



Scenario planning for the Westernport Bay Region

Final report of the Phillip Island scenario-planning workshop



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PRESERVE
WESTERN
PORT
ACTION GROUP

Workshop organisers

The Westernport Bay Region scenario-planning workshop was organised by the Preserve Western Port Action Group, the Victorian National Parks Association and the Australian National University, with the generous support of Bass Coast Shire Council.

The Victorian National Parks Association is an independent, non-profit, membership-based group that exists to protect Victoria's unique natural environment and biodiversity through the establishment and effective management of national parks, conservation reserves and other measures.

The Preserve Western Port Action Group is a Phillip Island community group of like-minded individuals whose objective is to protect and preserve the natural environment and its amazing wildlife for everyone to enjoy.

The Bass Coast Shire Council sets the strategic direction of the municipality, establishing and guiding policies, setting service delivery standards and monitoring the performance of the organisation.

The Australian National University is a celebrated place of intensive research, education and policy engagement, home to an interconnected community of scholars and that is located in the heart of Canberra.



Acknowledgements

The organisers of the Phillip Island scenario-planning workshop wish to thank Robert Costanza, Ida Kubiszewski and their ANU PhD students for facilitating the scenario-planning workshop, the Bass Coast Shire Council for their generous support, the Day 1 speakers Peter van Duyn, Steve Cork and Barbara Norman for their thought-provoking presentations, the volunteers, led by Carmen Bush, who helped with the day-to-day logistics and catering (thanks to Mad Cowers Cafe for the delicious food), and to all the workshop participants who gave their time to engage in discussions and debate about the future of the Westernport Bay Region.

Photos

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Editor: Chris Smyth
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October 2014

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Group participants at the Westernport Bay Region scenario-planning workshop on Phillip Island

EXECUTIVE SUMMARY

The Victorian Government is planning to build an international container port at Hastings, on the western shores of Westernport Bay, which could significantly change the economy and ecology of the region.

Following the release of the Australian Conservation Foundation's preliminary study into the ecological values of Westernport Bay, Professor Robert Costanza, one of the world's leading ecological economists, recommended a scenario-planning workshop to shed light on the alternative futures for the Westernport Bay Region.

Scenario planning explores and evaluates plausible futures that have been used to guide regional development, corporate strategy, political transition and community-based natural resource management.

This report summarises the outcomes of the scenario-planning workshop held on Phillip Island from 28 July to 1 August 2014, organised by Preserve Western Port Action Group and the Victorian National Parks Association, facilitated by the Australian National University and generously supported by the Bass Coast Shire Council.

Academics, key regional decision makers, strategic planners, scientists, business people, local councillors and members of community groups, in all representing 40 organisations, attended the workshop where they

analysed potential future scenarios that could secure or undermine the economic, social and environmental futures of the Westernport Bay Region.

After a series of presentations on Day 1, workshop participants were divided into four groups, each with the task of developing a plausible 2040 scenario for the Westernport Bay Region.

The narrative of each scenario was dependent on the extent to which policies for conventional economic development and UN sustainable development goals were implemented in and beyond the region.

The four groups each developed a different 2040 scenario for the Westernport Bay Region.

The WesternFreePort scenario pursues regional economic growth, supported by the conventional economic development policies at state, federal and international levels and with little concern for its environmental impact. This scenario presumes that the planned major development of the Port of Hastings proceeded.

The Beacon scenario has the community of the Westernport Bay Region resisting the conventional economic policies of the Victorian and federal governments to ensure sustainable regional development. The Port of Hastings is smaller than now and used by small domestic and international vessels and those for local cruises, dive tourism and

training.

The Creative Growth scenario has technocratic and top-down promotion and management of development using innovative technology to monitor and regulate compliance to achieve sustainable development goals within a locally conventional economic framework. The Port of Hastings is redeveloped on the existing footprint to allow small container ships to load and unload without the need for channel or port deepening.

The Lagom scenario is a community-based and collectivist approach to implementing sustainable development goals with the full support of the Victorian and federal governments and international agreements and frameworks. The Port of Hastings is retrofitted to allow use by small, fuel-efficient vessels.

Each group presented their scenario to a plenary session on Day 5 of the workshop.

A public opinion survey was then conducted during September and October 2014 to determine how the broader community viewed the scenarios. The results and analysis of this survey are included in this final report.

THE SCENARIO-PLANNING WORKSHOP

Scenario-planning methodology

(This is an edited extract from the 2014 report by Costanza et al, Scenarios for Australia in 2050: A synthesis and proposed survey)

Predicting the future is impossible, but laying out a series of plausible future scenarios is possible. These scenarios can enable the understanding of future possibilities or storylines and also clarify the complex uncertainties surrounding them. They have become an important way to inform decision-making with a whole-system perspective under uncertainty.

'Scenario' is a term with multiple meanings. Scenario exercises vary in their objectives and hence their characteristics. We define scenario analysis or scenario planning as a structured process of exploring and evaluating the future.

Scenarios are essentially stories that consider how alternative futures, typically related to a particular focal issue, may unfold from combinations of highly influential and uncertain drivers, and their interactions with more certain driving forces.

Scenario planning differs from forecasting, projections, and predictions, in that it explores plausible rather than probable futures. Although aspects of the future worlds depicted by scenarios may come to eventuate, these worlds are often best viewed as caricatures of reality from which we can learn.

Scenario planning is based on four assumptions:

1. The future is unlike the past, and is significantly shaped by human choice and action
2. The future cannot be foreseen, but exploring possible futures can inform present decisions

3. There are many possible futures; scenarios therefore map within a 'possibility space'
4. Scenario development involves both rational analysis and creative thinking.

Scenarios are best suited to exploring situations of high uncertainty and low controllability; for example, climate change and global governance are largely beyond the control of a particular region. In these situations, scenarios can help to illuminate the consequences of these uncontrollable forces and to formulate robust responses locally. Importantly, scenarios can help to reveal policy and value changes that may be required, and key branching points at which such changes can most affect outcomes.

Several scenario-planning exercises have been conducted in recent years at a range of spatial scales and for a range of purposes, including: global futures, corporate strategy, political transition and community-based natural resource management.

