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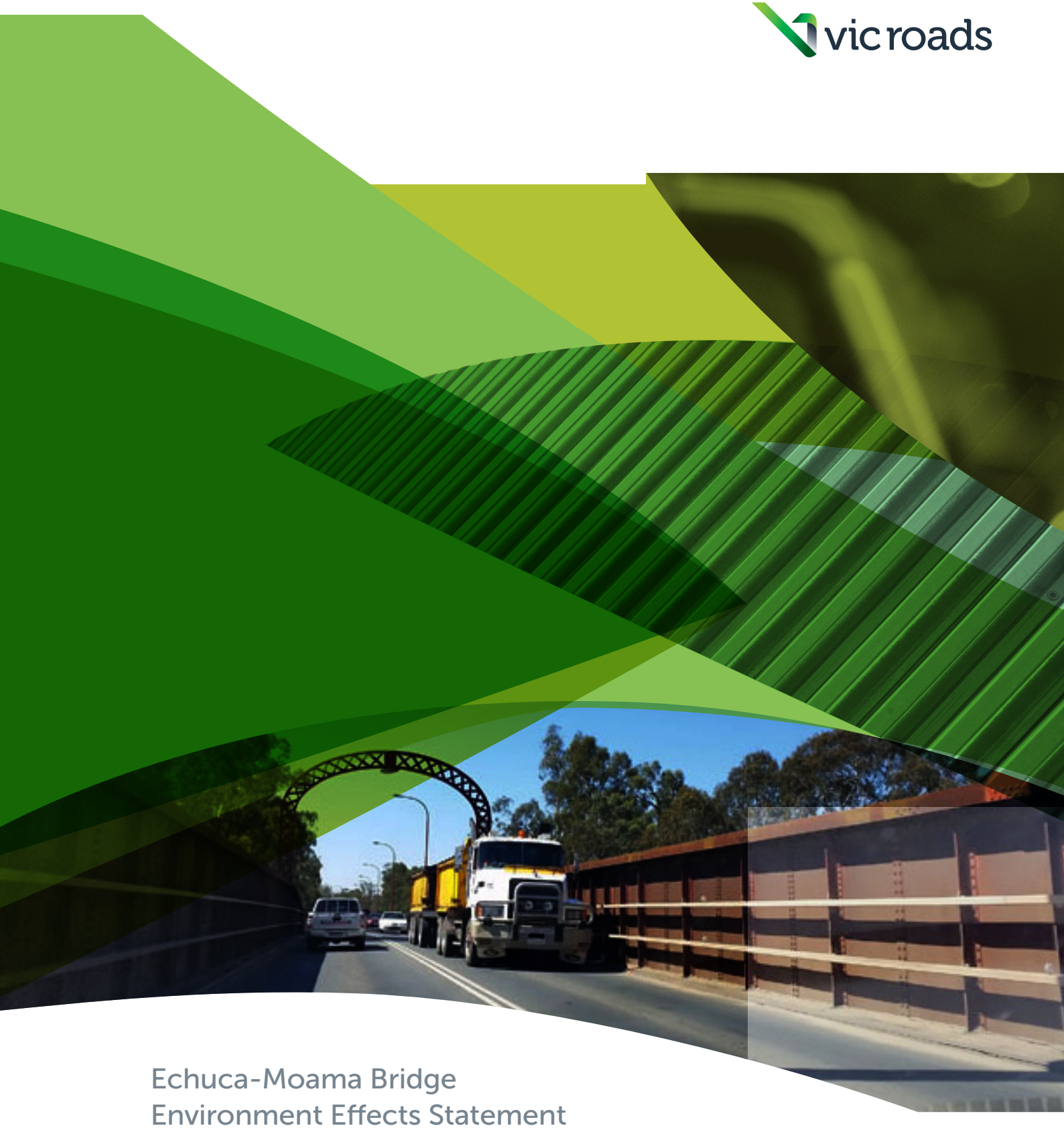

Echuca-Moama Bridge Environment Effects Statement

Summary Brochure

August 2015

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VICTORIA State Government

Introduction

This Environment Effects Statement (EES) relates to the Echuca-Moama Bridge Project (the Project) for the construction of a new road alignment and bridges over the Campaspe and Murray rivers. The preferred alignment lies between the intersection of the Murray Valley Highway and Warren Street in Echuca (Victoria), through to the intersection of Perricoota Road and the Cobb Highway in Moama (New South Wales).

VicRoads has been considering options for a second crossing of the Murray River since 1965. As part of previous assessments, VicRoads in conjunction with its New South Wales counterpart has considered a number of corridor options and undertaken detailed planning and environmental assessments.

The purpose of the EES is to provide stakeholders and decision-makers with a clear description of the proposed Project, relevant alternatives and assessment of the potential environmental, social and economic effects and benefits. The EES process informs the various statutory approvals required for the Project and invites comment on outcomes of the assessments undertaken. Relevant decision-makers need to have regard to the Victorian Minister for Planning's Assessment of the Project and its effects, which will be provided at the conclusion of the EES process.

This summary document provides an overview of the Project, the assessment and approvals framework, predicted environmental effects and management measures that are recommended. Details about where to view the EES, how to obtain copies and make a submission are also provided in the last two pages of this executive summary.

Project proponents

Roads Corporation (trading as VicRoads) and New South Wales Roads and Maritime Services (Roads and Maritime Services) are co-proponents for the Project. VicRoads is responsible for the preparation of this EES and undertaking the planning approvals within Victoria. VicRoads is also preparing the Preliminary Documentation for the Commonwealth approval on a Matter of National Environmental Significance consistent with the requirements of the *Environment Protection and Biodiversity Conservation Act 1999* (Cwlth.) VicRoads is working closely with Roads and Maritime Services to obtain approval for the NSW component of the Project.

VicRoads is a statutory authority whose responsibilities are outlined in the *Transport Integration Act 2010* (Vic.). It is one of several Victorian Government agencies that help the Government achieve its integrated transport policy objectives. VicRoads also administers a number of other Acts and Regulations including the *Road Management Act 2004* (Vic.) and the *Road Safety Act 1986* (Vic.). The VicRoads Chief Executive is accountable to the Minister for Roads, reporting through the Secretary of the Department of Economic Development, Jobs, Transport and Resources.

Roads and Maritime Services is a NSW department responsible for building and management of road infrastructure and the day-to-day compliance for road and waterway safety. Within NSW, assessment of the Project is prescribed by the *New South Wales Environmental Planning and Assessment Act 1979* (NSW) and the *Environmental Planning and Assessment Regulations.*

VicRoads and Roads and Maritime Services have previously worked together on a number of cross border projects that require combined approvals processes. Both VicRoads and Roads and Maritime Services have developed robust approaches to managing health and safety. Both organisations work together to define the scope of projects and in doing so have regard to environmental considerations and legislative requirements.

Project rationale

Echuca and Moama operate as a combined community and are currently linked by a heritage-listed bridge across the Murray River with a single carriageway in either direction. Reliance on the existing bridge as the only accessible river crossing can result in traffic gridlock and restricts higher efficiency and over-dimensional vehicles, thus having impacts both on productivity and economic activity within the region.

The Project would result in:

- Reduced travel time for commercial vehicles and removal of restrictions for Higher Mass Limit and oversized commercial vehicles
- Improved access for emergency vehicles and the provision of a second flood evacuation route
- A reduction in the number of heavy vehicles in the Echuca and Moama shopping centres, thereby improving the amenity of the retail area, which is beneficial to traders, shoppers and other users of the centre
- Improved amenity of the Port of Echuca Heritage Precinct, which would be beneficial to visitors and tourism operators
- Reduced travel time for tourists and residents, especially during peak seasons and major events
- Reduced risk to the ongoing operations of business/industry with an alternate river crossing available in the event of the existing crossing being inaccessible.

The full rationale for the Project is set out in Chapter 2 of the EES.

Alignment options

As noted previously, various studies have considered a range of potential alignments for a second crossing of the Murray River at Echuca-Moama.

Between 2011 and 2013, four options in the Mid-West 2 corridor were considered as part of the planning investigations:

- Mid-West 2A
- Mid-West 2B
- Mid-West 2C
- Mid-West 2D.

Following the investigations into these four options, the Mid-West 2A and Mid-West 2B options were identified as options that would be considered by further planning assessment, and options Mid-West 2C and Mid-West 2D would not be considered further.

Following the detailed planning and environmental assessments of the Mid-West 2 corridor an EES referral was made to proceed with either Option 2A or 2B in the Mid-West 2 corridor.

In June 2013 the Minister for Planning determined an EES was required to assess the potential effects of Options 2A and 2B together with investigation of a nearby alternative alignment in the Mid-West corridor.

Subsequently, it was decided to focus on three potential alignments within the Mid-West and Mid-West 2 corridors. These are described below and shown in Figure 1.

Description of the potential alignments

Mid-West Option

The Mid-West Option heads in a north-easterly direction along Warren Street from its intersection with the Murray Valley Highway. It then turns north-westerly off Warren Street, between Payne Street and Campaspe Esplanade, crossing the Campaspe River and Crofton Street. The Mid-West Option traverses the south-eastern section of the sand hill at the rear of the former Echuca Secondary College site and the western end of the Echuca Lawn Tennis Club courts, then passes to the north of the Echuca Holiday Park and Victoria Park boat ramp before crossing the Murray River. The option then turns northwards in alignment with Forbes Street/Cobb Highway and intersects with Meninya Street and Perricoota Road.

Mid-West 2A (MW2A)

MW2A heads in a northerly direction on a new alignment from the intersection of the Murray Valley Highway and Warren Street before turning north-easterly and passing to the north of the Echuca Cemetery and crossing the Campaspe River. MW2A traverses the northern section of the sand hill at the rear of the former Echuca Secondary College site and passes to the north of the Echuca Holiday Park and Victoria Park boat ramp before crossing the Murray River. MW2A then turns northwards in alignment with Forbes Street/Cobb Highway and intersects with Meninya Street and Perricoota Road.

Mid-West 2B (MW2B)

MW2B heads in a northerly direction on a new alignment from the intersection of the Murray Valley Highway and Warren Street before turning north-easterly and passing to the north of the Echuca Cemetery and crossing the Campaspe River. MW2B traverses the south-eastern section of the sand hill at the rear of the former Echuca Secondary College site and western end of the Echuca Lawn Tennis Club courts, then passes to the north of the Echuca Holiday Park and Victoria Park boat ramp before crossing the Murray River. MW2B then turns northwards in alignment with Forbes Street/Cobb Highway and intersects with Meninya Street and Perricoota Road.

Figure 1 **Echuca-Moama Bridge Project options**

Options assessment and selection process

A preliminary review of these three options was then undertaken based on investigations undertaken between 2009 and 2013. The preliminary review found the three alignment options would have significantly different impacts on:

- Biodiversity and habitat
- Aboriginal cultural and historic heritage
- Social considerations.

In order to inform a more detailed options assessment, a site inspection and review of previous documentation was undertaken, along with a site visit and targeted consultation by specialist consultants in these three key areas.

The assessment drew upon existing information obtained for the Project during previous investigations.

The evaluation criteria for each of the three key specialist areas were developed having regard to:

- The draft EES Evaluation Objectives
- The relevant legislation, policies or guidelines
- VicRoads' Project Objectives.

