



STRATEGIC ADVICE REPORT

BERWICK WATERWAYS PSP (PSP 09)

PREPARED BY TAYLORS DEVELOPMENT STRATEGISTS P/L GROWTH AREAS AUTHORITY – JULY 2010

DRAFT VERSION 0.1

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EXECUTIVE SUMMARY

Taylors Development Strategists have been engaged by the Growth Areas Authority to prepare a 'Strategic Advice' assessment for the Precinct Structure Plan (PSP area known as PSP 09 – Berwick Waterways Precinct Structure Plan (PSP).

This Report has been prepared to firstly review the history of the site and other material as provided by the GAA and secondly to identify high level development options and a staging strategy based on the information provided. The report will be accompanied by plans which show the proposed layout of the precinct.

1 INTRODUCTION

Berwick Waterways refers to a study area in Berwick that is entirely surrounded by existing conventional residential development and is the only remaining land to be developed in this area. Development has been stalled by the constraints of the site which include the extensive drainage issues and finding a development solution which is functional and feasible. The fragmented land ownership has also created further constraints.

The land is somewhat flood prone and the redevelopment and rezoning of the land for residential and urban intensification will require significant drainage infrastructure and thoughtful design responses.

A number of reports have been prepared to assist in the preparation of this report and have been reviewed and summarised in the report. They include the following:

- *Berwick Waterways Development Plan – Prepared by Tract (Adopted by Council March 2008)*
- *Berwick Waterways Summary Issues Paper – Prepared by Stormy Water Solutions and Neil Craigie P?L (14 September 2009)*
- *Berwick Waterways Drainage Assessment Options, Development and Appraisal - Prepared by Stormy Water Solutions and Neil Craigie P?L (23 November 2009)*
- *Flora and Fauna Assessment of Centre, Homestead and Ward Roads Area, Berwick Victoria – Prepared by Biosis Research (September 2004)*
- *Biodiversity Mapping Project*
- *Other correspondence Considerations*

2 SUBJECT SITE & SURROUNDS

2.1 SUBJECT SITE

The subject site is located south of the Princess Freeway and east of Narre-Warren Cranbourne Road in Berwick. The site is almost entirely bound by existing residential development with the only separation being drainage lines and roads.

Centre Road also extends through the centre of the site in an east-west direction and provides a connection through to Berwick-Cranbourne Road to the east. There are two Melbourne Water retarding basins located on the site, one in the north west corner of the site and another in the south east corner, as depicted in Figure 1.

The site is made up of a total of 28 lots, which are in various ownerships and used for farming and a range of other uses such as a Buddhist Temple and dog kennels. A land ownership plan is shown in Appendix 1.



Figure 1. Subject site on Google Earth Map

2.2 SURROUNDING AREA

The surrounding area is largely comprised of conventional residential development. The subject site is the last parcel of land in the area that is yet to be re-zoned for conventional residential development.

Local amenities include two secondary schools, one located to the east of the site and one located to the west of the site and a local primary school east of the site. There are a number of parks and recreational spaces surrounding the site, in particular, the Berwick Springs wetlands located south of the site which includes walking and cycling paths.

Within 1 kilometre of the site to the north is the Monash University Berwick Campus, Chisholm Institute of TAFE and Casey Hospital.

The character of the surrounding area is a mix of modern low scale residential development and infill development that has occurred over time.

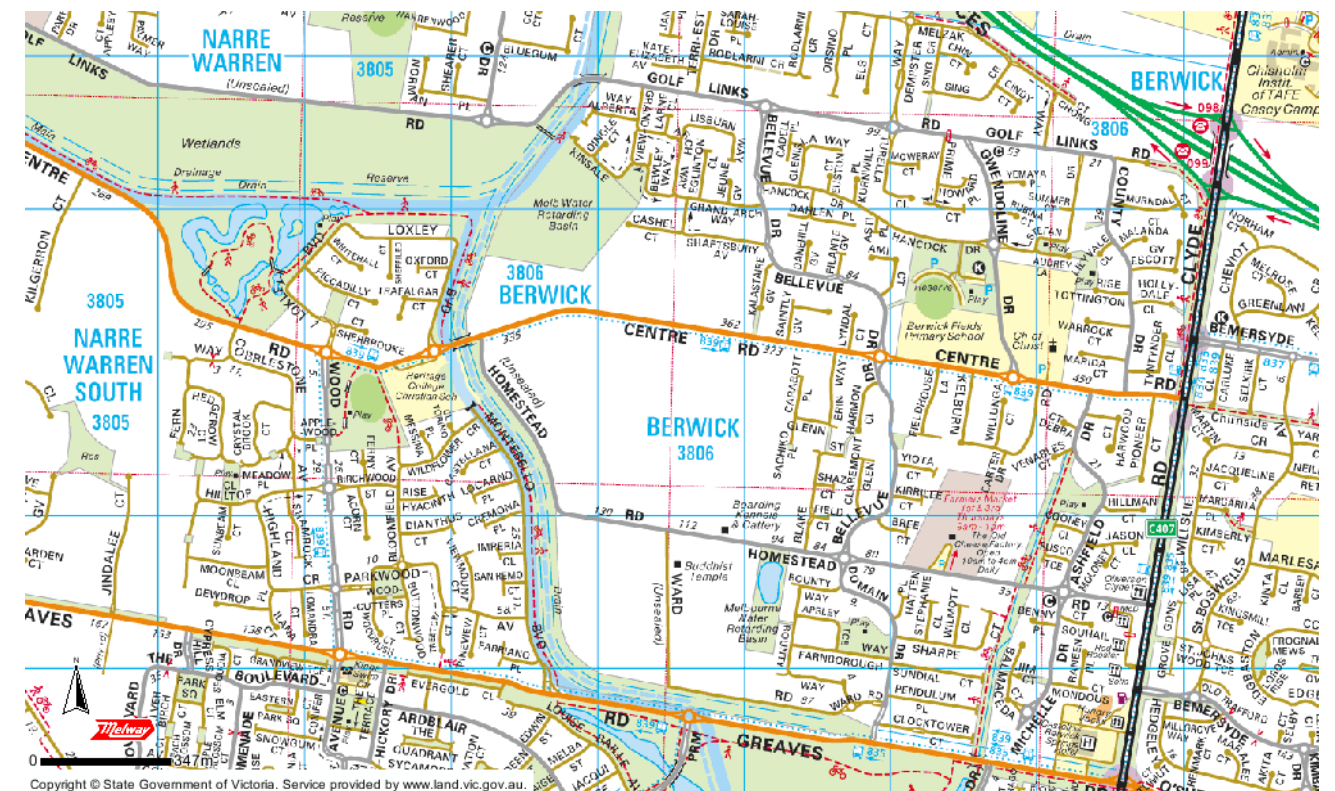


Figure 2. Melways map of subject site and surrounds

3 CURRENT PLANNING CONTROLS

3.1 ZONE PROVISIONS

The subject site is largely located within the Rural Living Zone under the Casey Council Planning Scheme with some land subject to the Public Use Zone 1 where the Melbourne Water retarding basins are located.

