Mr Majd Sharaf
Facilities Manager
BAE Systems Australia
Nelson House
Williamstown VIC 3016
T: 0409 129 576
E: majd.sharaf@baesystems.com

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1 Executive Summary

As the owner of an industrial manufacturing facility adjoining a Major Hazard Facility (MHF), BAE Systems welcome the opportunity to make a submission in response to the Major Hazard Facilities Advisory Committee Discussion Paper released in December 2015.

BAE Systems Australia (BAE Systems) owns and operates the Williamstown Shipyards, in the Hobsons Bay City Council. The site is located adjacent to Mobil's Gellibrand Tank Farm (GTF), which is classified as a MHF.

BAE Systems recognizes that changes in land use demands are leading to pressure and conflicts between established uses and new development, particularly when sensitive uses might be introduced alongside those that might have some potential adverse amenity impacts.

BAE Systems considers that the current land use planning framework, principally set out by planning scheme provisions, doesn't provide clarity and certainty about land use planning around MHFs. This applies equally from the perspective of either an operator of a MHF or to surrounding landowners and communities. BAE Systems believes the principle of 'agent of change' is appropriate by placing the onus on encroaching sensitive land uses for new developments near MHFs, however it should also be implemented in reverse.

BAE Systems suggests that any future planning framework should be proactive and enabling wherever possible to avoid creating an unduly alarmist or negative perception or to inappropriately sterilise land in proximity to a MHF. Similarly, the role of planning in Victoria is to provide for the '*fair, orderly, economic and sustainable use, and development of land*'. In the context of land use change around MHFs, this effectively requires a balance to be found between existing and future needs and to appropriately manage change in a fair and transparent manner. As a landowner adjoining a MHF, BAE Systems also consider that any new planning controls that might emerge through this review should, as a starting principle, seek to avoid placing further constraints over established uses alongside MHFs where this might adversely impact productivity or continued operation.

In this submission to the MHF Advisory Committee, BAE Systems proposes a planning framework and ideas that BAE Systems considers to address the key issue of dealing with potential conflicts between MHFs and other land uses in a systematic and scientifically robust manner. BAE Systems suggests the introduction of a new overlay (the Sensitive Use Overlay (SUO)) with the purpose of '*identify(ing) areas subject to increased risk due to proximity to an identified high risk facility and to restrict use and development to that which is appropriate to that level of exposure*'.

The establishment of an overlay should be based on localised and robust technical assessments using an evidenced based approach. Consequently, this should bring greater clarity for all parties about the precise impacts of a MHF and how the planning system will deal with use and development in proximity to them.

BAE Systems notes there are existing frameworks and systems in place relating to planning and risk criteria near MHFs such as in NSW and the UK. Furthermore, there are also existing system for other considerations in land use planning such as the MAEO / ANEF process for acoustics impacts in the area surrounding Melbourne Airport. It is suggested that the relevant elements of those existing systems are adapted to tailor to Victoria's requirements for land use planning around MHFs.

To minimise interruption or risk disconnect from the current planning framework, BAE Systems proposes that all new planning applications should continue to be assessed by each local council, with the planning system remaining the primary assessment framework for new MHFs and new developments around MHFs. BAE Systems also believes that consultation and referrals must also be directed to relevant agencies that have the necessary technical competence to assess proposals and provide sound determinations.

2 Introduction

BAE Systems Australia (BAE Systems) owns and operates the Williamstown Shipyards, in the Hobsons Bay City Council. The site is located next to Mobil's Gellibrand Tank Farm (GTF), which is a Major Hazard Facility (MHF).

Within the Hobsons Bay City Council, BAE Systems is aware of multiple recent planning permit applications (as outlined in Hobsons Bay City Council's initial submission, dated 13/11/2015). Most notably is the NP Developments NPV Stage 2 application, for the Former Port Phillip Woollen Mill site, which is located at Nelson Place opposite BAE Systems' site. From what BAE Systems has observed, BAE Systems believes that pressure to rezone land close to MHFs will continue to become more prevalent, especially as urban growth intensifies.

BAE Systems' comments and recommendations to the MHF Advisory Committee Discussion Paper are provided in this submission. BAE Systems presents these comments as a landowner adjacent to a MHF.

3 A Changing Urban Context

Consideration of MHFs needs to occur within the broader context of the competing land use demands in urban areas. It is assumed that this is part of the reason why the Major Hazard Facilities review is required, even if not expressly stated in the Discussion Paper.

Population growth, housing demand and a decline in traditional manufacturing industry are some of the contributing factors that have brought about structural change across the metropolitan area. In combination, cost of living, congestion and accessibility add layers of complexity that can increase the demand for land in certain locations, such as those close to public transport, shops or in high amenity locations.

Melbourne's urban area has also seen outward expansion into its Growth Corridors, introducing residential development into previously rural areas. This has brought its own conflicts, where residential development is being established in close proximity to uses such as quarries, waste facilities or broiler farms, which all have particular sensitivities.

Traditional industry is giving way to logistics, transport and warehousing uses, which because of the need for efficiency of movement, accessibility to road networks and land requirements are now being located in outer industrial areas. Consequently, transformation of older industrial areas and employment locations to alternative land uses is occurring, which gives rise to land use issues that need to be carefully managed during transition.

These changes inevitably lead to pressure and tension between established uses and new development, particularly when sensitive uses might be introduced alongside those that might have some potential adverse amenity impacts.