In addition, the evaluation criteria sought to provide a comparison of each option to determine the extent of impact (if any) and details of those impacts for each alignment option.

Biodiversity

All three alignments would result in impacts on biodiversity.

The Mid-West Option was rated as having the least impact on biodiversity. This is consistent with the findings of a number of detailed biodiversity assessments for the Project (see Chapter 9).

The Mid-West Option would have the least impact on biodiversity as:

- It would result in removal of the least amount of high quality habitat for listed species. The Mid-West Option was rated as moderately poor to low against this assessment criterion, compared to the MW2A and MW2B options which were rated as poor to moderately poor
- It would have the least impact on wildlife connectivity. The Mid-West Option was rated as moderately poor, compared to the MW2A and MW2B options which were rated as being poor
- It is likely to be easiest to secure offsets for this option. The Mid-West Option was rated as moderately poor for Environment Protection and Biodiversity Conservation Act listed species and negligible for other species. This is compared to MW2A and MW2B, which were rated as poor for Environment Protection and Biodiversity Conservation Act listed species and moderately poor for other species.

Heritage

From an Aboriginal cultural and historic heritage perspective the Mid-West Option is the better performing of the three options as it traverses a smaller area of the section of Victoria Park that contains scarred trees and therefore has less overall impact on registered Aboriginal sites. Importantly, the Mid-West Option would avoid intrusion into the culturally and scientifically sensitive sand hill area.

None of the options impact on any sites or places currently listed on the Victorian Heritage Register or Victorian Heritage Inventory in Echuca, or in the Schedule to the Shire of Campaspe Heritage Overlay under the Campaspe Planning Scheme.

Social

In terms of social impact considerations, the three options would have effects on existing social activities, but these were all generally rated as low to negligible, primarily due to the management measures proposed by VicRoads. The Mid-West Option has the benefit of avoiding any adverse impacts on the Echuca Cemetery.

In terms of impact on recreational facilities and events, the three options have broadly similar effects. In relation to Victoria Park and its interrelated active and passive recreational attributes, MW2A was rated as moderately poor whereas the Mid-West and MW2B options were rated as having a negligible impact.

This reflects the fact that MW2A would sever the passive use area of Victoria Park into three smaller segments, with implications for the useability and amenity of the quieter and more intact areas of the bushland area. The Mid-West and MW2B options would avoid fragmentation of the passive use area of Victoria Park and would have less impact on amenity within the bushland area.

Additionally the Mid-West and MW2B options would better follow the interface between the active (sporting) and the passive use areas of Victoria Park.

All three options would:

- Deliver significantly improved access across the Murray River for local and regional road users
- Support the vitality and growth of the region and states
- Provide an important access alternative for the Echuca-Moama community, and
- Improve the amenity in the existing town centres.

In relation to the following studies, it was determined there was little to differentiate between the three alignment options. The key points to note are as follows:

- Traffic and transport – Minor differences in traffic performance, although the Mid-West Option would attract slightly greater traffic volumes than MW2A and MW2B, thereby reducing traffic volumes on the existing bridge and town centres
- Aquatic – All options require two river crossings which avoid direct impact on waterways
- Planning and land use – All options would utilise flood affected land. The Mid-West Option would impact a greater number of freehold properties and the MW2A and MW2B options would impact a greater amount of public land
- Landscape and visual – The Mid-West Option would impact significant views around Crofton Street, whilst MW2A would be visible at Reflection Bend and MW2B would be visible from Crofton and Jarman streets
- Catchment values – All options can be mitigated to comply with flood afflux and floodplain performance requirements
- Soils and geology – Similar ground conditions exist for all options, although MW2A and MW2B would traverse a greater area of the floodplain while the Mid-West Option would utilise the existing Warren Street road formation. MW2B would also impact the disused tip site to the north of Campaspe Esplanade
- Noise – All options would be mitigated to comply with VicRoads noise policy. The Mid-West Option would increase noise levels to residential properties near Crofton Street and Warren Street. MW2A would increase noise levels at Merool Caravan Park (in NSW) and MW2B would increase noise levels at Crofton and Jarman streets.
- Regional economy – All options would provide similar economic benefits and have similar economic impacts.

Following consideration of previous investigations into the Mid-West Option, MW2A and MW2B, the former Deputy Premier announced on 31 July 2014, that the preferred alignment for a second Murray River crossing at Echuca-Moama is the Mid-West Option.

The Minister's announcement noted that whilst the EES would consider the three alignments, establishing a preferred corridor early in the process would allow effort to be focussed where it is likely to have the greatest effect.

Project objectives

In response to the above, VicRoads has developed the following project objectives:

- Improve accessibility and connectivity for the community of Echuca-Moama and the wider region
- Provide security of access with a second flood-free crossing between Echuca and Moama
- Enable cross border access for high productivity freight vehicles and oversized vehicles
- Improve emergency services access between Echuca and Moama during emergency situations and major tourist and flood events
- Provide road infrastructure that supports:
  - The Victorian and NSW state and national economies through improved connectivity of goods and services
  - The local and regional economy of Echuca-Moama.

EES and approvals

On 14 June 2013, the Victorian Minister for Planning decided that an EES under *the Environment Effects Act 1978* (Vic.) was required to assess the likely environmental effects of the Victorian component of the Project. This EES has been prepared in response to the EES Scoping Requirements issued in their final form on 30 June 2014 by the Victorian Minister for Planning.

The purpose of an EES is to provide a description of the Project and its potential effects on the environment, to inform the public and stakeholders and to enable a Ministerial Assessment of the Project that will inform decision-makers.

The Project is subject to relevant Commonwealth, Victorian and New South Wales legislative requirements. As co-proponents, VicRoads and Roads and Maritime Services have responsibility for obtaining the necessary State approvals. In addition, VicRoads will be responsible for leading the preparation of documentation for the Commonwealth approval. As the Project crosses state borders, three sets of documentation – the EES, a Review of Environmental Factors (REF) and Preliminary Documentation required under the

Environment Protection and Biodiversity Conservation Act – have been prepared for the Project.

This EES focuses on the approvals to be obtained by VicRoads under Victorian legislation, and also considers approval requirements under Commonwealth legislation. The Environment Effects Act is the overarching Victorian legislation requiring environmental impact assessment of the Project. In addition, VicRoads is required to prepare and obtain approval of a Planning Scheme Amendment to the Campaspe Planning Scheme under the *Planning and Environment Act 1987* (Vic.), and a Cultural Heritage Management Plan (CHMP) under the *Aboriginal Heritage Act 2006* (Vic.). Relevant NSW legislation is not assessed in detail as part of this EES. Detailed analysis of NSW legislation is outlined in the REF prepared for the Project by Roads and Maritime Services.

This EES and the draft Planning Scheme Amendment are subject to a public review process. An Inquiry Panel will be convened to conduct public hearings, consider submissions on the EES and draft Planning Scheme Amendment and provide a report to the Minister for Planning. The Minister for Planning will then consider the Inquiry Panel's findings and make recommendations on the Project.

EES Scoping Requirements and draft Evaluation Objectives

The EES Scoping Requirements provide the Minister's requirements on the range of environmental matters to be investigated and documented in the EES.

The draft EES Scoping Requirements for the Project were exhibited for public comment for 15 business days between 19 May 2014 and 6 June 2014. Following review of public comments and updating of the Scoping Requirements, they were issued by the Minister for Planning in their final form on 30 June 2014.

The Scoping Requirements include a set of draft Evaluation Objectives that identify desired outcomes in the context of potential project effects and relevant legislation. The draft Evaluation Objectives provide a framework to guide assessment of environmental effects in the EES. The draft Evaluation Objectives are:

- To improve accessibility and connectivity for the people of Echuca-Moama and the wider region by providing for existing and future traffic capacity and safety needs
- To avoid or minimise adverse effects on native vegetation and listed flora and fauna species and ecological communities, and address opportunities for offsetting potential losses consistent with relevant policy
- To avoid or minimise adverse effects on Aboriginal and historic cultural heritage values
- To minimise adverse social and land use effects, including impacts on existing uses of the Crown land
- To minimise adverse landscape and visual amenity effects on values of the area, including the Murray and Campaspe rivers and floodplains
- To maintain floodplain functions, hydrology, values of surface water, groundwater and geomorphic stability of proximate sections of the lower Campaspe and Murray rivers
- To minimise noise, air quality and other amenity effects to the extent practicable
- To provide road infrastructure that fosters a viable level of economic performance for the local and regional economy of Echuca
- To provide a transparent framework with clear accountabilities for managing environmental effects and hazards associated with construction, operation and rehabilitation phases of the project, in order to achieve acceptable environmental outcomes
- Overall, to demonstrate that the project would achieve a balance of economic, social and environmental outcomes that contribute to ecologically sustainable development and provide a net community benefit over the short and long-term.

The manner in which these draft Evaluation Objectives relate to the relevant legislation, guidelines and policies is set out in Table 5-1 of Chapter 5.

Technical Reference Group

A Technical Reference Group (TRG) chaired by the former Department of Transport, Planning and Local Infrastructure (DTPLI) was established in late 2013. The role of the TRG was to provide advice as appropriate, including on:

- The draft Scoping Requirements for the EES, including matters that should be investigated as part of the assessment of potential effects
- Relevant policies, strategies and statutory provisions including any legislation, regulations and guidelines that apply to the Project, as well as the consistency of the Project or relevant alternatives with these provisions
- Design and adequacy of EES technical studies in addressing the Scoping Requirements; and information required to support approval processes, in terms of consistency with good practice standards of methodology and analysis, in the context of relevant data sets and research
- Opportunities to address issues arising from EES investigations
- Technical adequacy of the draft EES documentation
- Design and implementation of VicRoads' public information and stakeholder consultation program for the EES
- Coordination of applicable statutory assessment and approvals processes.

The TRG comprised representatives from:

- Commonwealth Department of the Environment
- The following former Victorian Government departments, now part of the Department of Environment, Land, Water and Planning (DELWP):
  - DTPLI
  - Regional Development Victoria (Planning)
  - Department of Environment and Primary Industries
- Roads and Maritime Services
- Office of Aboriginal Affairs Victoria
- North Central Catchment Management Authority
- Heritage Victoria
- Campaspe Shire Council
- VicRoads Northern Region.

The first TRG meeting was held on 1 May 2014. Three further meetings were held while the EES was being prepared, with the final meeting on 31 October 2014.

Community consultation

Throughout the process of developing the alignment options, VicRoads has undertaken extensive consultation with landowners, potentially affected businesses and community groups.

Feedback has been provided on an individual and community level. Broadly, the main concerns can be summarised as:

- The potential impact on significant Aboriginal cultural heritage places (e.g. the sand hill)
- The potential impact on the Victoria Park sporting precinct, especially the loss of tennis courts
- The proximity of the Mid-West Option to residential areas, potentially impacting amenity resulting from increased traffic noise
- The effect of increased traffic in Warren Street on access to local residences and the Echuca Cemetery
- Access for river craft during construction (including major ski events)
- Access to Victoria Park for recreational activities
- Effects of construction of a new road across the Murray and Campaspe river floodplains
- Ongoing concern about the lack of a second Murray River crossing to provide for increased safety and improved amenity in the town centres.

