd and 40th Avenue. The Vernon Blvd and 40th Avenue intersection was a light controlled intersection.



- At 00:44:06 (Camera 1), the Police car crossed the crosswalk across 40th Avenue located on the west side of the intersection of 10th Street and 40th Avenue (See Figure 3). Brake lights are seen just after the car crossed the crosswalk.



Figure 2: Car Entering Intersection

- At 00:44:07 (Camera 1), the Police car begins to leave the camera's field of view (See Figure 3).



Figure 3: Car Exiting View

- There was no evidence in the video that the Police car had any emergency lights or signals on. Furthermore, we can see in the video that the Police car was entering the intersection driving in the middle of the road, whereas 40th Avenue was a two lane road that runs eastbound and westbound.
- From Satellite analysis, we find that the distance between entering and crossing the crosswalk at Vernon Blvd and crossing the crosswalk at 10th Street was a distance of 473.6 feet (See Figure 4).

Given the time difference of 5 seconds to travel 473.6 feet, the Police car was traveling at an average of 94.7 feet per second, or 64.6 mph. It is likely that the Police car was going a slower speed at the time of entering 40th Avenue at Vernon Blvd, and therefore was going a higher speed upon entering the intersection of 10th Street and 40th Avenue.



Figure 4: Distance of Travel of Police car in Video

- At 00:44:10 (Camera 1), presumably after the incident, lights from the Police car are now seen flashing in the video, reflecting off of the street pole and signs.

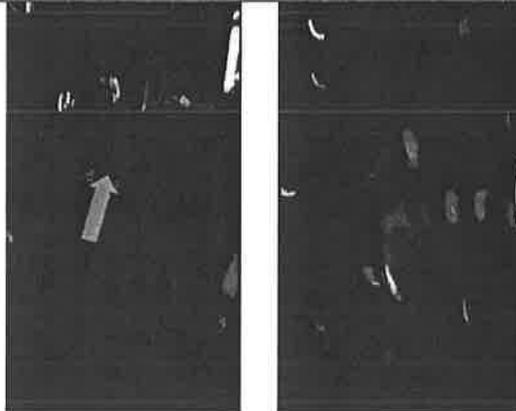


- At the same time 00:43:17 (Camera 2), a Police Van is in view across 12th Street. The police van panned into view on Camera 2 at approximately 00:43:43 (Camera 2) time and 00:44:05 (Camera 1) time, while the Police car was one car length away from the crosswalk at 10th Street.



Bystander Video provided the following information:

- There was a link from The Gothamist to a bystander video captured on social media. The video was useful in identifying the point of rest of Mr. Oyamada. When comparing to publicly available street view, Mr. Oyamada's point of rest was at or about the center of the road in line with a bus stop sign located on the south side of 40th Avenue (See Figure 5).
- When querying satellite information, the distance from 10th Street to the point of rest was approximately 125.73 feet.



- Point of Rest
- Bus Stop Sign
- Lit Bus Stop



Figure 5: Point of Rest

ACCIDENT RECONSTRUCTION

From the Police Reports, we know that the Police car was being driven by Officer Darren Ilardi. Also within the vehicle in the right front passenger seat was Officer Jason Carman. The vehicle was a 2010 Chevy RMP (Radio Motor Patrol), VIN# 2G1WD5EMXA1179282. From a VinLink report, the Police car was equivalent to a 2010 Chevy Impala, V6 3.9L. Vehicle specifications were available from Expert Autostats which are now attached to this report, along with the VinLink report, as Attachment E.

From the video analysis and satellite information analysis, we already know that Mr. Oyamada was walking at approximately 5.5 feet per second. Prior to the collision, we also know that the Police car was driving at least 64.6 mph as it approached 10th Street. A street view survey of the 40th Avenue revealed no speed limit signs for eastbound 40th Avenue starting at Vernon Blvd. The unposted speed limit for New York City was 30 mph at the time of the incident. (Note that the unposted speed limit was changed from 30 mph to 25 mph on November 7, 2014, after the incident date of February 21, 2013).