Plan Melbourne, the State Government's metropolitan strategy, acknowledges the growth pressures facing Melbourne (through to 2051) and identifies a range of initiatives and directives aimed at balancing growth over this period. Initiatives such as '*20 minute neighbourhoods*', '*Transitioning to a more sustainable city*' and '*Protecting the Suburbs by Delivering Density in Defined Locations*' are very much about making the best and most efficient use of land and existing social and physical infrastructure, putting people close to jobs and encouraging active forms of transport.

Relevant to the need for the Discussion Paper, many MHFs have or are likely to experience the same increasing pressures of urban intensification outlined above. Where once they may have been in locations separated from sensitive uses, they were typically protected either by the adjacency to other 'non-sensitive' uses or simply by distance e.g. set away from urban development.

From a longer term strategic planning perspective, this might also give rise to questions in reverse about the ongoing suitability of a MHF to continue operating in situ..

BAE Systems considers that the current land use planning framework, principally set out by planning scheme provisions, does not provide adequate clarity and certainty about managing land use planning around MHFs. This is considered to apply equally from the perspective of either an operator of a MHF or to surrounding landowners and communities.

BAE Systems also suggests that any future planning framework should be proactive and enabling, wherever possible, to avoid creating an unduly alarmist or negative perception or to inappropriately sterilise land use potential of land in proximity to a MHF. Similarly, the role of planning in Victoria is to provide for the 'fair, orderly, economic and sustainable use, and development of land'. In the context of land use change around MHFs, this effectively requires a balance to be found between existing and future needs and to appropriately manage change in a fair and transparent manner.

If new planning controls or provisions are to be developed as a consequence of the Advisory Committee review, BAE Systems would support an evidence-based approach built on robust technical data and consideration of local conditions to produce tailored provisions around each MHF. BAE Systems considers what an appropriate planning framework might be later in this submission.

4 BAE Systems' Proximity to a MHF

This section provides the context of BAE Systems' situation as a neighbouring site to a MHF, the guidance on planning from WorkSafe Victoria and the local council, and the risks to which BAE Systems is exposed.

4.1 Mobil's Gellibrand Tank Farm

BAE Systems is located adjacent to Mobil's Gellibrand Tank Farm (GTF) and port facility. The GTF is a Major Hazard Facilty (MHF), which is regulated by WorkSafe Victoria (WorkSafe). Mobil performs fuel unloading and loading operations at the Gellibrand Pier. The pier and any vessels alongside are not within WorkSafe's jurisdiction.

In their information sheet titled *Land use planning near a major hazard facility*, WorkSafe defines two areas around the GTF. These are the inner and outer planning advisory areas (IPAA and OPAA respectively). WorkSafe has also issued a map showing the advisory areas for the GTF in September 2010 (refer to Figure 1).

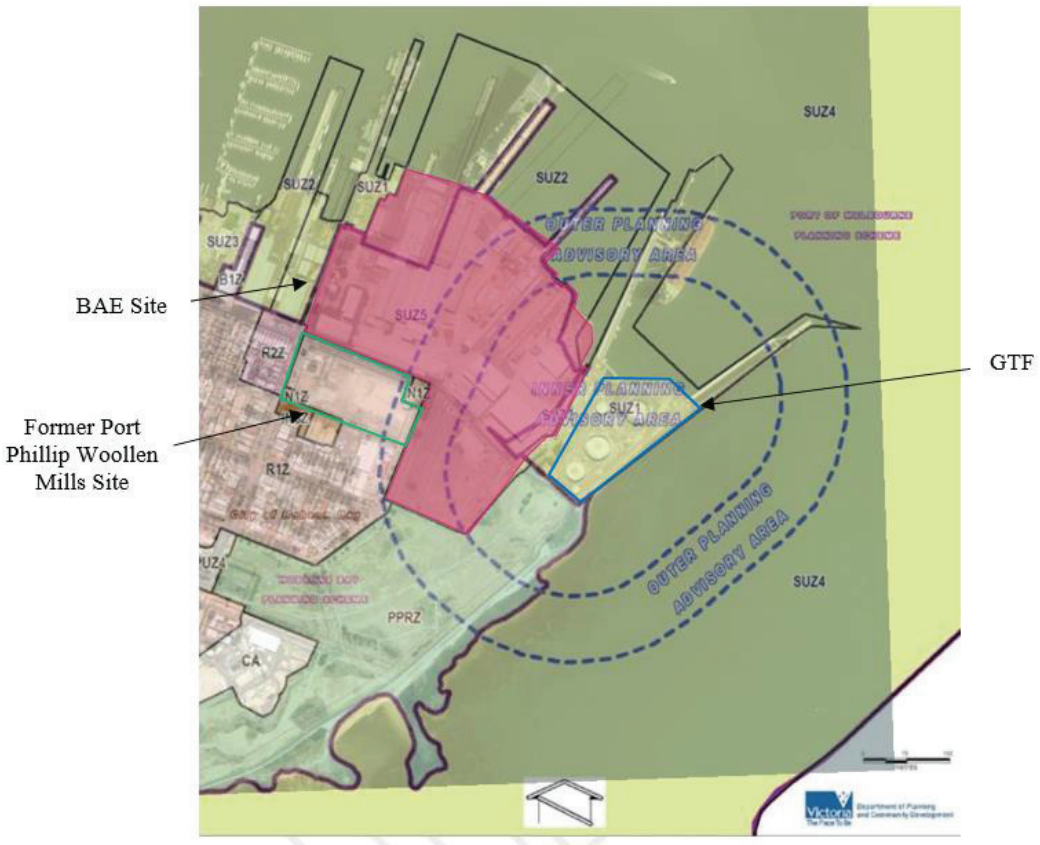


Figure 1: WorkSafe Planning Advisory Areas around the GTF with a Google Map Overlay

WorkSafe's definitions of the IPAA and OPAA are:

- IPAA: an area in which the "*individual risk of fatality from potential foreseeable incidents is greater than or equal to 1x10^{-7} per year (one chance in 10 million years)*".

