

THE SAFETY NETWORK LE RÉSEAU-SÉCURITÉ

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Vision Zero

Vision Zéro

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Editorial

A.E. (Tony) Churchill - City of Calgary, Roads, Traffic Engineering

We all want to go about our regular days without being injured or killed while we are getting around. This simple common desire is the basis of the Vision Zero movement and how the transportation system needs to operate to achieve that outcome. Vision Zero advocates seek to achieve a road system where there are no fatalities or serious injuries. The problems or opposition to Vision Zero come about when individuals or groups take different positions on issues, and how best to improve the system. This can happen for a variety of reasons.

The first issue is one of semantics in understanding the difference between a vision and a goal. It is important to have realistic, achievable targets, but keep a focus on the vision. As road safety professionals, we have a better understanding than most people that the system influencing traffic safety outcomes is extremely complex. Often though, individuals or organizations would rather not recognize their own responsibility for their safety and the safety of others in that system, and share a variety of 'we have always done it like that' or 'they should just...' type arguments to justify not changing how they approach traffic safety. This traditional view of traffic safety being the primary responsibility of someone else (transportation system users are 'at fault' in most collisions – right?) leads to lots of finger pointing and easy conclusions to jump to that there is nothing wrong with what 'I/we' are doing and that it is 'their' fault/problem. This is where we as road safety professionals need to do an even better job of clearly explaining how the system needs to change and why we need to change how we approach traffic safety improvements.

But we need to keep going back to my first comment, no one wants to get hurt, and then explain how the changes we need will move us toward that vision. The first big step which jurisdictions have been taking is clearly stating that their traffic safety



Tony Churchill, source: Calgary Sun

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plans embrace the Vision Zero approach to traffic safety (with political support). This is a direction Calgary is heading in our next Safer Mobility Plan, whereas our current plan subtly states that our Mission is “Striving for zero... pursuing transportation completely free of fatalities and injuries”. Equally important for the credibility of these plans is the funding to make sure that we can demonstrate progress toward the vision – this is another area that Canadian cities have been making vast improvements.

I'm looking forward to reading the other articles in this newsletter, about Edmonton's Vision Zero plan, the Vision Zero Advocate Conference in Edmonton (that I had the pleasure of speaking at and promoting CARSP), knowledge sharing about Vision Zero, and making safer infrastructure sound sexy by talking about how 'Fused Grids' support Vision Zero. We may have different ideas about how long it will take to get to zero, how to even get there, or who is responsible for what, but at the end of the day we need to be clear about the end outcome we all want – that common purpose is what will continue to move us toward zero fatalities and serious injuries on our roads.

Éditorial

A.E. (Tony) Churchill - City of Calgary

Personne ne souhaite mettre sa santé et encore moins sa vie en danger lors de ses déplacements. Ce désir de sécurité que nous partageons tous est l'assise de l'initiative Vision Zéro et il sert à guider la façon dont le système de transport doit fonctionner pour éliminer les risques. L'objectif de Vision Zéro est d'éliminer le risque de décès et de blessures graves sur le réseau routier. La divergence des intervenants sur les enjeux et les solutions freinent le travail de Vision Zéro. Plusieurs facteurs expliquent cette divergence.

D'abord, il faut expliquer la différence entre une vision et un objectif. Il est important d'avoir des objectifs réalistes et atteignables, mais il ne faut jamais oublier la vision. En tant que professionnels de la sécurité routière, nous sommes bien placés pour savoir à quel point le système derrière la sécurité routière est complexe. Malheureusement, beaucoup d'organismes et de personnes refusent de reconnaître leur responsabilité en matière de sécurité, autant la leur que celle du public, dans ce système, et préfèrent répondre par « on a toujours procédé ainsi » ou « ce serait à eux de... » pour justifier la rigidité de leur position. Cette vieille mentalité de donner la responsabilité aux autres (et pourtant, les utilisateurs du système de transport sont responsables de la plupart des collisions !) incite à jeter le blâme sur les autres, à vite conclure que « je n'ai rien fait de mal », que c'est « leur » faute. C'est pourquoi nous, les professionnels de la sécurité routière, devons encore mieux expliquer les modifications à apporter au système et les raisons pour lesquelles nous devons changer notre façon d'améliorer la sécurité routière.

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The first big step which jurisdictions have been taking is clearly stating that their traffic safety plans embrace the Vision Zero approach to traffic safety (with political support).