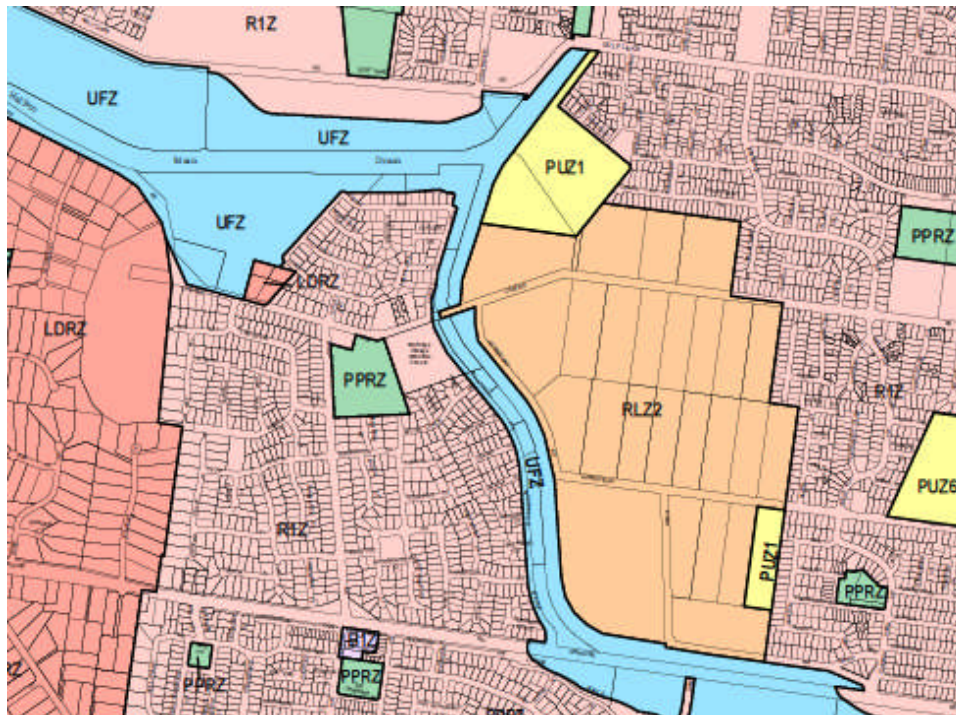


Figure 3. Casey Planning Scheme Zone Map

3.2 OVERLAY CONTROLS

The site is subject to the Development Plan Overlay (DPO1). Further details of the Development Plan that affects the site are found at Section 5 of this report. The requirements of the Development Plan are to show the existing and proposed road network, the location of existing and proposed open space including open space linkages and the location of any existing or proposed community facilities including school sites.

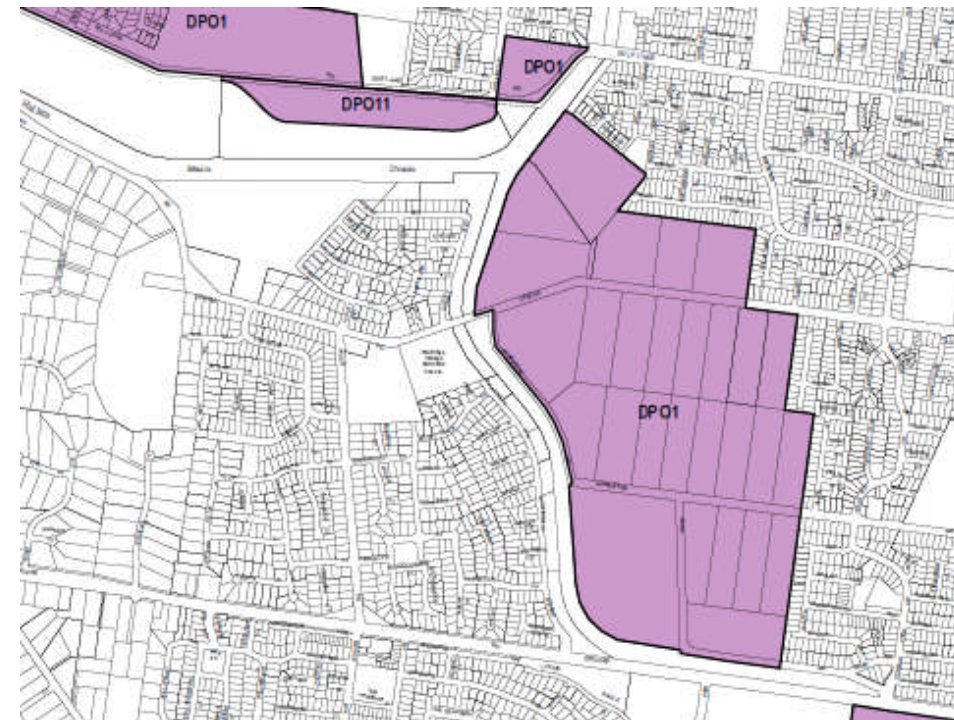


Figure 4. Casey Planning Scheme Development Plan Overlay Map

The site is subject to the Land Subject to Inundation Overlay (LSIO).

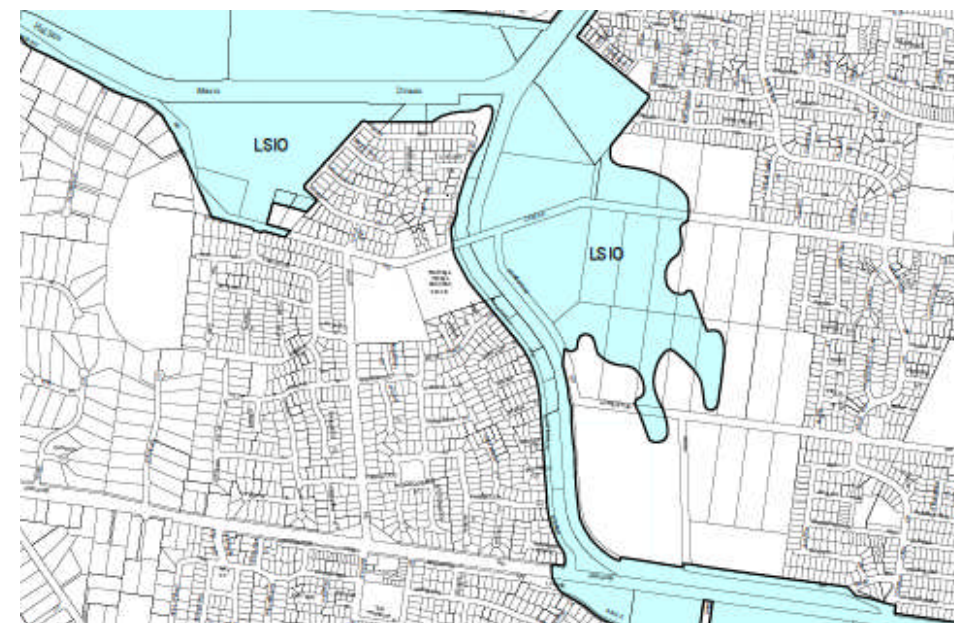


Figure 5. Casey Planning Scheme Land Subject to Inundation Overlay

3.3 STATE PLANNING POLICY FRAMEWORK (SPPF)

The State Planning Policy Framework sets out the relevant statewide policies for residential development at Clause 11 (Goals and Principles), Clause 12 (Metropolitan Development), Clause 14 (Settlement), Clause 16 (Housing) and Clause 19 (Design and Built Form). Clause 11 requires Council to integrate the range of policies relevant to the issues to be determined and to balance conflicting objectives in favour of net community benefit and sustainable development.

3.4 MUNICIPAL STRATEGIC STATEMENT

The municipality of Casey is located in the Casey-Cardinia growth area in the periphery of Melbourne's south east region. There are a vast number of people moving to the area each year creating a need for increased housing, infrastructure and facilities. Household sizes themselves are on the decline, therefore creating a need for a new housing type to meet this demand.

The MSS points out that whilst rapid urbanisation is occurring in the area, there are still a number of rural settlements that exist. There are various pressures and influences that are experienced in different areas of the municipality. The subject site is located in a built up area, which is centred around the two main travel corridors formed by the Princes and South Gippsland Highways. There are a wide range of land uses within the built-up area, the most predominant one being residential development at conventional densities.

