A Portrait for Victoria's Future

A Comparative Analysis of Infrastructure Victoria's *Choosing Victoria's Future* and Regen Melbourne's Greater Melbourne City Portrait

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Developed by

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Regen Melbourne acknowledges the traditional custodians of Greater Melbourne, the Wurundjeri Woi Wurrung, Bunurong and Boon Wurrung people of the Kulin Nation. We pay our deep respect to Elders past and present, and we acknowledge their living connections to land and waterways, including Birrarung Yarra River and Nairm Port Phillip Bay.

Contents

1. Purpose and background

Purpose

The purpose of this document is two-fold: first, it is to demonstrate the strategic importance of holistic measures of progress to inform decision-making in planning and policy; second, it is to highlight the value of the City Portrait as a model and methodology for this purpose.

This purpose is explored through a comparative analysis between the Greater Melbourne City Portrait, released by Regen Melbourne in November 2023, and *Choosing Victoria's Future* (CVF), a set of five future development scenarios modelled by Infrastructure Victoria (IV) and released in October 2023. Both of these models apply quantitative measurement to assess the performance of place, supplemented by qualitative narrative and reflection. The City Portrait focuses on the current state of Greater Melbourne, and the CVF report focuses on future state-wide development options. Despite the differences in origin and scope, including IV's infrastructure-centric remit, both the choice of metrics in each model and the ways in which they are applied offer useful insights.

We begin this work with an assertion that measurement matters: what we measure and how we measure it reflects choices, values and underlying mental models. Policy-making and investment are informed by quantitative evidence, and this evidence is shaped by decision makers' goals. Historically, parameters for decision-making, and the data and evidence underpinning them, have been relatively narrow. However, the current challenges and pace of change that we are experiencing locally and globally are unprecedented, and traditional forms of measurement no longer meet communities' needs. We therefore have an imperative to reexamine the goals that have underpinned our long-time decision-making - and the way that we measure progress towards them.

In this current context, the City Portrait presents a methodology and a model that provides a holistic understanding of a place as a system. It offers a new approach that supports us to measure progress towards a goal of social wellbeing within the limits of the planet.

This document responds to the following questions:

Overarching question:

- How can the City Portrait be applied to understand the anticipated holistic outcomes associated with different approaches to planning and development across Victoria?

Sub-questions:

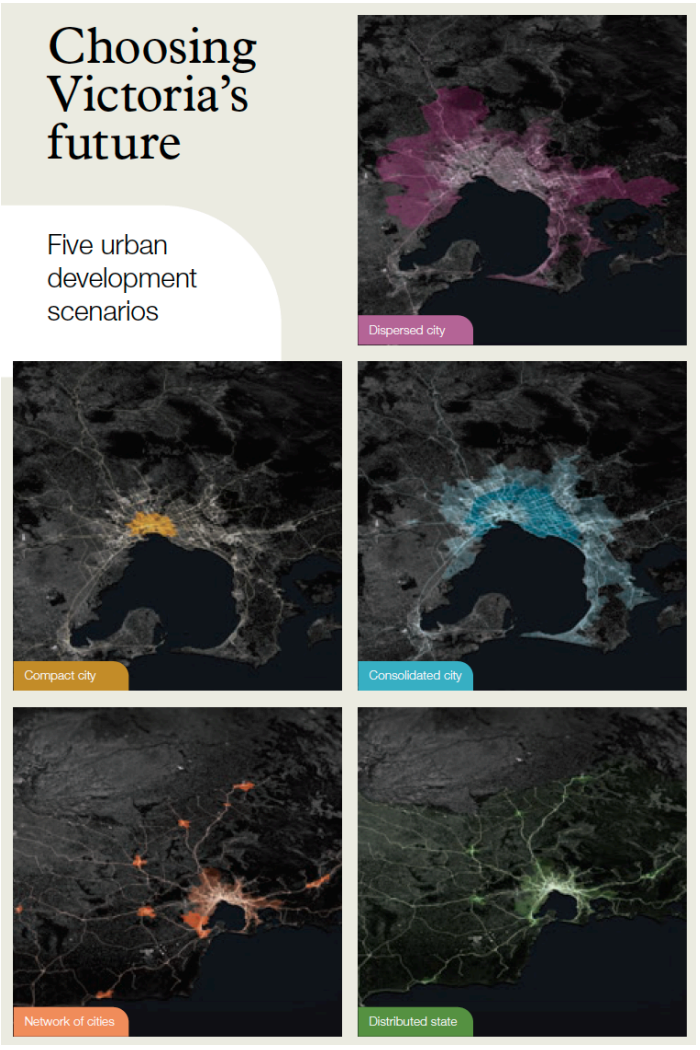
- How does the City Portrait align with the *Choosing Victoria's Future* indicator framework for modelling scenarios for future growth and development across Victoria? (*answered through Section 2)*
- What do differences between the frameworks reveal about the differences between the two approaches? (*answered through Section 3)*

- Based on where the two frameworks align, which scenarios developed in *Choosing Victoria's Future* best suggest movement towards the 'safe and just space' for Greater Melbourne? (*answered through Section 3)*
- What trade-offs exist in any of these scenarios, such as between social and ecological outcomes? (*answered through Section 3)*
- How might policymakers apply the City Portrait, in line with or building on the *Choosing Victoria's Future* scenarios, to inform future planning and policy decision-making? (*answered through Section 4)*

Infrastructure Victoria and *Choosing Victoria's Future*

Infrastructure Victoria (IV) is an independent body that is tasked with preparing a 30-year infrastructure strategy, providing independent advice to government and conducting research.

Its 2023 report, *Choosing Victoria's Future*, explores the impacts of five urban development scenarios. With projections indicating that Victoria's population will reach around 11 million people by 2056, the study investigates how choices in urban development affect social, economic and environmental outcomes.

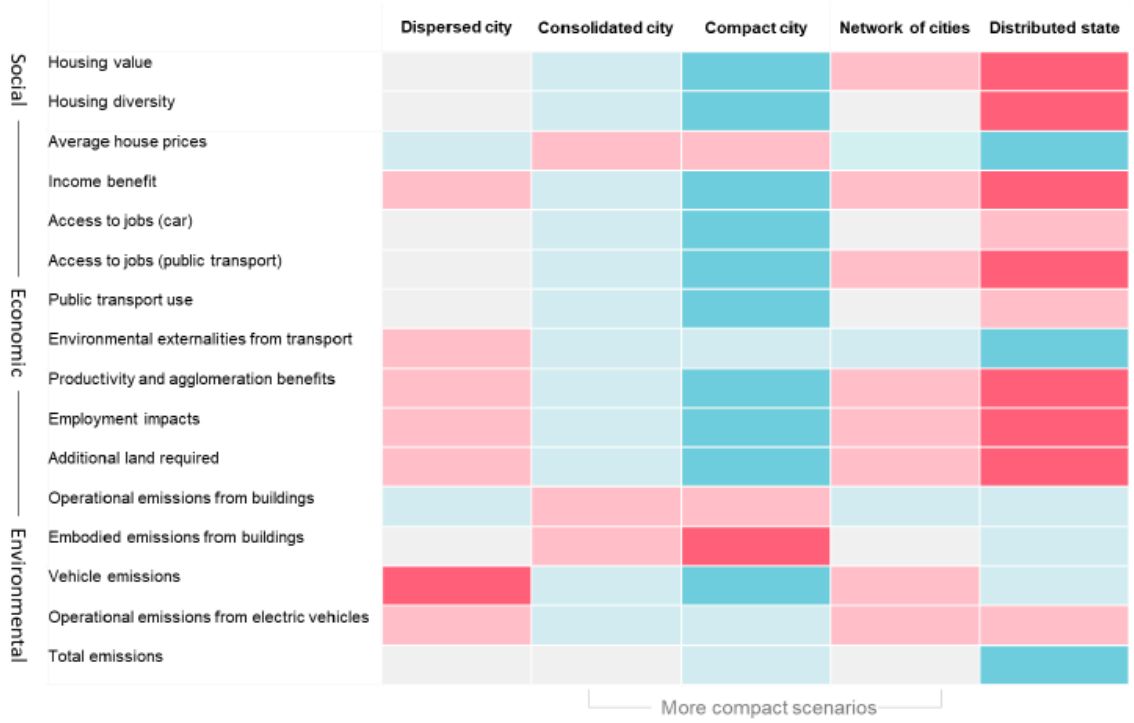


In line with IV's mandate, the report takes an infrastructure-led approach to outline five distinct scenarios:

- **Dispersed City:** Melbourne's growth areas have many more detached homes
- **Consolidated City:** Melbourne's inner and middle areas have many more medium-density homes
- **Compact City:** Melbourne's inner areas have many more high-density homes
- **Network of Cities:** Regional centres have many more homes
- **Distributed State:** Regional towns and rural areas have many more homes

In the report, each scenario is analysed based on an indicator framework designed to quantify its impact on housing, economy, job types, greenhouse gas emissions, land use, and infrastructure costs. The scenarios are then scored across social, economic and environmental dimensions.