- OPAA: an area in which "*the consequence of a credible incident is not likely to cause a fatality but persons present may suffer some adverse effects or have difficulty responding to an emergency that may result in injury or harm*".

For fuel storage facilities like the GTF, the IPAA is set at a distance of approximately 185m from the edge of the tank bund and the OPAA is set at approximately 300m from the edge of the tank bund. These distances are different for other MHFs.

4.2 Implications for BAE Systems

Within the Hobsons Bay Planning Scheme, the BAE Systems Site is classified as a Special Use Zone (specifically SUZ5) – marine engineering area. From the Hobsons Bay Planning Scheme, the purposes of SUZ5 are:

- "*To recognise the importance of the Port of Melbourne and its environs as a focus for major marine industrial development.*
- *To support the special importance of shipbuilding operations and its contribution to State economic development and employment.*
- *To provide for development which protects the amenity, safety and character of nearby areas.*"

A section of the BAE Systems Site is within the IPAA, another section is within the OPAA and the rest is outside the OPAA.

4.2.1 Risks

BAE Systems understands that as a MHF, the GTF poses a risk to the surrounding area. The following hazard events may occur at the GTF which may result in adverse impacts to the neighbouring area.

- Fire in the storage tanks;
- Fire in the tank bunds;
- Fire on water (sea fire) during unloading / loading operations or a pipeline failure in the water;
- Fire on a fuel tanker;
- Pipeline failure on land;
- Boilover;
- Explosion in a tank vapour space;
- Vapour cloud explosions (VCEs); and
- Explosions on a tanker deck.

A fire can generate heat radiation which may adversely affect nearby populations and buildings. For example, at 12.6kW/m^2, there is a significant chance of fatality for extended exposure and a high chance of injury and at 4.7kW/m^2, the radiation level will cause pain in 15-20 seconds and injury after 30 seconds' exposure (from HIPAP 4).

Similarly, an explosion can lead to harmful overpressures that affect people and damage buildings. For example, at 21kPa, there is a 20% chance of fatality for a person in a building and at 3.5kPa, no fatality, a very low probability of injury and 90% glass breakage is expected (from HIPAP 4).

These specific criteria are used in risk based decision making to inform the impact of major incidents on surrounding populations that together with the likelihood of the events occurring and the sensitivity of the population are used to quantify the risk. These criteria can also be used to engineer solutions to protect populations in much the same way wind loads and earthquake design is handled in the NCC. Further discussion on this can be found in section 5.

5 Understanding of the Current Victorian Planning System

5.1 Strategic Considerations

The Discussion Paper, in Section 2, outlines the current planning system in terms of the policy and provisions that may apply to the consideration of MHFs or land use changes that may be affected by them. BAE Systems considers that the Discussion Paper has appropriately identified the relevant planning policy framework and for this reason, it is not necessary to repeat it again here.

5.2 Commentary

BAE Systems highlights the opening paragraph in Section 2 of the Discussion Paper, which states:

"*Planning for Major Hazard Facilities (MHF) is managed in an indirect manner under the Victorian planning system. MHFs are not defined in the Planning and Environment Act 1987 (the Act), Victoria Planning Provisions (VPP) or any municipal planning scheme.*"

This appears to recognise that there is no specific policy (or controls) that apply to MHFs or the consideration of land use change adjoining them.

Instead, the Discussion Paper identifies a policy framework that sets out a range of policies and considerations that can, incrementally, combine to provide guidance to assist decision making on, for example, the buffer interface between zones (such as Clause 17.02-1 – '*Industrial land development*' or Clause 52.01: '*Uses with adverse amenity potential*'), protection of Ports (Clause 37.09: Port Zone) or protection of identified industrial areas of State significance (Clause 17.02-3: '*State significant industrial land*').

Clause 65 in the *General Provisions* of a planning scheme sets out a range of matters that a Responsible Authority (RA) must consider in its determination of a planning permit application, as appropriate. These include matters set out in Section 60 of the Planning and Environment Act 1987 (the PE Act). Section 60(1), as discussed in the Discussion Paper, details the specific matters that an RA must consider, which include:

"*...significant effects which a use or development may have on the environment or which the environment may have on the use and development and any significant social effects and economic effects which the responsible authority considers the use or development may have.*"

BAE Systems makes the overarching comment that due to the lack of specific policies, procedure or guidance around MHFs, the discretion allowed by, for example, the considerations an RA can defer to using Section 60 of the PE Act, provide scope for significant variation in decision making and procedure. This could include requests for further information (of variable scope), interpretation of information, weight afforded to particular matters, undue caution, delays in the planning process and, consequently a lack of clarity around decision making for all parties.

Planning Scheme Amendments (PSAs) that consider changes to land use around MHFs are, similarly, not informed by specific and clear policy or guidelines. Similar to decisions about any planning permit, an outcome of a PSA is inevitably at the discretion of the particular decision maker, which relies, somewhat arbitrarily, on whether the correct technical information has been sought to inform any decision.

