



At the Heart of Community

POLICE DEPARTMENT
TRAFFIC SAFETY DIVISION

200 Mohawk Trail
Lake Zurich, Illinois 60047

(847) 719-1690
LakeZurich.org

February 8, 2021

This report, which has been prepared by the Lake Zurich Police Department Traffic Safety Division, is being submitted regarding the Automated Traffic Law Enforcement System (ATLES). According to Illinois statute, our agency is required to prepare an evaluation report every three years. This report includes the following data for the calendar year of 2020:

- Intersection location and ATLES camera approaches identified
- Date of ATLES camera implementation
- ATLES camera system manufacturer and contractor name
- Summary of adjudication experience and results
- Signal-timing changes
- Traffic volumes
- Crash data
- Analysis of data
- Recommendations

Intersection location and ATLES camera approaches identified

- Southbound US Route 12 at Miller Road, Lake Zurich
- Northbound US Route 12 at Miller Road, Lake Zurich
- Southbound US Route 12 at June Terrace, Lake Zurich
- Northbound US Route 12 at June Terrace, Lake Zurich
- Southbound US Route 12 at Illinois Route 22, Lake Zurich
- Northbound US Route 12 at Illinois Route 22, Lake Zurich
- Eastbound US Route 22 at Illinois Route 12, Lake Zurich

Date of ATLES camera implementation

The ATLES program was implemented on April 15, 2009.

ATLES manufacturer and contractor name

Gatso USA, Inc. (1-978-922-7294)
900 Cummings Center, Suite 321-U
Beverly, MA 01915

Summary of adjudication experience and results

Exhibit 1 is a summary of the adjudication process from January 1, 2020, to December 31, 2020. The table reflects all three ATLES camera locations along Route 12 and the cross streets listed in the chart, the amount of fines paid by violators, fees paid to GATSO for their services, and the outcome of the violations.

2020	Citations	Miller Road	Route 22	June Terrace	Paid Violations	GATSO's Fees	Administrative Adjudication	Hearings	Liable	Not Liabile	Non-Suit
January	258	57	175	26	\$ 24,000.00	\$ 7,740.00	\$ 150.00	8	4	3	1
February	172	47	100	25	\$ 18,500.00	\$ 5,160.00	\$ 300.00	9	8	1	0
March	435	82	285	68	\$ 19,600.00	\$ 13,050.00	\$ -	0	0	0	0
April	158	36	78	44	\$ 29,400.00	\$ 4,740.00	\$ -	0	0	0	0
May	263	66	145	52	\$ 15,800.00	\$ 7,890.00	\$ -	0	0	0	0
June	269	73	147	49	\$ 24,200.00	\$ 8,070.00	\$ 187.50	9	7	1	1
July	250	59	133	58	\$ 20,200.00	\$ 7,500.00	\$ 150.00	7	3	4	0
August	259	107	95	57	\$ 17,300.00	\$ 7,770.00	\$ 112.50	3	1	0	2
September	300	99	145	56	\$ 29,800.00	\$ 9,000.00	\$ 150.00	5	2	0	3
October	87	32	27	28	\$ 20,800.00	\$ 2,610.00	\$ 300.00	6	2	1	3
November	326	78	178	70	\$ 13,100.00	\$ 9,780.00	\$ 150.00	4	3	0	1
December	160	55	83	22	\$ 17,700.00	\$ 4,800.00	\$ 150.00	4	3	0	1
Total	2937	791	1591	555	\$ 250,400.00	\$ 88,110.00	\$ 1,650.00	55	33	10	12

Exhibit 1

A total of **5,143 violations** were submitted by GATSO. Those violations were submitted and reviewed by members of the Lake Zurich Police Department. Of those violations, **2,937 were processed and approved for collections**. The remaining **2,206 were rejected** and never submitted to the violator. Exhibit 2 represents the total number of violations, broken down by site.

Site	Violations
EB Hwy 22 & Rand	800
NB Rand & Hwy 22	813
SB Rand & Hwy 22	382
NB Rand & Miller	1451
SB Rand & Miller	679
EB Rand & June Terrace	412
WB Rand & June Terrace	606
Total	5143

Exhibit 2

Signal timing changes

The signal timings are controlled by IDOT and there were no timing changes made at any of the locations.

