

Review of the Kwinana Air Quality Buffer - Position Paper

October 2008



Department for Planning and Infrastructure
Department of Environment and Conservation
Department of Industry and Resources

Acknowledgement

This document has been prepared for the departments of Planning and Infrastructure, Environment and Conservation, and Industry and Resources, by Essential Environmental Services, with input from a technical working group and steering committee.

The agencies who have worked together to produce the paper include:

- Department for Planning and Infrastructure;
- Department of Environment and Conservation;
- Department of Industry and Resources;
- Water Corporation;
- City of Cockburn;
- Town of Kwinana;
- LandCorp;
- Kwinana Industries Council; and
- Alcoa.

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1 Introduction

The *Review of Kwinana Air-Quality Buffer* was released by the Western Australian Planning Commission (WAPC), the former Department of Environment, Water and Catchment Protection and the former Department of Minerals and Petroleum Resources for public comment in August 2002. The review recommended modification to the existing Kwinana air quality buffer in six areas and identified three additional areas which were subject to further investigation.

Since the 2002 review, some additional work has been undertaken; however, some issues remain unresolved. This report revisits the areas reviewed by the 2002 report. It describes the extent of the Kwinana air quality buffer which will be established for the next 18 months to the end of 2009 based on existing information and how this differs to the 2002 review.

It is expected that by the end of 2009 additional information will be available to resolve some of the issues raised in this report. However, further time is likely to be required to resolve all of the issues in the area. Once this information has been considered, the buffer and the constraints to land use in the area surrounding the Kwinana industrial area can be more accurately defined. Further public comment on the proposed buffer will be sought at this time.

This position paper proposes that a modified buffer be established to provide some certainty of land use until further information is available in 2009. It represents the State Government's current thinking with regard to land use constraints arising from the Kwinana industrial area and associated industry, in the form of sulfur dioxide, risk, dust, noise, light and odour. The buffer should be used as an aid to land use decision-making but has no legal status. After the information has been gathered by the responsible agencies and considered by the key stakeholders, changes to the buffer may be recommended.

2 Background

The *Review of Kwinana Air-Quality Buffer* was an election commitment acknowledged by the Minister for the Environment and the Minister for Planning and Infrastructure in 2002. The 2002 *Review of Kwinana Air-Quality Buffer* report is available from the WAPC website: www.wapc.wa.gov.au under publications (R).

At the time of the review, a state air environmental protection policy was being developed by the Environmental Protection Authority (EPA) to implement the national environmental protection measure. The outcome of the review was to inform completion of the state air environmental protection policy.

Significant strategic planning had occurred as part of the *Fremantle-Rockingham Industrial Area Regional Strategy*. This was translated into a planning scheme by the *Hope Valley-Wattleup Redevelopment Act 2000*.

The review provided an opportunity to identify the areas likely to be affected by off-site impacts from the Kwinana industrial area and associated land uses. The review was expanded beyond sulfur dioxide to include risk, dust, noise, light and odour.

The review was released for public comment in August 2002. The main outcomes were:

- A consolidated "buffer" which included potential cumulative impacts of sulfur dioxide, risk, dust, noise, light and odour. This included a recommendation to expand the buffer in three places (areas 1 to 3) and contract it in three places (areas 4 to 6).
- A recommendation for a residential exclusion area to provide a land use outcome which could be implemented through the planning system.
- Areas which remained "subject to further investigation" where insufficient information was available to address specific issues associated with the buffer (areas 7 to 9).
- A recommendation for preparation of a state planning policy (SPP) to implement the findings of the *Review of Kwinana Air-Quality Buffer*.

Following release of the 2002 review for public comment, 40 submissions from state and local government, industry interests, and community groups and members were received. The comments were summarised in a submission report. The issues raised during the comment period in 2002 have been considered by this review. Please contact the Department for Planning and Infrastructure (DPI) for further information regarding the report on submissions.

