Edithvale and Bonbeach
Level Crossing Removal Project

Report of Kevin Begg

1 Introduction

I have been engaged on behalf of the Level Crossing Removal Authority (LXRA) in my capacity as an urban design expert and member of LXRA's Urban Design Advisory Panel (**UDAP**).

I have been asked to review the Environment Effects Statement (**EES**) prepared for the Edithvale and Bonbeach Level Crossing Removal Projects (**Projects**) to the extent relevant to my area of expertise and to explain how the urban design for the Projects will be assessed and approved, including the role of UDAP in the process.

I have also been engaged to review and respond to submissions on the EES relevant to my area of expertise.

2 Qualifications and experience

Appendix A contains a statement setting out my qualifications and experience, and the other matters raised by Planning Panels Victoria 'Guide to Expert Evidence'.

A copy of my curriculum vitae is provided in Appendix B.

3 Urban design in the EES

The requirements for addressing urban design in the Edithvale and Bonbeach Projects are outlined in the EPRs and further explained in Chapter 11 of the EES.

EPR UD1 requires that the Projects are designed “in accordance with the LXRA Urban Design Framework and project-specific Urban Design Guidelines” and that design teams must “seek the advice of the LXRA Urban Design Advisory Panel … during the preparation of detailed design to ensure an appropriate response to the LXRA Urban Design Framework”.

Drawings of the proposed grade separation of Edithvale and Bonbeach, as illustrated in the Urban Design Guidelines (UDGs), are simple, functional layouts. The performance-based requirements in the Urban Design Framework (UDF) and the UDGs are the primary tools to guide the quality of the final designs. The diagrams and layouts in the UDF and UDGs represent the minimum acceptable outcome for the State. The Urban Design Advisory Panel will use the performance-based requirements to achieve the best possible design result for urban design, architecture and landscape architecture for the sites.

The current EPRs in Chapter 9 of the EES that are relevant to urban design, specifically UD1 and UD2, are appropriate to manage and/or mitigate adverse environmental effects arising from development of the Projects.

4 Urban design assessment and approval process for the Projects

LXRA has established various processes and tools, to deliver high quality, integrated urban design outcomes in the Level Crossing Removal Program. These are outlined in Chapter 11. The primary process to guide and assess proposals is interaction with the LXRA Urban Design Advisory Panel (UDAP). UDAP uses performance-based requirements as tools to influence and assess design proposals.

Urban Design Advisory Panel (UDAP)

The Urban Design Advisory Panel is a group of experienced practitioners with training in urban design, architecture, landscape architecture and strategic planning. They come from various government authorities and departments including the Level Crossing Removal Authority, Office of the Victorian Government Architect, Victorian Planning Authority, Transport for Victoria (Public Transport Victoria and VicRoads), VicTrack, Creative Victoria and Local Government Authorities.

UDAP is involved in the development of the design proposal for each LXRA project, over the entire lifecycle of the project. This includes development of the scope, development and assessment of options, assessment of a preferred design, development and documentation of the design, on-site inspections during construction, through to practical completion.

UDAP meets with the project design team on a frequent basis (once every two to three weeks) in design workshops to review progress and provide advice on specific design issues. The primary focus of UDAP is to ensure that the proposed design achieves the design intent that is outlined in the performance-based requirements.

Performance-based Requirements

UDAP uses various performance-based requirements to define the aspirations and requirements of State. For each project, there are three key documents that address different levels of detail of requirements:

- The LXRA Urban Design Framework (UDF) addresses program-wide requirements that describes high-level design aspirations and expectations.

- The Urban Design Guidelines (UDGs) address site-specific requirements and establish design intent for each site location. They are developed in conjunction with the Landscape and Visual Impact Assessment and are based on mitigation measures identified in the LVIA study. The draft UDGs form part of the EES – specifically attachments VII for Edithvale and VIII for Bonbeach.

- The Project Requirements Specification (PRS) addresses detailed requirements for the Project and covers disciplines including engineering, urban design, architecture and landscape. These detailed, quantitative requirements are prepared by LXRA, as the initial design proposal from the Alliance is accepted by the State. The PRS locks in specific detailed requirements to be provided in the design, in compliance with the UDF and UDGs. It is a vehicle to add more specificity to the performance-based requirements in the UDF and UDGs.

These documents form part of the project contract and thus project teams must comply with them.

