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# Victoria's Draft 30-Year Infrastructure Strategy

Engineers Australia Response

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Victoria's Draft 30 Year Infrastructure Strategy

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# 1. About this submission

## 1.1 Engineers Australia

Engineers Australia is the peak body for the engineering profession in Australia. With approximately 100,000 individual members across Australia, we represent individuals from a wide range of disciplines and branches of engineering. Engineers Australia is constituted by Royal Charter to advance the science and practice of engineering for the benefit of the community. Engineers Australia's response is guided by our Charter and Code of Ethics which states that engineers act in the interest of the community, ahead of sectional or personal interests towards a sustainable future. Engineers are members of the community and share the community's aspirations for Australia's future prosperity.

## 1.2 Introduction

This submission has been informed by experienced members of Engineers Australia's Victoria Division Committee. The submission addresses several of the questions from Victoria's Draft Infrastructure Strategy (the Strategy). Engineers Australia welcomes the opportunity to provide this submission to Infrastructure Victoria in response to the Strategy. Engineers Australia broadly support the principles and objectives defined in the Strategy and has provided responses and advice in this submission.

## 1.3 Contact details

Contact details to discuss the contents of this submission further, please contact Sybilla Grady, Senior Policy Advisor on 0488 432 876 or [sgrady@engineersaustralia.org.au](mailto:sgrady@engineersaustralia.org.au).

## 2. Strengths and suggested improvements

### 2.1 Overall impressions of the draft strategy

Engineers Australia broadly supports the draft strategy. The stated objectives are consistent with our identified areas of strategic importance in Australian Infrastructure over the next 30 years. The draft recommendations include most essential considerations in the improvement and advancement of Victoria's liveability and productivity into the future, although we are eager to see more specificity in some of the recommendations, as described in the below responses. The Strategy focusses on the importance of an improved regulatory environment, a greater emphasis on whole-of-life considerations in asset management, and the circular economy, all of which will be essential to ongoing improvements to physical infrastructure.

The success of many of the recommendations contained in the draft require community education to accept a new paradigm in how we use infrastructure, and how we pay for it. This comes with several risks regarding how changes are communicated to the public, and the pace of change. Such changes are complex to implement and risk failing if bi-partisan political support is lacking. Regulatory changes requiring large scale behavioural change and public acceptance must be carefully reviewed and tested. A human centred approach is critical to successful implementation and must be addressed in any action plans going forward. It is also vitally important to consider how we will upskill our local workforce to help deliver these recommendations.

### 2.2 Key strengths of the strategy

The key strengths of the infrastructure strategy update are listed below.

- Inclusive consideration of Victoria-wide interests, ensuring both metropolitan and regional Victoria are represented.
- The focus on resilience, asset maintenance, whole-of-life considerations and managing unexpected events impacting infrastructure assets in Victoria.
- Emphasis on diversity and inclusion principles and social inclusion recommendations are commended. The pandemic has highlighted how demographics and social hierarchy can fundamentally affect how people fare when faced with extraordinary challenges.
- The focus on improving bus networks and bus usage is positive. but we wish to impress that significant public engagement and education will be essential to the success of these measures.
- Recommendation 61 which recommends the incorporation and implementation of emergency reviews.

### 2.3 General suggestions for improvement

- Limited discussion is provided regarding community and workforce education and workforce training requirements. Workforce training and education will be required to support the rollout of the 30-year plan. Consideration of how stakeholder engagement and change management is addressed will be essential to the Plan's success. Analysis of Victoria's infrastructure sector training needs and required engineering capability and technical professionals in the Victorian workforce to implement the plan's recommendations is critical. It is also necessary to consider how to maximise skills utilisation and development from within Victoria itself.
- Limited coverage of the role of the manufacturing and the resource sectors in Victoria's economic growth is provided. It is important to consider how skills can be repurposed and utilised in regional Victoria, such as in Latrobe Valley as power generation moves away from this area, or support for manufacturing electric vehicles in places with a strong automotive history, such as Geelong. It would also be useful to consider exploration for and development of future metals be appropriately supported in the state.
- Recommendation 3: Whilst projects such as the second interconnector to Tasmania and offshore wind are mentioned in passing, we believe that IV should make a firm recommendation regarding government support for such projects.
- Recommendation 7: Demand pricing of electricity should also include review of feed-in tariffs for roof-top solar and other embedded technologies.