The study uses the Dispersed City Scenario as a baseline, as this most closely aligns with current development patterns. This is then used to compare with the other scenarios:

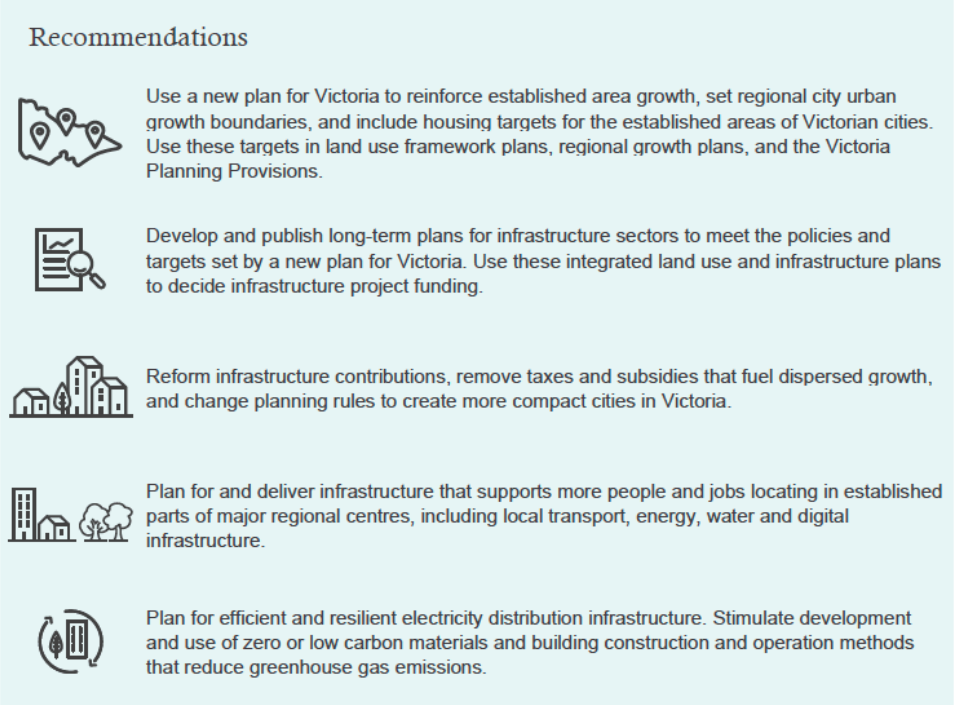


Data source: The Centre for International Economics, *Economic, social, and environmental impacts of alternative urban development scenarios for Victoria*, 2023

Note: blue shading indicates a more positive outcome and red indicates a more negative outcome, relative to all other scenarios. Grey shading means a neutral outcome.

Based on this approach, the report suggests that more consolidated or compact cities are expected to perform better across multiple dimensions, including improving quality of life and reducing government investment required for infrastructure delivery. Trade-offs associated with a transition towards more compact living are also identified, such as changes in established suburbs, lower rates of affordable homes and higher embodied carbon emissions from high-rise building construction, maintenance, and disposal.

The summary of IV's recommendations to the Victorian State Government is outlined below:



Recommendations

Use a new plan for Victoria to reinforce established area growth, set regional city urban growth boundaries, and include housing targets for the established areas of Victorian cities. Use these targets in land use framework plans, regional growth plans, and the Victoria Planning Provisions.

Develop and publish long-term plans for infrastructure sectors to meet the policies and targets set by a new plan for Victoria. Use these integrated land use and infrastructure plans to decide infrastructure project funding.

Reform infrastructure contributions, remove taxes and subsidies that fuel dispersed growth, and change planning rules to create more compact cities in Victoria.

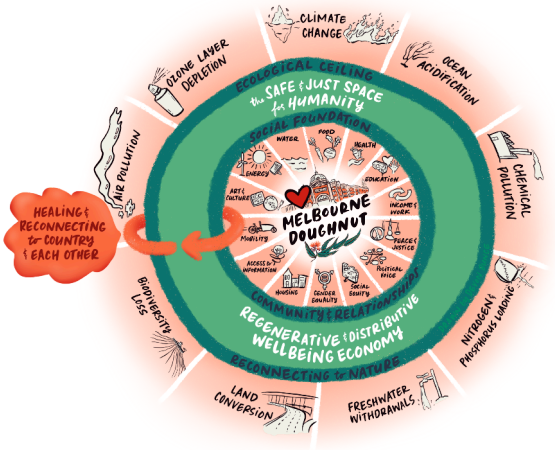
Plan for and deliver infrastructure that supports more people and jobs locating in established parts of major regional centres, including local transport, energy, water and digital infrastructure.

Plan for efficient and resilient electricity distribution infrastructure. Stimulate development and use of zero or low carbon materials and building construction and operation methods that reduce greenhouse gas emissions.

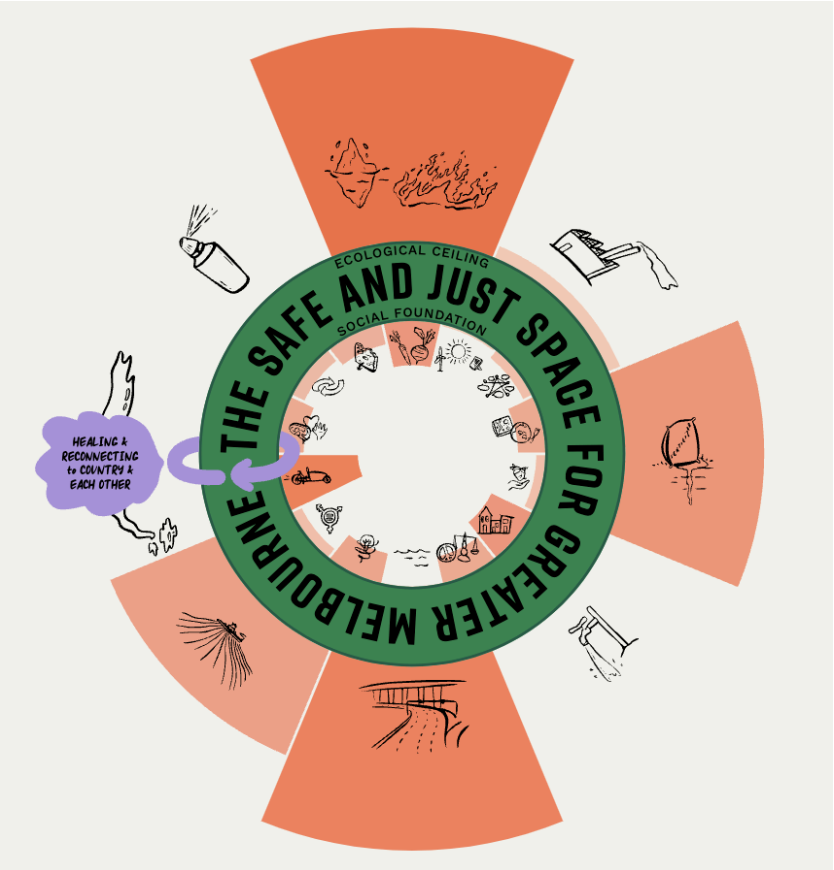
Regen Melbourne and the Greater Melbourne City Portrait

Regen Melbourne is a not-for profit engine for ambitious collaboration in service to Greater Melbourne. The organisation hosts a range of projects designed to move Greater Melbourne towards a future where people and place can thrive.

