

# **Establishing an Integrated Road Safety System in Ottawa**

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## **Abstract**

In 2000, the City of Ottawa and the Ottawa Police Service initiated a process to enhance the integration of the road safety initiatives of its internal departments (public health, engineering, communications and marketing) and police services. It was recognized that integration was key to increase efficiency and effectiveness of reducing collision frequency and severity in an environment where dollars are scarce and pressure on infrastructure is growing.

In 2002, iTRANS Consulting was retained to assist the development of a program foundation, expanding on the City's preliminary work. A framework for a sustainable Integrated Road Safety System (IRSS) was produced, including a number of key components (mission, vision, organizational structure), as well as responsibilities and functions of key personnel. All of which was packaged in a 3-year plan consisting of actions and resources enabling sustainability of the IRSS to 2005.

With IRSS in hand, the City moved forward with this integrated road safety approach. In doing so, the City acknowledged the challenge of agreeing on a common vision and road safety focus areas or "emphasis areas".

The system developed by iTRANS is expected to greatly assist the City of Ottawa in achieving their collision reduction goals; goals paralleling the targets set out in Transport Canada's Road Safety Vision 2010.

This paper provides a structured look at an integrated system (referencing Ottawa's), its components, and the process to address a road safety concern using one of the City's potential emphasis areas, "Increasing the Safety of the City's Young Drivers".

## **Introduction**

Integrating road safety initiatives improves road safety within a given municipality. This paper examines integration at the city level by focusing on the Integrated Road Safety System developed for the City of Ottawa.

One of the requirements for achieving integration is establishing a formal communication and coordination plan among multiple departments within an organization. Key elements of such a plan include agreement on priorities, resource allocation, and communication with the public.

In 2000 the City of Ottawa and the Ottawa Police Service initiated a strategic process to enhance the integration of the road safety initiatives of its internal departments and police services. At that time it was recognized that a more efficient and effective approach would be required in order to reduce the frequency and impact of traffic collisions, in an environment that supported dwindling financial resources and increasing pressures on the City's transportation infrastructure. In initiating this process the various City departments and police services would exist in a program that would see greater coordination, resource integration, sharing of knowledge, and data centralization. The parties currently involved in this integration effort are: the Ottawa Police Service, and the departments of People Services (Public Health and Community Services),

Emergency and Protective Services (Emergency Medical Services), Transportation, Utilities and Public Works, and Corporate Services (Communications and Marketing Branch).

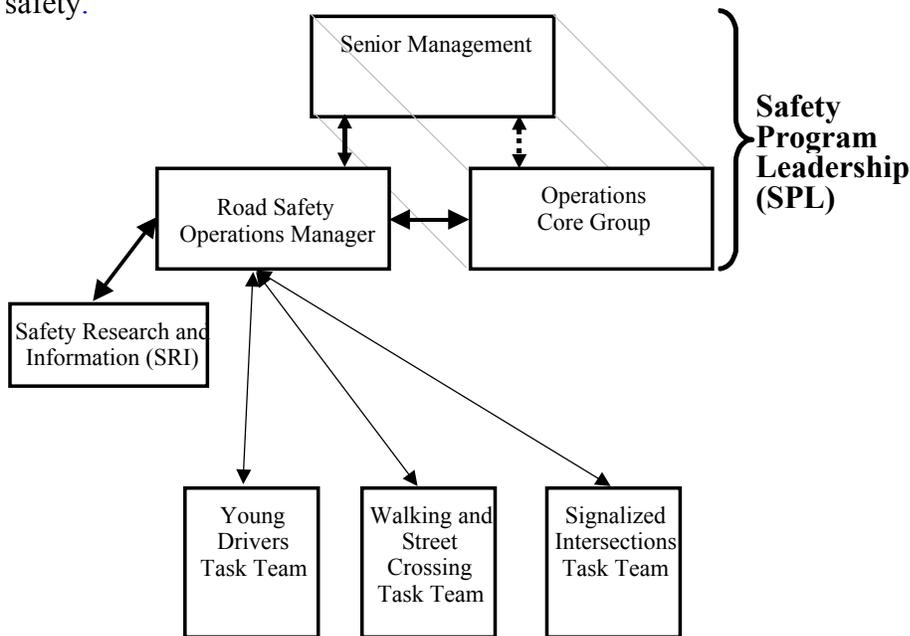
In 2002, iTRANS Consulting was retained to assist the development of a program foundation, expanding on the City’s preliminary work. As a result, a framework for a sustainable Integrated Road Safety System (IRSS), in which the City’s desired program could operate, was produced. The framework includes a number of key components including a mission, vision, and organizational structure, as well as responsibilities and functions of the key personnel required to support such a program. All of which was packaged in a 3-year plan, comprised of actions and resources enabling sustainability of the IRSS through to 2005.