In the context of Edithvale and Bonbeach level crossing removal projects, UDAP reviewed and provided advice on the draft site-specific Urban Design Guidelines in February 2018. Following the outcomes of the EES process, changes may be required to be made to the UDGs. UDAP will further review these documents, pending the outcomes of the EES. When the Edithvale and Bonbeach projects are allocated to an Alliance, UDAP will engage with their design team to ensure that their proposals meet or exceed the design requirements in accordance with the EPRs.

Examples of UDAP performance

LXRA UDAP was initially formed in June 2015 for the Caulfield to Dandenong Project. Advice provided to the Project Director and Alliance from UDAP has ranged from high-level strategic to fine-grained and detailed.

At the highest level, UDAP has been instrumental in reviewing, challenging and endorsing Urban Design Guidelines for all LXRA sites. This has resulted in high-quality built outcomes such as Noble Park Station, Clayton Station, Mernda Station and Hawkstowe Station that are all close to completion.

Examples of specific issues and outcomes include the following:

Design development - UDAP reviews the development of design proposals during the documentation phase, to ensure that the design intent in the UDF and UDGs is maintained. An example of this is the location of car parking at Rosanna Station. UDAP reviewed various proposals and assessed them against principles and objectives in the UDF and UDG such as personal safety, pedestrian connectivity and integration of the shopping area with the adjacent parkland. As a result of the review process, the car parking was located to the south of the site with direct access to the station and a sitting out area established north of Lower Plenty Road to connect the shops with Rosanna Parklands.

Design changes - Maintenance of design quality during the documentation and construction phases is a key role of UDAP. Examples of balancing construction costs with durability and quality include the materials used throughout the Mernda Rail Extension Project. Potential material substitutions for design elements such as weathering steel panels and stone paving were reviewed, interrogated and benchmarked by UDAP against the performance requirements in the UDF and UDGs. The result of this process is a series of high-quality stations at Middle Gorge, Hawkstowe and Mernda that are appropriate in character to their outer-suburban locations but comparable in quality to inner-city stations.

Innovation - UDAP also plays a role in reviewing and assessing any innovations proposed by the various Alliances. An example of this is the use of rotationally moulded plastic (RMP) panels on the elevated viaducts of the Caulfield to Dandenong Project. The new application of RMP, in lieu of more traditional building products such as glass-reinforced concrete (GRC), was achieved after considerable research, production of full size samples for inspection and demonstration of vandal-resistant qualities. UDAP reviewed the proposed change against the UDF and UDG, to ensure that design intent and quality were maintained whilst achieving a superior outcome for constructability, cost and appearance of the building elements over time.

5 Written Submissions

5.1 Submissions Received

I have read the submissions to the EES and identified those containing issues that are relevant to my area of expertise. These include the following submissions:

> *1 "You need to make provision for trees to be planted to lessen the visual impact of concrete."*
>
> *6 "Retaining the existing pedestrian crossings are equally important to allow access. I also think it would be wonderful to incorporate some design elements that reflect the local area – with a coastal/wetland theme. A tastefully pared back style with lots of timber / timber look*

elements, light colours and not a large overbearing structure … with lots of hardy native and coastal plants – much like what already exists."

10 I would like to see more car parking to help with access to the local shops … More bike parking so we can get as many locals riding to the station and not parking their cars … a bike locale cage would be great … we would love if there is a space for a mural … we would love to activate the small park in-between the station and the lifesaving club … Edithvale is missing a community space or meeting area."

28 "I am also worried about visibility and security with the trench option as I am often the only person boarding or alighting at Edithvale and am nervous of the idea of being in a virtual tunnel and unseen from the road and surrounding area. I also worry about disabled access as many disabled people are dependent on train travel to get around. I would also ask that any vegetation and planting be indigenous to the area and in keeping with the local area."

136 "The station and surrounds must match the natural, coastal feel of other great timber structures in the area including Seaford lifesaving club and Carrum bowling club"

145 "I do believe there is an opportunity to incorporate sympathetic coastal design elements into the buildings of the two new stations. The use of timber cladding, as used with great success at Keast Park in Carrum and the Seaford Lifesaving Club are recent examples of this. I would also like to see elements such as vertical plantings used around the station precinct especially if, due to space constraints, more traditional landscaping cannot be implemented. Leppington Station in New South Wales has green walls along its platform."

178 "I have inserted photographs of examples of coastal design elements and vegetation (including vertical) that I would like to see incorporated into the design of this project to soften and disguise the concrete of the station building and the concrete of the crash barriers and throw screens. I would like to see the design elements connecting and tying the project area into our number 1 asset the beach. This can be achieved by using wood being a natural building material and coastal plants." Also concerns about the removal of the Berry Avenue pedestrian crossing.

