Mirvac Victoria Pty Ltd

Revised Town Planning Report

Application to Amend Planning Permit STA / 2001 / 000714
Waverley Park, Mulgrave

12 August 2013

collie

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Executive Summary

Having reviewed the history of this matter including:

- the Panel report for Monash Planning Scheme (the Scheme) Amendment C20 (MPSC20);
- the Permit and associated plans;
- the planning and urban design outcome proposed for the balance of the Waverley Park development (as planned);
- the Community Benefits Package;

the powerline remaining overhead is entirely appropriate.

In particular, the following points are noted.

Panel Report

1) It was contemplated by the applicant (Mirvac) and the Panel that circumstances might change and that an amendment to the Permit and the Waverley Park Concept Plan may need to occur to allow the powerline to remain above ground. The Panel report for MPSC20 (particularly in Section 11.4 - "Panels Conclusions about Statutory Framework") states that whilst the undergrounding of the powerline was considered a significant benefit (and integral to the overall design), the Waverley Park Concept Plan should be modified to make it clear that the overhead powerline will be placed underground and if not, the masterplan will need to be amended. It went on to recommend that a condition should be included in the Permit requiring agreements to be entered into for the undergrounding works to occur within 5 years, otherwise an amendment to the Permit and the Waverley Park Concept Plan must be sought.

2) Furthermore, the Panel recognised that Mirvac consistently submitted through the course of the Panel hearing that it intended to place the powerline underground subject to a satisfactory commercial arrangement with SP AusNet being achieved.

3) The Panel stated that:

"Mirvac has received preliminary advice from SPI PowerNet that the cost of works for the two options detailed in document P47 tendered to the Panel, range between $12M [transition enclosures located on site] and $18M [transition enclosures located off site]. Obviously, if the cost of these works increases substantially it may no longer be commercial for Mirvac to pay for the works to be carried out. The additional works proposed by Mirvac allow for a commercial agreement to be negotiated with SPI PowerNet" (page 31 of 39).

4) Monash City Council disputed this position and in resolving this dispute the Panel commented as follows:

"The Panel has addressed this matter in Section 11.4.1. The design of the Waverley Park development as embodied in the Waverley Park concept plan, envisages removal of the power lines and easement. If this does not occur, the Waverley Park Concept Plan will require amendment. As the Waverley Park Concept Plan will form part of the planning permit (as an endorsed plan) such a significant change will require an amendment to the planning permit also. This is one of the disadvantages of a planning permit as distinct from a Development Plan Overlay with planning permits being issued for components of the Development Plan as they are proposed to be implemented. However Mirvac has sought a planning permit in preference to the DPO, therefore it must accept the implications of this as a site planning tool.

The Panel agrees with the Council on this issue. The permit should be subject to removal of the easement and undergrounding of the power lines. If this does not proceed, then the permit should be amended, which will provide an opportunity to consider the implications for the rest of the design".

5) As anticipated by the Panel, circumstances have now changed. In particular, a substantial increase in cost of the works and size and scale of the transition enclosures.

Aesthetics and Open Space Outcomes

6) The proposed amended Waverley Park Subdivision Masterplan includes a substantial increase in public open space and in many respects an improved aesthetic outcome in the areas where the transition enclosures required to underground the powerline would otherwise be visible.

7) The need for transition enclosures (which take up the appearance of large sub-stations) to be erected and located at the Jacksons Road frontage and at the western end of the linear public open space fronting Monash Freeway, results in an unattractive aesthetic outcome if the powerline was to be placed underground. As a result, the overall aesthetic benefit originally contemplated with the removal of the overhead powerline would not be realised. Transition enclosures would provide a poor 'public face' to Waverley Park and to the Jacksons Road streetscape.

8) Up to 20,500 square metres of additional public open space will be made available to the public and particularly to the residents of Waverley Park. This significant quantum (about 24 per cent increase) of additional public open space has been well designed and provides a clear net community benefit to the public.

Community Benefits Package

9) Mirvac has committed to spending $15 million on additional community benefits consisting of ex gratia cash payments to Waverley Park home owners and improved amenity. In addition to the $15 million, Mirvac is proposing to spend $7 million on powerline related works to raise and realign the powerline within the public open space corridor and $4 million on lake and wetlands works. The total spend of $26 million is in excess of the initial budget for the works as quoted by SPI PowerNet and tendered at the Panel hearing.

10) By redistribution of the funds originally budgeted for undergrounding of the powerline, Mirvac has addressed proactively any perceived issue of fairness associated with seeking to retain the powerline above ground and will provide a net community benefit when compared with the outcome associated with the undergrounding of the powerline.

11) Mirvac has and will continue to consult extensively with the Waverley Park community via survey, website, written communications and community information sessions, to ensure that as far as possible the Community Benefits Package responds to the needs of the Waverley Park community.

Amendments proposed

As a result of information obtained following the issuing of the Permit including responses to several phases of community consultation (refer section 2 of this report), this application proposes:

- to amend condition 50 of the permit to remove the Mirvac obligation to place the powerline underground; and
- to amend the plans endorsed under the Permit to retain the powerline aboveground and to include the public open space improvements contemplated as part of the Community Benefits Package.

1 Introduction

This revised report has been prepared by Collie Pty Ltd (Collie) on behalf of the applicant, Mirvac Victoria Pty Ltd (Mirvac), in support of an application made on 8 June 2011 under Section 72 of the *Planning and Environment Act 1987* (the Act) to amend Planning Permit STA / 2001 / 000714 (the Permit). The report has been revised in response to a letter (22 June 2011) from the then Department of Planning and Community Development (now Department of Transport, Planning and Local Infrastructure) (DTPLI) that sought further information on the proposed amendment to the permit as well as in response to several phases of community consultation.

1.1 Permit History

On 13 August 2002 the Minister for Planning approved MPSC20 and granted Planning Permit STA/2001/000714 (the Permit). The approval followed the combined consideration of the amendment and planning permit application by an independent planning Panel. The Panel report was released in August 2002.

MPSC20 and the Permit relate to the rezoning and redevelopment of Waverley Park, Mulgrave (the subject site) for residential purposes, apart from a mix of non-residential uses within the retained section of the former Sir Kenneth Luke grandstand. The Permit was issued for "*subdivision (up to 1500 Lots), construction of up to 1250 dwellings, creation and alteration of access to a road in a Road Zone Category 1, variation of an electricity easement, removal of native vegetation, and construction and carrying out of buildings and works*". The current Waverley Park Subdivision Masterplan approved under Condition 1 of the Permit is in **Appendix A** to this report.

Condition 50 of the Permit requires the removal of the existing powerline easement through the subject site and the powerline being placed underground. The approved Subdivision Masterplan provides a corridor for the powerline in various forms.

At the Panel hearing in June 2002, undergrounding of the powerline was considered and suggested by Mirvac as an option to provide an aesthetic benefit for the subject site, based on the information made available to Mirvac at the time. The estimated cost associated with the undergrounding process (about $12 million) provided by SP AusNet, formerly SPI PowerNet, was significant but was not considered prohibitive. Undergrounding the powerline was understood therefore, to be viable though this position was subject to further investigation and discussion with SP AusNet.

A summary of the expected costs associated with undergrounding the powerline was submitted to the Panel. Detailed feasibility studies and third party approvals however, would be required to confirm that it was feasible and to comply with condition 50 of the permit. The Panel discussed the possibility that the undergrounding of the powerline may not proceed and consequently an amendment to the Permit and the Subdivision Masterplan would be required.

In making its recommendation that condition 50 be included in the Permit the Panel on MPSC20 made a variety of references to the proposal to underground the powerline. In particular, the Panel noted that:

- while the undergrounding of the powerline was considered a significant benefit and integral to the overall design as proposed at that time, the Panel recommended that the Waverley Park Concept Plan be modified to clarify that if the powerline could not be placed underground, the Subdivision Masterplan would need to be amended;
- the permit condition should require that agreements be entered into for the undergrounding of the powerline within 5 years and, if not, the permit would need to be amended;

- Mirvac had submitted to the Panel that its proposal to underground the powerline was subject to a satisfactory commercial arrangement being possible with SP AusNet;
- if the costs of the works increased substantially beyond that contemplated at the Panel hearing, it may no longer be feasible for Mirvac to pay for the works to be carried out;
- in response to the Council position that Mirvac ought to be required to underground the powerline regardless of the cost:

> *"The Panel has addressed this matter in Section 11.4.1. The desire of the Waverley Park development as embodied in the Waverley Park concept plan, envisages removal of the power lines and easement. If this does not occur, the Waverley Park Concept Plan will require amendment. As the Waverley Park Concept Plan will form part of the planning permit (as an endorsed plan) such a significant change will require an amendment to the planning permit also. This is one of the disadvantages of a planning permit as distinct from a Development Plan Overlay with planning permits being issued for components of the Development Plan as they are proposed to be implemented. However Mirvac has sought a planning permit in preference to the DPO, therefore it must accept the implications of this as a site planning tool.*
>
> *The Panel agrees with the Council on this issue. The permit should be subject to removal of the easement and undergrounding of the power lines. If this does not proceed, then the permit should be amended, which will provide an opportunity to consider the implications for the rest of the design".*

It is clear that the Panel contemplated that circumstances may change and that in the event that they did change, an amendment to the Permit would be required. This application explains the change in circumstances, the planning merits associated with retaining the powerline above ground and seeks the relevant amendments to the Permit as contemplated by the Panel.

1.2 Development Progress

In parallel with its further investigation of the undergrounding of the powerline and related consultation, Mirvac has continued housing development at the subject site.

Over three-quarters of Waverley Park is developed or under construction. Most occupied lots are located some distance from the powerline, apart from occupied dwellings within the southern parts of Stages 2, 5, 6 and 7, and the northern parts of Stages 8 and 10.

Mirvac has co-ordinated housing construction generally from north to south but without encroaching on the powerline / public open space corridor. Housing construction to the north of the powerline and public open space corridor has now been completed to the full extent possible until resolution of the location of the powerline. Housing construction has moved to the southern side of the corridor to allow works to continue however, construction of houses in this area is also nearing completion. Furthermore, construction of the public open space corridor and associated community infrastructure (including the balance of the Monash Freeway acoustic wall and lake and wetlands) has been suspended while the future of the powerline and the Subdivision Masterplan for the corridor area is resolved.

Timing for consideration of this matter is critical therefore, to ensure that development can continue and residents can be given certainty about the future of the corridor area.

At present, the overhead powerline traverses the subject site from Jacksons Road to the Monash Freeway, including two towers that are located within the subject site.

1.3 Proposed Amended Permit

This application relates specifically to the powerline and the requirements of condition 50 of the Permit. As a result of information obtained following the issuing of the Permit (refer section 2 of this report), this application proposes to:

- amend condition 50 of the permit to remove the Mirvac obligation to place the powerline underground;
- amend the plans endorsed under the Permit to retain the powerline aboveground and to include the public open space improvements contemplated as part of the Community Benefits Package.

1.3.1 Planning Scheme Controls

The powerline traversing Waverley Park operates at more than 220,000 volts and therefore is defined under the Scheme as a utility installation.

The Scheme includes the powerline in the Residential 1 Zone (R1Z) and Schedule 1 to the Neighbourhood Character Overlay (NCO1).

Within the R1Z, utility installation is a 'section 2' (permit required) use. As there are existing use rights for utility installation under the provisions of clause 63 of the Scheme, a planning permit for use is not required under the R1Z.

A planning permit is required under the R1Z (clause 32.01-6) for buildings and works associated with a section 2 use and under the NCO1 for the construction of buildings and carrying out of works. We note that permission already exists pursuant to the Permit and therefore only an amendment to conditions and plans is required.

The schedule to clause 61.01 of the Scheme states that the Minister for Planning is the responsible authority for the subject site.

1.3.2 Amendments to the Permit Condition

(a) Condition 50

Condition 50 of the Permit is the only condition that relates specifically to the powerline. It states that *"the existing powerline easement through the land must be removed and high voltage electricity transmission lines must be placed underground in a location and via a route which is to the satisfaction of S.P.I. PowerNet Pty Ltd or the relevant electricity authority"*.

Since the Permit was issued, it has become clear that undergrounding the powerline is not the most appropriate, beneficial or viable outcome for a number of reasons which are discussed below. Furthermore, the retention of the power line above ground will provide a net community benefit when compared with the outcome associated with the underground powerline.

In order to allow for the retention of the powerline above ground a number of alterations are required to ensure safe clearances of the Monash Freeway acoustic wall and to improve the overall layout of the subdivision and the open space provision. These alterations involve a slight re-alignment of the powerline and construction of two new towers.

Given the above, this application seeks permission to amend condition 50 of the Permit by replacing it with the following condition.

"The alignment of the existing high voltage transmission line and associated easement may be varied to the satisfaction of the responsible authority and the relevant electricity authority".

The proposed amended condition will be consistent with the Permit and the primary permissions granted.

(b) New Conditions

The Permit includes permissions for buildings and works generally in accordance with plans to be endorsed in accordance with the conditions of the Permit. It is proposed therefore, to incorporate in the Permit an appropriately worded condition requiring that plans and elevations of the replacement towers and associated powerline be approved by the responsible authority to the satisfaction of the relevant electricity authority. The proposed additional condition is as follows.

"Before removal of the existing powerline and construction of the replacement powerline and supporting structures, plans to the satisfaction of the responsible authority and the relevant electricity authority must be submitted to and approved by the responsible authority. When approved, the plans will be endorsed and will then form part of this permit. The plans must be drawn to scale with dimensions and three copies must be provided".

In order to ensure the timely removal of the existing powerline and the construction of replacement powerline, it is recommended that the condition below be added to the Permit.

"The removal of the existing powerline and construction of the replacement above ground powerline and supporting structures must be completed within 2 years of the date agreement is reached with the relevant electricity authority and by no later than 3 years from the date this permit is amended to include this condition or such later date to the satisfaction of and approval in writing by the responsible authority".

(c) Condition 12

Condition 12 of the Permit ensures that detailed landscape plans are submitted to and approved by the responsible authority for each stage of the subdivision. Condition 12 also requires that *"the measures outlined in the endorsed landscape plan must be implemented to the satisfaction of the responsible authority and, in particular, all measures that relate to public works must be implemented prior to the issue of a Statement of Compliance for a stage or part of a stage unless the works are bonded or guaranteed to the satisfaction of the responsible authority".*

Condition 12 therefore, without further amendment of the Permit, requires the submission of landscape plans for the public open space corridor adjacent to the powerline and furthermore, ensures the timely implementation of the approved landscape works.

1.3.3 Amendments to the Endorsed Plans

The retention of the powerline above ground will result in the requirement to amend the Subdivision Masterplan (Appendix A). Attached (**Appendix B**) therefore, is a proposed amended Subdivision Masterplan for approval by the Minister for Planning under condition 1 of the Permit. The proposed amended Subdivision Masterplan indicates the alignment of the above ground powerline, changes to the road layout adjacent to the powerline, removal of the transition enclosures and changes to the location and an increase in the amount of public open space abutting the powerline.

In accordance with condition 1 of the Permit, a proposed amended Waverley Park Landscape Masterplan is provided (**Appendix C**) for approval.

Plans of the proposed works for the realigned powerline (**Appendix D**) and towers (**Appendix E**) are attached for approval by the Minister for Planning under the condition proposed to be added to the Permit as detailed in section 1.3.2 of this report.

2 Change In Circumstances

Following the issue of the Permit, comprehensive investigations and negotiations by Mirvac have continued with the relevant authorities and specialist service providers in an attempt to identify a suitable design and feasible delivery terms for an underground powerline.

Over the last eleven years, Mirvac has completed a review of possible options associated with undergrounding of the powerline. This has included concept design and then a detailed design process, tendering and liaising with industry service providers for construction of an underground powerline and excavation of a 1 metre deep trench in readiness for the installation of an underground cable, which remains an open trench at the time of writing this report (Figure 2.1). Throughout this period, Mirvac has continued communication with SP AusNet, the owner and operator of the powerline infrastructure, to try to resolve technical and commercial arrangements for the project.

Figure 2.1 Google Earth Image of trench in Waverley Park

The outcome of the investigations has revealed that undergrounding of the powerline can no longer be considered an appropriate, beneficial or viable outcome due to the physical infrastructure required to underground the powerline and the associated costs. Had this information been available to Mirvac at the time of the Panel hearing, Mirvac would not have suggested exploring the undergrounding of the powerline during the Panel process.

The proposed underground system consists of a number of buried high voltage cables together with transition enclosures at each end of the line where the dual circuit line is diverted from overhead to underground. The required design is the outcome of negotiations between SP AusNet and the Australian Energy Market Operator (AEMO), which is responsible for planning the transmission network. A third party specialist consultant has investigated these requirements based on high voltage engineering principles to safely place the powerline underground. The size and scale of the transition enclosures is required for maintenance access, safety, reliability, redundancy, reparability and load carrying capability. The design also contemplates how a possible third circuit (underground cable) might be established in the future, which was an additional AEMO requirement.

The transition enclosures are large, with the two areas estimated at 4,600 and 8,700 square metres and are separated by a relatively short distance (approximately 530 metres). Each proposed enclosure contains six tall concrete poles, the tallest of which are up to 30 metres in height. The transition enclosures and their concrete poles will be highly visible from some properties and public open spaces. A transmission tower is also required at the Monash Freeway enclosure (**Appendix F**).

2.2 Significant Cost Increase

At the time of the Panel hearing in June 2002, the cost of undergrounding the powerline was expected to be $12 million based on estimates provided by SP AusNet for a scheme with transition enclosures located on site. Estimates provided in late 2012 by SP AusNet and third party specialist consultants indicate that the undergrounding works would now cost in excess of $45 million, representing a significant increase in the original cost estimate.

As noted earlier, the Panel commented in 2002 that if the cost of the works to underground the powerline increased substantially, it may be not be viable for Mirvac to pursue the undergrounding of the powerline.

2.3 Safety

2.3.1 Electromagnetic Field (EMF)

A common public concern relating to visible electrical infrastructure, is the perception of potential unacceptable health effects of electromagnetic field (EMF) caused by the transmission of electricity.

There are no Australian standards regulating exposure to EMF. The National Health and Medical Research Council (now upheld by Australian Radiation Protection and Nuclear Safety Agency) however, has issued 'Interim guidelines of exposure to 50/60 Hz electric and magnetic fields'. These interim guidelines are aimed at minimising immediate health effects resulting from EMF.

Modelling of normal operating conditions shows that EMF is produced irrespective of whether the powerline is above or below ground. Importantly, both produce EMF with levels that are significantly below the full time exposure limit for members of the public, as recommended by the interim guidelines.

Although EMF levels are well below acceptable levels, the proposed amended Subdivision Masterplan has been designed in accordance with principles of prudent avoidance to provide setbacks to residential properties and increased amenity outside the powerline easement. The majority of the land within the easement (where EMF levels are greater than elsewhere) contains water bodies, sloping land or areas where the public are not encouraged to spend large amounts of time.

Mirvac and SP AusNet are working to educate some members of the Waverley Park community who may be operating on the misconception that undergrounding may be inherently safer than leaving the powerline above ground. SP AusNet has published a booklet 'All about Electric and Magnetic Fields from Transmission Lines' providing indicative EMF levels from powerlines and also everyday household appliances to demonstrate the relativity. In order to address feedback that new amenity and recreational facilities in the powerline corridor may be compromised by the above ground powerline, Mirvac has ensured that these are positioned well outside the power line easement. In addition, as part of the Community Benefits Package, Mirvac will commit to providing further upgrades of existing neighbourhood parks located throughout Waverley Park subject to Council approval(refer section 5 of this report). As part of the community information sessions (discussed further below), Mirvac displayed results of EMF modelling and had representatives from SP AusNet on hand to address enquiries about the overhead powerline (**Appendix G**).

Overhead powerlines are located within numerous regional public open spaces throughout metropolitan Melbourne, including along Gladeswood Reserve, Gardiners Creek, Merri Creek and the Maribyrnong River. The powerlines in these locations do not seem to affect the amenity or function of these public open space areas (as evidenced by the photographs provided in **Appendix H**). A number of these examples include treatments consistent with the desired landscape outcomes adjacent to and below the powerline on the subject site.

2.3.2 Earth Potential Rise

A further potential safety issue was raised by SP AusNet in late 2008 during the detailed design of the transition enclosures. This issue surrounds risks associated with Earth Potential Rise (EPR). EPR occurs where there is an 'earth fault' (which can occur where towers and infrastructure used in the transmission of electricity come into contact with the ground) and, whilst relevant to both above ground and underground powerlines, SP AusNet has advised that it is *'inherently safer'* from an EPR perspective to leave the lines above ground.

EPR generates voltage contours that present an increased risk of electrocution and in the event of a fault that *"high EPR may under certain circumstances result in a transferred potential to the general public outside of the station, leading to unacceptable safety hazards"* (**Appendix I**). Subsequent risk assessment by SP AusNet in 2010/2011 advised that in respect of these risks, mitigation works could facilitate undergrounding of the powerline - such mitigation works would include an earthing system within the transition enclosures and retrofitting of conductive services (such as pipes and cables) in the areas surrounding the enclosures.

