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# WEST SALE INDUSTRIAL LAND TECHNICAL REPORTS

SUMMARY DOCUMENT

WELLINGTON SHIRE COUNCIL | APRIL 2024



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## FILE

Final West Sale Industrial Land Technical Reports 080424

## VERSION

1

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# 1. INTRODUCTION

## 1.1. ENGAGEMENT

Urban Enterprise was engaged by Wellington Shire Council (**Council**) to coordinate the preparation of the West Sale Industrial Land Technical Reports, as a direct response to several recommendations in the West Sale and Wurruk Industrial Land Supply Strategy 2018 (**the Strategy**).

## 1.2. WEST SALE AND WURRUK INDUSTRIAL LAND SUPPLY STRATEGY

The Strategy was prepared in 2018 by Urban Enterprise for Wellington Shire Council. The Strategy assessed three potential candidate areas in West Sale and Wurruk for appropriateness to support future industrial growth in the short to medium term in Sale.

The Strategy found that Candidate Area 2 provided a strategic opportunity to accommodate industrial development, with the following opportunities presented:

- Approximately 50 hectares of gross developable area with capacity for 35ha of lot area;
- Sufficient scale to become a strategic employment area over the medium-long term;
- Opportunity to attract larger businesses seeking proximity to major transport infrastructure and separation from urban areas;
- Opportunity to form part of a consolidated aviation, manufacturing and business precinct in conjunction with the Aerodrome, attracting businesses associated with aviation; and
- Opportunity to capitalise on the likely government investment in the Sale Alternative Truck Route.

The Strategy recommended the rezoning of two Candidate Areas (known as Area 1 and 2), among a number of other strategic recommendations. Among these other recommendations were:

- “Require the preparation of a Preliminary Ecology Assessment for Areas 1 and 2 to observe the presence of protected flora and fauna.” (p. 5);
- “Require preparation of a Preliminary Cultural Heritage Survey of Area 2.” (p. 5);
- “Required the preparation of a survey and preliminary stormwater management plan and waterway management plan for Candidate Area 2, ensuring that all findings and options consider ways to integrate with proposed works associated with Aerodrome expansion.” (p. 6); and
- “Require the preparation of a Risk Assessment with V/Line and the Road Authority to reveal the additional impacts on level crossings to be utilised for the relevant candidate area and measures required to mitigate any risk, building on the initial assessment prepared for this strategy.” (p. 6).

Council adopted the Strategy in June 2018 and proceeded to commence preparation of the technical reports for **Area 2** in order to implement the recommendations and strategies identified in the Strategy.

Amendment C103 to the Wellington Planning Scheme was gazetted in October 2019 and rezoned Area 2 to the Industrial 1 Zone (**IN1Z**).

### 1.3. STUDY AREA

The study area for this assessment is Candidate Area 2. The study area is located approximately 7 kilometres west of the Sale CBD and is bound by the West Sale Aerodrome, Sale-Heyfield Road and the Melbourne to Bairnsdale railway line. The context of the study area is shown in Figure 1.

Matters of particular relevance to the development of Area 2 include:

- Proximity to West Sale Aerodrome and opportunity to form part of a consolidated aviation, manufacturing and business precinct;
- Aerodrome land has recently been expanded in order to accommodate a runway expansion as part of implementation of the West Sale Aerodrome Masterplan;
- Access from Sale-Heyfield Road (an unofficial Sale bypass), which is being considered for future upgrade by Regional Roads Victoria and Council for a formal Alternative Truck Route around Sale; and
- Proximity of Melbourne-Bairnsdale Rail line to the south and impacts of any development in the study area on existing level crossings.

#### F1. STUDY AREA CONTEXT



Source: Urban Enterprise

## 1.4. SCOPE

The scope of this report includes the following tasks for Area 2:

- Prepare an indicative lot layout and associated road network upon which technical reports can be based;
- Prepare a Preliminary Cultural Heritage Survey;
- Prepare a Preliminary Ecology Assessment;
- Prepare a survey and preliminary Stormwater Management Plan;
- Investigate access arrangements to Sale-Heyfield Road, including consideration of the strategic nature of the Sale Alternative Truck Route, and details of any required upgrades to road network;
- Prepare a Traffic Risk Assessment; and
- Review, collate and synthesise all technical report documents into a Draft and Final Report, identifying implementation requirements of each technical report to address the recommendations from the Strategy.

Technical reports have been prepared and are included in the Appendices Report which should be read in conjunction with this summary report.

The Appendices Report includes:

- Traffic Engineering Report, Traffix Group, September 2023;
- ALCAM Assessment; Traffix Group, October 2023;
- Sewer and Water Management Report, Stantec, September 2023;
- Stormwater Management Report, Stantec, September 2023;
- Aviation Impact Assessment; Syd Herron, November 2023;
- Clause 13.02-1S Assessment, December 2023, Fire Risk Consultants, December 2023;
- Draft Biodiversity Assessment, Ecology and Heritage, May 2019;
- Draft Aboriginal and Historical Heritage Assessment, Ecology and Heritage, May 2019;
- Cultural Heritage Management Plan – Approval Sheet, Jo Bell Heritage Services, September 2021; and
- Archaeological Assessment and Management Plan, Alliance Archaeology, July 2022

## 1.5. PRELIMINARY LOT LAYOUT

This section provides the preliminary lot layout, based on the findings of the Strategy and initial advice from Traffix Group regarding optimal road layout considerations. It should be noted that elements of the preliminary lot layout are expected to change as part of more detailed planning and design, based on the specific findings of the Technical Reports.

Traffix Group provided preliminary advice to inform the preparation of the preliminary lot layout, summarised as follows:

- The size of the lots and configuration of the internal road network should provide connectivity between the various external road network access points.
- The internal network should avoid cross-intersections for traffic management/road safety reasons.
- Council advised that the road profile should adopt the Infrastructure Design Manual (IDM) standard industrial street cross section, with road reserve widths of not less than 25 metres.
- The previous traffic report undertaken for the Strategy calculates that the 55ha site could generate in the order of 8,800 vehicles per day (vpd), with 1,760 vehicle movements in the peak hours, based on 1 trip per 100sqm in the peak hour). Actual movements could be lower given this was based on a metropolitan benchmark and would be lower if less developable area was possible, or higher if smaller lots are created rather than the current vision for generally medium to large lot sizes.
- SIDRA analysis previously undertaken for the Strategy suggested three access points (two to Sale-Heyfield Road plus one to Williams Drive) were necessary from an intersection capacity perspective. If the floor area

estimates for the site (assumed to be 176,000 sqm in total) and/or the adopted traffic generation rate for the peak hours (likely to be in the order of 0.7 per 100sqm rather than the 1 per 100sqm previously conservatively adopted) were to be reduced, this could reduce the demand for three access points.