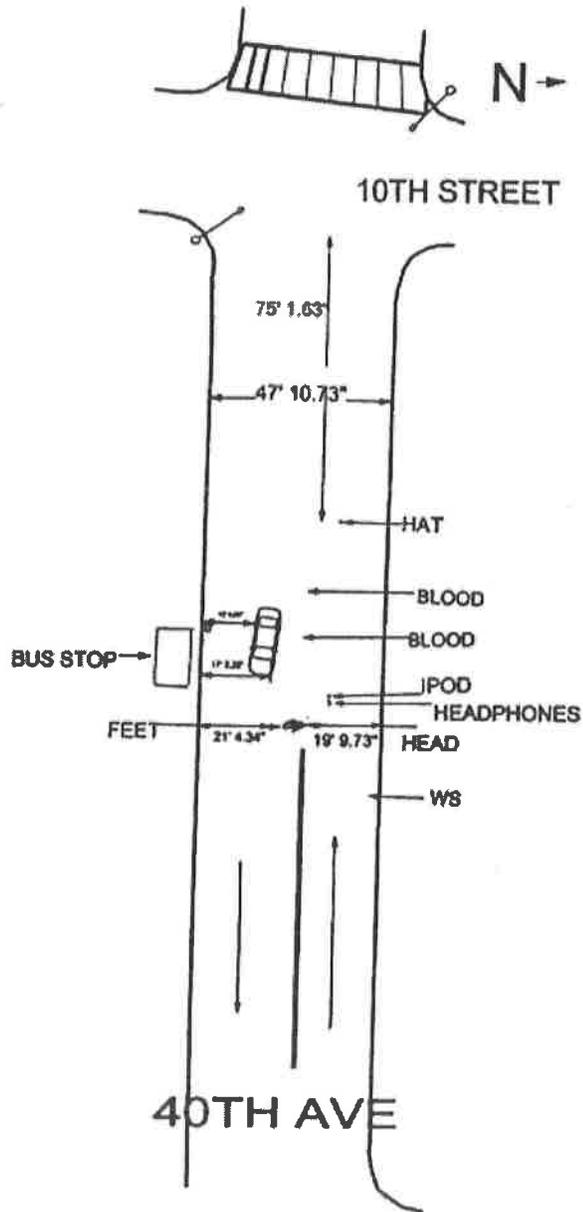
The Police car was going a conservative estimate of 34 mph over the statutory speed limit of 30 mph, or over twice the speed limit. A vehicle going 64.6 mph would be traveling at 95 feet per second, as opposed to a vehicle traveling at 30 mph or 44 feet per second.

Traveling at more than double the speed limit would be particularly dangerous to pedestrians crossing the road at night, because a pedestrian checking the road for clearance to cross may think that they have sufficient clearance, having only the headlights of an oncoming vehicle to gage distance and speed. As evidenced in the video and satellite analysis, the Police car spanned an incredible distance of 0.09 or almost 1/10th of a mile in less than half the time it would take a car traveling within the speed limit to travel the same distance.



Analysis of Scene Diagram

The police produced a diagram with dimensions of the road and of points of rests of evidence such as a hat, blood, and items deposited as a result of the collision (See Figure 6).



| | | |
|--------------------------------|---------------------|-------------------------------------|
| Prepared By: Name AMATO | Shield 11856 | Command 413 |
| Date 2/21/13 | PCT.ACC# 584 | A.I.S CASE# 713-10 SIGNATURE |

MOTOR VEHICLE ACCIDENT AND MECHANISM REPORT

PD 301-151-B

Figure 6: Police Diagram

The road was measured to be 47 feet, 10.73 inches. At 5.5 feet per second, Mr. Oyamada would require 8.7 seconds to cross the road in the narrowest dimension. Assuming Mr. Oyamada was crossing from south to north at the time the Police car was essentially two blocks away at Vernon Blvd., Mr. Oyamada would have been somewhere in the eastbound lane when struck.

The police reports indicate that Mr. Oyamada was struck approximately 60 feet east of 10th Street. Based on accident reconstruction methodology taught at SAE, items deposited on the road are a good indicator of points of impact. The hat was located approximately 75 feet from 10th Street, which would be approximately in line with the east end of the market (See Figure 7), and would be consistent with an impact in an area around the door of the store. The hat, iPod, and headphones were located in the westbound lane, indicating that Mr. Oyamada was likely struck in the westbound lane somewhere between the centerline of the road and the northern edge of the road.
REDACTED



Figure 7: Location of Hat

REDACTED

REDACTED

Oyamada further evidences that Mr. Oyamada was struck in the westbound lane of 40th Avenue and that the Police car actually steered back towards the eastbound lane after the impact. The video, the police diagram in Figure 6, and the police narrative were therefore entirely in conflict with the police sketch in the Preliminary Report and Police Accident Report (See Figure 8).