Regen Melbourne emerged from the dual crises of the Black Summer bushfires and the COVID-19 crises, as communities were seeking a new vision for the future of the city. A community research project explored the downscaling of Doughnut Economics, a framework developed by economist Kate Raworth that defines a 'safe and just space' where human needs are able to be met within the planet's ecological bounds. A 'Melbourne Doughnut' was created to align this framework with Melbourne's identity:



In 2023, Regen Melbourne led a highly collaborative process to evolve the Melbourne Doughnut into the Greater Melbourne City Portrait, applying data to each dimension of the Social Foundation (the inside) and Ecological Ceiling (the outside) to create a baseline measurement of the city's social and ecological wellbeing. The City Portrait also includes qualitative reflection on the 'Healing and Reconnecting to Country and Each Other' element, which ties together the social and ecological rings:



The City Portrait reveals a nuanced picture of the city, including a number of key insights:

1. **The liveability that we have achieved has not been evenly distributed** – For all that we have to be proud of, deep-seated inequalities in our city persist.

2. **The liveability we have is a result of us living beyond our means** – We consume too many resources, convert too much land for human use and produce too much waste. In scientific terms, we've been exceeding our 'Ecological Ceiling', pushing the limits of what the planet can sustain.

3. **Greater Melbourne isn't a bubble** – It is overly simplistic to try to understand our city without acknowledging our relationships with the surrounding regions and with people globally.

4. **Our social and environmental challenges are deeply interconnected** – The City Portrait reveals the positive and negative feedback loops between dimensions and between the inside and outside of the Melbourne Doughnut.

5. **We have the resources we need for our city to thrive** – The City Portrait reveals the many strengths that we have as a city. We have the financial, technical and natural resources, and insight we need to meet our human needs within the Ecological Ceiling.

6. **We have a global responsibility** – Melbourne is a wealthy and privileged global city and is a disproportionate contributor to planetary breakdown. This leads to a global responsibility to understand and respond to our urgent times, build on our strengths, and become a beacon city for regeneration.

These insights informed a number of recommendations for shifting Greater Melbourne's systems towards a safe and just future; these are summarised in general terms below:

1. **Create, support and adopt more holistic measures of progress** – In order to tackle the systemic challenges in our city, we need to go beyond first order effects and simple measures of progress.

2. **Engage in (and invest in) deep collaboration** – None of our major challenges can be solved by single actors, whether government, business or civil society.

3. **Normalise integrated decision making and internalise negative externalities** – With the City Portrait as a holistic compass for progress, the responsibility now sits with all of us to understand systemic interconnections.

4. **Shift capital towards systemic interventions** – The City Portrait reveals the interconnected nature of our systemic challenges and the need for aligned investment models.

5. **Increase our collective ambitions** – We have choices to make as a city. The shortfall and overshoot apparent in the City Portrait reveals the need for action on many fronts, but above all we need to dramatically increase our collective ambitions.

6. **Go out and smell the wattle.** Take a moment to truly reconnect with nature. Remember, for all of our modern hubris, we are all part of one living ecosystem.

2. Mapping frameworks: City Portrait dimensions and *Choosing Victoria's Future* indicators

How does the City Portrait align with the Choosing Victoria's Future indicator framework for modelling scenarios for future growth and development across Victoria?

What do differences between the frameworks reveal about the differences between the two approaches?

Framework mapping

Understanding the relationship between the *Choosing Victoria's Future* (CVF) scenario modelling and the City Portrait began with mapping the CVF indicator framework to the dimensions of the City Portrait.

The indicators applied in the CVF report each include a name and an associated unit of measure, so the mapping exercise corresponded to each individual indicator.

The City Portrait framework has a greater hierarchy: each 'dimension' of the Social Foundation or Ecological Ceiling is made up of 1–3 'outcomes' that describe components of that dimension. For each outcome, a number of indicators with associated units of measure are quantified.

	Choosing Victoria's Future	**Greater Melbourne City Portrait**
Overarching goal(s)	Understanding scenarios' performance across social, economic and environmental measures	A safe and just space where human needs are met within ecological limits
Second order	General categorisation of social, economic and environmental indicators	Dimensions *14 social, 8 ecological*
Third order	Indicators *6 social, 8 economic, 7 environmental*	Outcomes *33 social, 10 ecological*
Metrics	Measures *21 in total, one per indicator*	Indicators with targets *53 social, 10 ecological*

We first identified the City Portrait dimensions and outcomes that align with each of the CVF indicators, and specified a rationale or set of assumptions for why these were included.

For the purpose of this analysis, the 'outcome' level of the City Portrait framework was applied, as this was the level of detail from the City Portrait that best aligned with the premise of each of the CVF indicators. Only a few of the CVF indicators were seen to correspond directly with the measurable indicators from the City Portrait, so comparing at this level would have resulted in minimal alignment. Likewise, the indicators applied in the City Portrait are a non-exhaustive selection corresponding to each outcome, and in many cases CVF indicators could be considered similarly relevant.

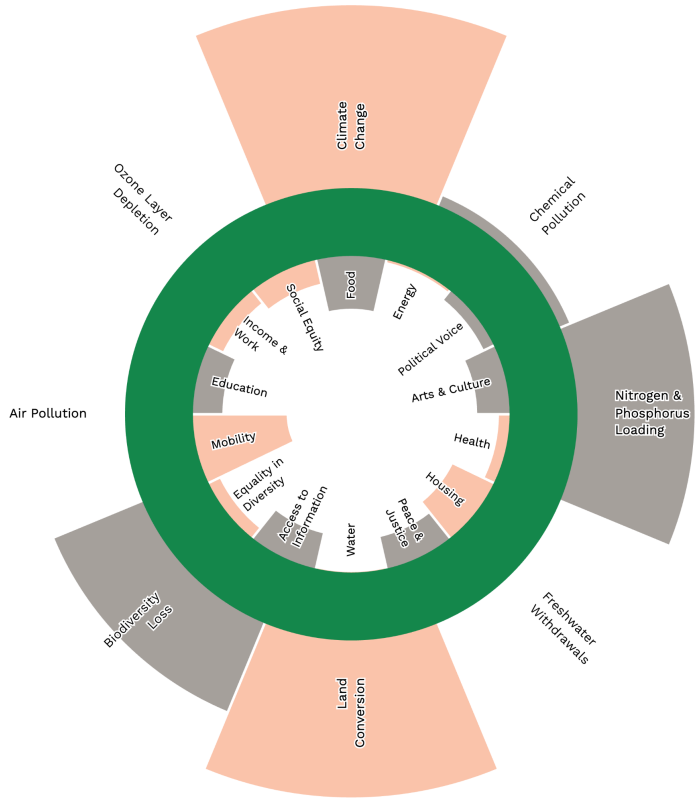
This mapping is outlined in the table in Appendix 1a. It shows that at least one City Portrait dimension and outcome (and in many cases more) corresponds with each of the CVF indicators. **This demonstrates that the measurable components of the CVF indicator framework are strongly represented in the City Portrait framework.**

We next mapped the two frameworks in reverse, identifying the CVF indicators that align with each of the City Portrait's dimensions, and specified a rationale or set of assumptions for why these were included.

The mapping was completed at the dimension level, with rationale and assumptions provided about which outcomes were represented through CVF indicators. A graduated 'scoring' system was used in this case:

Completely represented	All outcomes of the City Portrait dimension are represented through CVF indicators
Partially represented	Some outcomes of the City Portrait dimension are represented through CVF indicators
Not represented	No outcomes of the City Portrait dimension are represented through CVF indicators

The dimensions not represented at all in the CVF indicator framework are visualised in the Doughnut diagram below; a table outlining the rationale and assumptions behind this mapping is in Appendix 1b. It shows that many of the City Portrait's dimensions are either not represented or are only partially represented through the CVF quantitative indicators.



