



GHD adverse amenity

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“Balancing community amenity value with a cities commercial, industrial, and transportation requirements is integral to creating a liveable city”

Craig McVie - GHD Service Line Leader
Air Noise & Meteorological Assessments

The establishment of compatible land uses and/or accommodating industrial uses in contemporary cities is an increasingly significant issue in the development of cities, and presents a two-fold challenge:

- The risk of newly developed sensitive uses being subjected to unacceptable amenity impacts
- The encroachment of sensitive uses into the separation distance of existing industries which may result in unachievable or commercially unreasonable constraints being required of the industries to mitigate the impacts at the source ('reverse amenity')

A separation/threshold distance is a planning instrument used to provide separation of sensitive land uses (i.e. residential, schools, hospitals) from premises with the potential for off-site emissions (odour or dust) that can cause adverse amenity in the event of an upset or malfunction.

GHD has delivered a range of Adverse Amenity Impact Assessments across Australia including projects for:

- Existing and proposed industry, such as landfills, waste transfer stations, intensive animal industries, abattoirs, waste water treatment plants, concrete batching plants, quarries, paper manufacturing, coffee roasting, grain handling, flour mills and chemical facilities.
- Proposed sensitive uses located near industries, such as residential dwellings, mixed use complexes and child care centres.
- Large urban renewal projects to inform future land use planning for Precinct Structure Plans

As part of an Adverse Amenity Impact Assessment GHD offers a range of services including:

Default separation distance assessments

A separation distance assessment involves identifying separation distances for specific industries through application of the relevant EPA guidelines and/or state/local government planning guidelines.

For a proposed industry, the relevant separation distance from the industry is assessed in order to determine if there is potential for adverse amenity to be experienced at nearby sensitive land uses. For a proposed sensitive land use, the surrounding industries require identification to determine if they require a separation distance, in order to assess if there is potential for adverse amenity and subsequent constraints at the proposed sensitive land use.

Directionally dependent buffer

GHD has developed a methodology to vary the default separation distance to account for local meteorology using atmospheric dispersion modelling. When site-representative meteorology is available, the directions of good and poor dispersion can be

assessed and the default separation distance can be retracted and/or extended forming a directional buffer. The directional buffer informed by local meteorology provides the same degree of protection from upset events.

Site specific variation to separation distances

A number of factors can form the basis of a separation distance variation, including:

- Size of the plant
- Transitioning of the industry
- Plant equipment and operation
- Likelihood of industrial residual air emissions (IRAE's)
- Meteorology

GHD has experience in undertaking detailed assessments of specific industries in order to determine if variations to separation distances are applicable. This type of assessment has allowed for a much better understanding of a facility's impact on surrounding land, which is invaluable to those seeking to understand the opportunity to develop nearby land without exacerbating the risk of nuisance impacts.

Buffer volume assessments

GHD has developed an approach to provide three dimensional buffer volumes, namely around stacks, to assist with the development of land around stacks. The worst-case emissions are entered into a dispersion model, which results in geometric approximations of the plume envelope. These approximations are used to define the dimensions of the required buffer volume around the stack.

Amenity impact plan

For applications that require an assessment of the potential adverse amenity to their project or caused by their project, the preparation of an Amenity Impact Plan may be necessary as required by the local planning scheme.

GHD has developed a number of Amenity Impact Plans for proposed developments. The assessments have included a default and directional buffer assessment, a risk assessment in relation to air quality and noise and recommended measures to mitigate potential amenity impacts.

To learn more about adverse amenity, contact:

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