183 "CBTS supports the following: 1. More greenery at Bonbeach Station with space for trees and not just shrubs. 2. Good visual outcomes for the trench wall and face. 3. Ensuring Station Street between Edithvale and Bonbeach remains crossable on foot at all points. 4. Direct pedestrian access across the tracks including stairs at all points to supplement the low gradient ramps included for DDA compliance. 5. The relocation of the Route 902 SmartBus stops to nearer Edithvale Station to allow for safer and more direct access between train and bus. 6. Each station having its own colour and design scheme so that train travellers know where to alight, especially at night."

187 "… we would expect that the station be designed to be in keeping with its local coastal surroundings with an aesthetically pleasing façade together with attractive coastal plantings … we would like to see the substation with a similar façade to that of the station so that the sub-station looks to be part of the station complex and not an ugly tack on. We feel that (an elevated pedestrian overpass at Berry Avenue) would be a bulky eyesore and feel it would be better to either leave the crossing at ground level or place it under the railway.

226 City of Kingston Recommendation 4 – "Station design and landscaping should include a consideration of resilience and comfort for the community in a climate change future and include in depth consultation about this and vegetation replacement during design."

231 2. Revegetation – the LXRA has indicated that the trench solution will mean no trees with root systems can be replanted along the train line. I think they need to be more creative than what they have indicated thus far. They could still plant extra trees on the residential side of Station St and Nepean Hwy rather than the rail corridor. They should also plant as much plant material as possible in the form of low shrubs without root systems, above ground planting (eg planter boxes) or vertical plantings. 3. Pedestrian crossing – prefer a pedestrian crossing over Nepean Hwy opposite Nick's Bayside Pizzeria. *4. Sub-station* – prefer the sub-station closer to the current crossing in the main activity area to discourage vandalism. *5. Car park lighting* – prefer low level lighting shielded from adjacent residential properties. *7. Pedestrian overpasses – wherever possible these should be put in the direction to ensure the shortest distance and height impact."*

239 "… it would be great to incorporate coastally sensitive themes constructed there, into the design as an example of urban sensitive design." Also wants precedent images incorporated into the UDGs.

5.2 Summary of Issues Raised

The submissions have raised the following issues relevant to my area of expertise:

1. Coastal theme – there is a preference for the design to have a coastal theme and include the use of timber as an architectural element. (submissions 6, 136, 145, 178, 187, 239)

2. Indigenous trees and vegetation – there is a preference for the use of indigenous trees and shrubs in the station precinct, including green walls in the rail trench opposite platforms. There is also an interest to maximise the extent of planting, to mitigate the visual impact of the station and associated infrastructure. (submissions 1, 6, 28, 145, 178, 183, 187, 231)

3. Pedestrian crossings – there is a preference to retain the existing pedestrian crossings across the rail corridor and provide additional pedestrian crossings across the Nepean Highway. There is some concern about the visual impact of elevated pedestrian crossings. (submissions 6, 183, 187, 231)

4. Bicycle end-of-trip facilities – there is preference to provide additional end-of-trip facilities at the station for cyclists, including a parkiteer. (submissions 10)

5. Public art – there is a preference to incorporate public art into the station precincts, specifically a mural created by the local community. (submission 10)

6. Community spaces – there is a preference for additional community spaces, specifically at Edithvale. (submission 10)

7. Personal safety on train platform – there is a concern about visibility and personal safety for commuters when standing on a station platform in a rail trench. (submission 28)

8. Disabled access – there is concern about provision for universal access to the stations. (submission 28)

9. Unique station identity – there is a preference for each station to have its own unique identity, specifically through the use of colour, to assist in wayfinding. (submission 183)

10. Sub-station – there is a preference for the sub-station to blend in with the station building and be designed and located to discourage vandalism. (submission 187, 231)

11. Climate change - there is a preference for station design and landscaping to consider resilience and commuter comfort relative to climate change (submission 226)

12. Car park lighting - there is a concern that lighting in the station car parking areas may impact on nearby properties. (submission 231)

5.3 Respond to Issues Raised

Set out below are my comments and response to the issues raised by the written submissions relevant to my area of expertise:

1. Coastal theme – The request to develop station buildings and precincts with a coastal theme is already a key requirement for the projects. It is described in a number of places in both the UDF and the UDGs with requirements such as:

   "Guideline 1 - The scale, materials, textures and colours of the station building must respond to and complement the prevailing low scale, modest, coastal character of the surrounding area. The use of natural materials, colours and textures should be prominently used throughout the design, as appropriate." - Edithvale UDG Section 6.3 Page 39 and Bonbeach UDG Section 6.3 Page 39

   "Objective 1.1 – Sense of Place – Recognise, maintain and enrich the identity, character and individuality of neighbourhoods and communities through which the project passes, through responsive, high quality architecture, landscape and urban form." – LXRA UDF Section 4 Page 9

   Timber is often not used in a station environment, due to concerns about flammability, durability and maintenance. There are other materials that can evoke a coastal character, through warm colours and forms that mimic timber and natural stone. The proposed station design at Carrum illustrate the use of alternative materials whilst maintaining a coastal character.

2. Indigenous trees and vegetation – The use of trees and shrubs that contribute to the local landscape character is identified in the project guidelines. Requirements that address this include:

   "Strategic Objective 2 – Protect and strengthen the coastal landscape – The local landscape character should establish a sense of place that is specific to Edithvale by referencing and integrating existing species found in Beeson Reserve, along the rail corridor and on the foreshore." Edithvale UDG Section 6.3 Page 39

   "Strategic Objective 2 – Protect and strengthen the coastal landscape – The local landscape character should establish a sense of place that is specific to Bonbeach by referencing and

integrating existing species found along the rail corridor and on the foreshore." Bonbeach UDG Section 6.3 Page 39

"Guideline 12 – Maximise opportunities to reinstate or establish coastal tree species, shrubs and other landscaping along Nepean Highway and Station Street to provide a visual buffer to built form elements." Edithvale UDG Section 6.3 Page 39

"Guideline 10 – Maximise opportunities to reinstate or establish coastal tree species, shrubs and other landscaping along Nepean Highway and Station Street to provide a visual buffer to built form elements." Bonbeach UDG Section 6.3 Page 39

There is a difference between native plants (that have evolved in that specific area), naturalised plants (that are naturally occurring in other parts of the State) and introduced plants (some that are not appropriate to use, other that were introduced over a long period of time and now contribute to the local landscape character such as palm trees at train stations). Predominately, native plants from the local Ecological Vegetation Class (EVC) should be used, to reinforce the local landscape character.

Using green walls in rail trenches opposite platforms is discouraged because the vertical planting needs frequent maintenance. This would pose a significant safety risk with increased access required into the rail pit.

There is also an interest to maximise the extent of planting, to mitigate the visual impact of the station and associated infrastructure. Requirements that address this issue include:

"Guideline 4 – Integrate high quality public realm materials, details and landscaping into the station plaza and vegetation into the surrounding streetscapes including Edithvale Road, Nepean Highway and Station Street that is consistent with Council's Activity Centre Streetscape Suite." Edithvale UDG Section 6.3 Page 39

"Guideline 7 – Provide a high quality terminus view of the rail corridor from local streets that intersect with Station Street and Nepean Highway through landscaping or public realm/built form detailing, particularly Rae Avenue, Edithvale Road, Fraser Avenue, Northcliffe Road, Berry Avenue and Elsie Grove." Edithvale UDG Section 6.3 Page 39

"Guideline 6 – Provide a high quality terminus view of the rail corridor from local streets that intersect with Station Street and Nepean Highway through landscaping or public realm/built form detailing, particularly Broadway, Williams Grove, Harding Avenue, Bondi Road, Lord Weaver Grove and Cannes Avenue." Bonbeach UDG Section 6.3 Page 39

"Guideline 14 – Allow for trees to both sides of Station Street and Nepean Highway between car parking spaces in order to maximise street tree planting." Edithvale UDG Section 6.3 Page 39

"Guideline 10 – Maximise opportunities to reinstate or establish coastal tree species, shrubs and other landscaping along Nepean Highway and Station Street to provide a visual buffer to the built form elements." Bonbeach UDG Section 6.3 Page 39

3. Pedestrian crossings – enhancing cross-corridor connectivity and minimising severance due to rail infrastructure is a key objective of the projects. Requirements that address pedestrian crossings include:

   "Guideline 4 – Reinstate pedestrian crossings over the rail corridor with DDA compliant overpasses at Denman Avenue and Berry Avenue and incorporate stair access where in order to maximise their accessibility from all directions." Edithvale UDG Section 6.3 Page 41