With IRSS in hand the City’s road safety related departments along with police services made a mutual decision to move forward with this integrated road safety approach. In doing so the City acknowledged the challenge of a common vision shared by all and agreeing on “emphasis areas”. Emphasis areas are areas of safety concern identified through a comprehensive review and analysis of traffic safety information.

The system developed by iTRANS is expected to greatly assist the City of Ottawa in achieving their collision reduction goals; goals paralleling the targets set out in Transport Canada’s Road Safety Vision 2010.

## **The Integrated Road Safety System Functional Structure**

Instead of a new bureaucracy, the functional structure proposed for the City of Ottawa is dependent upon the IRSS departments forming a coalition. The structure of this coalition is illustrated in Figure 1. This management structure provides the system with inherent formalized coordination and communication channels between the various city departments involved in road safety.



**Figure 1: Functional Structure of Ottawa’s Integrated Road Safety System**

As shown in Figure 1, Ottawa's Integrated Road Safety System functional structure is composed of two tiers: Senior Management and Operations Core Group. This two-tier management approach was tailored to suit the City of Ottawa in the most effective way.

Senior Management comprises one representative from each IRSS department. Every representative has the authority to assign and acquire resources and gives final approval of proposed strategies, on behalf of his/her IRSS department.

Ottawa's Communications and Marketing Department plays a unique role in Ottawa's IRSS. This group endeavors to educate and inform the public of the on-going efforts to increase road safety in the city. With a representative in the Senior Management Group, the Communications and Marketing Department will be able to initiate and co-ordinate the release of information among the IRSS departments and the public.

Additional representatives from each of the IRSS departments form the Operations Core Group. The members of the Operations Core Group will develop the initiatives and manage their delivery, incorporating resources and safety programs.

Together, the Senior Management and Operations Core Group are responsible for establishing the mission statement, the communication plan, and the administrative structure for the IRSS.

The SPL sets an overall road safety goal for the jurisdiction. This goal, or vision, is an important aspect of the IRSS. It becomes the overall measure of effectiveness of the entire IRSS. In general, the vision should reflect the ambition of the jurisdiction, yet be an attainable goal.

For the purpose of this paper, it is assumed that the City of Ottawa's vision is to match Canada's Road Safety Vision 2010:

*"Decreases of 30% in the average numbers of road users killed or seriously injured during the 2008-2010 period (compared to 1996-2001)." (1)*

The focal point of the IRSS is the Operations Manager. The Operations Manager manages the daily tasks of the IRSS, ensuring effective communication between all departments. The City of Ottawa created a new full-time position for the Operations Manager within the existing City administrative structure.

The Senior Management, Operations Core Group, and Operations Manager form the Safety Program Leadership (SPL). The SPL provides leadership for the establishment, implementation, and administration of the IRSS.

The SPL relies on multidisciplinary teams formed by existing personnel, known as Task Teams. Task Teams are brought together to address a specific area of safety concern, or "emphasis area". They are formed under the direction of the SPL. Each Task Team has a leader, a person who is closely associated with and experienced in the assigned emphasis area. It is important to involve all related disciplines in a Task Team, so that strategies will effectively reduce target collisions.

An essential component of this functional structure is a group established to perform the quantitative analysis and evaluation of safety data and programs for all Task Teams and the SPL. This group, known as the Safety Research and Information group should be composed of data analysts currently positioned in the IRSS departments. It is recommended that the Safety Research and Information also confer with university and/or consultant professionals as needed.

## **The Integrated Road Safety Process**

Once all components of the IRSS functional structure have been established, the process of improving road safety in Ottawa, and integrating the various departmental efforts, truly begins.

