

City of London

2016 Status Report Road Safety Strategy

B000263 LRSS

March 2017

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Appendix A: Countermeasure Actions

1. Background

Over past decades, improved roads, improved vehicles, new driver licensing regulations, more stringent drinking and driving laws, seat belt laws and other initiatives have led to a decline in number and severity of traffic collisions in Canada. However, in recent years, the increasing number of road users and increasing congestion has caused a decline in the quality of mobility and level of safety for road users. To respond to the increase in risk to road users and the decrease in safety, federal, provincial and municipal agencies in Canada have been developing and implementing programs to address road safety.

2 The London Road Safety Strategy

Led by the City of London, and in collaboration with the Middlesex London Health Unit, Middlesex County and other partners, a road safety strategic program for London was developed. The London Road Safety Strategy (LRSS) identified the most important traffic safety issues in the City and surrounding areas. The Strategy set out the vision, mission, goals, and actions that are guiding the City, the County, and their partners in creating safer roads.

2.1 Target Areas

Target areas provide direction for the selection of safety programs. The selection of target areas was based on the findings of the traffic and collision data analysis and on public and Council input. The traffic collision data analysis focused on combined fatal and injury data, because safety programs were selected with more emphasis on severe collisions to provide the highest benefit to the citizens of the City and the County. As a side benefit, the information about the traffic collisions that resulted in physical harm to any of the involved road users is of better quality than for property-damage-only collisions.

A comprehensive review of the 4-year traffic collision history (2009 - 2016) was combined with the findings of several forms of public input collected by the City. It was concluded that the areas to be targeted by the Road Safety Strategy during the five year period 2014 - 2019 would be:

- + Intersections
- + Distracted and Aggressive Driving
- + Young Drivers
- + Pedestrians



- + Cyclists
- + Red Light Running

For each target area, a number of countermeasures were identified through a comprehensive evaluation process. For an effective program, the multidisciplinary nature of road safety is best mirrored by the proposed countermeasures. The countermeasures were developed for the categories of Engineering, Enforcement, Education and Empathy with the specific focus on prevention of future fatal and injury collisions.

Engineering, Enforcement, Education are traditionally known as the three “E”s. The Empathy approach was introduced to bring awareness of the need for mutual understanding between road users when meeting under conflicting circumstances. Empathy forms a complementary part of the education actions towards a road users’ safety cultural transformation.

The implementation of the selected countermeasures was comprised of new actions and expansion of existing programs in the City and County. The City of London, County of Middlesex, and their partners have adopted a wide range of programs with their respective actions forming the London Road Safety Strategy. They believe that these programs can be realistically delivered and set a goal of approximately 155 fewer fatal and injury traffic collisions annually by 2019/2020.

The various action plans making up the program were initiated by the program members over a period of months starting in late 2014 and spanning into 2015. This report is the first formal review of the success of the LRSS in reducing collisions.

2.2 Countermeasures

In response to the identified target areas, a response program of countermeasures was developed with special attention to the capacity of the service providers to implement the countermeasures and the expected effectiveness of the countermeasures selected to reduce fatal and injury collisions in the period 2014-2019.

3. Actions Taken to Date

Appendix A lists the actions that have been implemented by the City of London and its partners, and the status of each action item as of mid-2016. The list is extensive and innovative. It covers the range of target areas and addresses the target areas from all three main approaches – engineering, enforcement and education/empathy. The actions achieved to date show a high degree of commitment to achieving the goals of the LRSS.



4. Initial Outcomes - Collision Analysis

4.1 Background

The ultimate measure of the success of the LRSS is in a reduced number of fatal/injury collisions, and in reduced harm to road users in London and Middlesex. For an initial review, collision statistics for the City of London only were analysed. Middlesex County collision data were not used, nor was the degree to which the severity of injuries may have been mitigated reviewed.

Generally, when “before” and “after” data is compared, a minimum of two and preferably three or more years of data for each time period is preferred to give a solid statistical foundation. The City had excellent “before” data and five years was used to provide a basis, but the program has just been initiated and the analyses which follow in this report are based on a single year of “after” data, so readers are cautioned to view the comparisons as likely giving an indication of the direction the program is going, but cannot be considered totally conclusive in nature.

Traffic collision data, contained in the City of London’s database for the years 2009-2016, was analysed to identify trends and collision characteristics. Due to the time frames during which the LRSS road safety programming was initiated, data were not used for calendar years, but one year periods from July to June. The period from July 2014-June 2015 was not included in the analysis as it was the period of implementation of the measures. The year from July 2015 to June 2016 was used as the “after” period. The data were compared to both the five year “before” period and a one-year “before” period, being July 2013 to June 2014.