For example, one of the best-known scenario-planning exercises on the global level was in the Special Report on Emissions Scenarios (SRES). These scenarios have been widely used to study the potential impacts of future climates, especially within the Intergovernmental Panel on Climate Change (IPCC) process.

The SRES scenarios are based on four global "storylines" (termed the A1, A2, B1, and B2 worlds, respectively) representing different world futures based on two distinct axes or dimensions: (1) economic versus environmental concerns, and (2) globalised versus regional/national-based development patterns. These two axes define four distinct quadrants for future development. Scenarios could be used to encourage dialogue among

Australians regarding what futures they would prefer, how those preferences might differ between individuals and groups, and what the basis of those differences might be.

The most commonly used processes for developing scenarios of plausible futures include: a focus on some specific aspects of the future (e.g. energy production and consumption); consideration of what factors might affect those aspects; assessment of what is relatively certain and what is uncertain; exploration of the most critical uncertainties; and, consideration of what insights emerge and what actions might be relevant in the short, medium, and longer term to shape the future or prepare for threats and opportunities that might not be under our control. There is a range of methods to identify and explore critical uncertainties, and these can lead to different themes and foci for scenarios.

Since the 1970s, a complementary approach has emerged that seeks to synthesise and build on the sorts of approaches described above. It has been observed that the vast majority of scenarios developed around the world fall into a small number of types, or "archetypes". These archetypes range around the topics of growth, discipline/restraint, transformation, and collapse narratives. By focussing on these archetypes, different groups such as communities, businesses, government agencies, and others can quickly generate dialogue about how such futures might emerge, what they might look and feel like, and what the implications might be. A range of critical uncertainties might be considered simultaneously in such exercises, with an emphasis of acknowledging and considering diverse understandings and viewpoints.

Most of the scenarios that have been created at the Australian national scale have focused on Market Forces and Policy Reform archetypes, with little consideration of transformational or collapse futures.

Living scenario processes require a starting point – initial scenarios that a wide audience can respond to and hence inform ongoing scenario discussion and evolution.

Applying the scenario-planning methodology at the workshop

The Westernport Bay Region scenario-planning workshop was held on Phillip Island between 28 July and 1 August 2014.

The workshop was organised by the Victorian National Parks Association and the Preserve Western Port Action Group, generously supported by the Bass Coast Shire Council and facilitated by Dr Robert Costanza, Chair in Public Policy at Crawford School of Public Policy, ANU College of Asia & the Pacific.

The objective of the workshop was to develop and evaluate a range of scenarios for the Westernport Bay Region that could include:

1. A projection of current trends
2. A major international container port development at Hastings
3. An emphasis on tourism, economics and environment that includes the value of ecosystem services.

Invitations to attend were sent to a wide variety of stakeholders including business organisations associated with shipping and tourism, decision makers in government, social and environmental community groups,

and academics, consultants and scientists. More than 70 people, representing 40 organisations, attended over the five days (see Appendix 2 for the full list of participants).

The agenda and process for the five-day workshop were as follows.

Day 1

A plenary of 75 people listened to presentations and engaged in discussions about the scenario-planning process, community planning and the future of the Port of Hastings. The presentations were made by:

- Victoria University representative Peter Van Duyn, who based his presentation on the paper “Build it but will they come?”, which considers it unlikely that mega-container ships will come to Victoria, even if the expansion of the Port of Hastings proceeds
- Steve Cork, on scenario planning in Australia
- Barbara Norman, on community planning.

Day 2-4

Four small groups (five to six people in each) worked for the three days developing scenarios and 2040 outcomes for the Westernport Bay Region.

At the beginning of Day 2 the participants agreed on the constructs for each of the four scenarios. These were based on the scale and influence of policies for conventional economic development and UN sustainable development goals.

The vertical and horizontal axes had conventional economic development policies and UN sustainable development goal policies at either end. However, the vertical axis was on the national and global scale and the horizontal

axis at the local scale. Figure 1 illustrates this and identifies the four quadrants and scenarios now briefly described.

Quadrant 1/Scenario 1 has conventional economic development policies at the local, national and global scale.

Rapid economic growth is prioritised in the WesternFreePort scenario, with environmental impacts seen as unfortunate but necessary for economic development. This ‘everyone-for-themselves’ response has limited government interference. The major expansion of the Port of Hastings proceeded as planned in 2014.

Quadrant 2/Scenario 2: Conventional economic development policies are being pursued at the national and global scale. Locally, however, the community is working to implement policies consistent with the UN sustainable development goals.

In The Beacon scenario the community in the Westernport Bay Region is resisting conventional economic development policies. The biophysical limits to growth are recognised, sustainable development goals are targeted within a regional governance structure, and equity and quality of life issues are a key focus. The Port of Hastings expansion did not proceed and it is now used by small domestic and international vessels, along with local cruise, diving and training vessels.

Quadrant 3/Scenario 3: Locally, conventional economic development policies are being pursued but are heavily influenced by the national and global pursuit of UN sustainable development goals.

The Creative Growth scenario outlines a technocracy with a regional body working with the community to simultaneously

achieve the UN sustainable development goals and economic growth. It uses smart technology, innovative developments and top-down regulations, with strict compliance measures to encourage growth, overcome environmental limitations and minimise environmental impacts. The Port of Hastings is redeveloped on the existing footprint to allow small container ships to load and unload without the need for further channel deepening.

Quadrant 4/Scenario 4: Sustainable development goals are being implemented, driven at the local, national and global scales.

Lagom is Swedish for enough, sufficient, adequate, just right, in moderation, in balance, perfect, simple and suitable. The Lagom scenario has as its prime focus

the appropriate achievement of the UN Sustainable Development Goals using a community-based, equitable and collectivist approach. The Port of Hastings is retrofitted to allow use by small, fuel-efficient vessels.

Narratives for each scenario were prepared by the groups to describe its features in relation to governance, economy, community, built infrastructure and the natural environment. Maps were also prepared to show the location of key scenario proposals in the Westernport Bay Region.

On completing their scenario, each group was asked to conduct a self-assessment to estimate its impact on natural, social, human and built capital, natural upland areas, estuarine waters and agriculture/urban areas (see Appendix 3).