Overall, BAE Systems feels that this confirms that the 'indirect' control around MHFs does not foster clarity or certainty in the current land use planning system.

To echo the words in the introduction of the Discussion Paper, BAE Systems does not consider *that the current system (i.e. planning around MHF) is 'broken' and needs to be 'fixed'*. There are already clear examples in planning schemes, such as the Melbourne Airport Environs Overlays (MAEOs) or Land Subject to Inundation Overlays (LSIOs) where technical data and assessments underpin the policy and control framework, which demarcates an area where particular policy and considerations apply.

In the case of the MAEO for example, Australian Noise Exposure Forecast (ANEF) contours have been prepared to identify areas affected by aircraft noise. They are then applied through the planning system. The ANEF system was developed, as a land use planning tool, to assist in the control of land use around airports for uses sensitive to noise. The system underpins Australian Standard AS2021 'Acoustics – Aircraft noise intrusion – Building siting and construction'. The Standard contains advice on the acceptability of building sites based on ANEF zones.

BAE Systems would advocate that the MAEO/ ANEF approach already provides a model that could be easily adapted to each MHF. Consideration of how this might translate into new planning scheme provisions is provided later in this submission; however, BAE Systems considers that strong technical input and expertise from the outset is necessary in order to create the correct policy framework and balance between different land use interests.

5.3 Referral Agencies

5.3.1 WorkSafe Victoria

WorkSafe is the regulator for MHFs in Victoria. BAE Systems understands there is no statutory requirement to contact WorkSafe for any proposed development of land close to a

MHF. However, some authorities do seek advice from WorkSafe to decide the appropriateness of a proposed development that is close to a MHF.

As noted above and in the Discussion Paper, WorkSafe defines two areas around MHFs – the IPAA and OPAA. WorkSafe's criteria is as follows:

- IPAA: an area in which the "*individual risk of fatality from potential foreseeable incidents is greater than or equal to $1x10^{-7}$ per year (one chance in 10 million years)*".
- OPAA: an area in which "*the consequence of a credible incident is not likely to cause a fatality but persons present may suffer some adverse effects or have difficulty responding to an emergency that may result in injury or harm*".

WorkSafe bases its risk criteria and planning considerations on that of the UK's Health and Safety Executive (HSE) and the NSW Department of Planning and Environment (DoP).

5.3.2 Energy Safe Victoria

Energy Safe Victoria (ESV) is the regulator for pipelines. In ESV's initial submission to the MHF Advisory Committee, it was discussed that pipeline licensees are often not notified of development and land use changes within a pipeline's measurement length, and that prospective landowners are often not aware of the existence of the pipeline or the risks associated with it.

Although BAE Systems is not aware of any pipelines in close proximity to BAE Systems' site, the importance of consideration of pipelines in planning is noted and BAE Systems wishes for this gap in the planning system to be addressed by the MHF Advisory Committee.

5.4 Planning in Other Jurisdictions

5.4.1 New South Wales

In NSW, the Department of Planning and Environment (DoP) provides the administrative framework for planning processes. For developments and infrastructure of state significance, the NSW DoP has an important part in assessing and determining proposals. Less significant proposals are assessed by local councils in the context of their individual planning schemes and any state planning schemes.

In the context of MHFs, the NSW DoP publishes Hazardous Industry Planning Advisory Papers (HIPAPs) that provide guidance to both applicants and planning authorities in NSW. The paper most relevant to land use planning is HIPAP 10 (*Land Use Safety Planning*). The purpose of land use safety planning is to provide a mechanism to *"deal with actual or potential conflicts between sources of risk, such as potentially hazardous industrial developments, and surrounding land uses"*.

In order to help local councils and other planning authorities set policies and procedures in place, NSW DoP has established quantitative risk criteria and provides guidance on how this should be applied. The individual risk criteria is defined as the risk of fatality per year for different sets of the population. These are:

- Hospitals, schools, child-care facilities, old age housing: 5E-7 per year;

- Residential, hotels, motels, tourist resorts: 1E-6 per year;
- Commercial developments including retail centres, offices and entertainment centres: 5E-6 per year;
- Sporting complexes and active open space: 1E-5 per year; and
- Industrial: 5E-5 per year.

Exposure criteria is also defined for heat flux radiation and explosion overpressure:

- Incident heat flux radiation at residential and sensitive use areas should not exceed 4.7kW/m^2 at a frequency of more than 5E-5 per year; and
- Incident explosion overpressure at residential and sensitive use areas should not exceed 7kPa at a frequency of more than 5E-5 per year.

It is stressed in HIPAP 10 that conflicts will arise over time with changing land uses and that sterilization of land should be minimised. It points out that there is a balancing act to be performed between a conservative approach to decision making based on risk and the unnecessary sterilisation of the land. An important principle of such conflict resolution is consultation between all affected stakeholders.

5.4.2 United Kingdom

In the United Kingdom (UK), the Health and Safety Executive (HSE) is a statutory consulting authority for planning applications around major hazard sites and major accident hazard pipelines.

The HSE is responsible for providing advice to local planning authorities on the hazards and risks associated with MHFs. They determine the consultation distance around each MHF or pipeline, within which the planning authority must consult with the HSE over relevant developments which are likely to lead to an increased population around the major hazard. The HSE provides advice on applications for planning permission within these consultation distances. HSE will advise on safety grounds whether or not planning permission should be granted.