- Alternatively, a single access point of a roundabout on Sale-Heyfield Road may be considered as an option. The predominant movement causing capacity constraints (with primary access being to Sale-Heyfield Road) is the right turn out of the site onto Sale-Heyfield Road. A roundabout would mitigate the issues caused by the right turn onto Sale-Heyfield Road.
- There are restrictions to the location(s) of the site access due to the bend in Sale-Heyfield Road and the need to provide adequate sight distance. An access point located at the midpoint of the bend allows vehicles exiting the site to see clearly in both directions. If it is not at that point, it would need to be well away from the bend. Safe Intersection Sight Distance (SISD) for an 80km/h speed limit is 181 metres.

Based on advice from Traffix Group and Council, a high level concept the road connectivity was determined, with key points being:

- Initial access via Williams Drive which could be closed if and when the full east-west connection is established (with potential to also remove the level crossing in the future).
- Preliminary allowance for 2 intersection access points to Sale Heyfield Road;
- Minor road access at the aerodrome and Sale Heyfield Road; and
- Prohibition of property frontage to Sale-Heyfield Road.

Stantec (formerly Cardno / TGM) also provided initial advice that two retarding basins were likely to be required, along with a sewer pump station as shown.

A preliminary lot layout was prepared on this basis and is shown in Figure 2. The layout includes:

- Larger lots (greater than 2,000sqm) located at the south-eastern section of the site with frontage to the primary road;
- Medium lots throughout the precinct, primarily with access to the primary road;
- Smaller lots access from local roads; and
- Two drainage basins in the northern sections of the precinct.

The preliminary lot layout was provided to technical sub-consultants in order to inform analysis of infrastructure requirements, locations of any non-developable land and implications for development planning. The findings of these assessments are summarised in the following sections.



## 2. TRAFFIC

### 2.1. INTRODUCTION

This section summarises the technical transport assessments undertaken by Traffix Group to inform the traffic requirements for the proposed development.

### 2.2. TRAFFIC ENGINEERING REPORT

Traffix Group prepared a Traffic Engineering Report for the study area, which provides a detailed traffic impact analysis to determine access requirements and mitigating works required. The full report is provided in the **Appendices Report**.

#### METHOD AND ASSUMPTIONS

The following method and assumptions were adopted by Traffix Group to undertake the Traffic Engineering Report:

- A review the existing traffic conditions in and surrounding the study area, including:
  - An assessment of existing road network, configuration, accessibility and speed limits.
  - Summarise existing traffic volumes at key locations.
  - Plans for the Sale Alternative Truck Route.
- Undertake a traffic analysis (including SIDRA analysis) to determine likely traffic generation, impacts for site requirements and level crossings.
  - Traffic generation assumptions consider the RTA Guide to Traffic Generating Developments (2002) along with case study data from Wurruk and Shepparton.
  - Traffic distribution assumptions utilise SCATS signalised intersection data.
- Review and consider internal road and intersection design requirements, along with planning scheme overlay requirements that apply to the site.
- Conclusions and recommendations regarding the transport requirements of the precinct.

#### FINDINGS

The key conclusions and findings of the Traffic Engineering Report are:

- The standard RTA Guide metropolitan traffic generation rates for industrial uses are too high for this area based on empirical rates established at the nearby Hunt Place Industrial Estate;
- Traffic generated by the full build-out of the Development Plan area can be accommodated with access provided via the Williams Drive/Princes Highway intersection and a single industrial access connection to Sale-Heyfield Road;
- There is no need for a road connection to Sale-Cowwarr Road based on the current usage of the adjacent SUZ1 land from a traffic capacity perspective;
- In the event that an increase in intensity of use of the SUZ1 land were to be proposed it would be appropriate to revisit the potential need for a connection between Williams Drive and Sale-Cowwarr Road through the SUZ1 land;
- There is adequate capacity at the Princes Highway/Sale-Heyfield Road and Princes Highway/Williams Drive intersections to accommodate full build-out of the Development Plan area and no mitigating works are required at these intersections;
- When the Development Plan area is connected to Sale-Heyfield Road, the resulting intersection should include AUL(s) and CHR(s) auxiliary turn lanes based on the Austroads turn warrants for an 80kph speed limit;

- When the Development Plan area is connected to Williams Drive at the 90-degree bend, the traffic priority should be modified to give priority to north-south traffic accessing the industrial precinct, with the east-west leg to Give Way and the speed limit on Williams Drive should be reduced to 60km/h;
- The proposed road network is convenient and safe and meets the relevant requirements of the IDM and DPO12; and
- There are no traffic engineering reasons why a Development Plan should not be approved.

## IMPLICATIONS

The results of the assessments and subsequent recommendations of the Traffic Engineering Report have the following implications for the development site:

- Only a single industrial access intersection will be required on Sale-Heyfield Road. Alternative site access can be gained from the existing Williams Drive/Princes Highway intersection.
- No road connection is required to Sale-Cowwarr Road, but could be reviewed if land use intensity increases on the SUZ1 land.
- No upgrades are required to external intersections on Princes Highway as a results of the proposed development.
- Minor changes are required to the concept layout plan to reflect the findings of the traffic assessment.
- Intersection designs have been prepared by Traffix Group and are shown in the **Appendix Report**.

## 2.3. ALCAM ASSESSMENT

An Australian Level Crossing Assessment Model (ALCAM) assessment was prepared in parallel to the Traffic Engineering Report in order to understand and identify potential traffic risks at level crossings. The full assessment is provided in the **Appendices Report**.

### METHOD AND ASSUMPTIONS

The ALCAM assessment undertook the following approach:

- Review of existing conditions and traffic volumes, as well as future traffic volumes at each level crossing.
- Preparation of road rating results using the ALCAM to determine risk levels at each crossing.

### FINDINGS

From the ALCAM assessment, the key finding was:

- The assessment of risk between the existing function of the level crossing and the 'proposal' function shows that the level of risk at Williams Drive increases substantially, while there is also an increased risk at Sale-Heyfield Road level crossing, although to a lesser extent.

### IMPLICATIONS

Having regard to the implications for development of the site and potential risk mitigation measures, the findings and the results of the assessment indicate:

- The increased level of risk may require the need for an upgrade of the existing level crossing at Williams Drive (ie. boom barriers). It is noted that the ultimate responsibility for any upgrades to the level crossing is with V/Line Corporation.
- V/Line advised that impacts will be considered at Planning Permit stage, which will also require the preparation of a level crossing compliance report to support the ALCAM assessment and Traffic Impact Assessment.

The increased risk rating at each level crossing is not a hinderance to development, but may require some mitigation measures to improve safety. Level crossing upgrades are the responsibility of V/Line.

# 3. INFRASTRUCTURE

## 3.1. INTRODUCTION

This section provides an overview of the technical work prepared by Stantec regarding sewer and water infrastructure, and a stormwater management plan for the proposed development.

## 3.2. SEWER AND WATER STRATEGY

A sewer and water strategy was prepared by Stantec for the study area, dated September 2023. The full strategy is provided in the **Appendices Report**.

### METHOD AND ASSUMPTIONS

The following method was prepared by Stantec in order to prepare the sewer and water strategies:

- Brief review of context, including a high level concept layout provided by Urban Enterprise;
- Prepare a subdivision concept plan in accordance with the high-level concept layout;
- Consult with Gippsland Water and provide advice regarding both sewer and water requirements; and
- Prepare a Sewer Strategy Plan and a Water Strategy Plan for the subject land, including consultation advice from Gippsland Water regarding requirements for the precinct.