In summary, only three of the 14 Social Foundation dimensions and none of the Ecological dimensions of the City Portrait are considered to be 'completely represented' in the CVF indicator framework. **This demonstrates that the CVF indicator framework covers only a portion of the elements represented in the City Portrait framework.**

	Completely represented	Partially represented	Not represented
Social Foundation	• Housing • Mobility • Income & Work	• Energy • Health • Water • Equality in Diversity • Social Equity	• Food • Political Voice • Arts & Culture • Peace & Justice • Access to Information • Education
Ecological Ceiling		• Climate Change • Land Conversion • Air Pollution	• Chemical Pollution • Nitrogen & Phosphorus Loading • Freshwater Withdrawals • Biodiversity Loss • Ozone Layer Depletion (not expected to be within scope)

Analysis of framework mapping

The significant differences in the 'coverage' of the two frameworks can be attributed to the nature of the frameworks themselves, as well as the methodologies used to apply them in Victoria.

Scope and remit of methodologies

The scope and remit of Infrastructure VIctoria and Regen Melbourne differ, influencing the methodology applied to each framework. It is important to acknowledge IV's specific remit, which is to provide apolitical advice to the Victorian government on infrastructure-specific questions. While IV includes a wide range of forms of infrastructure within its scope, there are limitations to what its research is designed to address. As such, *Choosing Victoria's Future* was a centralised initiative, focused on evaluating the relative merits of different infrastructure design and planning approaches to manage the state's projected future growth and development. In it, IV avoids any explicit discussion of politics and normative claims about any particular form of development; for example, it does not quantify social, economic or environmental targets that it aims for any of the scenarios to achieve. Instead, it presents a comparative analysis of the scenarios' performance in relation to the selected indicators.

In contrast, the City Portrait was a broad, participatory process anchored on Doughnut Economics, with a stated normative goal of defining a 'safe and just' future for Greater Melbourne. It explicitly orients towards a goal of social and environmental wellbeing, reinforced by a set of social and environmental targets.

Selection and availability of datasets

The two frameworks draw on different types of data: the CVF report focuses on economic metrics while the City Portrait reflects a diversity of social and ecological measures. The analysis to define and assess each of the CVF scenarios was commissioned specifically for this report, based on existing and available datasets. These datasets tend to focus most on economic measures, in line with current policy understandings and expectations of what urban development aims to achieve. This is reflected in the CVF indicator framework, where economic terms are both included in their own right and also used to estimate many of the social and environmental impacts of each scenario. The report qualitatively refers to non-monetary outcomes, such as biodiversity impacts related to land use and health outcomes related to urban form, but it is not set up to model such outcomes in ecological or human terms.

In the City Portrait, indicators were selected based on the types of measures that could align strongly with each outcome. Indicators are designed to measure more in demographic and ecological terms, rather than in monetary value. However, securing consistent and appropriate datasets to apply to all of the City Portrait's dimensions and outcomes as defined by the collective process undertaken was a considerable challenge, and some outcomes remain without suitable measures.

Political landscapes, data and decision-making

This distinction between frameworks offers a useful reflection on the relationship between data availability and policy appetites for holistic decision-making. Even in the midst of serious political, social and environmental challenges facing us today, most data sources disproportionately emphasise economic productivity, reinforcing policy and investment models that prioritise GDP over social and ecological outcomes. In the CVF report, this paradigm is reflected in the indicator set and ultimately influences IV's final recommendations to government about whether and why certain forms of urban development are preferable for Victoria's future. The qualitative reflection that IV presents acknowledges a more holistic and nuanced understanding of each scenario's potential impacts. Ultimately, however, the scenarios are evaluated based on the measurable indicators, curated to align with IV's requirement to meet decision-makers' needs, which we consider to be set in entrenched economic and political landscapes.

While the City Portrait is intentionally designed with a larger aperture, and with a broader audience in mind, capturing deep data to serve its wellbeing-centric goal continues to prove challenging. It highlights that the datasets to help navigate towards a regenerative future do not exist, limiting the ability to accelerate a genuine shift in policy-making goals.

In summary, City Portrait offers a way to expand on the CVF approach to build a case for a different future for Melbourne. The CVF report provides policymakers with a meaningful and in-depth evidence base, but is limited to current economic and political paradigms that are reinforced by readily available data. The City Portrait offers a way to extend this work to more fully 'measure what matters', applying a holistic lens that more fully accounts for critical social and ecological outcomes, and inviting new forms of data collection to aid in this purpose.

3. Possible future Doughnuts: Assessing growth scenarios with the City Portrait

Based on where the two frameworks align, which scenarios developed in Choosing Victoria's Future best suggest movement towards the 'safe and just space' for Greater Melbourne?

What trade-offs exist in any of these scenarios, such as between social and ecological outcomes?

Growth scenarios as City Portraits

Mapping the two frameworks allowed us to explore how each scenario modelled in the CVF report might perform in relation to the City Portrait. We wanted to understand whether IV's recommendations preferencing more compact city forms would also hold in relation to the goal of the 'safe and just' future for Greater Melbourne (and Victoria by extension).

For this part of our analysis, we set the geographic scope to Victoria to align with IV's geographic scope for each scenario. We recognise that this artificially conflates the Greater Melbourne baseline from the City Portrait with a state-level view, but we have taken this approach for the sake of simplicity and assume that, on the whole, directional trends would hold at either scale.

Initially, we expected to be able to create a full Doughnut for each of the five CVF scenarios. Our intended design was:

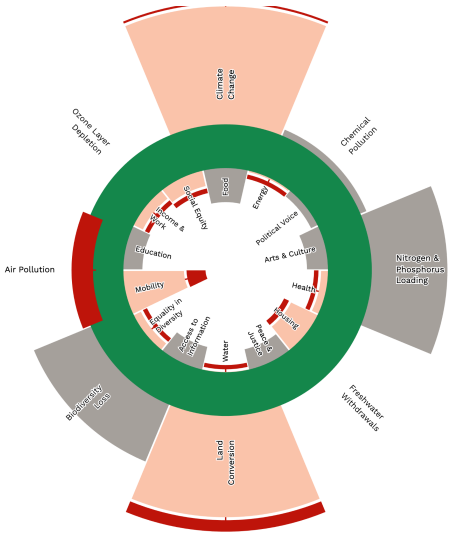
1. For City Portrait dimensions with corresponding measures in the CVF indicator framework (as identified in the indicator mapping), project directional performance based on the associated CVF indicators and the assumptions behind them
2. For City Portrait dimensions *without* corresponding measures in the CVF indicator framework, project directional performance based on qualitative assumptions drawn from the CVF report and Regen Melbourne's general knowledge

However, the second part of this methodology proved impractical for the high-level scope of our analysis: without relying on substantial outside research and new modelling, too many assumptions would be required to meaningfully suggest projected performance on 'not represented' dimensions. For example, projecting how each scenario would contribute to 'Arts & Culture' outcomes would require new assumptions or modelling about how investment to the cultural sector might flow under different future conditions. While all of the dimensions of the City Portrait have a relationship to urban form, the assumptions underpinning IV's design of the scenarios could not transfer sufficiently to the 'not represented' dimensions.

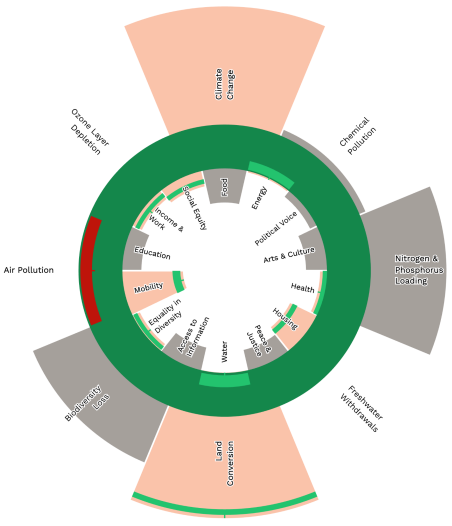
As noted previously, the CVF report qualitatively describes some outcomes associated with City Portrait dimensions that are not represented in the CVF indicator framework (such as biodiversity). However, we did not consider this qualitative commentary sufficient to include these dimensions in the Doughnut-scenario mapping.