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Pour ce faire, il nous faut d'abord revenir à ce désir fondamental de sécurité, que j'évoquais en guise d'introduction, pour ensuite expliquer comment les changements requis nous permettront de concrétiser cette vision. La première grande étape réalisée par les administrations publiques est de prendre sérieusement en considération l'approche Vision Zéro dans leurs plans de sécurité routière (avec un soutien politique). Calgary va dans ce sens en participant à notre prochain plan d'amélioration de la sécurité des transports, lequel a pour mission d'« éliminer la totalité des risques de décès et de blessure dans les transports ». La crédibilité de ces plans repose beaucoup sur la qualité de leur organisation, et sur notre capacité à montrer le progrès réalisé pour concrétiser notre vision – il s'agit d'un autre domaine dans lequel les villes canadiennes apportent de grandes améliorations.

Je suis impatient de lire les autres articles de ce bulletin : le plan Vision Zéro d'Edmonton, le colloque des militants de Vision Zéro à Edmonton (où j'ai eu le plaisir de donner une conférence et de faire valoir l'ACPSE), l'échange de connaissances à propos de Vision Zéro, et les façons de rendre attrayant la sécurité des infrastructures en parlant de la contribution des « îlogrammes » à Vision Zéro. Nous ne sommes peut-être pas d'accord sur le temps nécessaire pour atteindre l'objectif zéro, ni sur les façons d'y parvenir et l'attribution des responsabilités, mais en fin de compte, nous devons clairement définir notre objectif commun – c'est ce qui nous amènera à progresser ensemble vers l'élimination des décès et des blessures graves sur nos routes.

Vision Zero Academy

This article was developed based on content found on the Vision Zero Academy website.

Résumé : L'Académie Vision Zéro est un forum international dont l'objectif est l'acquisition de connaissances en sécurité routière, l'adoption de procédés innovants et de bonnes pratiques supportés par des preuves scientifiques. De façon ouverte, transparente et inclusive, ce forum vise à conscientiser les décideurs du monde entier.

Vision Zero Academy is an international forum, based in Sweden, that seeks to generate knowledge about road safety and how to reach the most effective and science based innovation and implementation processes. It aims to spread this awareness to stakeholders worldwide in an open, transparent and inclusive way.

When the concept of Vision Zero was introduced in Sweden in 1995, it turned the traditional view of road safety work upside down. From an initial focus on the prevention of crashes, the present direction is that no-one should die or be seriously injured as a result of collisions.

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According to Vision Zero, the main problem is not that crashes occur – it is rather that crashes should not lead to death or lifelong injury. Vision Zero stresses the fact that the road transport system is an entity, in which the different components, such as the roads, vehicles, and road users, must be made to interact with each other so that safety can be guaranteed.

Vision Zero in Sweden is a long-term goal. In 1997, Parliament made the historic decision that Vision Zero should form the basis for the work carried out in Sweden on road safety. Vision Zero garnered wide-ranging support among stakeholders and became a common expression of political direction for the whole society.

The system approach adopted by Vision Zero involves both innovative techniques and old solutions that are used in a new way. Examples include speed reduction through the use of safety cameras and vehicle-based, Intelligent Speed Adaptation (ISA) systems; alcolocks to prevent alcohol-impaired drivers from starting their vehicles; and centrally-separated, 2+1-lane roads and roundabouts to help avoid serious crashes.



In 2008, the Swedish Road Administration published a report entitled "*The management of traffic safety work by objectives. Cooperation between players focusing on new milestones in 2020*". This contained a proposal for a new system for the management of traffic safety work by objectives, based on three fundamental points:

- (1) cooperation when milestones are developed,
- (2) action-related milestones, and
- (3) annual result conferences in which traffic safety and goal fulfilment are evaluated.

The report served as the starting point for a Government bill entitled "*Goals for future travel and transportation*" which, in turn, formed the basis for future traffic safety initiatives in Sweden. A new milestone for traffic safety on Swedish roads was adopted by Parliament in 2009. The goal is for the number of people killed in traffic in the year 2020 not to exceed 220.

The system approach adopted by Vision Zero involves both innovative techniques and old solutions that are used in a new way.

The first annual outcome conference was held in 2009. Before each conference, a report on traffic safety developments during the previous year is produced. Progress is analysed in the first instance on the basis of some ten indicators, such as the observance of speed limits, sobriety, and the use of cycle helmets. The report details the outcomes for specific sub-targets and shows those areas in which additional efforts are needed.

The concepts and approach of Vision Zero have spread all over the world. Vision Zero Academy is a knowledge node on Vision Zero containing reports and research results. For full details, visit the web site at: <https://tinyurl.com/VisionZeroAcademy>.

Vision Zero Edmonton

Gerry Shimko
City of Edmonton Office of Traffic Safety

Résumé : Edmonton maintient ses efforts en sécurité routière et s'applique maintenant à intégrer les impératifs éthiques qu'impliquent la "Vision Zéro" : soit qu'aucun usager de la route ne devrait décéder ou être blessé sérieusement dans une collision sur les routes edmontonniennes.