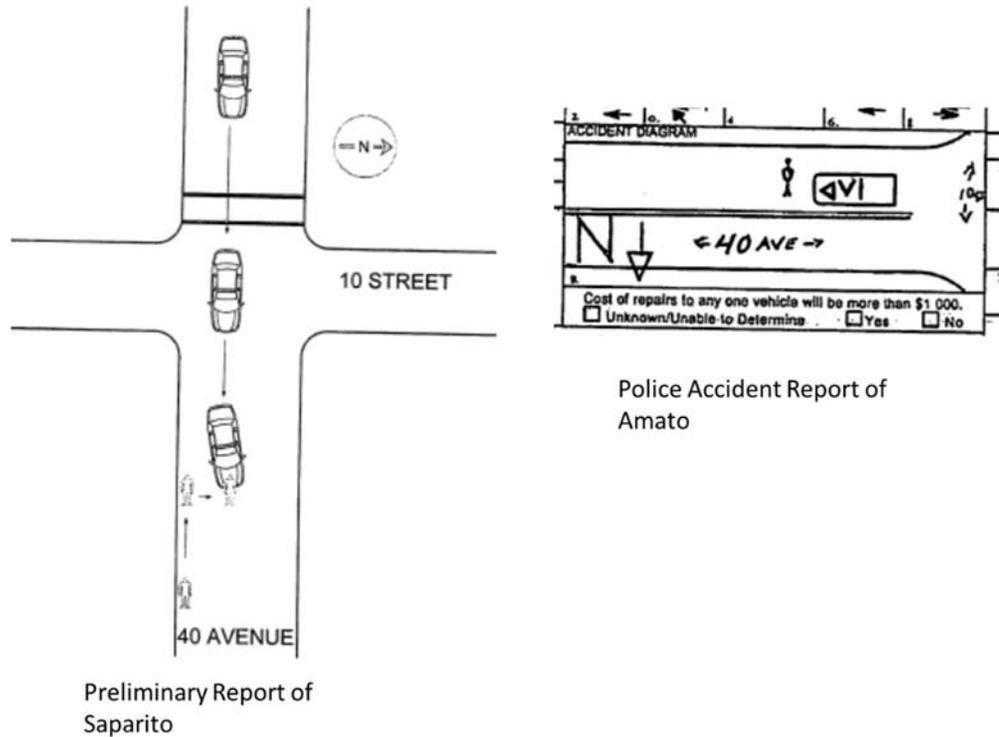


Figure 8: Police Sketches

Pedestrian Impact and Throw Analysis

Given that we know the point of rest of Mr. Oyamada (approximately 125.7 feet from 10th Street) and the estimated point of impact (approximately 60 feet from 10th Street), and we know that Mr. Oyamada was struck and experienced a wrap and throw (from the narrative), then we can determine the collision speed using a variety of pedestrian impact equations (See Figure 9).

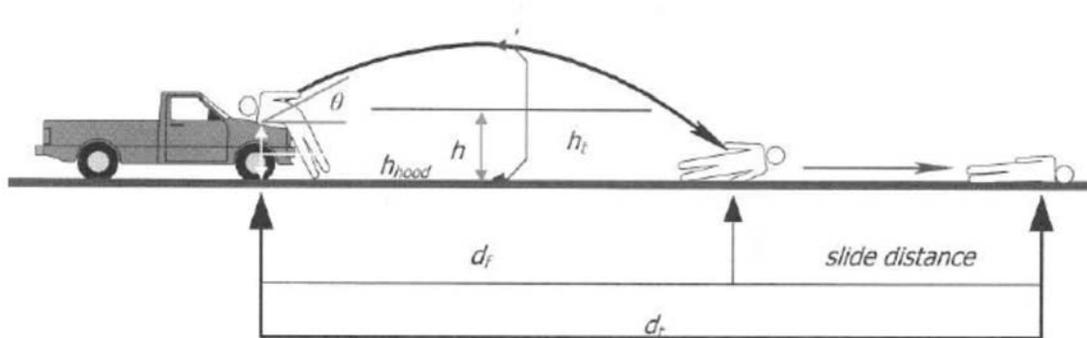


Figure 9: Diagram of Inputs to Pedestrian Throw Equations
(G. Russell, Equations & Formulas for the Traffic Accident Investigator and Reconstructionist)



Since we do not have all of the variables and information to employ many of the different throw equations, we can use the pedestrian throw equations that employ the total throw distance, which we know to be approximately 50.7 feet. We can further average the results of the different equations to come up with reasonable prediction of collision speed. Summary of different models and equations are now attached as Attachment F. Results of the pedestrian throw analysis are summarized in Table 1.