Traffic volumes

The Illinois Department of Transportation only tracks the average daily traffic counts for state roadways every other year. Traffic counts on county roads are conducted approximately every four years. The most recent data was compiled in 2019. A special traffic count was conducted by the Lake Zurich Police Department in 2020 for June Terrace. Exhibit 3 indicates the average daily traffic count for the most recent year available at intersections with an ATLES installed:

2019 Average Daily Traffic Counts	
<i>Intersection</i>	<i>Number of Vehicles</i>
Route 12 north of Miller Road	34800
Route 12 south of Miller Road	40100
Miller Road east of Route 12	4200
Miller Road west of Route 12	7200
2019 Average Daily Traffic Counts	
<i>Intersection</i>	<i>Number of Vehicles</i>
Route 12 north of Route 22	37300
Route 12 south of Route 22	38400
Route 22 east of Route 12	12500
Route 22 west of Route 12	13700
2019 Average Daily Traffic Counts	
<i>Intersection</i>	<i>Number of Vehicles</i>
Route 12 north of June Terrace	38400
Route 12 south of June Terrace	38400
June Terrace at Route 12 (*2020 data)	2501

Exhibit 3

Crash Data

Crash data was compiled for intersections equipped with an ATLES. Exhibit 4 compares the data at intersections with an ATLES installed from 2018 to 2019.

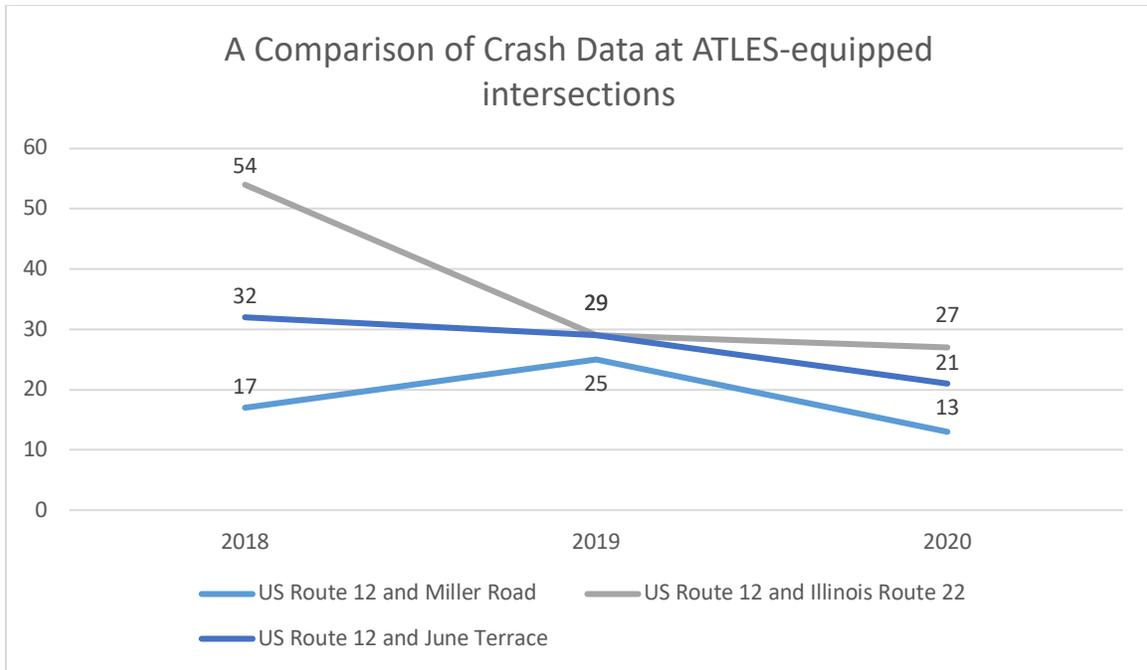


Exhibit 4

The overall number of traffic crashes decreased at the ATLES intersections from **83 in 2019 to 61 in 2020**. According to the National Highway Transportation Safety Administration, traffic counts for 2020 were down significantly during the COVID-19 pandemic, however, crashes due to risky driving increased. Data was not analyzed specific to Lake Zurich for this study.