Clause 21.09 of the MSS refers to Building New Communities and the objectives in this clause include:

- *Ensuring residential land is used efficiently so that existing land zoned for this purpose is consumed less quickly and future residential growth is not directed to areas that are remote and less suitable for urban development.*
- *Ensure that residential subdivision of new areas occurs in an orderly manner.*
- *Build community pride through providing an attractive and functional physical environment that local communities can call their own.*

New residential communities should be planned and development around neighbourhood centres that cluster facilities, are serviced by public transport, are accessible to the intended residential catchment by cycling or walking and should facilitate surveillance of public areas.

3.5 LOCAL PLANNING POLICY FRAMEWORK

The Future Urban Areas Policy (Clause 22.01) applies to all land contained within the Urban Growth Boundary and identified for future urban purposes. The purpose is to identify land which may be suitable for urban purposes in the future and to prevent such land from being used or developed in a manner which could prejudice its possible future use for planned urban purposes.

4 BACKGROUND REPORT REVIEW

A number of reports have previously been prepared to investigate the potential for future urban development to occur on the subject site and which aim to facilitate rezoning of the area for residential purposes and therefore guide the future development on site however as mentioned previously in this report these reports have been so far unable to provide a solution which is both functional and economically viable. The following is a summary of those reports.

4.1 BERWICK WATERWAYS DEVELOPMENT PLAN

The Berwick Waterways Development Plan was adopted by Council on 4 March 2008. The Development Plan (DP) was prepared to provide the base framework to enable more detailed subdivision design. The plan was prepared to create some level of certainty regarding development of the site.

The plan consists of both a report providing a general outline for intended development and maps showing the overall site networks and drainage requirements.

The purpose of the DP is to ensure the coordination and integration of development elements, as well as mechanisms to provide infrastructure in an equitable manner. A plan of the DP which was prepared by Tract Consultants is shown in Figure 6.

This plan was prepared to show the preferred location of proposed residential land, proposed open space and creek reserve, existing roads and proposed roads and local parks.



Figure 6. Development Plan

4.2 BERWICK WATERWAYS SUMMARY ISSUES PAPER

The Berwick Waterways Summary Issues Paper was prepared by Stormy Water Solutions and Neil Craigie Pty Ltd on 14 September 2009. The Summary Issues paper was the result of an investigation to enable:

- *Cost effective development of Berwick Waterways; and*
- *Coordinated and equitable delivery of drainage infrastructure.*

The issues paper specifically addresses the following:

- *Summarises the current drainage strategy for the area as documented within MWC's Homestead Road Extension DSS,*
- *Details the history of drainage in the area,*
- *Identifies issues and constraints in regard to the drainage infrastructure, and*
- *Identifies possible changes to the current drainage strategy which could be utilised to meet some or all of the objectives described above.*

The summary issues paper made recommendations that the Growth Areas Authority, Melbourne Water Corporation, the City of Casey and a consultant team workshop all issues that were identified in Sections 5 and 6 of the report. These issues are summarised as follows:

- ***Identifying the contribution area and maximising the development area.***
- ***Consideration of the development fill requirements. The report considers previous estimates by Charter Keck Cramer to be an underestimate.***
- ***Scheme and outfall drainage works should be revisited as the current Melbourne Water Corporation Drainage Services Scheme drainage costs as applied to the current drainage strategy are probably a little bit high.***
- ***Wetland reserve acquisition needs to be considered further. The development contribution rate may be too low given that the acquisition of the reserve was not accounted for. The equity issue of ensuring that no one landowner is adversely impacted on by wetland placement must also be addressed.***

- ***The summary of drainage and fill cost implications refers to the Charter Keck Cramer estimates for subdivisions fill, DSS costs and reserve acquisition and raises the concern that the cost may be far more than their summary states and that all effort must be made to reduce these costs if development is to proceed.***

Section 6 of the report recommends a strategy to achieve an optimum outcome for the site with regard to cost implications while retaining the intent of the original drainage strategy. The layout detailed in the Development Plan (figure 5 of this report) is considered to address the issues to some degree, however there may be other configurations which are more equitable. In addition to this the summary states that all effort should be made to clearly identify the following:

- ***Minimum reserve area required for wetland and flood mitigation functions***
- ***The minimum amount of area required for open space purposes***
- ***Where the above functions can be dual purpose.***
- ***Minimise the development fill requirement as per the suggestions at Section 6.2 of the summary***
- ***Minimise DSS scheme and outfall drainage costs as per the suggestions at Section 6.3 of the summary***

A final outcome of the summary issues paper and recommendation was to identify 3 options that will be further investigated regarding their engineering feasibility and economic benefit to address the following:

- *Reduce fill volume as much as possible*
- *Reduce MWC Development Services Scheme (DSS) Costs as much as possible, and*
- *Reduce reserve area requirements to minimise reserve acquisition costs.*

4.3 BERWICK WATERWAYS DRAINAGE ASSESSMENT, OPTIONS DEVELOPMENT AND APPRAISAL

The Berwick Waterways Drainage Assessment, Options Development and Appraisal, draft report for comment was prepared on 23 November 2009 by Stormy Water Solutions and Neil M Craigie Pty Ltd. This report was prepared as a follow on from the Summary Issues Paper and the workshop that was held with the consultant team where all issues were identified.

The drainage strategy considered in Section 4 of this report can result in development of the subject area for urban purposes without prohibitive fill costs. However, the costs associated with providing drainage infrastructure will be higher than in conventional developments. Allowing as much higher density development as possible will increase the benefits of the costs of developing the area.

The workshop that was conducted prior to preparation of this report discussed the following opportunities and constraints:

Engineering Requirements:

The original DSS strategy of providing an on line wetland system to meet the flood storage and water quality requirements of the Homestead Road Extension DSS, the Homestead DSS and O'Sheas Road DSS is an appropriate engineering solution. Without an on line wetland system, development cannot occur.

The primary objective of the current work therefore is to optimise the existing DSS drainage strategy incorporating an on line wetland and flood storage system.

Minimisation of Drainage System and Fill Costs:

There are a number of initiatives listed in the report that have been identified as being suitable to use to minimise fill costs. It is noted that in general MWC have indicated that they prefer to get the engineering and town planning correct and in place prior to organising financing issues.

Constraints and Opportunities:

A number of additional opportunities and constraints are included in this report that have been identified since the Summary Issues Paper was prepared.

Developed Drainage Strategy Themes:

Three themes were developed from the workshop outcomes and information in reports prepared previous to this report. The three themes are included in Appendix 2 of this report as well as in the figures below.