| | | | | |
|----------------------------|-------------|--|----------------------------|--|
| Distance | 65.7 ft | | | |
| h | 2.5 ft | (estimated height of center of mass of pedestrian) | | |
| wv | 3732 pounds | (vehicle weight from Expert Autostats) | VIN 2G1WD5EMXA1179282 | |
| wp | 180 pounds | (estimated pedestrian weight) | 2010 Chevy Impala, V6 3.9L | |
| Amrit and Toor | | Speed | | |
| k (wrap) | 0.0198 | 57.6 fps | 39.3 mph | |
| k Adult | 0.0213 | 55.5 fps | 37.9 mph | |
| Searle Lowest Value | | Speed | | |
| μ low | 0.66 | 44.1 fps | 30.1 mph | |
| μ high | 0.79 | 45.4 fps | 30.9 mph | |
| Wood Simplified | | Speed | | |
| μ low | 0.66 | 54.7 fps | 37.3 mph | |
| Wood (New) | | Speed | | |
| k (wrap low) | 3.3 | 26.7 fps | 18.2 mph | |
| k (wrap high) | 4.7 | 38.1 fps | 26.0 mph | |
| | | Average | 31.4 mph | |

Table 1: Pedestrian Throw Analysis

Based on the pedestrian analysis, Mr. Oyamada was struck at approximately 31 mph. This indicated that the Police car was in the process of braking from the initial travel speed of 64.6 mph when the car struck Mr. Oyamada.

Equations of Motion Analysis

There was nothing noted in the police report of any skid marks from the Police car. A normal deceleration rate for a vehicle is somewhere between 0.3 to 0.45 g. From Expert Autostat report of the 2010 Chevy Impala, V6 3.9L, Police Package vehicle, VIN #2G1WD5EMXA1179282, the max deceleration rate for the car with hard pedal, no skid, from 60 to 0 mph was -27.6 ft/sec^2 , a time of 3.2 seconds, and 140 feet of distance.

Therefore, from 64.6 to 0 mph at the max deceleration rate, the Police car would have required 3.4 seconds and 162.6 feet to stop. This was entirely consistent with the video showing brake light activation (amber) as the police car crossed over the pedestrian crosswalk at 10th Street and crossing the intersection (See Figures 2, 3, and 10).

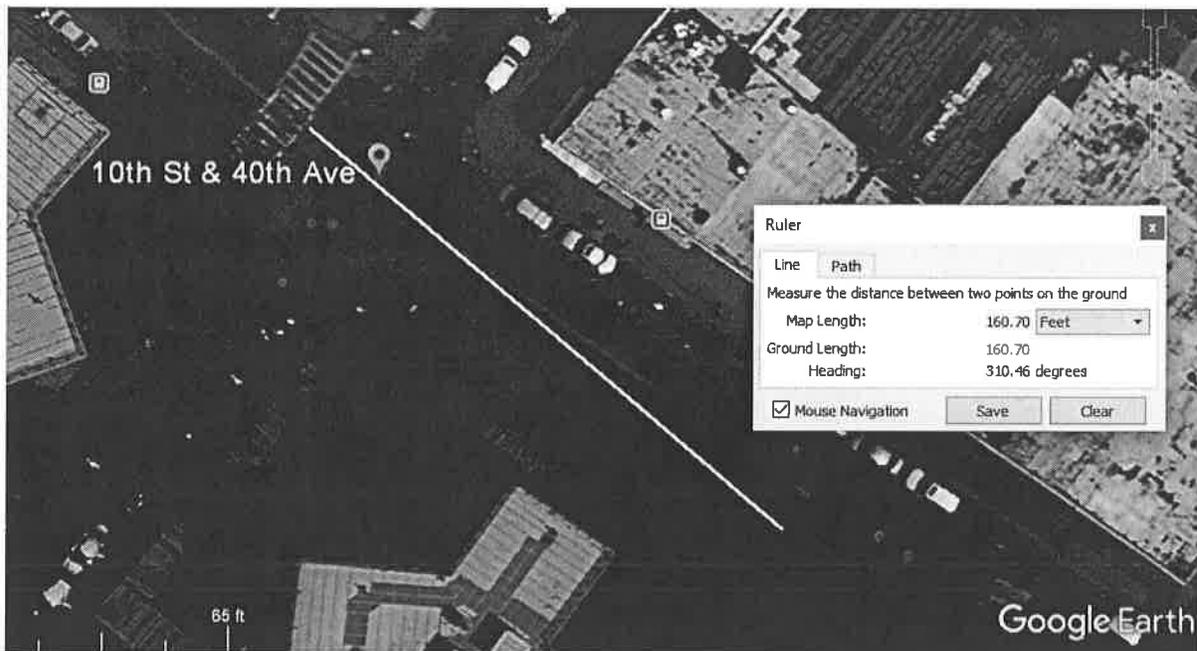


Figure 10: Distance between Crosswalk and Points of Rest

In comparison, if the Police car was doing the speed limit of 30 mph at the point of human perception and emergency braking, the Police car would have required 35 feet to stop and would not have come close to hitting Mr. Oyamada, who would have been approximately 95 to 100 feet away from the western crosswalk.

