

Questions and Answers

Where is the Narangba industrial Estate (NIE)?

The NIE is located approximately 35 kilometres north of Brisbane is divided by the Bruce Highway. It bordered the former local authority areas of Caboolture and Pine Rivers Shire Councils, now known as Moreton Bay Regional Council. The Bruce Highway divides the NIE with the smaller portion of the estate located on the western side. The main part of the industrial estate, eastern side of the highway, is where the higher impact industries are located while the western side contains the more general types of industry.

What type of industrial estate is the NIE?

The industrial estate provides for both local and regional industry and contains in excess of 74 businesses. There are currently 14 large dangerous goods locations 2 major hazardous facilities (MHF) and numerous dangerous goods locations. It should be noted that one of the MHF is in the process of being downgraded to a large dangerous good location.

The types of activities conducted by businesses within the estate include chemical manufacture, animal hide tanning, waste disposal, concrete batching, timber chemical treatment, timber milling, furniture recycling, heavy equipment storage and rental, liquid and solid waste treatment, paper printing, cabinet making, fibreglass pool manufacture, cement mixing, warehousing and product irradiation.

What is a Health Impact Assessment (HIA)?

The HIA is a process that systematically identifies and examines, in a balanced way, both the positive and negative health impacts of an activity. HIA can be used to assess the health impacts of many different activities or policies. The level of assessment can vary from relatively simple to very comprehensive depending on the situation. The Narangba HIA is quite complex and requires the input of many different professionals with considerable levels of expertise.

The HIA includes the following steps:

- screening – to determine whether or not a HIA is required and at what level of complexity
- scoping – to identify the issues to be explored and how they can be addressed
- health risk assessment – to identify the impacts of the findings, who they affect and how much
- reporting, decision making and implementation – to draw conclusions and recommendations to actions and ways to control risks in future
- monitoring – to provide ongoing monitoring the actual impacts and evaluate the HIA process.

Why conduct an HIA on the NIE?

The community raised concerns about whether the operations of the industrial estate had the potential to impact on their health and well-being and that of the rapidly expanding population. The project was established to gain a better understanding of air quality in the area and to identify any potentially associated risk to health.

How is the HIA an independent process?

The HIA was set up as a community driven process. Community members were invited to express their interest in becoming a member of the CRG and were then selected on their knowledge, interest and availability to participate in the process.

The group is supported by an independent facilitator, an independent technical adviser and a health advisory panel consisting of Queensland Health staff with significant knowledge in environmental toxicology and public health. The CRG has confirmed its confidence in the expertise and integrity of these experts.

All work that has been commissioned has been done in accordance to standard processes. In some cases, work was confined to a small number of businesses meeting very specific requirements while at other times tenders were released to the open market place.

What are the factors that determine a person's health?

There are many factors and conditions that influence health - these are referred to as the determinants of health (Table 1)¹. Some of these factors can be controlled by individuals e.g. smoking, while others may be beyond the control of an individual or population e.g. climate change, air quality or genetics. Anything that alters one of these factors may result in an impact on health (positive or negative). Those factors that have the ability to produce a negative effect on health are known as hazards and in an HIA it is often easier and more accurate to measure the hazard directly, rather than measure ill health due to the wide range of variables that have to be considered.

Table 1: Examples of determinants of health

| Fixed | Social and Economic | Lifestyle and Behaviours | Access to Services | Environment |
|--------|--|--------------------------|--------------------|---------------------------------|
| Genes | Poverty | Diet | Education | Air quality |
| | Employment | Physical activity | Health services | Noise |
| Ageing | Social exclusion | Alcohol | Social services | Housing |
| | Community structure and infrastructure | Sexual behaviour | Transport | Water quality |
| | | Drugs | Leisure | Social environment |
| | | Coping skills | | Risk of injury |
| | | Smoking | | Sun exposure |
| | | | | Disease vectors e.g. mosquitoes |

HIAs can also consider matters such as demographic and health data, special populations, and environmental, social and economic impacts where appropriate, in order to provide a more balanced approach when considering human health impacts.

Who is preparing the HIA report?

The HIA was announced in June 2006 and has been overseen by the Community Reference Group (CRG) supported by Queensland Health. Independent consultants are preparing and/or participating in preparing reports to inform the health impact assessment. Queensland Health will be preparing the final HIA report.

How will the HIA be used?

The HIA will provide government with a comprehensive statement of actual health risks resulting from the industrial estate and will indicate if there are health risks

¹ Health Impact Assessment Guidelines, enHealth September 2001

which need additional management strategies beyond those already in place and, if relevant, recommendations for managing those risks according to their level of significance. It is also intended to provide government with information to:

- inform the future development of policies and projects related to industrial estates
- increase the understanding of the health impacts of implementing comparable policies and projects elsewhere
- increase the knowledge and evidence base to inform future HIAs around industrial estates.

In addition, some of the data collected throughout the HIA, can be used as baseline data for future monitoring and evaluations of NIE and similar sites.

When will the HIA report be released?

The HIA is expected to be completed by December 2009.

What will happen when the final report has been completed?

The report will be submitted to Queensland Government.

What is expected to come out of this study overall?

The immediate outcomes will be a better understanding of any contribution by NIE to the air quality in the Narangba area and any potential risks to public health that may arise from the presence of particular air pollutants. Where unacceptable risks to public health are identified, actions will be taken to eliminate or manage the risks.

Will the HIA prove that a particular symptom or illness is caused by emissions from the NIE?