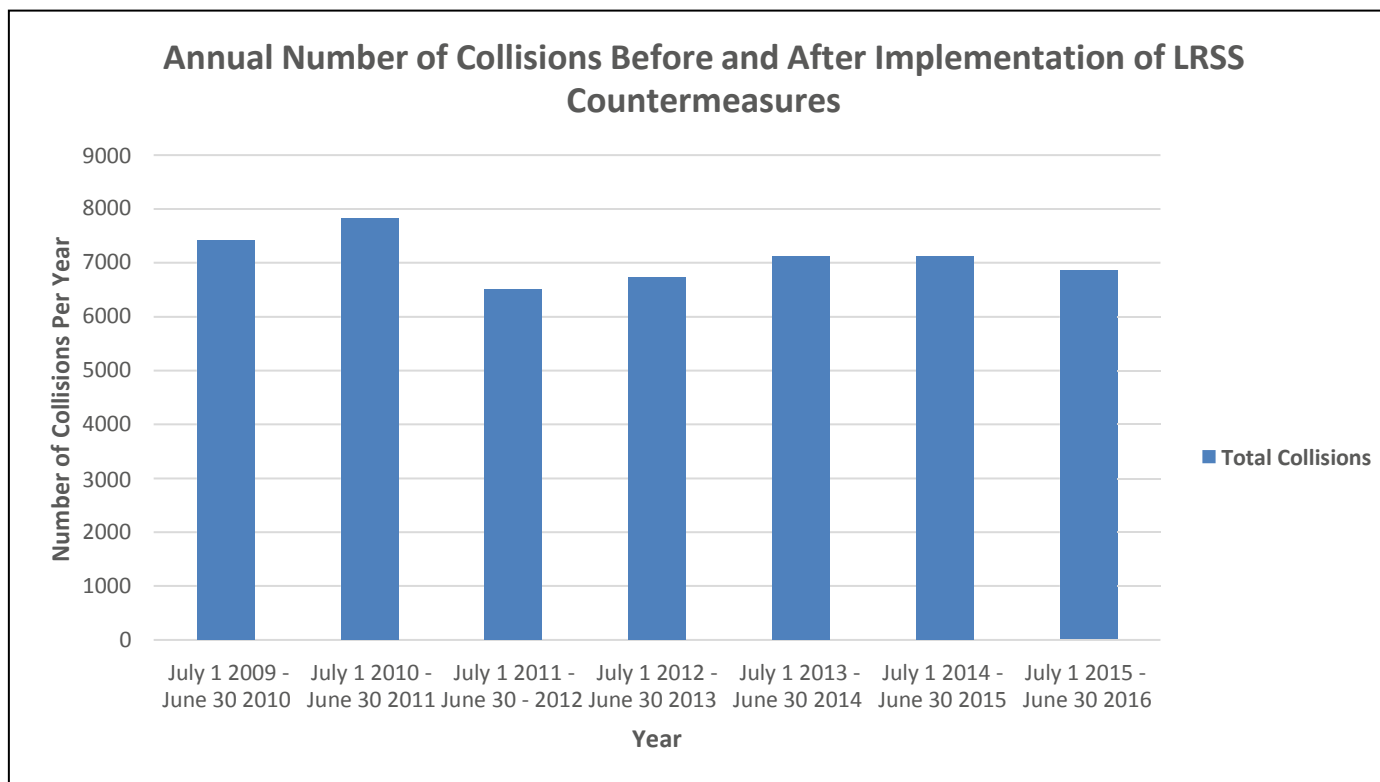
4.2 Total Collisions and Fatal/Injury Collisions