- Recommendation 25-27: In addition to freight, it is recommended that analysis of Victoria's future airport needs, such as land acquisition, be included in the draft.
- Recommendation 46: Care needs to be taken in implementing different public transport fare structures. If they are too complex and confusing, changes would be counter-productive and could decrease patronage.
- Recommendations 77-80: These recommendations could be strengthened by leveraging off Commonwealth Government initiatives such as the Inland Rail project.
- Recommendations 81-84: Existing skills should be repurposed for utilisation in places like the Latrobe Valley, as coal-fired power plants are decommissioned. Comprehensive manufacturing industry policy including transition and training arrangements would be beneficial.

## 2.4 Suggestions to assist with implementation

The Strategy should be complemented by a comprehensive stakeholder education program and skills/training strategy for implementation in parallel with the strategy. Several of the recommendations rely on consumer behavioural change and skills such as engineering, urban planning, construction, telecommunications, and biotechnology. This ambitious plan will require skills to be sourced interstate or overseas if they cannot be sourced locally. A comprehensive audit of workforce capacity in Victoria is necessary, and a plan to engage and train the next generation who will see this plan through to completion. Use of local (Victorian) skills and expertise should be encouraged and prioritised.

As with any long-term planning completed at this time, this plan is subject to ongoing review. Particularly given the unprecedented state of flux the Victorian economy is currently in due to unforeseen disasters such as COVID-19 and associated restrictions and bushfires. Longer term emergent climate change impacts must be taken into account.

## 2.5 Further comments

Lack of certainty leads to a lack of preparedness from a resourcing point of view. For example, the current "Big Build" requires an unprecedented level of resourcing in the private sector. Invariably, there is a mix of local and imported capacity, and the actual mix depends on the overall pipeline and certainty of government investment in the medium to long term. Private enterprise is less likely to invest in training to develop local capacity if it considers the current building boom to do be a short-term spike in demand, rather than a long-term, sustainable pipeline of work. Reliable, stable long-term planning and investment allows for more sustainable local capability building and skills creation.

A skills and capability focused, competency based inter-sectoral transfer approach would see people from different industries not going through the same level of economic growth crossover (e.g., detailed design, project management or equipment maintenance or O&M management from other sectors).

# 3. Navigating the energy transition

## 3.1 How should the government support Victorians to move away from using diesel and petrol to power their vehicles?

We consider the best way to do this is via a *carrot and stick* approach. Regulation can act as the *stick* to force change by making fuel more expensive, changing pricing models for petrol/diesel, but this must be accompanied by a *carrot* to incentivise consumer uptake of electric vehicles.

There is also an opportunity to draw on Victoria's proven car manufacturing history by attracting manufacturing and innovation investment to the Victorian economy in this sector. Where such technology is developed locally, there is a good chance of engendering local support, through buy-local campaigns.

The United Nations Sustainable Development Goals (SDGs), in particular SD13 which calls for consideration of carbon impact should be included in the lifecycle costing of mode selection and investment decisions associated with infrastructure planning. Over the life of the infrastructure, what is the cost of CO2 impact, congestion, and lack of disability access, for example.

## 3.2 What other action should the Victorian Government take to coordinate priority renewable energy zones?

Active support to make certain large scale signature projects viable is required via regulatory approval, expedience, and consistency, and via encouragement of collaboration to bring innovative lower cost renewable energy solutions to fruition.