Analysis of Crash Data at Intersections with an ATLES

In an attempt to gain more information on the effectiveness of the Automated Traffic Law Enforcement System (ATLES), specifically within our Village, a statistical survey has been completed. The survey compared the most recent full year of crash data (2020) with the most recent traffic counts. Crash data was taken from crash investigation reports. Traffic volume data was compiled using average daily traffic counts recorded by the Illinois Department of Transportation (IDOT). This data is available to the public on IDOT's website.

According to IDOT's website, data is collected in the following manner:

IDOT annually publishes detailed traffic information based on a statewide traffic count program. Counts from this program range in duration from continuously recorded data at permanent count stations to thousands of 24-hour counts at locations throughout the state.

While a local study would likely be more accurate, the financial burden to undertake a study of such magnitude would be considerable.

Both major and moderate thoroughfares throughout the Village of Lake Zurich were chosen based on the presence of a traffic signal at the intersection. Although the Village only has ATLES cameras at intersections along US Route 12, data from other intersections not along US Route 12 was included in order to have a control group. While being able to compare data at the same intersection with and without the system installed over a longer period of time would have been ideal, the data without the system is over 10 years old and other factors have changed enough to skew the data.

Exhibit 5 shows traffic counts at the selected intersections. Data of vehicles passing through a specific intersection is not recorded, just data in each direction before and after the intersection. The counts in both directions of traffic were averaged and the average was multiplied by the number of days in a year. Traffic counts have been converted to a yearly average because crash data was compiled on a yearly basis.

Intersection	Yearly Traffic Count
<i>US Route 12 at IL Route 22</i>	<i>18,684,300</i>
<i>US Route 12 at June Terrace</i>	<i>14,969,766</i>
<i>US Route 12 at Miller Road</i>	<i>15,792,900</i>
US Route 12 at Ela Road	18,318,300
US Route 12 at S Old Rand Road	17,458,200
US Route 12 at Honey Lake Road	14,731,500
IL Route 22 at S Old Rand Road	7,191,900
IL Route 22 at Ela Road	7,594,500
IL Route 22 at Oakwood Road	8,738,250
S Old Rand Road at Main Street	3,998,550
Ela Road at Cuba Road	8,335,650

Exhibit 5

Exhibit 6 includes crash data taken from the same intersections. Locations are listed on crash reports by how far a crash occurred from the nearest intersection. Crashes were not excluded based on the type of crash because it is impossible to know whether or not the crash was directly related to the presence of an ATLES. The severity of the crash was not taken into consideration when compiling the data.

Intersection	Total crashes in 2020
US Route 12 at IL Route 22	27
US Route 12 at June Terrace	21
US Route 12 at Miller Road	13
US Route 12 at Ela Road	11
US Route 12 at S Old Rand Road	15
US Route 12 at Honey Lake Road	6
IL Route 22 at S Old Rand Road	6
IL Route 22 at Ela Road	0
IL Route 22 at Oakwood Road	8
S Old Rand Road at Main Street	2
Ela Road at Cuba Road	4

Exhibit 6

Exhibit 7 represents a graphical look at the data in Exhibits 5 and 6. Generally, all intersections on the graph follow a similar and expected pattern: more traffic at an intersection equals more crashes. A trend line has been placed on the graph to indicate this pattern. Intersections equipped with an ATLES are indicated in red.