Day 5

The larger group plenary from Day 1 reassembled to hear the 2040 outcomes of the four scenarios.

What follows in this report are a:

- description of the Westernport Bay Region
- detailed description of each scenario, including information about the 2040 outcomes for governance, economy, community, built infrastructure and the natural environment, and maps showing the location of key proposals for each scenario
- summary of the impacts of each scenario on a series of parameters
- summary of the key features of each scenario.

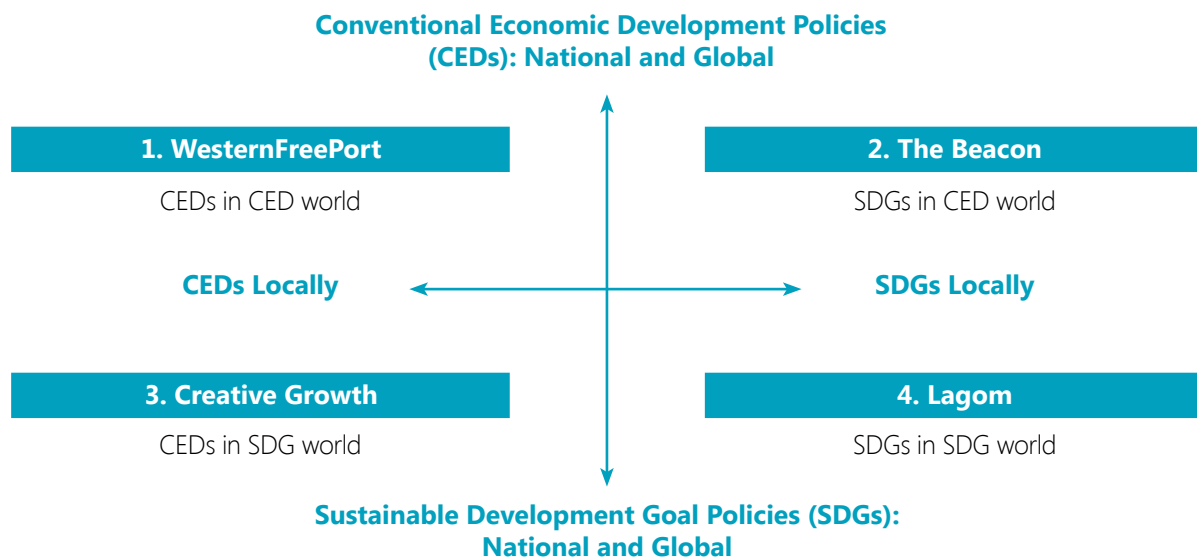


Figure 1: Axes and quadrants for the Westernport Bay Region scenarios.

THE WESTERNPORT BAY REGION

The catalyst for the Westernport Bay Region scenario-planning workshop was the Victorian government's planned expansion of the Port of Hastings on the bay's north-western shore. However, this was only one of many matters considered by workshop participants when developing plausible futures for the Port of Hastings, the bay and its catchment.

Natural values

The land catchment of Westernport Bay is located to the east and south-east of Melbourne – Hastings is 70 kilometres and Cowes 140 kilometres from Melbourne by road – and covers more than 3,000 km². It stretches north to Cockatoo and the hills in the upper reaches of the Bunyip River, west to Point Nepean at the entrance to Port Phillip Bay, and east to Nyora, Drouin and the Strzelecki Ranges.

The shallow waters of Westernport Bay, which have a tidal range of 3 metres, cover 680 km² and include 270 km² of mudflats exposed at low tide. Within the bay there are two large islands—Phillip Island (100 km²) and French Island (170km²)—and internationally important mangroves, saltmarshes, seagrass meadows and soft seabed habitats. Rocky reefs and sandy beaches border the southern shores of Mornington Peninsula, Phillip Island and the Bunurong coast to the east. The whole of Westernport Bay is listed under the Convention on Wetlands of International Importance (Ramsar).

There are 330 terrestrial native species—89 are threatened—living in habitats around Westernport Bay, while its wetlands have more than 630 species of invertebrates, fish, birds and mammals. Thirty-six migratory bird species fly into the bay each year from their Asian breeding grounds. Around 65% of

Victoria's bird species are found in and around the bay, along with breeding colonies of little penguins, koalas, Australian fur seals, hooded plovers and short-tailed shearwaters.

A number of conservation reserves have been established to protect the natural values of the Westernport Bay Region. These include the three marine national parks at Churchill Island, French Island and Yaringa, the Phillip Island Nature Parks, the Point Nepean, Mornington Peninsula and French Island national parks, and a number of small reserves protecting fragments of the catchment's original vegetation cover.

In 2002 the Westernport Bay Region was proclaimed a UNESCO Biosphere Reserve, recognising its outstanding natural values on the fringe of Melbourne. It covers 2,100 km² and includes Mornington Peninsula, all of Westernport Bay and the southern part of the bay's catchment. The aim of the reserve, and the Biosphere Foundation, its board and advisory panel, is to foster conservation and a sustainable future for the Westernport Bay Region through research, education, community engagement, partnerships and on-ground conservation efforts.

Land use

Figure 2 shows land use in the Westernport Bay Region and reveals that dryland grazing (beef and dairy) covers much of the area, although its spatial extent has been in gradual decline as Melbourne has expanded. Even so, the value of production has remained relatively constant because of more efficient and intensive production techniques.

In the Casey and Cardinia municipalities, which have a green

wedge and one of Melbourne's growth corridors within their borders, the region's greatest value of agricultural production is in the beef, milk, poultry and egg sectors. However, that value represents only a small portion of Victoria's total production for those products. In contrast, more than 50% of the state's celery, leeks, herbs, silver beet, radishes and spring onions, and 90% of its asparagus, are grown on the peaty and sandy soils once covered by the Koo-wee-rup Swamp.

Annual agricultural production in the Casey-Cardinia area is valued at more than \$400 million, a similar figure for the Mornington Peninsula where vegetables, beef, lamb, chickens, grapes and other fruits are produced. These and the beef and dairy products in the Bass Coast Shire are part of what is becoming a food bowl for Melbourne.