## 3.3 What other actions should be taken to improve energy efficiency in existing buildings?

Improving energy efficiencies in existing buildings requires a focus on insulation, ventilation, purchase and installation of energy star certified products, LED lighting, and offering asset owners and operators ready calculations on return on investment for energy efficient upgrades. Options and incentives to assist existing buildings to become more sustainable across energy-water and waste include:

- Auto correctors on temperature settings for unused areas (HDVC, heating and air condition systems).
- Motion sensors for lighting.
- Revamping of sorting of waste by business and large facilities.
- Geographic clustering of greater recycling
- Installation of waste-to-energy plants.
- Embedded electricity network virtual renewable power purchase agreements.

Refer to Australian Sustainable Built Environment Council (ASBEC) publication *Building efficiency for jobs and growth – Why every building counts in the post COVID recovery*<sup>1</sup>, and Climateworks, Infrastructure Sustainability Council of Australia and ASBEC Issues Paper *Reshaping Infrastructure for a Net Zero Future*<sup>2</sup>.

## 3.4 How can households be better supported to transition to demand management electricity pricing?

Broad, evidence-based stakeholder education is critically important to provide for change to consumer behaviours. Community and stakeholder education promotes an environment which supports innovation and new product and services, in collaboration with other Victorian government organisations such as Invest Victoria.

Pricing changes need to include an overhaul of feed-in tariffs and ongoing subsidies for micro-generation options, such as roof top solar, and batteries.

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<sup>1</sup> <https://www.asbec.asn.au/wordpress/wp-content/uploads/2020/06/200617-Building-efficiency-for-jobs-and-growth-FINAL.pdf>

<sup>2</sup> <https://www.asbec.asn.au/wordpress/wp-content/uploads/2020/03/200304-CWA-ISCA-ASBEC-Reshaping-Infrastructure-Issues-Paper.pdf>

## 4. Responding to a changing climate

### 4.1 How should the Victorian Government build community understanding of alternative water sources, such as recycled water for drinking?

Community education must provide information as well as recommended behaviours and actions. Diverse methods of dissemination should be employed, including mainstream media campaigns, social media, specific websites including fact sheets and opportunity for enquiries, community notice boards, site specific signage, targeted email campaigns and letter box drops, face to face workshops and facilitated discussions, on site and online tours of facilities and water management, access to experts to build confidence to concerned parties by providing evidence and reassurance that alternative sources are safe.

### 4.2 What would improve demand management of agricultural water?

The Australian government should implement a strategy that facilitates water service providers to explore and utilise opportunities to access other sources of water to achieve long-term water security outcomes.

This strategy should include:

- The removal of policy bans on use of certain types of water.
- Optimisation plans at the local scale that identify the optimal mix of water supply sources under different availability scenarios and for different purposes.
- A dedicated community engagement plan allowing for improved transparency of all water supply options, benefits and risks.

### 4.3 What should be done to make infrastructure more resilient to climate change?

Government at all levels and across all departments require a more coordinated and cohesive approach to climate change. Prioritisation of data collection and analysis is key: for example, coastal water level rise impacts (close to population centres), impact of escalating summer temperatures, and transport requirements associated with crisis/emergency management corridors. There are significant opportunities to work with research institutions to model and plan for more frequent and extreme weather events associated with climate change. Across regulations, design standards and guidelines there is not a single, consolidated source of information on design for existing and new infrastructure in response to climate change. Development of bespoke requirements / regulations is recommended.

### 4.4 When is it appropriate to retreat from coastal erosion, rather than invest in coastal strengthen infrastructure?

Coastal erosion is a natural occurrence and cannot be prevented everywhere. A comprehensive planning framework with easily auditable decision-making accountability and transparency is required to assess whether engineering intervention is appropriate. Certainly, areas of cultural significance, critical infrastructure, or urban necessity, coastal strengthening should be prioritised. However, there needs to be a clear decision-making matrix for assessment of where the above conditions do not necessarily apply and where it might be appropriate to allow for coastal erosion.