We can all agree that regardless of where you live, work and play, no one should die or suffer from serious injuries as a result of a motor vehicle collision. This was very evident as we took to the streets of Edmonton with a series of questions that culminated in asking "How many people in your family should die as a result of a motor vehicle collision?" The unanimous answer was zero, each and every time. This strong endorsement captured on a YouTube video titled, *Edmonton Zeroes in on Traffic Safety*, was shared with Edmonton City Council in September 2015, when the Edmonton Road Safety Strategy 2016-2020, which incorporated the Vision Zero philosophy and the Safe System approach, was approved. As an early adopter of Vision Zero, Edmonton continues to build on earlier traffic safety efforts and has now accepted the ethical imperative that no one should die or be seriously injured as a result of a motor vehicle collision on Edmonton roadways.

As a wise instructor once said years ago, we need to retool our thinking on how we are doing things and the same applies with Vision Zero. The data clearly pointed to a high risk for vulnerable road users in Edmonton which is likely the same in many jurisdictions. This necessitated a shift in our metrics and targets to add greater focus in these areas while still working on targets from our master transportation plan. This retooled approach shifted limited resources to prioritized work relating to pedestrians, cyclists, and motorcyclists.

Nearly half of Edmonton's fatalities were pedestrians and a significant majority were seniors. Two major initiatives are rolling out in 2017 that will work to increase safety in



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Edmonton's pedestrian crosswalk program along with a major public education campaign in the fall. While in the past we have accepted that fatalities and serious injuries were random events, it may be more appropriate to say that they are system failures that could have been prevented.

The first initiative includes a comprehensive review of Edmonton's pedestrian crosswalk program with a greater emphasis on prioritization of locations with higher risks for pedestrian injuries including children and seniors. Further work is underway to ensure both an optimal complaint driven process and a proactive

process that would look at identifying and prioritizing locations that will require higher degrees of protection. Two subsets of this will include a review of fully protected signalized locations and the standard marked crosswalk with pedestrian sign locations. These two pedestrian safety measures contribute to the first and second highest number of pedestrian injuries in Edmonton. Other areas which have been identified for review are decorative crosswalks as well as locations that are used within a designated cycle track. Speaking of crosswalks, pedestrians and bicycles, who knows what "elephant feet" markings at a crosswalk are for?

Like other cities in the northern hemisphere, the reduction of daylight hours starting in the fall and continuing through the winter months is a known time frame for an increased risk for pedestrian related fatalities and injuries. A major education campaign is under development to address this significant contributor to vulnerable road user injuries which should roll out by September. This will also coincide with education campaigns on back to school and speed reduction in the junior high school zones. Other campaigns will target follow too close collisions, speeding (both too fast and too fast for road conditions) and distracted driving.

On the technology side, Edmonton has had a very promising start to the use of Driver Feedback Signs (DFS) to reduce speeding vehicles with reductions of approximately 6 to 11 km/h. The program targets the inner ring road, locations coming off the provincial ring road, locations with high speed violations and low compliance and schools. Over 150 DFS units have been permanently deployed and each collects speed data which is downloaded weekly, analyzed and used to monitor compliance, as well as prioritize future enforcement. Similarly, several pilots of using permanently mounted Digital Messaging Systems infrastructure have identified the potential to use

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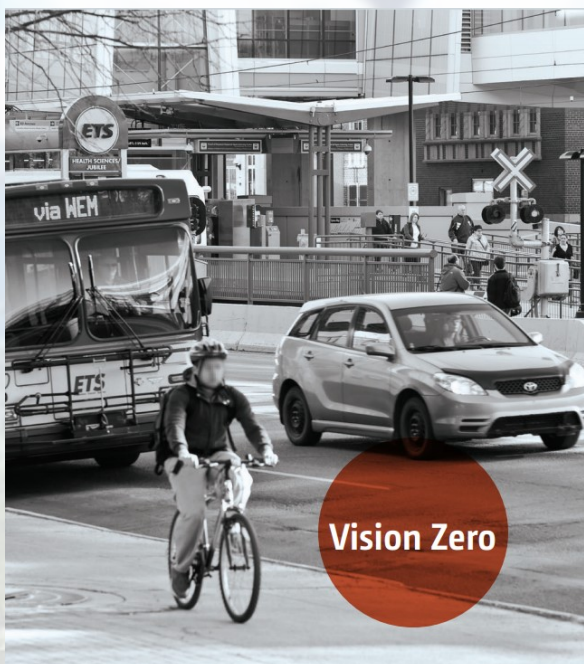


Image source: Edmonton Road Safety Strategy 2016 - 2012

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generic and specific messaging to drivers based on collision analysis to educate and reduce related collisions.