Even if we were to assume a speed of 40 mph, the Police car would have required 62 feet to stop, which would have been short of the point of impact.

Using equations of motion time, distance, deceleration, and speed analysis, we can also estimate a collision or impact speed and verify the Pedestrian Throw Analysis. We know from equations of motion:

$$V_i - V_f = at$$

$$V_i^2 - V_f^2 = 2aD$$

Where,

V_i = Initial Speed (ft/sec)

V_f = Final Speed (ft/sec)

a = acceleration, or in this case max deceleration, -27.6 ft/sec^2

t = time

D = distance traveled (ft)

Assuming max deceleration rate of -27.6 ft/sec^2 , 64.6 mph (94.7 ft/sec) to 39.5 mph (57.9 ft/sec) would require 1.3 seconds and a distance of 101 ft. 39.5 mph to 0 mph would require an additional 2.1 seconds and an additional distance of 60.8 feet. A collision speed of approximately 39.5 mph using equations of motion would be in line with two of the calculated pedestrian throw equations and support the conservative estimation of 31 mph as the collision speed.



REDACTED

Analysis of Driver History

REDACTED

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- -
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SITE INSPECTION

On March 22, 2017, while returning from an early morning inspection in Brooklyn, I was able to stop at or about the site of the incident, 40-06 40th Avenue, Long Island City, Queens, NY, and spot check the distances and measurements used in the accident reconstruction from the police scene diagram (See Figure 6), as well as satellite queries. The following table was generated from the inspection (Table 2):



| Location | From | Direction | Distance | | Notes |
|------------------------------|----------------|-----------|----------|------|----------------------------------|
| | | | (ft) | (in) | |
| Vernon Blvd. | Vernon | East | 0 | 0 | |
| End of Crosswalk at Vernon | Vernon | East | 16 | 0 | |
| West end of 9th Street | Vernon | East | 228 | 2 | |
| East end of 9th Street | Vernon | East | 259 | 6 | |
| Start of Crosswalk at 10th | Vernon | East | 476 | 10 | |
| End of Crosswalk at 10th | Vernon | East | 489 | 0 | |
| West end of 10th Street | Vernon | East | 489 | 0 | |
| C.Walk at Vernon | C.Walk at 10th | East | 473 | 0 | Calculated |
| East end of 10th Street | Vernon | East | 521 | 2 | |
| Start of Bus Stop | 10th | East | 100 | 8 | Measured on South Sidewalk |
| End of Bus Stop | 10th | East | 114 | 8 | Measured on South Sidewalk |
| Bus Stop Sign | 10th | East | 122 | 7 | Measured on South Sidewalk |
| Bus Stop Sign | C.Walk at 10th | East | 170 | 9 | Calculated |
| Center of Door of Store | 10th | East | 54 | 5 | Measured from South Side of 40th |
| Center of Door of Store | 10th | East | 46 | 8 | Measured on North Sidewalk |
| South Edge of Store and Sign | 10th | East | 59 | 2 | Measured on North Sidewalk |
| Double Yellow Line | North 40th | south | 22 | 9 | |
| 40th Avenue Road Width | north | south | 48 | 1 | +3 in. for wheel dia. |

Table 2: Site Inspection Measurements

The spot check of measurements were largely consistent with the police scene diagram (See Figure 6), and satellite queries, and therefore the Accident Reconstruction Analysis and conclusions remain unchanged.

Some additional information that can be gathered from the site inspection was that the point of impact 60 feet east of 10th Street was somewhere just east of the door and within the profile of the front of the store window and sign (See Figure 11). According to the report of police investigators, video taken at the time of the crash by a camera mounted on the deli was reviewed, but not collected.