Stantec adopted the following assumptions:

- Road gradings are at preliminary stage to facilitate the procurement of network strategies such as the sewer and water strategies. Gravity sewers would follow the fall of the road but these road gradings are subject to final detailed design and road sections depending on cut/fill tolerances;
- It should be noted that information provided in the technical report is of a high-level nature and will require further consultation with Gippsland Water and other stakeholders; and
- This report considers a high level development layout based on the total area developed by a single property developer. However, the report also considers the potential of each individual title as separate development opportunities.

### FINDINGS

Gippsland Water is the responsible authority for sewer infrastructure in the study area and provided the following advice:

- The West Sale Aerodrome has a private sewer and pump station currently operating, with ongoing negotiations to handover this asset to Gippsland Water. However, there is no guarantee that Gippsland Water will accept the asset;
- It is assumed that sewer flows from the Aerodrome will flow through the study area, requiring a new main at sufficient depth and potentially upsized to have capacity;
- A sewer pump station will need to be sized to cater for both the study area and the Aerodrome, and be located at the low point of the site; and
- The sewer rising main will need to be bored under the rail line, requiring approval from VicTrack (timeframe in excess of one year), with the full cost of sewer infrastructure borne by the developer.

Gippsland Water is also the responsible authority for water infrastructure in the study area, and provided the following advice:

- There is sufficient capacity to service the new development;

- An existing 150mm diameter PVC main in Williams Drive can be extended into the development. All internal water mains must be 150mm diameter, with costs borne by the developer; and
- An additional connection is required to the study area for operational contingency and reticulation purposes. A new 225mm diameter main will need to be constructed along Sale-Heyfield Road and be partly funded by Gippsland Water. This main will cross the Gippsland Rail Line and thus will be required to be bored.

## IMPLICATIONS

In terms of implications for development of the site, the findings from the strategies indicate the following:

- The development can be readily serviced by sewer and water infrastructure.
- Sewer infrastructure in the study area will need to be of sufficient scale to cater for both the study area and the Aerodrome. This may warrant cost sharing arrangements.
- A new sewer pump station and rising main is required to service the study area. This has minor implications for developable area and a cost impost to developers.
- There is likely to be minimal cost associated with the water infrastructure. Extension of existing mains can be provided.
- A new 225mm main along Sale-Heyfield Road will be partly funded by Gippsland Water. The costs of all internal water mains are borne by the developer.
- The cost of drainage infrastructure is estimated to be in the order of \$6.9 million if developed in accordance with the subdivision concept plan, or up to \$12.1 million if each current property is developed individually (ie. no consolidation).
- Timing delays associated with VicTrack approvals to bore services (both sewer and water) under the rail-line are potentially extensive.

### 3.3. STORMWATER MANAGEMENT REPORT

A Stormwater Management Report was prepared by Stantec dated September 2023. The full report is included in the **Appendices Report**.

#### METHOD

The following method was undertaken by Stantec in order to prepare the sewer and water strategies:

- Brief review of context, including a high level concept layout provided by Urban Enterprise;
- Adopt a draft subdivision concept plan prepared as part of the Sewer and Water Strategy;
- Consult with key stakeholders including Council and West Gippsland Catchment Management Authority (**WGCMA**);
- Review and model the existing drainage conditions; and
- Assess and model the requirement for post development drainage conditions, including Water Sensitive Urban Design (**WSUD**).

Stantec adopted the following assumptions:

- Road gradings are at preliminary stage to facilitate the procurement of network strategies such as the sewer and water strategies. Gravity sewers would follow the fall of the road but these road gradings are subject to final detailed design and road sections depending on cut/fill tolerances;
- Rainfall data has been gathered from Bureau of Meteorology's website for West Sale;
- Parameters to calculate water flow have been adopted from various manuals and best practice;
- Stormwater analysis is based on the Australian Rainfall and Runoff (**ARR**) Guidelines 1987;
- Stormwater quality and quantity modelling is based on the ultimate development of the estate, with out of sequence or staged development impacting the accuracy of the report;

- Assets that provide stormwater treatment or detention located on private property would require easements in favour of Council to ensure appropriate management and maintenance;
- This report has assessed the land use for industrial growth primarily on light industrial demand. Industrial businesses that require a heavy demand on infrastructure would result in the need for larger infrastructure upgrades to those identified in the Stormwater Report;
- This report considers a high level development layout assuming the precinct is developed as a consolidated site, but also considers the potential of each individual title as separate development opportunities;
- Adopt an industrial street width of 25 metres;
- An employment yield of between 750 and 1,700 jobs at full development; and
- A total site area of 54.3 hectares.

**T1. SUMMARY OF ADOPTED ASSUMPTIONS - STORMWATER**

Input	Technical Report Assumption
Site Area	54.3 ha
Employment Yield	750 – 1,700 jobs
Street Width	25 metres