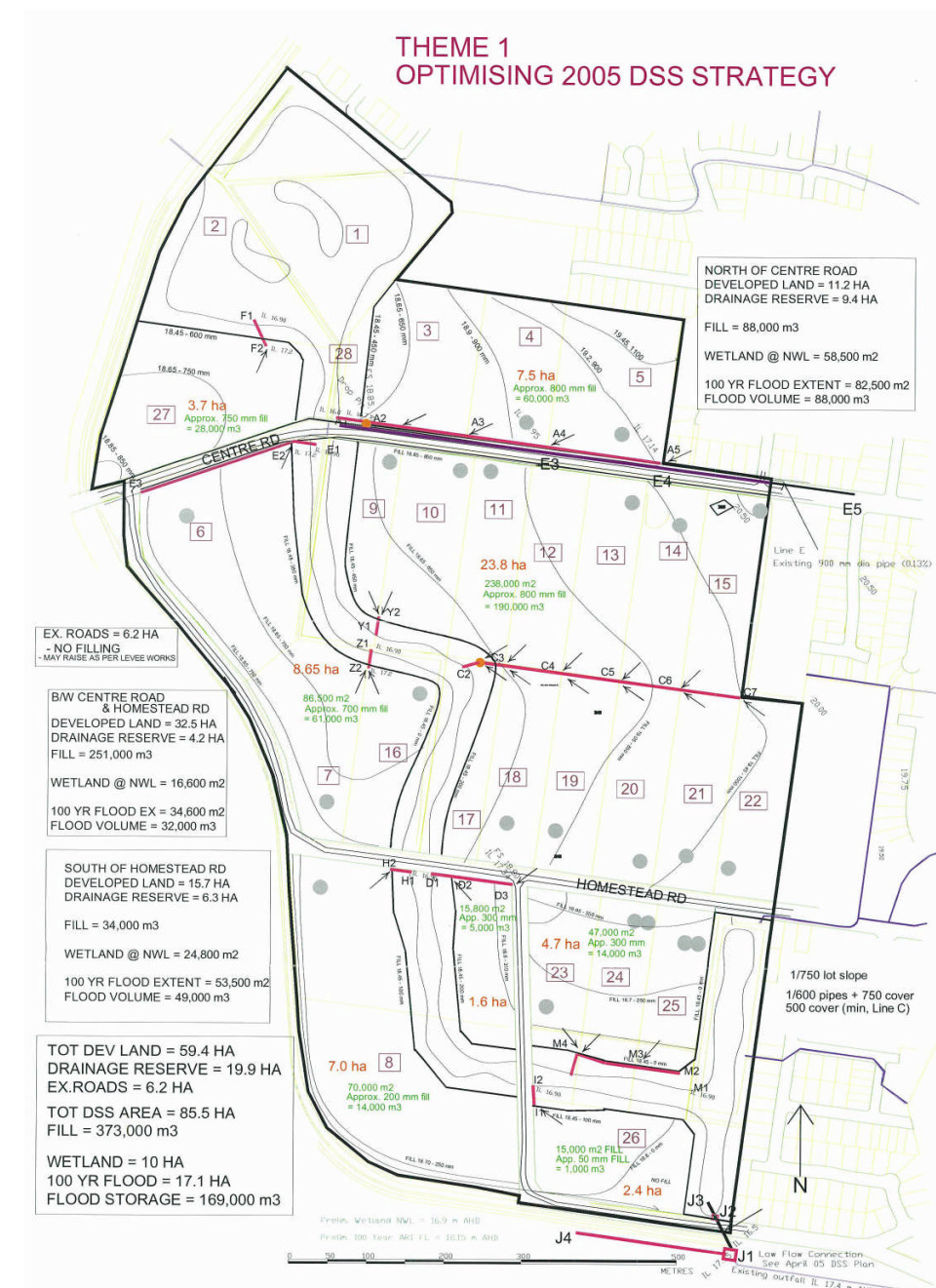


Figure 7. Optimising 2005 DSS Strategy – Theme 1

Theme 1 is the optimisation of the original DSS Strategy. Theme 2 incorporates all the optimisation considerations as per Theme 1 however, a wetland finger is extended into the development area to reduce the pipe run length and fill requirement. In addition, Theme 2 allows for a balance pipe in the Buddhist temple land to minimise impact.

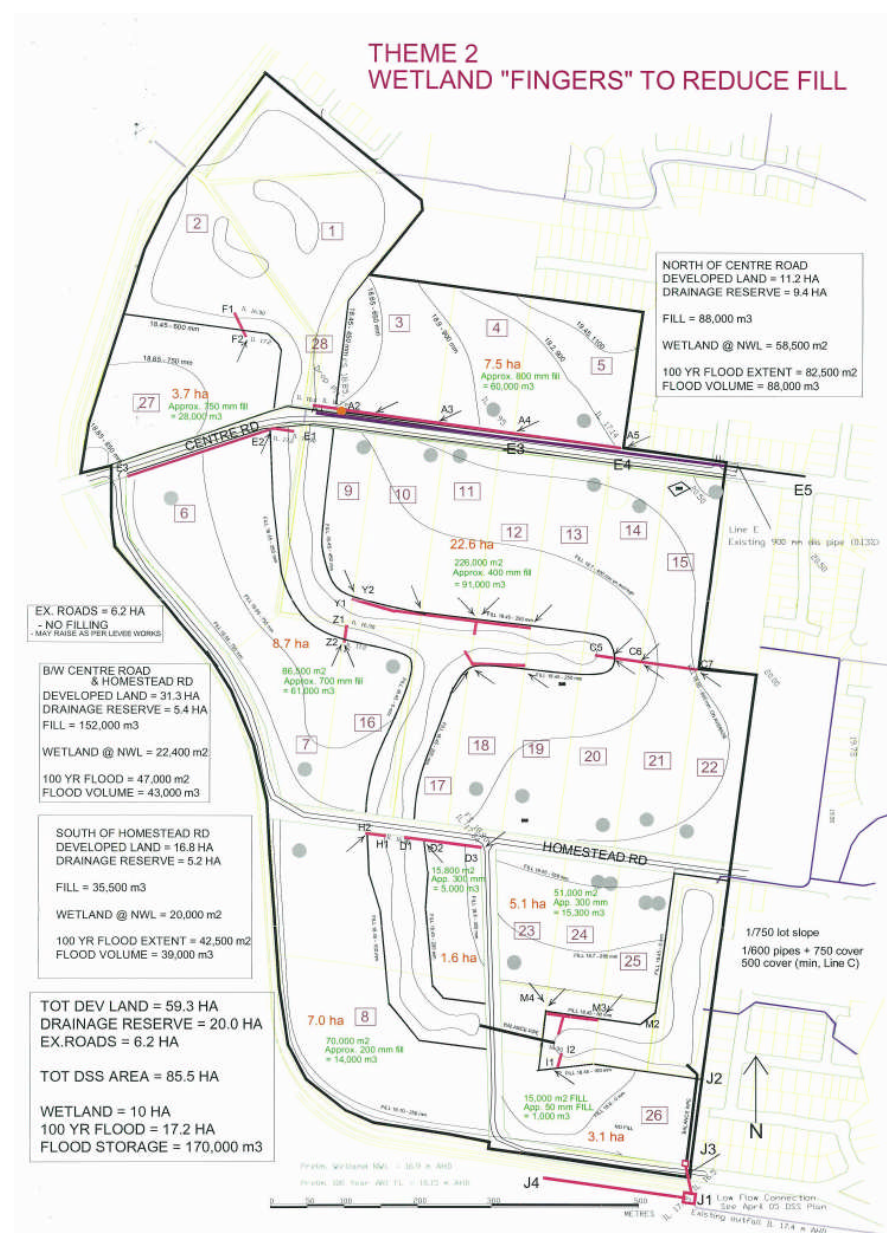


Figure 8. Optimising 2005 DSS Strategy – Theme 2

Theme 3 incorporates all the optimisations as Theme 1 and the wetland finger and balance pipes as in Theme 2. However, some provision is shown for incorporation of POS within the wetland environment. The POS land shown will be at or above the 100 Year flood level and will not require filling. Council is assumed to own the POS shown. The POS land shown could contribute to the 4% POS requirement.