Table 1 demonstrates how these issues have been addressed in the EES.

Table 1 Summary of key issues raised through consultation and responses

Issues raised during consultation	Response
Potential impact on significant Aboriginal cultural heritage places	The concept design and construction techniques at potentially significant Aboriginal cultural heritage places (e.g. the sand hill) would be developed in consultation with the Registered Aboriginal Party.
Potential impact on Victoria Park sporting precinct facilities (Echuca Lawn Tennis Club)	VicRoads has committed to replacing six lawn tennis courts that would be impacted by the alignment in consultation with the Echuca Lawn Tennis Club and the Campaspe Shire Council.
Access for river craft (especially paddle-steamers and Southern 80 Ski Race) during construction and operation of the new crossing	The height of the new bridge would be designed to allow the tallest existing paddle-steamer to navigate the river crossing at the high permissible water level. Provision would be made for the Southern 80 Ski Race to be conducted during the bridge construction period. Bridge piers would be located clear of the main Murray River channel. Access to the boat ramp for boating enthusiasts would be provided during construction where practical.
Proximity of the preferred alignment to residential areas and potential noise impacts	Noise studies have been undertaken; noise mitigation measures such as noise walls or low noise road surfacing treatments would be adopted where required to ensure that traffic noise was within VicRoads' Noise Policy guidelines.
Provision for slow moving funeral processions accessing the Echuca Cemetery	An additional turning lane (i.e. third lane for the initial carriageway) would be included in the design for Warren Street to cater for funeral processions.

Issues raised during consultation	Response
Provision for vehicle and pedestrian access for Warren Street residents	Intersection treatments would be formalised with Homan and Redman streets to provide safe access for local residents and visitors to the Echuca Cemetery. Connections would be made to a shared pathway to enhance pedestrian and cycle activities.
Access to Victoria Park for recreational activities	The spans of the Murray River bridge would be arranged to allow for adequate vehicle and pedestrian access under the bridge to Victoria Park facilities.
The effects of a new road built on flooding regime of the Murray and Campaspe rivers floodplain	Detailed analysis of the impacts of a new road on the floodplain has been carried out. The new road would provide a second flood free access between the towns with structures to mitigate the effects of 1:100 year Average Recurrence Interval (ARI) flood event.
Ongoing concern about the lack of a second Murray River crossing to provide for increased safety and improved amenity in the town centres	The Mid-West Option would provide an alternate route across the Murray River. It would allow for improved freight movements, reduce traffic congestion and provide improved amenity with Echuca, Moama and the historic Port of Echuca through significant traffic reductions.

Commonwealth approval requirements

VicRoads is responsible for obtaining the relevant Commonwealth statutory approval for the Project. The Australian Government has responsibilities under the Environment Protection and Biodiversity Conservation Act for the protection of defined Matters of National Environmental Significance (MNES). These matters include World Heritage properties and National Heritage places, Ramsar wetlands of international importance, nationally listed threatened species and ecological communities and listed migratory species, among others.

On 23 April 2013, a referral for the Mid-West 2A and Mid-West 2B options under the Environment Protection and Biodiversity Conservation Act was made to the then Australian Government Department of Sustainability, Environment, Water, Population and Communities (now known as the Department of the Environment) with respect to listed species under the Act, which potentially may be impacted by the proposed works. The potentially impacted species included the South-eastern Long-eared Bat, Macquarie Perch, Murray Cod and Murray Hardyhead. On 11 July 2013, the Department of the Environment determined the Project was a 'controlled action' under the controlling provisions s18 and s18A (threatened species and ecological communities).

On 22 December 2014 a variation to the referral under the Environment Protection and Biodiversity Conservation Act was accepted by the Department of the Environment. The variation sought to include the Mid-West Option (which was not part of the April 2013 referral) as part of the assessment and to exclude the proposed roundabout at the Murray Valley Highway as it was remote to the habitat of the South-eastern Long-eared Bat and would allow for pre-construction activities to occur.

The EES process applies only to the Victorian component of the Project so it is not able to be accredited under a bilateral agreement with the Commonwealth. The Commonwealth determined the assessment approach under the Environment Protection and Biodiversity Conservation Act would be via Preliminary Documentation. The Preliminary Documentation prepared for the Project is required to outline the construction and operational impacts on the South-eastern Long-eared Bat across the entire Project area, including:

- The nature and extent of the likely short-term and long-term relevant impacts
- Whether any relevant impacts are likely to be unknown, unpredictable or irreversible
- Analysis of the significance of the relevant impacts
- Any technical data and other information used or needed to make a detailed assessment of the relevant impacts.

Consistent with the requirements of the Environment Protection and Biodiversity Conservation Act, the Preliminary Documentation will be placed on public exhibition (concurrently with the EES and REF), updated following receipt of comments and then placed on public exhibition a second time.

The Commonwealth Environment Minister will consider the final Preliminary Documentation, and would only approve the Project if impacts to listed threatened species were acceptable.

Victorian approvals

The Environment Effects Act provides for assessment of projects capable of having a significant effect on the environment. The Act does this by enabling the Minister for Planning (the Minister) to decide an EES should be prepared for a Project.

The Ministerial Guidelines for assessment of environmental effects under the Environment Effects Act specify criteria under which a project must be referred to the Minister.

An EES referral for the Project was submitted on 1 February 2013. As described above, a decision was made by the Minister on 14 June 2013 requiring VicRoads to prepare an EES to document the assessment of the Mid-West 2 corridor options 2A and 2B, as well as an alternative alignment available in the previously identified Mid-West corridor.

VicRoads is responsible for preparing the EES, with the Department of Environment, Land, Water and Planning (DELWP) providing guidance on process.

The Planning and Environment Act establishes the framework for planning, use and development of land within Victoria. The Act also provides for the establishment of planning schemes, which outline the objectives, policies and provisions relating to the use, development, protection and conservation of land within a local government area. Within Victoria, the Project is situated within the Shire of Campaspe and the Campaspe Planning Scheme applies to the Project.

In addition to the EES, a draft Planning Scheme Amendment has also been prepared, which is associated with land acquisition and planning permit exemptions within Victoria.

The EES and draft Planning Scheme Amendment are being exhibited concurrently for a period of 30 business days.

Under section 49 of the Aboriginal Heritage Act, a CHMP must be approved prior to commencing works for any project for which an EES has been required.

Under the Act, Registered Aboriginal Parties (RAPs) are appointed by the Aboriginal Heritage Council and are the cultural heritage decision-makers for designated areas of Victoria. The RAP for the Project is the Yorta Yorta Nation Aboriginal Corporation.

The *Environment Effects Advisory Note: Aboriginal cultural heritage and the environment effects process* (DPCD, 2007) suggests the CHMP for the Project be prepared in conjunction with the EES and considered for approval after the Minister for Planning makes the assessment of the EES. This pathway is recommended for projects with a higher degree of uncertainty or complexity, or where a range of project options is being considered and it is not prudent to pre-empt project design or location decisions. This enables the details of a CHMP to be resolved as part of the development and assessment of an EES, in the broader context of other environmental, social and economic issues.

A CHMP is being prepared for the Project in conjunction with the EES and will be submitted to the RAP for evaluation and approval.

The Project is also subject to approvals which would be considered following the Minister for Planning's assessment of the EES. These approvals include (but are not limited to):

- A permit to remove protected flora and fauna from public land under the provisions of the Flora and Fauna Guarantee Act
- A licence to construct works on a waterway or to construct a bore under the provisions of the *Water Act 1989* (Vic.)
- A licence to take or use water from a waterway or groundwater under the Water Act
- Consent for works on Crown Land under the *Crown Land (Reserves) Act 1978* (Vic.)
- Permits to remove trees containing habitat or any other fauna habitat areas or fauna salvage and translocation under the *Wildlife Act 1975* (Vic.).

NSW approvals

Roads and Maritime Services is responsible for relevant assessment and approval procedures for the NSW component of the Project. Roads and Maritime Services is the proponent and determining authority under part 5 of the NSW *Environment and Planning and Assessment Act 1979*, and is responsible for coordination of the preparation and public notification of the equivalent NSW document, the REF.

The purpose of the REF is to describe the proposal, document the likely impacts on the environment and outline recommended protective measures to be implemented during construction.

Although the Project includes works in Victoria and NSW, the study area for the REF is confined to the section of the alignment in NSW.

The description of the proposed works and associated environmental impacts has been undertaken in the context of clause 228 of the NSW Environmental Planning and Assessment Regulation 2000, the *Threatened Species Conservation Act 1995* (NSW) and the *Fisheries Management Act 1994* (NSW). In doing so, the REF helps fulfil the requirements of section 111 of the Environment and Planning and Assessment Act, which VicRoads and Roads and Maritime Services are examining and taking into account to the fullest extent possible, including all matters affecting or likely to affect the environment by reason of the activity.

The REF will be exhibited for a period of 30 business days for public review and comment, concurrent with the EES, draft Planning Scheme Amendment and Preliminary Documentation.

Following public review of the REF, a Submissions Report will be prepared, which will also take into consideration the Victorian Minister's assessment of the Project. This report will then be made available to the public and Roads and Maritime Services will determine planning approval and whether to proceed with the proposal.

Project description

Note: the term 'the Project' is used here to refer to the preferred Mid-West alignment, following the outcomes of VicRoads' options assessment process as described above.

Project overview

The Project would be built in stages to meet traffic demands, including the initial alignment and providing for an ultimate duplication, should it ever be required. The initial alignment includes a single carriageway with one lane in each direction. The ultimate duplication provides a second carriageway, resulting in two lanes in each direction.

The preferred alignment is approximately 4.3km in length, with a 33m wide carriageway. It commences at the intersection of the Murray Valley Highway and Warren Street in Echuca, where a large diameter, three-leg roundabout would be constructed.

From the Murray Valley Highway roundabout, the preferred alignment extends north-east along Warren Street (Cohuna-Echuca Road), for a distance of approximately 1.5km where a roundabout would be constructed. The design includes duplicate carriageways on all approaches to the roundabout with twin lanes in each carriageway. Additional road works to upgrade Warren Street to above the 100 ARI would be undertaken between the new roundabout south-west of Campaspe Esplanade and the existing bridge over the Campaspe River (approximately 300m to the north of the Warren Street roundabout).

From the new roundabout south-west of Campaspe Esplanade, the preferred alignment diverts to the north-west, over Campaspe Esplanade and the Campaspe River. North of the Campaspe River, the preferred alignment bridges over the western end of Crofton Street and turns in a north-easterly direction, crossing the former Echuca Secondary College site and the western end of the Echuca Lawn Tennis Club courts. The preferred alignment then traverses Victoria Park to the northern side of Echuca Holiday Park and crosses the Murray River, immediately north of the existing boat ramp.

The alignment includes an approximately 650m long bridge extending over the Murray River (including a clear span over the river of approximately 90m), elevated carriageways over the floodplain within NSW and connects with the Cobb Highway at Meninya Street. The Project would also include intersection upgrades on the Cobb Highway at its intersection with Meninya Street and Perricoota Road (Moama-Barham Road) including reconnection of Francis Street to the Cobb Highway for vehicles.