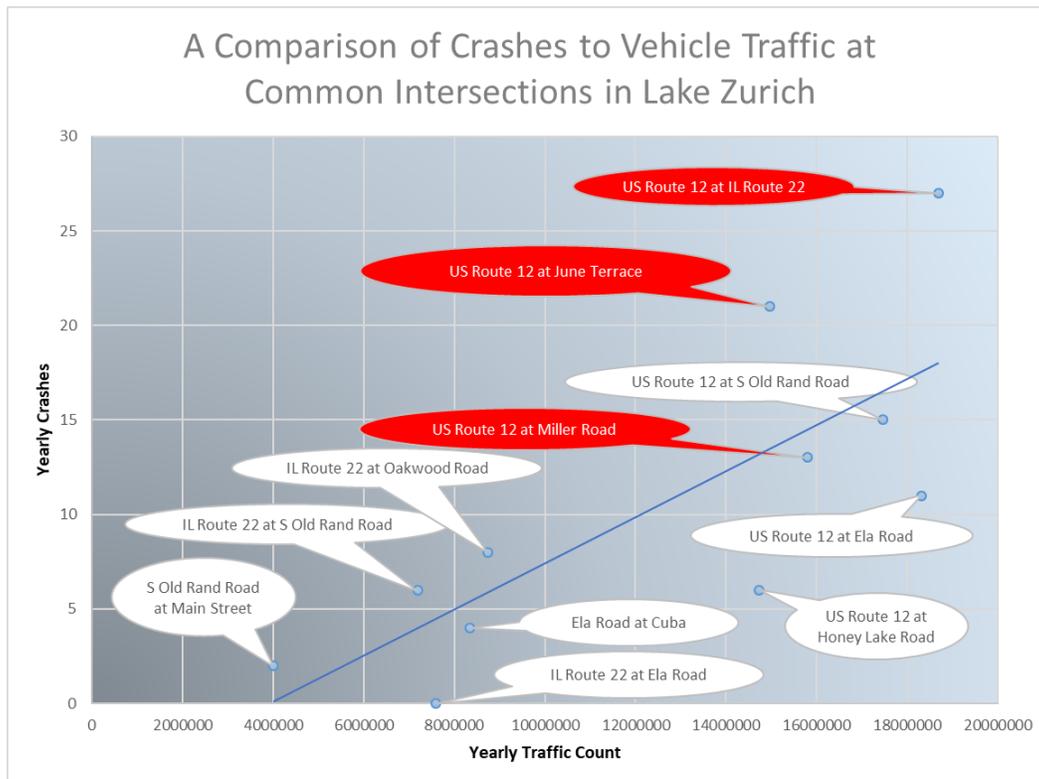


Exhibit 7

To accurately create a metric to compare the data between intersections, the total crashes near an intersection were divided by the yearly traffic count to find the probability of being involved in a traffic crash at a specific intersection. As these figures are extremely minuscule, the number is rounded to the nearest hundred-thousandth of a percent. The raw data is included in Exhibit 8. The data is shown graphically in Exhibit 9. This metric is more telling as to the effectiveness of the ATLES program. It is notable to have two of the ATLES-equipped intersections grouped together with the same probability. This is the second year in a row where this pattern has been noticed.

Intersection	Ratio
US Route 12 at Ela Road	0.00006%
IL Route 22 at Ela Road	0.00000%
US Route 12 at June Terrace	0.00014%
US Route 12 at IL Route 22	0.00014%
US Route 12 at Miller Road	0.00008%
US Route 12 at S Old Rand Road	0.00009%
IL Route 22 at S Old Rand Road	0.00008%
IL Route 22 at Oakwood Road	0.00009%
S Old Rand Road at Main Street	0.00005%
Ela Road at Cuba Road	0.00005%
US Route 12 at Honey Lake Road	0.00004%