Whilst not a barrier to undergrounding the powerline, this introduces risks associated with the long term maintenance and monitoring of these EPR mitigation works and is one of the reasons why SP AusNet would prefer to retain the powerline above ground as discussed in section 3.

2.4 Information to Prospective Purchasers

There is no express provision in the sale contracts requiring Mirvac to underground the powerline. Mirvac has also developed a Community Benefits Package in connection with its application to amend the Permit. The essential objective of this package is to provide a net benefit to residents affected by the proposed amendment. Details of the Community Benefits Package are set out in section 5 of this report.

3 Key Reasons for Maintaining Above Ground Powerline

The retention of an above ground powerline will free-up significant funds that can be fully invested into the community, in the form of:

- increased public open space serving Waverley Park residents;
- a 'Community Benefits Package';

and will result in other benefits including:

- an improved appearance in Jacksons Road / the southwest area of Waverley Park;
- reducing significantly the delay in developing community spaces and completing the Monash Freeway acoustic wall.

3.1 Cost is Prohibitive

As discussed in section 2.1 of this report, the cost to underground the powerline has increased significantly from the estimates provided to Mirvac during the Panel process.

This cost increase (excluding the proportion of the increase due to inflation on the original cost provided to the Panel) is not a justifiable community cost in terms of the benefit it would deliver and relative to the majority of above ground powerlines throughout the Melbourne metropolitan area. Indeed the powerline in question is and will continue to be above ground on either side of Waverley Park.

3.2 Increased Public Open Space and Amenity

The Permit required public open space to be a minimum of 8.5 hectares (85,000 square metres).

The proposed amended Subdivision Masterplan layout with the above ground powerline will increase the public open space provision by approximately 2.05 hectares (20,500 square metres), which is an increase of public open space of approximately 24 per cent. Furthermore, there will be improved public open space connectivity. The amenity of public open space along the powerline alignment will be improved by removing the need to construct the transition enclosures adjacent to this space (Figure 3.1).

Figure 3.1 Active open space adjacent to powerline

The proposed amendment provides a better long term landscape corridor as although there are limitations on the height of planting beneath the line, any planting would be more substantial than that achievable on the underground powerline easement. Furthermore, significant areas of hardscape are required in association with an underground powerline, including road pavement.

3.3 Community Benefits Package

Mirvac is proposing to redistribute all of the funds (plus inflation) otherwise allocated to the original (at the time of the Panel) estimate of undergrounding of the powerline back into the community via a 'Community Benefits Package'. This Package has been proposed by Mirvac proactively to ensure fairness is achieved. The package is detailed in section 5 of this report.

3.4 Removes Requirement for Unsightly Infrastructure

At the time of the panel hearing, Mirvac was not aware of the scale and appearance of the infrastructure required to safely place the powerline underground or where this infrastructure would need to be located.

The proposed amendment removes the requirement to construct above ground unsightly transition enclosures and associated electrical infrastructure on the frontages of Jacksons Road and the Monash Freeway.

Removing the requirement to construct these transition enclosures will greatly improve the appearance of these areas and the amenity of existing and future residents and commuters along Jacksons Road and the Monash Freeway. In particular, the transition enclosure adjacent to Jacksons Road would have caused a detrimental impact to the amenity of residents outside Waverley Park on the east side of Jacksons Road, where existing dwellings would face that transition enclosure (**Appendix J**).

Removing the need for a transition enclosure adjacent to Jacksons Road will also improve significantly the appearance of Waverley Park from Jacksons Road. It will maintain the clear view from Jacksons Road along the internal boulevard to the retained portion of the Sir Kenneth Luke Grandstand as indicated by the images below. The importance of this view line has been identified in the Waverley Park Concept Plan and is further enhanced by listing of the Sir Kenneth Luke Grandstand on the Victorian Heritage Register and by the National Trust. Avoiding the need for a transition enclosure adjacent to Jacksons Road will protect this view line and will allow better visual and physical connection between one of the main entries to Waverley Park and the 'heart' of the development, being the Grandstand and oval (Figure 3.1 and Figure 3.2). The proposed amendments sought to the Waverley Park Subdivision Masterplan indicate clearly the manner in which the retention of the powerline above ground will protect this view line.

Figure 3.1 View towards stadium from Jacksons Road if powerline retained above ground

Figure 3.2 View towards stadium from Jacksons Road if powerline below ground

3.5 Reduced Delay in Developing Community Spaces and the Monash Freeway Acoustic Wall

Completion of construction associated with the proposed above ground powerline (including negotiation of commercial terms) is anticipated to be achieved significantly sooner than an underground scheme. The proposed amendment will allow the earlier commencement and therefore, completion of the public open space corridor and associated amenity facilities. It is estimated that construction associated with the above ground powerline may bring forward completion of the public open space (including lake and wetlands) by up to 18 months. In addition, it will allow for earlier completion of the acoustic wall along the Monash Freeway to the south of stages 2 and 7, which cannot be completed until resolution of the location and nature of the powerline.

SP AusNet has advised an indicative works duration for the proposed above ground powerline of approximately 12 to 16 months, a substantially shorter time frame than would be the case if the powerline were to be undergrounded.

3.6 Safety Benefits Negligible

As indicated in Section 2.3 modelling indicates that EMF levels between the above and underground powerline designs are both well below the acceptable levels for full time exposure for members of the public. There are significant mitigation measures required however, to reduce potential EPR risk to ensure that the underground system is as safe as the above ground system.

3.7 SP AusNet Position

As indicated in the letter dated the 28 March 2011, SP AusNet has advised that it does not consider undergrounding to be a satisfactory or appropriate outcome for the subject site and that it prefers pursuing an above ground solution.

3.8 Planning Issues Associated With Transition Enclosures

The construction of transition enclosures required to underground the powerline would require a planning permit. There is no guarantee that it will be acceptable to residents surrounding the enclosures. In particular, this applies to existing residents outside Waverley Park and to the east of Jacksons Road who were not aware of the infrastructure involved with undergrounding when condition 50 was imposed (Figure 3.3).

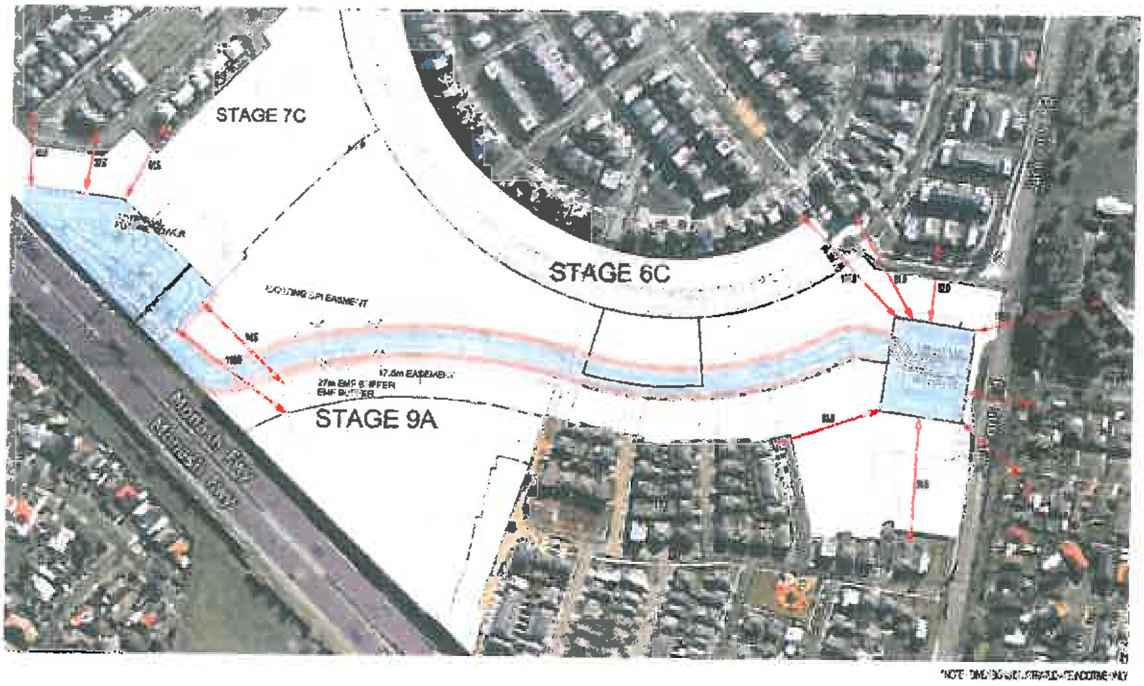


Figure 3.3 Transition enclosures (if powerline below ground) proximate to existing dwellings

3.9 Overall Outcome

Given the relatively short distance between the transition enclosures (approximately 530 metres) and the physical infrastructure required to underground the powerline (including the transition enclosures and replacement transmission towers), the expected aesthetic benefits of undergrounding the powerline are not realised.

As outlined above, the proposed amendment will result in a net community benefit by improving the appearance of Waverley Park from both within and outside the development in the areas where the transition enclosures would be visible, providing additional and higher quality public open spaces and reducing the time required to construct the powerline and complete the public open space works, lake, wetlands and Monash Freeway acoustic wall.

4 Proposed Powerline Works

The Proposed Powerline Plan (Appendix D) indicates the alignment of the existing above ground powerline, including the location of the two existing towers on the subject site that are to be re-located as part of the works under the proposed amendment. The plan also indicates the revised alignment of the powerline proposed to be retained above ground, including the location of the two re-located towers on the subject site. It is proposed to move the powerline to the south of the existing alignment to relate better to the Waverley Park Subdivision Masterplan and the proposed public open space corridor. The powerline will exit the site at the same locations to connect to the existing above ground powerline and towers to the east and west of Waverley Park.

It is anticipated that the new towers will be of a similar appearance to the existing towers. They will be in locations generally proximate to the existing towers and slightly higher in order to span the acoustic wall beside the Monash Freeway. Some works may be required to the east of Jacksons Road to allow for the change in alignment of the powerline. It is expected that any such works, which would not be on the Waverley Park site, can be addressed through amendments if required to Planning Permit 36157. Planning Permit 36157 was issued by Monash City Council for the construction of a new transmission tower to the east of Jacksons Road. Amendments (if required) to Planning Permit 36157 would be subject to a separate application process.

The plans and elevations (Appendix E) provide an indicative design of the proposed towers, including the extent of footings and overall height.

The proposed amended Waverley Park Subdivision Masterplan (Appendix B) depicts the proposed amended layout of Waverley Park. The powerline easement will traverse open space with its centreline being located approximately 30 metres from the closest residential property in Waverley Park.

A report (**Appendix K**) prepared by AECOM Australia Pty Ltd (AECOM) provides technical information relating to retention of the powerline above ground.

Unlike undergrounding, it is expected that minimal negotiation will be required in relation to commercial terms for the delivery of the above ground powerline. Once these terms are agreed, SP AusNet has advised indicative timing for completion of the revised above ground powerline of approximately 12 to 16 months.

A proposed Landscape Concept Plan (**Appendix L**) is attached for the amended proposal.

5 Community Benefits Package

As noted in section 3 of this report, if the Permit amendment is approved, Mirvac will redistribute the funds (plus the increase due to inflation) allocated originally to undergrounding of the powerline back into the community via a 'Community Benefits Package'.

The $15 million of funds allocated for the Community Benefits Package is derived from the financial commitment of Mirvac when it suggested the undergrounding of the powerline during the 2002 Panel process. At this time SP AusNet advised that undergrounding the powerline with on site transition enclosures could be completed for a budget of approximately $12 million. The value of this commitment today less the cost estimate for the above ground powerline works still required, defines the amount of money available for the Community Benefits Package as indicated in the table below.

SP AusNet budget estimate of $12 million in 2002 in current dollars with CPI adjustment	$22 million
Less Costs of Powerline Works (that is, new towers and realignment works)	$7 million
Leaves cash available for the Community Benefits Package	$15 million

Further to the $22 million, Mirvac will still be spending a further $4 million on lake and wetlands works (required under the previous underground proposal).

The Package has been designed using feedback received in the recent survey of home owners (refer to section 6 of this report) and residents of Waverley Park and input from other stakeholders and is based on the following:

- enhancements to existing and future public open spaces within Waverley Park and to services within the Monash Municipality for residents of Waverley Park;
- ex gratia cash payments to all lot owners of Waverley Park.

Mirvac is committed to spending the full $15 million allocated to the Community Benefits Package. If it is not spent in one area, it will be redistributed to another.

5.1 Enhancement to Existing and Future Public Open Spaces and Services

The Community Benefits Package will provide $6.5 million in funding for open space enhancements and renewal within Waverley Park and to other existing community services and parks utilised by Waverley Park residents. This will benefit owners and occupiers of dwellings in Waverley Park and the surrounding community.

The additional funding will improve the quality of these public open spaces by providing renewal of existing open spaces or additional features. This will improve the amenity of the public realm and help to encourage greater use of public open spaces.

Additional funding will be provided for example, to the proposed Waverley Park lake and wetlands corridor. This funding will result in increased and improved public open spaces, walking paths and sporting facilities, to create a space of regional significance (Figure 5.1 and Figure 5.2).

Figure 5.1 Artist impression of proposed public open space enhancements to the Waverley Park Lake and wetlands corridor

Figure 5.2 Artist impression of public open space to the Waverley Park Lake and wetlands corridor if powerline below ground

Upgrades to the existing amenity and provision of other services to Waverley Park residents recognises that many of those residents live some distance from the lake and wetlands corridor. An initial assessment of the types of upgrades that may be appropriate for existing public open spaces has been completed by MDG Landscape Architects (**Appendix M**). This will be refined following further consultation with the community and the City of Monash. What is evident from discussions held with residents to date however, is that upgrades of existing local parks throughout Waverley Park are important as are appropriate long term maintenance standards for public spaces. A further enhanced amenity proposition that will be tested with the community is the demand for a local community centre which may be delivered as part of the Community Benefits Package. Mirvac is canvassing community views on appropriate content and location of any amenity upgrades via an online survey.

The Landscape and Recreation Masterplan prepared by MDG Landscape Architects (Appendix M) provides detail on the proposed public open spaces in Waverley Park and includes a comparison between the public open space works within and adjacent to the powerline corridor that would be completed if the powerline was above ground or underground. It is clear from these plans that retaining the powerline above ground will enable Mirvac to develop a more enhanced, higher quality open space network than would be possible if the powerline was placed underground.

5.2 Ex Gratia Cash Payments To Lot Owners

The Community Benefits Package will provide $8.5 million in funding for ex gratia cash payments by Mirvac to lot owners at Waverley Park. The structure of this payment program was informed significantly by the resident survey completed by Mirvac in May 2013. Mirvac has proposed offers to all lot owners within Waverley Park.

Mirvac has obtained advice from a number of real estate professionals to assist with determining the quantum of the offers. The experts considered a range of factors, including:

- the purchase price of the property;
- the date of purchase;
- both the above and below ground powerline outcomes, including the electrical infrastructure associated with each;
- the type / size of house, inclusions, land size, distance and orientation to the powerline;
- the proximity of the house to other site features that may impact on value (including parks and major roads);
- sales and re-sales evidence within Waverley Park;
- sales evidence for properties located in close proximity to powerline corridors and electrical infrastructure within Melbourne;
- independent studies of the impact of powerlines and electrical infrastructure on property values.

Their advice is that generally:

- any effect of proximity to towers or powerlines dissipates as distance from the element increases, such that there is little or no adverse effect on value beyond a distance of 100 metres;
- any effect on values within about 100 metres depends on the location and aspect of the property;
- any adverse effect upon properties within about 100 metres will in part reduce over time, as a development progresses, views of powerlines are built out or obscured and landscaping establishes.

Offers have been structured based on the following principles:

- $3,000 for those owners who purchased their properties after December 2008, recognising that purchasers after this date were advised of the possibility of the powerline being retained above ground;
- $10,000 for those owners who purchased before January 2009 and whose property is not located within 150 metres of the powerline;
- a minimum of $15,000 for those owners who purchased before January 2009 and whose property is located within 150 metres of the powerline.

5.3 Implementation Of The Community Benefits Package

The Community Benefits Package described above is to be provided in two forms.

Firstly, a recommended condition is to be added to the permit along the lines as set out below.

> *"Before a statement of compliance is issued for the final stage of subdivision at Waverley Park, payments and / or works in accordance with the Community Benefits Package (Enhancement of Public Open Space Serving Waverley Park), prepared by Mirvac, dated (insert date here) must be completed to the satisfaction of the responsible authority. Payments for any works on public open space serving Waverley Park residents but not located in Waverley Park must be works provided or paid for wholly by the applicant or works where the cost is shared with Monash City Council. The value of any payments or works not completed at the time of compliance may be bonded to the satisfaction of the responsible authority."*

Secondly, Mirvac will make the eligible lot owner ex gratia payments upon approval of the amended Permit and will enter into a private contract / 'land owner agreement' with each eligible lot owner after the amended permit is issued. The agreement will be a simple standard form of payment and release.

6 Consultation On Application Proposal / Works

6.1 Previous Consultation

Over the last two years, Mirvac has completed significant consultation in respect of the powerline matter with residents and other stakeholders, including with:

- Waverley Park residents via focus groups and information sessions;
- officers of Monash City Council and the DTPLI;
- relevant staff of SP AusNet;
- the Waverley Park Residents Action Group.

Focus group research completed for Mirvac in December 2010 indicated the need for greater community awareness of the proposed change to the powerline arrangement. As a result, Mirvac conducted three public consultation sessions with residents of Waverley Park. These consultation sessions were held at a display house in Waverley Park from 6.00pm to 8.00pm on 29 and 31 March 2011 and from 11.00am to 2.00pm on Saturday 2 April 2011.

The consultation was aided by models and graphics depicting the underground and above ground comparisons, the public open space / landscape / recreation proposals relative to each powerline arrangement, the EMF levels associated with each powerline scenario and the planning process to amend the Permit.

Attendance (excluding Mirvac team members) was 52 people on 29 March 2011, 30 people on 31 March 2011 and 41 people on 2 April 2011 (123 people in total). Positive and negative comments were received about each possibility.

6.2 Recent Consultation / Communication

Following the consultation noted above, Mirvac completed a detailed review (2011 to 2013) of all aspects in relation to the powerlines before determining that undergrounding was not a viable proposition. Mirvac conducted further consultation to explain this position and the basis of its determination, which included:

- a face-to-face survey of residents and owners in relation to a potential Community Benefits Package;
- discussions and briefings with officers of Monash City Council and DTPLI;
- briefing sessions with the Waverley Park Residents Action Group;
- further community information sessions to communicate the Community Benefits Package;
- establishment of a website (refer to section 6.3 in this report) and registration for the Community Benefits Package;
- provision of information to the local media for publication.

Mirvac engaged Epirica Research to conduct surveys of Waverley Park residents between 30 April and 16 May, 2013. The main aims of this research were to determine the level of community awareness of the proposed amendment, to gain information on the opinions and concerns of residents with maintaining the powerline above ground and to ascertain preferences for how the $15,000,000 Community Benefits Package should be spent.

Empirica conducted door-to-door surveys and a total of 305 responses were received. The main findings of the surveys are summarised below.

- The proposed change in the powerline arrangement was not mentioned as a major negative factor in the Waverley Park development, with other issues such as narrow roads and lack of parking being noted as the 'worst' aspects of the development.
- A sense of community pride is important to many Waverley Park residents.
- On average, residents rated themselves as only slightly or moderately affected by the proposed amendment to the Permit. Less than a quarter of respondents believed that they would be extremely or very affected.
- A number of residents were concerned about the health implications of an above ground powerline. Some residents are also concerned that property values may decrease if the powerline remains above ground.
- Investments in community facilities including parks and sporting infrastructure were identified as a vital component of any Community Benefits Package.
- When given a series of options to which to allocate the funding, the most common option was to provide funding for community and sporting facilities and provide cash payments of $3,000 to all households in Waverley Park except households within 100 metres of the power line, who should receive a payment of $10,000.

The majority of respondents were supportive of cash payments to all households.

Following the mail-out on 21 June 2013 of individual offers in relation to the ex gratia payments, Mirvac held information sessions for Waverley Park residents, owners and other stakeholders to discuss the amended proposal and the Community Benefits Package. These sessions took place on 27 June, 29 June and 2 July 2013 at a tenancy in the Grandstand at Waverley Park and adopted a similar format and content to the 2011 sessions.

Attendance (excluding Mirvac team members) was 59 people on 27 June 2013, 85 people on 29 June 2013 and 77 people on 2 July 2013 (221 people in total).

Mirvac believes that the majority who attended seemed to be open-minded about the future of the powerline. Discussion around the relative merits of the above ground and underground powerline was prominent and interest in the type of enhanced amenity being proposed was high.