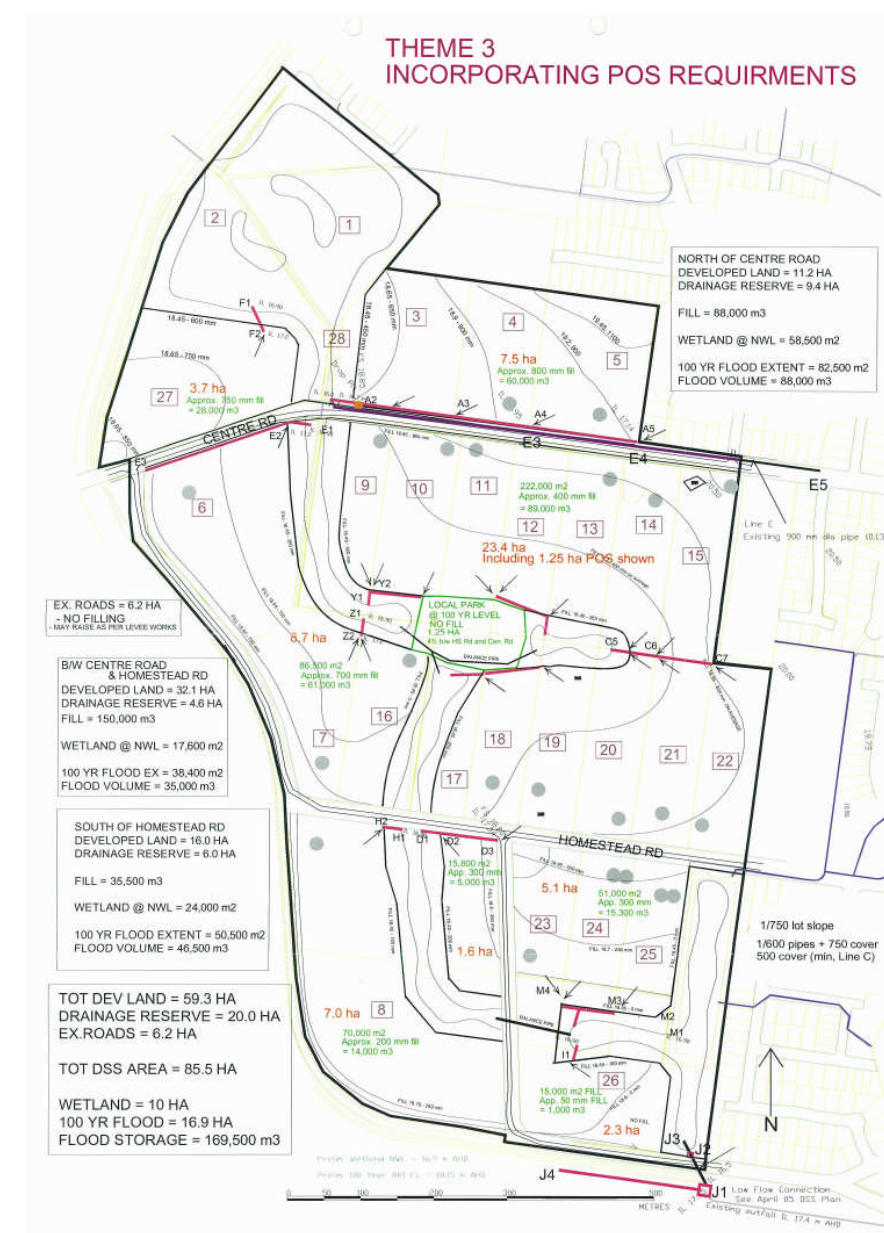


Figure 9. Optimising 2005 DSS Strategy – Theme 3

The report summary indicates that Theme 2 is the preferred option.

4.4 BIODIVERSITY MAPPING PRECINCT

There were two maps provided that indicated the assessed habitats within the precinct and assessed ecological vegetation class in the precinct (EVC). These plans are included in Appendix 3 of this report.

The assessment of the habitats map indicated that the majority of the precinct has an assessed habitat score of zero. There were some sections along the boundaries of various properties running through the site that had a habitat score of 20 to 30 and some with 10 to 20. There were also some scattered trees found throughout the site which have been nominated on the plan. The remaining areas were unassessed.

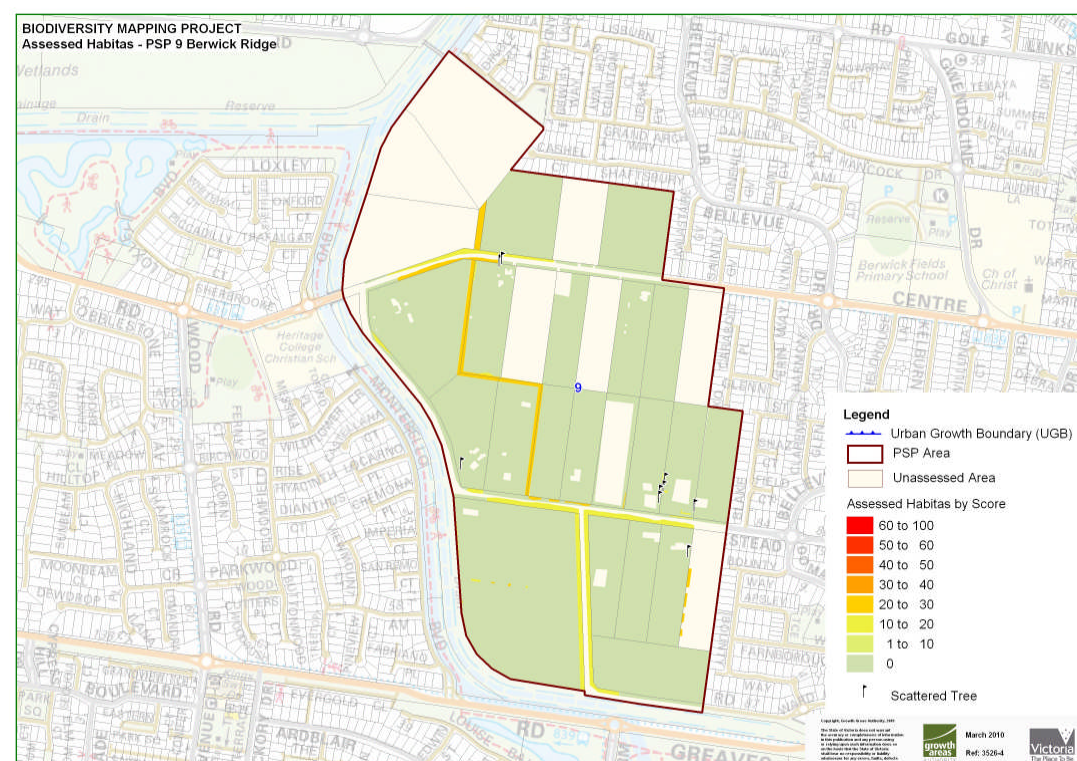


Figure 9. Biodiversity Mapping Project – Assessed Habitats Map

The EVC map showed that there were some areas along the boundaries of the properties that show swamp scrub and sedge wetland. These areas largely match the areas shown on the habitat map which received a score of between 10 to 30.