   "Guideline 4 – Reinstate pedestrian crossings over the rail corridor with DDA compliant overpasses at Golden Avenue and the Glade and incorporate stair access where in order to maximise their accessibility from all directions." Bonbeach UDG Section 6.3 Page 41

   "Guideline 5 – Provide at-grade pedestrian crossing over the rail corridor at Fraser Avenue with a minimum width of 4.0 metres that provides a direct and safe connection between Station Street and Nepean Highway." Edithvale UDG Section 6.3 Page 41

   The design of a pedestrian crossing as an underpass or an overpass is largely influenced by engineering requirements such as rail alignment and available space. Urban design, architecture and landscape architecture can mitigate issues such as poor passive surveillance, concerns about personal safety and universal access through initiatives including wide walkways, clear sight lines and effective lighting. Requirements that address safety and universal access include:

   "Objective 7.1 – Personal Safety – Significantly improve real and perceived personal safety in all affected areas through the application of passive, integrated Crime Prevention Through Environmental Design (CPTED) principles." UDF Section 4 Page 12

   "Objective 8.1 – Universally inclusive – enhance universal accessibility through the affected and surrounding immediate and extended precinct for all members of the community, through fully integrated design solutions, without perceived or physical barriers or differentiation." UDF Section 4 Page 12

   An overpass solution at Berry Avenue was nominated in the Edithvale UDG Section 6.3 Page 41 Guideline because it was considered safer than an underpass with low passive surveillance and blind corners..

4. Bicycle end-of-trip facilities – Bicycle parking and cycling paths are to be provided in the projects at each station, to encourage active transport in the local area. Bicycle parking is determined by Transport for Victoria and defined in the Project Requirements Specification. Requirements in the UDGs that address cycling facilities include:

   "Guideline 2 - Provide dedicated walking and cycling infrastructure along the Station Street side of the rail corridor that provides for safe pedestrian and cycling movements along this corridor, as well as, to the station and the neighbourhood centre from the broader precinct." Edithvale UDG Section 6.3 Page 41 and Bonbeach UDG Section 6.3 Page 41

   "Guideline 3 – Establish clear and direct pedestrian linkages between the station entrances to bus bays, commuter car parking, and bicycle storage locations." Edithvale UDG Section 6.3 Page 41 and Bonbeach UDG Section 6.3 Page 41

"Guideline 10 – Locate all bicycle parking to be visible and have direct access from the station entrance and cycling infrastructure along Station Street." Edithvale UDG Section 6.3 Page 41 and Bonbeach UDG Section 6.3 Page 41

5. Public art – public art is to be provided by the Alliance, as part of the overall development of the rail corridor. The location is determined during the procurement process and does not guarantee that every level crossing project site will have new public art.

6. Community spaces – the scale of community spaces around train stations is influenced by context and availability of land. For Edithvale and Bonbeach, the rail corridor is relatively narrow and the primary addition of public space to the local areas will be the station forecourts. Requirements that address the station plazas include:

   "Guideline 7 – Provide a suitably generous station plaza space that accommodates public amenities such as seating, lighting and furniture, in addition to space required for pedestrian and cycle through-paths." Edithvale UDG Section 6.3 Page 45 and Bonbeach UDG Section 6.3 Page 45

7. Personal safety on train platform – personal safety is another key requirement for the projects. Requirements that address safety include:

   "Strategic Objective 1 – Enhance a sense of safety – Design the station precinct to feel safe through passive surveillance opportunities and the elimination of conflicts between modes and users." Edithvale UDG Section 6.3 Page 43 and Bonbeach UDG Section 6.3 Page 43

   "Guideline 1 – Maximise visual connections and transparency between the station platform to the station concourse and to pedestrian activity along Station Street and Nepean Highway." Edithvale UDG Section 6.3 Page 43 and Bonbeach UDG Section 6.3 Page 43

   "Guideline 2 – Ensure a large proportion of the platform is open to the sky for natural sunlight and to provide passive surveillance opportunities over the station platform from Station Street and Nepean Highway." Edithvale UDG Section 6.3 Page 43 and Bonbeach UDG Section 6.3 Page 43

   "Guideline 3 – Ensure well-lit platforms that provide high levels of illumination that reduce the contrast between day-lit and artificially lit areas of the platform to assist visibility of users and improve the sense of safety." Edithvale UDG Section 6.3 Page 43 and Bonbeach UDG Section 6.3 Page 43

   "Objective 7.1 – Personal Safety – Significantly improve real and perceived personal safety in all affected areas through the application of passive, integrated Crime Prevention Through Environmental Design (CPTED) principles." UDF Section 4 Page 12