The design provides for construction of a shared off-road pedestrian/bicycle pathway along the entire length of the alignment and includes connections to the existing paths within Victoria Park.

The design also provides for the upgrade of existing connections to the two-way service road between Homan Street and Redman Street to provide safer access to, and egress from Warren Street.

As part of the Project, there would be some alterations to the existing road network and access provisions. The existing intersection of Murray Valley Highway and Warren Street would be upgraded to a large diameter roundabout to facilitate freight movement. The roundabout would be constructed with two circulating lanes as part of the construction of the initial alignment. Each leg of the roundabout would match into the two-lane two-way approaches to the roundabout. The existing Y-intersection of Murray Valley Highway and Mount Terrick Road north of Warren Street would also be upgraded as part of these works to form a T-intersection with the Murray Valley Highway.

There would be minor road widening along Warren Street to improve the cross section and provide sealed shoulders.

The at-grade intersections of Warren Street with Homan Street and Redman Street would be maintained and improved to provide safer access to, and egress from Warren Street.

A new 400m long right-turn lane would be provided along Warren Street to the north-east of Homan Street for funeral traffic travelling from Echuca and turning right into Homan Street to access the Echuca Cemetery. The extended right turn lane would improve safety by separating turning and through-traffic on Warren Street.

Properties fronting the north-west side of Warren Street would be accessed by two-way service roads that would be connected to Homan and Redman streets. The appropriate standard of the service road would be determined in consultation with Campaspe Shire Council and local residents. The existing service road would either be retained in its existing condition (informal and unsealed) or upgraded to a sealed service road with or without kerb and channel. Residents north-east of Redman Street would no longer have direct vehicular access onto Warren Street.

A new three-leg roundabout would be provided on Warren Street, approximately 125m south-west of Campaspe Esplanade. There would be provision in the road reserve to upgrade this roundabout to a larger diameter to meet future freight movement requirements.

Campaspe Esplanade would be changed to a left-in left-out staggered T-intersection with Warren Street.

On the new road section from Warren Street to Cobb Highway, Campaspe Esplanade would be truncated to the north-west side of Warren Street. Bicycle and pedestrian access along Campaspe Esplanade would be maintained under the proposed Campaspe River Bridge. West of the new road alignment, Campaspe Esplanade would be accessible by vehicles from Redman Street and Homan Street.

A new bridge would be constructed over the Campaspe River and Crofton Street/Scenic Drive. Access from Crofton Street to Scenic Drive would be maintained under the bridge and would have sufficient clearance for emergency vehicles. A new bridge would also be constructed over the Murray River.

Boundary Road in NSW would be truncated. Access to the supermarket delivery bay in Boundary Road would be maintained from Perricoota Road. A turning bowl would be provided on the Boundary Road truncation to enable supermarket delivery vehicles to undertake a U-turn. Bicycle and pedestrian access would be maintained from Meninya Street to Boundary Road.

Meninya Street would be realigned to form a T-intersection with the Cobb Highway, and traffic signals would be installed.

Traffic signals would also be installed at the intersection of Cobb Highway and Perricoota Road, and approaches upgraded with right turn lanes and left turn slip lanes.

Francis Street would be reconnected to the Cobb Highway at Perricoota Road, and would be a minor leg of the signalised intersection (no left turn slip lanes would be provided on Francis Street or the Cobb Highway north approach as this would not be warranted by the local road traffic volumes).

Project timing and duration

The construction of the initial alignment would be subject to the provision of funding and is expected to take up to three years to complete. Timing for the ultimate duplication is subject to future traffic demand and regional urban growth.

Once planning and environmental approvals are obtained, the two main activity sequences which follow are pre-construction and construction. After funding becomes available, the land acquisition and pre-construction activities would commence.

The pre-construction phase would include detailed site investigations, land acquisition and detailed design, and take around six to nine months to complete. The acquisition of land for the construction of the Project would include land required for the ultimate duplication. Depending on the method of project delivery (e.g. construct only, or design and construct), detailed design may be undertaken concurrently with land acquisition. Tendering the contract for construction would take around six months until award.

Construction area

A construction area has been defined for the Project, which is the potential area of direct impact for the ultimate duplication.

The width of the construction area varies, reflecting the requirement for road formation, intersection treatments, bridge footings, spill basins and shared pathways.

The construction area extends a minimum 5m-10m either side of the edge of the road formation and bridges (except where constraints are identified) and is wholly within the proposed Right-of-Way.

The construction area would include the removal of vegetation as required. Significant vegetation and areas of cultural sensitivity would be fenced and protected during the construction of the Project.

The construction area includes the pavement and construction buffer areas (i.e. provision for drainage and relocation of services). The construction area forms the basis for assessing Project impacts in the specialist studies provided in the EES Technical Appendices.

The extent of the actual construction buffers would be refined through the detailed design.

Intersections and access

The preferred alignment would provide for safe intersection and property access in accordance with Austroads guidelines.

Intersections and turning movements have been designed to cater for vehicles legally able to use the new roadway for both the initial alignment and the ultimate duplication (i.e. the Project). The intersections have been designed to accommodate turning movements associated with B-Double vehicles (26m in length) and have been reviewed for an A-Double (a vehicle consisting of a prime mover and two trailers linked together approximately 36m

long) and a B-Triple (Type 1 road train) to turn and access the road without interrupting traffic flow.

Bridges and waterway crossings

The Project would include new bridge crossings of the Murray River and Campaspe River. Flood relief structures including bridging and/or culverts would be provided over low lying flood prone land, providing adequate clearance for movement of flood waters. The piers of the Campaspe River and Murray River bridges would be constructed outside the river channel (summer flow/low water mark extent).

Typical cross sections of the proposed bridges are shown in Figure 6-2 of Chapter 6. The bridge lengths proposed as part of the preferred alignment are provided in Table 2.

Table 2 Approximate bridge lengths and locations

Location	Approximate length (m)*
Campaspe River bridge	300
Victorian floodplain bridge	65
Murray River bridge	650
NSW floodplain bridge	45

*Final bridge lengths subject to detailed design and flood modelling requirements.

Bridge structures would be designed to be simple and elegant structures that make a positive visual contribution to the environment.

The location and lengths of the proposed flood relief structures are depicted in Figure 16-5 of Chapter 16. The long bridge lengths would continue to enable easy access under the structures for recreational use of Victoria Park and provide clearance for the movement of wildlife. The bridge over the Campaspe River would allow vehicle and pedestrian access from Crofton Street to Scenic Drive. The extent of the area of embankment associated with the Murray River Bridge would enable continued use of Scenic Drive and relatively unimpeded use of the existing car park near the boat ramp.

Warren Street is situated within an existing floodway and the existing level of the road is overtopped in a 20 year Average Recurrence Interval event (i.e. a rainfall event that would be expected to recur on average once every 20 years). The height of the section of Warren Street between the Murray Valley Highway and the proposed roundabout north-east of Payne Street on Warren Street would remain at or near the existing road level. Works within this location would also include upgrade of the existing flood relief structures under the carriageway on Warren Street, providing adequate clearance for movement of flood waters.

Bicycle and pedestrian access

Cyclists would be able to travel the length of the new road on an off-road shared pathway, which would connect into the existing network at Victoria Park. For both the initial alignment and ultimate duplication an off-road shared pathway has been included within the overall Project footprint. The proposed shared pathway would provide access or connection to the existing tracks within Victoria Park and the surrounding pedestrian network. Shade and shelter requirements would be considered in the design of the shared pathway.

Commuter cyclists would be permitted to ride on the sealed road shoulders.

Cyclist/pedestrian crossings would be provided:

- Where traffic signals are to be installed at the intersections with Meninya Street and Perricoota Road, Moama
- Across the Murray Valley Highway on the south side of the proposed roundabout
- Under the Campaspe River bridge at Campaspe Esplanade and Crofton Street
- Under the flood relief bridge in Victoria Park
- Under the Murray River bridge.

Lighting and traffic signals

Street lighting would be provided in accordance with Chapter 6 of VicRoads Traffic Engineering Manual Volume 1 – Traffic Management, which states a specified level of lighting at intersections. Street lighting would be provided as follows:

- Overhead street lighting would be installed on the Murray Valley Highway and Warren Street carriageways, and on intersection approaches as required. No pedestrian lighting is proposed for the shared pathway adjacent to Warren Street
- Street lighting from Warren Street to the Cobb Highway is proposed at intersection approaches only. Shared pathways on the Campaspe and Murray River bridges would be lit by low level strip lighting/LED lights, to minimise light spill. Provision for street lighting would be included to enable installation if it is required in the future
- Overhead street lighting would be installed on the Cobb Highway and intersection approaches as required.

The traffic signals proposed for the Project are located in NSW at the following locations:

- The intersections of Cobb Highway and Meninya Street
- The intersection of Cobb Highway and Perricoota Road.

Speed limits

The alignment has a design speed of 90km per hour (km/h) and would have a posted (signed) speed limit of 80km/hr on both road and bridge structures.

Landscaping

Some vegetation within Victoria Park and along the banks of the Campaspe and Murray rivers would need to be removed as part of the Project. The design and species selection for remedial and augmented landscaping would be in keeping with the existing landscape character.

Construction staging and working hours

There is potential to construct the Project in a number of stages (either concurrently or at different times) or as a single contract.

The roundabout at the intersection of the Murray Valley Highway and Warren Street could potentially be constructed ahead of the overall Project, subject to the allocation of funding.

Following this, other construction stages would include:

- The upgrade of Warren Street between the Murray Valley Highway and the existing Campaspe River bridge, including the new roundabout on Warren Street to the south-west of Campaspe Esplanade.
- Construction of a new section of road between Warren Street, Echuca and Meninya Street, Moama including the Campaspe and Murray River bridges and shared pathway.
- Installation of new traffic signals at the Perricoota Road/Cobb Highway and Meninya Street/Cobb Highway intersections in Moama. Works would also include the re-opening of vehicular access between Francis Street and the Cobb Highway.

Construction work for the Project would be undertaken during the standard hours for construction work as set out in VicRoads specifications, which are Monday to Saturday between 7am or sunrise (whichever is the later) and 6pm or sunset (whichever is the earlier).

Construction outside of the standard hours may occur at certain times to safely or more efficiently undertake certain tasks and would be subject to approval by VicRoads and notification to affected members of the community.

Construction activities would be guided by the contractor(s) Environmental Management System (EMS) and associated Construction Environmental Management Plan (CEMP) which would incorporate all EES commitments and measures identified in the conditions of subsequent statutory approvals for the Project.

Access to community infrastructure such as the boat ramp and car park would be maintained where possible during construction, with interruptions to access kept to a minimum where possible. Access arrangements would be established in consultation with Campaspe Shire Council and relevant stakeholders. The number, extent and duration of closures affecting river traffic during construction of the Murray River bridge structure would be minimised as much as possible and in consultation with river-based businesses. Outside of river closures, sufficient and safe access for all river users would be maintained during the works.

Construction scheduling of the Project would be established at the time of contract preparation and engagement of a construction contractor. Construction contracts prepared by VicRoads would stipulate that scheduling of works would take into account seasonal uses and demands within the vicinity of the Project. Major events/busy holiday periods in Echuca-Moama and the wider region would be taken into consideration in construction scheduling to ensure impacts were minimised as much as possible.