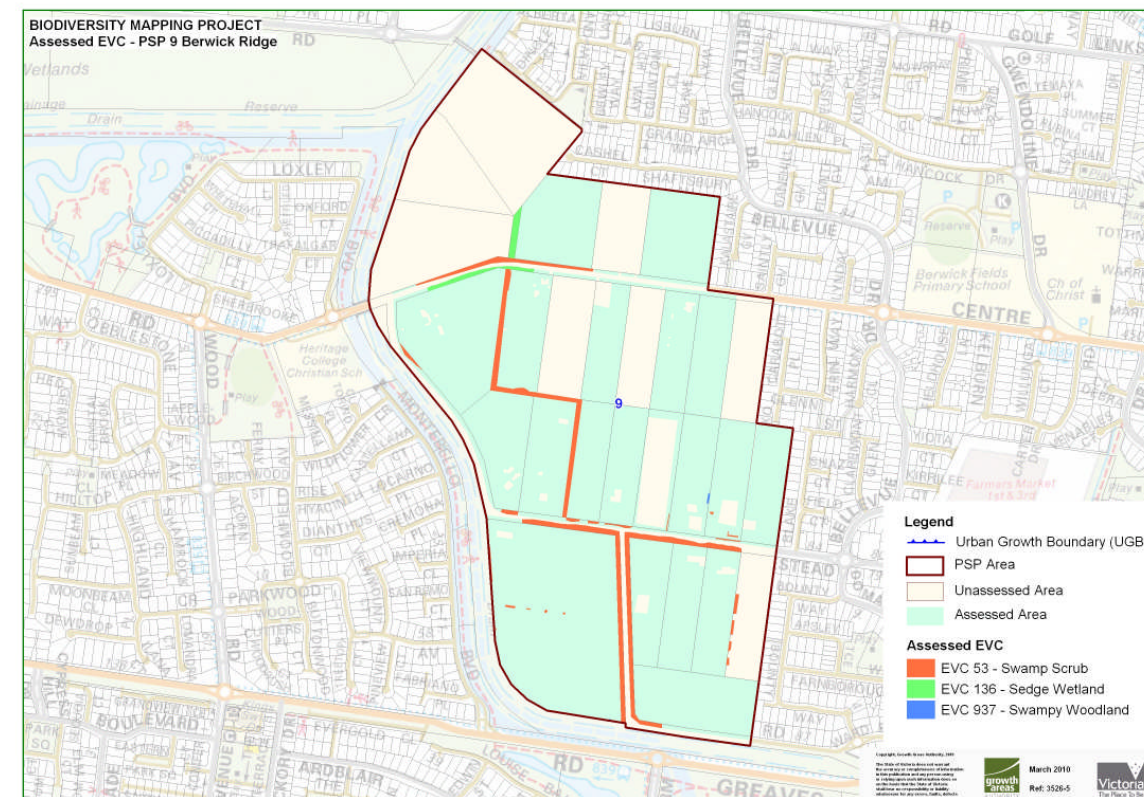


Figure 8. Biodiversity Mapping Project – Assessed EVC Map

FLORA AND FAUNA ASSESSMENT OF CENTRE, HOMESTEAD AND WARD ROADS AREA, BERWICK, VICTORIA

This report was prepared by Biosis Research in September 2004 for the City of Casey where the objective was to identify and analyse opportunities and constraints for biodiversity conservation as they relate to land use planning in the study area.

Native vegetation and habitat within the study area are identified in the report as having local significance for biodiversity. The large majority of the study area however has little or no significance for biodiversity.

Recommendations outlined in the report based on the research outline the following recommendations:

- **Protect all remaining native vegetation where possible**
- **Undertake a Net Gain assessment to quantify losses**
- **Maintain and enhance roadside vegetation where possible**
- **Design and construct the wetlands for maximum environmental benefit**
- **Consider the creation of additional shallow ephemeral wetlands**

4.5 OTHER CORRESPONDENCE CONSIDERATIONS

A number of other authorities and relevant parties have provided correspondence throughout the process of preparing this report. These include the following;

DPCD

There are no known Aboriginal Places located in this area however the PSP is located in an area of Aboriginal Cultural Heritage Sensitivity which means that other unlocated sites may be present in this area. If subdivision is planned for this area, this it is likely that a mandatory CHMP would be required before any planning permit could be issues.

VicRoads

VicRoads have identified a number of key issues to inform the preparation of the urban structure. The following are the key points that they have nominated in their letter dated 19 May 2010:

Planning should facilitate the future upgrade of Greaves Road to perform an arterial function.

There may need to be a strong focus on deliverability and implementation early in the process due to the fragmented land ownership.

Vic Roads requests that Ward Road not be planned as a staggered 'T' intersection with Greaves Road. Vic Roads suggests that an alignment extending north for some distance from the current intersection of Berwick Springs Promenade and Greaves Road should be utilised for access to the PSP to create a single connector/arterial road intersection.

Should opportunities exist in the future to deviate bus services through Berwick Waterways, then the Greaves Road intersection and relevant streets should be planned in-line with DoT and VicRoads guidance.

Assessment of the following intersections should be undertaken; Clyde Road/Centre Road, Clyde Road/Homestead Road and Narre Warren-Cranbourne Road/Centre Road.

There are safety concerns in relation to the intersection of Homestead and Centre Roads. It is recommended that an investigation is undertaken to realign the intersection and achieve improved sight distances.

Discussion should be had in relation to how the future PSP will support the bicycle link between Cranbourne and Narre Warren and onwards to Dandenong and what type of pedestrian and bicycle crossing will be put in place at Greaves Road.

The proposed road corridor locations and widths may need to respond to a strategy for managing overland flows arising from storm events.

Melbourne Water

Melbourne Water support the development provided that it is shown to be feasible. MW suggest that the development begin downstream, and proceed upstream to support practical delivery of drainage infrastructure. Staging of the development is likely to affect economic viability.

There are several stormwater quality wetlands and other MW assets located immediately downstream of the PSP area. Opportunities should be explored to enhance habitat connectivity through improving waterway condition and provision of appropriate undeveloped buffers.

Several of the wetlands adjacent to the PSP are known to experience blue-green algal growths, and this should be considered during development of a DSS.

A stylized illustration of a landscape. It features a winding river with a blue center and brownish-yellow banks. The river flows from the top left towards the bottom right. On the right bank, there are several green, rounded hills or bushes. The background is a light green color. The sky is a pale blue with a few small, white, fluffy clouds. The overall style is simple and colorful, typical of a children's book illustration.

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5.2 CONSTRAINTS

Whilst there are a number of opportunities that exist on the site, there are also a number of constraints that need to be addressed and balanced with the opportunities listed above to create a viable development. Constraints include:

- *There is very limited existing drainage infrastructure on the site, therefore significant costs could be involved in constructing new drainage infrastructure for both developers and Melbourne Water. This includes water and sewerage supply also.*
- *Major stormwater drainage works required for the servicing of future urban areas to ensure potential flooding problems are not exacerbated and the future drainage needs of the area are catered for.*
- *Part of the site is subject to inundation for a 1:100 year storm event - further surveys required to confirm extent of area.*
- *Permanent sediment and litter traps to be provided.*
- *Fragmented land ownership results in constraints in the design of the precinct to ensure that the drainage reserve and road provision is spread evenly across the precinct. Also creates staging issues for the development of the precinct.*
- *Large reserve area may be required for drainage reserve - cost implications for acquisition.*
- *Large fill volumes may be required.*