Progress since the release of the 2002 review has resulted in the following:

- Hope Valley-Wattleup Redevelopment Area Master Plan
- Preparation of a draft state planning policy by DPI in consultation with key stakeholder agencies to be consistent with the recommendations of the review. Due to the unresolved status of the areas subject to further investigation, the SPP has not been finalised or released for comment.
- Perth Air Quality Study (Air Toxics Background Study) – Department of Environment and Conservation
- Alcoa dust emission modelling
- Woodman Point wastewater treatment plant environmental impact assessment (EPA section 16 advice, 2006)

3 Current review and recommendations

Due to the time since the release of the draft *Review of Kwinana Air-Quality Buffer*, all changes recommended in 2002 to areas 1 to 9 (figure 1), have been reconsidered.

The results of the current review are such that some areas remain “subject to further investigation”. It was recommended by the stakeholder agencies that the review be finalised as much as practicable so that landowners have a degree of certainty regarding land use options.

Recommendations for the Kwinana air quality buffer for 2008 – 2009 are:

3.1 Area 1 – land in the vicinity of the Marine Industry Technology Park

The 2002 review recommended expansion of the buffer boundary to contain the Marine Industry Technology Park which was mostly in the existing Kwinana Environmental Protection Policy buffer boundary. Due to the commercial/light nature of industry in the area, the Marine Industry Technology Park was zoned urban. This land use is compatible with the Kwinana air quality buffer.

Expansion of the buffer is consistent with the City of Cockburn local planning scheme, and this report supports expansion as per the 2002 review.

3.2 Area 2 – Lot 15 Cockburn Road, Munster

Due to the industrial zoning of this area, the 2002 review proposed expansion to include the area in the Kwinana air quality buffer. Expansion of the buffer is consistent with the City of Cockburn local planning scheme, and this report supports expansion as per the 2002 review.

3.3 Area 3 – land in the 500 m buffer for the Kwinana wastewater treatment plant

A generic 500 m buffer warranted by the activity of the wastewater treatment plant led the 2002 review to recommend that area 3 be contained within the Kwinana air quality buffer. The plant is intended to be used as a treated wastewater recycling plant in the future.

There are no foreseeable problems with including this area in the buffer as the lots are owned by Alcoa or in public ownership. The land uses in and surrounding the expansion include a piggery and the Department of Agriculture and Food, both of which are appropriate uses in the buffer. The expansion proposed in the 2002 review continues to be supported provided provisions are made to ensure this buffer connects appropriately with the area 9 buffer when determined. The Kwinana air quality buffer is to be expanded to include the generic 500 m wastewater treatment plant buffer as depicted in figure 1.

3.4 Area 4 – land bounded by Power Avenue, Dalison Avenue and the existing Kwinana Environmental Protection Policy buffer

The 2002 review recommended contraction of the buffer with restrictions placed on land use in the area to allow a transition between industry and development.

However, area 4 is likely to be adjacent to a transport precinct in the Hope Valley-Wattleup redevelopment area (now known as Latitude 32) and therefore may be subject to off-site impacts (noise, light etc). LandCorp is currently preparing a structure plan for the area and will undertake noise modelling if an intermodal terminal is to be located adjacent to area 4. Retention of the buffer is recommended at this time so as not to constrain any possible future operations in the adjacent area and to preserve the viability of the remaining rural area.

However, these recommendations may change during 2009 when further information will be made available.

3.5 Area 5 – land in the vicinity of the intersection of Wattleup and Mandogalup roads

The 2002 review suggested that area 5 be contracted from the buffer and eventually become connected to the urban cell to the east. However, rezoning was to be deferred until the master plan for the Hope Valley-Wattleup redevelopment area was finalised. Area 5 is separated from the Hope Valley-Wattleup redevelopment area to the west by Bush Forever site 393.

Recent studies have raised the possibility that area 5 may still be subject to off-site impacts from the Alcoa residue storage area, particularly from area F (figure 1). Therefore, this area should remain in the buffer until more information is available with regards to the likely impact of dust and odour emissions from the Alcoa residue storage area following the remediation of area F.

Recommendations on whether area 5 should remain in the Kwinana air quality buffer will be reviewed in 2009 following the culmination of current investigations.

3.6 Area 6 – land within the redevelopment area west of Mandogalup Road

As area 6 was not considered to be affected by any off-site impacts that constrain sensitive development, the 2002 review proposed removing it from the buffer while retaining it in the Hope Valley-Wattleup redevelopment area. There were a number of options for the use of this land, to be determined by the Hope Valley-Wattleup master plan.

