

Accidents and Malfunctions

One of the key objectives of the Detroit River International Crossing (DRIC) study is to provide for reasonable river crossing options to facilitate the safe, secure and efficient movement of people and goods. The DRIC study team has developed Practical Alternatives for the access road, plaza and crossing to meet the anticipated future travel demand. As part of the assessment of benefits and impacts of these alternatives, it is important to determine how each alternative would maintain a continuous, ongoing flow of traffic in the event of accidents and malfunctions in the transportation network.

The assessment of the ability to address accidents and malfunctions is part of the broader evaluation factor group 'Improve Regional Mobility'. The environmental assessment will also consider the environmental effects associated with accidents and malfunctions.

How the Analysis was Done

The assessment of accidents and malfunctions will include a review of safety performance as well as the assessment of potential effects from accidental spills (e.g. fuels, oils, hydraulic fluids), as well as other accidents and malfunctions that could be expected to occur, such as collisions, power failures and extreme weather conditions.

The approach to conducting the assessment of accidents and malfunctions is as follows:

- undertake a comparative safety review of the Practical Alternatives to address the relative safety of each Practical Alternative
- undertake a review of potential security issues related to plaza and crossing sites and layouts
- meet with local, provincial and federal safety, security and emergency services representatives to identify potential safety and security issues and response measures appropriate for the new crossing.

Results to Date

Safety Review

Initial findings of a safety review of the Practical Alternatives for the access road has found that:

- the proposed controlled access freeway facility greatly improves safety in comparison to the current arterial roadway with signalized intersections and other entrances/conflict points
- the risk of driving in tunnels is different than on open roads
- elements of tunnel driving that negatively effect safety may include:
 - limited visibility due to tunnel walls
 - light changes at the portals
- it is much more difficult to control events in a tunnel crash; motorists' escape is not simple, and it is harder for emergency response teams to reach the crash site.
- The positive effects of tunnels on safety include:
 - elimination of adverse weather conditions
 - increased driver attention and/or slower speeds due to the confined driving space
- the consequences of catastrophic crashes within the contained area of a tunnel are greater than on an open road, however these types of incidents are infrequent, and the occurrence of general traffic crashes is similar for these two types of facilities
- the crash risk near the portals of the tunnel is higher than elsewhere within the tunnel.

Security Assessment

In collaboration with the federal departments responsible for critical infrastructure protection, the RCMP, Canada Border Services Agency (CBSA), and Natural Resources Canada, the study team has examined the crossing alternatives from a security perspective, including consideration of the adjacent land uses and national and local response capabilities. Based on the information available to date, each of the Practical Alternatives is considered viable from a security point of view. The study team and these agencies will continue to assess and monitor local and national security issues to ensure that appropriate security considerations are integrated into the design of the new crossing facilities.

Meetings with Emergency Services Representatives

Meetings with local municipal emergency services representatives, provincial emergency planning representatives, CBSA and RCMP were held to discuss issues of fire and life safety and emergency response. Key issues identified in the assessment of alternatives included:

- some options, particularly the tunnel option, will require special equipment and training for emergency response staff
- back-up systems for ventilation (air handling), lighting and pumps should be incorporated into the design of any tunnel
- distance between access points with the tunnel option (greater than 3 km or 1.8 miles) is a concern to local emergency services; access from either direction is required with intermittent openings to maneuver equipment inside the tunnel
- local access for emergency services must be maintained during construction
- one-way service roads may increase response times for emergency services as compared to the two-way service road option
- communications systems for the tunnel should be tied into local emergency response
- access to the plazas (secure areas) for emergency services must be considered.

Remaining Activities

Additional details on the design of air handling, illumination and communications systems will be identified for purposes of incorporating into cost estimates and reliability assessment. As well, issues pertaining to emergency response will be incorporated in the design of alternatives as appropriate to verify the feasibility of response measures.

This information will be incorporated into the assessment of the ability of each alternative to provide for a reasonable and secure river crossing option.