Urban expansion is largely occurring on the Mornington Peninsula and through the growth corridor in the catchment's north around Pakenham and Berwick (most of Cranbourne's growth is in Port Phillip Bay's catchment). Coastal towns now have growth boundaries in place to restrict their spatial extent.

In the far north of the catchment, timber is taken from state forests while Westernport Bay is a base for commercial fishing fleets and many anglers and sailors throughout the year.

Industrial development is centred along the north-western shoreline of Westernport Bay at Hastings-Crib Point-Stony Point where the Port of Hastings, Bluescope Steel (flat steel production facility with an uncertain future after recent major job cuts), Esso (LPG processing and crude oil storage and distribution at Long Island Point) and other industry is based. HMAS Cerberus, located at Crib Point, is a naval training facility.

Tourism is increasingly important to the Westernport Bay Region. In the Bass Coast Shire alone it accounts for 5,000 jobs and contributes more than \$600 million each year to the local economy. The internationally famous Penguin Parade, where each year more than a million visitors come at dusk to watch little penguins returning from feeding at sea, is the major tourist attraction. The other major area of tourism is on the Mornington Peninsula where it is valued at more than \$200million each year.

Public transport is largely limited to buses on major routes, a short rail line (non-electrified) from Frankston to Stony Point, the Melbourne to Gippsland railway line through Berwick, Pakenham and Drouin along the city's growth corridor, and a passenger ferry service from Stony Point to French Island and Cowes. The main public roads are the Princes Freeway, South Gippsland Highway, Bass Highway, Western Port Highway, Mornington Peninsula Freeway and Point Nepean Road.

A changing environment

The natural environment that existed in the Westernport Bay Region before 19th century European settlement has been extensively modified. Dryland grazing is now the dominant land use but is gradually being replaced by intensive agriculture, urban development and lifestyle properties. The region's market gardens are also under threat from a rapidly expanding Melbourne.

Before European colonisation and the subsequent growth of Melbourne and agriculture, the Westernport Bay Region was covered in forests, woodlands, heathlands and the vast Koo-

wee-rup Swamp (400km² in area). The vegetation was cleared and the swamp drained (from the 1890s); the drainage channels are now 'creeks' discharging into Westernport Bay.

Small remnants of native vegetation are scattered across private land in the Westernport Bay Region, but forests have been retained in the Bunyip State Park and state forests in the region's upper catchment, while others are included in a number of other conservation reserves.

Most of the remnant ecological vegetation classes are either Endangered or Vulnerable and largely found on the Mornington Peninsula and the elevated land east of Westernport Bay in the shires of Bass Coast and Cardinia (south-eastern corner). Very few remnants exist in the former Koo-wee-rup Swamp or the City of Casey.

Fringing Westernport Bay are about 1,000 hectares of saltmarsh, approximately 450 hectares below what existed at the time of European settlement. Agricultural development has removed large areas but the inland migration of mangroves has also contributed to the loss.

Mangroves cover more than 1,800 hectares around the shoreline of Westernport Bay, with large areas at Quail Island and the Inlets on the northern shore, and at the mouth of the Bass River in the bay's south-eastern corner. Although there was extensive clearance of mangroves in the early 19th century to produce barilla for use in soap and glass making, the mangroves have recovered, largely by moving inland and replacing saltmarsh.

In 1974 there were 250 km² of seagrass meadows but by 1984 this had declined to 72 km². The area recorded in 2011 had increased to 150 km² but large areas have

failed to recover and in other areas recovery has been hampered by poor water quality. The Western Port Seagrass Partnership is working to ensure a healthier future for seagrasses and mangroves in Westernport Bay engaging in research, education, restoration and replanting projects.

The loss of vegetation cover and drainage of the Koo-wee-rup Swamp have had profound effects on siltation, turbidity and the loss of seagrass meadows in Westernport Bay. Landfill, clearing and agricultural, urban and industrial development have impacted on the extent of mangroves and saltmarsh. These and climate change, water pollution, introduced marine pests, land degradation and water pollution are the major ongoing threats for the natural values of the Westernport Bay Region.

A growing population

There are four local municipalities with boundaries that connect with Westernport Bay. They are the Shire of Mornington Peninsula, the City of Casey and the shires of Cardinia and Bass Coast. Parts of the South Gippsland and Baw Baw shires are also found within the region's catchment.

The northern part of the catchment is in one of Melbourne's growth corridors and the region's population is steadily increasing. Based on the 2011 census, population projections by the Australian Bureau of Statistics and growth extrapolations for this report, it is estimated that the population of the Westernport Bay Region will grow from roughly 400,000 (in 2011) to more than 600,000 by 2040.

The most-rapid population increases will be along the Melbourne growth corridor in the northern parts of