Our expectations and hopes are based on a simple six word story, *"Everyone leaves and comes home safely."* Our results are available through the internet via the 2016 Vision Zero Annual Report and the 2016 Motor Vehicle Collisions Report for the City of Edmonton. In 2018, we will establish a Vision Zero target date which will be reported in our 2017 Vision Zero Annual Report.

Vision Zero Advocate Conference

Alexandra Kelly, M.Sc., CPC
Vision Zero Advocate Institute, ATS Traffic

Résumé : L'Institut de défense de la Vision Zéro (Vision Zero Advocate Institute) a été fier d'accueillir la conférence inaugurale Vision Zero Advocate à Edmonton, Alberta, en mars 2017, tenue à guichets fermés. Cet événement, le premier du genre au monde, a également permis le lancement de l'Institut et de son site Internet : www.visionzeroai.com.

Inaugural Vision Zero Advocate Conference A Success

The Vision Zero Advocate Institute is a leader in the accelerated adoption of Vision Zero in municipalities and organizations in Canada and around the world. The Institute was proud to host the sold out inaugural Vision Zero Advocate Conference in Edmonton, Alberta in March 2017. The first of its kind in the world, the conference was also the launch of the Vision Zero Advocate Institute and its website, located at www.visionzeroai.com.

Diverse and Engaging Program

The event welcomed delegates, speakers, and traffic safety professionals from across North America to discuss current trends in road safety, and the strategies and tools for the successful widespread adoption of Vision Zero.

Topics for the three-day event included public engagement, funding, utilizing data, and the emergence of autonomous vehicles. With a mixture of delegates from engineering, public health, enforcement, traffic safety, and advocacy, the event highlighted the connection between diverse groups with a common goal. The beginning of the conference also marked the official launch of the Vision Zero Advocate Institute website, which introduced attendees to Vision Zero Advocate Program and the kinds of resources available.



VISION ZERO

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Edmonton Mayor Promotes Vision Zero

Edmonton Mayor Don Iveson celebrated the launch, highlighting how the Vision Zero Advocate Institute supports the critical work that needs to be done to reconsider the balance in road design and use, while urging city councils from across the country to support conditions that encourage big shifts in traffic safety.

As Mayor of the first Canadian city to adopt Vision Zero, Mayor Iveson promoted “deliberate prioritization” of resourcing, road usage and safety agendas as municipalities work to address traffic safety issues.



Don Iveson, Mayor of the City of Edmonton

Vision Zero Book Released

The conference also featured the release of *The Road to Vision Zero*. This book, the first of its kind, provides a detailed introduction to the Vision Zero framework, and expands on that framework, walking readers through a comprehensive community and organizational plan. A foundation to the Vision Zero Advocate Program, *The Road to Vision Zero* is rooted in best practice strategies to take a municipal team from idea to implementation.

Jeff Calibaba, author and Vision Zero Advocate Institute founder, has deep roots in injury prevention, traffic safety and community development. As a father, former paramedic and three-time author, Calibaba applied his experience as a paramedic and founder of the global defibrillator program, Heart Save, to the development of the Vision Zero Advocate Institute. Calibaba believes in the power of collaboration, saying that he knows “that lives can be saved when people, communities and government all work together.” The book is currently available through Amazon.

*The conference also featured the release of **The Road to Vision Zero**. This book, provides a detailed introduction to the Vision Zero framework, and expands on that framework, walking readers through a comprehensive community and organizational plan.*

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*(Continued from page 9)***Toronto to Host 2018 Event**

The annual event will be hosted in a different Canadian city each year, to continue a national conversation and increase a widespread commitment to Vision Zero. The Vision Zero Advocate Institute looks forward to hosting the next conference in Toronto, February 28-March 2, 2018. Look for more details, coming soon, to www.visionzeroconference.ca.

With the collaborative effort of public educators, government agencies, advocacy groups, municipal officials, and of course, drivers themselves, Vision Zero is becoming less of an ambitious goal, and more of an attainable reality. To learn more about the Vision Zero Advocate Institute and to view presentations from the conference, visit www.visionzeroai.com.

Vision Zero Network

This article was developed based on content found on the U.S.-based Vision Zero Network website.

Résumé : Aux États-Unis, l'initiative « Vision Zero Network » (Réseau Vision Zéro) s'est engagée à aider les communautés à atteindre leur but de Vision zéro accident, afin d'éliminer les décès et les blessures sur les routes en augmentant la mobilité sécuritaire, saine et équitable de tous les usagers de la route.

Vision Zero is a strategy to eliminate all traffic fatalities and severe injuries, while increasing safe, healthy, equitable mobility for all road users. First implemented in Sweden in the 1990's, Vision Zero has proved successful across Europe — and now it's gaining momentum in major American cities.