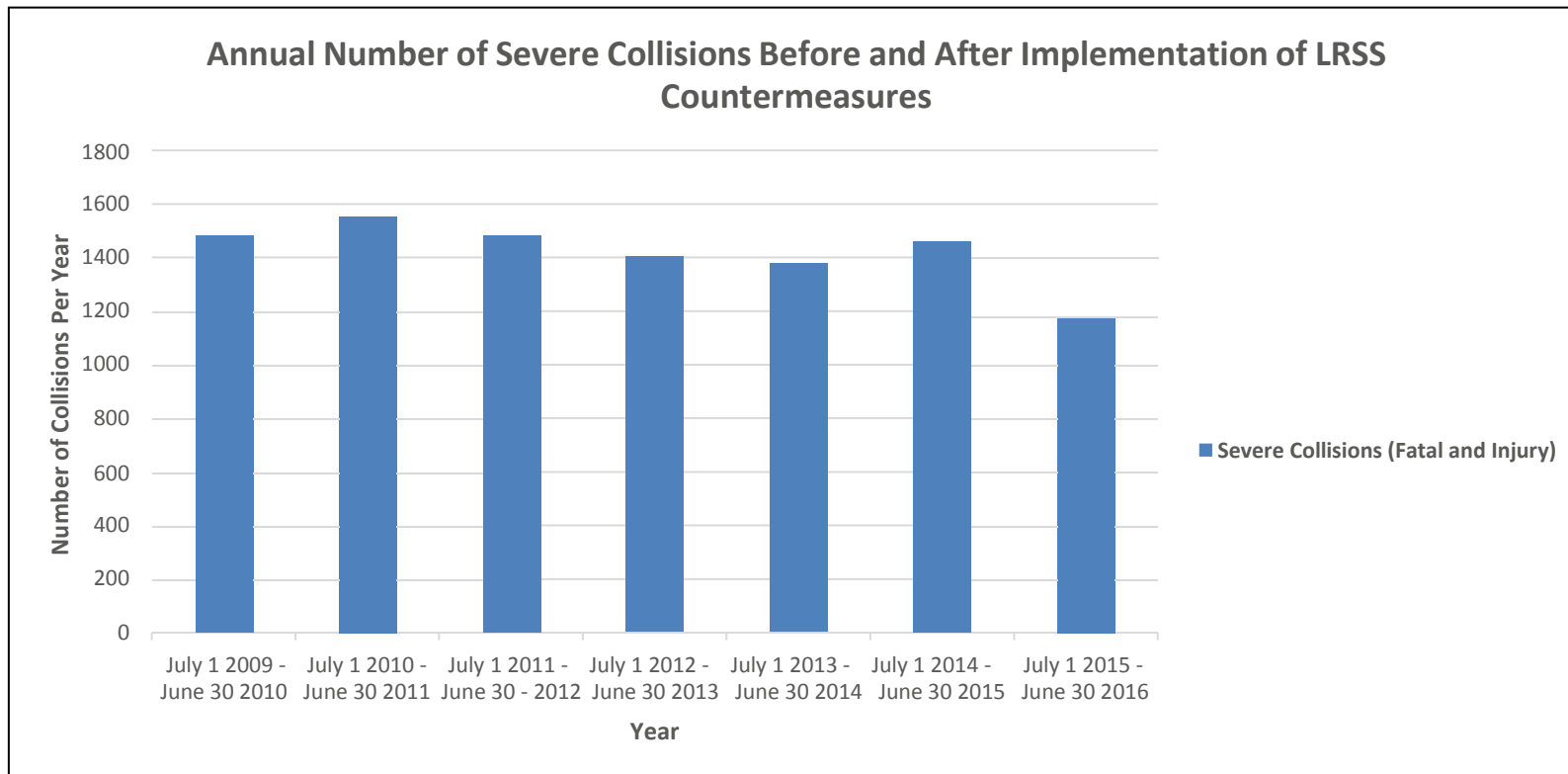
The total number of traffic collisions from the period 2009-2014 averages approximately 7100 per year. This number decreased to approximately 6900 in 2016, which is roughly a 4% decrease both compared to the five-year “before” and the one-year “before” condition.

Comparing just fatal/injury collisions, which the LRSS is focused on, the results were 16% and 20% reductions respectively. Based on a five year “before” period, if the LRSS is completely responsible for the reduction which occurred in the number of severe collisions, the program has greatly exceeded its five year goal of 155 fewer collisions, with a reduction of 298 in just the first year. Again, caution is required, and it needs to be seen with a longer time period whether these results are the true outcome and will be maintained, but these are promising results.

The graphs below illustrate the annual number of total collisions for the period 2009-2016 and the annual number of fatal or injury collisions for the same period.