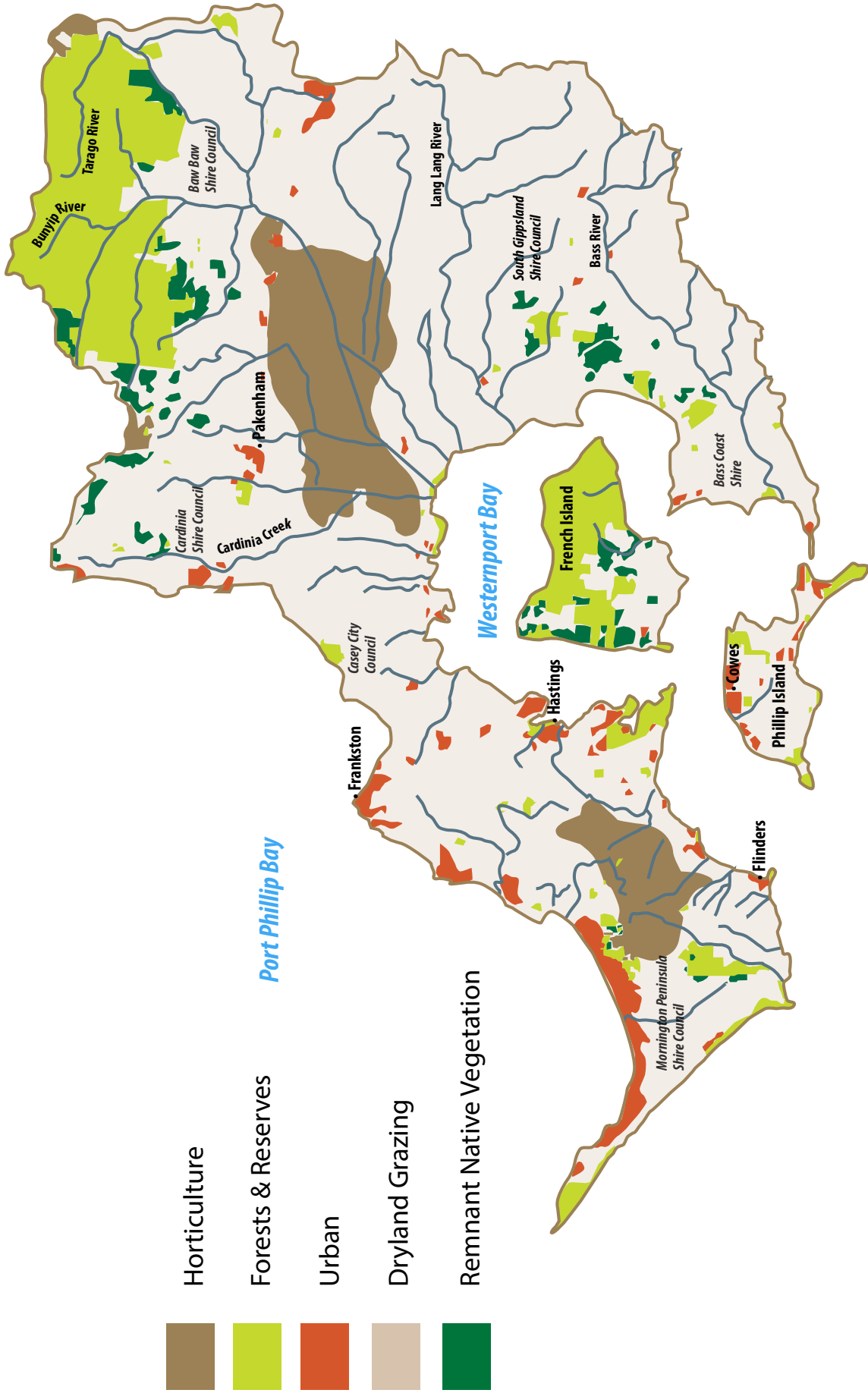


Figure 2: Land use in the Westernport Bay Region.

Casey (Victoria's second-fastest growing municipality) and Cardinia, and the slowest in the Shire of Bass Coast, including Phillip Island, while French Island is unlikely to see any population increase at all. Casey, Cardinia and Mornington Peninsula municipalities are where the greatest numbers of people will be living.

Expansion of the Port of Hastings

The Port of Hastings, in the north-western corner of Westernport Bay, covers about 3,500 hectares and eight kilometres of shoreline, with facilities that include the Stony Point jetty and depot, Crib Point and Long Island Point liquid berths and the BlueScope Steel jetty.

Up to 100 vessels use the port each year for the import and export of around 5 million tonnes of goods including oil, liquid petroleum gas, unleaded petrol and steel, but it is also the terminal for gas and oil pipelines supplying local markets. The Cowes and French Island

passenger ferries also use the Stony Point Jetty, along with fishing boats and oil exploration vessels.

The Victorian government has begun the planning for a major expansion of the port, based on the premise that the port of Melbourne will reach capacity in 10-15 years but that container traffic will continue growing.

Currently the government is spending \$110 million on scoping, design, preparation for environmental approvals, business case development and procurement and delivery strategies, with construction planned between 2018 and 2025 for an initial capacity of three million containers that would increase to nine million by 2060.

If that capacity is reached, it has been estimated by Victoria University's Institute for Supply Chain and Logistics that 1.5 million B-double trucks and 50,000 trains would each year travel through Melbourne to distribute the containers, largely because the goods distribution network is located in the north and west of Melbourne, not to the east where

the Port of Hastings is located.

Although Westernport Bay is dubbed a natural deep-water port, it is not, for ongoing dredging is required to maintain the 14-metre depth of the shipping channel. This would need deepening to 16 metres to cater for the mega-container vessels (12,000-18,000 containers) envisaged for the expanded port, with additional dredging in the port and anchorage areas, all of which could have wide-ranging impacts on the Westernport Bay Region.

More than 3,000 ships could be using Westernport Bay each year – currently it is 100 – if the port expansion goes ahead. Such a huge expansion of shipping traffic would increase the potential for oil spills that research has shown could reach sensitive habitats within hours.

However, serious doubts have been cast over whether Australian ports will ever see mega-container ships due to the fragmented distribution of containers between Australia's capital cities and their relatively small markets.

FOUR ALTERNATIVE FUTURES FOR THE WESTERNPORT BAY REGION

WESTERNFREEPORT P15

THE BEACON.....P19

CREATIVE GROWTH P23

LAGOM..... P27

1: WESTERNFREEPORT

Overview

The world economy has continued to expand and conventional economic development policies are used to encourage economic growth in the Westernport Bay Region. A small-government approach places few if any restrictions on industry and commerce.

The massive expansion of the Port of Hastings to accommodate nine million containers by 2060 proceeded, along with its sale to a port development consortium, the funds from which were used to develop the Westernport Bay Region with little concern for environmental sustainability or social equity.