Subsequent to the release of the master plan, area 6 is proposed to be partly rural and partly eco industry/business park. It is possible that the area is subject to dust impacts from the Alcoa residue storage area F.

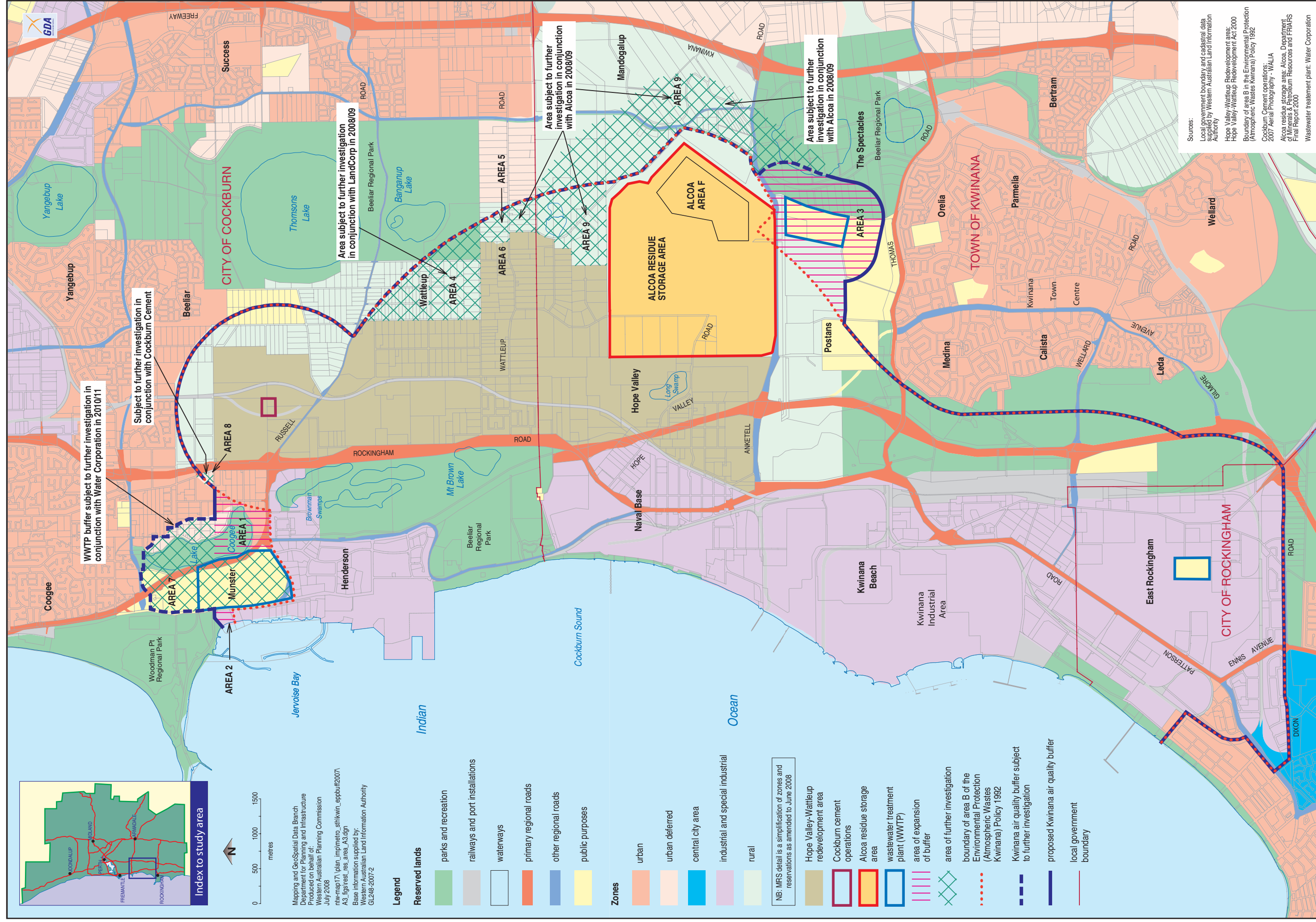


Figure 1: Areas comprising the Review of the Kwinana Air Quality Buffer and recommended Kwinana air quality buffer for 2008 – 2009

As the Hope Valley-Wattleup redevelopment area was defined to protect both neighbouring uses from the off-site impacts of the Kwinana industrial area and the Kwinana industrial area from encroachment, there is no need to remove this area from the buffer. Area 6 is to remain in the Kwinana air quality buffer as shown in figure 1.