In 2007, the HSE introduced PADHI – Planning Advice for Developments near Hazardous Installation, for planning authorities to use. PADHI categorises land in the consultation distance around the hazardous area into three zones (inner, middle and outer) and developments into four sensitivity levels (SL1 – SL4). Depending on the combination of the sensitivity of the development and the zone it is in, HSE's response when asked to give planning advice is either Advise Against (AA) or Don't Advise Against (DAA).

In 2015, the HSE replaced PADHI with the HSE's Planning Advice Web App (http://www.hse.gov.uk/landuseplanning/padhi.htm). The main difference between this and PADHI is that now developers (as well as planning authorities) can now use the tool to obtain the HSE's land use planning advice on developments around major hazard sites and major accident hazard pipelines.

In 2005, a tank at the Buncefield oil storage depot overfilled, a large vapour cloud formed and ignited causing a massive explosion and a fire that lasted five days. Following the Buncefield incident, the HSE reviewed its policies for providing land use planning advice

around large-scale petrol storage sites. It was decided that observations of the damage incurred at Buncefield could be used to estimate maximum ranges to damage levels of interest. These distances were used to establish new land use planning zone boundaries specific to large scale petroleum storages. This resulted in increased zone boundaries for most large scale fuel storages. The Development Planning Zone (DPZ) was also introduced to restrict development of normally occupied buildings, in the highest risk area of the inner zone. The distances of the four LUP zones (development planning zone – DPZ, inner, middle and outer zones) are provided in SPC43 Advice for planning around large scale petroleum storage sites.

5.5 Summary of Risk Criteria

Table 1 provides a summary of the risk criteria (in fatalities per year) around fuel storages that is used in the UK, Victoria and NSW and the defined distances from a hazardous site (where available).

Table 1: Summary of Risk Criteria and Distances

Victoria WorkSafe	UK HSE	NSW DoP
	DPZ (0-150m)	
	Inner zone (150-250m): 8E-5 / year	
		Industrial: 5E-5 / year
		Sporting complexes and active open space: 1E-5 / year
		Commercial developments including retail centres, offices and entertainment centres: 5E-6 / year
	Middle zone (250-300m): 4E-6 / year	
		Residential, hotels, motels, tourist resorts: 1E-6 / year
		Hospitals, schools, child-care facilities, old age housing: 5E-7 / year
IPAA (approx. 185m): 1E-7 / year	Outer zone (300-400m): 1E-7 / year	
OPAA (300m): not likely to cause a fatality but may result in injury or harm		

6 Proposed Planning Framework

BAE Systems proposes the following planning framework and ideas for consideration by the MHF Advisory Committee. BAE Systems believes this framework addresses the key issue of dealing with potential conflicts between MHFs and other land uses in a systematic and

scientifically robust manner. BAE Systems recognises that there are other matters to consider, such as cost, resources, and acceptance by stakeholders.

As discussed in the above sections, there are existing frameworks and systems in place relating to planning and risk criteria near MHFs, such as in NSW and the UK. Furthermore, there are also existing systems for other considerations in land use planning such as the MAEO / ANEF process for acoustics impacts in the area surrounding Melbourne Airport. BAE Systems suggests that the relevant elements of those existing systems are taken and adapted to suit Victoria's requirements for land use planning around MHFs.

6.1 Consolidated Planning Guidance

To minimise interruption or risk disconnect from the current planning framework, BAE Systems submits that all new planning applications should continue to be assessed by each local council, with the planning system remaining the primary assessment framework for new MHFs and new developments around MHFs (MHF Discussion Paper question 8). However, BAE Systems considers that consultation and referrals must also be directed to relevant agencies that have the necessary technical competence to assess proposals and provide sound determinations.

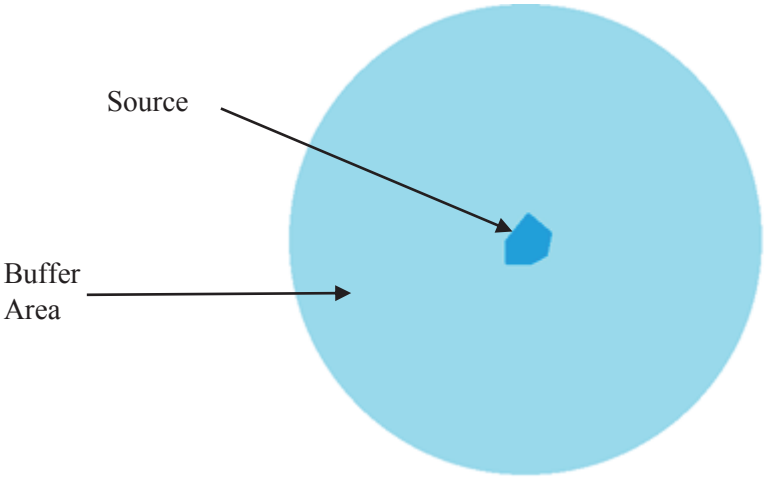
Technical guidance and development requirements will need to be consolidated and developed. This includes the need for an understanding of the risks and consequences around a high risk facility (such as a MHF), and what appropriate controls can be implemented. How this can be achieved through the introduction of a new overlay, is discussed below.

6.2 Sensitive Use Overlay

BAE Systems proposes the introduction of a new overlay (the Sensitive Use Overlay (SUO)) with the purpose of '*identify(ing) areas subject to increased risk due to proximity to an identified high risk facility and to restrict use and development to that which is appropriate to that level of exposure*' (MHF Discussion Paper question 2). An example of the contents and layout of the SUO is presented in Appendix A.