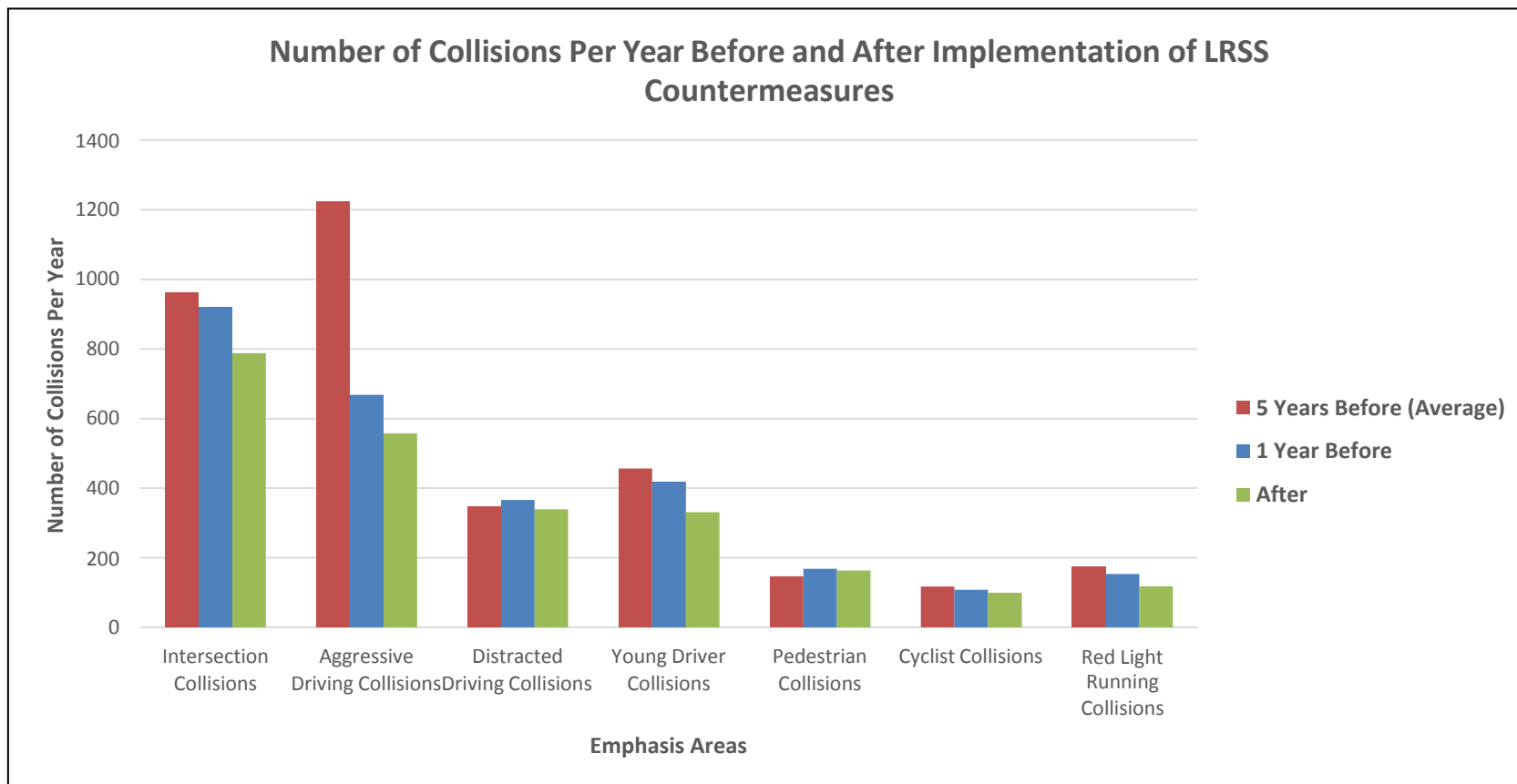


4.3 Collision Analysis: Target Areas

As discussed earlier, target or emphasis areas were identified and selected as the basis for the action plans of the London Road Safety Strategy.

Figure 2 illustrates the reduction in collisions for each target area, showing the number of collisions in the five year “before” period, the one-year “before” period and the one-year “after” period. As the histogram shows, there were significant decreases in Intersection collisions, Aggressive Driving collisions, Young Driver collisions, Red Light Running Collisions and Cyclist Collisions and neutral to negative outcomes for Pedestrian collisions and Distracted Driving collisions. Again, caution is suggested in drawing conclusions from these limited data, but the consistent reductions appear promising.





Comparing collisions for the five year period before the implementation of the countermeasures with the one year “after” period, one finds:

- Intersection collisions have decreased 18%;
- Aggressive driving collisions have decreased 54%;
- Distracted driving collisions have decreased 2%;
- Young driver collisions have decreased 27%;
- Pedestrian collisions have increased 11%;
- Cyclist collisions have decreased 15%;
- Red light running collisions have decreased 33%.

Comparing collisions for the one year period before the implementation of the countermeasures with the one year “after” period, one finds:

- Intersection collisions have decreased 14%;
- Aggressive driving collisions have decreased 16%;
- Distracted driving collisions have decreased 7%;
- Young driver collisions have decreased 21%;
- Pedestrian collisions have decreased 3%;
- Cyclist collisions have decreased 7%;
- Red light running collisions have decreased 23%.

5. Summary and Conclusions

The LRSS shows the City and County commitment to improving road safety and reducing injuries and deaths due to motor vehicle collisions. The program is structured to address the target areas, those groupings of collisions presenting the largest numbers of serious collisions and therefore, the best opportunity to address road safety. The City and its partner members have commenced the response phase of the project with a broad and innovative set of actions directed at the target areas from multiple approaches.