During construction, VicRoads would commit to a suspension of construction works of up to two weeks in the vicinity of the Southern 80 Ski Race venue. This would ensure that construction work did not prevent the setup, staging and decommissioning of the Southern 80 Ski Race. Details of the suspension would be determined in consultation with relevant stakeholders.

The construction contractor, VicRoads and Roads and Maritime Services would work with Campaspe Shire Council and Murray Shire Council as well as relevant event organisers to manage impacts of construction events.

Working hours during significant and sensitive events in the region would be established in consultation with both councils and other relevant stakeholders at the time of contract preparation.

Construction traffic

There would be movements of heavy vehicles resulting from the construction works, primarily associated with transport of construction machinery and equipment to and from the site, and import and disposal of materials (i.e. fill or pavements,).

In accordance with VicRoads policy, construction vehicles and machinery would be restricted to the highways and arterial roads wherever possible.

The use of the local road network by construction vehicles would be confined to routes as agreed in consultation with the Campaspe Shire Council and Murray Shire Council.

An accurate estimate of construction traffic generation cannot be made until a program and staging of construction has been developed. However, the construction of similar projects typically generates the greatest traffic volumes during the earthworks, bridging and pavement construction phases, and generally less traffic volumes at other times. These phases could be expected to generate in the order of 100 to 150 truck trips per day across the workday. Less than 100 light vehicle trips would be expected to be generated by worksite contractors accessing the site, typically expected to occur during early morning and late-afternoon periods.

Based on the above, at its peak, the construction of the Project would typically be expected to generate

in the order of 250 vehicle trips per day, including 150 heavy vehicles.

It is conservatively assumed that 30 per cent of light vehicle construction traffic would occur during the peak hours, associated with worksite employees arriving and departing the site. Similarly, it is conservatively assumed that 15 per cent of heavy vehicle traffic would occur in the peak hours, associated with an even distribution of truck movements across the workday. It is therefore estimated that construction activities may generate up to 52 vehicle trips in peak hours, including 22 heavy vehicles.

Operation and maintenance

Key operational activities would be the ongoing road maintenance, consistent with current practices and standards. Assets to be maintained by relevant road authorities would include landscaping, spill basins and stormwater drains, bridges, road pavement, signage, barriers and line marking.

VicRoads' 'Roadside Management Strategy 2011, Roadside Management – A Balanced Approach' is a strategy which aims to provide clear and consistent objectives to manage roadside areas.

The strategy provides a framework for the balanced consideration of the four key objectives of roadside management:

- Enhance transport safety, efficiency and access
- Protect environmental and cultural heritage values
- Manage fire risk
- Preserve and enhance roadside amenity.

It uses an asset management approach to balance the key objectives of roadside management and identify the most appropriate treatments to preserve roadside functions.

Fire management is undertaken through a cooperative approach between government agencies to ensure that it is strategic, effective and targeted.

Risk assessment

A detailed environmental risk assessment of the preferred alignment was completed to characterise risks and identify appropriate responses. Standard environmental protection measures, which are required of all VicRoads construction projects, were assumed as a starting point. Additional Project-specific environmental management measures were also identified to reduce risk in some cases.

All management measures identified as part of the risk assessment have been included in the Environmental Management Framework, presented in the EES in Chapter 20. This EMF would inform development of a Project CEMP.

The final residual risk rating reflects the likelihood and consequence of the risk following the implementation of both VicRoads and Roads and Maritime standard environmental protection measures, and the final Project-specific environmental management measures.

Impact assessment

The impact of the risks was assessed, giving consideration to:

- Positive and negative changes or impacts
- Direct and indirect impacts
- Spatial and temporal changes
- The ability of the environmental resource or system to recover
- The ability to reduce or mitigate the impact.

The impact assessments for social, regional economy, planning and land use, and landscape and visual impacts were not based on an environmental risk framework. This was because assessment for these specialist disciplines focuses on predicted change rather than the risk of harm to the environment, and the interpretation of impacts is based on the assessor's professional expertise, the outcomes of community engagement, individual perceptions and related circumstances and is therefore more difficult to measure.

The impact assessment approach for these disciplines involved predicting the likely temporary and permanent impact of the Project on existing conditions. The level of impact was assessed against the likely outcome should the Project not proceed, known as the 'no project' scenario. The results of the other specialist risk and impact investigations undertaken for the Project were also considered for these assessments.

Traffic and transport

The Traffic and Transport Impact Assessment examined the extent to which the Project would be expected to address improvements to accessibility and connectivity, access for high productivity and oversized vehicles, and to provide road infrastructure that supports local, regional, state and national economies, as outlined in the Project Objectives (refer to Chapter 2).

It is expected the Project would provide benefits to road users including:

- A 40% reduction in traffic volumes on the existing bridge by 2044
- 42% of through traffic would be removed from the area of High Street near the historic port area by 2044

- Truck volumes would also be expected to decrease by a similar proportion in and around the town centres
- Improved river crossing access for heavy and oversize vehicles, currently restricted from using the existing bridge
- Provision of a higher mass limit compliant crossing.
- No adverse impacts have been identified for public transport, walking or cycling
- Improved river crossing access for heavy and oversized vehicles that would otherwise be restricted from using the existing bridge.

The majority of adverse impacts would be expected to occur during the construction stage of the Project. It is expected that there would be short-term congestion impacts on the existing road network, including an increase in truck movements, potential road safety issues due to increased interaction of construction related vehicles with local traffic in the construction zone.

No adverse impacts have been identified for existing public transport, walking or cycling connections, and a new pedestrian/cyclist shared pathway would be constructed along Warren Street.

It is expected the existing standard environmental protection measures of VicRoads and Roads and Maritime Services would be sufficient to control risks when enhanced by further Project-specific environmental management measures. These additional measures would include communication and traffic management plans.

Biodiversity and habitat

The Biodiversity and Habitat Impact Assessment (Brett Lane & Associates, 2015) examined the existing terrestrial ecology of the study area and the potential impacts that the Project could have on terrestrial flora and fauna.

It was based on a number of assessments undertaken prior to the EES process, as well as the assessments completed as part of the EES process.

A large proportion of the study area supports native vegetation. This includes a contiguous area of woodland vegetation between the Campaspe and Murray rivers.

There would be 13.655ha of remnant native vegetation removed for construction of the Project. The removal of native vegetation would be offset, as required under the Biodiversity Assessment Guidelines. It is expected that locating suitable offsets would be achievable given the extent of similar native vegetation in the region.

There are no nationally significant flora species or communities affected by the Project. The flora species likely to be affected are listed under the Department of Environment, Land, Water and Planning (DELWP) Advisory List and the impact is expected to be minor.

There were seven *Environment Protection and Biodiversity Conservation Act 1999* (Cwlth.) (EPBC Act) listed fauna species considered likely to occur in the study area, and one of these was identified in site assessments. There were 16 *Flora and Fauna Guarantee Act 1988* (Vic.) (FFG Act) listed fauna species considered likely to occur, with three identified in site assessments.

The species identified in the site assessments included:

- Rainbow Bee-eater (EPBC listed)
- Masked Owl (FFG listed)
- Squirrel Glider (FFG listed)
- Yellow-bellied Sheathtail Bat (FFG listed).

Of these four listed fauna species recorded in the study area, all are dependent on hollow bearing trees except for the Rainbow Bee-eater.

The key impacts arising from the Project are to threatened fauna species through removal of habitat, and particularly hollow bearing trees.

Two hundred and twenty one large old trees (LOTs) recorded in the Victorian component of the study area are proposed to be removed, however a large number of LOTs would still remain within the study area. As the extent of hollow bearing trees removed would be a comparatively small proportion of the treed habitat on the Murray and Campaspe River floodplains near Echuca-Moama, the overall impact on habitat is expected to be minor.

The assessment found that all impacts on local flora and fauna could be managed and were expected to be minor. A key management measure would be to limit the removal of hollow bearing trees, where possible. Where this was not possible, species salvage and translocation management measures would be used to reduce the potential impact on species dependent on hollow bearing trees.

The South-eastern Long-eared Bat (EPBC listed) was initially considered to be present within the study area, based on the analysis of calls recorded during targeted bat surveys and initial findings that there was suitable habitat present. However, a subsequent peer review of these findings found that the habitat was not suitable and the recorded calls could not be attributed to the South-eastern Long-eared Bat. As such, this species is considered not likely to occur within the study area and the Project would not impact upon this species. VicRoads is preparing Preliminary Documentation as required under the EPBC Act based on these revised findings that the South-eastern Long-eared Bat is not present within the study area.

The Biodiversity and Habitat Impact Assessment also considered the potential impact on wildlife corridors. The landscape of the study area and surrounds has changed significantly following European settlement and the introduction of various agricultural practices.

The Project would not contribute significantly at a regional scale to the fragmentation of existing wildlife corridors as this habitat is already fragmented due to historical and existing land uses. However, the Project would lead to fragmentation at a local scale specifically affecting Victoria Park. It is likely that many of the remaining fauna species in the existing habitat have already adapted to a degree of habitat fragmentation.

With the implementation of VicRoads standard environmental protection measures, and the additional measure of creating a management plan to mitigate the potential impacts on Victoria Park and its habitat, the impact to wildlife corridors is expected to be minor.

Aquatic flora and fauna

The Aquatic Flora and Fauna Impact Assessment examined the existing aquatic ecology of the study area and the potential impacts that the Project could have on aquatic flora and fauna.

No national or State threatened species were sighted during the field surveys of the study area, although desktop assessments listed 16 threatened flora and fauna species that could occur in the study area. These were identified from the Environment Protection and Biodiversity Conservation Act, Flora and Fauna Guarantee Act and the DELWP Advisory List. Using a 'likelihood of occurrence' assessment, these 16 species were limited to eight species judged as 'likely' or 'possible' to occur in the study area. The four 'likely' species included:

- Murray Cod (EPBC vulnerable, FFG listed, on the DELWP advisory list)
- Silver Perch (EPBC critically endangered, FFG listed, on DELWP advisory list, Fisheries Management Act (FM) vulnerable)
- Golden Perch (on DELWP advisory list)
- Murray Spiny Crayfish (FFG listed, on DELWP advisory list, FM vulnerable).

The four 'possible' species included:

- Trout Cod (EPBC endangered, FFG listed, on DELWP advisory list, FM endangered)
- Freshwater (Eel-tailed) Catfish (FFG listed, on DELWP advisory list, FM endangered community)
- Flat-headed Galaxias (FFG listed, on DELWP advisory list, FM critically endangered)
- Murray River Turtle (on DELWP advisory list).

The assessment found that construction of the Project would have associated risks that could cause minor adverse impacts on aquatic flora and fauna, including:

- Potential to encounter the Lower Murray Endangered Ecological Community
- Potential to encounter EPBC, Victorian and NSW threatened species and their habitat
- Increased erosion
- Increased noise and vibration
- Destruction of riparian vegetation
- Infestation of aquatic weeds and introduction of pathogens
- Impeding the passage of aquatic fauna
- Impacts on floodplain habitat and ecological function.