Source: Stantec, 2023

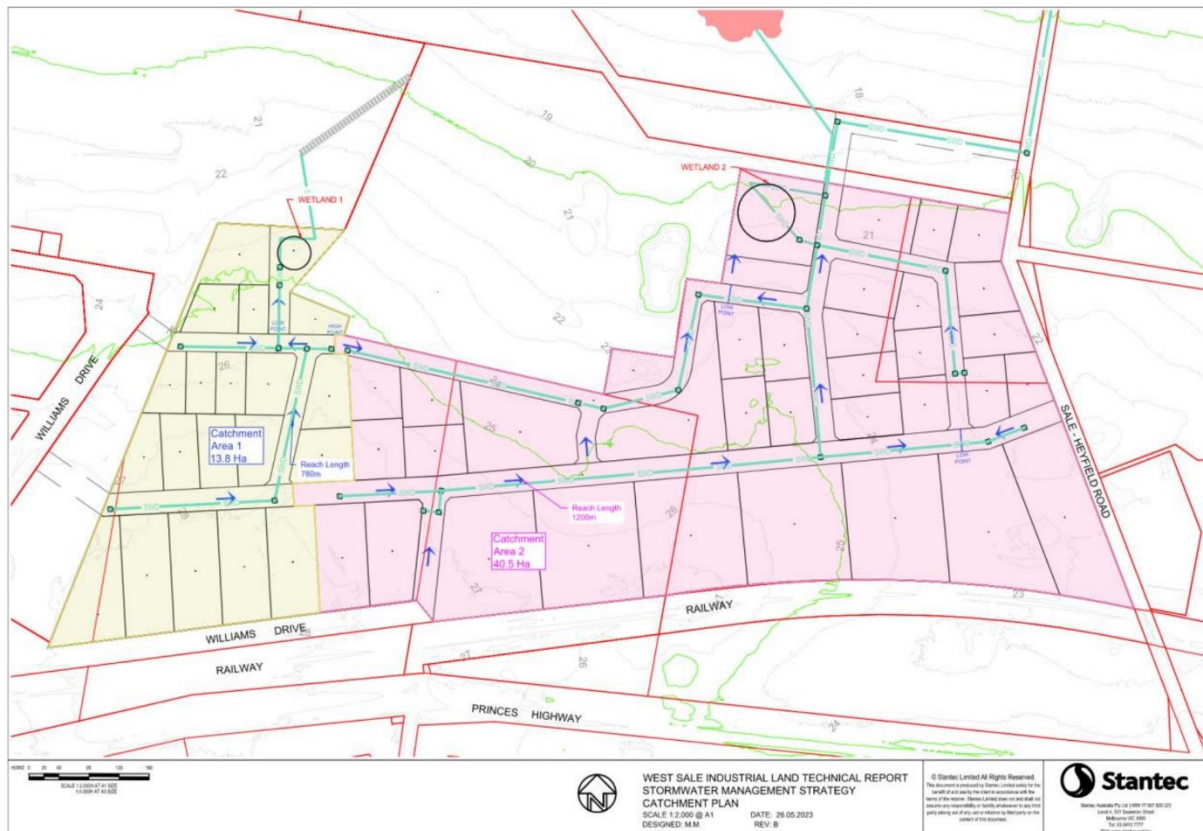
**FINDINGS**

The existing conditions of site drainage were assessed through LIDAR data modelling, which identifies that the site generally splits into two catchments. The western catchment flows almost due north before entering the Aerodrome land. The second catchment flows more north-easterly, with three different outfalls.

Existing conditions are that some outfall flows south of the site. West Gippsland Catchment Management Authority (WGCMA) advised that future development should be engineered to ensure a significant proportion of the catchment drains to the north. Investigations by Stantec found that this can be addressed through moderate filling and appropriate engineering to ensure all stormwater discharge flows to the north, eliminating any stormwater crossing Princes Highway.

Figure 3 shows the drainage catchment plan prepared by Stantec.

### F3. DRAINAGE CATCHMENT PLAN



Source: Stantec, 2023.

Based on estimated stormwater flows within each catchment, it is proposed that two retarding basins would be required. The required detention storage volumes of the basins are 3,003 m<sup>3</sup> and a 10,053 m<sup>3</sup>, with a footprint area of 3,845 sqm and 9,503 sqm respectively.

The strategy identifies that:

- The Aerodrome runway extension includes two 900mm diameter stormwater drains, which will be a nominated method of conveying stormwater.
- A minor flow network has been designed to convey water through an underground pit and pipe network, within road network, in the event of a particular storm event (10% chance per year in an industrial estate).

With regard to achieving WSUD best practice guidelines, the following treatments are recommended:

- All generated stormwater shall be captured and treated on-site before being released downstream;
- Road grades of 1%-4% to achieve sufficient velocities to avoid water stagnation;
- Use of wetlands is a recommended treatment, however mitigation measures are required to manage bird life and to ensure limiting impacts to the aerodrome; and
- Primary, secondary and tertiary treatment stages implemented:
  - Primary: A gross pollutant trap (GPT) has been included in each catchment to catch all litter and sediment greater than 5mm;
  - Secondary: Sediment basins have been included as a secondary measure to treat medium sized particles; and
  - Tertiary: Wetlands are the final treatment device aimed at reducing the amount of dissolved contaminants (nitrogen and phosphorus) from the water.

## IMPLICATIONS

The practical implications of the stormwater modelling and findings include the following:

- The requirements for stormwater infrastructure do not present any barriers to development;
- An underground pit and pipe network within the road network is required to convey water in a particular storm event. This would be funded by developers;
- Minor filling and appropriate engineering are required by the developer in some sections to ensure that outfall flows north. This is a common requirement and would not be expected to present an unreasonable cost burden on a developer;
- Two retarding basins are required within the precinct, which the MUSIC Concept Plan identifies as warranting wetland reserves of approximately 0.4 ha and 1.2 ha respectively. Although this is slightly different to the areas shown in the preliminary lot layout (0.7 ha and 1.3 ha each), the overall land allocation is similar; and
- A wetland treatment is likely to require significant mitigation measures to manage bird life and impacts on the aerodrome. This proposed treatment should be considered in the context of requirements under Guideline C of the National Airports Safeguarding Framework (**NASF**), which identifies this as an 'incompatible' land use within 3 km of the aerodrome.

## 4. AVIATION

### 4.1. INTRODUCTION

This section provides an overview of a technical assessment undertaken by Syd Herron related to aviation and implications for any future industrial development.

### 4.2. AVIATION IMPACT ASSESSMENT

An Aviation Impact Assessment was prepared by Syd Herron for the study area, dated November 2023. The full assessment is provided in the **Appendices Report**.

#### METHOD

The method utilised in the assessment are outlined as follows:

- Review of the existing site conditions of the West Sale Aerodrome and subject site;
- Overview of the existing activities, layout, forecast operations and land use considerations from the 2017 West Sale Airport Master Plan;
- Summary of implications of the 2017 Master Plan for the subject site; and
- Assessment of impact and risk of National Airports Safeguarding Framework (NASF) Guidelines on the subject site.

#### FINDINGS

Comments on the 2017 West Sale Airport Master Plan:

- Since the preparation of the 2017 Master Plan, the main runway of the airport has been extended to a length of 1,803 metres.
- The West Sale Airport aircraft movements between 2020 and 2022 increased from 7,701 up to 9,119 movements, which is greater than the 6,338 forecast aircraft movements forecast for Year 2037 and used to generate the Year 2037 ANEF noise contours. This may mean that the 2037 Master Plan ANEF is likely to understate noise impacts.
- The Masterplan predates COVID era and does not consider the possibility of regional airlines or higher capacity jets (larger than Q400) utilising the airport. Although the likelihood of this is considered low, if it were to eventuate, it may require further runway extension or changes to future ANEF contours that impact the subject site.

The assessment of the proposed development against the NASF Guidelines found:

- Guideline A: The subject site is located outside the 20 ANEF contours for West Sale Airport and the proposed development complies with AS2021. Therefore, no impact.
- Guideline B: The subject site is within the windshear trigger areas for two runway approaches. Technical assessment is needed for any lots where the proposed building heights will penetrate the 1:35 slope from the extended runway centrelines.

Point 8 of the Guidelines states the following regarding the likelihood of this Guideline preventing development:  
*"While off-airport buildings are an important consideration, buildings would have to be of a significant height to fail the Guideline B criteria. It is not expected that off-airport buildings would create unacceptable risks to aviation as often as on-airport buildings."* (p.2)

- Guideline C: There are potential wildlife strike risks depending on the nature of the industrial land use. Some specific uses / activities are not compatible, while others may require mitigation or monitoring.