Exhibit 8

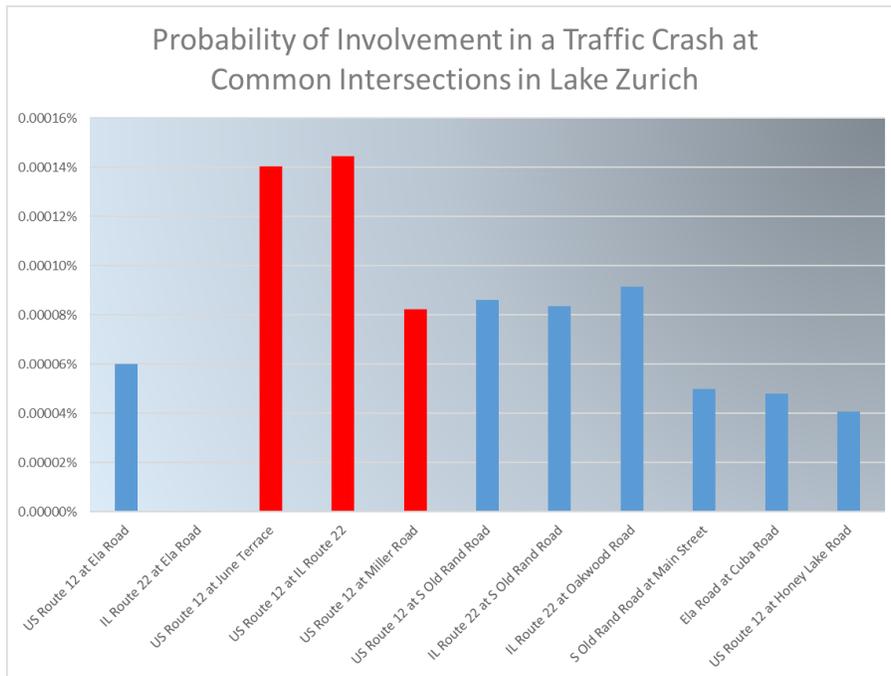


Exhibit 9

There is no way to know how many crashes have or have not been prevented (or caused) near an intersection, just as there is no way to measure a police officer's effect on what he or she may have prevented during his or her tour of duty.

Police officers investigating a traffic crash must use a standardized form created by the Illinois Department of Transportation. The form does not specifically track whether or not a motorist made a driving decision based on the perception of receiving a violation. Because crashes and traffic patterns have other influences involved such as weather, human factors, clarity of traffic signage, and construction (just to name a few), a law enforcement officer investigating a motor-vehicle crash at an intersection where an ATLES has been installed has no way of truly knowing the effectiveness of the system based solely on the statements of the drivers involved.

Therefore, data at hand must be examined. In both 2018 and 2019, motorists were no more or less likely to be involved in a crash at an ATLES-equipped intersection. In 2020, motorists were slightly more likely to be involved in a crash at two of our intersections equipped with an ATLES (US Route 12/IL Route 22 and US Route 12/June Terrace). Being that the average probability of being involved in a traffic crash in the Village of Lake Zurich is 0.00008%, those two intersections have a 0.00006% greater chance of being involved in a crash. While this is almost double the average, the probability is so miniscule that the results could be easily skewed by other factors.

In addition to these issues, 2020 was unique in that the world experienced the COVID-19 pandemic, which included a months-long 'Stay at Home' order from the governor. This accounted for a documented reduction in national traffic counts. Unfortunately, the most recent traffic count numbers were for 2019. This means the probability ratio could be skewed by using 2019's traffic counts, which are presumed to be higher than 2020's actual traffic numbers.

Recommendations

Beginning in 2018, our agency began a process of collecting data from three consecutive years to identify metrics to aid in the determination of the effectiveness of ATLES and make decisions moving forward. 2020 was supposed to be the third year of that process.

The global Covid-19 pandemic has affected every aspect of society and traffic patterns are no exception. Some national studies showed a 40% reduction in the number of vehicles on roadways during different times in 2020. The historical impact of Covid-19 has continued into 2021 and, at this point, one can only speculate on when life as we know it will return back to "normal."

As a result, using data collected in 2020 as part of a process to determine future needs and trends does not seem prudent. Though crashes at the Village's three ATLES intersections dropped from the year prior, total crashes throughout the country were down. The impact of Covid-19 on societal trends and patterns, specifically as they pertain to vehicle counts, should continue to be monitored. Once restrictions related to the pandemic, such as the disaster proclamation and its associated restrictions on travel and behavior, have ended, meaningful data can once again be gathered in order to establish the metrics as originally planned.

For all the aforementioned reasons, and in accordance with Illinois statute, it is the recommendation of the Traffic Safety Division that no changes should be made to our ATLES program. Lake Zurich experiences a relatively low number of major traffic crashes in our jurisdiction. In addition, the number of crashes reported has reduced every year since 2016.

An effective traffic enforcement program must include a suite of different techniques to deter and apprehend traffic violators. Our agency has always made traffic safety a priority. We participate in traffic grants, saturation patrols, traffic surveys, and public education campaigns. We will continue to closely monitor both regional and national data to make informed decisions to best serve the public.

Disclaimer:

The traffic-crash data referenced herein was provided by the Illinois Department of Transportation based upon information derived from multiple sources. Any conclusions drawn from analysis of the aforementioned data are the sole responsibility of the data recipient(s). Additionally, for coding years 2015 to present, the Bureau of Data Collection uses the exact latitude/longitude supplied by the investigating law-enforcement agency to locate crashes. Therefore, location data may vary in prior years since the data prior to 2015 was physically located by bureau personnel. Given the subjective nature of the reporting process, the modifications in the incident-locating protocols and the changes to the crash-reporting thresholds effective 2009, the Village acknowledges the potential for discrepancies in the final conclusions drawn.