Numerous residents had been unaware of the spatial and visual impact of the transition enclosures and the fact that large poles and one tower would be required with the underground powerline. Mirvac was informed at these sessions and subsequently by numerous owners and residents, that they rescinded their earlier support of a petition opposing any amendment of the Permit.

At the time of writing this report, 307 people representing 255 separate lots within Waverley Park had registered their interest in the Community Benefits Package proposed by Mirvac. A further one person registered to receive further information without expressing a view on the Package.

6.3 Future Consultation

In conjunction with statutory notification of the Permit amendment, further information sessions will be held for those that could not attend the original sessions or for residents seeking further clarification of the amendment and Community Benefits Package.

On 15 July 2013, Mirvac launched the website http://www.waverleyparkcbp.com.au/home which:

- provides information on the Mirvac proposal;

- includes a *"Have Your Say"* page inviting owners / residents *"to contact relevant authorities to voice their support"*, including contact information;
- provides a link to the online survey of residents to help inform specific amenity upgrades / inclusions in existing public open spaces at Waverley Park - thus assisting in ensuring that, subject to amended Permit approval, identified benefits are delivered to the community as part of the upgrade of existing parks.

6.4 Statutory Requirements

In addition to the completed and future consultation, this application to amend the permit will be advertised as directed by the Minister for Planning in accordance with the Planning and Environment Act 1987.

7 Conclusion

In addition to positive outcomes delivered as part of the Community Benefits Package, this proposed amendment to the Permit provides a net community benefit through:

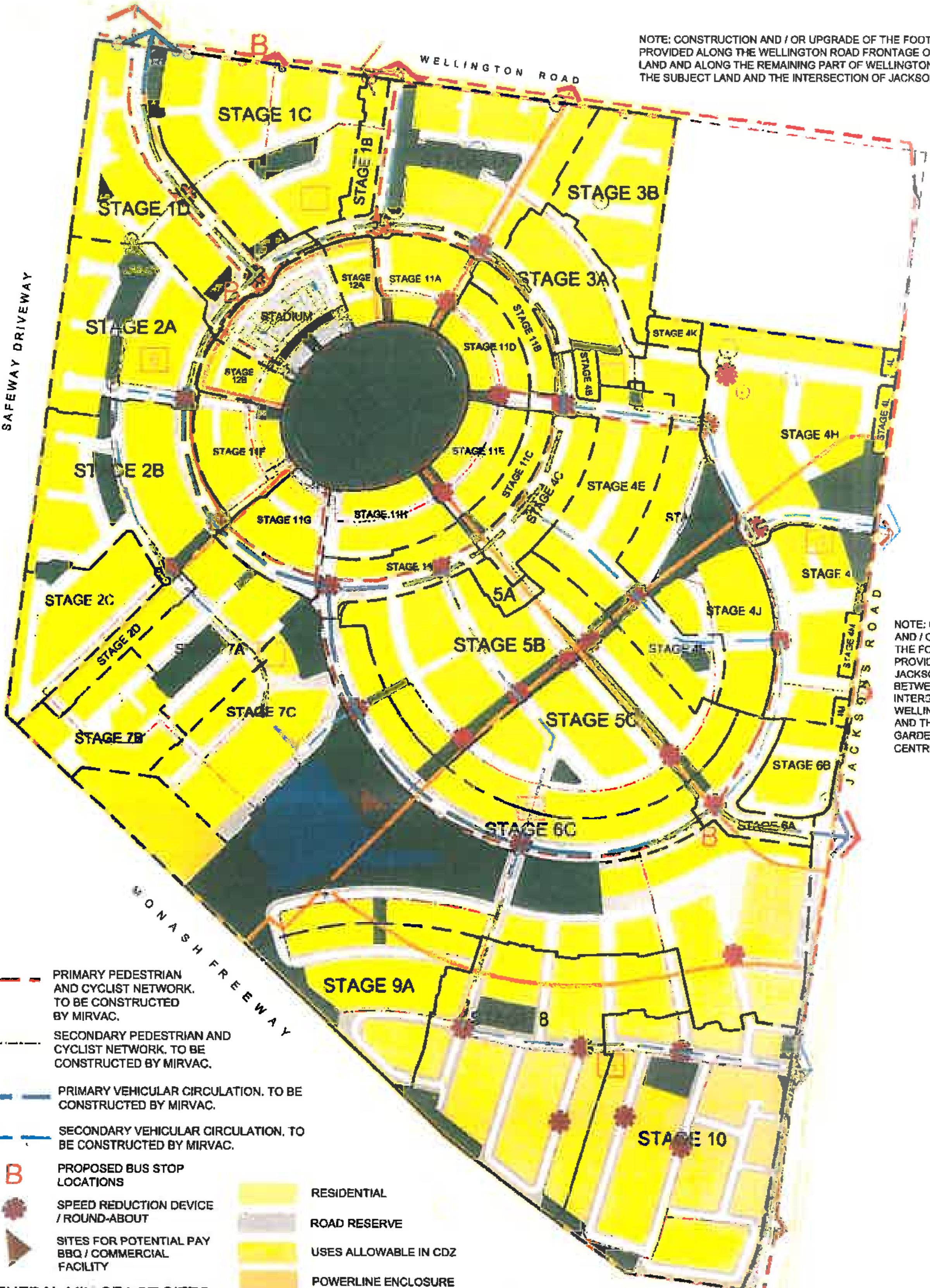
- an appropriate solution to the powerline undergrounding difficulties that have emerged since the Permit was issued;
- an increased public open space provision significantly above that required in the Permit;
- the funding of the undergrounding as envisaged under the Permit still being expended in the form of additional enhancements and Community Benefits Package;
- an improved appearance with the removal of the need for transition enclosures;
- an early resolution of the issues and a shorter timeframe to complete the associated powerline and enhanced public open space works.

It is requested that the Permit be amended in accordance with section 1.2.2 and 5.3 of this report and that amended plans be endorsed under the relevant conditions of the Permit as detailed in section 1.2.3 of this report.

Appendix A

Waverley Park Subdivision Masterplan as Approved by the Minister for Planning on 2 February 2013

NOTE: CONSTRUCTION AND / OR UPGRADE OF THE FOOTPATH TO BE PROVIDED ALONG THE WELLINGTON ROAD FRONTAGE OF THE SUBJECT LAND AND ALONG THE REMAINING PART OF WELLINGTON ROAD BETWEEN THE SUBJECT LAND AND THE INTERSECTION OF JACKSONS ROAD



NOTE: CONSTRUCTION AND / OR UPGRADE OF THE FOOTPATH TO BE PROVIDED ALONG JACKSONS ROAD BETWEEN THE INTERSECTION OF WELLINGTON ROAD, AND THE WAVERLEY GARDENS SHOPPING CENTRE

PRIMARY PEDESTRIAN AND CYCLIST NETWORK. TO BE CONSTRUCTED BY MIRVAC.

SECONDARY PEDESTRIAN AND CYCLIST NETWORK. TO BE CONSTRUCTED BY MIRVAC.

PRIMARY VEHICULAR CIRCULATION. TO BE CONSTRUCTED BY MIRVAC.

SECONDARY VEHICULAR CIRCULATION. TO BE CONSTRUCTED BY MIRVAC.

B PROPOSED BUS STOP LOCATIONS

SPEED REDUCTION DEVICE / ROUND-ABOUT

SITES FOR POTENTIAL PAY BBQ / COMMERCIAL FACILITY

RESIDENTIAL

ROAD RESERVE

USES ALLOWABLE IN CDZ

POWERLINE ENCLOSURE

PUBLIC OPEN SPACE
REFER TO P.O.S. SECTORS AREA & DISTRIBUTION SCHEDULE BELOW

A PUBLIC OPEN SPACE SECTOR

GENERAL MIX OF LOT SIZES

< 300m²	10% - 50%
300m² - 450m²	50% - 90%
≥ 450m²	5% - 20%

Public Open Space Sectors Area and Distribution

[illegible]

PUBLIC OPEN SPACE¹ SECTOR	PUBLIC OPEN SPACE AREA² (m²) RANGE AND SECTOR DISTRIBUTION³
A	6,000 - 8,000
B	6,000 - 8,000
C	8,000 - 10,000
D	10,000 - 14,000
E	28,000 - 38,000
F	12,000 - 18,000
G	2,000 - 4,000

0 20 60 120 240

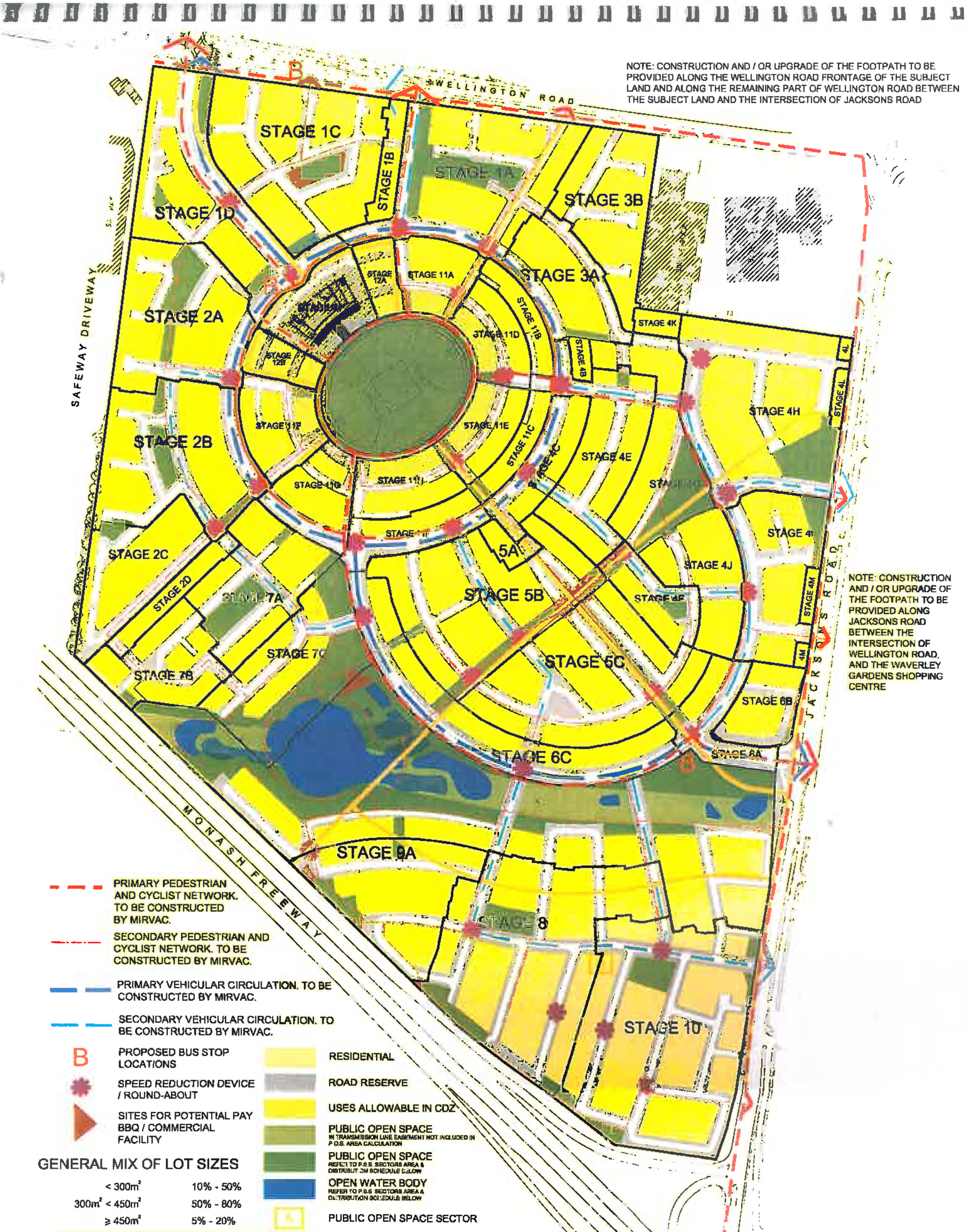
PLANNING and ENVIRONMENT ACT 1987
MONASH PLANNING SCHEME
PERMIT No. STA/2001/000714
ENDORSED PLAN
Sheet 1 of 1
Signed .... for
MINISTER FOR PLANNING
Date 7/2/13

SUB-DIVISION MASTER PLAN | WAVERLEY PARK
1:4000 | SD MP-01 (2) UNDERGROUND POWERLINE | 01 FEB 13

...\Permit Drawings\Permit Master Plan\SD MP-01-Undergournd Power option.dwg, 1/02/2013 9:31:42 AM, CutePDF Writer

Appendix B

Proposed Amended Waverley Park Subdivision Masterplan


NOTE: CONSTRUCTION AND / OR UPGRADE OF THE FOOTPATH TO BE PROVIDED ALONG THE WELLINGTON ROAD FRONTAGE OF THE SUBJECT LAND AND ALONG THE REMAINING PART OF WELLINGTON ROAD BETWEEN THE SUBJECT LAND AND THE INTERSECTION OF JACKSONS ROAD
WELLINGTON ROAD
SAFEWAY DRIVEWAY
STAGE 1C
STAGE 1B
STAGE 1A
STAGE 1D
STAGE 3B
STAGE 3A
STAGE 2A
STAGE 12A
STAGE 11A
STAGE 11B
STAGE 11D
STAGE 12B
STAGE 4K
STAGE 4B
STAGE 4L
STAGE 4H
STAGE 2B
STAGE 11F
STAGE 11E
STAGE 11C
STAGE 4C
STAGE 4E
STAGE 11G
STAGE 4I
STAGE 2C
5A
STAGE 4J
STAGE 2D
STAGE 7A
STAGE 5B
STAGE 4M
STAGE 7C
STAGE 6C
STAGE 7B
STAGE 6B
STAGE 6C
STAGE 6A
JACKSONS ROAD
NOTE: CONSTRUCTION AND / OR UPGRADE OF THE FOOTPATH TO BE PROVIDED ALONG JACKSONS ROAD BETWEEN THE INTERSECTION OF WELLINGTON ROAD, AND THE WAVERLEY GARDENS SHOPPING CENTRE
MONASH FREEWAY
STAGE 9A
STAGE 8
STAGE 10
PRIMARY PEDESTRIAN AND CYCLIST NETWORK. TO BE CONSTRUCTED BY MIRVAC.
SECONDARY PEDESTRIAN AND CYCLIST NETWORK. TO BE CONSTRUCTED BY MIRVAC.
PRIMARY VEHICULAR CIRCULATION. TO BE CONSTRUCTED BY MIRVAC.
SECONDARY VEHICULAR CIRCULATION. TO BE CONSTRUCTED BY MIRVAC.
PROPOSED BUS STOP LOCATIONS
SPEED REDUCTION DEVICE / ROUND-ABOUT
SITES FOR POTENTIAL PAY BBQ / COMMERCIAL FACILITY
RESIDENTIAL
ROAD RESERVE
USES ALLOWABLE IN CDZ
PUBLIC OPEN SPACE IN TRANSMISSION LINE EASEMENT NOT INCLUDED IN P.O.S. AREA CALCULATION
PUBLIC OPEN SPACE REFER TO P.O.S. SECTORS AREA & DISTRIBUTION SCHEDULE BELOW
OPEN WATER BODY REFER TO P.O.S. SECTORS AREA & DISTRIBUTION SCHEDULE BELOW
PUBLIC OPEN SPACE SECTOR
GENERAL MIX OF LOT SIZES
< 300m² 10% - 50%
300m² < 450m² 50% - 80%
≥ 450m² 5% - 20%

Public Open Space Sectors Area and Distribution

1 The total Public Open Space must be a minimum of 8.5 hectares including the lake (excluding the [illegible]).
2 This area must be distributed as listed opposite (other than as modified as set out in point 3 below). Public Open Space shown on the subdivision masterplan is indicative only of the Public Open Space areas and locations.
3 Public Open Space distribution can vary between sectors provided the overall distribution remains appropriate to the satisfaction of the Responsible Authority, and the total area requirement is not diminished.

PUBLIC OPEN SPACE[1] SECTOR	PUBLIC OPEN SPACE AREA[2] (m^2) RANGE AND SECTOR DISTRIBUTION[3]
A	6,000 - 8,000
B	6,000 - 8,000
C	6,000 - 10,000
D	10,000 - 14,000
E	28,000 - 38,000
F	12,000 - 18,000
G	2,000 - 4,000