Assessments required or important implications are as follows:

- Guideline B requires any building that penetrates the 1:35 surface to **undertake a technical assessment for windshear and turbulence effects, which must satisfy the approval authority** that the building will not create an unacceptable risk to aircraft operations. Areas in the northern half of the subject site are likely to be impacted, although not prohibited by this requirement.
- Guideline F: There are height restrictions as a result of the OLS that could impact the northern most sections of the of the subject site. Allowable building heights will need to be assessed against the Australian Height Datum (AHD)<sup>1</sup>. **The lot layout may need to take this Guideline into consideration as part of the Development Plan.** Layout considerations may be able to identify alternative land uses within areas impacted by this guideline.
- Guideline I: There is a portion of the subject site in the north east that may be impacted by a potential PSA footprint. However, there is no guideline that applies for PSAs, meaning that **Council will need to consider a preferred approach to assessing and considering risks based on other State or local government approaches, including whether existing approaches are suitable to apply to the context and operations of the West Sale Aerodrome.** Council has advised that the expectation will be that the industrial precinct is intended to attract development of low intensity and could be appropriately considered at the planning permit stage. It is expected that this will not prevent development from occurring within affected areas.

Potential assessment requirement:

- Guideline C: There are several land uses identified from the Wildlife Strike Guidelines that are deemed not compatible within 3km of an airport. When assessing planning permits, **Council should take due consideration of the guidelines and non-compatible uses, noting that these are 'guidelines' and may be accepted by Council subject to future assessment and suitable mitigation measures.** This includes wetland treatments and food processing plants. The Guidelines indicate that these incompatible uses can be allowed where the development demonstrates exceptional mitigation measures that have been assessed as suitable by a wildlife hazard expert.
- Guideline E: **Sites that fall within Zones A and B should be assessed for any lighting impacts on pilots.** Where necessary, the impact of a proposal could be referred to the Civil Aviation Safety Authority (CASA), however impacts are generally mitigatable through appropriate shielding.
- Guideline G: A small area of the site is within the 100 metre radius of the West Sale VHF antenna. **Any structure within this area must be referred to Airservices Australia for assessment.** Airservices Australia should also be advised of large structures / obstructions elsewhere in the subject site.

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<sup>1</sup> AHD is approximately 20-25m AHD within the subject site, however more detailed assessment is required.

# 5. BUSHFIRE

## 5.1. INTRODUCTION

This section provides a summary of the technical assessment prepared by Fire Risk Consultants related to bushfire risk of future industrial development on the subject site.

## 5.2. BUSHFIRE RISK ASSESSMENT

Fire Risk Consultants prepared a Bushfire Risk Assessment for the study area, dated January 2024, against the requirements of Clause 13.02-1S of the Wellington Planning Scheme. The full assessment is provided in the **Appendices Report**.

### METHOD AND ASSUMPTIONS

The method adopted to undertake the assessment included:

- A review of the subject site and existing land uses;
- Contextual review of bushfire risk across South East Australia;
- A bushfire hazard assessment, including history, existing risk assessments, and likely bushfire scenarios;
- An assessment against State Government bushfire planning guidelines; and
- A review of how settlement planning objectives have been met through the assessments undertaken in the report.

### FINDINGS

The key findings of the Bushfire Risk Assessment include the following:

- Historical information indicates that no bushfires have occurred in the surrounding landscape, with the Macalister Irrigation District to the north likely preventing larger bushfires from spreading.
- The closest bushfire occurred to the south and south west of the development area within the Plantations on the southern side of the Latrobe River. Under a south westerly influence, there is the potential for the bushfire to burn towards this site.
- A Bushfire Management Overlay (BMO) does not apply to the subject site. The closest areas that have a BMO are to the south of the Latrobe River within the Plantation area.
- The Wellington Municipal Fire Management Plan (MFMP) 2023-2026 identifies the West Sale Airport as a medium risk and the Fulham Correctional Centre as a high risk following an assessment using the Victorian Fire Risk Register process.
- The likely bushfire scenarios mainly involve a bushfire approaching from the north west or south west.
- The following are identified as the most likely bushfire scenarios within different surrounding contexts:
  - Landscape conditions (10 kms and 1 km) – Effective access and egress options to a safer place is required. Embers are the most likely cause of building loss, which can be mitigated by incorporating larger properties to the outside and smaller properties to the centres of the development.
  - Neighbourhood conditions (400 m) – The predominant threat to the development is a fire starting to the north west or south west. It is assumed that the development will be serviced by a reticulated water supply consisting of street fire hydrants, while buildings may require some fire safety measures (ie. dedicated fire hydrant system). Perimeter setbacks or perimeter roads around the development would be advantageous.

- The site for development – Vacant properties that haven't been developed could become overgrown and increase the bushfire risk. Mitigation measures must be implemented during a staged development to limit the risk.
- Other findings relevant to the bushfire planning guidelines include:
  - The bushfire hazard has been assessed and is considered low in the immediate surrounding area.
  - The Clause 13.02 assessment has identified the need to provide larger sized properties around the perimeter of the development.
  - The types of buildings that will be constructed are required to comply with the National Construction Code.
  - The access and egress provisions will be extensive to ensure safe entry and exist for all vehicle types to safer locations if necessary.
  - The type of land use will not be conducive to containing vegetation.
  - Development will be excluded from the external boundaries of the development to achieve appropriate setbacks. There is no specific setback requirement, given the development is not in the BMO. However, exclusion areas along the boundary or building setbacks are a prudent bushfire mitigation approach. These requirements can be further planned during detailed design phase.
- With the lack of recent or historical bushfire events and the numerous landscape features present in the area including the Macalister Irrigation District, Princes Highway, Fulham Correctional Centre and the West Sale Airport, the overall bushfire risk is considered low.

## IMPLICATIONS

The findings of the Bushfire Risk Assessment do not prevent development from occurring within the subject site.

The assessment considers there to be a low bushfire risk which will require the following mitigation treatments:

- Detailed planning must consider the introduction of appropriate setback measures including building exclusions, perimeter roads and open space areas on the perimeter of the development.
- Consideration must be given to effective staging to ensure that unmanaged vegetation is not permitted to occur.

## 6. ECOLOGY

### 6.1. INTRODUCTION

Ecology and Heritage undertook a Biodiversity Assessment for the study area to identify the extent and type of native vegetation present and the presence of significant flora and fauna species. The full assessment is included in the **Appendices Report**.

### 6.2. METHOD

The method undertaken to develop the Biodiversity Assessment included the following:

- A desktop assessment of existing information;
- A field assessment to obtain information on flora and fauna values within the study area;
- Preparation of guidelines for the removal, destruction or lopping of native vegetation; and
- An assessment of qualifications and limitations.

### 6.3. FINDINGS

The key findings of the biodiversity assessment are summarised as follows:

#### FLORA

- A current wetland is modelled to occur within the study area, located in the central-northern border of the study area. This wetland did not support native vegetation at the time of the field assessment, however, it may support native vegetation in other seasons / years, particularly following heavy rainfall events.
- There is presence of approximately 0.163 hectares of an endangered native grass, Plains Grassy Woodland, recorded in three patches throughout the study area. If removed, the vegetation falls under a permit application of the 'immediate assessment pathway', requiring a planning permit. There would be a requirement of 0.034 General Habitat Units (GHU) to offset the native vegetation if remove. These offset obligations can be met through several land owners with existing credits available within the West Gippsland CMA.
- Lanky Buttons *Leptorhynchus elongatus*, listed as endangered under the Flora and Fauna Guarantee Act 1988, have been recorded adjacent to the study area, however have a low likelihood of being present within the study area. All other significant flora species are unlikely to occur within the study area.
- Although *Gippsland Red Gum*, *Grassy Woodland and Associated Native Grassland* were identified in the West Sale and Wurruk Industrial Land Use Strategy as being potentially present on the site, the native vegetation was observed to be highly degraded and did not meet condition thresholds that define the communities. No other state significant vegetation communities are likely to be present within the study area.