3.7 Area 7 – buffer for the Woodman Point wastewater treatment plant

The Woodman Point wastewater treatment plant services a large portion of the metropolitan region and supplies recycled water to the Kwinana area for industry via the Kwinana water recycling plant. The plant is of significance and its capacity is likely to increase as development extends to the south.

This area was “subject to further investigation” in the 2002 review. The Water Corporation has undertaken some improvements to reduce impacts affecting privately owned land to the north-east of the plant. Odour modelling studies commenced in 2003 to define the extent of the impact with the aim of establishing an appropriate buffer.

A 750 m buffer currently exists which is supported by the Water Corporation. However, small changes have been requested so that the 750 m buffer (mostly) reflects cadastre and existing approvals. This provides the most effective guidance for land use planning decision-making.

The urban deferred area within the 750 m buffer is an area of community interest.

The 750 m Woodman Point wastewater treatment plant buffer encompasses urban deferred land east of Lake Coogee (private land), as well as the public purposes reserve north of the plant. This land was rezoned urban deferred by Metropolitan Region Scheme amendment 939/33A in 1997.

In determining the amendment, the Minister for Planning noted that *“the land within the urban deferred zone should not be considered as being suitable for future residential development. Rather, future use is to be compatible with the location of land within the wastewater treatment plant buffer zone or the Minister for the Environment’s conditions of development.”*

The EPA released a section 16 report (bulletin 1240, Nov 2006) on the Woodman Point wastewater treatment plant which recommended maintaining the existing buffer (750 m) until after the implementation of stage 1 measures, which are to achieve a 50% odour reduction, to be completed by the end of 2008. The EPA noted that the 750 m buffer was not a technically established buffer. It is recommended that the 750 m buffer be included in the Kwinana air quality buffer to reflect acknowledged and current off-site impacts from the wastewater treatment plant.

Additional information will be available after the implementation of stage 1 and stage 2 measures by the Water Corporation, scheduled for completion by

the end of 2008 and 2009, respectively. The Water Corporation will undertake monitoring of climate conditions and the results of the upgrade works, and review the impact of these works on the buffer during 2010/2011.

The 750 m buffer is to be included in the Kwinana air quality buffer at this time as shown in figure 1.

3.8 Area 8 – land adjacent to the corner of Rockingham Road and Frobisher Avenue

This area was “subject to further investigation” in the 2002 review. It includes urban deferred land in the arbitrary 1.5 km buffer established in the 1980s, and the land is also affected by quarrying. The main emissions are odour; however, dust and noise are also a factor.

Although the potential exists for the buffer to be slightly adjusted in this area to align with cadastral boundaries in order to provide a more practical planning outcome, there is no technical information which supports a reduction of the buffer.

Accordingly, this area should remain subject to further investigation until an independent review is undertaken of any available technical investigations.

3.9 Area 9 – buffer for the Alcoa residue storage area

This area was “subject to further investigation” in the 2002 review due to potential impacts of dust, noise and visual amenity arising from the operations at the Alcoa residue storage area.

Alcoa has recently upgraded their dust control sprinkler systems for the residue storage area and undertook monitoring and modelling during the summer of 2007-2008. This will help to determine the impact of dust in the surrounding areas.

Alcoa is expected to finalise operations in area F by 2010 with the remediation of this area to be completed by 2015. A detailed remediation plan is currently being prepared and is expected to be completed by the end of 2008. This plan will provide the technical information necessary to better define any likely off-site impacts during the remediation phase.

The Alcoa monitoring and modelling studies planned for 2007-2009 will assist with determination of the extent of the buffer, if any, required around the entire residue area once area F is remediated.

No buffer around area 9 can be technically established at this time.

3.10 Summary of recommendations and changes

The proposed changes to the Kwinana air quality buffer are outlined in table 1 and depicted in figure 1.