The Vision Zero Network recognizes that achieving the goal of safe mobility for all is not only critically important, but also distinctly challenging. Those communities stepping up to boldly change business as usual deserve support. That's why the Vision Zero Network has pledged to foster collaboration between leading cities to accelerate progress toward eliminating traffic deaths and serious injuries.

In early 2016, the Vision Zero Network launched its *Vision Zero Focus Cities* program to encourage collaboration between leaders in ten early-adopter Vision Zero Cities. Through peer-to-peer networking, sharing of innovations and data, and leadership development, staff and officials from the Focus Cities support and encourage each other as they develop successful American practices to reach zero traffic fatalities and severe injuries on our streets, sidewalks, and bikeways.

These pioneering cities were selected through a competitive process to accelerate Vision Zero in the United States and to serve as models for other communities. The cities leverage their shared resources and highly-visible national profiles to showcase their commitments to transform the culture and expectations around traffic safety through public policy, roadway designs, and other systemic practices to prioritize safety.

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As cities are able to share their learnings, the Network operates as a clearing house of best practices for all communities looking to advance Vision Zero. The Network invests significant energy toward identifying, documenting and sharing the winning strategies developed by the participating cities. By creating new resources, particularly online, and forums for sharing, the goals of Vision Zero will gain greater momentum and reach a far greater audience.



Municipal truck with retro-fitted steel mesh sideguard

The Vision Zero Network also supports other communities through its *Emerging Cities* program, which facilitates networking and collaboration among other cities at various stages of commitment to Vision Zero. This fast-growing cohort consists of both small and large communities earlier in their development of Vision Zero but no less dedicated to the goal of ensuring their streets and sidewalks are safe for all.

Beyond Cities: Vision Zero on Rural Roads

Daphné Dethier, WSP Montreal
Karin Hassner, WSP Stockholm
John Chow, WSP New York City

Résumé : En Amérique du Nord, la Vision Zéro est portée par les villes, mais le bilan routier pourrait être grandement amélioré si les routes rurales pardonnaient davantage. Des mesures passives telles que des glissières, des barrières médianes et des bandes rugueuses sont des moyens de prévenir les accidents et leur sévérité, en complément aux mesures visant à réduire la vitesse, la fatigue et l'alcool au volant.

In North America, cities have mainly led Vision Zero initiatives in recent years. However, it is important to also focus on the safety of rural roads in the context of Vision Zero.

The goal of Vision Zero is that “no one shall be killed or seriously injured within the road traffic system.” Vision Zero is a truly holistic approach and includes all road facilities, both urban and rural. Indeed, in its birthplace in Sweden, Vision Zero is implemented nationally. In Australia, *Towards Zero* is organized by state. In Canada, British Columbia has a province-wide strategy. This article focuses on Vision Zero on rural roads, drawing on measures to reduce the severity of road crashes in relation to the characteristics of rural road environments.

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In North America, cities have mainly led Vision Zero initiatives in recent years. However, it is important to also focus on the safety of rural roads in the context of Vision Zero.



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Posted speeds are high on rural roads which can be associated with an increased risk of severe crashes. The most common crash type in a rural environment is a single-vehicle hitting a fixed roadside object. Head-on crashes are common as well. Factors contributing to rural road crashes are speeding, impaired driving, distracted driving, and fatigue. Other elements such as sparse public transportation make travel on rural roads less safe. Human errors on rural roads can translate to severe injuries and fatalities when the roadside environment is not forgiving.

So how can we increase the forgivingness of rural roads?

- Ensure safe and consistent road shoulders to reduce the severity of run-off-road crashes.
- Install shoulder rumble strips to cost-effectively prevent roadway departure.
- Clear roadsides areas or install barriers.
- Install median barriers or build parallel roads to physically separate driving directions, preventing head-on crashes.
- Consider retrofitting with centrally-separated 2+1 lane roads, which have proven successful. The +1 lane alternates between the two directions of travel to allow safer passing.

ITS, vehicle technology, and enforcement are also part of the solution. Highly visible speed cameras remind drivers to respect the posted speed limit, auto-generating tickets to offenders. As Claes Tingvall reminded us during the 2017 Vision Zero Cities conference: *"The best camera is the one which issues no ticket"*. Our goal is helping drivers comply, not collecting revenue. Automated camera enforcement also eliminates discrimination, generating tickets solely based on speed or red-light violation.

Variable speed limits, which can be adjusted based on pavement and weather conditions, assist drivers in maintaining safe, appropriate speed. Speed is a key factor in a crash survival, but is also the source of the

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contradiction between flow and vulnerable road users' protection. Other safety tools include alcolocks, which keep drunk drivers off the road.