#### FAUNA

- Fauna observed using the paddocks and improved exotic pastures include:
  - Australian Magpie *Cracticus tibicen*,
  - Common Blackbird *Turdus merula*,
  - Little Raven *Corvus mellori*, and
  - Magpie-lark *Grallina cyanoleuca*.
- It is also likely that these areas are important for common native fauna including snakes, lizards and skinks. Additionally, evidence of European Rabbit *Oryctolagus cuniculus* was found.

- There are recordings of the Grey-headed Flying-fox *Pteropus poliocephalus* more than five kilometres from the site, and Latham's Snipe recorded in a property adjoining the site. However, it is unlikely that these species would use the study area on a regular basis.
- All other significant fauna species are considered unlikely to reside or regularly visit parts of the study area.

#### 6.4. IMPLICATIONS

The following implications and requirements relate to the proposed development of the site:

- The identified patch of Plains Grassy Woodland (0.163ha) in the western section would need to be considered as part of the development. The vegetation could be removed with Planning Permit approval from Council if appropriate offsets are established. This would then not impact on the developable area of the site.
- Management of flora may require:
  - A Weed Management Plan due to the presence of noxious weeds and weeds of National Significance;
  - Pest fauna eradication plan due to evidence of pest fauna species;
  - A Fauna Management Plan to guide the salvage and translocation process of any displaced fauna;
  - A Construction Environmental Management Plan (**CEMP**) should be prepared and implemented prior to construction activities; and
  - Any habitat trees or shrubs proposed should be removed under the supervision of an appropriately qualified zoologist to salvage and translocate any displaced fauna. The wildlife specialists undertaking this action must hold a current Management Authorisation.

# 7. CULTURAL HERITAGE

## 7.1. INTRODUCTION

Ecology and Heritage Partners undertook an Aboriginal and Historical Heritage Assessment (**AHHA**) for the study area to assess the extent of aboriginal and cultural heritage on the site and discuss opportunities and constraints for development. The full report is included in the **Appendices Report**.

A subsequent Cultural Heritage Management Plan (**CHMP**) and Aboriginal Assessment and Management Plan were prepared and are summarised in section 7.5 and 7.6. The full reports are included in the **Appendices Report**.

## 7.2. METHOD

The method undertaken to prepare the AHHA including the following:

- A desktop assessment of relevant heritage registers, databases, archaeological publications and unpublished reports, and a review of the environmental context of the study area; and
- A field survey by two qualified archaeologists and representatives of the Registered Aboriginal Party (**RAP**), to discover Aboriginal or historical cultural heritage on the ground surface, as well as areas where heritage of this type may be likely.

## 7.3. ABORIGINAL AND HISTORICAL HERITAGE

## F5. ABORIGINAL PLACES LOCATED DURING SURVEY

### **Historical Heritage:**

A field survey revealed one site of historical heritage within the study area: the former West Sale RAAF Base. The RAAF base occupies the western section of the study area (shown in Figure 6).

Heritage features are present throughout this area, with the southern section most densely occupied, including building foundations. This site presents examples of design and function of World War II Air Base and Barracks and of the lives of male and female military personnel during the 1940s.

The site is of aesthetic, archaeological, architectural, historical, scientific and social significance to the State of Victoria and Wellington Shire Council. The heritage site was registered with Heritage Victoria by Ecology and Heritage Partners and added to the Victorian Heritage Inventory.

## F6. HISTORICAL PLACES LOCATED DURING THE SURVEY



Source: Ecology and Heritage, 2019

## IMPLICATIONS

### Aboriginal Heritage:

- Preparation of a mandatory CHMP is required due to the high impact activity of the proposed development. This is to be undertaken by a suitably qualified Heritage Advisor (note that a CHMP has been approved);
- The need for a CHMP has the following potential impact on future development of the site:
  - CHMPs often require considerable time to prepare and finalise;
  - There would be cost impact to the proponent;
  - There may be impacts on developable area due to any areas of significance that according to the CHMP must be retained / not developed;
  - Other cost impacts could be incurred relating to fencing programs or artefact salvage programs; and
  - Potential subsequent restrictions to the location of infrastructure, roads and/or the lot layout of any future development.

### Historical Heritage:

- The Former West Sale RAAF Base Site has been added to the Victorian Heritage Inventory (H8221-0020) for its potential to contain historical archaeological remains. It is important to note that in accordance with Section 123 of the *Heritage Act* 2017, an approval from the Executive Director of Heritage Victoria must be obtained to authorise the disturbance of any historical archaeological remains at this place.
- A "Consent to Damage" is required to be obtained from Heritage Victoria prior to further archaeological investigation or development. It is noted that a suitably qualified archaeologist prepared an Archaeological Assessment and Management Plan with regard to heritage findings on the site (summarised in section 7.6).
- Subsequent studies undertaken after the completion of the field survey (including the CHMP and Archaeological Assessment and Management Plan) indicate that there will be limited impact to the development of this section of the site if appropriate mitigation and consent processes are adhered to.

## 7.4. CULTURAL HERITAGE MANAGEMENT PLAN

A CHMP was prepared by the Joanne Bell and received notice of approval in September 2021.

### METHOD

Desktop, standard and complex assessments were undertaken as part of the CHMP.

The desktop assessment involved:

- A review and search of existing information and registers relating heritage activity in the area; and
- Concluding whether it is possible that Aboriginal cultural heritage may be located in the activity area.

A standard assessment was undertaken by Ecology and Heritage Partners (2019) as summarised section 7.3 and 7.4 of this report.

A complex assessment was undertaken, including:

- Hand excavation of several different locations and areas within the subject site. This sought to:
  - Test the potential for Aboriginal cultural heritage to be located in areas that have sustained less ground disturbance; and
  - Determine the extent, nature and significance of the Aboriginal cultural heritage places already known to exist in the activity area.

### FINDINGS AND IMPLICATIONS

The following key findings and implications for the site are identified:

- Results of the impact assessment for proposed activity on Aboriginal cultural heritage are shown in Table 3.
- Actions to appropriately salvage areas of aboriginal cultural heritage are required, noting that one of the five sites has already been salvaged.
- Consent to excavate and consent to damage will be required for development of the subject site.

#### T2. LIST OF CULTURAL HERITAGE SITES AND ACTIONS

Aboriginal Cultural Heritage	Impact	Action		
		Avoid Harm	Minimise Harm	Salvage
VAHR 8221-0250 - Sale-Heyfield Road LDAD 1	Will be harmed	No	No	Yes
VAHR 8221-0263 – West Sale Industrial Precinct LDAD 1	Will be harmed	No	No	No – already salvaged
VAHR 8221-0260 - Sale-Heyfield Road AS 1	Will be harmed	No	No	Yes
VAHR 8221-0262 – West Sale Airport LDAD 1	Will be harmed	No	No	Yes
VAHR 8221-0261 – West Sale Airport AS 1	Will be harmed	No	No	Yes

Source: Cultural Heritage Management Plan (Bell, 2021)

There does not appear to be any implication on net developable land area or development approvals within the subject site all salvaging works are successfully completed.