   "Objective 7.3 – Visual connectivity – Maximise visibility and visual connections through design for clear sightlines and direct, intuitive site navigation routes, minimising obstructions including those associated with overpasses, underpasses and hidden corners." UDF Section 4 Page 12

8. Disabled access – universal access to a station and station precincts is guided by the Disability Standards for Accessible Public Transport (DSAPT) that seeks to eliminate discrimination 'as far

as possible', against people with disabilities. Public transport is a service covered by the Disability Discrimination Act 1992. The purpose of these Standards is to enable public transport operators and providers to remove discrimination from public transport services. All public buildings must comply with this. Strategic Objectives that address universal access in the UDGs include:

"Strategic Objective 2 - Provide a universally inclusive design – ensure the design provides universal access to all public spaces and the station and promotes equity for all users and mobilities." Edithvale UDG Section 6.3 Page 41

"Strategic Objective 3 - Provide a universally inclusive design – ensure the design provides universal access within the station and wider corridor and promotes equity for all users." Bonbeach UDG Section 6.3 Page 41

"Objective 8.1 – Universally inclusive – enhance universal accessibility through the affected and surrounding immediate and extended precinct for all members of the community, through fully integrated design solutions, without perceived or physical barriers or differentiation." UDF Section 4 Page 12

9. Unique station identity – each station and station precinct should be responsive to the surrounding area and reflect the identity of the local environment. Requirements that address the unique identity include:

   "Objective 1.1 – Sense of Place – Recognise, maintain and enrich the identity, character and individuality of neighbourhoods and communities through which the project passes, through responsive, high quality architecture, landscape and urban form." – LXRA UDF Section 4 Page 9

   Stations typically use colour, materials and arrangement of building elements to create a unique identity that assists in wayfinding (ie. people recognise their station and know when to alight). This design initiative supports the standard station signage required at all stations.

10. Sub-station – electrical sub-stations in highly visible areas such as station precincts should be treated, to ensure that they are integrated into the local area. Requirements that address the external presentation of sub-stations include:

    "Guideline 5 – Provide fencing or landscaping around the perimeter of the electrical substation to provide a positive, high quality interface from residential outlooks and passing traffic along Station Street and Nepean Highway." Edithvale UDG Section 6.3 Page 39

11. Climate change - the preference for station design and landscaping to consider resilience and commuter comfort relative to climate change is supported in objectives such as:

    "Objective 4.3 – Environmental sustainability – employ environmentally sustainable design to minimise water and energy usage, to reduce climate change impacts and to protect and improve sustainability in the natural and built environment." UDF Section 4 Page 10

    Opportunities to demonstrate the achievement of this objective are established using processes such as Greenstar and ISCA Rating.

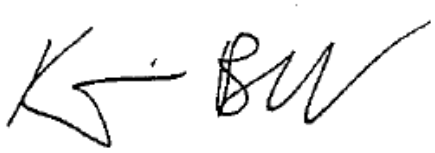
12. Car park lighting – light spill from car parking areas can be minimised using particular types of lights. Requirements that address this issue include:

    "Guideline 10 – Minimise or manage light spill from station buildings and car parking to sensitive land uses adjacent to the rail corridor such as housing and retail within Edithvale neighbourhood centre." Edithvale UDG Section 6.3 Page 39

    "Guideline 9 – Minimise or manage light spill from station buildings and car parking to sensitive land uses adjacent to the rail corridor such as housing and retail within Bonbeach neighbourhood centre." Bonbeach UDG Section 6.3 Page 39

Declaration

I have made all the inquiries that I believe are desirable and appropriate and that no matters of significance which I regard as relevant have to my knowledge been withheld from the Inquiry and Advisory Committee.



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Signed

Date: 24 May 2018

Appendix A Matters Raised by PPV Guide to Expert Evidence

(a) the name and address of the expert;

Kevin Begg

GHD, 180 Lonsdale Street, Melbourne

(b) the expert's qualifications and experience;

Bachelor of Planning and Design, University of Melbourne, 1990

Bachelor of Architecture, University of Melbourne, 1993

Kevin has 25 years of experience in urban design and architecture including three years as Urban Design Lead and Subject Matter Expert for the Level Crossing Removal Authority and one year Urban Design Lead and Subject Matter Expert for the North East Link Authority. He is a member of the Urban Design Advisory Panel for LXRA Caulfield to Dandenong, LXRA Western Program Alliance, LXRA North East Program Alliance, LXRA Southern Program Alliance, LXRA Mernda Rail Extension Project, North East Link and Westgate Gate Tunnel Project, as well as Technical Advisor to the State Government for the Public Housing Renewal Program.