Many of these minor impacts of the Project are considered unlikely to occur and therefore have a low residual risk rating. This is predominantly as a result of avoiding the erection of structures within waterways. It is considered that these minor impacts would be adequately managed using VicRoads and Roads and Maritime Services standard environmental protection measures.

Aboriginal cultural heritage

A desktop assessment undertaken as part of the Aboriginal Cultural Heritage Impact Assessment indicated the Echuca region has been occupied by people for at least 30,000 years. There are 87 registered Aboriginal cultural heritage places located within the geographic region, including six scarred trees identified within and one just outside of the proposed Right-of-Way. Assessment of these trees using the Australian International Council on Monuments and Sites' (ICOMOS) Burra Charter Criteria determined they are of considerable aesthetic, historical, scientific and social value both to the contemporary Yorta Yorta people, other Aboriginal communities and the wider Australian community.

Construction works for the initial alignment would have the potential to directly impact on one dead scarred tree and three live scarred trees within the proposed Right-of-Way, as well as one live tree located just outside of the proposed Right-of-Way. The dead tree would be relocated prior to construction however it is still considered that the Project could result in a moderate impact on this tree. The four live scarred trees would be retained in their current locations, with the Project design minimising any disruption to the water supply of these trees. It is therefore considered that the impact of the Project on these four live scarred trees would be minor.

Similarly, a live scarred tree is located adjacent to the proposed Murray River bridge structure. Although this tree would be retained as part of the Project, it would require lopping prior to construction of the ultimate duplication. Provided this was undertaken by a qualified arborist, it is expected the impact of the Project on this tree would also be minor.

A second dead scarred tree on the southern side of Warren Street would be retained as part of the initial alignment. The base of this tree is largely rotted out and VicRoads would monitor its condition and discuss options for treatment with the Yorta Yorta Nation Aboriginal Corporation (YYNAC) if it was identified that the tree was at risk of collapse. To avoid further impacts, the tree would be relocated prior to construction of the ultimate duplication. Provided this was undertaken by a qualified arborist, it is expected the impact of the Project on this tree would be minor.

Sub-surface investigations identified two deposits of stone artefacts just north of the Campaspe River, within the proposed Right-of-Way and near to where the proposed bridge piers would be constructed. One of these is a single stone artefact that would most likely be disturbed during construction, but this is not considered to be significant given it is within highly disturbed soil. In order to minimise the potential for any impacts to the other buried deposit of stone artefacts, bridge piers would be installed south of Scenic Drive as well as at the bridge abutment at the northern end of the bridge.

The sand hill near the former Echuca Secondary College site, the banks of the Murray and Campaspe rivers and permanent spill and temporary sedimentation basin excavation areas have all been identified as sensitive areas that may contain sub-surface Aboriginal cultural heritage places, including Aboriginal ancestral remains. Construction works at these locations would be undertaken in accordance with an approved CHMP. Additional approval of protocols for the protection of ancestral remains and other unidentified Aboriginal cultural heritage places would also be sought from the YYNAC.

No excavation would occur at the sand hill location other than minimal topsoil removal, and a rigid road pavement would be used to minimise the potential for compression of the underlying sand deposits. Consultation would be undertaken with the YYNAC to determine the most appropriate arrangement for a new emergency access on or near the high point of the sand hill, and its use would be restricted to emergency services. Pavement material would be placed on top of the existing ground to enable access for emergency vehicles whilst minimising disturbance to the natural surface.

It is acknowledged that impact to previously unidentified Aboriginal cultural heritage places encountered during construction could have a moderate impact; however the proposed management measures would ensure that the likelihood of impact would be rare.

Similarly, it is acknowledged that impact to unregistered Aboriginal ancestral remains encountered during construction could be a significant impact; however the proposed management measures preventing ground disturbance would ensure that this is unlikely.

If unregistered Aboriginal ancestral remains or previously unidentified Aboriginal cultural heritage places are encountered during construction, the contingency arrangements in the approved CHMP will provide best practice outcomes in collaboration with the YYNAC.

Historic heritage

The Historic Heritage Impact Assessment found there are no previously registered heritage sites, heritage places or historic archaeological sites within the construction area of the proposed Right-of-Way. However, there are number of registered or potential heritage places within or adjacent to the study area.

Key heritage places within or adjacent to the study area include:

- Echuca Wharf
- Echuca – Historic Area
- Echuca Cemetery and its cast iron gates
- Old Echuca Township Precinct
- A stand of Murray Pines near Reflection Bend on the Murray River
- Echuca North Residential Precinct
- A number of private dwellings including St Leonards Homestead
- Campaspe River Former Weir.

Echuca Wharf, Echuca – Historic Area, Old Echuca Township Precinct, Echuca North Residential Precinct and Campaspe River Former Weir are all outside the proposed Right-of-Way and would not be impacted by the Project.

Echuca Cemetery is a highly significant place within the study area but is also outside the proposed Right-of-Way to the north of Warren Street. It is not formally listed on the Campaspe Heritage Overlay, although its cast iron gates are. The Echuca Cemetery would not be directly or indirectly impacted by the Project.

The preferred alignment crosses the site of the former Echuca Secondary College. A stand of remaining palm trees at the former entrance to the college is within the proposed Right-of-Way, however there is no evidence to suggest that these palm trees are of heritage significance. VicRoads has committed to relocating these palm trees. All other structures on the site have been demolished.

Recently Campaspe Shire Council proposed an amendment to the Campaspe Planning Scheme (Planning Scheme Amendment C101), which would apply the Heritage Overlay to a number of identified heritage precincts and individual places across the municipality.

As part of this amendment, it is proposed to extend two Heritage Overlays: HO79 covering the stand of Murray Pines; and HO41 covering the St Leonards Homestead. These changes would result in an overlap between the Heritage Overlays and the proposed Right-of-Way. The proposed amendment was exhibited between 29 January and 2 April 2015. VicRoads made a submission in relation to Amendment C101 which recommended that any overlap be avoided. Amendment C101 was considered by a Planning Panel in July 2015. The Planning Panel's report had not been released at the time of writing this EES.

At the time of publication none of the sites identified within or adjacent to the study area in Victoria are within the proposed Right-of-Way, and construction activities would be managed to avoid any impacts to identified historic heritage sites. VicRoads and Roads and Maritime Services standard environmental protection measures would also be used.

There is a low to moderate likelihood that previously unrecorded historic heritage places or sites exist within the study area. Contingency measures would be included in the Environmental Management Plan to manage the unexpected discovery of previously unregistered and assessed historical cultural heritage sites and features.

Planning and land use

Overall, the planning and land use impacts identified would be generally localised and site specific. Land use and planning related issues would be short-term and construction-related, such as impacts to native vegetation, utility services and amenity impacts, which would be appropriately managed through the implementation of a CEMP.

Land acquisition impacts on individual land holdings would be limited by virtue of the preferred alignment utilising existing road reserves and acquisition generally being located adjacent to existing boundaries or fence lines.

Overall, 67 allotments would be affected, with nine private landowners and a number of Crown land managers including the Shire of Campaspe impacted by the proposed acquisition.

A total of 19ha would be acquired, including almost 10ha of Crown land. The area of acquisition would be confirmed through surveying following finalisation of the detailed design.

The greatest land use impacts resulting from acquisition in Victoria would be to Victoria Park and the former Echuca Secondary College site, both of which are on Crown land. These impacts would be due to changes to access and amenity and the loss of six tennis courts at the Echuca Lawn Tennis Club. The existing draft Victoria Park Master Plan anticipates the road in this location, and the land use related impacts are therefore considered minimal.

Compensation for severance and land acquisition impacts would be provided where appropriate and consistent with the *Land Acquisition and Compensation Act 1986* (Vic.).

The Project as a whole would not result in any significant inconsistency with planning policy, and would not result in broad changes to land use within the surrounding area.

The impacts of the Project on planning and land use would not vary substantially between the initial alignment and ultimate duplication. Following the implementation of management measures, there are not expected to be any significant detrimental planning or land use impacts as a result of the Project.

Social

The Social Impact Assessment has assessed the social impacts of the Project on residents, visitors and businesses, community groups, community facilities and places of special interest within the study area.

Social issues and impacts assessed included:

- The potential social benefits of the Project, including safety improvements and opportunities for amenity improvements
- The implications for local and regional residents and businesses in terms of access to properties and services
- The net community benefit of the Project in terms of social sustainability.

Echuca is located within the Shire of Campaspe while Moama is part of the Murray Shire. Historically, Echuca has always been the larger of the two towns. The population of Echuca is three times that of Moama but, in recent years, the population of Moama has been growing at twice the rate of Echuca.

The social and economic roles of the two towns are closely intertwined. Echuca-Moama is locally recognised as a single community and functions as an integrated regional centre. Both towns rely heavily on each other for services and facilities, with extensive collaboration and little need for duplication of services. The vast majority of employment, education, emergency and social services are provided in Echuca.

The Project would provide a number of positive social benefits. The preferred alignment would relieve traffic congestion on the existing bridge and approaches and improve travel times for motorists. This would increase accessibility to local facilities and services for residents of Echuca and Moama, and enhance social cohesion.

The Project would also relieve traffic congestion within the town centres of Echuca and Moama thereby improving the safety and amenity of these centres.

Stakeholders consulted as part of the Social Impact Assessment, including representatives of Campaspe Shire Council and Murray Shire Council, felt the attractiveness of Echuca and Moama were currently negatively impacted by traffic.

The Project would significantly reduce the risks associated with disrupted access across the river, particularly in relation to traffic incidents on the existing bridge.

Given the interdependence of Echuca and Moama, including the reliance of residents on essential services located only in Echuca and/or Moama, the additional security provided by a second river crossing is considered by the community to be essential.

The Project would improve pedestrian and cyclist connectivity to key destinations including Victoria Park.

In addition, the new bridge could potentially become a structure of note within the region and contribute to the success of the proposed Bridge Arts Project in NSW.

Overall, the social impacts of the Project are considered to be low, although there could be short-term moderate impacts during construction.

Potential impacts associated with construction of the Project on the Southern 80 Ski Race would be mitigated by the Project's design, VicRoads' standard environmental protection measures and other specific Project commitments.

However, the final operation of the Project would have a moderately negative impact on visitors to Victoria Park and a minor negative impact on members of the Echuca Lawn Tennis Club, who would experience varying degrees of change to existing visual amenity and increased noise levels.

Predicted changes to visual amenity and increased noise levels could also have a minor negative impact on a small number of permanent residents of Echuca Holiday Park and long-term annual permit holders who may choose to holiday in a different location.

There would be no material difference between the ultimate duplication and the initial alignment in terms of social impacts, since the land acquisition and severance associated with the Project would occur when the proposed Right-of-Way was established. Changes to local amenity, associated with the upgrade to the ultimate duplication, would be minor.

Landscape and visual amenity

The landscape and visual effects of the Project on the study area were assessed against the following set of landscape planning sub-objectives:

- Protect the scenic amenity, cultural and natural heritage and recreational values of the Murray River
- Protect the visual amenity and key views of the river floodplains
- Protect the recreational amenity of Victoria Park
- Protect the scenic amenity, natural heritage and recreational values of the Campaspe River
- Enhance existing networks that provide cycling and walking accessibility and connectivity.