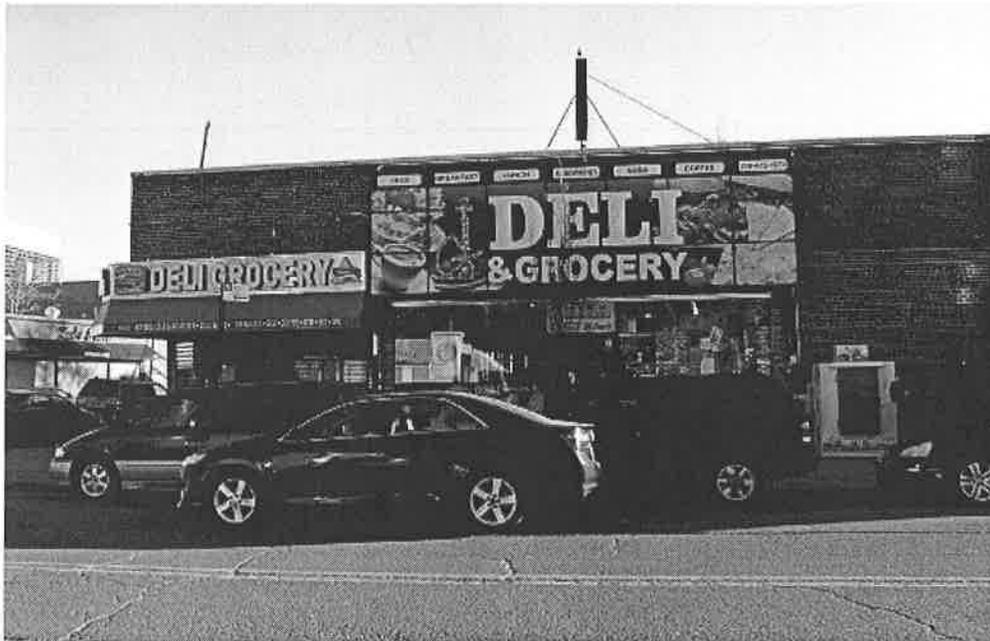


Figure 11: Front of the Store

The crosswalk at 10th Street located on the west side of the intersection was actually for a school crossing (See Figure 12). At the time of the inspection, there was a crossing guard.



Figure 12: School Roadway Mark

There were no posted speed limits from Vernon Blvd to past 10th Street on eastbound 40th Avenue, and the road was essentially flat. Although there was a slight curvature to the road, there was an unobstructed line of sight between Vernon Blvd and 10th Street, although the distance begins to be beyond human sight (See Figure 13).



Figure 13: View from Vernon Blvd eastbound down 40th Avenue

APPLICABLE TRAFFIC LAW

A cause of the incident was speeding. Under the New York Vehicle & Traffic Law (VTL) 1180, (a), (d), and (h):

“§ 1180. Basic rule and maximum limits. (a) No person shall drive a vehicle at a speed greater than is reasonable and prudent under the conditions and having regard to the actual and potential hazards then existing.”

“(d) 1. Except as provided in subdivision (g) of this section, whenever maximum speed limits, other than school speed limits, have been established as authorized in sections sixteen hundred twenty, sixteen hundred twenty-two, sixteen hundred twenty-three, sixteen hundred twenty-seven, sixteen hundred thirty, sixteen hundred forty-three, sixteen hundred forty-four, sixteen hundred fifty-two, sixteen hundred sixty-two-a, sixteen hundred sixty-three, and sixteen hundred seventy, no person shall drive in excess of such maximum speed limits at any time.”

“(h) Upon a conviction for a violation of subdivision (b), (c), (d), (f) or (g) of this section, the court shall record the speed upon which the conviction was based on the certificate required to be filed with the commissioner pursuant to section five hundred fourteen of this chapter, or if the conviction occurs in an administrative tribunal established pursuant to article two-A of this chapter, the speed upon which the conviction was based shall be entered in the department's records.

1. Every person convicted of a violation of subdivision (b) or paragraph one of subdivision (d) of this section shall be punished as follows:

(i) Where the court or tribunal records or enters that the speed upon which the conviction was based exceeded the applicable speed limit by not more than ten miles per hour, by a fine of not less than forty-five nor more than one hundred fifty dollars;

(ii) Where the court or tribunal records or enters that the speed upon which the conviction was based exceeded the applicable speed limit by more than ten miles per hour but not more than thirty



miles per hour, by a fine of not less than ninety nor more than three hundred dollars or by imprisonment for not more than fifteen days or by both such fine and imprisonment;

(iii) Where the court or tribunal records or enters that the speed upon which the conviction was based exceeded the applicable speed limit by more than thirty miles per hour, by a fine of not less than one hundred eighty nor more than six hundred dollars, or by imprisonment for not more than thirty days, or by both such fine and imprisonment.”

The Police car was traveling at over 30 mph over the statutory speed limit of 30 mph, which according to New York VTL 1180 (h) was the highest level of speeding level violation. Not only was the Police car traveling over 30 mph over the speed limit, the Police car was traveling at over twice the unposted city speed limit of 30 mph.

At these speeds, the Police car was a danger to themselves, other vehicles, and to pedestrians regardless of conditions or regardless if the turret lights and sirens were on. Human perception reaction time for emergency braking has been shown to be 1 to 1.5 seconds under ideal conditions.¹ For nighttime and non-ideal conditions, such as a pedestrian walking perpendicular to the line of traffic, reaction time can be as high as 3 seconds.¹ For emergency steering, an additional 0.2 to 0.25 second was typically required.¹ For the Police car to perform emergency braking and steering, the total human perception reaction time at night and under non-ideal conditions can take as high as 3.25 seconds. A vehicle going 64.6 mph would be traveling at 95 feet per second and could travel up to 284 feet before effectively apply brakes, which would still require an additional 163 feet to stop. That would be a total of 447 feet, or almost the entire distance between Vernon Boulevard and 10th Street.