mirvac

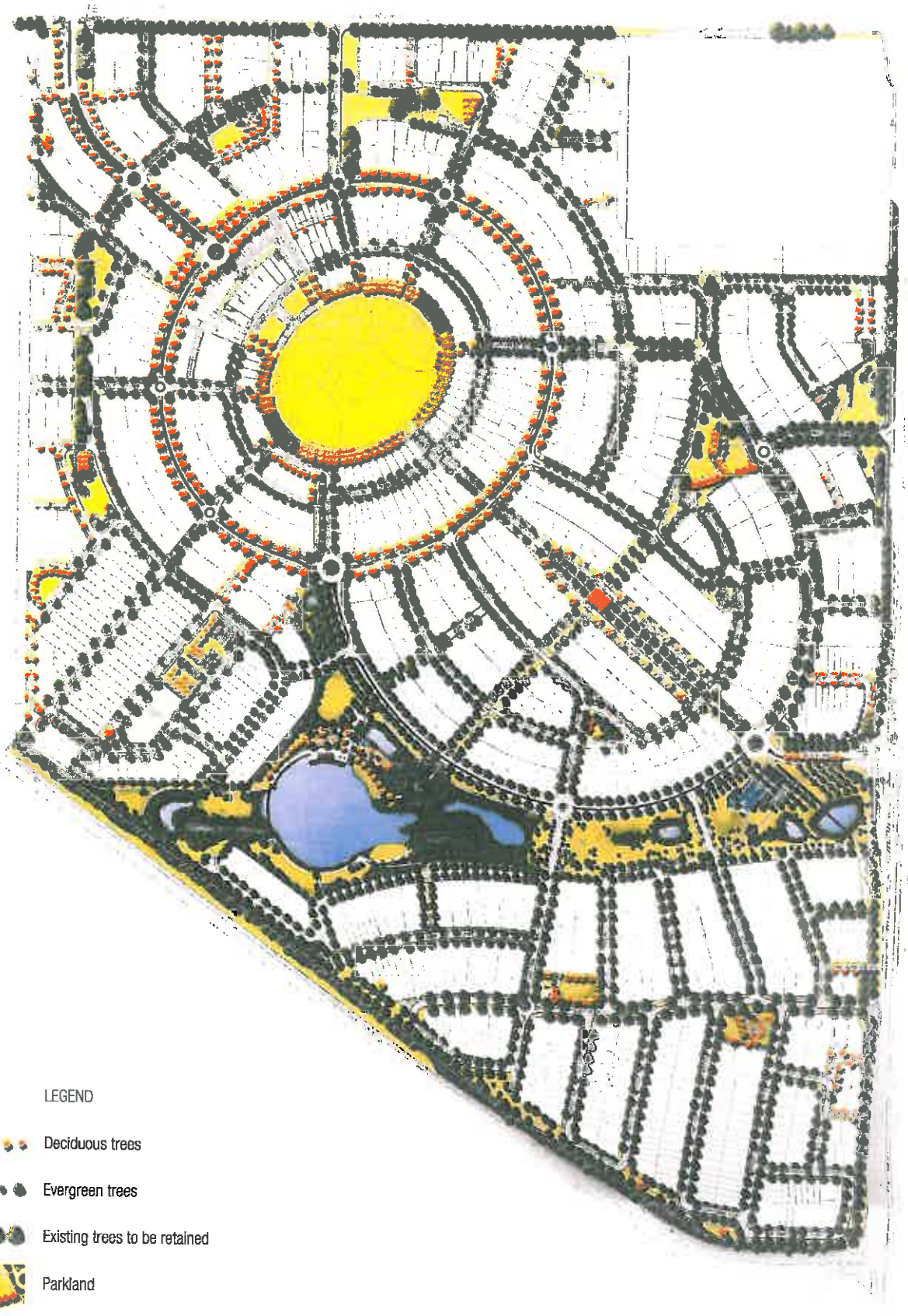
0 20 60 120 240

SUB-DIVISION MASTER PLAN | WAVERLEY PARK

1:4000 | SD MP 01 [TL4] | 14 JUN 2013

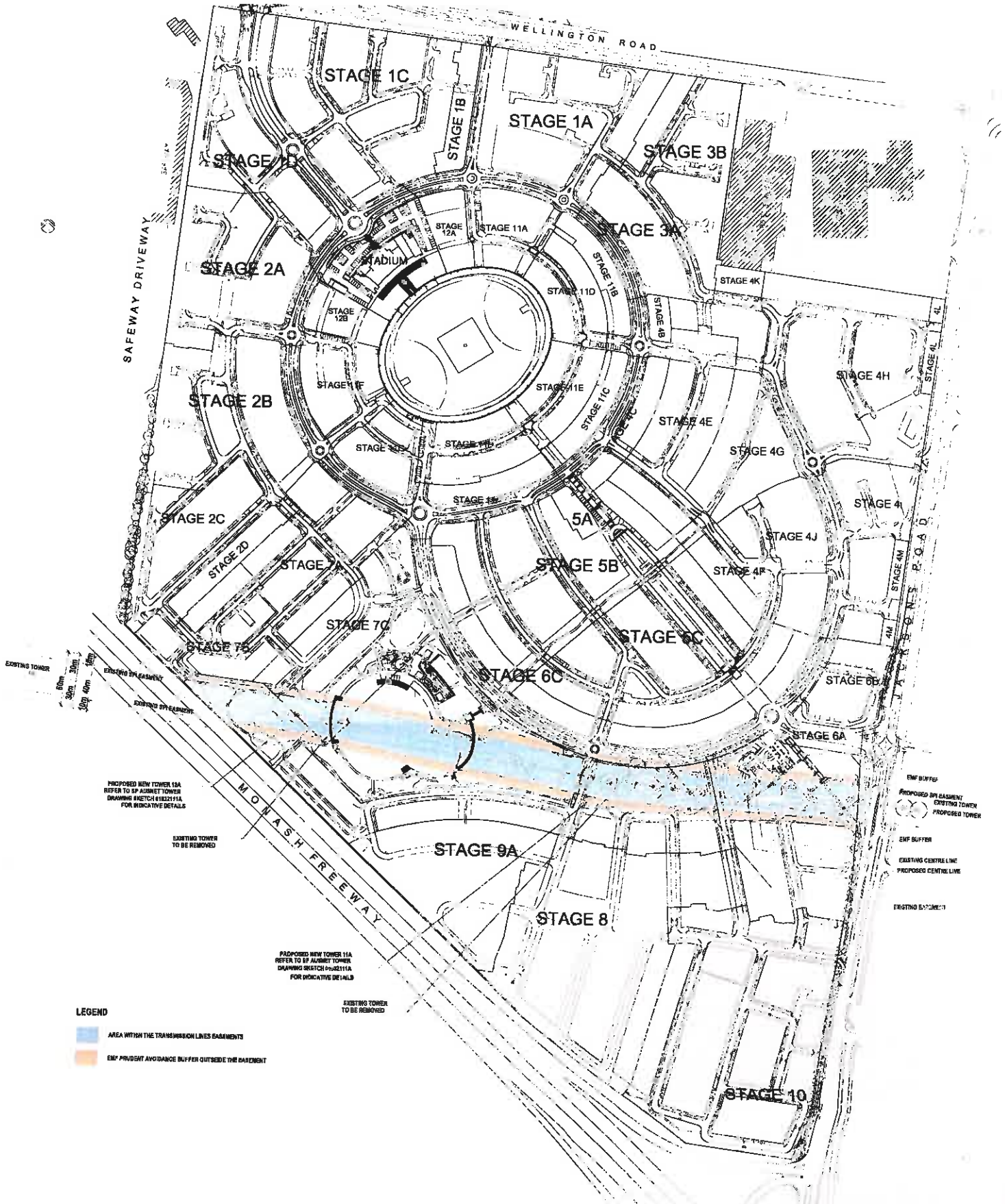
Appendix C

Proposed Amended Waverley Park Landscape Masterplan


LEGEND
Deciduous trees
Evergreen trees
Existing trees to be retained
Parkland

Appendix D

Proposed Powerline Plan



architect:
MIRVAC DESIGN

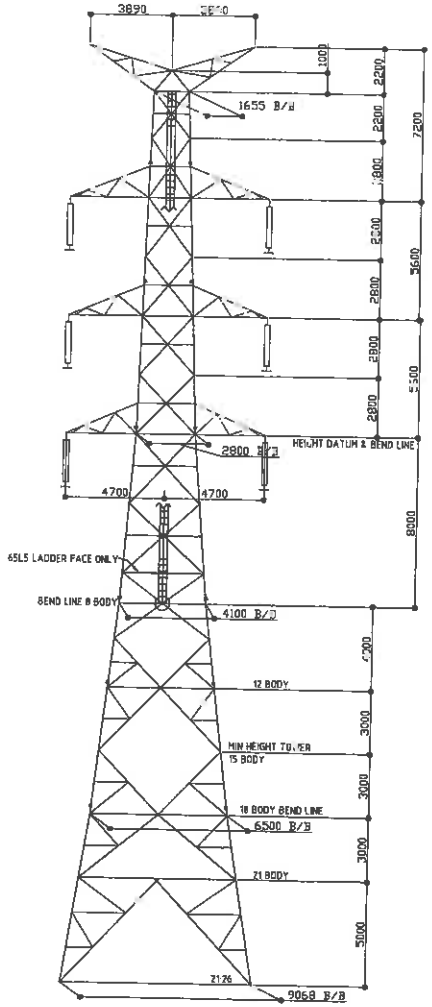
mirvac

Waverley Park
Proposed Power Line Plan

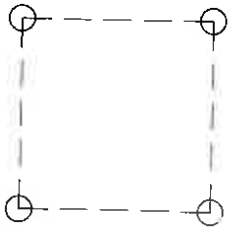
TL-TP1100a C

Appendix E

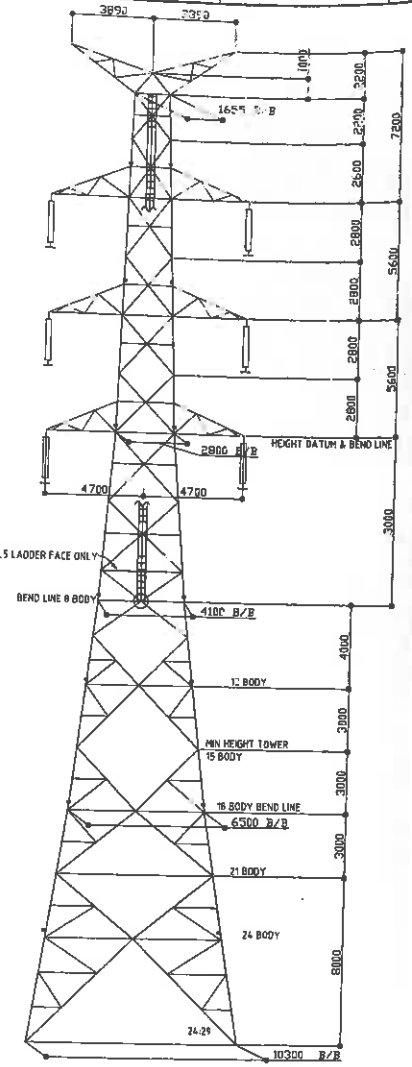
Plan and Elevation of Proposed Towers



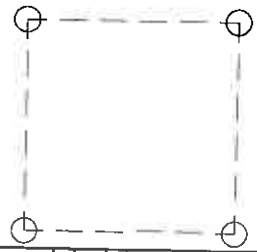
PROPOSED TOWER 11A



GROUND LEVEL FOOTPRINT
APPROX 9.1m SQUARE



PROPOSED TOWER 12A



GROUND LEVEL FOOTPRINT
APPROX 10.3m SQUARE

220KV TRANSMISSION LINES
DOUBLE CIRCUIT STRAIN TOWER
LIGHT STRAIN TYPE MPC
WAVERLEY PARK PROPOSAL

SKETCH 01032111 A

Appendix F

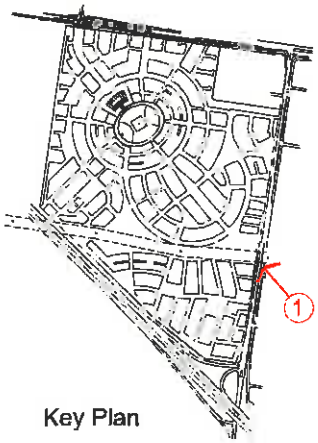
Images of Powerline Elements

View of Above Ground Power Line

View 1
Looking towards the Stadium from Jacksons Road

View of Transition Enclosure (if powerline below ground)

View 1
Looking towards the Stadium from Jacksons Road



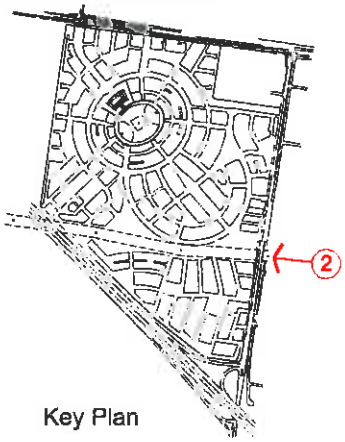
Key Plan

View of Above Ground Power Line

View 2
Main Entry into Waverley park from Jacksons Road

View of Transition Enclosure (if powerline below ground)

View 2
Main Entry into Waverley park from Jacksons Road



Key Plan

MIRVAC DESIGN

mirvac

Waverley Park
Images of
Power Line Elements

TL-TP1601

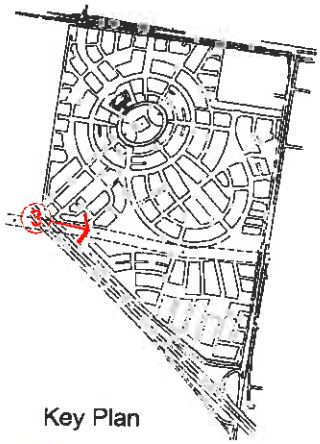
E

View of Above Ground Power Line

View 3
View from Monash Freeway looking East

View of Transition Enclosure (if powerline below ground)

View 3
View from Monash Freeway looking East



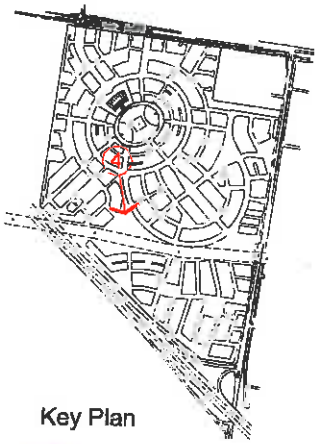
Key Plan

View of Enhanced Playground (if power line above ground)

View 4
Looking away from the Stadium

View of Playground & Wetlands (if power line below ground)

View 4
Looking away from the Stadium



Key Plan

MIRVAC DESIGN

mirvac

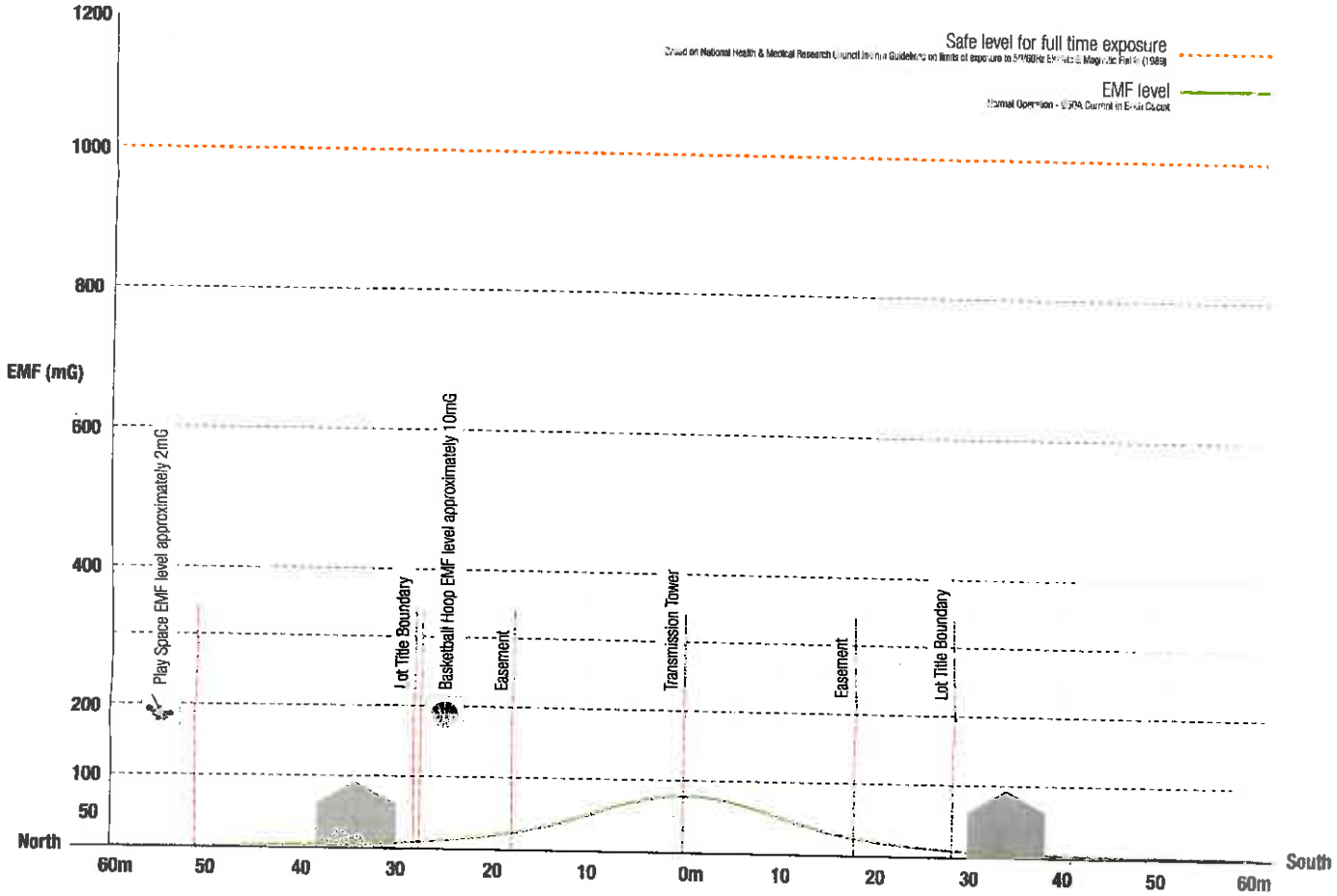
Waverly Park
Images of
Power Line Elements

TL-TP1600

E

Appendix G

EMF Level Diagram



*This graph (Graph) has been prepared by Mirvac (Victoria) Pty Ltd ("Mirvac") based on modelling of preliminary designs and calculations to reflect typical EMF levels based on normal operating conditions as advised by SP AusNet.

*At present the overhead line rating (as specified by the SP AusNet Circuit Data Sheets is 2440A (winter) and 1610A (summer). Typically, on double circuit lines such as these, the current is limited under normal operating conditions to half the line rating. The load profiles (taken from the SPA 2003 report) indicated a maximum peak load of 1220A. Actual levels may differ based on final design and construction.

*No representation, warranty or guarantee, express or implied, is given as to the accuracy, currency or reliability of the information displayed in the Graph and no liability is accepted by Mirvac for any such information or opinions. Mirvac is not obliged to inform a recipient of any other information of which Mirvac becomes aware which may affect the information in the Presentation, or to update or supplement the Presentation.

Above Ground Powerlines – EMF Level Diagram

Date 24.05.13

Appendix H

Images of Above Ground Powerline in Public Open Spaces Around Melbourne

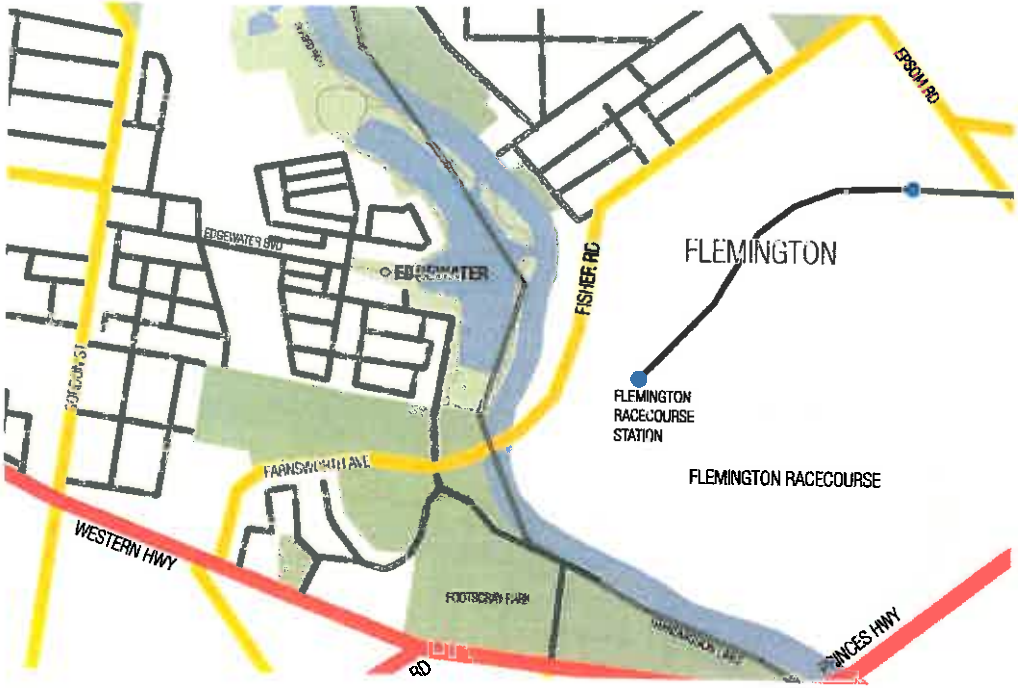
EDGEWATER ESTATE

DESCRIPTION
RESIDENTIAL AND BUSINESS MIXED USE DEVELOPMENT

LOCATION
7KM NORTH WEST OF MELBOURNE CBD
ALONG THE MARIBYRNONG RIVER.

TRANSMISSION LINES
220 kV TRANSMISSION LINES RUN ALONG THE EAST OF THE SITE PASSING OVER EDGEWATER LAKE, WETLANDS AND A SHARED BICYCLE AND PEDESTRIAN PATH USED AS A CYCLE COMMUTER ROUTE.