The Landscape and Visual Impact Assessment was informed by the existing conditions of the study area. Within Victoria, the study area was assessed as having six main landscape character types. Landscape character types that contained a higher number of positive attributes across a larger area were assessed as being relatively more significant than those containing fewer attributes across smaller areas. The Murray River, river floodplains and Victoria Park's active recreation areas were assessed as being the most significant landscape character types.

Overall, the introduction of a new twin bridge structure across the Murray River would have a very high impact on its scenic, recreational, cultural and natural heritage values.

The highest impacts would be during construction, although given the close proximity of the bridge to house boat moorings and its visibility to passing paddle-steamers, the impacts would continue through the operational phase.

However, if the bridge was designed to be a clear span over the Murray River with an elegant structure that contributed to the landscape, these impacts would be reduced to a high level.

Within Victoria Park, the introduction of road and bridge infrastructure was assessed as resulting in a moderate to high impact on the visual amenity and key views of the river floodplains. However, the new road and bridge would provide motorists and shared pathway users with a new elevated view of the floodplains.

Similarly, the Project would have a high impact on the recreational values of Victoria Park through the removal of open space and vegetation, the severance of walking paths and access roads, and the introduction of highly visible road and bridge infrastructure. Lighting and noise would also be associated with the construction and operation of the road.

These impacts could only be partially mitigated by reinstating shared pathways and access road connections and planting vegetation between the road and affected areas of Victoria Park.

In contrast, one the Project's major benefits would be its contribution to the area's bicycle and walking networks through the provision of on-road bicycle lanes in both directions and an off-road shared pathway following the length of the preferred alignment.

In summary, after 10 years of operation, the Project would meet the landscape planning sub-objectives moderately well.

The application of VicRoads' standard environmental protection measures and additional Project-specific management measures would not mitigate the impacts of the Project entirely, but would reduce these impacts to a moderate level.

Catchment values

The Hydrology Impact Assessment examined the potential impacts of the Project on the surface water, groundwater, existing flood patterns and the river morphology of Echuca-Moama.

Existing flood conditions for the study area were determined based on a previous study (SKM, 1997) that developed a flood frequency model extrapolated from over 100 years of flood data. These existing conditions were used to build a model to assess the impact of the Project on hydraulic conditions in the study area.

Assuming the implementation of VicRoads' standard environmental protection measures and Project-specific management measures, the modelled impact of the Project on existing flood conditions is expected to be minor.

The modelling indicates that the flood level across a range of flood events up to the 100 year ARI event would only increase by 3 to 5cm at affected locations near the proposed Warren Street roundabout. This is a very small increase relative to existing peak flood water levels at these locations.

As part of the Project, existing culvert systems under Warren Street would be moved and upgraded to allow for greater efficiency in conveying flood waters across the floodplain, thereby minimising flood impacts.

Water quality impacts to the Campaspe River associated with sedimentation and stormwater runoff during construction and operation are considered to be minor.

Construction of the bridge piers adjacent to the Murray River represent the greatest risk to catchment values, through potential adverse impacts on water quality, damage or removal of riparian vegetation and destabilisation of the river bank.

However, these impacts are considered to be minor following the implementation of VicRoads' standard environmental protection measures and Project-specific environmental management measures, and due to design elements such as the incorporation of adequately-sized spill basins.

As the Project would be constructed mainly on fill, it is not expected that groundwater would be impacted due to excavation. The impact on the quality of the groundwater due to the construction of the bridge piers is likely to be minor when appropriate management measures are implemented.

Overall, construction and operation of the Project is not considered to have significant impacts on the function, values or beneficial uses of the Murray and Campaspe rivers, or on groundwater. Flooding impacts would be minor and apply only to specific locations, and the design of Warren Street would increase flood protection for sections of this road. Moreover, the Project would provide a second flood evacuation route up to the 100 year ARI event for the townships of Echuca and Moama.

Soils and geology

The Soils and Geology Impact Assessment examined the potential for the Project to encounter adverse geological conditions, affect soil stability, damage geomorphology, cause soil erosion and/or potentially expose contaminated materials.

Even though there is currently limited information on the soil properties and characteristics of the study area, and specific areas which may be more susceptible to soil settlement cannot be accurately identified, the potential to encounter or cause soil erosion is considered a low risk. This is because the most erosion-prone areas within the proposed construction area are limited to the river crossing points. VicRoads' standard environmental protection measures would reduce any erosion caused by the Project to ensure the environmental impact was minor.

Detailed geotechnical site investigations, supplemented by specific engineering design for the Project, would minimise the potential for soil settlement and erosion.

The geomorphology of the Echuca-Moama area, characterised by the extensive, flat floodplains and the deep river channels of the Murray and Campaspe rivers, would be unaltered by the Project. The design of the proposed bridge, abutments and piers would minimise impacts on the geomorphic stability.

There would be a need to import a large amount of fill for the Project, approximately 350,000m^3. Fill materials would be sourced from VicRoads-approved quarries and borrow pits. In this way, all soils would comply with relevant requirements to prevent importation of contaminated fill materials.

The potential to encounter or cause soil erosion is considered a low risk. This is because the most erosion-prone areas within the proposed Right-Of-Way are limited to the river crossing points. VicRoads standard environmental protection measures would reduce any erosion caused by the Project so that the environmental impact would be minor. Detailed geotechnical site investigations, supplemented by specific engineering design for the Project, would minimise the potential for soil settlement and erosion.

No historic land uses in the study area indicate the presence of existing land contamination. Phase 1 environmental site assessments (ESAs); required by the Environment Protection Authority Victoria (EPA) under the State Environment Protection Policy (Prevention and Management of Contamination of Land) would be conducted to test the preferred alignment for contamination. If any contamination was identified, Phase 2 ESAs would be undertaken to locate and classify the contamination. With the information obtained from these ESAs it would be possible to alter the Project's design and minimise the ground disturbance at contaminated sites.

The geologically sensitive area of the sand hill would be protected from any subsurface disturbance.

The identified soils and geology risks associated with the Project would be appropriately managed with a combination of VicRoads and Roads and Maritime Services standard environmental protection measures and Project-specific environmental management measures.

Air and noise

The Air Impact Assessment examined the extent to which the construction and operational phases of the Project would impact on the air quality of the Echuca-Moama region.

A qualitative assessment of the impact of the Project's construction on air quality was undertaken by considering the potential impacts from dust and emissions from construction vehicles and machinery.

The assessment found the Project's construction would have the potential to impact local air quality, however these impacts would be temporary and would be mitigated using methods applied successfully by VicRoads as part of similar recent road construction projects, in accordance with the EPA Victoria's Best Practice Environmental Management Guidelines for Major Construction Sites (1996) (EPA Victoria Publication 480). These measures would include proactive air quality monitoring to ensure that any exceedances are identified and addressed.

To assess the operational impacts of the Project, VicRoads' Air Quality Screening Tool (AQST) was used to determine the likely worst-case concentrations of traffic exhaust emissions, with predicted traffic volumes obtained from the traffic modelling study used in the Traffic and Transport Impact Assessment.

Even at the closest sensitive receptors to the preferred alignment, concentrations of nitrogen dioxide and particulate matter are predicted at less than 10 microns, which would be substantially less than State Environment Protection Policy (SEPP) (Air Quality Management) intervention levels.

It is therefore expected the Project would easily meet the SEPP (AQM) levels and objectives for air quality.

The Project would also reduce some congestion on the existing bridge and road network, which would provide more efficient traffic movement and a reduction in total vehicle emissions across the local road network.

The Noise Impact Assessment examined the extent to which the construction and operational phases of the Project would impact on nearby sensitive receptors.

The study area for the Noise Impact Assessment encompassed an area within 300m of the centreline of the preferred alignment.

The potential noise and vibration impacts from construction of the Project were assessed by considering the potential for impacts based on the construction activities and equipment likely to be used.

It was found there would be the potential for construction activities to cause noise impacts at the nearest affected sensitive receptors, particularly during corridor clearing and site establishment when heavier machinery is likely to be used.

However, a combination of controls, including restrictions on working hours and implementation of VicRoads' standard environmental protection measures, would reduce noise during construction as far as practicable. It is considered the impacts of noise from construction of the Project would be minor to moderate.

Equipment that is most likely to cause vibration during the Project's construction includes pile drivers, hydraulic rock breakers, jackhammers, bulldozers, vibratory rollers and trucks. With the implementation of VicRoads' standard environmental protection measures and Project-specific environmental management measures, it is considered the impacts of vibration from construction of the Project would be moderate.

Modelling of future operational noise levels for the Project was undertaken for the following scenarios:

- The 'No Project' scenario – predicted noise levels in 2029 without the Project
- The Project – predicted noise levels in 2029 for the initial alignment, without mitigation measures
- The Project – predicted noise levels in 2029 for the initial alignment, with management measures
- The Project – estimated noise levels for the ultimate duplication, following the implementation of management measures.

The Noise Impact Assessment found that, without any mitigation measures, the maximum noise levels permitted to achieve compliance with VicRoads Traffic Noise Reduction Policy (2005) would be exceeded at residential properties in Crofton Street and Echuca Holiday Park.

However, by applying mitigation measures such as low noise asphalt road pavement and noise barriers, the predicted operational noise levels would comply with the VicRoads Traffic Noise Reduction Policy.

In the context of this policy it is considered that the impacts of noise on amenity in residential areas during operation of the Project would not be significant. Whilst the VicRoads Traffic Noise Reduction Policy does not apply to recreational facilities or larger areas of passive use, noise mitigation measures for residential receptors would in some instances also reduce noise impacts to some public open space and parkland areas.

It is noted that, following implementation of mitigation measures, apparent noise levels at some residential receptors and at Victoria Park would still be around twice as loud and apparent noise levels at the Echuca Lawn Tennis Club would be much louder than the 'No Project' scenario. Chapter 14 discusses the social impacts associated with these increased noise levels.

Regional and local economy

The Economic Impact Assessment examined the potential effects of the Project on Echuca-Moama's local and regional economy.

The Project would generate an average of 1,410 full-time equivalent (FTE) direct and indirect jobs per year, and a wage spending stimulus of approximately $18 million over the three-year construction period.

In any given year over the construction period, it is estimated that up to 540 direct FTE jobs will be created, and up to 870 indirect FTE jobs will be supported by the project.

Much of this labour would be sourced from the local and regional workforce providing employment opportunities for local residents.

Additionally, the Project would provide the opportunity for training and upskilling of the local workforce and for the expansion of local and regional businesses to service the primary contractor and temporary construction workers.

Once operational, the Project would improve access and efficiency for heavy vehicles, which would benefit industry and agricultural operators.

Improved efficiency of movement during peak periods would benefit tourism-related businesses

and improve access to and from major events such as the annual Club Marine Southern 80 Ski Race. The Project could also facilitate the opportunity to develop the Bridge Arts Project in NSW.

In addition, removal of heavy vehicles from the Echuca and Moama town centres would improve amenity and allow for planning and investment to create more connected, well-functioning and attractive shopping and dining areas.

Potential construction impacts associated with the preferred alignment could include:

- Amenity impacts at Echuca Holiday Park potentially reducing patronage and causing a loss of revenue
- Disruption to river-based businesses such as paddle-steamer and houseboat businesses, causing loss of revenue
- Displacement of local residents and increased rental prices if temporary construction workers enter the rental market.