Governance

- Increased corporate and business influence over decision making
- Governance poorly integrated

Economy

- Bold conventional economic development
- Increased rate of GDP growth
- Increased inequality/worsening income distribution
- Substantial urban growth

Community

- Increased labour immigration and inequality in employment and income
- High-density living with reduced environmental amenity
- Privatised health and education with inequality of access
- User-pays principle
- Individual wellbeing
- Commercial recreational opportunities increased

Natural Environment

- Coastal erosion
- Increased turbidity
- Climate change brings more damaging storms
- Acid-sulphate soils released, turbidity and heavy metals pollution increases
- Damage to biodiversity
- Reduced environmental stability

Built Infrastructure

- New mega-container port
- Container Freight Network implemented
- Coastal walls control erosion
- Tunnel connecting Phillip Island to mainland
- Fun park, aquarium, casinos
- French Island sand mine
- Tyabb airport expanded
- Coal rail link to Moe (Latrobe Valley)

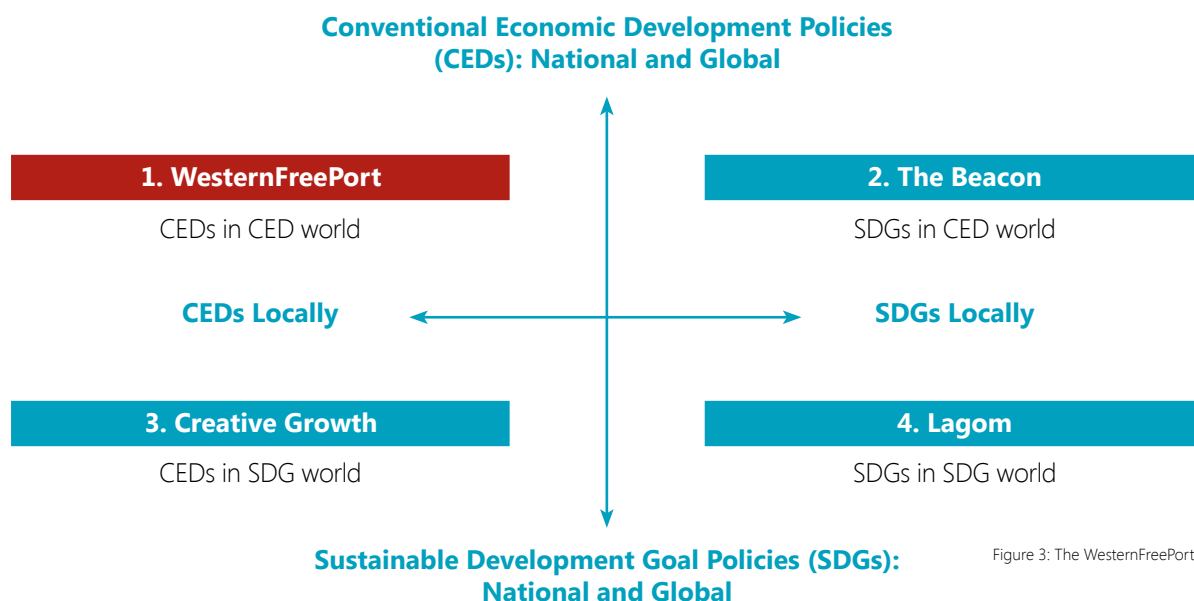


Figure 3: The WesternFreePort quadrant

Governance

The Victorian Government continues to promote and support the Westernport Bay Region's goal of economic growth and development.

A number of departments are responsible for the management of various activities to achieve that goal. They include the Environment Protection Authority, Department of Environment and Primary Industry, Department of Planning and Community Development, Tourism Victoria and the Department of Transport.

Shire councils are fully committed to developing their municipalities to maximise GDP and employment, ahead of public amenity. Environmental 'red tape' has been minimised to facilitate more rapid growth.

The Hastings Port Authority Inc. replaced the public Port of Hastings Development Authority and operates the Port Zone. Rules are only used to ensure the safe and efficient running of the port; there is little or no accountability or transparency in decision-making.

Transport Safety Victoria (Marine Safety Board/Parks Victoria) regulates the use of Westernport Bay's waterways. As a result of the dominance of shipping, there is now reduced public access and a stronger regulation of public and commercial boating.

Marine Protected Areas remain under the control of Parks Victoria.

Economy

Phillip Island is now a place for mega-tourism, the duty-free playground of the south, i.e. a special economic zone with casinos and related high-roller infrastructure. It is promoted throughout the world to

encourage international visitors.

Other family-focused tourism highlights are the penguins at the Penguin Parade and the seals at Seal Rocks. To maximise the island's income stream, there is now a fun park, 'Funland', a zoo, an aquarium, 'Sea World', a giant rollercoaster, and fairy penguins, great white sharks, orcas and whales etc. in super-large tanks.

To make it easier for tourists to get to Phillip Island, there is now an undersea tunnel – a bridge would have obstructed container shipping – from Stony Point to Cowes.

The region's energy requirements are met by the burning of cheap and plentiful brown coal resources from the nearby Latrobe Valley.

Industrial development and housing/urban intensification have followed the port's development, all of which have maximised GDP, jobs and opportunities for entrepreneurs.

Due to the Westernport Bay Region's vastly expanded construction industry, especially on Phillip Island and at Hastings, French Island is mined as a local source of building sand, which is loaded onto barges at a new port on the former Tankerton Jetty site.

Built infrastructure

The container port, coal loader and associated development are fully operational, with 10 mega-container ships using the port each day. The shipping channel and turning area have been dredged to 16 metres to accommodate the larger ships.

A marked increase in the cost of container movements within Victoria, due to the increased costs associated with the port expansion project, has been passed onto consumers.

The privately built and tolled underwater tunnel from Stony Point to Cowes has two-lane traffic in either direction.

The town of Hastings has quadrupled in size (8,685 people at the 2011 census) due to increased industrial activity in the Westernport Bay Region, while housing and population have increased ten-fold to service industrial, urban and tourism development.

The Victorian Freight Network enables freight trains with containers to enter the Melbourne CBD on an overhead rail line through the south-eastern suburbs of Melbourne. A rail link has also been built to the coalmines of the Latrobe Valley.

The East-West Link connects trucks to the city to deliver the goods from containers to various outlets.

The Tyabb airport has been substantially expanded to increase imports/exports and now also caters for increased national and international tourism.

Community

With the intense development in the region, the gap between rich and poor has increased while the population has rapidly expanded – the more people, the better is the philosophy of WesternFreePort.

High-density living has reduced environmental amenity and the privatisation of health and education has led to inequity of access – emphasising the user-pays principle.

For reasons of safety and port efficiency, anglers are no longer able to fish around the port, the dredged shipping lanes and the turning bays.