## 5. Embracing technology and innovation

### 5.1 What funds or policy frameworks have been used successfully to promote systematic innovation in infrastructure?

Systemic innovation in infrastructure requires a level of open-mindedness, acceptance of reasonable risks and awareness of what change involves from a change management perspective. Interrelated parties have a holistic, ecosystem-wide perspective to identify, test and assess new ways of doing things that will be more cost effective, sustainable, and future proof.

Consideration and assessment of appropriate infrastructure delivery models is also important to ensure the right contract type is assigned to projects accordingly. For example, public private partnerships can result in incomplete risk transfer, but have good asset lifecycle accountability. Alliances are collaborative but can be very short sighted insofar as they focus solely on design & construct methods.

### 5.2 What are the risks of adopting these new technologies?

The biggest risk we see in adopting new and innovative technologies is risk aversion, and fear of the new. Test programs can support confidence by proving performance but can be expensive. Incentive funding may assist in breaking down barriers as has been the case with the financial bonus for adoption of new solutions in the Level Crossing Program has shown.

Another barrier is the coexistence of new and old forms, running in parallel. For example, infrastructure to support the existing fleet of petrol-based and human operated vehicles whilst supporting increased use of electric-powered and autonomous vehicles will be required. Rigorous consideration of what infrastructure, policy reforms and incentives will be required to phase out technology that has been superseded is critical.

Government legislation and regulation must be agile to support and integrate new technology and ensure it is rolled out within a controlled environment.

### 5.3 What changes can assist people to keep using telehealth services?

Ongoing improvement of telecommunication technology is vital in this regard. This is specifically the case for disadvantaged, remote and rural communities. There is a potential requirement for provision of community centres where internet access can be privately obtained, for those who are unable to access it at home.

## 6. Staying connected to global markets.

### 6.1 How can we temporarily use land reserved for future transport and infrastructure projects?

The temporary state of any such land needs to be clearly and regularly communicated to local communities, to avoid conflict when it is ultimately developed for its intended purpose.

## 7. Building a circular economy

### 7.1 What other cost-effective actions can the Victorian Government take towards a circular economy?

Circular economy experts argue that a true circular economy will specifically set out to prioritise reuse over recycling, and the two should not be confused. In the reports the terms for reuse and recycling are frequently used together and may describe a collective approach.

The National Waste Policy 2019 defines reuse as a term that can be applied to waste products. A clearer definition might be: Reuse may be applied to unwanted products or materials that sit outside the waste stream.

The construction and demolition sector also use the term 'Zero waste' where zero waste is avoiding all disposal to landfill. By using this definition, many in the sector do not consider recycling as waste.

Mandating use of recycled materials in public projects and incentivising sustainable procurement practices is encouraged.

Greater alignment with industry in funding and development of new ventures in sustainable waste collection sorting and separation, and manufacturing will be essential for the long-term.

An integrated waste procurement strategy should include the integral upstream, midstream, and downstream processing of waste into a range of products. The products can be both intermediates and final products, and include metals, recyclable building materials, compost and feeds, composite materials, and chemicals, whereas energy includes fuels, power, and/or heat.

Reuse is a core principle of circular economies and should be prioritised similarly to recycling.

Consider incentives to use recycled materials in all areas: government, private businesses and households. Examples include offering subsidies to companies producing recycled materials to make their products cheaper or by introducing extra taxes on products that use virgin materials.

Introduction of subsidies to help businesses recycle materials is another option. For example, for regional areas that may have large freight costs, offering subsidies on freight when transporting material for recycling.

Analysis of waste plastics, sorting, solar panels, and organics must be analysed and prioritised for capture, and create value through reuse and recycling. There are several wastestreams not being adequately captured for reuse and recycling, for example unregulated e-waste and rare earths. There are opportunities to capture and create value add manufactured products.