Table 1: Summary of recommendations for changes to the nine areas of the Kwinana air quality buffer

Area	Recommendation	Consistent with 2002 report	Reason and action
1	Expand buffer to include area 1	Yes	Consistent with local zone and use.
2	Expand buffer to include area 2	Yes	Consistent with local zone and use.
3	Expand buffer to include area 3 – 500 m	Yes	500 m buffer is indicative.
4	Retain in buffer	No	Review at end of 2009 when detailed noise studies and structure planning completed for Hope Valley-Wattleup redevelopment area.
5	Retain in buffer	No	Review at end 2009 when further monitoring and modelling completed, and detailed remediation plan completed.
6	Retain in buffer	No	Part of the Hope Valley-Wattleup redevelopment area.
7	Incorporate the recognised 750 m cadastral buffer for the wastewater treatment plant in the buffer	N/A	Review in 2010/2011 when upgrade works and detailed odour monitoring and modelling have been completed by the Water Corporation.
8	Retain in buffer	N/A	Retain in buffer unless technical studies demonstrate otherwise.
9	Subject to further investigation	Yes	Review in 2009 when further monitoring and modelling have been completed and detailed remediation plan completed.

4 Process for review and finalisation of buffer

This position paper outlines the current position with regard to the Kwinana air quality buffer to be implemented over the next 18 months until it is reviewed at the end of 2009. At this time additional information will be available, particularly with regard to:

- Area 4 – the potential impact of a transport precinct adjacent to the area will be investigated by LandCorp through more detailed structure planning, including noise studies.
- Area 5 – the status of this area will be reviewed based on any new information available. If it remains unconstrained, area 5 could possibly be removed from the buffer.
- Area 7 – further technical studies are required from the Water Corporation to assess improved procedures required by the EPA, although final conclusions may not be able to be made at this time.

- Area 8 – independent review of technical information if available.
- Area 9 – as a result of further studies to be conducted by Alcoa it should be possible to identify whether a buffer can be established in the interim, until remediation is completed in 2015.

Other information, where relevant, will also be reviewed at this time. This may include the Kwinana Cumulative Risk and Land Use Planning Study currently being undertaken by the Department of Industry and Resources.

5 Implementation

Once the buffer is defined, it will need to be implemented through the planning system. Consideration may be given to the drafting of a state planning policy to reflect the buffer and restrict further residential uses in the area (potentially a restricted residential area). Provisions may

be developed to allow only a single house on a block and no subdivision for additional residential uses, with no additional residential development or sensitive uses permitted.

The WAPC, together with the DPI, will work with key stakeholder agencies to develop the most effective way of implementing the agreed buffer.

6 Conclusion

The purpose of the Kwinana air quality buffer is to protect residents outside the Kwinana industrial area and the Hope Valley-Wattleup redevelopment area from pollutants such as sulfur dioxide, risk, dust, noise, light and odour as well as avoiding restrictions on industrial operations in the buffer.

The *Review of Kwinana Air-Quality Buffer* was released for public comment in August 2002. The review recommended modification to the existing buffer in six areas and identified three additional areas which were subject to further investigation.

These areas were reviewed recently with the aim of finalising the buffer. However, due to a lack of information, particularly with regard to impacts arising from the Woodman Point wastewater treatment plant and the Alcoa residue storage area, the buffer is not able to be finalised at this stage. Some additional information will be available at the end of 2009 and in order to provide guidance for land use decisions until this time, an interim buffer has been proposed. The buffer is depicted in figure 1 and proposed to be expanded in areas 1, 2, 3 and 7, and retained in areas 4, 5, 6 and 8, with area 9 unresolved.

The interim buffer will be reviewed at the end of 2009 when some of the necessary information will be available. A further review will be conducted when all issues have been resolved, likely to be around 2011.

7 References

Environmental Protection Authority (2006) *Strategic advice on the proposed buffer for the Woodman Point Wastewater Treatment Plant*. Section 16e report and recommendations of the Environmental Protection Authority, Bulletin 1240, Environmental Protection Authority, Perth, Western Australia.

Western Australian Planning Commission, Department of Environment, Water and Catchment Protection and the Department of Minerals and Petroleum Resources (2002) *Review of Kwinana Air-Quality Buffer*, Western Australian Planning Commission, Perth, Western Australia.

Western Australian Planning Commission (2000) *Fremantle-Rockingham Industrial Area Regional Strategy*, Western Australian Planning Commission, Perth, Western Australia.