Intersections and roads sections require different treatments in rural areas. It is also important to make the transition between urban and rural environments clear to the road user. Amongst other goals, Vision Zero aims at simplifying road design to minimize roads users' decisions.

Finally, monitoring and evaluation are important to measure progress, both in terms of effort and success (number of fatalities and severe injuries). Indicators are the tools to achieve targets. For rural areas, safety indicators may include kilometers with lane separation, speed cameras, kilometers of rumble strips, and 2+1 roads.

Image sources:

[1, 2, 3, 5, 6] Swedish Transport Administration, *Road Safety Vision zero on the move*, 3rd edition. Sweden, February 2012

[4] <http://ut.zerofatalities.com/safety-plan/engineering/>

[7] SWOV Institute for Road Safety Research, *Advancing Sustainable Safety, National Road Safety Outlook for 2005-2020*, The Netherlands, 2006

Recap of Toronto's Vision Zero Summit

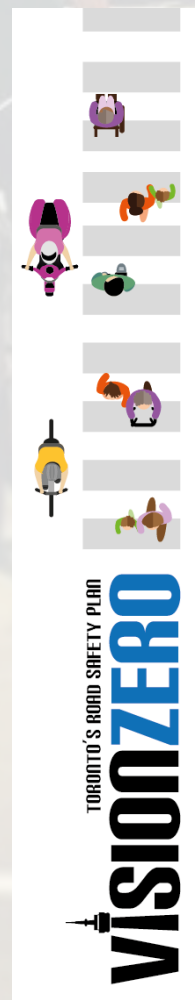
Pamela Fuselli, Parachute Canada

Résumé : La ville de Toronto a récemment accueilli son premier sommet portant sur l'adhésion de Toronto à la Vision Zéro. Le plan Vision Zéro Toronto 2017-2021 a été au cœur des discussions lors du sommet. En lien avec cet événement, Parachute Canada a mis au point un site Web consacré au partage des concepts de la Vision Zéro avec les acteurs intéressés.

On May 3, 2017 Toronto's Councillor Jaye Robinson, Chair Public Works & Infrastructure Committee, hosted the first Toronto Vision Zero Summit. This was a gathering of around 30 people from government (municipal and provincial), enforcement and community organizations. Updates on the progress of the City's implementation of interventions were presented by Barbara Gray, General Manager Transportation Services, Sergeant Brett Moore from Toronto Police Services shared the adoption of activities that support Vision Zero and participants had the opportunity to present on their activities, discuss the information shared, and ask questions of City staff.

As outlined in the 2017-2021 Toronto Vision Zero Road Safety Plan, there are six emphasis areas determined through data analysis, public engagement and Council direction. These are pedestrians, school children, older adults, cyclists, motorcyclists,

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and aggressive driving and distraction. Barbara Gray talked about 'pulling all levers' to address these emphasis area and using data to evaluate and direct change as it is needed.

Some examples of achievements include:

- Signs corresponding to speed limit reductions have been installed at twenty-three corridors with an additional twenty-three corridors scheduled to be completed by September 2017.
- Improvements to pavement markings (e.g., zebra markings at crosswalks) have been completed in eighteen corridors and a further twenty-eight corridors will be completed in 2017.
- Signal timing adjustments to optimize pedestrian crossing times have been completed at five corridors and an additional twenty-six corridors are planned for completion this year.
- 4,000 signs on 925 local roads have been installed indicating reduced speed limits.
- Eleven locations around the City have been re-timed with longer pedestrian phases. Forty-one locations are to be completed by the end of the year.
- Improvements to cycling facilities such as pavement markings, bollards and signs, and the installation of bike lanes or cycle tracks improve cyclist safety by providing increased visibility of cyclists and protection from vehicular traffic.
- Thirty-two new sites have been outfitted with red light cameras and an additional forty-seven sites will be installed by the end of June.



Toronto's Vision Zero Road Safety Plan

Parachute was pleased to participate in this Summit event on the same day @ParachuteVZ was launched social media. A few days later on May 8, Parachute launched the national Vision Zero Network site at (<https://www.visionzeronetwork.ca>). The Network has a wide variety of resources that will help the public learn more about Vision Zero, what's being done in Canada and how to go about applying what they've learnt in their communities. Parachute Vision Zero Network will house resources like Toronto's Vision Zero Road Safety Plan.



Fused Grids

Abdulrahman Masoud, UBC Okanagan

Résumé : La Vision zéro fait appel à une approche plus proactive de la sécurité routière où les décisions sont prises pour prévenir les décès sur les routes avant que les accidents ne se produisent. La façon dont on conçoit les réseaux routiers influence significativement la gravité et le type d'accident potentiels. L'approche « Fused Grids » est un modèle pour la conception de rues du voisinage qui est 60 % plus sécuritaire, d'après les études, que les développements construits en utilisant les modèles traditionnels de quadrillage et de cul-de-sac. Cet article donne un aperçu des « Fused Grids », y compris les avantages de sécurité qui ont été déjà éprouvés.