Potential Government strategies required to drive management of waste include:

- Increase operations for processing and recovery.
- A ban on disposing of recyclable or reusable waste to landfill.
- Support for development of appropriate processing operations such as grants or dispensations.
- Universal implementation of a landfill levy to incentivise investment and re-direction of waste.
- Taxation or other relief for enterprises involved in recycling and reuse.

## 7.2 What more can the Victorian Government do to enable more private investment in recycling facilities?

Increasing funding, innovation support and research and development of recycling facilities will encourage private investment. Private investment could also be supported through government procurement guidelines specifically mandating certain activities in this area. It is important that ongoing improvements in waste collection ensure that the product used by recycling companies is appropriately segregated.

# 8. Integrating land use and infrastructure planning

## 8.1 How does a lack of certainty in Victorian Government infrastructure planning affect private investment decisions?

Lack of certainty translates to a lack of preparedness from a resourcing point of view, particularly from an engineering sector perspective. For example, the current “Big Build” requires an unprecedented level of resourcing in the private sector. Invariably, there is a mix of local and imported capacity required, and the actual mix depends on the overall pipeline and certainty of government investment in the medium to long term. Private enterprise is less likely to invest in training and development of local capacity if the current building boom is perceived as a short-term spike, rather than a long-term, sustainable pipeline of work. Reliable, stable long-term planning allows for more sustainable local capability building and skills creation.

# 9. Create thriving urban places

## 9.1 What types of locations should be prioritised for building more homes?

New homes need to be built on existing transport corridors, with easy access to activity centres. Development of regional centres such as Geelong, Ballarat, and Bendigo as commuter hubs, from which people can easily commute back and forth to Melbourne should be prioritised. An international example includes the London model, where several towns exist within 100 miles or so of central London, where supporting infrastructure supports people to commute to and from work.

## 9.2 How can the Victorian Government encourage more short trips to be taken by walking or cycling?

Greater investment in pedestrian and cycling infrastructure must be incorporated into major projects. User focussed engagement and empowerment to ensure paths link up, are appropriately located and have clearly defined destinations in mind will encourage use.

Active support for e-bike and e-scooter rental schemes across cities and not just in central business districts will encourage community uptake of active modes of transport.

Consideration of classification of bikes as a fringe benefit under the taxation scheme would allow commuters to purchase bikes pre-tax.

Please refer to Engineers Australia Transport Australia Society Discussion Paper on Active Transport <https://www.engineersaustralia.org.au/sites/default/files/Learned%20Society/Active%20Transport%20Discussion%20Paper%20V0.3.pdf>

## 9.3 How can we meet the growing public transport needs of our ageing population?

All transport must be evaluated to ensure compliance with the Disability Discrimination Act. Engagement with and education for elderly Australians will be essential. Face to face sessions, phone support lines, as well as online delivery of programs to assist elderly Australians to navigate new modes of transport, including information on variable pricing, routes and times as well as reliance on apps will challenge elderly transport consumers and adequate support to ensure inclusion will be critical.

# 10. Steer changes in travel behaviour

## 10.1 How else should the Victorian Government support people to change their travel behaviour?

The pace of change is a primary consideration as many will take time to adapt. Encouraging mode choice is fine in inner city areas, close to major activity centres, but planning and support for people in suburbs or areas with poor connectivity is essential to behavioural change. Not everyone will be able to choose the best mode of transport, sometimes this will be dictated by geographic circumstance and mode availability.

When considering options such as congestion pricing, provisions of options to enable mode choice is a key consideration. A congestion charge will not be effective if driving is still the only viable mode of travel for people to get to and from a destination. Roll out of usage/congestion charges must not occur before provision of suitable additional infrastructure options.