The preliminary outcomes, in terms of changes in collision frequencies, were calculated for each of the target areas as well as the totals. While there are some promising trends, due to the timing of the project, the current analyses can only be based on only one year of data after initiation of the countermeasures. A short “after” period such as this is generally not viewed as strong evidence statistically, and results can easily be affected by factors other than the LRSS. The results after two, and especially three, years following initiation of the program, will be much more reliable indications.

APPENDIX A

Countermeasure Actions

CIMA+ file number



London Road Safety Strategy – Progress and Outcomes

Action	Action Type	Description	Lead Organizations	Progress/Outcome
Development of Network Screening and High Collision Location Identification	Engineering	Identify abnormally high collision locations based on collision type, using screening filters	City of London - Transportation	12 intersections have been audited by CIMA and City including highest injury locations and highest vulnerable user locations
Collision Counter-measure Program	Engineering	Identify intersections experiencing higher than expected number of collisions, using prediction models	City of London - Transportation	Complete
Traffic Signals Improvement Program - Left Turn Phasing	Engineering	Continue to review advance left-turn phasing and to analyse need for protected left-turn phase	City of London - Transportation	On going
Traffic Signal Improvement Visibility Review	Engineering	Continue to review visibility of downstream signal heads where multiple traffic signalized intersections are within 250m of each other. Review visibility of signal heads and sight distances at individual and adjacent signal locations.	City of London - Transportation	Complete
Crosswalk Pavement Marking Program	Engineering	Continue to identify which locations would benefit from ladder markings (refer to TAC Pedestrian Traffic Control Guide); create a criteria to assist in identifying the locations for ladder markings, and for maintenance of markings after installation.	City of London - Transportation	8 intersections and 22 crossings will have ladder markings added this year (2016)
Pro-active Enforcement Program	Enforcement	Enhanced use of pro-active enforcement strategies - specific to high risk intersections as determined by collision screening programs (above)	London Police Service	Intersection related light violation tickets/ HTA 144: 2014- 2419 (Project Collision Reduction done during this year with 93 of the 2419 tickets arising out of this project)



				<p>2015- 2217 intersection related light violation tickets</p> <p>2016 to date- 1400</p>
Advance Street Name Sign Program	Engineering	Install advance street name signs using ClearView font and Upper/Lower case lettering before major intersections	City of London - Transportation	8 intersections will be complete by the end of the year
Unmarked Enforcement of Distracted Driving	Enforcement	Initiatives involving unmarked vehicles and/or officers in plain clothes	London Police Service	<p>2016 May long weekend is the OACP Drive Safe campaign so within that time period we engaged in enforcement specific to distracted driving over both of those weekends.</p> <p>LPS Traffic Management Unit we have conducted four cell phone specific projects during that time period (although they focus on this offence every day). Two of them were plain-clothes intersection related and two were on LTC buses. One was a full week long.</p> <p>Tickets issued for violating hand held communication device legislation</p> <p>2014- 2506</p> <p>2015- 2859</p> <p>2016 to date- 1599</p> <p>(includes tickets issued by uniformed officers)</p>
Driver Education Campaign - Tweets	Education/Empathy	Police media tweets campaign "Look where you are driving"	London Police Service	<p>Canada Road Safety Week CACP ran from 17 May- 23 May 2016 and May 12-18 2015.</p> <p>The focus during that week is also on distracted driving. For some perspective by focus I mean that a series of tweets and media releases are sent out, all patrol and traffic</p>



<p>CIMA+ file number</p>			<p>officers are advised and are requested to focus on distracted driving related offences</p> <p><u>OPP</u></p> <p>Distracted Driving Campaign (OPP – March Break) 14Mar2016 – 20Mar2016</p> <p>Easter Long Weekend (OPP – Focus Seatbelt) 25Mar2016 – 28Mar2016</p> <p><u>2015 Provincial Traffic Safety Campaigns</u></p> <p>Canada Road Safety Week (CACP/Transport Canada) 12May2015 – 18May2015</p> <p>Victoria Day Long Weekend (OPP – Focus ORV/ATV/MC) 15May2015 – 18May 2015</p> <p>Operation Corridor (OPP/MTO) 16Jun2015 – 17Jun2015</p> <p>Canada Day Long Weekend (OPP – Focus Aggressive Driving) 26Jun2015 – 01Jul2015</p> <p>Civic Day Long Weekend (OPP – Focus Move Over) 31Jul2015 – 03Aug2015</p> <p>Labour Day Long Weekend (OPP – Distracted Driving) 04Sep2015 – 07Sep2015</p> <p>Fall Seatbelt Campaign (MTO/OPP) 23Sep2015 – 09Oct2015</p> <p>Operation Impact (CACP/Transport Canada) 09Oct2015 – 12Oct2015</p>
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				<p>LPS Traffic twitter account stands at 1346 followers</p> <p>LPS Media account stands at 39900 followers</p> <p>Retweets by each related to traffic tweets</p>
<p>Driver Education Campaign for Distracted/Aggressive Drivers</p> <p>CIMA+ file number</p>	Education/Empathy	Program in collaboration with London Health Sciences Centre and other partners	Middlesex-London Health Unit (MLHU)	<p><u>Buckle Up Phone Down Campaign</u></p> <p>To inform the community about pending changes to Bill 31's distracted driving legislation, the Buckle Up, Phone Down campaign targeted drivers 16-45</p> <p>Launched in December of 2014</p> <p>invested \$32,168.62</p> <ul style="list-style-type: none"> - Media Event at London Police Services -Cineplex ads for Josh's Story (Distracted Driving) shown approximately 4,655 times (Dec 2014-Jan 2015) - Rack Cards- 3510 -Ad-Tube advertising 41,101 views - Cell Phone Screen Cleaners 2500** - Logo Window Clings 1050 -Bus Shelter Ads: 3 Locations avg circulation 41,751 -Facebook 3 ads approximate views : 75,705 <p><u>Phase 2 Buckle Up Phone Down</u></p> <p>May 2015 - December 2015</p>