Vision Zero calls for a proactive approach to road safety where decisions are made to prevent road deaths before collisions occur. The way we design road networks greatly influences the severity and type of potential collisions. Fused Grids are a neighbourhood street design pattern that have been found to be 60% safer than developments built using the traditional grid and cul-de-sac patterns. This article provides an overview of Fused Grids and discusses their proven safety benefits.

Given the limited impact of current neighbourhood street pattern designs (i.e. traditional grid and cul-de-sac) in promoting more sustainable and safe communities, the SMARTer Growth (Fused) Grid – Sustainable Neighbourhood Design principles were developed by Canada Mortgage and Housing Corporation with the objective of balancing the needs of safety and health for residents, with those of the automobile and active transportation (AT), all in pursuit of enhanced community sustainability. A typical Fused Grid neighbourhood is shown below.



Typical Fused Grid Neighborhood Pattern (Sun and Lovegrove 2013)

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OKANAGAN

Fused Grids are a neighbourhood street design pattern that have been found to be 60% safer than developments built using the traditional grid and cul-de-sac patterns.

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The name 'Fused Grid' came from the fact that it 'fuses' the best aspects of local accessibility, through-mobility, built environment, and restorative green spaces within a walkable 80 meter grid pattern. This Fused Grid pattern consists of four 16-hectare quadrants. Each quadrant represents a 400-square meter neighbourhood with local roads providing access to local traffic only; through-vehicle connectivity is precluded by a car free central green space.



Fused Grid Illustration, source: <https://www.flickr.com/photos/22392855@N08/>

The main characteristic of the Fused Grid design is the fact that it provides high connectivity through a district/city to facilitate mobility for longer trips by motorized vehicles. These arterial trips occur at higher speeds, over longer distances, and in higher volumes, with heavy vehicles. At the same time, Fused Grids provide low vehicle connectivity (while maintaining emergency and utility vehicular access) paired with high AT connectivity in residential neighbourhoods.

Perimeter roads in the Fused Grid model facilitate through traffic according to standard 400 meter (minor collector), 800 meter (major collector), and 1600 meter (one-way couplet arterial) spacing. Spacing, alignments, and grades can be varied depending on existing ground conditions and the planned land use activities. The green spaces supplement local roads by a continuous grid network of off-road paths and local parks to provide full walk/bike connectivity, such that all residents can walk or cycle to the mixed land uses and services, located between the perimeter arterial one-way couplet roads, in less than five minutes (Grammenos and Lovegrove, 2015).

To eliminate high-speed, severe, and right-angle collisions, intersections are either controlled by roundabouts (arterial-arterial, arterial-collector, collector-collector), or three-way intersections (local-local, local-collector). The bulk of research evidence

The name 'Fused Grid' came from the fact that it 'fuses' the best aspects of local accessibility, through-mobility, built environment, and restorative green spaces within a walkable 80 meter grid pattern.

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suggests that these types of road infrastructure incorporated within the fused grid design (i.e. one-way couplets three-way intersections and roundabouts) are associated with increased road safety for all users (Tanner, 1953; Elvik, 2003; Lovegrove and Sayed, 2006; Grammenos et al., 2008; Oregon State Highway Department, 1959; Research Triangle Institute, 1976). In addition, a more comprehensive study using macro-level collision prediction modelling approach found that the Fused Grid is classified among the safest road network patterns as the results showed it was 60% safer than developments built using the traditional grid and cul-de-sac patterns (Sun and Lovegrove, 2013). Moreover, a recent study investigated the impact of retrofitting a neighbourhood in the city of Kelowna, BC to Fused Grid design (Masoud et al., 2017). The results show 10% reduction in driving modal share for work trips; hence, reducing VKT, which is well associated in the literature with increasing road safety (Lovegrove, 2007; Lovegrove and Sayed, 2006).

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To eliminate high-speed, severe, and right-angle collisions, intersections are either controlled by roundabouts (arterial-arterial, arterial-collector, collector-collector), or three-way intersections (local-local, local-collector).



Importance of Knowledge Transfer in Vision Zero

Robyn Robertson, Traffic Injury Research Foundation

Résumé : Le transfert de connaissances est un processus permettant d'assurer que les résultats d'études rigoureuses soient transmis de façon efficace à la bonne audience, aux personnes cibles, afin de les motiver à modifier leurs attitudes et leurs comportements au quotidien pour produire des effets bénéfiques et réels. Pour réaliser une "Vision Zéro", il est primordial de réduire les mortalités et les blessures sur nos routes qui sont associées aux événements évitables, que sont les collisions routières.