## 10.2 How can people be supported to understand a different public transport fare structure?

When charging for station parking, there must be recognition that many people drive to the station and park out of necessity. Charging for parking, in addition to public transport fares will discourage many from public transport use. A

whole of trip fare strategy is needed. This is important in outer suburbs, or outside of Melbourne in particular where the nearest station may be several kilometres away and appropriate connector bus routes not necessarily available.

Fare structures based on different modes and different travel times can become very complex very quickly. Every effort should be made to keep them as simple as possible. Fare caps need to be retained so that those requiring multiple trips are not disadvantaged.

## 11. Adapting infrastructure for modern needs

### 11.1 How should the Victorian Government better incentivise good asset management?

Much of Victoria's post war infrastructure is reaching the end of its intended design life. Greater investment in asset management, renovation and maintenance will be required to sustain existing infrastructure. A potential way to better maintain information is to improve monitoring.

## 12. Shaping the transport network for better access

### 12.1 What would make buses more attractive to use?

Uniform, consistent routes turn up and go services and rapid travel which is comparable to or faster than a car journey will assist in making bus use more attractive.

It is still common in many parts of Melbourne for the first bus to be 7am or later, and tend to arrive at 15-20mins intervals with unreliable arrival times, and long, complicated, indirect routes. Access to buses at earlier and later times of the day, with faster and more direct routes is encouraged.

One proposed solution is for pop up bus routes<sup>3</sup> for aged/disabled residents in local communities. The greatest advantage of buses is they are flexible. It should be possible, noting there may be scheduling constraints, to create pop up but stops in places where a disabled resident, for example, lives nearby, making it easier for them to use the service.

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<sup>3</sup> For example, see <https://www.theverge.com/2017/5/9/15590820/citymapper-bus-service-london>

## 13. Planning for growth areas

### 13.1 What else can the Victorian Government do to ensure the right infrastructure arrives at the right time in areas experiencing rapid growth?

Wherever possible, development should be close to existing activity centres, business districts and transport corridors. Where development occurs on or near an existing transport route, upgrade of those routes must be urgently prioritised.

One example to consider is that rapid housing development has been occurring in Cranbourne East and Clyde since the late 90s, including the Casey Fields sporting complex. Still, more than 20 years on, there is no train-station nearby, despite it having been discussed and promised since that period. The negative outcome of this is creation of a car-centric community as they have no viable transport alternative. In this example, the line extension and station are presumably waiting for sufficient demand to justify the infrastructure on a cost-benefit basis.

In such communities, the infrastructure should have been built prior, or in parallel to the initial development. The earliest residents moving into such a community should have access to good public transport and other infrastructure. This may reduce requirements for a second car and limit overreliance on driving where other options are available.

## 14. Developing regional Victoria

### 14.1 Are there other cost-effective ways to enhance the market access and productivity of regional businesses and industry?

The 30-year strategy does not reference the Inland Rail corridor upgrades currently proposed for the Melbourne to Albury rail corridor. There may be opportunities to leverage these upgrades to enhance and activate local communities along the corridor.

## 15. Unlocking regional economic growth opportunities

### 15.1 Are there other cost-effective infrastructure solutions that can unlock regional growth in industries of competitive strength?

There are opportunities to link to the innovation sector and set up innovation hubs in regional areas, for example in agriculture and water. Maintenance upgrades and renovation as well as a focus on reinvigorating manufacturing industries will unlock regional growth and provide support for growing populations.

## 15.2 Are there specific locations where implementing these recommendations would have a greater impact on regional economies?

- Gippsland: As power generation moves away from this area, together with decreased forestry activity, there is an opportunity to re-purpose existing skills and workforce capacity.
- Portland: Consideration of the long-term future of the aluminium smelter is desirable to determine whether existing infrastructure/workforce capacity can be repurposed.
- Geelong: Ideal for reinvigoration of vehicle manufacturing with a focus on innovative technologies to produce electric and automated vehicles.
- Ballarat/Bendigo: One consideration would be to manufacture trains.

Thorough engagement with all local communities is critical.



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