The movement on the City Portrait was represented through a graduated scale similar to what the CVF report applied in scoring each scenario according to its indicator framework:

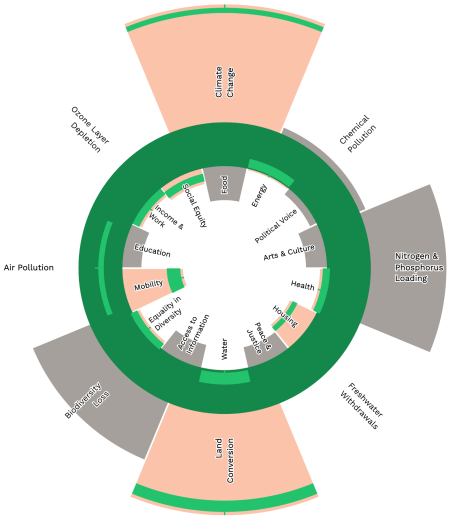
	Relationship to Safe and Just Space	Extent of social shortfall or ecological overshoot
More positive outcome *Thick green band*	Projected to move Victoria much closer	Significantly reduced
Positive outcome *Thin green band*	Projected to move Victoria closer	Reduced
Neutral	Projected to have minimal impact	No change
Negative outcome *Thin red band*	Projected to move Victoria away	Increased
More negative outcome *Thick red band*	Projected to move Victoria much further away	Significantly increased
Unable to be determined	Potential change unable to be meaningfully proposed based on scenario description and understanding of related trends	



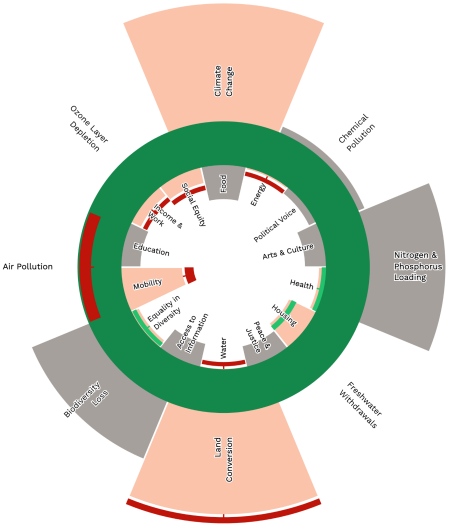
Dispersed City scenario



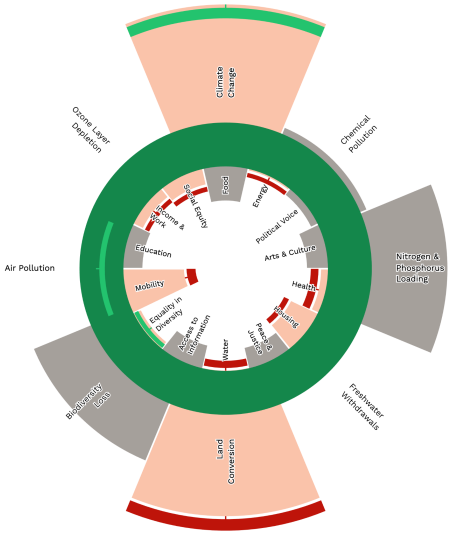
Consolidated City scenario



Compact City scenario



Network of Cities scenario



Distributed State scenario

Not surprisingly, the Compact City model suggests the greatest amount of improvement in social and ecological wellbeing of Victoria; the Doughnut visualisation showing only 'upside' makes this clear. This makes sense because the performance of each scenario on the City Portrait is based on the CVF indicator framework.

Analysis of growth scenario mapping to the City Portrait

This mapping reveals a number of questions for us about the CVF scenarios.

Partial doughnuts

The 'possible future City Portraits' produced by this analysis represent a number of 'partial doughnuts' as a result of the mismatch between the CVF indicator framework and the City Portrait dimensions. This suggests that additional analysis is required to fully understand the

kind of places **that could emerge through each of these scenarios, beyond the scenarios' current analysis of *what they look like*.**

It is worth noting that each of the City Portrait's dimensions, including those not represented in the CVF indicator framework, has a relationship to spatial planning decision-making and outcomes (some more directly than others). The 'partial doughnuts' reveal a number of important questions about the future of Victoria that nonetheless remain relevant to future planning. Some examples of these questions include:

- **Food –** What are the implications of any of the five scenarios on Victoria's food systems? In relation to the Food - Consumption outcome of the City Portrait, which scenarios are likely to improve secure access to sufficient, affordable, nutritious and culturally-appropriate food for all Victorians?
- **Education –** What are the implications of any of the five scenarios on Victoria's education system? In relation to the Education - Learning outcome of the City Portrait, how do the assumptions about education infrastructure delivery relate to the likelihood of each scenario to improve equitable access to lifelong learning that nurtures them to reach their potential?
- **Political Voice –** What are the implications of any of the five scenarios on Victorians' ability to have a say in, and influence over, decisions that affect their lives? In relation to the Political Voice - Participation outcome, which scenarios are likely to improve the relevance and accessibility of public engagement processes?
- **Chemical Pollution –** What are the implications of any of the five scenarios on waste generated across Victoria, and how this waste is managed?
- **Freshwater Withdrawals –** What are the implications of any of the five scenarios on our freshwater systems across Victoria? Which scenarios are likely to minimise impacts on waterway health and the stability of our water systems?
- **Equality in Diversity –** How are the needs of our diverse population understood and integrated into planning? In relation to the Equality in Diversity - Celebration outcome, what are the implications of the five scenarios on our ability to connect to place and each other, building on 60,000 years of First Nations culture and custodianship?

In addition, the City Portrait's Healing and Reconnecting with Country and Each Other element plays a critical role of tying together social and ecological aspects. It also creates the space to foreground the Indigenous knowledge that cannot be effectively quantified - and therefore is not easily incorporated into a quantitative scenario-modelling approach.

This list is not exhaustive, but it identifies a variety of key policy and investment areas that would need to be addressed under the pursuit of any of the scenarios proposed for Victoria's future. It suggests ways in which the City Portrait framework - and the way in which it shifts the goal to privilege social and ecological thriving - provides a valuable quantitative and qualitative model to build on IV's work and inform integrated planning in Victoria.

An appetite for change

The differences between the scenarios' performance as visualised through the City Portrait open interesting reflections on assumptions about change underpinning the CVF analysis.

For example, under the Mobility dimension, the Consolidated and Compact scenarios perform much better because of assumptions about a greater level of demand for public transport (relative to road-based transport) than in the Dispersed scenario. The Dispersed scenario largely aligns with current public transport demand levels to determine required investment in new infrastructure in growth areas. From an outcomes perspective, however, the City Portrait identifies a significant social shortfall in relation to Mobility, reflective of limitations to the current network's functionality and accessibility. Likewise, the climate crisis will increasingly create an imperative for places like Melbourne to limit transport emissions, including by shifting away from road-based travel. This suggests the potential of latent demand in the current system, and therefore scope to amplify public transport investment to increase demand over current levels. Such a shift would contribute to improving equity and sustainability outcomes.

The Dispersed scenario is designed to largely reflect current planning trends, and so does not assume notable uplift in public transport demand because (we propose) this is not currently a political priority - even though technical solutions exist. In contrast, we note that the Consolidated and Compact scenarios embed a political willingness to fundamentally reorient how investment and planning are conceived and prioritised.

This highlights that the physical form of the CVF scenarios is inherently linked to political will for change and outcomes-based planning. The scenarios that resemble current development patterns are based on assumptions that more closely reflect business-as-usual planning policy and decision-making. In this vein, IV's recommendations for how to move towards the Consolidated City scenario argue (explicitly and implicitly) that a considerable shift in urban policy and investment decision-making is required: we not only need to pursue a new physical form of development, but new approaches to actualising this form.

In this sense, the City Portrait's values-based approach, one that starts with a goal of prioritising social and ecological wellbeing, is implicitly baked into the planning and investment assumptions behind IV's preferred approach to urban growth across the state. This again suggests that the City Portrait offers a model to extend the findings in the CVF report.

Limits to growth

Visualising the scenarios as Doughnuts illustrates an important difference between the composition of the CVF indicator framework and the City Portrait. The CVF analysis seeks to maximise better-performing scenarios without setting targets or creating a hierarchy to the set of measures. The City Portrait, on the other hand, places social and ecological dimensions in tension, and sets targets that highlight science-based limits to growth.