<p style="writing-mode: vertical-rl; transform: rotate(180deg);">CIMA+ file number</p>			<p>Invested \$11,263.60</p> <p>Cineplex Josh's Story Ads (May 2015) 1848 ads(approximate)</p> <p>-Video Contest June 2015 – 3 Entries</p> <p>-Winning Video Lego Brick Distracted Driving Video</p> <p>https://goo.gl/xjEHek</p> <p>- creation of LMRSC YouTube Channel</p> <p>-Lego Brick Ad Tube ads (October 13- December 14) 23,745 total views with 5,442 views during National Teen Driving Safety Week (accounted for 23% of total)</p> <p>- Rack Cards 490 distributed</p> <p>- 56 Window Clings</p> <p>- 1311 Screen Cleaners</p> <p>- Ads for Buckle Up, Phone Down in ParentGuide.ca distributed free throughout the city of London and Middlesex County</p> <p>- Facebook and Twitter posts</p> <p>- Media Coverage from London Free Press</p> <p>- MLHU website</p> <p>-LHSC website</p> <p><u>Winter Driving Campaign</u></p> <p>November 2015- March 2016</p> <p>Invested \$18,476.69</p>
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<p style="writing-mode: vertical-rl; transform: rotate(180deg);">CIMA+ file number</p>			<ul style="list-style-type: none"> -Radio Ads read by Trauma Physician Dr. Neil Perry - 280 Radio ads aired, 4 Radio Stations 150,000 potential reach - Facebook Ads , 217 Likes, 170 Shares , 25 public comments - Distribution of Emergency Blankets with Winter Safety Driving Tips, 2000 blankets throughout City of London and Middlesex County -200 ice Scrapers distributed at LHSC - Distribution of 475 Reflective ``Be Seen`` Arm Bands - Media coverage from London Free Press, Am 980 -MLHU Website -LHSC website City of London <u>Buckle Up Phone Down Phase 3</u> April 2016 – October 2016 Invested \$1100 -2 Facebook ads created for the Lego Brick Distracted Driving video – 24,000+ views - Ad purchased in the Parent Resource Guide.
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				- Distracted Driving Lego Brick Video creator Aaron-John Williams won MTO Road Safety Volunteer Award for 2015.
Young Drivers Education Campaign - Distracted and Impaired	Enforcement/Education/Empathy	Continue the education campaign focused on distracted driving and impaired driving by alcohol and drug in secondary schools	London Police Service	Two-day drug and alcohol program disseminated to all grade 11 students in London. Topics covered included impaired driving and drivers licences restrictions and sanctions related to graduated licencing. Approximately 4000 students reached.
Young Drivers Education Campaign - Skill Building	Education/Empathy	Continue Young Drivers of Canada's training for skill building, cognitive assessment, and development training for co-drivers and resources for G1 & G2 drivers	Young Drivers Canada	Ongoing 2015-2016 (present) 699 students
Young Drivers Education Campaign - Inexperience in Driving	Education/Empathy	Collaborate and explore ways to better understand youth and inexperience in driving needs, and integrate their needs with engineering modifications to traffic signals and geometric elements	London Health Sciences Centre (LHSC)	Present the distracted driving simulator to students at a # of schools and community events (e.g. Laurier Secondary school, Fanshawe College, FireFest). Created a teen focused website www.impactprogram.ca and provided 150 USB armbands with access to the website for resources related to teen driving behaviour.
IMPACT – Informing Teens, Preventing Injuries	Education/Empathy	Continue campaign focused on reaching out to youth (ages 15-19) to discuss the consequences of high risk behaviour such as aggressive and distracted driving	London Health Sciences Centre (LHSC)	From May 2015 to September 2016 over 4,000 students have received the redesigned Impact presentation at their schools. Over 350 students attended more than 10 in-hospital presentations.