PUBLIC AMENITY / RECREATION
- CYCLE AND PEDESTRIAN PATHS
- EDGEWATER LAKE AND MARINA
- SEATING AREAS
- FISHING (MARIBYRNONG RIVER)
- JENSEN RESERVE BBQ AND SEATING (APPROXIMATELY 50m FROM TRANSMISSION LINES)



Waverley Park

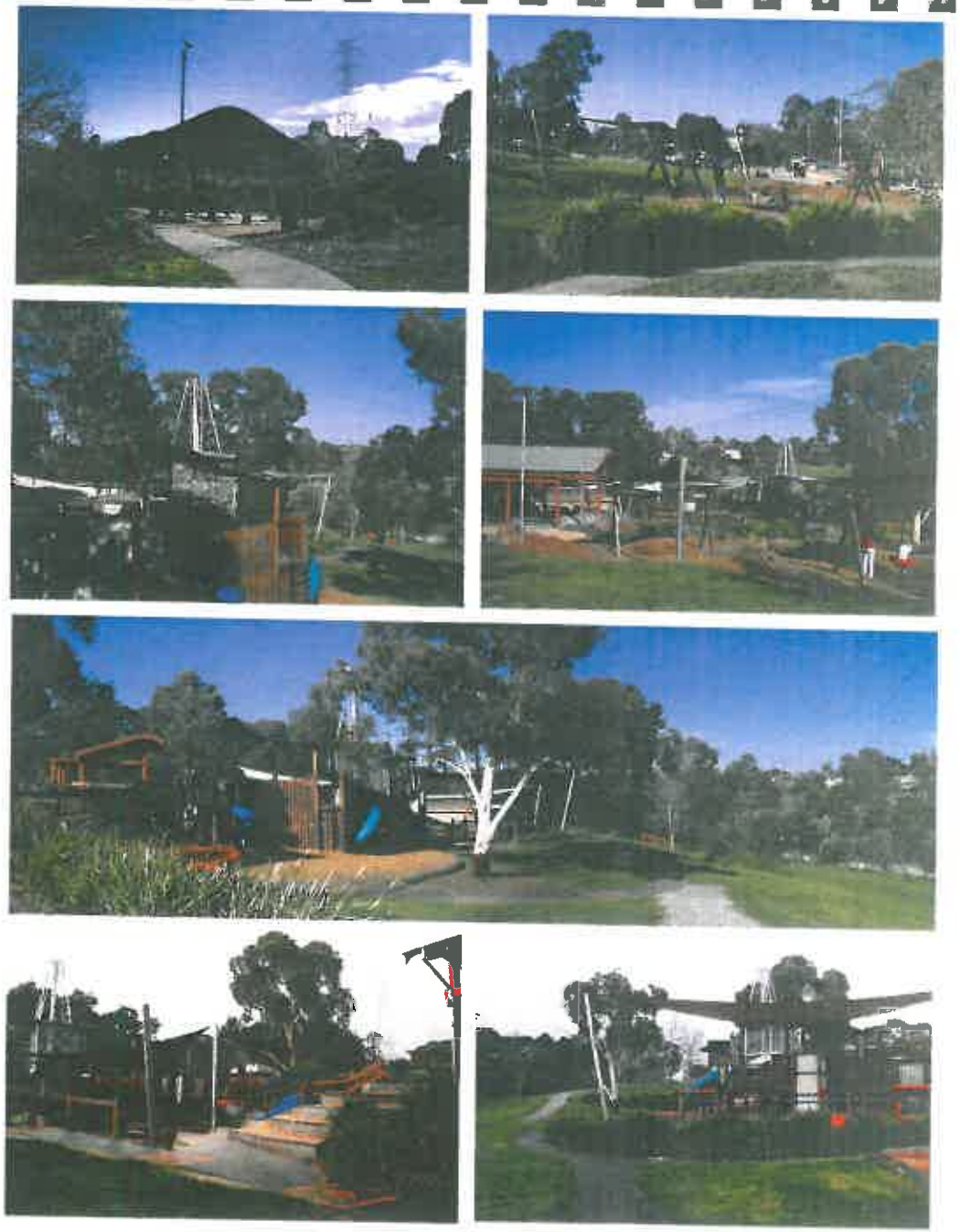
ABOVE GROUND POWERLINES - PARK COMPARISONS
EDGEWATER ESTATE
drawing no. SP1-A-SK8403[A] date. 03.06.09

RUFFEY LAKE PARK

DESCRIPTION
PUBLIC OPEN SPACE IN DONCASTER

TRANSMISSION LINES
275 kV TRANSMISSION LINES RUN THROUGH THE SITE

PUBLIC AMENITY / RECREATION
- REGIONAL ADVENTURE PLAYGROUND (APPROXIMATELY 20m FROM TRANSMISSION LINES)
- PICNIC SHELTERS (APPROXIMATELY 30m,40m & 50m FROM TRANSMISSION LINES)
- TOILETS (APPROXIMATELY 40m FROM TRANSMISSION LINES)
- BBQS AND PICNIC TABLES
- SEATING
- SHADE STRUCTURES
- BICYCLE TRAIL
- JOGGING TRACK
- PEDESTRIAN PATHS



Waverley Park

ABOVE GROUND POWERLINES - PARK COMPARISONS
RUFFEY LAKE PARK
drawing no. SP1-A-SK8406[A] date. 30.06.09

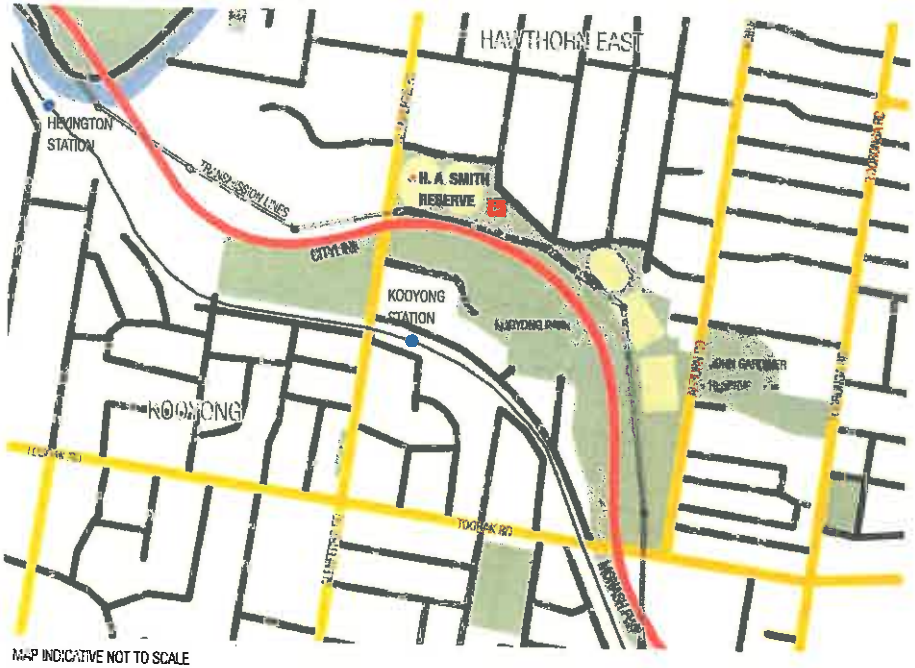
H.A.SMITH RESERVE

DESCRIPTION
LINEAR OPEN SPACE IN HAWTHORN EAST.

LOCATION
APPROXIMATELY 7KM EAST OF MELBOURNE CBD. ADJACENT TO CITYLINK.

TRANSMISSION LINES
275 kV TRANSMISSION LINES RUN TO THE SOUTH OF THE SITE PASSING OVER SHARED BICYCLE AND PEDESTRIAN PATH USED AS A CYCLE COMMUTER ROUTE AND VARIOUS FITNESS STATIONS.

PUBLIC AMENITY / RECREATION
- MULTI-PURPOSE OVALS AND SPORTS FIELDS (ADJACENT TO POWER LINES)
- OUTDOOR VELODROME (APPROXIMATELY 20m FROM TRANSMISSION LINES)
- PLAYGROUND AND SEATING (APPROXIMATELY 40m FROM TRANSMISSION LINES)
- BBQ AND SHELTER AND TOILETS (APPROXIMATELY 80m FROM TRANSMISSION LINES)



MAP INDICATIVE NOT TO SCALE


HA SMITH RESERVE - PLAYGROUND


HA SMITH RESERVE - PLAYGROUND


HA SMITH RESERVE - SHARED PATH


HA SMITH RESERVE - FITNESS STATION


HA SMITH RESERVE - PLAYGROUND


HA SMITH RESERVE - OVAL

NETTLETON PARK

DESCRIPTION
PUBLIC OPEN SPACE IN GLEN IRIS

LOCATION
APPROXIMATELY 10km SOUTH EAST OF MELBOURNE CBD ALONG THE MONASH FREEWAY AND GARDINERS CREEK.

TRANSMISSION LINES
275 kV TRANSMISSION LINES RUN ALONG THE WEST AND SOUTH OF THE SITE, PASSING OVER A SHARED BICYCLE AND PEDESTRIAN PATH USED AS A CYCLE COMMUTER ROUTE.

PUBLIC AMENITY / RECREATION
- MULTI-PURPOSE OVAL, PAVILLION, AND CRICKET PRACTICE NETS (APPROXIMATELY 50-100m FROM TRANSMISSION LINES)
- PLAYGROUND (APPROXIMATELY 150m FROM TRANSMISSION LINES)
- SEATING

GLEN IRIS PARK

DESCRIPTION
PUBLIC OPEN SPACE IN GLEN IRIS

LOCATION
APPROXIMATELY 11km SOUTH EAST OF MELBOURNE CBD ALONG THE MONASH FREEWAY AND GARDINERS CREEK.

TRANSMISSION LINES
275 kV TRANSMISSION LINES RUN THROUGH THE CENTRE OF THE SITE PASSING OVER A MULTI-PURPOSE OVAL, AND SHARED BICYCLE AND PEDESTRIAN PATH USED AS A CYCLE COMMUTER ROUTE.

PUBLIC AMENITY / RECREATION
- MULTI-PURPOSE OVAL (DIRECTLY UNDER POWER LINES)
- CRICKET PRACTICE NETS (APPROXIMATELY 30m FROM TRANSMISSION LINES)
- PAVILLION AND SEATING (APPROXIMATELY 60m FROM TRANSMISSION LINES)
- PLAYGROUND (APPROXIMATELY 60m FROM TRANSMISSION LINES)
- BBQ AND SHELTER (APPROXIMATELY 80m FROM TRANSMISSION LINES)

MAP INDICATIVE NOT TO SCALE


NETTLETON PARK - OVAL


NETTLETON PARK - PLAYGROUND


GLEN IRIS PARK - SHARED PATH


GLEN IRIS PARK - OVAL


GLEN IRIS PARK - OVAL


GLEN IRIS PARK - PLAYGROUND

Appendix I

SP AusNet Letter dated 28 March 2011

SP AusNet
A member of Singapore Power Group

28 March 2011

John Carfi
CEO Development NSW/VIC
Mirvac
Level 6,
380 St Kilda Rd,
Melbourne 3000

Dear John,

PROPOSED UNDERGROUNDING OF OVERHEAD POWERLINES AT WAVERLEY PARK DEVELOPMENT

I refer to recent discussions between SP AusNet and Mirvac concerning the undergrounding of 800 meters of SP AusNet's Rowville to Springvale 220kV transmission line and SP AusNet's letter to David Penfold dated 3 July 2009.

As you are aware, AECOM's report issued on 15 Dec 2008 analysed potential safety hazards including Earth Potential Rise (**EPR**), as part of the detailed design for the two transition stations that will be built to facilitate the undergrounding of the line. The report identified that the associated voltage contours due to earth fault occurring in a transition station went far beyond the transition station boundaries. SP AusNet advised Mirvac that the undergrounding of the line was not desirable due to SP AusNet's obligations concerning community safety and the ongoing and extensive mitigation measures that would need to be put in place to manage the issue, in its letter dated 3 July 2009.

A further report issued by Safearth Consulting on 12 Dec 2010 confirmed SP AusNet's original concerns. The report states that 1000 volt EPR spread beyond the transition station boundaries. IEEE80 *Guide for Safety in AC Substation Grounding*, the standard accepted for station earthing system design, advises that high EPR may under certain circumstances result in a transferred potential to the general public outside the station, leading to unacceptable safety hazards. SP AusNet is not willing to accept such a hazard. In contrast, an earth fault occurring on the overhead line towers will also raise the EPR. However, given the footprint of a tower is smaller than a transition station the EPR will extend a shorter localised distance and remain within the easement, which makes keeping the lines overhead inherently safer.

Another area of concern for SP AusNet is that introducing an 800 meter segment of underground cable will require the training of specialist contractors to respond to operation, maintenance and fault responses. The engagement of specialist contractors introduces unnecessary risks, delays and costs to SP AusNet with regard to the operation and maintenance compared to the otherwise day to day operations and maintenance tasks on the existing overhead line.

A final point of note is that the undergrounding of the line will create a greater transmission footprint with two transition stations being constructed to replace a single tower. Further, this will be the first time that only part of 220kV line will be undergrounded in Victoria.

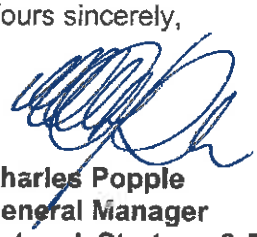
SPI PowerNet Pty Ltd ABN 78 079 798 173
A subsidiary of SP Australia Networks (Transmission) Ltd
[illegible]
[illegible]

In view of the above issues and the enduring nature of the residual risk, although the underground solution is technically possible SP AusNet does not consider it to be a satisfactory solution. It therefore does not believe that it is appropriate to underground the line.

SP AusNet is keen to explore an overhead solution as an alternative with Mirvac. Such an alternative will greatly reduce or eliminate the enduring risks associated with the underground solution as set out in this letter.

If you have any further questions please contact Farhad Tantra on 9695 6421.

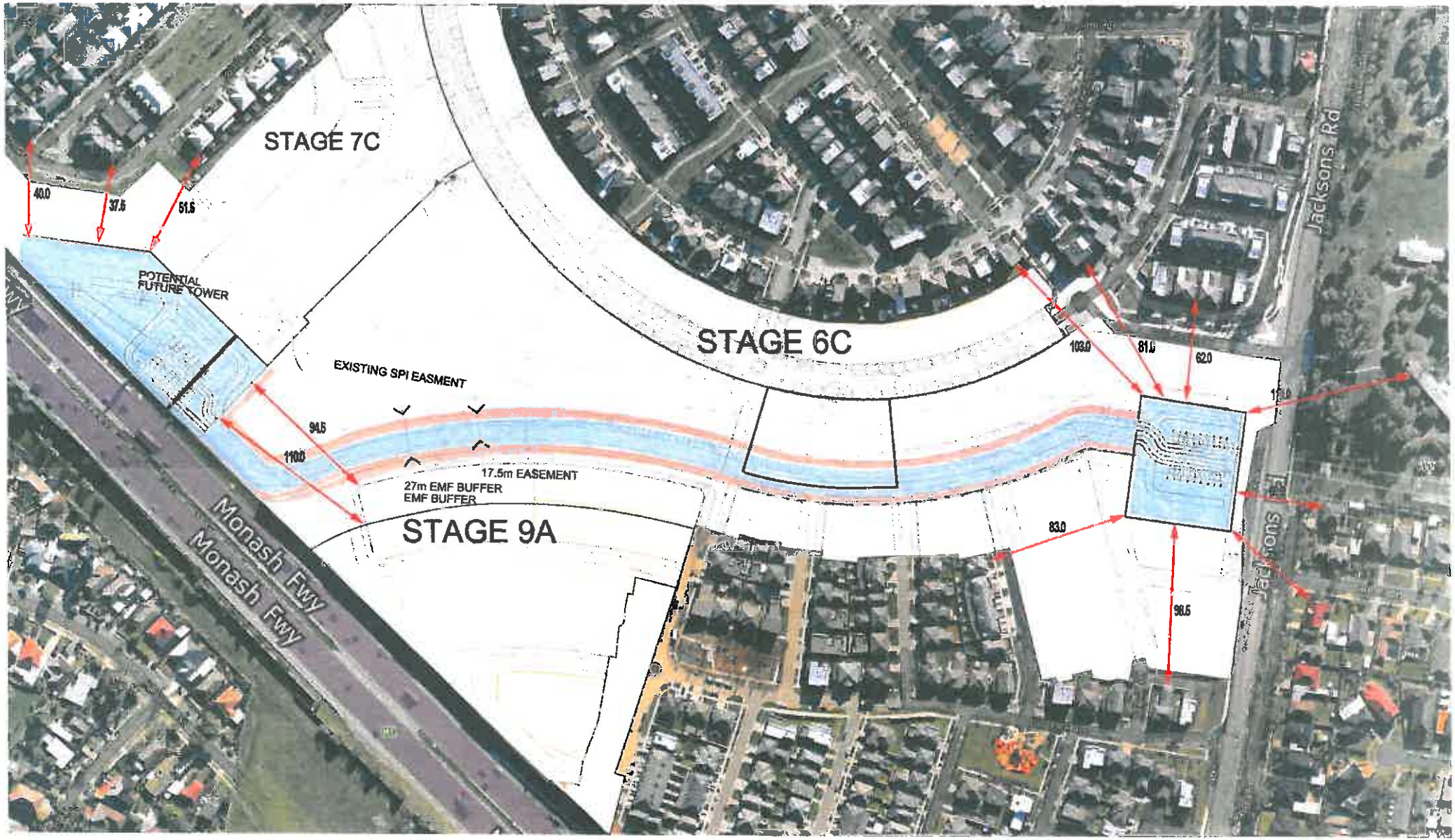
Yours sincerely,



Charles Popple
General Manager
Network Strategy & Development
SP AusNet

Appendix J

Transition Enclosure (if Powerline Below Ground) Proximate to Existing Dwellings



*NOTE - DIMENSIONS ILLUSTRATED ARE INDICITIVE ONLY

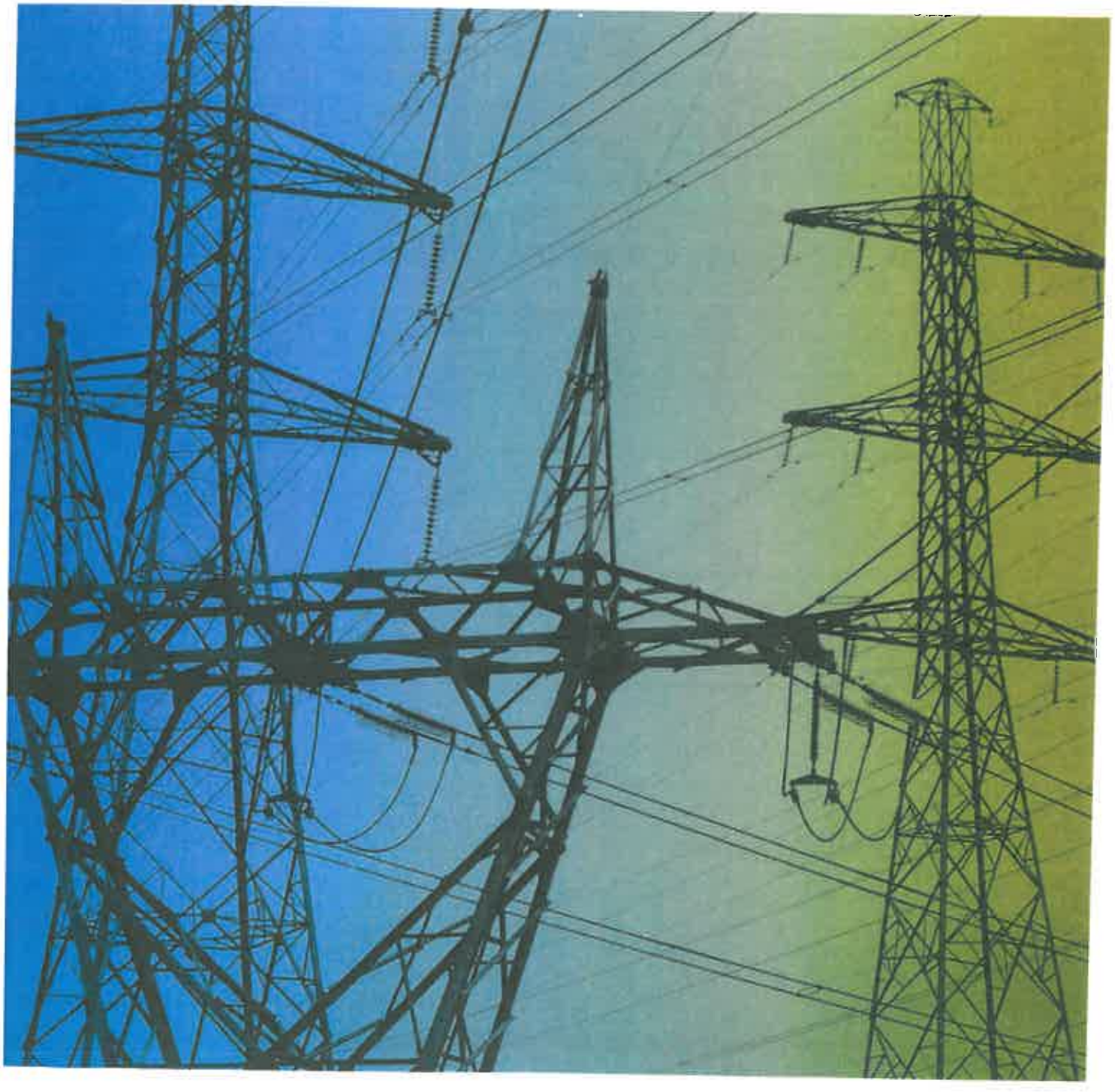
Appendix K

Report for Proposed Powerline Arrangement as Prepared by AECOM Australia Pty Ltd

AECOM

Mirvac
2 June 2011
Document No. DO-003

Waverley Park 220kV Overhead Transmission Line Project



Waverley Park 220kV Overhead Transmission Line Project

Prepared for

Mirvac

Prepared by

AECOM Australia Pty Ltd
Level 9, 8 Exhibition Street, Melbourne VIC 3000, Australia
T +61 3 9653 1234 F +61 3 9654 7117 www.aecom.com
ABN 20 093 846 925

2 June 2011

60046976

AECOM in Australia and New Zealand is certified to the latest version of ISO9001 and ISO14001.

Quality Information

Document Waverley Park 220kV Overhead Transmission Line Project

Ref 60046976

Date 2 June 2011

Prepared by Raghavendra Kulkarni / Roy Kinston

Reviewed by Stephen Boyle

Revision History

Revision	Revision Date	Details	Authorised	
			Name/Position	Signature
A	15-Jul-2011	Final for Issue	Stephen Boyle Technical Director – Energy	Original signed
1	2-Jun-2011	Revised Final	Stephen Boyle Technical Director - Energy	

Table of Contents

Executive Summary

Mirvac are developing the Waverley Park site. There is an existing SP AusNet 220kV double circuit transmission line crossing the development site from Monash Freeway to Jackson Road with two lattice towers located within the development site.

As a condition of its development permit, Mirvac are required to underground the transmission lines and since the issue of the permit in 2002 have been working with SP AusNet to resolve a suitable design. A number of significant issues have arisen through the development of the concept including the visual impact of the transition stations, the risks associated with earth potential rise in the vicinity of these stations and commercial issues surrounding the delivery model.

Leaving the existing lattice towers in place is no longer an option as there will be inadequate clearance to the new acoustic wall proposed along the Monash freeway boundary. Accordingly, Mirvac have commissioned AECOM to undertake a high level assessment of the issues associated with replacement of the existing towers with new lattice towers positioned in locations that will improve the development outcomes for the site and provide a workable option.