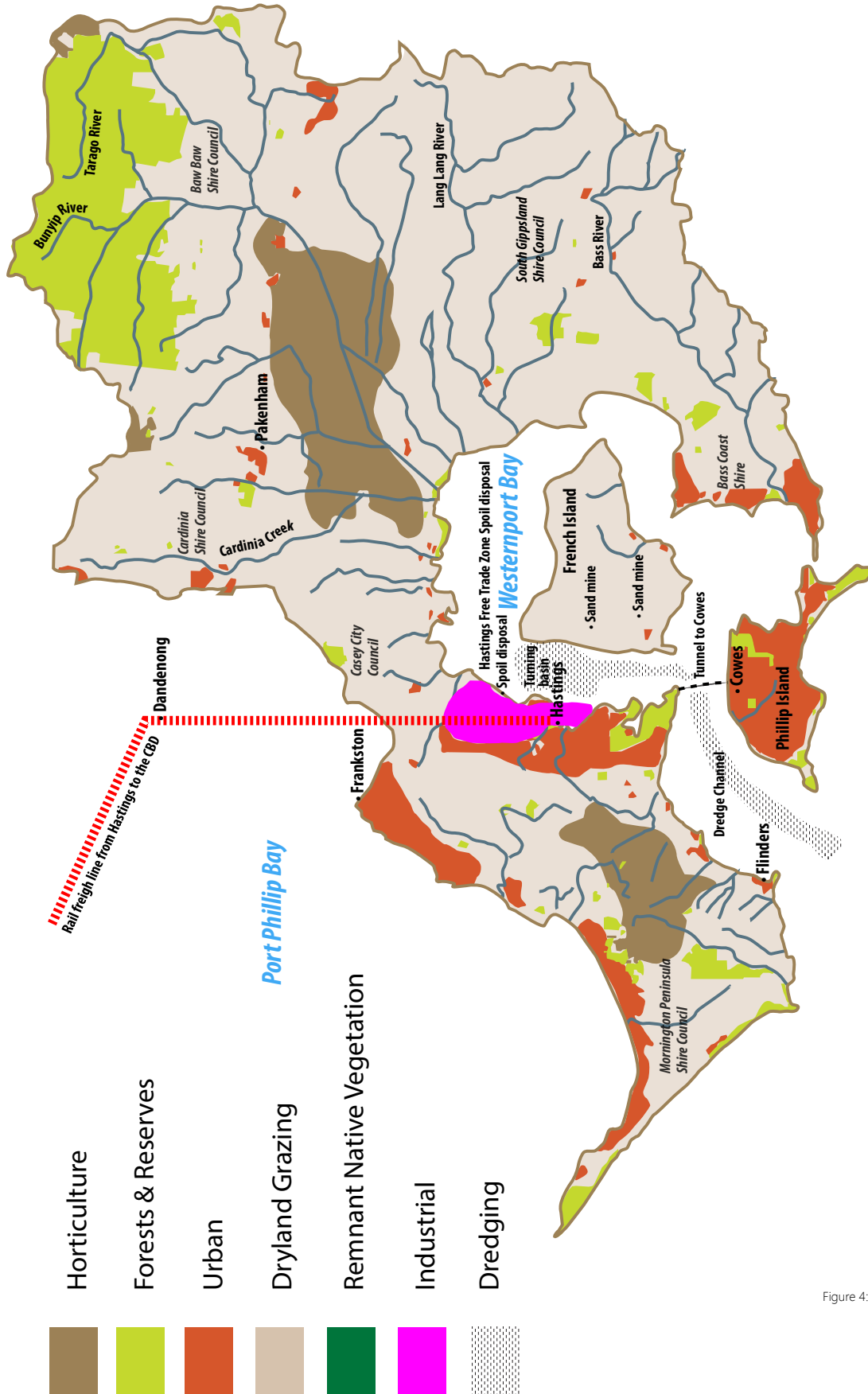


Figure 4: WesternFreePort proposals

Natural Environment

Climate change continues with rising sea levels and more frequent and stronger storms. To combat coastal erosion, which has been exacerbated by the increased tidal flow caused by dredging, extensive coastal rock and cement walls have been constructed, requiring the removal of fringing habitats around Westernport Bay.

Local councils are implementing some planning policies but, other than requiring new houses to be raised by 800 mm, there are no other climate adaptation measures being implemented.

The necessary dredging of the shipping channels and anchorage has increased turbidity and caused the dieback of seagrass meadows and a reduction in the number of fish that anglers could target.

The dumping of dredge spoil, initially proposed for Bass Strait, is

now occurring off Point Leo and other parts of the bay where it is used to build islands and reclaim land e.g. the ongoing expansion of the Port of Hastings. The spoil takes years to dry before buildings can be erected on it.

Dumping close to the shore and for island building is carefully planned due to three-metre tidal range in Western Port. However, it has raised turbidity in the bay and the Department of Environment and Primary Industries may in the future require that areas of seagrass be carefully monitored.

Air pollution from ships' exhausts has become a regional health issue, but the shipping industry opposes stringent fuel regulations that require the sole use of ultra-low sulphur fuels in Australian waters. The industry threatened to stop trade to Australia if the government tried to enforce the law.

Ship ballast water continues to be

an issue when ships fail to follow regulations and release ballast water in port, introducing marine pest species.

Other environmental considerations are too costly for the Port of Hastings Inc. to address including:

- Requiring energy efficiency and clean fuels
- Oil spillages during refueling of ships
- High risk of accidents, including from storm events.

The increased development of industry and urban growth has increased pollution from acid-sulphate soils, turbidity, heavy metals and hydrocarbons, bringing with it damage to biodiversity and a reduction in environmental stability.

These and other impacts are regarded as a necessary if unfortunate consequence of pursuing the bold development agenda of WesternFreePort.

SCENARIO 2: THE BEACON

Overview

The Victorian Government's plan to massively expand the Port of Hastings failed to proceed due to its logistics, associated costs and the potential for overwhelming environmental impacts from dredging. However, Victoria and the rest of the world continued down the business-as-usual path, with the emphasis on economic growth and no regard for sustainability goals.

People in the Westernport Bay Region recognised that action was needed to reverse the decline of social, economic and environmental assets and to become a best-practice model – The Beacon – for regional sustainable development.