Pedestrian Refuge Island Program	Engineering	Construct new pedestrian refuge islands where needed based on City's criteria	City of London - Transportation	On-going
Pedestrian Facilities Upgrades, OTC Book 15, AODA, TAC Pedestrian Traffic Control Guide	Engineering	Enhance pedestrian safety by expanding and upgrading pedestrian facilities based on recent guidelines	City of London - Transportation	22 Type D pedestrian Crossovers installed this year
Pedestrian Crossing Enforcement Strategy	Enforcement	As a supplement to education and awareness countermeasures, targeted strategies for pedestrians who cross the road in contravention of the act or applicable by-law will be enforced at selected locations	London Police Service	On-going – officers address when it occurs In October 2016 Officers will be instructed to focus on PXO locations – to instruct and educate along with enforce.
Safe Routes to School Program	Engineering	Review local issues around schools as an integral part of an active Safe Routes to School program	City of London	Numerous issues addressed at multiple schools Barriers are site specific- lack of access ramps, no bike trails, no clearing of paths in winter, too many parents dropping kids off. Many of the issues arise (Lego Video to illustrate some safety tips HEAL lab to get some data and will share this with us in the next few months.
Safe neighbourhoods	Education/Empathy	Continue the engineering collaboration with schools (1) through the walkabout at every school with parents, police, teachers City staff to review identified safety concerns; (2) the dissemination, through the school newsletter, of the generic set of questions	City of London	Four areas completed safety audits in 2016 40km reduction in 3 school zones was approved by council Education to follow for parents and children about misconceptions about 40km reductions- be aware that cars may not actually b going slower

CIMA+ file number



		and answers on the pros and cons of perceived solutions to traffic concerns.		
Active and Safe Routes to School (ASRTS)	Education/Empathy	ASRTS is a community partnership. Interested schools are provided with a comprehensive strategy to meet the needs for safety and active transportation at their school. An educational planning manual is available.	Middlesex-London Health Unit (MLHU)	<p><u>2014-2015 Active and Safe Routes to School Program</u></p> <p>School Travel Planning (STP) encourages active transportation to and from school by developing an action plan to build upon strengths and work to remove concerns around schools</p> <ul style="list-style-type: none"> •5-step process: 1) set up, 2) baseline data collection, 3) action plan development, 4) action plan implementation, 5) evaluation •Region: St. Thomas, Elgin, London, Middlesex and Oxford •2014 I Walk – International Walk to School Day resources were updated (posters, contest and assembly ideas, announcements, newsletters, etc.) and loaded to our website: www.activesaferoutes.ca <p>2015 I walk day – merged with HKCC and InMotion Campaigns</p> <ul style="list-style-type: none"> •2015/2016 Priority – STP follow-up surveys created and evaluation process developed <p>2016 STP Update: 17 Active STP schools; 3 Evaluations in progress (http://activesaferoutes.ca/school-travel-plans/participating-schools/) . Focus Groups scheduled for Fall 2016 for STP qualitative evaluation.</p>

CIMA+ file number



<p style="writing-mode: vertical-rl; transform: rotate(180deg);">CIMA+ file number</p>			<p>August to October 2016 – Social media promotion paired with 'back to school safety tips', pedestrian safety video promotion, and international walk to school day October 5th.</p> <p>2016 – had software developed to automate the STP data analysis process in order to increase the number of schools that can be taken on for STP.</p> <p><u>2016 Pedestrian Safety Video</u></p> <p>Launch August 22 2016- mid October 2016</p> <p>Invested \$7043</p> <p>A pedestrian safety tips video was created in the same stop motion Lego brick style to teach parents and their children the proper steps to crossing at traffic lights safely. This was a collaboration between Active and Safe Routes to School and LMRSC</p> <p>https://goo.gl/vsILCS</p> <p>Ad tubes (pending)</p> <p>Facebook ads</p> <p>Social Media</p> <p>YouTube link</p> <p><u>2016 Pedestrian Cross Over Education Campaign</u></p> <p>Launched: August 11 2016 – end of October.</p>
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				<p>Invested: \$26,108 Education, \$50,000 Engineering</p> <p>The City of London installed 22 new pedestrian crossovers' to coincide with amendments to Bill 31. A corresponding educational campaign was spearheaded by the City of London, in collaboration with the London Middlesex Road Safety Committee.</p> <ul style="list-style-type: none"> - Radio Ads - Bus Ads - Transit Ads - Print Material - Media Event - Newspaper Ads - City of London Website
Safe Routes to elementary and secondary school program by Middlesex OPP in Middlesex County	Education/Empathy	Continue partnership between the Middlesex OPP and Thames Valley District School Board to support local school programs and educate the youth	Ontario Provincial Police (OPP)	Students mostly bussed – Dorchester and Lucan have some walking students – Thorndale some traffic complaints being looked into
Cyclist Crossing Enforcement Strategy	Enforcement	As a supplement to education and awareness countermeasures, targeted strategies for cyclists who cross the road in contravention of the act or applicable by-law will be enforced at selected locations	London Police Service	On-going London By-law officers blitz on Thames Valley Parkway for use of EBikes LPS targeting use of EBikes
Annual addition of Bike Lanes	Engineering	Continue the expansion of dedicated bike lanes on major roads as per the City's Bicycle Master Plan	City of London - Transportation	331 kilometres of existing cycling facilities and pathways in London.