To start the process, the SPL and Safety Research and Information review existing road safety knowledge. In the City of Ottawa, this knowledge includes:

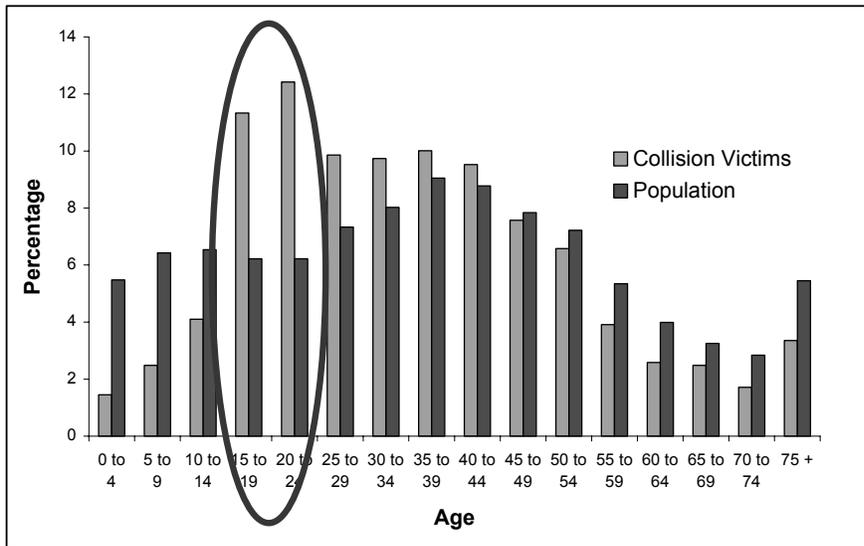
- Annual collision statistics produced by the Transportation, Utilities and Public Works department
- Injury statistics produced by the City's People Services Department (Public Health) and the Emergency and Protective Services (Emergency Measures Services), and local hospitals
- All road safety programs planned or already underway in the City
- All road safety programs planned or already underway at provincial and federal levels
- Effectiveness of road improvements/ countermeasures based on the latest research

Based on this knowledge, the SPL selects key emphasis areas for action. For example, potential emphasis areas for the City of Ottawa include:

- Seat belt/child seat usage
- Drinking and driving
- Pedestrian and cyclist safety
- Work zone safety
- Young drivers

## **Emphasis Area: "Increasing the Safety of the City's Young Drivers"**

One of the City's potential emphasis areas is the safety of young drivers. The annual road safety statistics report produced by Ottawa's Transportation, Utilities and Public Works Department revealed an overrepresentation of young people involved in traffic collisions (Figure 2). Specifically, there is a high incidence of injuries and fatalities of young people aged 15 to 24 in proportion to this population subset. "Victims" as illustrated in Figure 2 include motor vehicle drivers and passengers, pedestrians, cyclists, and motorcycle drivers and passengers.



**Figure 2: Total number of collision victims (fatal and injury) vs. Population by age group (2001)**

This overrepresentation could lead to a broad focus, such as “Increasing the Safety of Young Road Users”. However, in order to focus the work of the IRSS Task Team members, the emphasis area was defined as “Increasing the Safety of the City’s Young Drivers”. For the purpose of this discussion, “Young Drivers” will include only motor vehicle drivers, which comprise 48% of the injuries and fatalities aged 15 to 24 in the year 2001.

As part of Ottawa’s IRSS process, a Task Team would be formed to address this emphasis area. Members of this Task Team could include personnel from the IRSS departments.

With the specific target of young drivers, other agencies outside the IRSS may be asked to provide input to the Task Team, or to become Task Team members. Agencies such as MADD, driving instructors, driver licensing personnel (MTO), or high school, college and university student governments, could provide valuable information and connections to young drivers.

The Task Team performs an overall review of related data, most specifically collision data to determine an objective for this emphasis area. This objective is quantifiable. The SPL will be asked to approve or propose modifications to the objective. This objective will support the overall goal of the IRSS. For the purpose of this paper, it is assumed that the Task Team would propose the following:

*“Decrease of 30% in the average number of young drivers killed or seriously injured during the 2008-2010 period (compared to 2000-2001).”*

Once the objective is set, a more in-depth review of collision statistics is performed.

## **In-depth Review of Collision Related Statistics**

The Task Team reviews overall collision and injury statistics and specifics found within police reports to identify possible causes of the over-representation of young people involved in collisions.

This review identifies attributes for further investigation, such as:

- Impaired driving
- High speed
- Lack of safety equipment (seat belts)
- Time of year

Furthermore, the locations of these collisions are analysed.

Once possible causes for the over-representation of young driver injuries and fatalities are established, the Task Team begins to develop strategies for each cause. The strategies (or mitigation measures) will strive to involve the 4 E's (Engineering, Enforcement, Education, Emergency Medical Services) when applicable. Part of the purpose of the multidisciplinary Task Team is to ensure that each department plays a role to reach the objective of the emphasis area. Potential strategies for Ottawa's young drivers are listed in the next section.