In consideration of the desired development outcomes and technical matters relating to works, the most appropriate solution comprises a realignment of the existing easement to follow the proposed open space corridor as indicated in drawing TL-TP1100. This realignment would require replacement of the two existing lattice towers with two new lattice (strain) towers repositioned to more appropriate locations within the estate. Presented below is a summary of this proposal.

Suspension Towers	Strain Towers	Project duration (months)	Height of Towers (metres)	Conductor Sag(*) (metres)	Spans (metres)	General Comment
-	12A	17	47.4	7.6	11A-12A: 357.5m 12A-13: 297.5m	Two new strain towers proposed to meet project requirements.
	11A		44.4	7.6	10A-11A: 348.9m 11A-12A: 357.0 m	

(*) From horizontal (based on maximum conductor temperature of 82 deg C).

1.0 Background Information

There is an existing SP AusNet 220kV double circuit transmission line crossing the development site from Monash Freeway to Jackson Road with two lattice towers located within the development site. The first tower is located adjacent to the Monash Freeway (Tower 1) and the second is located adjacent to Jacksons Road (Tower 2).

1.1 Key Considerations

There are a significant number of considerations associated with the detailed design and construction of the new tower arrangements such as Aerial Line Survey (ALS), geo-tech conditions and tower modelling. In addition to these design matters that relate to the transmission system, consideration must also be given to the Waverley Park masterplan and the stated aims of improving aesthetic outcomes. To this end AECOM have reviewed available options, starting with retaining the existing lines in the existing easement through to realignment of the easement and replacing the existing towers.

1.1.1 Retaining Existing Easement and Tower Locations

Due to clearance issue between the lines and the proposed Monash acoustic wall it is no longer possible to maintain the western (Monash) tower and a new, taller tower is proposed. The eastern (Jacksons Road) tower is very close to the proposed ring road and in its current position will compromise the masterplan and a significant number of houses to be developed in this area. Accordingly, Mirvac has indicated that if above ground structures are to remain they will need to be repositioned in an adjusted easement corridor to maximise development outcomes.

1.1.2 Off-setting the Second (Jacksons Road) Location

Within certain limits it is possible to offset the towers and realign the easement without significant works to infrastructure outside the site. Based on AECOM's assessment of the existing transmission line it should be possible to shift the eastern (Jacksons Road) tower by approximately 20-30 metre which will align the overhead easement with the landscape corridor for this part of the site. This offset would cause a deviation to the existing line of up to eight degrees, putting additional strain on the towers and the new towers will have to be constructed at higher cost as a strain tower to cater for the additional unbalanced longitudinal load.

1.1.3 Works Outside the Mirvac Site

As noted above, it is equally important to consider requirements associated with the structures outside of the Waverley Park area, i.e. the next towers beyond Monash Freeway and Jackson's Road and the towers all the way to the next strain tower. During the construction phase of the project these strain towers may have to be guyed.

The towers immediately on either side of the Waverley Park site are standard suspension towers. Significant changes in the alignment will affect the loadings on the intermediate towers through to the next strain towers beyond Monash Freeway and Jackson Road. These towers may need additional works such as strengthening though, at this stage, it is anticipated that this will only apply to the one tower on the Oblates land on the eastern side of Jackson's Road.

1.2 Proposal – Two Lattice Towers (using modified alignment)

The first (western most) new tower will be located near the Monash Freeway end close to the site of an existing tower. The location of the second (east) tower will be shifted to a position south of the existing easement to more strategic location. The existing easement alignment will change and the deviation of the line will be considerable. This tower will need to be a strain tower to accommodate the larger loads caused by the deviation and, by using a strain tower, the tower can also be located in the best interests of the development.

Mirvac will be charged a line outage fee when lines are taken out of service during construction and, in order to limit the outage duration and cost, it is recommended to divert the existing line onto Emergency Restoration (ERS) System during of the construction phase.

2.0 Project Considerations

The implications for this proposal are provided below in terms of

- Extent of works
- Type of towers
- Sags and clearances
- Project duration
- Works required outside Mirvac site
- EMF and Planning issues.

2.1 Extent of Works

The work is to replace and relocate two towers within the Mirvac site at Waverley Park so that the transmission line better aligns with the proposed redevelopment. It has not been determined exactly what work is required beyond the Waverley Park Site, but indicative information is provided in 1.1.3 above.

Refer to drawing TL-TP1100 for proposed tower location and line alignment.

2.2 Type of Towers

AECOM propose, as the basis for this option, two lattice towers with the following design parameters. These parameters are preliminary and based on the initial site investigations, SP Ausnet preliminary study and Mirvac's plans for site development. Detailed design and site conditions may cause the parameters to vary.

Tower Type	Quantity	Deviation Angle (degrees)	Height (metres)	Conductor Sag (metres)	Spans between Towers (metres)
Strain – 12A	1	-3.21	47.4	7.6	11A-12A: 357.5 12A-13: 297.5
Strain- 11A	1	6.5	44.4	7.6	10A-11A: 348.9 11A-12A: 357.5

2.3 Sags and Clearances

The tower height for the suspension tower is based on a minimum clearance of 7.8m to the proposed acoustic wall (7.2M height) adjacent to the Monash Freeway. Span lengths and the required minimum conductor height requirements have also been considered. Both tower heights have been calculated with consideration of the proposed site contours and Mirvac's proposed tower positions.

2.4 Project Duration

AECOM have considered the various tasks required for this work and typical duration times for each of them. We have estimated a total project duration for this option in the order of 13 months as indicated below for the work within the Waverley Park site. If any additional work is required to the towers outside of the Mirvac area, it is anticipated that it can occur concurrently with the work within the area.

The availability and timing of line outages will need to be to be confirmed with SP AusNet before the project duration and timing can be confirmed.

Task	Duration
1. In Principal Approval of Concept	1 months
2. Approvals	2 months
3. Design and Tendering	2 months
4. Manufacturing	4 months
5. Installation	3 months
6. Commissioning and float	1 month
Total	13 months

Note that the above times do not include a time allocation for obtaining planning approvals for the new line easement.

2.5 Works Required Outside the Mirvac Site

A desk top assessment carried out by AECOM of the changes in the line indicated that only reinforcement of the suspension tower on the Oblates land on the eastern side of Jackson's Road is required. However, AECOM is aware that the transmission asset owner, SP AusNet, is of the opinion that this tower will need to be replaced. The existing tower footings also need to be checked to confirm their adequacy for the new line loadings. For the purposes of this report the footings are assumed to be adequate.

There may also be a requirement for additional work on other suspension towers outside the development area due to the slight line deviation. This may be limited to providing suitable guying arrangements during stringing or it may require tower strengthening.

2.6 EMF and Planning Issues

A planning permit has already been obtained by Mirvac for construction of a new strain tower on the Oblates land adjacent the site for the purposes of the underground scheme. It is expected that any strengthening works to this tower can be addressed via this planning permit. (Strengthening work is an alternative to tower replacement.)

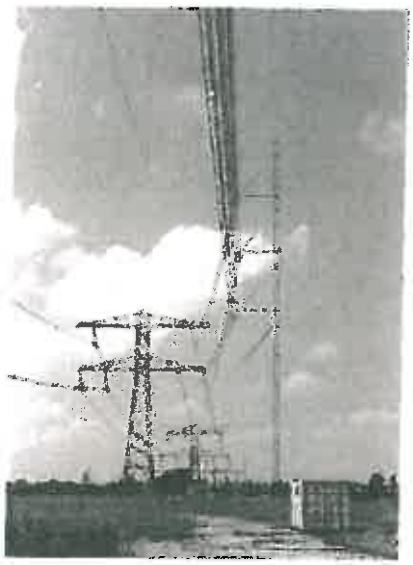
Because the line route outside the Mirvac development will change only marginally, there is not expected to be any change in EMF levels along the easement.

Within Waverley Park, the transmission line and Mirvac's layout of the estate and the position of new dwellings relative to the lines to achieve will need to be designed so that EMF levels are the same as the existing overhead lines. The line design to achieve these levels, which is based on a policy of "prudent avoidance", will require a buffer of approximately 30m either side of the centreline of the overhead lines.

3.0 General Project Methodology

It can reasonably be assumed that SP AusNet will wish to minimise line outages throughout the project and, wherever possible, keep the line in service whilst the old towers are removed and the new towers erected. This can be achieved through the use of a temporary guyed pole arrangement (known as Emergency Restoration System) which allows the conductors to be swung clear of the existing towers pending the new tower being erected. A typical example is shown in Fig 2 (source CIGRE 2004 Paris Session paper B2-304). It would be worthwhile to enquire if SP AusNet, would be able to loan or hire an ERS for the duration of the project.

Figure 1: Typical ERS Arrangement



With all the requisite approvals in place, following would be the general sequence in which project would proceed.

- The existing as-built information would be confirmed by Aerial Line Survey (ALS)
- The Sag/Tension of the conductor would be determined to ascertain existing conductor profile. This could be done from the existing PLS-CADD model from asset owner and confirmed by a new ground survey of the transmission line. This survey data would be required from strain tower to strain tower on both Monash Freeway and as well from Jackson's Road ends.
- Where existing tower locations and easement are being used, the existing asset data in regard to conductor profile, sag, tension, soil type would be used as the design criteria.
- Based on the line model, the structure loads on each tower would be calculated and the new towers would be designed.
- For the proposed tower locations, a detailed geotechnical investigation would be carried out to ascertain the soil parameters so that footing design can be carried out. Bores will be required at tower locations, with a depth up to 10m or more depending on the soil type.
- Foundation design and drawings would be developed for each of the locations.
- Line outages and project construction schedule will be planned in collaboration with SP AusNet.
- Suitable arrangements to support the towers beyond the Mirvac area (e.g. by guying) during dismantling & stringing must be implemented.
- We have assumed that ERS system would be available during construction and lines will be swung across to the ERS.
- Existing towers will be dismantled after swinging lines to the ERS and new towers erected.

- Where towers are located sufficiently distant from existing tower locations, they may be erected prior to tower dismantling.
- Once towers are erected, stringing of the conductors onto the new towers will take place.
- Removal of the tower support measures and ERS structures.
- Commissioning and clearing of site.

Appendix L

Landscape Concept Plan

LEGEND:

Fitness Trail

Outdoor Gym ⑥

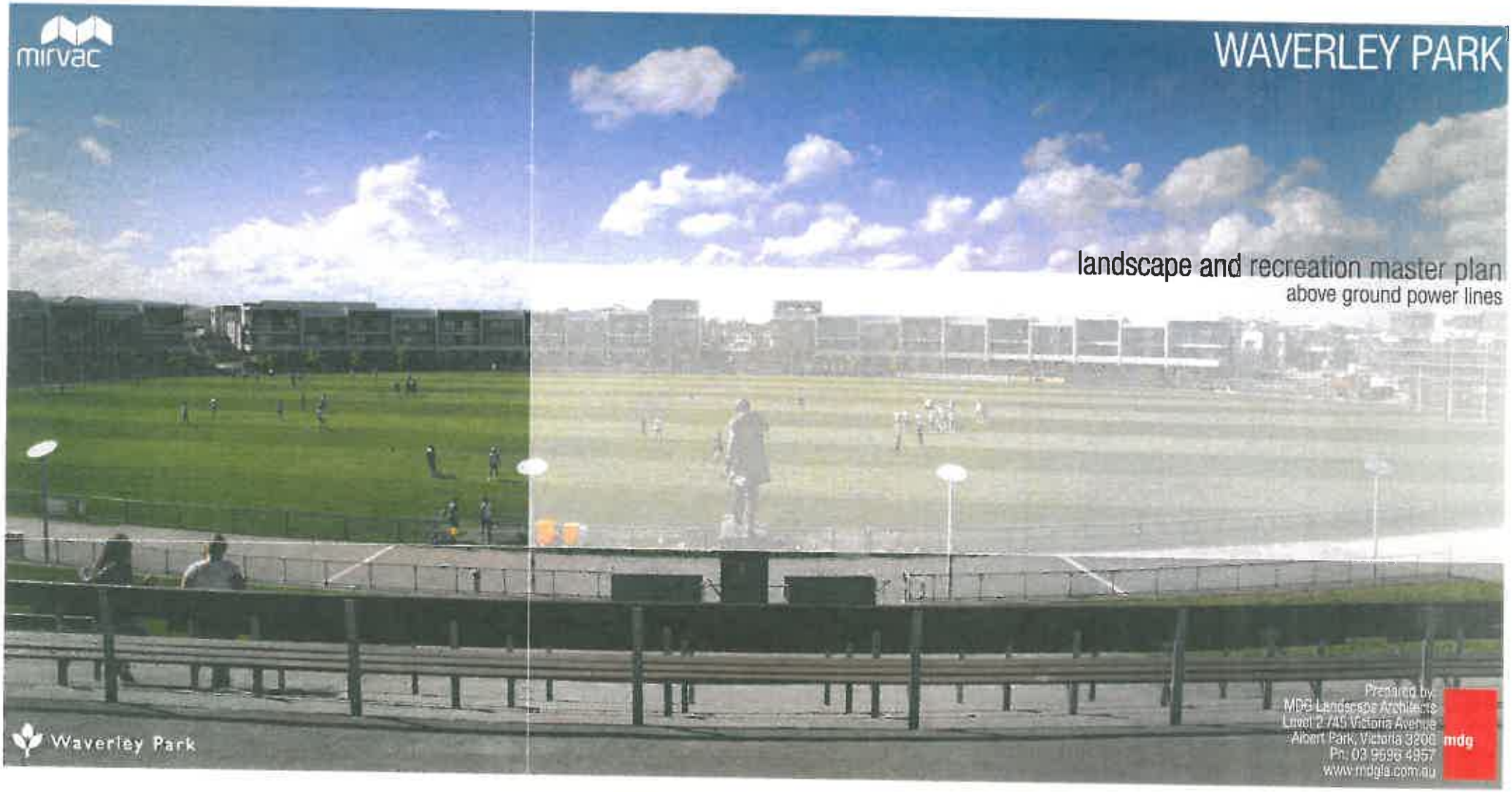
Exercise Station ① – ⑥

Waverley Park

Above Ground Power Line Proposal

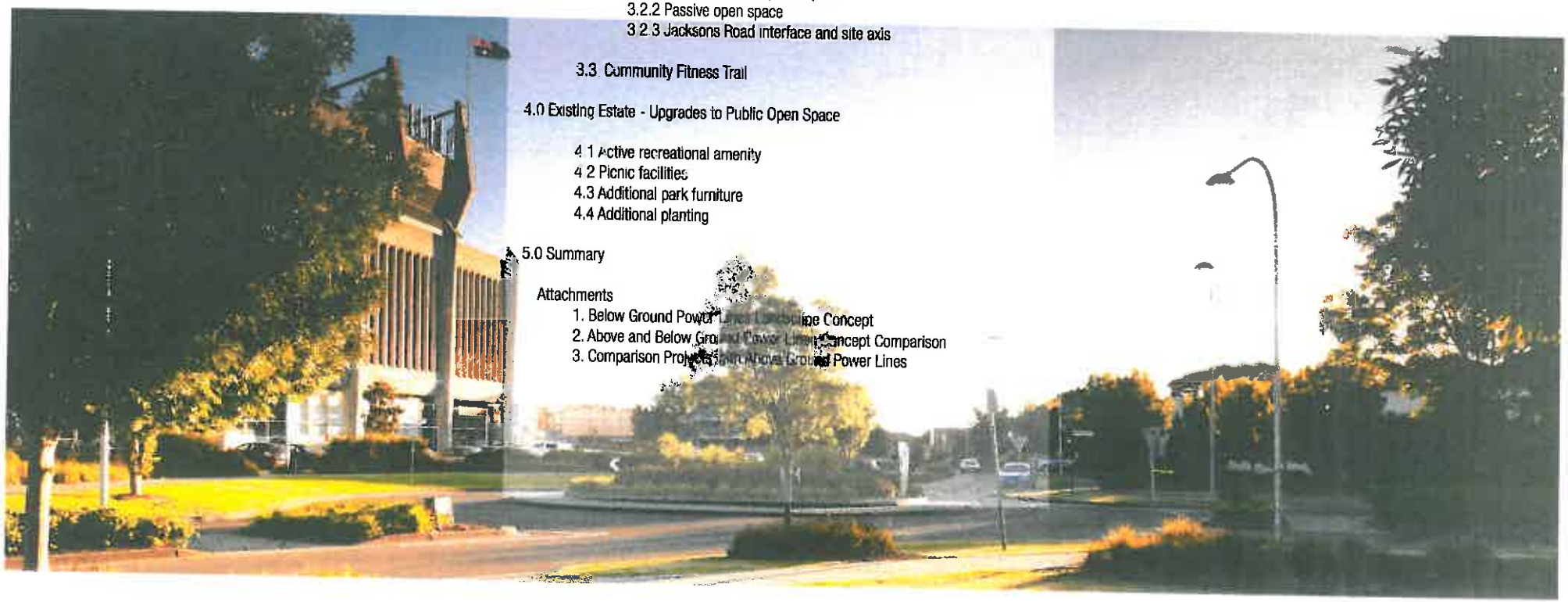
Appendix M

Landscape and Recreation Masterplan Report prepared by MDG Landscape Architects



PLANNING PERMIT AMENDMENT APPLICATION
Date: 17.07.2013

Contents



1.0 Introduction

MDG Landscape Architects have been engaged by Mirvac Victoria as Landscape Architects for the Waverley Park redevelopment since the inception of the project in June 2001.

In October 2009, MDG in conjunction with Mirvac Design commenced a significant review of the master plan for the balance of the site to be developed, as a result of the proposal to retain the existing power lines above ground. The review identified opportunities for significant improvements that were incorporated into an amended landscape master plan and subdivision master plan for Waverley Park, which formed part of the Planning Permit Amendment Application submitted by Mirvac Victoria in June 2011.

Following the submission in 2011, MDG Landscape Architects commenced a further review of the landscape master plan and existing recreational amenity within the development as part of a broader "community benefits package". At the same time both the above and below ground power lines master plans have been updated to incorporate urban design changes within the balance of site that affect the boundaries of the Lake and Wetland open space on the southern and western sides. This further review has identified the opportunity for enhanced community benefits through additional improvements to recreational amenity, including:

- Re-design of the proposed public open space associated with the power line corridor to address community concerns over the location of open space amenity such as the children's playground, as highlighted through ongoing dialogue between residents of Waverley Park and Mirvac representatives; and

- Upgrading existing public open space reserves at Waverley Park to provide enhanced amenity throughout the estate; MDG has assessed the existing open space amenity at Waverley Park and identified opportunities for possible upgrades and enhancements that would provide positive community benefit for the residents of Waverley Park.

As part of this review, Mirvac and MDG consulted and liaised with a number of stakeholders including the Department of Community Development, the City of Monash (management and officers, the Mayor and local ward Councilors), and residents and property owners at Waverley Park. The range of possible upgrades to existing parks has been reviewed with management and officers of the City of Monash and has been given in principle support. The review has also involved further analysis of the Waverley Park recreational context within the City of Monash that has informed proposals for enhanced community benefits within the new landscape master plan proposals.