The CVF report acknowledges trade-offs that exist in each scenario, such as higher embodied carbon associated with the Compact City. However, it does not consider whether any of the scenarios produce fundamentally unacceptable outcomes, such as carbon emissions that exceed agreed state and national targets. Extending the CVF analysis through the social and ecological lenses of the City Portrait would offer a means of further refining the scenarios and the pathways required to achieve balanced outcomes through any of them - true movement towards a 'safe and just space' for Victoria.

4. Conclusions and recommendations: The City Portrait as a holistic picture of the city

How might policymakers apply the City Portrait, in line with or building on the Choosing Victoria's Future scenarios, to inform future planning and policy decision-making?

In summary, the comparative analysis of *Choosing Victoria's Future* and the Greater Melbourne City Portrait reveals several differences in the two frameworks and analytical methods. It identifies that applying the City Portrait as a means of building on the CVF modelling can help to ensure that holistic social and ecological outcomes are more fully accounted for in planning and policy-making about Victoria's future.

As would be expected due to IV's remit, the CVF scenario modelling focuses on design and delivery of physical infrastructure. The mix of indicators in IV's analytical framework include social, economic and environmental measures, but start from an orientation that heavily weights economic productivity. The measures draw on available data sets that are familiar within entrenched political and economic paradigms and resulting priorities.

The City Portrait builds on the scope included in IV's analysis. It is designed to start with a holistic definition of a place as a system. In addition, it is explicitly oriented towards a goal of a "safe and just space" that prioritises social and ecological wellbeing; this includes within it an understanding that the economy is in service to people and the planet.

At the core, both the City Portrait and the CVF report provide policymakers with reasonable grounds for decision-making oriented towards a more socially and ecologically sustainable Melbourne. The two models, despite their differing approaches and orientations, share similarities in their commitment to sustainable urban development. Both emphasise the importance of integrated, holistic planning inclusive of social, and environmental considerations. They recognize the need to involve a diverse range of stakeholders, including government, business, and community, in the urban development process. Furthermore, both are forward-looking, aiming to shape the future of Melbourne and Victoria to ensure long-term sustainability, economic vitality, and social equity. These commonalities reflect a broader recognition of the complex, interconnected nature of urban development challenges.

When understood in this way, IV's recommended form of future development requires a significant rethinking of policy, planning and investment in urban systems across Victoria. The assumptions embedded in the Compact City scenario suggest a substantial shift in the values underpinning current city-shaping practices. In this sense, IV's work represents transitional thinking, aiming to shift our current system without naming a fundamental reorientation – basically, moving towards a future more aligned with the aspiration of the City Portrait, but without explicitly changing the goal away from one that centres economic growth.

In reviewing the CVF scenarios and the City Portrait together, it becomes evident that a synergy between these frameworks can enhance the effectiveness and inclusiveness of urban development strategies. IV's scenarios do not fully incorporate the broader social indicators critical to the City Portrait model, such as Political Voice, Arts & Culture and Biodiversity.

Integrating these indicators is essential to creating a comprehensive approach to urban planning. For instance, the key "housing value" indicator, which IV includes as a primary social measure, could be expanded to explicitly include the City Portrait's complete set of housing-oriented outcomes that include security, design and amenity and connection - as well as other dimensions of the City Portrait that reinforce the relationship of housing to other parts of day-to-day experiences, such as safety and social inclusion. This would ensure that housing policies not only address affordability but also empower communities and enhance social connectivity and wellbeing. Such a shift would require alignment of multiple policies and coordination across government departments and sectors.

Measurement alone does not guarantee a shift in attitudes, behaviours and political paradigms, but it is a necessary contributor to such a mission. By aligning the City Portrait's holistic indicators with an infrastructure planning focus, Melbourne can foster urban growth that is not only efficient but also socially and politically resilient. This approach would make compact cities (or any city form) more attractive and inclusive, addressing concerns from concerned stakeholders, especially those worried about housing prices and the cost of living, and ensuring broader community support and engagement.

As a result, there is an important opportunity for the City Portrait to augment the CVF report, and other research-based initiatives like it that are informing current long-term government planning initiatives. This would extend the purpose of such inputs to planning processes by providing a more holistic and multidimensional perspective. The City Portrait provides three opportunities along these lines:

1. **Change the goal of *why* we measure -** Starting with the City Portrait's holistic goal of social and ecological thriving orients us to a future in which economic activity is in service to the wellbeing of people and place. This allows us to understand what kind of place - city or state - we want to be, beyond just focusing on the physical form we want this place to take.

2. **Change *what* we measure -** This shift in orientation requires us to measure more of what matters, incorporating a rich set of indicators related to personal and community wellbeing and ecological health. The City Portrait approach can enrich models such as the CVF scenario analysis with a broader spectrum of metrics, enabling a more comprehensive evaluation that considers not only the economic and infrastructural impacts but also the wider social and environmental implications. This approach can ensure that urban development strategies and plans contribute to a more sustainable, equitable, and resilient future, aligned with Victoria's unique context and challenges.

3. **Change *how* we measure -** Developing values-based measurement systems that lead with a wellbeing-based goal informs how measurement is undertaken. The City Portrait was developed through a participatory process focused on describing a healthy, safe, inclusive and thriving city at an individual and collective level, and from human and natural systems' perspectives. In this process, a range of perspectives and understandings were foregrounded as important to inform what is measured. Likewise, the nature of measures - such as quantifying data in demographic terms, inclusive of both objective and self-reported metrics -generates a rich picture of place. The process

also revealed the value of qualitative representation and storytelling to complement and help to integrate and contextualise measurable indicators. Quantitative measurement can sometimes fall short; this is particularly true when considering how to represent diverse knowledge forms and systems, including Indigenous understandings of place.

In conclusion, we applaud the work undertaken by Infrastructure Victoria and strongly encourage government policy makers and planners to also adopt the City Portrait as a guiding tool to inform long-term decision-making about Victoria's future form.

Returning to the recommendations identified with the City Portrait's release, this includes:

1. **Create, support and adopt more holistic measures of progress** – Governments and planners at all levels should support and accelerate efforts to apply holistic measures of progress and invest in modelling to support such measurement efforts.

2. **Engage in (and invest in) deep collaboration** – Governments need to significantly invest in well-oriented collaboration in planning processes – including measurement – to align outcomes with community needs and values.

3. **Normalise integrated decision making and internalise negative externalities** – Governments have a moral responsibility to understand systemic interconnections, internalise negative externalities, and publicly acknowledge trade-offs in decision making. This includes more integrated government approaches to policy and planning.

4. **Shift capital towards systemic interventions** – In order to create pathways to a safe and just future, capital (including government investment) must now also invest in complex systemic interventions, with long-term multi-order effects. Future urban development should be understood in this way.

5. **Increase our collective ambitions** – Government should respond to the scale and urgency of challenges, focusing on the potential of new models and mindsets.

6. **Go out and smell the wattle** – Connecting with nature is good for all of us, and a good reminder that she is an active stakeholder in planning processes.

Appendix 1a: Mapping of City Portrait dimensions to *Choosing Victoria's Future* indicator framework

***Choosing Victoria's Future* Indicators**	**Unit**	**Related City Portrait Dimensions and Outcomes**	**Rationale and assumptions on related City Portrait Dimensions and Outcomes**
Net value of housing	$b, present value	Housing – Amenity & Connection Mobility – Functionality Health – Care Energy – Demand Water – Availability	Access to Energy, Health (Care), Housing (Amenity & Connection), Mobility and Water all contribute to net value of housing. However, emphasis on increased housing values may run counter to affordability objective of Housing – Security.
Of which: value of housing improved access to jobs	$b, present value	Housing – Amenity & Connection Equality in Diversity – Representation Income – Sufficiency Social Equity	Housing – Amenity & Connection outcome includes emphasis on meeting daily needs, which can be inclusive of jobs. The indicator includes an assumption about increasing equitable access to employment across genders and diverse populations, though this is measured in monetary value and not in demographic terms.
Net value of housing per dwelling relocated	$000/relocated dwelling	Energy – Demand Health – Care Housing – Amenity & Connection Mobility – Functionality Water – Availability	Access to Energy, Health (Care), Housing (Amenity & Connection), Mobility and Water all contribute to net value of housing. However, emphasis on increased housing values may run counter to affordability objective of Housing – Security.
Housing choice – share of all dwellings that are detached, 2056	Per cent	Housing – Security, Design and Amenity & Connection	Arguably this is a 'pathway' indicator that speaks to design strategies to achieve social and ecological outcomes; however, the choice factor has relevance to Housing in the City