Canada's Road Safety Strategy (RSS) 2025 is based on the Vision Zero philosophy that aims to reduce deaths and injuries due to road crashes until no one is killed or seriously injured. An evidence-based, comprehensive and coordinated approach is essential to ensure we achieve this goal. In other words, we must be able to draw upon new research findings and apply them in practice across diverse stakeholders in the real world. This means that knowledge transfer will play a critical role in our success.

Knowledge transfer refers to the process of ensuring that rigorous and sound research results are effectively communicated to appropriate audiences in order to motivate them to alter their attitudes and behaviour in the real world to produce better outcomes. In essence, research must be accessible, meaningful, understandable and relevant to practitioners, but also usable within their context, environment or system. Although specific definitions of knowledge transfer may vary across disciplines, some of the key features of definitions are generally similar and incorporate the following concepts.

First, both individuals and organizations are inherently resistant to change, and perhaps nowhere is this fact more abundantly clear than in the field of road safety. For example, despite clear and convincing evidence that unsafe behaviours such as speeding or drinking and driving increase a driver's crash risk, a proportion of drivers persist in this behaviour.

Second, knowledge transfer requires more than a one-way push. It is unlikely that new knowledge will be spontaneously implemented or widely adopted without intensive efforts. Traditional, passive approaches to the dissemination of research findings without the involvement of end-users have had limited success and often do not produce the consistent adoption of evidence-based approaches. Perhaps the most poignant example is that real-world programs rarely incorporate all of the components that are deemed essential for effectiveness.

Third, knowledge must be filtered and distilled to make it usable for a particular audience or within a specific context. There is no doubt that knowledge is more readily used if it is relevant, compelling, tailored to the audience, and visually interesting. In today's environment, professionals are increasingly tasked with ever-growing responsibilities and

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required to accomplish more with shrinking resources. This creates an untenable situation for practitioners who frequently lack the capacity, the access, and the ability to identify, synthesize and gather relevant research and apply it to day-to-day operations in a meaningful way. As a consequence, ineffective practices are continued, the delivery of programs and services is sub-optimal, and precious resources are poorly spent.

Ultimately, knowledge transfer can make it possible for us to attain Vision Zero by helping us to more rapidly realize the real-world benefits of new knowledge, and identify the most effective ways to mobilize that knowledge. As such, knowledge transfer strategies must be able to adapt to the multidisciplinary nature of road safety and go beyond translating research evidence to make it usable by practitioners within a single discipline.

Road safety is a complex issue that draws upon learning from many fields including engineering, design, behaviour and health, which represent distinct disciplines, unique systems and diverse practices across multiple organizations. Further, each of these fields is comprised of a wide array of subjects that range from ergonomics to civil engineering, urban planning to data mining, and neuroscience to adult education to name a few. This means that knowledge transfer strategies must be able to move across disciplines to share knowledge and inform practices among a much broader cross-section of leaders, policymakers and frontline staff who deliver road safety programs.

At the same time, any road safety strategy must acknowledge that knowledge transfer is a dynamic and iterative process, and not a single, point-in-time event. This means that the onus is on both researchers and practitioners to engage in knowledge transfer activities as part of a continuous process throughout the lifetime of RSS 2025 and beyond. Everyday our knowledge of evidence-based policies and programs expands. Knowledge transfer enables us to integrate this new knowledge into practice more rapidly, and thereby accelerate the benefits of innovation to improve social life. As such, our road safety plan must also be flexible so that new knowledge can be integrated in a seamless fashion.

Knowledge transfer is paramount to reduce deaths and injuries on our roads due to preventable road crashes and achieve Vision Zero. We all have a responsibility to ensure that decision-making is informed by research and practice, and guided by awareness of the contextual environment in which policies and programs will be implemented.



Knowledge transfer strategies must be able to move across disciplines to share knowledge and inform practices among a much broader cross-section of leaders, policymakers and frontline staff who deliver road safety programs.

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Next Issue

The next edition of the Safety Network Newsletter will cover the 27th CARSP Conference taking place in June in Toronto, Ontario. Please contact Rebecca Peterniak (rebecca.peterniak@fireseedsnorth.ca) if you would like to contribute an article or photos from the conference. Submissions are due July 17, 2017 and should be between 300 and 500 words plus accompanying pictures and graphics.

Prochain Numéro

Le numéro estival du bulletin Le réseau-sécurité traitera de la 27^e conférence de l'ACPSE qui aura lieu à Toronto, ON. SVP contactez Rebecca Peterniak si vous voulez soumettre un article ou des photographies de la conférence, au plus tard le 17 juillet 2017. Les articles doivent contenir entre 300 et 500 mots et être accompagnés de figures ou de photographies.