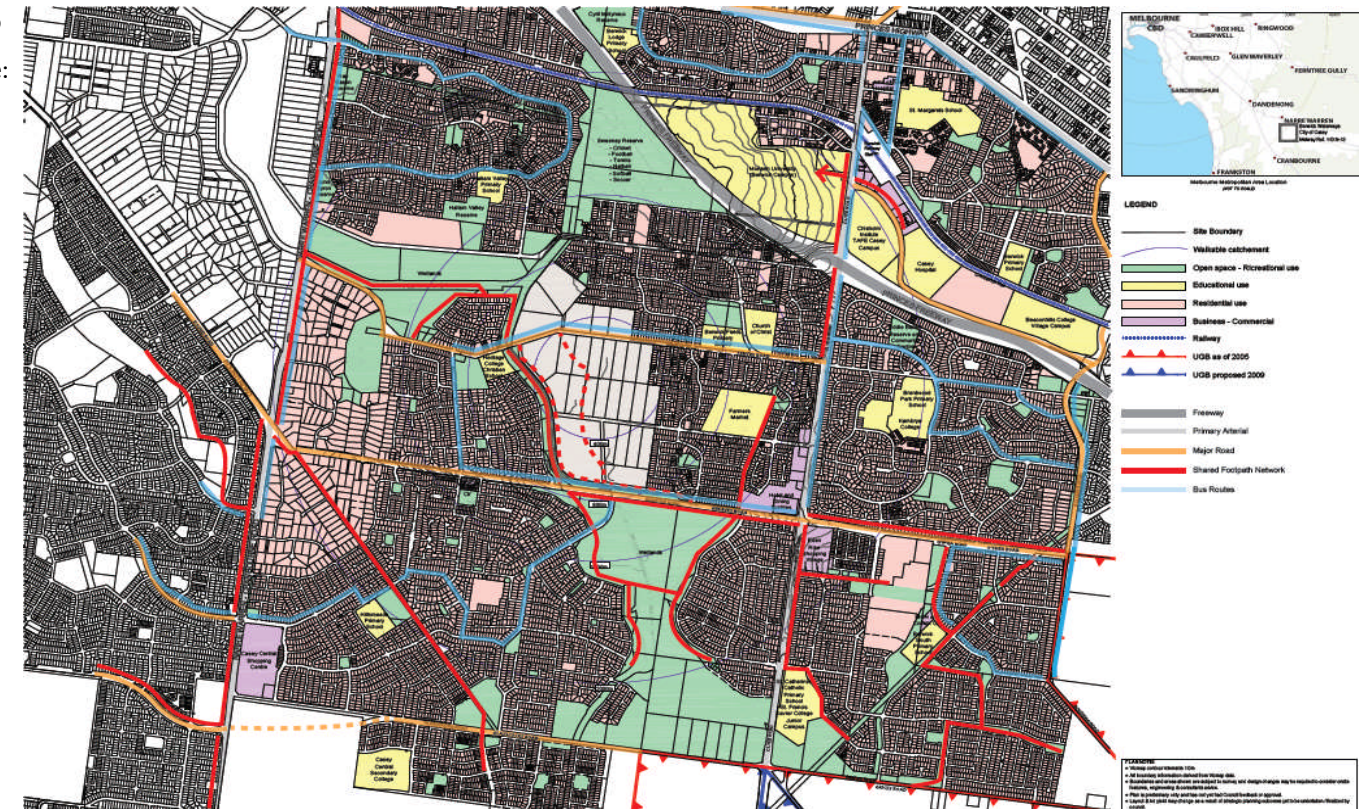


Figure 11. Taylors Major Movement Hierarchy Plan

6 IDENTIFICATION OF HIGH LEVEL DEVELOPMENT OPTIONS

In response to the opportunities and constraints referred to in Section 6, a number of key objectives have been prepared to assist in the preparation of the high level development options.

Key Objectives are to design a precinct that:

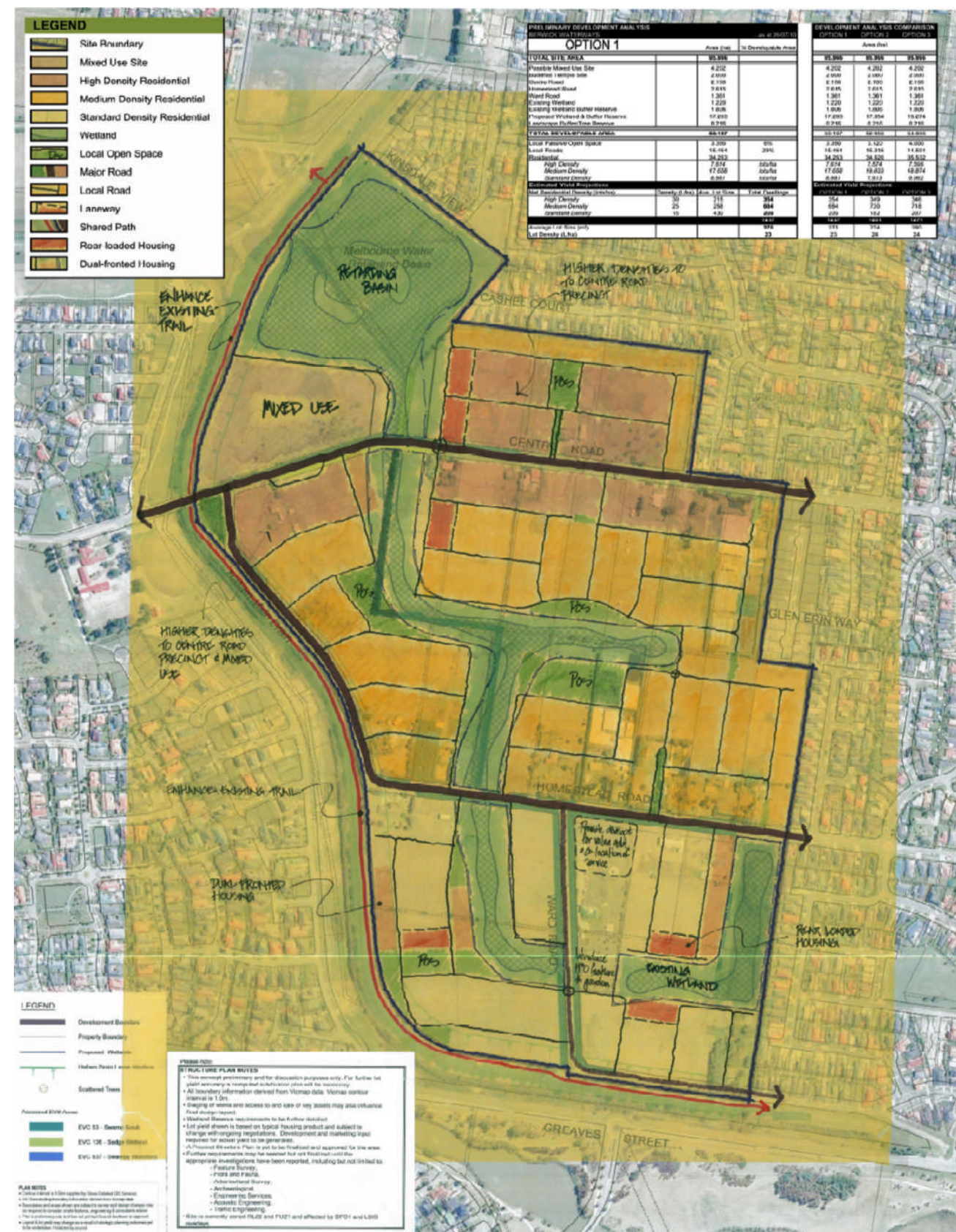
- *Resolves the drainage and flooding issues through the design of a wetland that minimises land acquisition for Melbourne Water, spreads the wetland as evenly as possible across various titles and requires the least amount of fill costs.*
- *Incorporates the existing wetlands to the south and floodplains to the north that offer significant landscape qualities.*
- *Provides pedestrian and cycle networks to provide links not only throughout the site but also between passive open space assets surrounding the site. These links should be incorporated into the drainage reserve where possible to utilise this otherwise unuseable space efficiently.*
- *Enhances the existing depleted local ecology throughout the precinct where possible.*
- *Utilises the existing road network and prepare plans which develop the road network future based carefully around the land ownership to ensure that when development occurs, roads can be built efficiently.*
- *Ensures that sections of the site close to the nominated space for an activity precinct include higher density housing mixes.*

The plans included in this report below are also found at Appendix 5 and incorporate a number of the objectives above.

6.1 OPTION 1 CONCEPT PLAN

Concept 1 includes the following key principles:

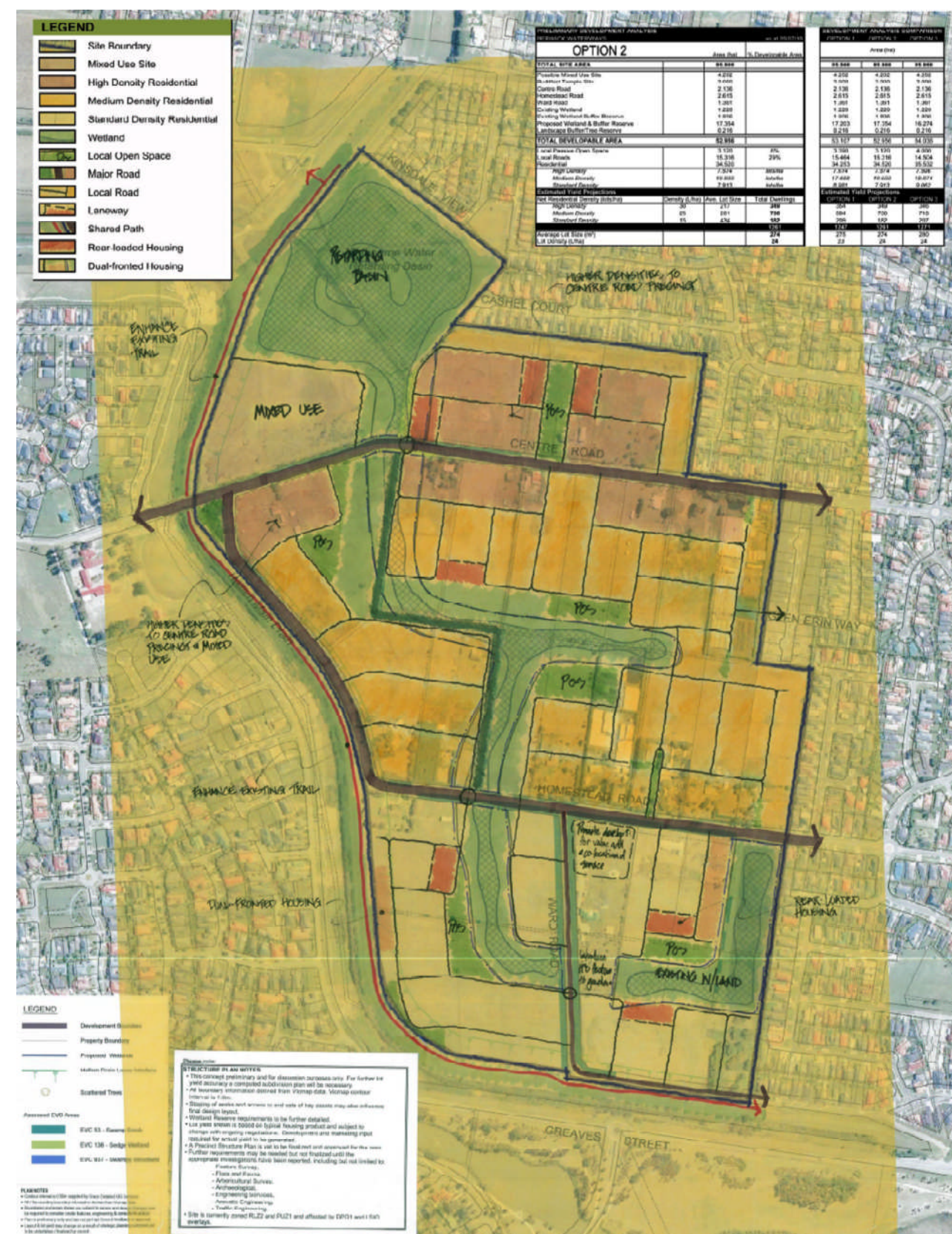
- Street layout based on title boundaries
- No change to wetland and layout provided
- No re-alignment to existing roads
- Structure based on volume builder housing product
- North-South grid network for connectivity, legibility, efficiency and passive traffic control
- Higher density focussed along Centre Road corridor and abutting mixed use site
- Densities provided are based on GAA requirements from Cardinia West PSP, January 2010



6.2 OPTION 2 CONCEPT PLAN

Concept 2 includes the following key principles:

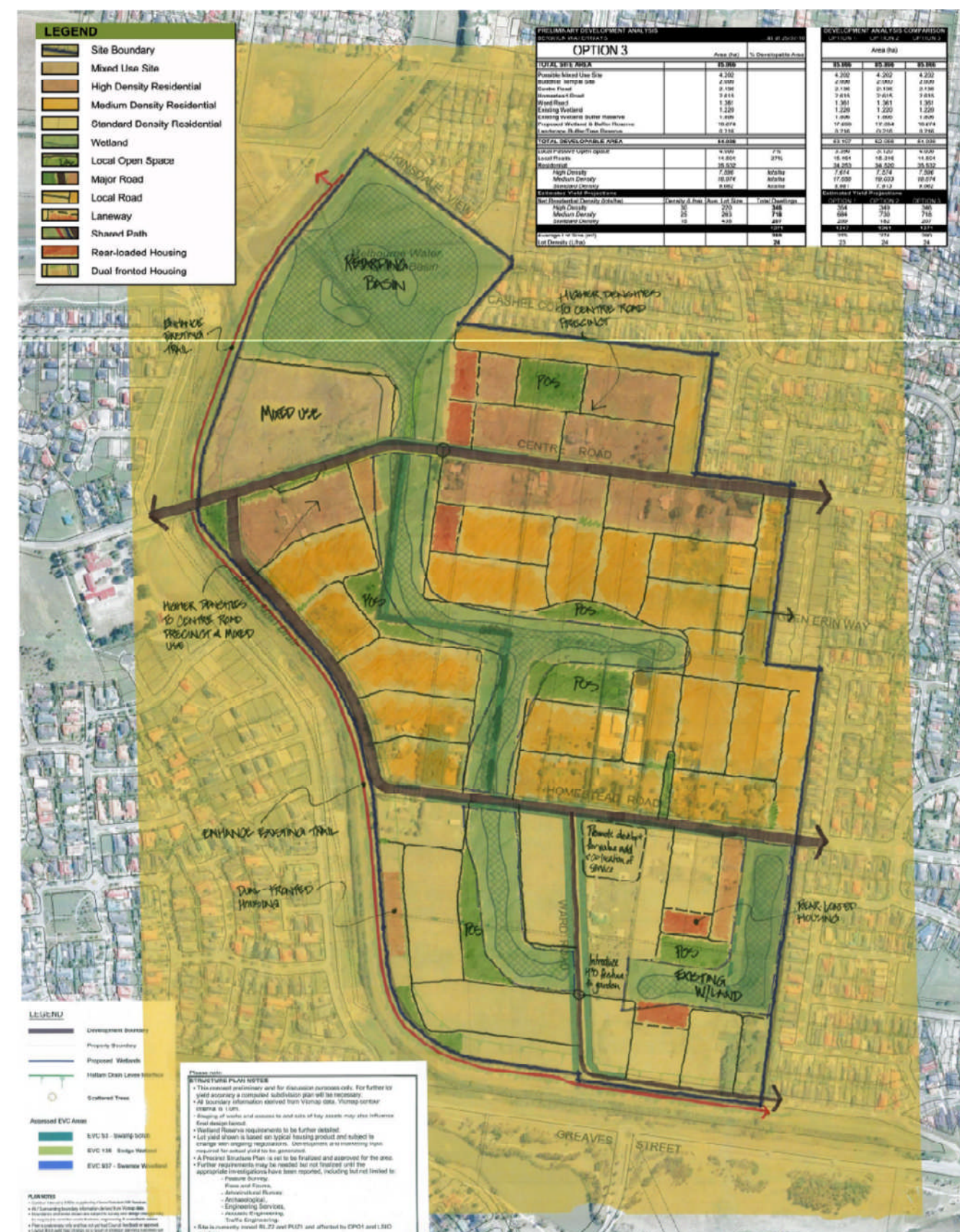
- Street layout based on landownership
- Slight change to wetland layout provided
- No re-alignment to existing roads
- Structure based on volume builder housing product
- North-South grid network for connectivity, legibility, efficiency and passive traffic control
- Higher density residential focussed along Centre Road corridor and abutting mixed use site
- Densities provided are based on GAA requirements from Cardinia West PSP, January 2010



6.3 OPTION 3 CONCEPT PLAN

Concept 2 includes the following key principles:

- Street layout based on title boundaries
- Slight change to wetland layout provided
- No re-alignment to existing roads
- Structure based on volume builder housing product
- North-South grid network for connectivity, legibility, efficiency and passive traffic control
- Higher density residential focussed along Centre Road corridor and abutting mixed use site
- Densities provided are based on GAA requirements from Cardinia West PSP, January 2010



7 APPENDIX 1 – Taylors Landownership Plan

8 Appendix 2 – Drainage Themes

9 Appendix 3 – Vegetation Maps

10 Appendix 4 – Taylors Site Analysis

11 Appendix 5 - Taylors Concept Plans