ENVIRONMENTAL CUMULATIVE EFFECTS MANAGEMENT

FORT AIR PARTNERSHIP
We Monitor the Air You Breathe

The environment's ability to cope with increasing pressures from human activity is limited. Environmental cumulative effects management is a way to consider the environmental impact of human activities for a specific region over time. It recognizes that limits need to be placed on the total emissions and activities in an area based on the region's sensitivity. This management approach is necessary if we are to protect the environmental quality of the air, land, water and biodiversity in Alberta.

What are Environmental Cumulative Effects?

'Cumulative effect' is a term that refers to the impact(s) that a combination of activities, and/or an increase in a single activity, has on one or more aspects of the environment. Sometimes this will occur over time, when a new development starts up in an area that already has environmental impacts from previous activities. Cumulative effects also occur when multiple activities take place across an area.

Alberta's Industrial Heartland, east and north of Edmonton, is an example of an area that contains a number of industrial facilities. As part of managing the environment in this area, the cumulative effects of adding a new facility or allowing an increase in emissions would be considered in the context of emissions and activities that are already there.

Realization that there is a cumulative impact of all emission sources within a region on air quality is leading to regional air monitoring plans that measure the impact of all sources on air quality including traffic, home heating and smaller industry that do not require operating approvals.

Environmental Cumulative Effects Management

Environmental cumulative effects management is a system or process that looks at the total impact of development in an area over time. Part of this includes setting limits for emissions into the air, as well as the impacts on land and water. This method of managing the environment is called 'outcomes based', which means that a clearly defined end result has been established for the environment. For example, a cumulate effects management system can determine that it is possible to improve air quality by limiting the total emissions of specific substances.

When determining the safe level of a total emission for a harmful substance, both industrial and non-industrial sources are taken into account as well as the environmental sensitivity of the region. This method of tailoring limits for a specific area is known as 'place based' cumulative effects management.

Sensitive regions are less able to buffer change so development in these regions are managed differently than in areas that are able to withstand/absorb greater amounts of changes. All facilities operating in an area must work cooperatively to ensure that total emissions for a region does not exceed the set limit. In addition to meeting these regional limits, environmental regulations also apply to each individual industrial activity. Cumulative effects management approaches also include non-regulatory options such as education, incentives and voluntary actions for meeting an objective.

Benefits of Environmental Cumulative Effects Management

Environmental cumulative effects management ensures the impact of all activities occurring within a region over time are considered. The system considers the environmental implications of development on a regional basis, rather than across the province as a whole, since every landscape is different. Cumulative effects management encourages the development and use of new innovative tools and methods to protect the environment by providing pollution reduction incentives to industry. By using these methods, environmental cumulative effects management aims to address environmental issues associated with regional growth and development so a balance is reached between the environment and human activities.

Evaluation of Environmental Objectives

Within a region, regular reviews are undertaken to evaluate if the desired outcomes (environmental results) are being achieved. An important part of cumulative effects management is being flexible and allowing for adjustments when pre-determined environmental targets are not being met. However, these adjustments must not cause an adverse effect on the environment.

Definitions

Biodiversity – the variety of organisms (plants and animals found within a specified geographic region.

Buffer – the ability to withstand change and protect from damage.

Limits – the amount of total allowable emissions for a region. This would typically be an annual total number describing the maximum in tonnes of emission of a specific substance allowed from all facilities in a region.

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This is one of a series of fact sheets on air quality developed by Fort Air Partnership in cooperation with the Government of Alberta. The rest of the series is available at **fortair.org**.