## 7.5. ARCHAEOLOGICAL ASSESSMENT AND MANAGEMENT PLAN

An Archaeological Assessment and Management Plan was prepared by Alliance Archaeology for the heritage site listed as West Sale RAAF/Migrant Holding Centre site H8221-0020.

### METHOD

The stated scope outlined and undertaken as part of this assessment and management plan included:

- An outline of the place's heritage status/listings(s);
- A place history;
- An assessment of the current condition of the site;
- A significance assessment (which may involve comparative analysis with other similar or related places/sites). This assessment was to address whether the place may have potential state-level cultural heritage significance; and
- Recommendations regarding any proposed site use, and associated programs of site investigation/recording and/or mitigation/protection, particularly in relation to Heritage Act Consent requirements.

### FINDINGS AND IMPLICATIONS

The following key findings and implications for the site are identified:

- Given that the West Sale site has been recorded on the Heritage Inventory as an historical archaeological site H8221-0020, development of the site will need to undertake a three-step process consisting of consents to uncover, excavate and damage.
- It is recommended that the Consent process include a program of detailed recording of the archaeological remains and, if deemed appropriate, some test excavation.
- The Consent process may present an opportunity to engage with the relevant community and undertake oral history recording to identify places/ structures on the site.

The consents and archaeological recording process must be undertaken prior to approvals for development within the affected areas. However, if completed to an appropriate standard, this does not prevent the ultimate development of the precinct occurring.

## 8. FINDINGS AND IMPLICATIONS

The following key findings and implications are summarised in order to identify key issues and next steps to prepare for development of the subject site:

### Development Plan Tasks

- There are several implications from the technical reports that should be reflected in a revised layout plan:
  - Development of property 1, and the potential new road connection to Williams Drive, will be subject to Heritage Act consents.
  - Restrictions apply in the northern areas of the precinct as a result of aviation guidelines requirements (height limits, windshear and public safety). Further mapping investigations will be required to indicatively estimate allowable building heights. Layout could be adjusted to include a northern setback, including a boundary road, open space or stormwater treatment works that do not require building construction. The North-East corner is the most affected area of the precinct.
  - Larger lots should be set along the perimeter of the development where it borders with open grass land to ensure opportunity for setbacks from buildings and open air storage to mitigate fire risk.
  - Only one access intersection is required on Sale-Heyfield Road. The northern access point is to be removed as not required.
  - The site layout will need to incorporate a new sewer pump station and rising main.
- Revise the lot layout to incorporate necessary changes arising from the technical reports.
- Initiate VicTrack approvals to bore services (both sewer and water) under the rail line. This process could take up to 12 months.
- Include provision relating to development staging to ensure that unmanaged vegetation is not permitted.

### Standard Development Processes and Permit Stage Works

- Preparation of a level crossing compliance report is required at Planning Permit stage.
- Council to determine a preferred approach to assessing risk of development within the PSA area and undertake assessments at part each permit approval process.
- Approvals must be sought for any development proposals that:
  - Have buildings that penetrate the height guidelines – prepare and approve a technical assessment.
  - Are located within areas that may have lighting impacts on pilots – prepare an assessment.
  - Are located within 100 metres of the VHF antenna – refer to Airservices Australia for assessment.
- Removal of specific vegetation and habitats can occur under the supervision of an appropriately qualified zoologist to salvage and translocate any displaced fauna (relevant management plans should be prepared prior to this action being undertaken – see ‘further work and issues’).
- Undertake Consent processes to uncover, excavate and damage archaeological sites prior to any further development occurring.
- Obtain consent to excavate and damage, and appropriately salvaging areas of aboriginal cultural heritage.

### Further Work and Issues

- Additional detailed designing is required for mitigation works on wetlands, with regard to wildlife impacts, and must be approved by a wildlife hazard expert.
- Management of flora may require:
  - A Weed Management Plan;
  - Pest fauna eradication plan;
  - A Fauna Management Plan; and
  - A Construction Environmental Management Plan (CEMP) should be prepared and implemented prior to construction activities.

## APPENDIX A SEWER AND STORMWATER COSTINGS

**WEST SALE INDUSTRIAL LAND  
WELLINGTON SHIRE COUNCIL  
1 WILLIAMS DRIVE, FULHAM VIC 3851**

**OPINION OF COSTS**

Date: 18/10/2023  
VERSION 2

REFER PLAN

WEST SALE INDUSTRIAL LAND

INDIVIDUAL DEVELOPMENT SITES PLAN - NO SUBDIVISION

Site Area      Approx. 54.356 Ha  
Current Lots      4 No.

Item	Description	LOT 1	LOT 2	LOT 3	LOT 4	Amount
<b>1</b>	<b>INTERNAL DEVELOPMENT WORKS (By Developer)</b>					
<b>1.01</b>	<b>Roads and Drainage</b> Aprox. 3.5km of internal road network funded by Developer.	-	-	-	-	-
<b>1.02</b>	<b>Earthworks</b> To be confirmed. Funded by Developer.	-	-	-	-	-
<b>1.04</b>	<b>On-site Detention and Retention systems</b> Refer to External Stormwater Works (Considered to be part of overall drainage scheme and Developer contributions to fund works	-	-	-	-	-
<b>1.05</b>	<b>WSUD Protocols</b> As per above.	-	-	-	-	-
<b>1.06</b>	<b>Sewerage Reticulation</b>  Sewer Pump stations and Rising mains consider part of overall sewer strategy. Developer contributions to fund works. Internal sewer reticulation funded by Developer.	-	-	-	-	-
<b>1.07</b>	<b>Potable Water Reticulation</b> Internal watermains funded by Developer.	-	-	-	-	-
<b>1.08</b>	<b>Fire Service</b> To be confirmed. Funded by Developer.	-	-	-	-	-
<b>1.09</b>	<b>Demolition and Environmental Remediation</b> To be confirmed. Funded by Developer.	-	-	-	-	-
<b>1.10</b>	<b>Electricity Supply</b> Internal electrical supply and public lighting funded by Developer.	-	-	-	-	-
<b>1.11</b>	<b>Telecommunications</b> Internal Communications to be funded by Developer.	-	-	-	-	-
<b>1.12</b>	<b>Gas Supply</b> To be confirmed.	-	-	-	-	-
<b>1.13</b>	<b>Miscellaneous</b> To be confirmed.	-	-	-	-	-
	<b>Contingency (0%)</b>	NA	NA	NA	NA	NA
	<b>Sub Total</b>	-	-	-	-	-
<b>2</b>	<b>EXTERNAL DEVELOPMENT WORKS</b>					
<b>2.01</b>	<b>Roads</b>  External Upgrade to Sale- Heyfield Road (Auxiliary turning lanes). Nominal Upgrade to Williams Drive for secondary Access.	\$250,000.00	\$250,000.00	\$150,000.00	\$150,000.00	\$800,000.00
<b>2.02</b>	<b>External Stormwater works</b> Supply of stormwater pipes (Approx. 1376m), Gross Pollutant Trap (GPT) , Retarding Basins and wetlands for each lot. Including all the construction, material and professional fees as necessary.	\$962,000.00	\$1,327,500.00	\$849,000.00	\$700,000.00	\$3,838,500.00
<b>2.03</b>	<b>Sewer (Pump stations + Rising main)</b> Supply of sewer pipes (Approx. 914m) and sewer pump stations for each lot. Connect two proposed rising mains to existing rising main in Princes Highway by boring rising main under railway line (Approx.118m). Including all excavations, ground support, backfilling, restoration and supply of materials as required by Gippsland Water.	\$632,000.00	\$945,000.00	\$774,000.00	\$863,000.00	\$3,214,000.00