Furthermore, the elements of reaction time are perception time, judgement time, reaction initiation time, and reaction execution time.¹ REDACTED

Driving with sirens and turret lights off and REDACTED should not have been combined with driving at higher than posted speed limits through a residential neighborhood.
REDACTED

¹ R. Limpert, Motor Vehicle Accident Reconstruction and Cause Analysis, Fifth Edition, attached as Attachment G.



REDACTED Police car's attempt at stealth. Driving at higher than the speed limit through a residential neighborhood at night requires the driver to focus completely on driving.
REDACTED

The driver

should be focusing on driving and avoiding collision

REDACTED

more likely

than not, Officer Carmen was assuming that Officer Ilardi would be focusing on driving.

Another cause of this accident was failure to drive on the right side of the roadway. Under the New York Vehicle & Traffic Law (VTL) 1120:

“§ 1120. Drive on right side of roadway; exceptions. (a) Upon all roadways of sufficient width a vehicle shall be driven upon the right half of the roadway, except as follows:

1. When overtaking and passing another vehicle proceeding in the same direction under the rules governing such movement;
2. When overtaking or passing bicyclists, pedestrians, animals or obstructions on the right half of the roadway;
3. When an obstruction exists making it necessary to drive to the left of the center of the highway; provided, any person so doing shall yield the right of way to all vehicles traveling in the proper direction upon the unobstructed portion of the highway within such distance as to constitute an immediate hazard;
4. Where travel on the shoulder or slope is permitted by section eleven hundred thirty-one of this article;
5. Upon a roadway divided into three marked lanes for traffic under the rules applicable thereon; or
6. Upon a roadway restricted to one-way traffic.

(b) In addition, upon all roadways, any vehicle proceeding at less than the normal speed of traffic at the time and place and under the conditions then existing shall be driven in the right-hand lane then available for traffic, or as close as practicable to the right-hand curb or edge of the roadway, except when overtaking and passing another vehicle proceeding in the same direction or when preparing for a left turn at an intersection or into a private road or driveway.

(c) Upon any roadway having four or more lanes for moving traffic and providing for two way movement of traffic, no vehicle shall be driven to the left of the center line of the roadway, except when authorized by signs or markings designating certain lanes to the left side of the center of the roadway for use by traffic not otherwise permitted to use such lanes, or except as permitted under subsection (a) (2) hereof.”

REDACTED

As evidenced by the video and REDACTED, the Police car was driving essentially in the middle of the road as it entered the intersection of 10th Street and 40th Avenue. As evidenced by the police scene diagram (See Figure 3) and REDACTED the Police car initially swerved left and Mr. Oyamada was struck somewhere within the westbound lane. More likely than not, after striking Mr. Oyamada, the Police car was steered to the right to its final point of rest in the eastbound lane.



If the Police car had been operated in the eastbound lane, more likely than not, Mr. Oyamada would not have been struck.

At the speed the Police car was traveling, it would not have mattered if Mr. Oyamada had crossed at the crosswalk or at any other point in the road. Mr. Oyamada would not have had the speed or human perception and reaction time to react to the Police car, and as stated previously, Officer Ilardi did not have adequate human perception reaction time for emergency braking or steering given the nature of the street and the nighttime conditions. A travel speed of at least 64.6 mph was essentially highway speed. For this reason, there are no known pedestrian crosswalks across highways without careful consideration of traffic control lights and/or traffic control signs placed well in advance of such a crosswalk. There was no traffic control light at the intersection of 10th Street and 40th Avenue, and no pedestrian crosswalk signs posted eastbound on 40th prior to the intersection.

More likely than not, Mr. Oyamada looked to see if there was sufficient clearance to cross, and began to walk across 40th Avenue at or about the door to the store. However, once in the road, Mr. Oyamada was essentially trapped because of the high speed of the oncoming car and the fact that the car was driving in the wrong lane. It would have been reasonable for Mr. Oyamada to have attempted to avoid the collision by moving forward towards the northern curb, because he was closest to that curb and his movement in that direction might have avoided or mitigated the collision, had Officer Ilardi not also swerved.

New York VTL 1152 regarding Pedestrians was superseded by the New York City Traffic Rules in Section 4-02 (e). Per NYC Traffic Rules Section 4-04(c and d):

“(c) Restrictions on crossings.

(1) No pedestrian shall enter or cross a roadway at any point where signs, fences, barriers, or other devices are erected to prohibit or restrict such crossing or entry.