Each strategy must have a method for measuring its performance, or the effect on safety.

## **Potential Strategies**

In the City of Ottawa, existing strategies will combine with new strategies. Some potential strategies are:

- Review of signal operation policies to meet the needs of young drivers
- Increase levels of enforcement at locations with high number of young driver collisions
- Institute "Zero-tolerance" approach to young drivers committing traffic offences, such as driving under the influence, speeding, lack of restraint use, or high-risk maneuvers
- Deploy education campaigns related to driving under the influence, speeding, and high-risk behaviour at high schools and universities/colleges
- Have front line personnel (police, EMS, Communications and Marketing) visit schools to relate the consequences of traffic collisions
- Inform the general public of emphasis area and related strategies
- Co-ordinate with driver training and licensing offices to ensure challenging skills are reinforced in training courses and license tests (e.g., merging, making a left-turn)

The Task Team will select those strategies with the highest potential for positive impact.

## **Detailed Action Plans**

Following the selection of strategies, detailed action plans are developed to identify who will do what, at what time, and what location (if applicable). For example, for the fourth strategy:

“Deploy education campaigns related to driving under the influence, speeding, and high-risk behaviour at high schools and universities/colleges”, a detailed action plan would outline:

- Number of personnel required to perform the review
- Expected timelines to perform review and finalize reports
- Expected outcomes of review

The detailed action plan for each strategy becomes part of an Integrated Road Safety Plan (IRSPan). The Operations Manager coordinates this plan. The Operations Manager seeks approval of the SPL and ensures optimization of the IRSPan.

## **Implementation and Results**

As the IRSPan is implemented, the Task Team reviews the impact of the strategies. The result of this review will assist the Task Team to modify the action plans if necessary.

After the detailed action plans have run their course, the process begins again.

## **Summary**

This paper briefly describes the functional structure of an Integrated Road Safety System. The IRSS process was exemplified using one of the City’s potential emphasis area, “Increasing the Safety of the City’s Young Drivers”. Possible strategies for this emphasis area were identified, and additional components of the process were examined, such as the detailed action plan developed for each strategy.

It is anticipated that this system will greatly assist the City of Ottawa in achieving their collision reduction goals; goals paralleling the targets set out in Transport Canada’s Road Safety Vision 2010.

## **References**

1. CCMTA (Canadian Council of Motor Transport Administration), Transport Canada, “Road Safety Vision 2010: 2001 Update” ([http://www.tc.gc.ca/roadsafety/vision/2010/pdf/2010\\_e.pdf](http://www.tc.gc.ca/roadsafety/vision/2010/pdf/2010_e.pdf)).

## **Glossary**

### *Detailed Action Plan*

A specific plan that is developed to address a particular *strategy*, including a specification of budget and resource allocation (i.e., who, what, where, when and how the program is going to be implemented). Action plan activities are combined to create the Integrated Road Safety Plan. An action plan may be made up of one or more activities.

### *Emphasis Area*

An area of safety concern identified through a comprehensive review and analysis of highway

safety information. This area is subjected to further analysis for the identification and formulation of mitigating or corrective *strategies*.

#### *Operations Core Group*

The coalition departments will assign experienced, knowledgeable personnel the Operations Core Group, the most active and involved tier of the two-tier Safety Program Leadership.

#### *Operations Manager*

A person appointed by the Safety Program Leadership (SPL) responsible for the day-to-day operations and management of the Integrated Road Safety Process which include the development of the City's Integrated Road Safety Plan.

#### *Safety Program Leadership*

A coalition of Ottawa's Police Service, People Services, Transportation, Utilities and Public Works, and the Communications & Marketing, Services. The SPL is divided into a two-tier system: Senior Management and Operations Core Group. The SPL provides leadership for the establishment, implementation, and administration of the Integrated Road Safety System.

#### *Safety Research and Information Group*

Comprised of existing personnel in various departments who are called on to conduct quantitative analysis and evaluation, and assemble additional safety information (state-of-the-art) as requested by the Operations Manager, SPL, or Task Teams.

#### *Senior Management*

The IRSS departments will assign upper level management to the Senior Management group, one tier of the two-tier Safety Program Leadership.

#### *Task Team*

Comprised of existing personnel in various departments who are called on to address an emphasis area under the direction of the SPL and Operations Manager. Each Task Team is directed by the IRSS mission and vision.