			Portrait in relation to Security, Design and Amenity & Connection outcomes.
Share of dwellings for sale under $750,000 (today's value)	Per cent	Housing – Security	Housing – Security outcome in City Portrait includes affordability.
Share of dwellings available for rent under $500 per week	Per cent	Housing – Security	Housing – Security outcome in City Portrait includes affordability.
Accessibility to jobs (car 2036 / 2056)	Ratio to dispersed city	Equality in Diversity – Representation Income – Sufficiency Social Equity	Indicator includes an assumption about equitable access to jobs (measured in monetary terms and not demographic outcomes). It is not linked to Mobility in City Portrait because car dependence is not considered consistent with Mobility outcomes.
Accessibility to jobs (public transport 2036 / 2056)	Ratio to dispersed city	Equality in Diversity – Representation Income – Sufficiency Mobility – Functionality and Equity Social Equity	As above, Multiple City Portrait dimensions linked, related to equitable means of accessing jobs. Mobility – Equity outcome added here due to considerations of user cost of public transport in CVF analysis.
Public transport mode share (AM peak)	Per cent of trips	Mobility – Sustainability	Mobility – Sustainability includes mode share indicator.
Environmental externalities from transport	$b relative to dispersed city	Mobility – Sustainability Air Pollution – Aerosol Emissions Climate Change – Carbon Emissions and Non-CO_2 Greenhouse Gas Emissions	Mobility – Sustainability outcome in Social Foundation included (in addition to Ecological Ceiling dimensions) due to its holistic social / environmental nature.
Business location productivity	$b relative to dispersed city	Income – Sufficiency	Indicator has direct relationship to availability of jobs (Income – Sufficiency).
Agglomeration benefits	$b relative to dispersed city	Income – Sufficiency and Purpose	Indicator has direct relationship to availability of jobs (Income – Sufficiency) and is

			indirectly, but still notably, linked to greater likelihood of finding purposeful employment (Income – Purpose).
Employment impacts	$b relative to dispersed city	Income – Sufficiency Social Equity	Assume indicator focuses on availability of work (Income – Sufficiency and Social Equity), not meaning / value of it (Purpose).
Additional land requirements	Km^2 relative to dispersed city	Land Conversion – Land Use	Land Conversion tied to this indicator most directly, but biodiversity impacts referenced throughout CVF analysis in relation to this indicator.
Building operational GHG emissions	Million tonnes CO_2e relative to dispersed city	Housing – Design Climate Change – Carbon Emissions and Non-CO_2 Greenhouse Gas Emissions	Housing – Design in Social Foundation included (in addition to Ecological Ceiling dimensions) due to its holistic social / environmental nature.
Building embodied GHG emissions	Million tonnes CO_2e relative to dispersed city	Housing – Design Climate Change – Carbon Emissions and Non-CO_2 Greenhouse Gas Emissions	Housing – Design in Social Foundation included (in addition to Ecological Ceiling dimensions) due to its holistic social / environmental nature.
Vehicle tailpipe GHG emissions	Million tonnes CO_2e relative to dispersed city	Mobility – Sustainability Air Pollution – Aerosol Emissions Climate Change – Carbon Emissions	Mobility – Sustainability outcome in Social Foundation included (in addition to Ecological Ceiling dimensions) due to its holistic social / environmental nature.
Operational emissions from electric vehicles	Million tonnes CO_2e relative to dispersed city	Mobility – Sustainability Air Pollution – Aerosol Emissions Climate Change – Carbon Emissions	Mobility – Sustainability outcome in Social Foundation included (in addition to Ecological Ceiling dimensions) due to its holistic social / environmental nature.
Total GHG emissions	Million tonnes CO_2e relative to dispersed city	Climate Change – Carbon Emissions and Non-CO_2 Greenhouse Gas Emissions	Both Climate Change outcomes (Carbon Emissions and Non-CO_2 GHG Emissions) associated with total GHG emissions.

Appendix 1b: Mapping of *Choosing Victoria's Future* indicator framework to City Portrait dimensions

Completely represented	All outcomes of the City Portrait dimension are represented through CVF indicators
Partially represented	Some outcomes of the City Portrait dimension are represented through CVF indicators
Not represented	No outcomes of the City Portrait dimension are represented through CVF indicators

City Portrait Dimensions and Outcomes	Related Choosing Victoria's Future indicators	Rationale and Assumptions on related IV indicators
Social Foundation		
Food - Production - Consumption - Circularity	—	*Not represented* No IV indicators sufficiently associated with this dimension of the City Portrait.
Energy - Supply - Demand	Net value of housing (total and per dwelling relocated)	*Partially represented* Energy infrastructure costs included in net value of housing, assumed to be passed on to households through energy bills. No IV indicators associated with Energy – Supply.
Political Voice - Agency - Participation - Trust	—	*Not represented* No IV indicators sufficiently associated with this dimension of the City Portrait.
Arts & Culture - Inclusion - Recognition - Contribution	—	*Not represented* No IV indicators sufficiently associated with this dimension of the City Portrait.

Health – Wellness – Care	Net value of housing (total and per dwelling relocated)	*Partially represented* Health – Wellness outcomes are discussed qualitatively in relation to each scenario but are not quantified. Access to health infrastructure is assumed to be part of housing value as part of social infrastructure / amenity access.
Housing – Security – Design – Amenity & Connection	Net value of housing (total, improved access to jobs and per dwelling relocated) Housing choice – share of all dwellings that are detached Share of dwellings for sale under $750,000 (today's value) Share of dwellings available for rent under $500 per week Building operational GHG emissions Building embodied GHG emissions	*Completely represented* IV indicators link to a combination of all three Housing outcomes to varying degrees. Operational emissions indicators link to Housing – Design outcome. However, no indicators measure housing quality, health or climate resilience as part of Housing – Design.
Peace & Justice – Safety – Accountability	—	*Not represented* No IV indicators sufficiently associated with this dimension of the City Portrait.
Water – Availability – Value	Net value of housing (total and per dwelling relocated)	*Partially represented* Water infrastructure costs included in net value of housing, assumed to be passed on to households through water bills. No IV indicators associated with Water – Value outcome.
Access to Information – Access – Relevance – Reciprocity	—	*Not represented* No IV indicators sufficiently associated with this dimension of the City Portrait.
Equality in Diversity – Representation – Celebration	Net value of housing (improved access to jobs) Accessibility to jobs (car)	*Partially represented* Access to jobs includes consideration of diverse populations (Representation outcome), but this is quantified in

	Accessibility to jobs (public transport)	economic / monetary terms and not in relation to demographic outcomes. No IV indicators associated with Equality in Diversity - Celebration.
Mobility - Functionality - Equity - Sustainability	Net value of housing (total and per dwelling relocated) Accessibility to jobs (public transport) Public transport mode share (AM peak) Environmental externalities from transport Vehicle tailpipe GHG emissions	*Completely represented* Multiple IV indicators link to a combination of Functionality and Sustainability outcomes and accessibility to jobs implies equitable access to use of public transport. Emissions-related indicators link to Sustainability outcome when 'sustainability' is understood holistically to include environmental and economic considerations. Accessibility to jobs by car not included since Mobility dimension of the City Portrait is not intended to prioritise individual car-based travel. Mobility - Equity outcome partially represented through IV assumptions of equitable pricing for public transport, but it is unclear whether accessibility for people with mobility needs has been included in costings for public transport upgrades.
Education - Learning - Teaching	—	*Not represented* While IV's models incorporate costs of building new education infrastructure, there are no IV indicators sufficiently associated with this dimension as defined by the City Portrait.
Income and Work - Sufficiency - Purpose	Accessibility to jobs (car) Accessibility to jobs (public transport) Business location productivity Agglomeration benefits Employment impacts	*Completely represented* IV indicators focus on Income & Work - Sufficiency outcome most fully. Agglomeration indicator links to Income-Purpose outcome through implication of more meaningful jobs becoming available, if somewhat indirectly.
Social Equity - Distribution	Net value of housing (improved access to jobs) Accessibility to jobs (car)	*Partially represented* IV indicators linked to job access include assumptions about Social Equity, but these indicators are quantified in economic / monetary terms; it is assumed that they can relate to demographic outcomes that lead to

