

Risk-based Land Use Planning Guidelines

This 36-page document (46 pages in pdf version) was developed by the Major Industrial Accidents Council of Canada (MIACC), a voluntary alliance of interested parties dedicated to reducing the frequency and severity of major industrial accidents. From 1987 until its dissolution in 1999, this partnership included the federal, provincial and municipal governments, industry, labour, emergency response groups, public interest groups and academia.

On the dissolution of MIACC, the emergency preparedness aspects of this initiative were transferred to the Canadian Association of Fire Chiefs (CAFC) as part of the *Partnerships Toward Safer Communities* initiative. In 2006 the CAFC was no longer able to continue to lead and support this initiative, so the process safety management (PSM) division of the Chemical Institute of Canada/Canadian Society for Chemical Engineering (CSCChE) which was formed in 1999 to take over the PSM aspects of MIACC, then arranged to take over the remaining MIACC products.

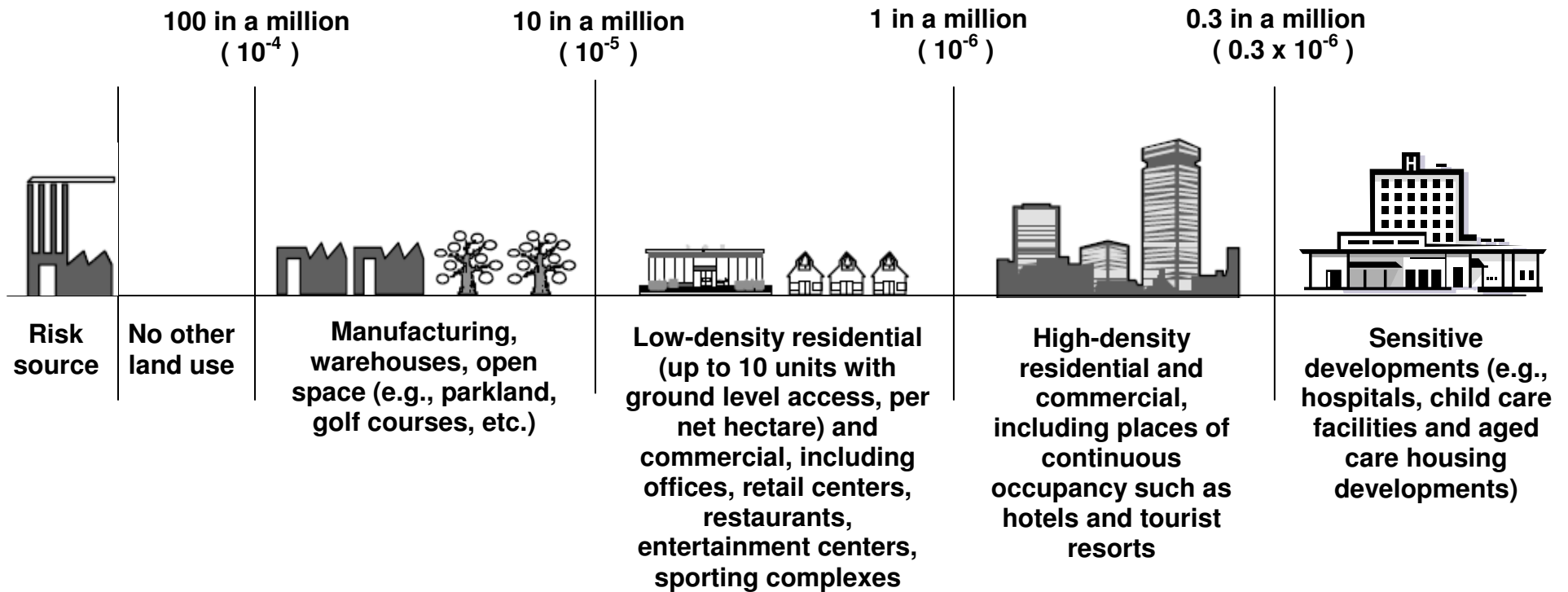
The *Risk-based Land Use Planning Guidelines*, one of the best-known and most-used MIACC products, is targeted at municipal planners responsible for land use plans who have limited expertise in the risk assessment or chemical field. In very simple language, it provides the reader with advice and background on risk acceptability criteria suitable for use in any jurisdiction in Canada.

The document here is the original MIACC publication. Experience has demonstrated that the criteria adopted at that time have received broad support from the stakeholder community and have worked well in practice. However, in 2008, the PSM division decided to review because of experience and developments in land use planning and, as a result of this review, the PSM division recommends that three additional points should be taken into consideration when using this guide:

- The diagram which appears on page 16 (original numbering) should be modified to include an additional risk acceptability criterion of 0.3 in million (0.3×10^{-6}). This additional criterion would apply to sensitive developments such as hospitals, schools, child care facilities and aged care housing development. The definitions of the allowable land uses should be modified accordingly. (see diagram on next page).
- When assessing the potential impact of industrial activities on surrounding land uses and vice versa, the assessment should take into account the range of uses that are permitted by the existing zoning, and not be limited only to those uses that are already in place. The reason for this is that this range of permitted uses could be significantly restricted by allowing higher hazard or more sensitive uses, and could thus influence the value of the lands affected.
- Where several hazardous facilities exist in an area and it is likely that the cumulative risk to individuals approaches the recommended criteria, it is recommended that a cumulative risk and hazard analysis for existing and proposed developments in the area should be undertaken before assessing new developments in the affected zone. No extra risk would be acceptable where the cumulative risk of existing facilities, combined with the assessed risk of the proposed new facility, exceeds the recommended risk levels.

Annual Individual Risk

Chance of fatality per year



Allowable Land Uses