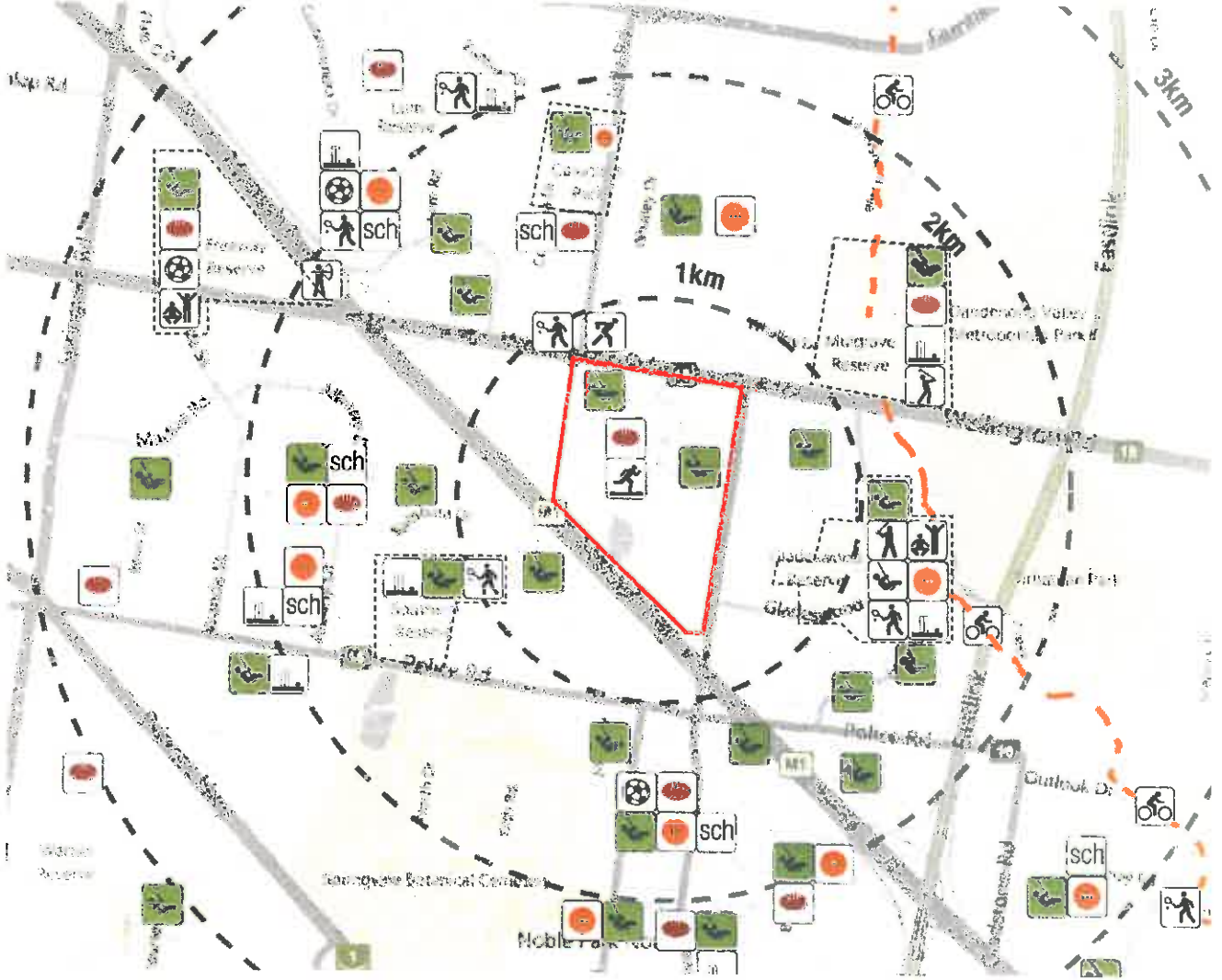
The amended landscape and recreation master plan, including re-design of the lake and wetland picnic and playground amenity area and proposals for upgrades to the amenity of existing open space reserves is described in detail in this report.

2.0 Context

2.1 Location and Site

The site is located in Mulgrave within the City of Monash approximately 23 kilometers east of the Melbourne CBD. Waverley Park includes 80 hectares of land abutting Wellington Road to the north, Jacksons Road to the east and the Monash Freeway to the South. The western boundary interfaces the Woolworths distribution centre, and in the north east corner of the site there is an interface to two light industrial / office buildings that front Wellington Road and Jacksons Road.

The landform of the overall site includes a ridge line running from the north to the south east corner, creating two separate drainage catchments. The larger catchment drains to a constructed lake and wetland system that has already been partially constructed by Mirvac as part of the development of the site. There are some established existing trees that have been retained on the site to date, but there are no existing trees retained in the area that is the subject of this report.



Recreation Context Plan

LEGEND

- Site Boundary
- Sports Oval with Cricket and Australian Rules Football Facilities
- Play Equipment
- sch Facilities Located on School sites
- Archery Facility
- Baseball Pitch
- Basketball / Netball Court
- Basketball practice 1/2 Court
- Bowling Green
- Cricket practice Area
- Golf Course
- Fitness Circuit
- Running / Walking Track
- Soccer Pitch
- Tennis Court
- Cycle / Walking Trail

2.2 Recreation and Amenity

The Waverley Park development is serviced by facilities within the local neighbourhood, including open space within public reserves, schools, and private land such as sporting clubs (refer to Recreation Context Plan opposite). Open space reserves that are located within a two kilometer radius of Waverley Park provide residents with access to playgrounds, sports facilities, walking tracks and trails, and cycle trails. The nearest public facilities are contained in five reserves: Mulgrave Reserve, Gladeswood Reserve, Columbia Park, Southern Reserve, and Freeway Reserve. The frequency of use of these facilities by residents of Waverley Park would be influenced by the distance of travel to these amenities and constraints imposed by physical and perceived barriers such as arterial roads and the Monash Freeway.

The Waverley Park development currently has three local scale playgrounds as defined by the City of Monash Playground Classification. The Waverley Park Oval is a central active recreational space within the development that is a full size oval for casual use with a perimeter running and walking track. There are existing walking tracks and shared pedestrian and cycle paths through and around the estate.

The master plan for Waverley Park that was based on the power lines being placed underground included a linear open space adjacent to the power line easement, with the lake and wetlands as the major open space area of the site. Refer to Attachment 1 for detail of the below ground power lines landscape master plan and the level of recreational amenity provided.

2.3 Design Vision

A significant section of the overall site had already been developed, and construction of new stages has continued where unaffected by the location of the power line easement. The extent of Waverley Park development that has been built or is currently under construction is shown in the plan to the right, together with the balance of the site that has been re-designed as a result of the proposal to maintain the power lines above ground.

Key aims of the overall landscape master plan for the development are to:

- Create a highly attractive development and public realm that makes for a high quality living environment in which people will want to live, with a clear local identity and sense of place and community;
- Promote and support walkability and bicycle use by providing legible and easy connectivity within the site and to the external road and path network;
- Provide accessible and high quality public open spaces that offer a range of passive and active recreation opportunities for all age groups, supporting community needs including gathering, relaxing, play and fitness;
- Promote active and healthy lifestyle choices for residents;
- Protect and reinforce environmental values and biodiversity;
- Deliver a memorable, balanced and distinct landscape setting for an environmentally and socially sustainable urban community.

The landscape proposals for the open space associated with the balance of the site will need to respond to this vision, and integrate with the character of the existing landscape built in the previous stages of the development.

Extent of Development Master Plan


LIVERPOOL STREET
GIPPS COURT
SOUTH HAMPTON DRIVE
LORDS AVENUE
DUDLEY COURT
BALDWIN LANE
STADIUM CIRCUIT
PUNT LANE
ST JAMES DRIVE
BROOKEFIELD LANE
MCLESHORTH DRIVE
EDGBASTON WAY
BEACONSFIELD ROAD
MONASH FREEWAY

3.0 Balance of Site – Landscape and Recreation Master Plan

The master plan proposal for retention of the above ground power lines delivers a linear park that is 775 metres in length extending from Jacksons Road in the east to the Monash Freeway in the west, generally aligned to the easement associated with the electrical power lines. This open space corridor forms the major open space area of the site, and is a continuation of the open space network that ties all the main parks of the development together.

The linear park is contained by a number of edges including a connector road, local access streets, Jacksons Road, direct house lot frontages, and a section of the Monash Freeway acoustic wall.

Pedestrian and cycle connectivity is catered for by footpaths and shared paths that have clear links to the broader path network of the development. Full connectivity between all areas of the site and to adjacent neighborhoods would be achieved for both pedestrians and cyclists, including clear and safe connections to the Oval, Stadium, external road network, and linkages throughout the open space network.

Vehicle access to the linear park is from local access streets, and a connector street running broadly east west to the northern side of the open space. On street car parking would be maximized on these roads, particularly where the road directly interfaces the park.

The proposed landscape concept builds on the previous design proposals for the below ground power line scheme, and introduces additional elements to provide improved community benefits that are inclusive of a broad range of users and age groups, in line with City of Monash policies. The resulting design offers a setting for passive and informal active recreation, providing amenities such as seating, shelter structures, paved areas and walking trails, play spaces, active sports, as well as open lawn areas for picnicking and informal recreation.

The linear park is divided into two distinct components:

- Lake Park with associated wetlands, bioretention and retarding functions; and
- Entry Park adjacent to Jacksons Road.


Picnic Area


Play Space


Boardwalk


"Kick About" Area


Fitness Station and Trail


Youth Space

3.1 Lake Park

The Lake Park is intended to form the hub of the recreational open space within the overall Waverley Park development, providing an expansive natural landscape experience that integrates habitat creation and biodiversity with recreation.

The Lake Park can be divided into two key areas:
1. Lake Park passive open space
2. Lake Park activity node

Lake Park Passive Open Space
The majority of the Lake Park is semi-natural in character as a lake and wetland environment with an open water body, vegetated wetland and planted and grassed drainage batters. This semi-natural environment provides an opportunity for passive recreational activities, and a variety of walking and cycling trails and routes that connect to the wider development.

The walking trails provide a range of circuits that are accessible to all abilities and age groups on all weather surfaces, including concrete paths and timber boardwalks. The circuit immediately around the lake is 475m in length, and a walk can be extended to include up to 3.1km of walking trail within the larger linear park. A series of exercise stations are located within the Lake Park along the walking and running trails as part of a Community Fitness Trail that is described in Section 3.3; these contribute to a greater diversity of recreational activity within the park.

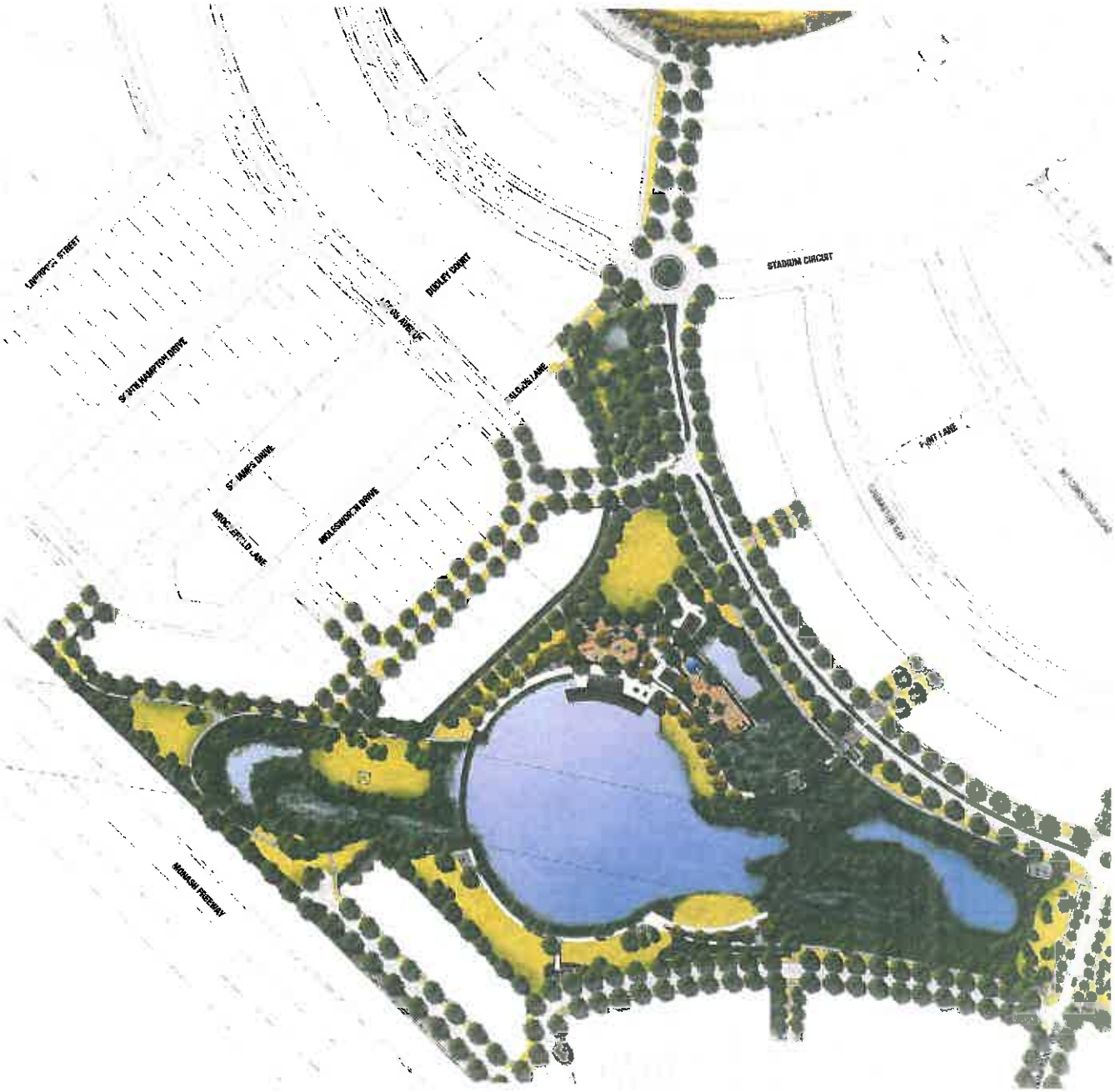
Substantial tree plantings are achieved outside of the power line easement and would provide scale and structure to the park. These trees will quickly establish, softening views to the transmission towers and power lines from the surrounding streets and residences and from within the park itself. Plantings within the area would be predominantly native, with a considerable component being indigenous to the area.

The opportunity to incorporate a dedicated off-leash area for dogs within the passive open space should be considered and would need to comply with City of Monash requirements. It is proposed that this is reviewed at the detailed design stage.

Lake Park Activity Node
The Lake Park activity node is located on the north side of the lake, near to existing development on the site and with a clear connection back towards the Oval. The node is comprised of the following activities or use, co-located so that there is integrated access and connectivity for individuals, groups or families using the facilities:

- Play Space
- Promenade walkway
- Grassed informal "kick about" area
- Outdoor gym fitness equipment
- Picnic and lakeside amenity area

All amenities are accessible at grade without the need to use ramps or stairs.



3.1.1 Play Space

Located at the centre of the Lake Park activity node are play spaces for a range of ages and ability. These spaces have been reconfigured from the layout proposed in the previous Planning Permit Amendment Application (2011), so that the play spaces are now located further away from the power lines. The play spaces are located in an area that is between 32m and 75m offset from the edge of the power line easement.

Playground equipment would be installed for junior and senior age levels, within a natural landscape setting that enhances the diversity of play opportunity. Sand and mulch areas with rocks and planting would provide special environments for unstructured creative and imaginative play, while a diverse range of play equipment would include at least one large combination unit, slides, swings, a flying fox, and possibly a large climbing cable net structure or other lookout type element.

The play equipment and overall setting would be designed to provide equitable access as an Accessible Playground as defined in the City of Monash Playground Classification, so that there are several items of equipment designed for those with special needs. The play areas would be contained by fence protection due to proximity to the wetland and lake water bodies, in line with Life Saving Victoria guidelines. Passive surveillance of the area is gained from the picnic area and walking trails.

1. Elevated view of the Lake Park picnic and playspace area
2. View within eastern play space
3. Balance beams and sand play example, Riverwalk, Werribee
4, 5. Existing play spaces at Waverley Park
6. Themed play space, Williams Landing, Laverton
7. Accesible play equipment example, Birrarung Marr


Play Space


Promenade walkway


Grassed informal "kick about" area


Outdoor gym fitness equipment


Picnic and lakeside amenity area

3.1.2 Promenade walkway

Forming part of the walking trail around the lake a hard paved 4m wide waterside promenade, with seating, shade trees and planting, provides passive recreation and relaxation in a location with views across the lake and wetlands. This walkway connects to the circuit loop extending around the perimeter of the lake.

3.1.3 Grassed informal "kick about" area

On the higher ground above the picnic area and Play Space is a large level informal grass area that has been created in the master plan as a result of reconfiguration of the road and subdivision to the north-west. This space creates a strong link to the Oval as an additional large grassed informal "kick about" area of approximately 50m x 40m that can accommodate play and other informal active pursuits. The layout in this area has been amended from the Planning Permit Amendment Application (2011) version to provide a stronger connection to the picnic facilities and play spaces.

3.1.4 Outdoor gym fitness equipment

At the western end of the activity node, at one end of the promenade walkway is a proposed outdoor gym that contains high quality outdoor equipment designed to meet a range of fitness requirements including cardio, strength and agility elements. These types of fitness equipment have proved to be very popular where they have been installed in other parks in Melbourne, for example at Alamanda in Point Cook. This fitness gym is part of a Community Fitness Trail that is described in more detail in Section 3.3 of this report.

3.1.5 Picnic and lakeside amenity area

The picnic area would service both residents of Waverley Park and visitors from the surrounding neighbourhood as a district scale amenity, with one large shelter and three smaller shelters providing all weather protection. A range of groups or families would be accommodated, with the provision of 5 double barbecues, and up to 12 picnic tables located both under shelters and in the open air. One shelter has been relocated in this revised version of the master plan so that it is within the fenced Play Space; this will better accommodate family groups and children's parties that are using the play area. Casual seating is also provided, with tree planting providing additional natural shade. A picnic lawn space adjacent to the lake edge and the large picnic shelter give further opportunity for large and small group gatherings, and a 5.5m wide boardwalk area adjoining the lake creates a focal point for the picnic area.

1. Looking south towards the lake from the barbeque and shelter area
2. Looking east along the promenade walkway
3. Looking east towards the boardwalk and picnic shelter area

1. Example of wetland boardwalk, The Rise, Lyndhurst
2. Existing Waverley Park Stage 4 Park
3 . Lake and wetland example, Roxburgh Park
4,5. Examples of landscape treatments
6. Picnic shelter example, Aurora, Epping North
7. Elevated view of 'kick about' lawn area

3.2 Entry Park

The revised master plan for the above ground power lines opens up the interface of the development to Jacksons Road with the creation of a considerable open space that in this report is described as the Entry Park. This open space complements the Lake Park in delivering an overall linear park space that caters for all age groups, by providing for a different part of the community demographic and age group focused on teenage and young adult activities within active open space outside the power line easement. This active open space would provide for a range of sporting and recreational uses.

The key components of the Entry Park are:

- Sports court and Youth Space;
- Jacksons Road interface and site axis; and
- Entry Park passive open space.

1. Example of sports court, Aurora, Epping North
2,3. Examples of landscape treatment
4 . Amphitheatre seating, Highlands, Craigieburn
5. Example of landscape treatment
6. Example of wetland boardwalk
7. Example of wetland edge treatment

Sports Court / Youth Space

Picnic Shelter with Barbeque facilities

Climbing Wall

Outdoor Gym

Community Fitness Trail - Exercise Station

Axis walkway and boardwalk with sculptural elements

3.2.1 Sports court and Youth Space

The focus of activity within the Entry Park is the multi-purpose sports court including a full size basketball court and integrated soccer goals that can accommodate informal 7-a-side soccer games, with netball rings on the sides. This court is set within a youth-oriented space in the form of a robust gathering and informal seating area with natural shade provided by native evergreen canopy trees. This space would include terraced seating for gathering and viewing the court activity, and large scale 'lounge' furniture for casual use. The seating and terraced areas would be designed to be skate-friendly and would accommodate use by skaters, scooters and bmx bikes. Integrated as an extension of the terrace seating, it is proposed to install a challenging climbing wall with rubber softfall base, to provide further diversity of activity and more intense use of the space. This climbing wall would be designed and audited to meet all relevant Australian Standards, to ensure public safety requirements are met.

To the side of the court is located a medium scale picnic shelter with barbeque facilities, and adjacent to the picnic shelter a second outdoor gym is proposed as part of the Community Fitness Trail. These facilities will promote a broader mix of users and age groups within the park area, and assist in creating a perception that the area is accessible to all members of the community. The shelter and barbeque may also be used by youth sporting clubs for an informal group gathering or end of season event, and the seating terrace around the court could be used for local community events or gatherings.

This sport and play zone forms a separate activity precinct within the larger linear park area, which is a key definition within the City of Monash Playground Classification for a Significant Playground. In combination with the Lake Park playground precinct the overall provision of play may be viewed as meeting the requirements for a significant playground area, which does not currently exist within the municipality.

1. Elevated view of sports court and youth space
2. View of proposed shelter and barbeque area
3. Community gathering space example, Highlands, Craigieburn
4. Skate friendly space example, Caroline Springs
5. Climbing wall example
6. Sports / basketball court example

1. View of proposed sports court and climbing wall
2. View of proposed shelter and barbeque area from the sports court

3.2.2 Passive open space

The Entry Park extends west towards the lake and wetlands and is crossed by two streets running approximately north-south. The central component of the overall linear park space is part of the estate drainage treatment and contains a sedimentation pond, bioretention swale and retarding basin, with generally steep grass batters within the easement. This space is largely visual in nature, with access limited to walkways around the edges as part of the overall trail network, and including an exercise station as part of the fitness trail.

The semi-natural character of the lake and wetland environment is continued through the Entry Park, so that the two areas combine to form a seamless and continuous linear park. An overall increase in the density of tree planting along the southern edge of the power line corridor is achieved compared to the original below ground power lines master plan, as a result of creating additional space in the subdivision plan through a 5m relocation of the roadway outside the easement. These tree plantings would provide scale and structure, and would quickly establish to soften views to the transmission towers and power lines. Plantings within the area would again be predominantly native, with a considerable component being indigenous to the area.

3.2.3 Jacksons Road interface and site axis

The open space at the interface to Jacksons Road provides an enhanced site address, and incorporates the major signalized intersection that is the main site access point from Jacksons Road. This interface is a 125m wide, and incorporates tree planting and a small open water body and wetland.