	Accessibility to jobs (public transport) Employment impacts	conclusions about social cohesion as related to equity.
Ecological Ceiling		
Climate Change - Carbon Emissions - Non-CO_2 Emissions	Environmental externalities from transport Building operational GHG emissions Building embodied GHG emissions Vehicle tailpipe GHG emissions Operational emissions from electric vehicles Total GHG emissions	*Partially represented* Multiple IV indicators measure Carbon Emissions directly Some Non-CO_2 Emissions are assumed to be included in these indicators, but not all sources of these types of emissions are included.
Chemical Pollution - Chemical Pollution	-	*Not represented* No IV indicators sufficiently associated with this dimension of the City Portrait.
Nitrogen & Phosphorus Loading - Nitrogen Release - Phosphorus Release	—	*Not represented* No IV indicators sufficiently associated with this dimension of the City Portrait.
Freshwater Withdrawals - Water Consumption	—	*Not represented* While water consumption is discussed qualitatively in relation to some scenarios, it is not included explicitly as its own indicator.
Land Conversion - Land Use	Additional land requirements	*Partially represented* IV indicator for land requirements focuses on housing and infrastructure requirements in Melbourne, but not consumption or production-based land requirements globally to support Greater Melbourne's liveability.
Biodiversity Loss - Biodiversity Loss	—	*Not represented* While biodiversity is mentioned qualitatively as an impact related to land requirements for each scenario, it is not included explicitly as its own indicator.

Air Pollution - Aerosol Emissions	Environmental externalities from transport Vehicle tailpipe GHG emissions Operational emissions from electric vehicles	*Partially represented* IV indicators on transport externalities link to air quality, but do not represent all sources of air pollution.
Ozone Layer Depletion - Ozone-depleting Substances	—	*Not represented* No IV indicators sufficiently associated with this dimension of the City Portrait. (This is to be expected based on the nature of typical interventions controlling for ozone-depleting substances)

Appendix 2: City Portrait indicative performance of scenarios based on IV analysis and assumptions

Projected change in relation to the Safe and Just Space as defined by the City Portrait

More positive outcome	Projected to move Victoria much closer to the Safe and Just Space (significantly reduced social shortfall or ecological overshoot)
Positive outcome	Projected to move Victoria closer to the Safe and Just Space (reduced social shortfall or ecological overshoot)
Neutral	Projected to have minimal impact on Victoria's social and ecological performance as measured by the City Portrait
Negative outcome	Projected to move Victoria away from the Safe and Just Space (increased social shortfall or ecological overshoot)
More negative outcome	Projected to move Victoria much further away from the Safe and Just Space (significantly increased social shortfall or ecological overshoot)
Unable to determine	Potential change unable to be meaningfully proposed based on scenario description and understanding of related trends

City Portrait indicative performance of scenarios based on IV analysis and assumptions

City Portrait Dimensions	**Scenarios' Projected Performance** (relative to City Portrait baseline for Greater Melbourne's current social and ecological performance)					**Assumptions**	
	Dispersed City	Consolidated City	Compact City	Network of Cities	Distributed State	Assumptions from IV analysis	Additional assumptions
Social Foundation							
Food	–	–	–	–	–		

Energy						*Dispersed, Network and Distributed scenarios* – The cost of delivering energy infrastructure is higher in more diffuse scenarios. *Consolidated and Compact scenarios* – The cost of delivering energy infrastructure is lower in more concentrated scenarios.	
Political Voice	–	–	–	–	–		
Arts & Culture	–	–	–	–	–		
Health						*Dispersed scenario* – Physical access to health infrastructure is low based on low-density development model. *Consolidated and compact scenarios* – Physical access to health infrastructure improves based on development / density models, most notably within Compact scenario. *Network scenario* – Access to health infrastructure improves as part of increase in regionalised services. *Distributed scenario* – Access to health infrastructure limited by wider distribution of development.	
Housing						*Dispersed and Distributed scenarios* – Benefits of lower housing costs are offset by these scenarios' likelihood to perpetuate the generally low housing design quality and low access	*All* – In relation to the Housing – Security outcome, models with lower housing values equate to lower housing costs and therefore increased

						to local amenities seen in current development models. *Consolidated and Compact scenarios* – A higher cost of housing is offset by improved housing design / performance of attached housing models and significantly increased access to amenities. *Network scenario* – Benefits of lower housing costs are supported by improved access to local amenities. Design quality / housing performance is also likely to improve based on emphasis on attached housing.	housing security (and vice versa for higher housing values). In relation to the Housing – Design, outcome, attached housing models are assumed to demonstrate better thermal / environmental performance on average.
Peace & Justice	–	–	–	–	–		
Water						*Dispersed, Network and Distributed scenarios* – The cost of delivering water infrastructure is higher in more diffuse scenarios. *Distributed scenario* – This scenario has particularly high impacts on regional water supplies, contributing to decreased water quality. *Consolidated and Compact scenarios* – The cost of delivering water infrastructure is lower in more concentrated scenarios.	
Access to Information	–	–	–	–	–		

Equality in Diversity						*Dispersed scenario* – Better jobs are concentrated in central Melbourne, entrenching economic disadvantage in areas where greater population growth is anticipated, and for parts of the population already disadvantaged. *Consolidated scenario* – Multiple high-intensity precincts and associated public transport networks increase accessibility of good jobs for more diverse people. *Compact scenario* – A more even distribution of good jobs, such as in the knowledge sector, enables even greater access to employment by diverse communities. *Network and Distributed scenarios* – Regional population growth supports new jobs growth in these areas, increasing opportunities for communities often disadvantaged under the current model. This is in spite of these scenarios performing less well economically overall than Melbourne-centric scenarios.	*All* – The Equality in Diversity – Representation outcome is more strongly correlated to access to better-paying jobs when this access is available via public transport (vs. by car).
Mobility						*Dispersed, Network and Distributed scenarios* – Most investment in transport infrastructure is in roads vs. public and active transport. *Consolidated and Compact scenarios* – More investment in / uptake of	

						public and active transport, most fully in Compact model.	
Education	–	–	–	–	–		
Income and Work						*Consolidated and Compact scenarios* – Agglomeration generates more jobs and a higher concentration of jobs that are accessible and attractive, most fully in the Compact model. *Network scenario* – Growth in regional city jobs does not compensate for slower job growth in Melbourne. *Dispersed and Distributed scenarios* – Job growth is slower overall and does not produce as many high-value jobs.	*Consolidated and Compact scenarios* – Higher-quality jobs in line with the Income – Purpose outcome are more readily available through agglomeration-based models, in line with IV assumptions.
Social Equity						*All* – Same assumptions as Income and Work.	
Ecological Ceiling							
Climate Change						*All* – Higher embodied emissions from construction in higher-density models is offset by lower vehicle emissions due to lower use of private vehicles.	
Chemical Pollution	–	–	–	–	–		
Nitrogen & Phosphorus Loading	–	–	–	–	–		

Freshwater Withdrawals	–	–	–	–	–		
Land Conversion						*All* – 'Additional land requirements' quantified only focuses on land needed for new development under each model.	*All* – Land directly required for development, as quantified by IV, has flow-on effects related to total land conversion associated with consumption patterns in each model.
Biodiversity Loss	–	–	–	–	–		
Air Pollution						*All* – Emissions and environmental impacts of vehicle use are based on each model's anticipated amount of travel and associated congestion.	*Dispersed and Consolidated scenarios* – These models have the highest levels of congestion, which translates to lower air quality outcomes. *Compact scenario* – Lower reliance on private vehicles in this scenario contributes to improved air quality. *Network scenario* – Reliance on private vehicles in denser regional centres contributes to lower air quality. *Distributed scenario* – This scenario relies on private vehicle use, but longer distances driven mean that air quality impacts from short trips and congestion are reduced.
Ozone Layer Depletion	–	–	–	–	–		