				<p>The Council approved Cycling Master Plan recommends the implementation of 305 kilometres of new cycling facilities including bike lanes, cycle tracks, buffered paved shoulders and off-road pathways within the downtown, suburban and rural areas of the city.</p> <p>Cycling Master Plan complete and in implementation</p> <p>11 specific action plans</p>
<p>Share the road signage and educational project in the City of London and Middlesex County</p>	<p>Education/Empathy</p>	<p>Middlesex County, City of London, Middlesex-London Health Unit, and London Middlesex Road Committee launch a new Share the Road educational campaign for West London and Middlesex County in 2014</p>	<p>Middlesex-London Health Unit (MLHU)</p>	<p><u>Share the Road Campaign</u></p> <p>In accordance with Bill 31- the Share the Road Campaign encourages drivers to be respectful to cyclists and leave at least 1m distance between them when passing because it's the law.</p> <p>May 29th 2014 –September 21st 2014</p> <p>Invested \$30,000</p> <p>Media event</p> <ul style="list-style-type: none"> - Radio ads – 580 aired ads on 5 different radio stations - Website – 1006 unique visits - Facebook (FB) ads – Reach 91,643, 383 public comments, 333 shares - Twitter – 33 tweets, 204 retweets - rack cards- 6300 distributed - Posters- 200 distributed - Placemats (for restaurants) 75,000 at 2 restaurants - T-shirts -60 distributed

CIMA+ file number



<p>file number</p>				<ul style="list-style-type: none"> - Measuring Tape – 500 distributed - Keychains – 480 distributed - Display board for 5 community events <p><u>Share the Road Reboot</u></p> <p>May 1st 2015-October 2015</p> <p>Invested \$2,075</p> <ul style="list-style-type: none"> - 60 Reflective Share the Road T-shirts distributed to local cyclists - 1175 Reflective Arm Bands - 17 community events - Facebook, Twitter posts. - 960 Rack Cards distributed - 9 Bike light prizes at community events <p><u>They Will 2 Helmet/Cycling Safety Campaign Summers 2015/2016</u></p> <p>This campaign uses role modeling theory to encourage parents to wear their helmets so that their children will mimic the behaviour. This was a collaboration from the South West Injury Prevention Network</p> <p>Invested \$1653</p> <ul style="list-style-type: none"> - 540 Reflective Arm Bands - 675 They will 2 Rack Cards - 377 2V1 Helmet fitting Rack Cards - 185 Share the Road Rack Cards - 70 Be Seen Rack Cards
<p>CHWA Traffic Signals Improvement Program - Signal Timing</p>	<p>Engineering/Enforcement</p>	<p>Continue the review of signal clearance times and extensions</p>	<p>City of London - Transportation</p>	<p>On going</p>



Traffic Signal Sight Distance Review	Engineering	Continue the review of signal clearance times and sight distances at high right-angle collision locations	City of London - Transportation	On going
Traffic Signals Improvement Program - Signal Coordination	Engineering	Continue to optimize and co-ordinate signal timings along corridors	City of London - Transportation	On going
Red-Light Camera Implementation	Engineering	Install Red-Light camera equipment at selected locations	City of London - Transportation	2017 Launch
Pro-active Enforcement Program - Red-Light Running	Enforcement	Use of co-ordinated enforcement strategy with use of both plain clothed and uniformed officers in close collaboration with the engineering program	London Police Service	2017
Traffic Signals Improvement Program - LED Signals	Engineering	Use of LED signals to increase visibility of red light as an integrated program with the other strategies related to red-light running	Middlesex County	8 intersections proposed to be upgraded by 2018