Recognition and reinforcement of the visual and physical axis of the site leading to the Oval and Sir Kenneth Luke Stand is expressed through the incorporation of large sculptural elements along a walkway aligned to the axis. The sculptural elements are akin to the skeletal structure of the Stand, and there is an opportunity to incorporate historic interpretive elements as part of the site's interpretive trail. The overall feature would act as a landmark for passing traffic on Jacksons Road.

The inclusion of tree planting, the water body and a boardwalk crossing of the water on the axial walkway greatly improves the visual amenity of the Jacksons Road entrance area, not only reinforcing the visual axis through the overall master plan, but also taking viewers' eyes away from the power lines. The water body would be fed from a local drainage catchment and water from the main lake via a wind pump or electric pump powered by a wind generator.

Plantings of tall native evergreen canopy trees outside of the power line easement is arranged in a grid that further reinforces the axis and master plan of the site, with the central part of the grid left clear to allow views up the axis and to highlight the sculptural features.

The walkway aligned to the axis is connected to the linear park walking trails and forms a part of the Community Fitness Trail; there are direct connections to the sports court and Youth Space, the Jacksons Road shared path, and the continuation of the axis through to the Oval and Stadium.

1. View of proposed sculptural walkway on the site axis
2. View of proposed Jacksons Road interface, and site axis with sculptural elements and boardwalk
3,4,5. Examples of semi-natural drainage and walkway treatments

3.3 Community Fitness Trail

To promote an active healthy lifestyle for residents it is proposed to develop an integrated fitness trail that connects through the linear park and back to the Waverley Park Oval. This trail would include a co-ordinated series of exercise stations that contain high quality outdoor gym equipment designed to meet a range of fitness requirements including both cardio, strength and agility elements. Within the open space network there would be significant opportunities for longer and shorter loops as part of the overall fitness trail. The equipment is installed with signage that has instructions for use, and is easily maintained.

The proposal to include a major fitness trail within a substantial new open space linear park is in line with the City of Monash Physical Activity Plan, which recommends the development of a significant park within the municipality and the development of outdoor fitness equipment. In summary, the proposal would provide:

- An integrated fitness trail that connects to the existing Waverley Oval fitness facilities and links through the Lake and Entrance parks along a circuit that extends up to 2.5 kilometers;
- A co-ordinated series of exercise stations that contain high quality outdoor gym equipment designed to meet a range of fitness requirements including both cardio, strength and agility elements;
- Significant opportunities for longer and shorter loops within the overall fitness trail.

Equipment Stations
Outdoor Gym (G)
Exercise Station (1) – (6)

Circuit Loop
Approx. 2.5 loop incorporating all stations and the oval circuit

1. View of proposed Outdoor Gym in the Entry park
2,3,4. Examples of oudoor gym and fitness equipment

4.0 Existing Estate – Upgrades to Public Open Space

As part of the proposal for the retention of the above ground power lines Mirvac have committed to upgrading existing public open space reserves at Waverley Park as part of the "community benefits package".

MDG have undertaken a review of the existing open space amenity at Waverley Park and this review has identified opportunities for a range of upgrades and enhancements that would provide further positive community benefits for the residents of Waverley Park. While there is already a good level of open space amenity within the estate that is in line with the design vision identified in Section 2.3 of this report, upgrades to the existing parks will further benefit individual local neighborhood communities within the existing estate by:

- Enhancing high quality public open spaces to offer a broader range of passive and active recreation opportunities for all age groups, supporting community needs including gathering, relaxing, play and fitness;
- Further promoting active and healthy lifestyle choices for residents; and
- Reinforcing environmental values and increasing biodiversity.

The review of the existing open space and amenity identified which parks have capacity for improvements and also the types of upgrade that would provide positive community benefit. Five of the existing public open space reserves are either of a size that can accommodate new amenity or have existing amenity that can be extended or improved. These reserves are identified on the plan shown right.

A range of possible upgrades are proposed that can be divided into the following categories:

- Active recreational amenity;
- Picnic facilities;
- Additional park furniture; and
- Additional planting and shade trees.

The proposals have been reviewed with management and officers of the City of Monash and have been given in principle support. The final design of the amenity upgrades will involve consultation with Waverley Park residents and further co-ordination with the City of Monash, and all works proposed will be subject to approval by the City of Monash.

Stage 1A Park

Stage 1C Park

Stage 2B Park

Stage 4G Park

Stage 7A Park

Existing public open space reserves suitable for upgrade

4.1 Active recreational amenity

Active recreational amenity upgrades to support community needs such as fitness and play:

- New basketball half court(s) including all weather surface, hoop and backboard, line marking etc;
- Existing playground refurbishment and additional equipment; and
- Additional junior playground in a park that has a neighbourhood demographic with young families



4.2 Picnic facilities

Provision for picnicking and gathering within existing public open space:

- Upgrade to an existing park shelter structure to include roofed weather protection;
- Addition of picnic tables and benches and rubbish / recycle bins (subject to agreement with City of Monash); and
- Addition of double barbecue to one park that has a picnic shelter (subject to agreement with City of Monash).



4.3 Additional park furniture

Additional furniture elements to support passive use of open space, such as:

- Picnic tables and benches;
- Park bench seating; and
- Bicycle parking hoops.



4.4 Additional planting

General streetscape and open space enhancements that reinforce the character of the existing development and reinforce environmental values and increase biodiversity:

- Replanting of existing garden beds within parks and streetscapes; and
- Planting of additional canopy shade trees.



5.0 Summary

The linear park landscape concept proposal for the above ground power lines master plan has the potential to create a large, extremely attractive and recreationally diverse park for both the Waverley Park community and visitors from surrounding neighborhoods.

The vision detailed in this report would deliver a district scale recreational resource with a substantial increase in the level of passive and active amenity compared to the original below ground power line master plan. The 14,300m2 increase in level useable park area accommodates a park with cutting edge facilities and amenities that are a major recreation and lifestyle asset aimed at a broader range of the community.

In addition to the enhanced proposals for the linear park space, upgrades to existing public open space reserves in the estate are proposed that will provide further benefit to the existing and future community at Waverley Park.

The proposed landscape concept and associated improvements are achieved through a combination of initiatives, including:

- Research and consultation by the design team, including response to City of Monash policies incorporated in the Physical Activity Plan, Recreation Around Waverley Park document, and Playground & Playspace Strategy;
- Review and revision of the master plan for the balance of the site to maximise useable open space in the linear park area, particularly around the Lake Park and including extending the park space northwards towards the Oval and forming clearer connections to the open space network around the site;
- Increasing the size of the play space and providing diversity of play opportunity, and increasing picnic and barbeque facilities at the lakeside setting as the central hub of the park, so providing district park scale facilities;
- Extension of walking and running trails throughout the linear park;
- Addition of a Community Fitness Trail with fitness stations and outdoor gym equipment on varying length circuits up to a maximum single circuit length of approximately two kilometers, with links back to the running track around the oval and the gymnasium in the Stadium;
- The creation of a new Entry Park adjacent to Jacksons Road that complements the Lake Park as a space that caters for all age groups but focuses on teenage and young adult activities with active open space that provides for a range of sporting recreational uses, skate friendly robust seating and platforms, and a shelter and barbeque;
- Recognition and reinforcement of the visual and physical axis of the site leading to the oval and stadium through the incorporation of sculptural elements, with the opportunity for historic interpretive elements as part of the Heritage interpretive trail;
- Enhancement of the site address to Jacksons Road with an open water body and wetland;
- An increase in tree planting to provide scale and structure to the perimeter of the power line easement, and a general increase in understorey planting to create a semi-natural landscape quality for the overall linear park space; and
- Upgrades to existing public open space within the estate to provide additional amenity and positive community benefits for the residents of Waverley Park.

Attachments

Attachment 1

Below Ground Power Lines Landscape Concept

Attachment 2

Above and Below Ground Power Lines Concept Comparison

Attachment 3

Comparison Projects with Above Ground Power Lines

Attachment 1

Below Ground Power Lines Landscape Concept

Figure 1.
Landscape Concept Plan

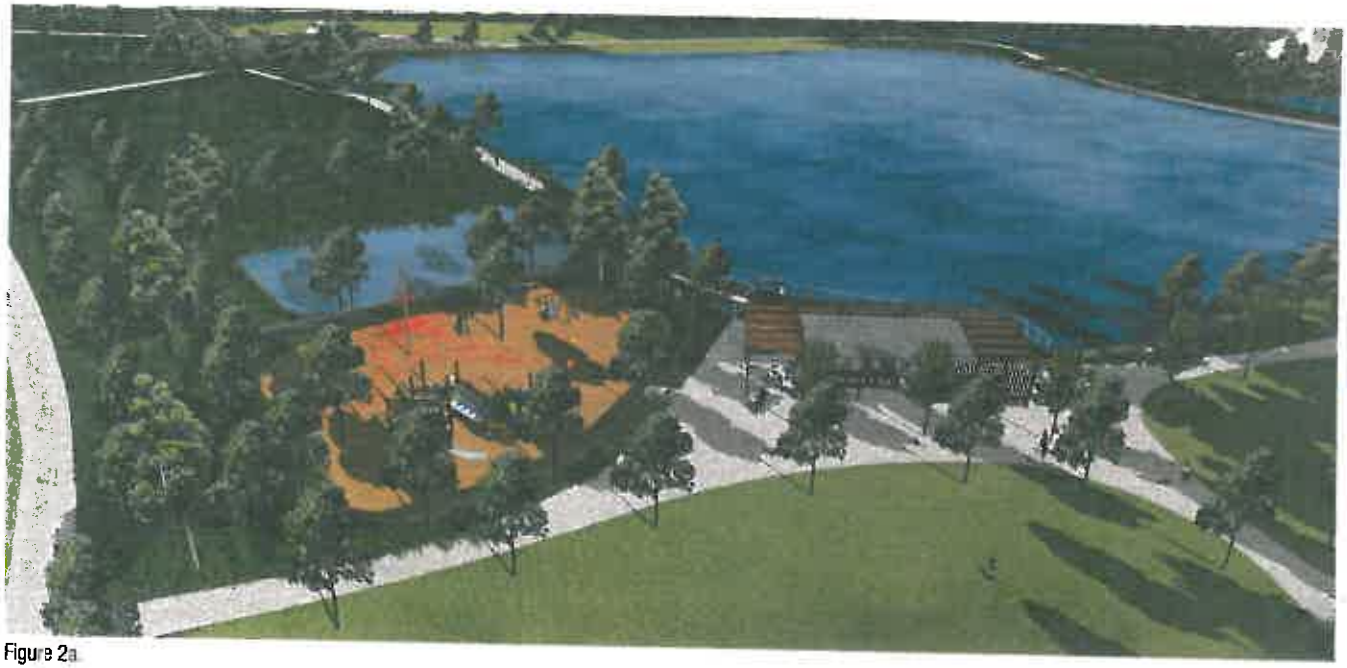


Figure 2a.
Elevated view of the picnic area and play space

Figure 2b.
Looking east towards the picnic shelter and play space

Figure 2c.
Looking west towards the picnic shelter

Figure 2d.
Transition enclosure and tower on west side of park adjacent to the Monash Freeway

Figure 2e.
Transition enclosure and tower adjacent to Jacksons Road

Attachment 2

Above and Below Ground Power Lines Concept Comparison

The amended design for the above ground power lines includes the addition of approximately 20,565m² of open space within the central open space corridor. Through improved utilisation of the space within the power line easement and reworking of the urban design for the land subdivision, there is a significant increase in the useable area of the park (defined for the purposes of this report as the level areas outside the power line easement and not including water bodies or drainage batters as part of the lake and wetlands). This 44% increase in overall park area and 350% increase in "usable" park area allows the creation of a significantly enhanced parkland amenity compared to the original scheme.

The linear park is 775m in length, and generally varies in width from 80 to 200m. At the interface to Jacksons Road, the visual opening created by the park and road reserves is 125m wide from building title boundary in the north, to building title boundary in the south.

Above Ground Power Lines Concept

Below Ground Power Lines Concept

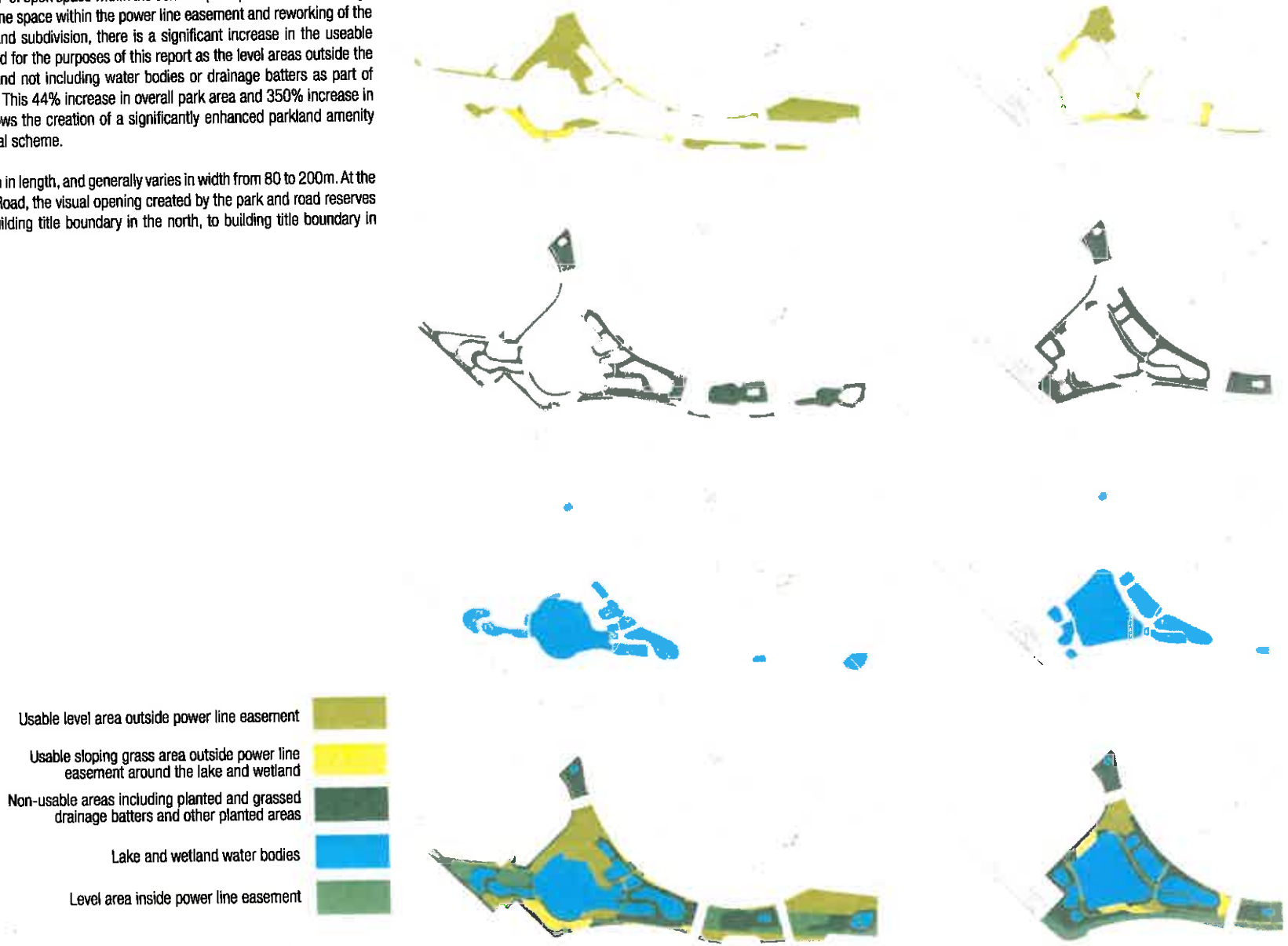


Figure 1. Land Use Comparison

Figure 2. Scheme Comparison Chart

	Below Ground Power Lines Proposal	Above Ground Power Lines Proposal	Comparison
Total Park Area	47,100 m²	67,665 m²	20,565 m² increase
Usable Level Area Outside Power Line Easement	5,700 m²	20,000m²	14,300 m² increase
Usable Grassed Batters Outside Power Line Easement	2,000 m²	2,300m²	300 m² increase
Level Area Inside Power Line Easement	4,900 m²	7,800 m²	2,900 m² increase
Non-usable Area Including Drainage Batters	15,100 m²	17,265 m²	2,165 m² increase
Lake Area and Wetland Water Bodies	19,400 m²	20,300 m²	900 m² increase
Enhanced Amenity			**Enhanced amenity in the Above Ground proposal:**
Walking Trails	1.5km	3.1km	1.7km additional path
Seating	12	26	14 additional seats
BBQ	2 double BBQ's	6 double BBQ's	4 additional double BBQ's
Lake Park Picnic Shelter	1 medium shelter	1 large shelter & 3 small shelters	Larger shelter & 3 additional small shelters
Boardwalk	210m	225m	15m additional boardwalk
Picnic lawn	1300 m²	1300 m²	
Play space	Standard play space	Regional type play space with equitable access	Access for all play space with:
- Junior Play	155 m²	680 m²	525 m² additional junior play space
- Senior Play	325 m²	775m²	450 m² additional senior play space
		Increased tree planting and soft landscape	Increased tree planting and soft landscape
New Amenity			**New amenity in the Above Ground proposal:**
Sports court		Full size basketball Court	Full size basketball Court
		Netball rings	Netball rings
		Integrated soccer goals	Integrated soccer goals
Youth Space		Terraced seating and viewing area	Terraced seating and viewing area
		Skate friendly – skaters, scooters and bmx bikes	Skate friendly – skaters, scooters and bmx bikes
		'Lounge' seating	'Lounge' seating
		Climbing Wall	Climbing Wall
Picnic Shelter:		1 medium picnic shelter with double BBQ, picnic table and 'Lounge' seating	1 medium picnic shelter with double BBQ, picnic table and 'Lounge' seating
Enhanced entrance / address to Jacksons Road		Water body and boardwalk	Water body and boardwalk
		Sculptural element	Sculptural element
Open lawn 'kick about' space (minimum length 50m)		2000 m²	2000 m² open lawn 'kick about' space
Fitness Trail		Up to 2 5km Circuit	2.5km fitness trail
Outdoor Gym and Exercise Stations		2 outdoor gym facilities and 6 exercise stations	2 outdoor gym facilities and 6 exercise stations
Electrical Infrastructure			
Towers	1	2	+1 tower
Electrical Enclosures	2	0	-2 Electrical enclosures

* Area Calculations are indicative based on conept design

Attachment 3

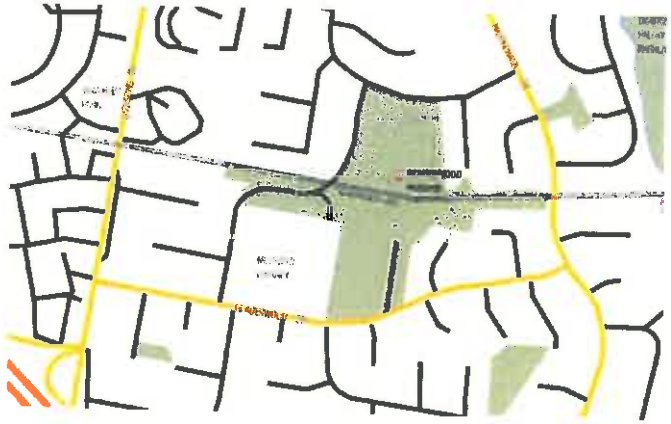
Comparison 1 – Gladeswood Reserve

Gladeswood Reserve
Reserve in Mulgrave, east of Waverley Park

Power Lines
275 kV Power Lines run through the open space reserve

Public amenity / Recreation

- tennis club (courts directly beneath power lines)
- pre-school (outdoor play area approximately 25m from power lines)
- basketball key (approximately 45m from power lines)
- play space
- seating
- bocce court
- bicycle trail
- jogging track
- pedestrian paths



Comparison 2 – Edgewater Estate

Edgewater Estate
Residential and business mixed use development located
7km north west of Melbourne CBD along the Maribyrnong River.

Power Lines
220 kv Power Lines run along the east of the site passing over Edgewater Lake, wetlands and a shared bicycle and pedestrian path used as a cycle commuter route.

Public amenity / recreation:
- Cycle and pedestrian paths
- Edgewater Lake and marina
- Seating areas
- Fishing (Maribyrnong river)
- Jensen Reserve barbecue and seating (approx 50m from power lines)

Comparison 3 – Ruffey Lake Park

Ruffey Lake Park
Regional Adventure Playground in Doncaster

Power Lines
275 kV Power Lines run through the site

Public amenity / Recreation

- regional adventure playground (approximately 20m from power lines)
- picnic shelters (approximately 30m,40m & 50m from power lines)
- toilets (approximately 40m from power lines)
- Barbecues and picnic tables
- seating
- shade structures
- bicycle trail
- jogging track
- pedestrian paths