No. The HIA will not be able to prove a causal link between any health symptoms and the industrial estate for reasons linked to the many factors that determine a persons health. However, should evidence be found indicating high exposure concentrations, then further actions may be required.

Why does the risk assessment study only look at air quality?

The CRG determined that based on the location of the industrial estate and limited opportunity for exposure through other environmental factors, the main environmental hazard to be assessed through the HIA would be air quality.

What about ground water quality?

The community reference group did not determine ground water quality to be a major issue as community exposure is very limited. EPA and local government have monitoring and surveillance systems in place.

How is an assessment made on air quality?

There are different methods that can be used to predict air quality. A number of different internationally accepted methods were used for this project. The project is using direct measurement and modelling to support the assessment of air quality. There are a number of different methods to measure any given pollutant, varying in complexity, reliability, and detail of data. These range from simple passive sampling techniques to highly sophisticated sampling processes.

Why don't you measure everything that is in the air?

Not everything in the air is at a level that represents a risk to human health. There are chemicals that, at concentrated levels in an enclosed space, may affect a person's health, but when dispersed in the atmosphere have little or no measurable

impact. Whether or not this is the case is decided by comparing the concentrations and the length of time of exposure with toxicological standards.

What type of air monitoring has been done?

Different types of monitoring has been done and includes:

- Ambient air monitoring which is the systematic, assessment of pollutant levels by measuring the quantity and types of certain pollutants in the surrounding, outdoor air; and
- Emissions monitoring which is the process of monitoring particulate and gaseous emissions from a specific source such as a stack or a pond.

Why was ambient air monitoring done?

This monitoring is carried out to assess the extent of pollution in the area, provide information for validation of modelling and to assist in determining the most appropriate methodology for the monitoring strategy.

Why was emission monitoring done?

To measure both the *type* and *quantity* of contaminants being released from sites to provide data for input to the modelling process which will enable a health appraisal at community based sites.

What is the purpose of the air quality model?

Ambient monitoring gives us data on concentrations at a limited number of sites for specific time periods. It is just not possible to measure concentrations of substances at all parts of the region, and it is not possible to know ahead of time that the sites selected will correspond with highest concentrations. A combination of a meteorological model of winds in the region with the emissions for the sources in the region will allow us to estimate the concentrations of the substances in the parts of the region and in the time periods in which it was not possible to make ambient measurements.

What are the requirements for air monitoring?

Requirements for air monitoring vary depending on the purpose for monitoring, what is being measured and how it is being measured. Basic site considerations include site location, site security, main power access, access, surrounding vegetation and location of major sources of extraneous emissions e.g. roads. Other sampling considerations include processing capacity at time of sampling, type of processes being conducted during sampling, weather etc..

How much sampling time is required?

This will vary on the reason for monitoring and the type of methodology used. For the project some monitoring was conducted over extended periods of time at different seasons while others was done at the time of emission release.

Why can't air monitoring be conducted when it is really windy or raining?

Conducting sampling during these conditions can compromise the sample integrity from certain processes resulting in samples which are not truly reflective of the reality. Some compounds are scrubbed out by rain and may not be detected if sampled during wet conditions.

Does it matter which direction the wind is blowing when conducting emissions monitoring?

No, wind direction does not matter for emissions monitoring as monitoring is conducted at the source.

Does it matter which direction the wind is blowing if ambient air sampling at community sites is being conducted?

Yes, wind direction does matter in this instance. Emissions will travel with the wind away from the source so samples taken down wind will provide an indication of emission presence while samples taken upwind will not.

Do you have to take samples at sites in order to make an assessment of potential health impacts?

No. It is not necessary to undertake monitoring at a particular site, if there is data from other comparable sites which is considered to provide a fair and reasonable estimate of air quality at the site in question. Air monitoring identifies current, rather than potential, concentrations of substances at a site. In conjunction with meteorological data some conclusions about source may be made. Potential impacts on other sites will be inferred from the results of the modelling exercise.

The most widely used methodology for human health risk assessment involves a combination of environmental monitoring and modelling. The modelling allows for predictions to be made in all directions from the source and at a variety of distances which take into account wind dispersion, dilution and mixing.

How will this report be able to make comments about impacts at the North Lakes development?

Potential impacts at these sites will be inferred from the results of the modelling exercise.

What about spills or plant upsets, what is happening about reporting these events to Queensland Health and what is Queensland Health doing about these events?

The project is looking at normal operating conditions only. All spill or plant upset events will be dealt with by the most appropriate jurisdiction. There are plans/frameworks in place that will trigger the involvement of Queensland Health.

Will the regional industry area of the NIE continue to expand over time?

No. Previous decisions made by local and state government have limited the expansion opportunities of the NIE to accommodate additional regional/specialised industry. There are no further sites available for regional/specialised industry development so what is currently in the estate is all the estate can accommodate. The results of the project will be used to guide future industrial estate development within Queensland.

Will the report discuss off site consequence analysis?

No, off site consequence analysis was not part of the scope of the HIA. Specific monitoring during an emergency/upset event would be necessary to identify offsite impacts of an emergency/upset event.

Why doesn't the NIE have an evacuation plan?

The NIE is not required to have a specific evacuation plan. The Moreton Bay Regional Council has responsibility to develop a local disaster management plan for their jurisdiction. A local disaster management plan will include a number of sub plans for specific functions such as community evacuation. In addition, individual businesses are required to have their own individual plans relating to incidences on their own site.