Refer to CV in Appendix B for more information.

(c) a statement identifying the expert's area of expertise to make the report;

Kevin is the Urban Design Lead and Urban Design Advisory Panel member for the Level Crossing Removal Authority and the North East Link Authority. He is a co-author of the LXRA Urban Design Framework and Urban Design Management Plan.

Refer to CV in Appendix B for more information.

(d) a statement identifying all other significant contributors to the report and where necessary outlining their expertise;

The Urban Design Guidelines and Chapter 11 of the EES were prepared by Zac Cvitkovic - Technical Advisor Urban Design Lead for the Southern Program Alliance.

The Urban Design Guidelines were reviewed by the Urban Design Advisory Panel that was chaired by Damian Collopy – Principal Advisor, Landscape Architecture and Urban Design, Level Crossing Removal Projects, Office of the Victorian Government Architect.

(e) all instructions that define the scope of the report (original and supplementary and whether in writing or oral);

Written instruction that define the scope of this report were received from Sallyanne Everett of Clayton Utz in a letter dated 1 May 2018.

(f) the identity of the person who carried out any tests or experiments upon which the expert relied in making this report and the qualifications of that person;

There are no other people who carried out any tests or experiments upon which I relied in making this report.

(g) the facts, matters and all assumptions upon which the report proceeds;

There are no additional facts or matter upon which this report proceeds. I have received and read all submissions.

(h) reference to those documents and other materials the expert has been instructed to consider or take into account in preparing the report, and the literature or other material used in making the report;

(i) The urban design approach for the Projects at Chapter 11 of the EES

(ii) LXRA's Urban Design Framework

(iii) Draft Urban Design Guidelines for the Projects

(i) a statement identifying any provisional opinions that have not been fully researched for any reason (identifying the reason why such opinions have not been or cannot be fully researched);

There are no provisional opinions in this report that have not been fully researched for any reason.

(j) a statement setting out any questions falling outside the expert's expertise and also a statement indicating whether the report is incomplete or inaccurate in any respect.

There are no questions allocated that fall outside of urban design. The report is not incomplete or inaccurate in any respect, to the best of my knowledge.

(k) a summary of the opinion or opinions of the expert

The current EPRs in Chapter 9 of the EES that are relevant to urban design, specifically UD1 and UD2, are appropriate to manage and/or mitigate adverse environmental effects arising from development of the Projects.

The urban design of the projects at Edithvale and Bonbeach is defined in performance requirements. These requirements are detailed in the LXRA Urban Design Framework and Urban Design Guidelines. Design proposals will be assessed against these performance requirements by the LXRA Urban Design Advisory Panel and frequently measured for compliance. This process has been developed by LXRA to provide high quality urban design outcomes and successfully employed over a number of projects at a number of sites,

Appendix B CV

Curriculum Vitae

Kevin Begg

Technical Director - Urban Design

Qualified. Melbourne University Bachelor of Architecture (1st class hons) 1993. Melbourne University Bachelor of Planning and Design 1990.
Connected. Smart Seeds Innovation Program Organiser,
Committee for Melbourne Future Focus Group participant,
Victorian Government Projects - Urban Design Advisory Panel member
Relevance to project. With more than 25 years of experience in urban design and architecture throughout Australia, England, Asia and the Middle East, Kevin has led many multidisciplinary teams designing complex, large-scale urban renewal and transit oriented developments in diverse locations. With a firm belief in collaborative processes, he participates in the development of new town centres, integrated mixed use transport developments and public precinct design

Level Crossing Removal Program
LXRA | Melbourne, VIC, Australia

Principal Urban Designer and Subject Matter Expert advising the State Government on the removal of rail level crossings and urban renewal opportunities in 50 activity centres across the city. Tasks undertaken in the program include representation on the Urban Design Advisory Panel, development of the network-wide Urban Design Framework, options investigation and assessment, identification of value capture opportunities, extensive community engagement, participation in the interactive proponent design workshops, tender evaluation and close collaboration with OVGA, PTV, MTM, Councils and other stakeholders.