Potential operational impacts associated with the preferred alignment could include amenity impacts at the Echuca Holiday Park due to its proximity to the preferred alignment, resulting in loss of patronage and revenue.

It is expected that construction and operational impacts of the ultimate duplication would be similar to those determined for the initial alignment.

The potential impacts of the Project would be minimised through the implementation of VicRoads' standard environmental protection measures, the Project-specific environmental management measures recommended in other specialist assessments and management measures outlined in Chapter 6.

For the construction period, the Project is expected to have a moderate to high positive impact on the local and regional economy. During the operational phase the positive impact of the Project is expected to be moderate when compared against the no project scenario.

Environmental Management Framework

The purpose of the EMF is to provide a transparent framework with clear accountabilities for managing environmental effects and impacts associated with construction and operation of the Project.

The key roles and responsibilities for the construction and operational phases of the Project in Victoria are listed in Chapter 20.

Construction phase

VicRoads and Roads and Maritime Services would appoint one or more construction contractor(s) who would be responsible for construction works for the Project.

VicRoads has established an Environmental Risk Management Guideline to define and aid the implementation of its Environmental Management System for construction and maintenance projects. The guideline has been developed to assist VicRoads staff in the management of the environment in relation to the planning, development and delivery of road construction projects. The Project would be delivered in accordance with VicRoads' Environmental Management System and the guideline.

VicRoads would prepare a construction contract specification(s) for the Project to articulate the requirements for the Project. VicRoads has standard contract specifications that contain environmental protection measures developed to address environmental management principles and legislative requirements.

The specification clauses would be further developed to address specific risks and management measures identified for the Project in this EES where these are not adequately addressed by the specification.

The construction contractor(s) would be required as a condition of contract to prepare a Project-specific EMP for construction. The EMP would be required to address the range of environmental risks and impacts and proposed management measures identified in the EES.

The EMP would incorporate the following:

- A statement of scope and purpose and the environmental objectives
- A schedule of environmental elements that are expected to be affected by the works under the contract including an outline of proposed mitigation treatments and proposed timeframes
- The identification of work activities and an assessment of their potential impacts and associated risks to onsite and offsite environmental receptors (e.g. community, including tourism events, land uses, waterways, floodways, flora and fauna, cultural heritage) including times when the contractor is not on site, including but not limited to matters covered in this specification.

Revisions to the construction contractor(s) environmental documentation may be required as a result of reviews, changes in activities and work practices, legislation, aspects and impacts, or as a result of internal or external audit findings, incidents or complaints.

Operational phase

VicRoads would be responsible for ongoing management of the Victorian portion of the Project post-construction, while Roads and Maritime Services would be responsible for ongoing management of the NSW portion of the Project post-construction.

The key activities would comprise ongoing road maintenance. VicRoads and Roads and Maritime Services may appoint contractors to complete specific maintenance tasks as required during operation. These contracts would be managed in accordance with the relevant authorities' practices, standards and legislative obligations.

To manage its obligations as the responsible road authority under the Road Management Act, VicRoads currently has area-wide contract arrangements in place for the maintenance of the arterial road network. These contracts include the routine maintenance of pavement, shoulders, roadside areas, drainage systems, road furniture and structures on the arterial network and require the contractor to have an EMP in place.

A Project Environment Protection Strategy (PEPS) and risk assessment has been developed by VicRoads to address maintenance activities for the specific area-wide maintenance contracts. The PEPS addresses any additional matters that need to be included in the maintenance contract specification and the maintenance contractor's EMP. As per the process for construction, the maintenance contractor's EMP would be subject to regular monitoring, revision, audit, reporting and review.

A summary of the results of environmental monitoring and studies conducted subsequent to the EES would be communicated through forums including a Project website and community information bulletins.

Conclusion

The EES for the Project has included the preliminary assessment of three alignment options and an integrated detailed assessment of the preferred alignment for the Project, considering a range of environmental, social and economic criteria.

The Project is consistent with the goal of ecologically sustainable development for the following reasons:

- The Project would achieve sustainable benefits in transport efficiency within Echuca-Moama, and a demonstrable ability to meet appropriate levels of service within the local road network and at the two key river crossings
- The Project would make a significant contribution to the local economy during the two construction phases, and provide the environment within which local businesses and the community could take advantage of improved local traffic conditions to make functional and design improvements to local business districts and assets
- The Project would provide associated benefits for the social environment of Echuca and Moama, given their interdependent nature, and strengthen the role of the existing and proposed bridge crossings that provide accessibility, connectivity and support social cohesion
- The Project would promote community resilience, and provide an alternative crossing of the Murray and Campaspe rivers during periods of flooding on the two river systems
- The construction and operation of the Project can be undertaken in a manner that actively manages potential adverse impacts on the local biophysical environment
- The Project would be consistent with the adoption of the precautionary principle, in that all impact assessments have been undertaken assuming the final fully developed Project footprint and the associated scale, character and intensity of impacts on the economic, social and biophysical environment
- In doing so, the Project integrates both long and short term economic, environmental, social and equity considerations
- The Project has involved an extensive community engagement process that has facilitated community involvement. Input from the community on the use of recreational facilities, impacts on public open space, and the Project's predicted substantial reduction in heavy vehicle traffic in the Echuca and Moama town centres has influenced Project outcomes.

This EES documents the predicted risks and impacts of the Project and identifies management measures to reduce the residual impacts to an acceptable level.

EES Exhibition

The EES is exhibited together with the draft Planning Scheme Amendment (for the Campaspe Planning Scheme), the REF and the Preliminary Documentation. The intention is to request a Ministerial amendment to the Planning Scheme (under Section 20(4) of the Planning and Environment Act) and therefore there may be no further opportunity for public comment on these amendments beyond the current exhibition period.

The EES, draft Planning Scheme Amendment, REF and Preliminary Documentation have been placed on exhibition for public comment from 27 August 2015 until 9 October 2015 and may be examined during normal business hours at the following locations:

- **Campaspe Shire Council**, corner of Hare & Heygarth Streets, Echuca, Phone: 1300 666 535 (free within the shire)
- **Campaspe Regional Library**, 310 Hare Street, Echuca, Phone: (03) 5481 2400
- **Murray Shire Council**, Moama Branch Office, 6 Meninya Street, Moama, Phone: (03) 5482 3852
- **Department of Environment, Land, Water & Planning**, Loddon Mallee Region, Level 1, 56-60 King Street, Bendigo, Phone: (03) 4433 8056
- **State Library of Victoria**, 328 Swanston Street, Melbourne, Email: vgp@slv.vic.gov.au
- **Department of the Environment**, 33 Allara Street, Canberra, ACT

VicRoads and Roads and Maritime Services will conduct a community information session for the EES and REF at the St Mary's Hall, 224 Anstruther Street, Echuca VIC 3564, from 12pm to 5pm on Wednesday 2 September 2015, and 2pm to 7pm on Thursday 3 September 2015.

Obtaining and purchasing copies of the EES

The EES, draft Planning Scheme Amendment, Preliminary Documentation and supporting documents can be viewed and downloaded from the VicRoads website at www.vicroads.vic.gov.au. The REF can be viewed and downloaded from the Roads and Maritime Services website www.rms.nsw.gov.au.

Note: If you experience any problems downloading any of the exhibited documents or require assistance accessing them please contact VicRoads or Roads and Maritime Services on the phone number or emails below.

Free copies of the EES Summary Brochure and a DVD of the complete EES Main Report, Technical Reports, draft amendment and Preliminary Documentation are available at display locations and from VicRoads. To access a copy, email nr.mailbox@roads.vic.gov.au or call (03) 5434 5024. Hard copies of the EES Main Report and Technical Reports are available for purchase at $75 each.

A DVD/USB of the complete REF and Technical Reports are available for purchase from Roads and Maritime Services at $10 each. To access a copy, email timothy.v.wilson@rms.nsw.gov.au or call (02) 6937 1604. Hard copies of the REF Main Report and Technical Reports are available for purchase at $25 each.

How to lodge a submission

Interested persons and organisations wishing to make a formal submission on the EES, draft Planning Scheme Amendment, REF or Preliminary Documentation are invited to make submissions by 5.00pm 9 October 2015.

Submissions on the EES, REF and Preliminary Documentation can be made online at: www.delwp.vic.gov.au/echuca-moama-bridge-ees. You must complete the online submission coversheet and indicate whether your submission relates to the EES, REF or Preliminary Documentation (or all three).

Parties wishing to post in a written submission will need to contact Planning Panels Victoria on (03) 8392 6393 to obtain a hard copy of the submission coversheet.

Submissions will be treated as public documents. All submissions must state the name and postal address of the person making the submission. Please read the privacy notice on the EES submission coversheet to see how submissions may be used. Anonymous submissions will not be considered.

EES submissions will be made available for any person to inspect at the following locations:

Campaspe Regional Library, 310 Hare Street, Echuca, Phone: (03) 5481 2400

Alternatively, by appointment at:

Department of Environment, Land, Water and Planning, Level 1, 56-60 King Street, Bendigo.

For an appointment, please call (03) 4433 8056.

All REF submissions will be addressed by Roads and Maritime Services with responses published in a submissions report.

All submissions to the Preliminary Documentation will be addressed by VicRoads and Roads and Maritime Services and provided to the Commonwealth Department of the Environment.

Inquiry hearing process (EES only)

An Inquiry Panel will be appointed by the Minister for Planning under the Environment Effects Act to consider the exhibited documents and public submissions. The Inquiry Panel may also be appointed as an Advisory Committee under the Planning and Environment Act.

The Inquiry Panel will hold a Directions Hearing on 27 October 2015 at which anyone who has made a written submission may request to be heard at the subsequent hearing. Requests to be heard by the Inquiry Panel must be received prior to or at the Directions Hearing.

The Inquiry Panel is expected to commence in the week starting 16 November 2015. Information on the Inquiry Panel process and timetable for the hearings will be published on the Internet as it becomes available – www.delwp.vic.gov.au/echuca-moama-bridge-ees

Following the public hearing, the Inquiry Panel will provide a report to the Minister for Planning, including recommendations on the proposal and its impacts. The Minister for Planning will then issue a formal Assessment of the proposal to the relevant decision-makers to inform their final decisions on applications for approval.

Questions

Questions relating to the **Echuca-Moama Bridge Project** should be directed to Donna Clusker at VicRoads – Phone: (03) 5434 5180, or Tim Wilson at Roads and Maritime Services – Phone: (02) 6937 1604, depending on the jurisdiction.

Questions relating to the **EES** process should be directed to Fiona Murray at the Department of Environment, Land, Water and Planning – Phone: (03) 4433 8056.

Questions relating to the **REF** process should be directed to Tim Wilson at Roads and Maritime Services – Phone: (02) 6937 1604.

Questions relating to the **Preliminary Documentation** process should be directed to Helen Searle, Commonwealth Department of the Environment – Phone: (02) 6275 9119.

Questions relating to the public **Inquiry process** should be directed to Greta Grivas at Planning Panels Victoria on: (03) 8392 6393 or email planning.panels@delwp.vic.gov.au.