(2) No pedestrian shall cross any roadway at an intersection except within a crosswalk.

(3) No pedestrian shall cross a roadway except at a crosswalk on any block in which traffic control signals are in operation at both intersections bordering the block.

(d) Operators to exercise due care. Notwithstanding other provisions of these rules, the operator of a vehicle shall exercise due care to avoid colliding with any pedestrian.”

Because the intersection of 10th Street and 40th Avenue did not have traffic control signals at both intersections bordering the block and because Mr. Oyamada was not crossing the roadway at an intersection, Mr. Oyamada was permitted by law to cross 40th Avenue anywhere along 40th Avenue. There was no evidence that Mr. Oyamada jumped out into the path of the oncoming Police car, because as earlier concluded, Mr. Oyamada was already in the westbound lane. As evidenced by Officer Ilardi’s testimony (pg. 91), Mr. Oyamada was “shimmying left and right” indicating that Mr. Oyamada was trying to get out of the path of the oncoming vehicle.

CONCLUSIONS:

Based upon the video evidence, review of written materials, site inspection, and engineering research, I conclude the following with a reasonable degree of engineering certainty:

1. On February 21, 2013, at or about 12:45 a.m. (00:45 military time), Officer Darren Ilardi, the operator of a 2010 Chevrolet Impala Police Cruiser, struck Mr. Ryo Oyamada near the intersection of 10th Street and 40th Avenue, Borough of Queens, New York.



2. Mr. Oyamada was walking on the south sidewalk of 40th Avenue westwards toward the corner of 10th Street and 40th Avenue. Based on video, Mr. Oyamada was walking in a normal straight manner, and did not appear to be acting in a reckless manner. As Mr. Oyamada attempted to cross 40th Avenue at or about the location of the store, Mr. Oyamada was struck in by the Police car.
3. Based on the police scene diagram and analysis, Mr. Oyamada was more likely than not in the westbound lane when he was struck by the Police car.
4. Based on video analysis, scene diagrams REDACTED the Police car was driving in the center of the road for some period of time prior to the incident.
REDACTED the Police car then veered left further into the westbound lane of traffic when the Police car struck Mr. Oyamada. The Police car traveling outside the right lane of travel was a violation of New York Vehicle and Traffic Law 1120, and a cause of the accident. Traveling in the westbound lane while going eastbound was reckless.
5. Based on accident reconstruction and video analysis, the Police car was traveling at a conservatively calculated average speed of 64.6 mph in the east direction.
6. Based on the video, the Police car began applying brakes at or about crossing the crosswalk located west of 10th Street.
7. Based on different methods of motor vehicle accident reconstruction (pedestrian throw equations and the equations of motion), the Police car likely struck Mr. Oyamada around 31 mph.
8. Based on the scene diagram and written materials, the Police car then maneuvered to the right and stopped in the eastbound lane of 40th Avenue at or about a bus stop located on the south sidewalk of 40th Avenue.
9. Based on the accident reconstruction analysis speed of 64.6 mph or more, a cause of this accident was the excessive speed in which Mr. Ilardi was operating the Police car. Even with ideal driving conditions (daylight, unobstructed lines of sight, targets in the field of view and not traveling perpendicular to the vehicle), a speed of 64.6 mph was extremely unsafe for 40th Avenue. The Police car was in excess of 30 mph over the statutory unposted city speed limit of 30 mph, which under New York Vehicle and Traffic Law 1180 would be considered extremely reckless.
10. Based on accident reconstruction and equations of motion, the Police car speed of at least 64.6 mph was unsafe on 40th Avenue in the vicinity of the incident on the basis of human perception and emergency reaction time, as it would require up to 447 feet for emergency braking and steering, or almost the entire distance of 40th Avenue between Vernon Boulevard and 10th Street. (Note, this was a conservative estimate for emergency braking and steering, not normal braking and steering).
11. REDACTED the danger posed by the excessive speed was further compounded by the fact that REDACTED
12. REDACTED



13. Any one of the four causes of this incident (excessive speed, driving outside the appropriate lane of travel, REDACTED) on their own could have caused this incident. However, the combination of all four represented a reckless disregard and represented an extreme risk to life to all proximate to the path of travel.
14. This extreme risk was particularly unacceptable to take on a street separating a large residential housing project from an all-night food store, which even after midnight in February was a destination for several pedestrians as shown in the Camera 2 video. REDACTED
15. The activation of sirens or turret lights would have been helpful in preventing this incident by helping Mr. Oyamada differentiate an oncoming Police car as being different from a normal vehicle in operation. REDACTED

The above conclusions are subject to change with the addition of new materials or information.

Respectfully Submitted,

 ME, PE, ACTAR