BAE Systems is of the belief that the proposed overlay, detailed below, could be effective at managing the risk associated with sensitive use encroachment on not only Major Hazard Facilities, but on a range of pre-existing High Risk Facilities (HRFs), including refuse disposal facilities, quarries and other uses with adverse amenity potential.

The SUO would apply, via a facility-specific Schedule to the SUO (e.g. SUO1), to each high risk facility and a surrounding, facility-specific buffer area.



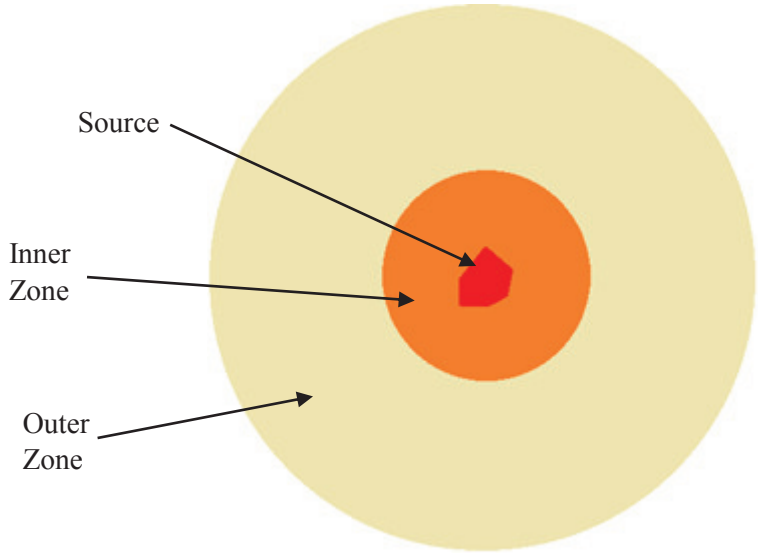
The key features of the SUO would be to:

1. Defer use, building and works and subdivision triggers to the requirements of each facility-specific Schedule. This approach is intended to allow each facility's specific risk factors to be considered during the Schedule's development and amendment process.
2. Establish an additional application requirement for all proposals within the SUO, of an impact assessment in accordance with a new **Sensitive Use Overlay Practice Note** that demonstrates, to the decision-maker's satisfaction, that the level of exposure likely to the use and development due to proximity to the subject high risk facility is appropriate. A practice note would identify how buffers are derived for different facilities and best practice for considering land use and development alongside.

   Rather than institutionalise a range of arbitrary buffer distances that apply in all circumstances and to all types of high risk facility, this approach is intended to instead allow for the flexibility and adaptability necessary to enable proponents to demonstrate individual proposal suitability as technological advances and improvements in risk-assessment/management practice invariably decrease the risk associated with each facility over time
3. Apply additional decision-making considerations to proposals affected by the SUO, focused on establishing:
   a. Whether the proposal includes the addition of an inappropriate sensitive use or will result in increase in the number of people affected by the Sensitive Use Overlay; and
   b. Whether the proposal is compatible with the present and future operation of the high risk facility.

Each facility-specific Schedule to the SUO (e.g. SUO1) would then identify three specific areas within the SUO (MHF Discussion Paper questions 7, 9, 13-19):

1. Source
2. Inner Zone
3. Outer Zone



The extent of each of these areas would be determined during the Schedule's scheme amendment process and based on the specific facility's individual circumstance. Therefore, it could be assumed that not only different types of high risk facility would have different buffer characteristics, but also the same types of facilities, depending on their individual scale, location, age and risk management measures.

1. The key feature of 'Source' is to establish a permit requirement to internally alter a site where the increased risk generated could demand a change in the extent of either the Inner Zone or the Outer Zone.

   The intention of this trigger is to recognise that, although the fundamental purpose of the SUO is to manage the inappropriate encroachment of sensitive uses on the operations of MHFs, each MHF also has an obligation to ensure that any development that does occur on site does not actively increase the risk burden the facility places on surrounding properties. Instead, MHFs should be actively introducing internal risk management measures that reduce the risk burden on surrounding properties, as would be consistent with the obligations under the Occupational Health and Safety Act, 2004.

2. The key aim of the 'Inner Zone' is to ensure that no increases in sensitive use density are achieved in this area of highest external risk.

   This would be achieved by:

   - Prohibiting all forms of accommodation (other than caretaker residence) in this area;
   - Triggering a building and works permit (regardless of other exemptions within the wider scheme) in all circumstances where additional dwellings are proposed. This is intended to prohibit increases in dwelling density, but also recognise that existing dwelling may already be located in this area and may need to be rebuilt/renovated at different points in time; and
   - Prohibiting subdivision of land which would increase the number of dwellings for which the land could be used for.

3. The key aim of the 'Outer Zone' is to ensure that any increase in population density or introduction of a new sensitive use is appropriate to the individual site's level of exposure to risk.

This would be achieved by:

- Triggering a use permit for all accommodation types (except for caretakers residence), regardless of other exemptions established elsewhere within the Scheme;
- Once again, only triggering a building and works permit in circumstances where additional dwellings are proposed; and
- Triggering a subdivision permit, where it would increase the number of dwellings for which the land could be used, regardless of other exemptions established elsewhere within the Scheme.