North East Link
NELA | Melbourne, VIC, Australia

Principal Urban Designer and Subject Matter Expert advising the State Government on the development of the North East Link freeway project. Tasks undertaken in the program include representation on the Urban Design Advisory Panel, development of the corridor-wide Urban Design Strategy, options investigation and assessment, extensive community engagement, and close collaboration with OVGA, VicRoads, Wurudjeri, Councils and other stakeholders

Bendigo Integrated Transport Land Use Strategy
City of Greater Bendigo | Bendigo, VIC, Australia

Principal Urban Designer creating an urban planning framework for the development of Bendigo for the next fifty years when the local population will double from 100,000 to 200,000 people. Key aspects of the ITLUS include supporting ten minute neighbourhoods and maintaining the city's natural growth boundary of regional parks. Issues addressed by the strategy include employment nodes, new residential models, cycling, walking and improved public transport. The project featured extensive engagement with stakeholders, government agencies and the community.

City Place Urban Renewal
City of Moonee Valley | Moonee Ponds, VIC, Australia

Principal Urban Designer for a new civic precinct in Moonee Valley incorporating a bus-tram modal interchange. Moonee Valley City Council engaged GHD to study the feasibility of creating a new plaza and public transport interchange at the centre of Moonee Ponds. The project includes a new civic space for activities, on grade parking and a public transport interchange accommodating two trams and twelve buses. Kevin led a multi-discipline team from GHD that included urban design, traffic and transport, traffic modelling, planning, landscape design, behaviour change, civil engineering and development strategy.

Reservoir Junction Urban Renewal
City of Darebin | Reservoir, VIC, Australia

Principal Urban Designer for the redevelopment of four hectares at the centre of Reservoir Junction. Aspects of the urban design framework include lowering the rail line below grade, simplifying and improving the surrounding road network and establishing a new town centre and retail district. The primary focus of the project is economic development for the Major Activities Centre. The resulting master plan is accompanied by a clear implementation strategy and action plan for coordinating efforts to secure funding. A strong focus of the project was transport interchange between train, tram and bus stations.

Essendon Transport Interchange
City of Moonee Valley | Essendon, VIC, Australia

Principal urban designer investigating the feasibility and preferred design outcome for the grade separation of the Craigieburn rail line where it runs through the major transport interchange at Essendon Junction. The reconfiguration of rail below road will provide significant positive impacts on the Essendon activity centre and enhance development opportunities beyond the immediate site. It will also deliver a superior outcome in terms of integrated train, bus and tram interchange functionality. In this scenario, Mount Alexander Road will be raised to the natural ground line, providing a better local street structure, connectivity and active frontages to the new development envelopes.

Surf City Retail Precinct
Surf Coast Shire | Torquay, VIC, Australia

Principal Urban Designer leading a multi-discipline team to rejuvenate the Surf City retail precinct in Torquay. This feasibility study for the Surf Coast Shire includes extensive community and stakeholder consultation, tourism analysis, brand development, development feasibility and advocacy strategy for funding. It addresses the broader strategic and economic planning of Torquay and the region, as well as the social, cultural and environmental concerns of the local community. Facilities on the site include as an iconic surf retail precinct, surfing museum, visitor information centre and local library.

Lagoons District Master Plan
TDIC | Abu Dhabi, United Arab Emirates

Principal Urban Designer for the development of a new mixed-use suburb for 30,000 people on Saadiyat Island. Key issues include walkability and permeability of the gated communities, sustainability in a coastal desert environment, use of water across the district, integration of civil infrastructure and the development of the interface with neighbouring, environmentally sensitive mangrove areas.

Energy Park Master Plan
City of Brimbank | Sunshine, Australia

Principal Urban Designer assisting Brimbank Council in assessing potential master plan options for a 54 hectare site in Sunshine. Development scenarios considered for the land fill site included a regional sporting facility, residential, logistics, a golf course and passive recreational space. Opportunities to provide the adjacent Albion Station with additional park'n'ride facilities were also explored.

Union Station Precinct Design
RTA | Dubai, UAE

Design Director and Project Director for the competition winning design of a 19,000m2 transit-oriented mixed-use precinct adjacent and above the new Union Station in Dubai. The architectural design and corresponding business model includes retail, cultural facilities, heritage building and transport interchange – all under a climate moderating canopy.

Ningbo New Urban District
City of Ningbo | Ningbo, PR China

Principal Urban Designer for the development of three satellite cities accommodating 1.2 million people around the historic urban core of Ningbo. Key issues include the rehabilitation and reuse of the existing canal network, identity and character of the cities and provision of staged civil, community and transport infrastructure.