Item	Description	LOT 1	LOT 2	LOT 3	LOT 4	Amount
2.04	<b>External Potable Water Mains and Connections</b> Including supply and delivery of all water pipes and fittings (Approx. 766m DN225mm water pipes). Connet 225mm water main to existing water main in Princes Highway for lot 1 and 2. Connect 225mm water mian to existing water main in William Drive for lot 3 and 4. Bore 225mm water main under railway line. Gippsland Water approved Contractor to carry out actual connection to their existing Assets. Gippsland Water to be informed of all live works	\$356,600.00	\$356,600.00	\$379,700.00	\$380,750.00	\$1,473,650.00
2.05	<b>External Gas Mains and Connections</b> There are existing APA gas assets on Williams Drive and Princes Highway.	\$280,000.00	\$280,000.00	\$384,000.00	\$384,000.00	\$1,328,000.00
2.06	<b>Electricity Supply (external supply)</b>	\$250,000.00	\$250,000.00	\$250,000.00	\$250,000.00	\$1,000,000.00
2.07	<b>Telecommunications Supply</b> There are Telstra services on Williams Drive and Sale-Heyfield Road	\$100,000.00	\$100,000.00	\$100,000.00	\$100,000.00	\$400,000.00
	<b>Sub Total</b>	<b>\$2,830,600.00</b>	<b>\$3,509,100.00</b>	<b>\$2,886,700.00</b>	<b>\$2,827,750.00</b>	

**TOTAL ESTIMATED COST**

**\$12,054,150.00**

NOTES

- 1 These estimates are preliminary only and are not based on detailed design and/or analysis
- 2 The costs are based on either preliminary advice or no advice obtained from the relevant authorities and all items are therefore subject to confirmation and review upon receipt of formal conditions for the development

**REV 02**

**WEST SALE INDUSTRIAL LAND  
WELLINGTON SHIRE COUNCIL  
1 WILLIAMS DRIVE, FULHAM VIC 3851**

**OPINION OF COSTS**

**Date: 18/10/2023  
VERSION 2**

**REFER PLAN**

**WEST SALE INDUSTRIAL LAND  
SUBDIVISION CONCEPT PLAN**

**Site Area  
Conceptual Subdivision Lots**

**Approx. 54.356 Ha  
56 No.**

Item	Description	Amount
<b>1</b>	<b>INTERNAL DEVELOPMENT WORKS (By Developer)</b>	
<b>1.01</b>	<b>Roads and Drainage</b> Aprox. 3.5km of internal road network funded by Developer.	-
<b>1.02</b>	<b>Earthworks</b> To be confirmed. Funded by Developer.	-
<b>1.04</b>	<b>On-site Detention and Retention systems</b>  Refer to External Stormwater Works (Considered to be part of overall drainage scheme and Developer contributions to fund works)	-
<b>1.05</b>	<b>WSUD Protocols</b> As per above.	-
<b>1.06</b>	<b>Sewerage Reticulation</b> Sewer Pump stations and Rising mains consider part of overall sewer strategy. Developer contributions to fund works. Internal sewer reticulation funded by Developer.	-
<b>1.07</b>	<b>Potable Water Reticulation</b> Internal watermains funded by Developer.	-
<b>1.08</b>	<b>Fire Service</b> To be confirmed. Funded by Developer.	-
<b>1.09</b>	<b>Demolition and Environmental Remediation</b> To be confirmed. Funded by Developer.	-
<b>1.10</b>	<b>Electricity Supply</b>  Internal electrical supply and public lighting funded by Developer.	-
<b>1.11</b>	<b>Telecommunications</b> Internal Communications to be funded by Developer.	-
<b>1.12</b>	<b>Gas Supply</b> To be confirmed.	-
<b>1.13</b>	<b>Miscellaneous</b> To be confirmed.	-
	<b>Contingency (0%)</b>	NA
	<b>Sub Total</b>	-
<b>2</b>	<b>EXTERNAL DEVELOPMENT WORKS</b>	
<b>2.01</b>	<b>Roads</b> External Upgrade to Sale- Heyfield Road (Auxiliary turning lanes). Nominal Upgrade to Williams Drive for secondary Access.	\$400,000.00
<b>2.02</b>	<b>External Stormwater works</b>  Supply of stormwater pipes (Approx. 1376m), Gross Pollutant Trap (GPT), Retarding Basins and Wetlands (1.6Ha) for each lot. Including all the construction, material and professional fees as necessary.	\$3,290,000.00
<b>2.03</b>	<b>Sewer (Pump stations + Rising main)</b>	\$1,407,000.00

Item	Description	Amount
	Supply of sewer pipes (Approx. 914m) and sewer pump stations for each lot. Connect two proposed rising mains to existing rising main in Princes Highway by boring rising main under railway line (Approx.118m). Including all excavations, ground support, backfilling, restoration and supply of materials as required by Gippsland Water.	
<b>2.04</b>	<b>External Potable Water Mains and Connections</b>	\$407,000.00
	Including supply and delivery of all water pipes and fittings (Approx. 766m DN225mm water pipes). Connect 225mm water main to existing water main in Princes Highway for lot 1 and 2. Connect 225mm water main to existing water main in William Drive for lot 3 and 4. Bore 225mm water main under railway line. Gippsland Water approved Contractor to carry out actual connection to their existing Assets. Gippsland Water to be informed of all live works	
<b>2.05</b>	<b>External Gas Mains and Connections</b>	\$664,000.00
	There are existing APA gas assets on Williams Drive and Princes Highway.	
<b>2.06</b>	<b>Electricity Supply (external supply) - Nominal Sum</b>	\$550,000.00
<b>2.07</b>	<b>Telecommunications Supply Nominal Sum</b>	\$150,000.00
	There are Telstra services on Williams Drive and Sale-Heyfield Road	
	<b>Sub Total</b>	<b>\$6,868,000.00</b>

**TOTAL ESTIMATED COST**

**\$6,868,000.00**

NOTES

- 1 These estimates are preliminary only and are not based on detailed design and/or analysis
- 2 The costs are based on either preliminary advice or no advice obtained from the relevant authorities and all items are therefore subject to confirmation and review upon receipt of formal conditions for the development