The extent of each Zone's boundary would be determined on a case-by-case basis for each facility (MHF Discussion Paper question 13). It is anticipated that the extent of the Inner Zone will be determined by a risk-based approach; that is, based on the individual risk of fatality per year similar to the extent of the IPAA that is currently used by WorkSafe. The value of the risk criteria may need to be reviewed. From Table 1, it can be seen that the risk criteria and separation distances adopted in Victoria is more conservative than that of the UK and NSW. The chosen risk criteria should be reasonable and a balance of public safety and industry development. BAE Systems suggests that adopting the NSW DoP criteria would be appropriate for minimising the differences between jurisdictions in Australia.

The extent of the Outer Zone should be where requirements of the National Construction Code (NCC) are sufficient in providing protection to residents despite an incident at the high hazard facility. Thus outside of the Outer Zone, no additional protection measures to enhance building resilience will be necessary.

Between the Inner and Outer Zone boundaries, a combination of risk and consequence should be used to assess new applications. This would be specific to the MHF (e.g. worst expected heat radiation, blast overpressure, toxicity, etc.) and the proposed development (e.g. height, intended use, density of population, etc.). The provision of risk mitigation measures (e.g. fire wall, laminated windows, enhanced structural resilience, evacuation measures, etc.) should be considered in the decision regarding the acceptability of the application (MHF Discussion Paper question 5).

The concept of the zones would also extend to pipelines, where the consequences of pipeline failure needs to be considered (MHF Discussion Paper question 33). The current standard (AS2885) to calculate the measurement distance around gas pipelines is reasonable and valid. However the same cannot be said for liquid hydrocarbon pipelines. A more realistic method will need to be established that takes into account the topography of the land.

Sensitive land use should be formally defined to provide clarity to all stakeholders (MHF Discussion Paper question 30). A review of the definition of sensitive use against other jurisdictions (e.g. NSW) could be undertaken to ensure consistency. Sensitive land uses could include:

- Schools
- Preschools
- Hospitals
- Day care
- Aged Care

- Prisons

Other types of land uses that may be considered sensitive could include those that increase the density of the area, such as:

- High density residential accommodation
- Retail centres
- Facilities that attract large crowds e.g. sport stadiums, movie theatres, music venues

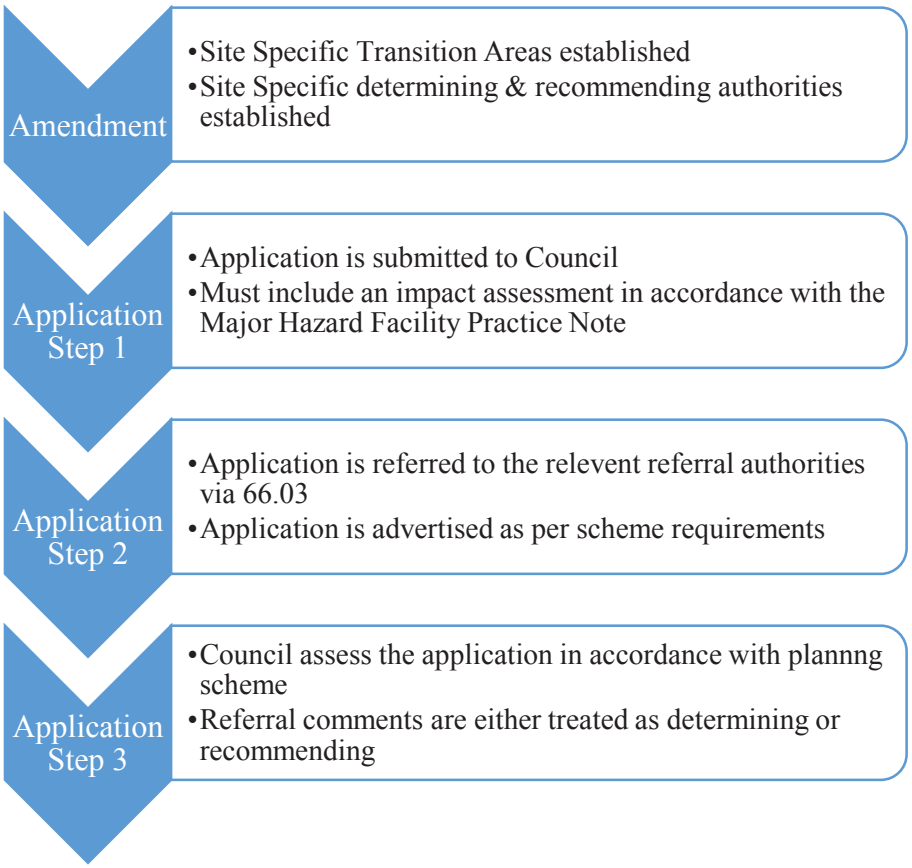
Finally, BAE Systems proposes that Clause 66.03 (Referral of permit applications under other State standard provisions) be amended as each Schedule to the SUO is introduced into the Scheme in order to test and then incorporate the appropriate determining and recommending authority/s for that facility.

This is intended to ensure that, although the Council's Town Planning Department (who already have the structure established to assess planning applications) continue to manage the general assessment of the application, for every application within the SOU the entities with the appropriate technical expertise regarding the nature of each high risk facility are granted the ability to provide input as to whether the proposal is appropriate (MHF Discussion Paper questions 21-24).

The entity that the application is referred to via 66.03 could potentially take a number of forms including:

- A list of all individual agencies and/or regulators who are considered relevant to the assessment, such as the EPA, Energy Safe Victoria and/or WorkSafe Victoria, as recommending or determining authorities; with each provided the ability to submit individual recommendations; or
- The creation of a specialist determination body benefitting from representation from each relevant agency/regulator; that is convened on an as-need-basis with the aim of providing a coordinated, integrated and consistent approach to proposal assessment and appropriateness determination. Consideration of a specialist body to deal with very technical planning applications could be used more broadly in the planning permit application process to deal with projects as they occur on a State-wide basis. This would help to ensure technical expertise and consistency is brought to the consideration and determination of significant applications.

Both approaches have potential strength and weaknesses, but regardless, relevant agencies with the expertise to comprehend and appreciate the risks associated with each facility, must be provided the ability to provide advice, whether that is as one of (potentially) a number of recommendations or as a single, coordinated determination.



6.3 Agent of Change Principle

BAE Systems believes the principle of 'agent of change' is appropriate by placing the onus on encroaching sensitive land users for new developments near MHFs (MHF Discussion Paper question 29). However it should also be implemented in reverse, i.e. if a high hazard industry decides to expand production and increase its impact area.

If the new development is a place of employment, there is already a mechanism via the Occupational Health and Safety (OH&S) legislation to ensure risk is reduced to 'so far as is reasonably practicable' (SFAIRP).

Appendix A – Example Sensitive Use Overlay

SENSITIVE USE OVERLAY (SUO)

1.0 Purpose

To identify areas subject to increased risk due to proximity to an identified High Risk Facility and to restrict use and development to that which is appropriate to that level of exposure

2.0 Use of land

Any requirement in a schedule to this overlay must be met.

3.0 Buildings and Works

Any requirement in a schedule to this overlay must be met

4.0 Subdivision

A permit is required to subdivide land.

Subdivision must occur in accordance with any lot size or other requirement specified in a schedule to this overlay.

5.0 Application Requirements

In addition to any other requirements under this Scheme, an application must be accompanied by an impact assessment in accordance with the Sensitive Use Overlay Practice Note, which demonstrates the appropriateness of the level of exposure likely to the use and development due to proximity to the XXX High Risk Facility.

6.0 Decision Guidelines

Before deciding on an application, in addition to the decision guidelines in Clause 65, the responsible authority must consider, as appropriate:

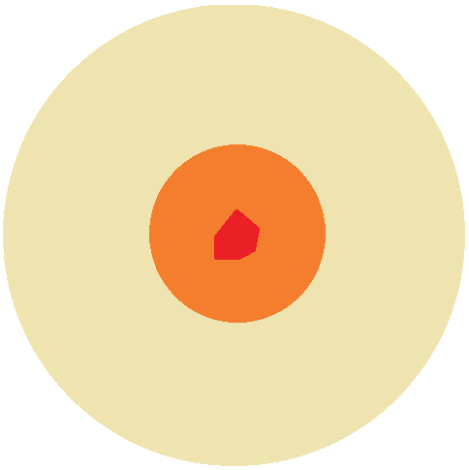
- The State Planning Policy Framework and the Local Planning Policy Framework, including the Municipal Strategic Statement and local planning policies.
- Whether the proposal includes the addition of an inappropriate sensitive use or will result in increase in the number of people affected by the Major Hazard Facility Overlay.
- Whether the proposal is compatible with the present and future operation of the Major Hazard Facility.
- Any other matters specified in a schedule to this overlay.

Example Schedule 1 to the SUO (one for each High Risk Facility (HRF))

Shown on the planning scheme map as SUO1

Purpose

To identify areas subject to increased risk due to proximity to the XXX High Risk Facility and to restrict use and development to that which is appropriate to that level of exposure.



1.0 Source

Shown on the planning scheme map as 'Source'

Building and Works

No permit is required under this overlay:

- To internally alter a site where the increased risk generated could not demand a change in the extent of either 'Inner Zone' or 'Outer Zone'

2.0 Inner Zone

Shown on the planning scheme map as 'Inner Zone'

Use of Land

Section 2 (Permit Required):

Use	Condition
Caretakers residence	

Section 3 (Prohibited):

Use	Condition
Accommodation	**Other than caretakers residence**

Building and Works

No permit is required under this overlay:

- If no additional dwellings are proposed.

Subdivision

Any subdivision of land which would increase the number of Dwellings for which the land could be used for is prohibited. This does not apply to the subdivision of land to create a lot for a Dwelling in respect of which a permit has been granted.

3.0 Area 3 – Outer Zone

Shown on the planning scheme map as 'Outer Zone'

Use of Land

Section 1 (No Permit Required)

Use	Condition
Caretakers residence	

Section 2 (Permit Required)

Use	Condition
Accommodation	**Other than caretakers residence**

Building and Works

No permit is required under this overlay:

- If no additional dwellings are proposed.

Subdivision

A permit is required for any subdivision of land which would increase the number of Dwellings for which the land could be used for. This does not apply to the subdivision of land to create a lot for a Dwelling in respect of which a permit has been granted.

4.0 Decision Guidelines

Before deciding on an application, in addition to the decision guidelines in Clause 43.XX-X (SUO), the responsible authority should:

- Consider any comments of any referral authorities pursuant to Clause 66. 03.

66.03 Referral of permit applications under other State standard provisions

An application of the kind listed in the table below, where the planning scheme includes the specified clause, must be referred to the person or body specified as the referral authority. The table below specifies whether the referral authority is a determining referral authority or a recommending referral authority.

Clause	Kind of application	Referral authority	Type of referral authority
Clause 43.XX-X (SUO1) (One of these for each HRF site/schedule)	An application of the kind specified in a schedule to the overlay.	Referral Authorities determined during amendment process	Determining and recommending status determined during amendment process