Governance

- Regional municipalities collaborate
- New regional institutions coordinate regional planning
- Indigenous community involvement in planning

Economy

- Diversified growth areas in ecotourism, agriculture, education, specialised manufacturing
- Existing port continues with potential to upgrade for other technologically focused uses
- Leveraging off existing/new events
- Equitable real estate policies cater for all incomes
- Entrance fees fund tourist sites
- Maritime and airport transport expansion

Community

- Economic, social and environmental equality in communities
- Improved health and wellbeing from use of new recreational facilities
- Indigenous Bunurong Dreaming culture integrated

Natural Environment

- Significant environmental repair and reestablishment of wetlands to mitigate runoff, sediment and chemicals reaching the bay
- Best-practice agricultural policies
- Climate change: major issues are sea level rises and warming water
- Renewables: wind, water, solar energy focus

Built Infrastructure

- Fully integrated transport system with upgrade of road and rail and a new airport
- Specialised education and research centres
- Existing port maintained but later converted for sustainable development
- Car ferry Stony Point to Cowes
- Upgraded communications network promotes smart businesses and better work-life balance

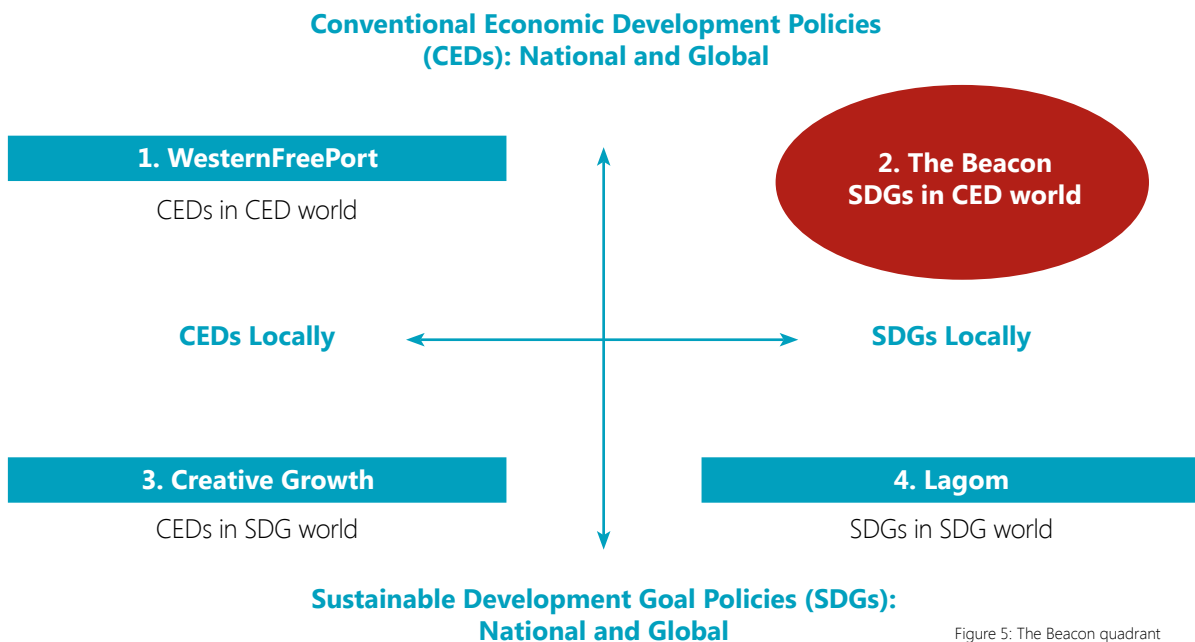


Figure 5: The Beacon quadrant

Governance

The Westernport Bay Region's municipalities, community and business developed a common resolve for regional development consistent with the UN Sustainable Development Goals. To achieve that, they followed a more economically, socially and environmentally sustainable path with the natural environment as the primary asset.

CEOs and representatives from the Mornington Peninsula, Bass Coast, Casey, Cardinia, Frankston, Baw Baw and South Gippsland municipalities established an advisory group tasked with establishing a 'Special Economic and Environmental Bubble' (SEEB).

The region's municipalities collaborate to realise the vision, while new institutions coordinate and legislate for the planning and management of the region.

Consultation-based self-determination was seen as desirable to avoid being subject to the whims of global enterprises and the Victorian government. Local Indigenous communities also play a vital role in regional planning and management.

Economy

The 2014 closure of BlueScope Steel in Hastings was at the time an economic disaster for the Westernport Bay Region.

However, an important component of regional economic development policies are opportunities for niche producers of high-value produce coupled with agritourism.

Niche industries e.g. cheeses, wines, beers and cottage industry products are encouraged and supported by the Westernport Cooperative, which assists with sales, marketing and distribution.

Tourism in the region has increased threefold, with local governments encouraging recreational, ecotourism and agritourism.

In 2014 Phillip Island attracted 3.5 million visitors, the vast majority with the sole objective of visiting the 'Penguin Parade' and staying in the region for just a few hours. But in 2040, incentives are now encouraging tourists to remain for a minimum of 24 hours, yielding significant additional revenues to the region.

Smart industry (e.g. high-tech) was encouraged by the development of a fibre-optic communications infrastructure. This and the improved transport to the city make it easier for people to work from home and enhance their work-life balance.

Marine research and education has become a significant contributor to the region's economic activity, as too a second airport.

Built infrastructure

The first initiative to address the job losses in Hastings in 2014 was the duplication and electrification of the rail line from Stony Point to Frankston. This created a seamless connection into the metropolitan rail network, opened up the region to new job opportunities and provided better access to the region for tourists.

On Phillip Island a flexible, accessible and scalable transport system wrested control of tourist movements from city-based tour operators. The transport system alleviated the logjam of vehicles that had previously occurred during major tourism events. A light-rail transport system on Phillip Island offers cheap fixed fares, spectacular ocean/bay views, and packages that include entrance fees to major attractions.

In conjunction with the deployment of the light-rail system, a private ISP rolled out a fibre-optic backbone within the region and enabled the development of Wi-Fi hotspots and smart industry.

This integrated transport/communications network now circumnavigates Westernport Bay, connecting Phillip Island's infrastructure to the heavy-rail system at Pakenham, Cranbourne and Hastings.

The Blue Scope Steel infrastructure at Hastings, which was vacant in 2014, was re-established as the Marine Research and Maritime Academy.

The Port of Hastings is now used to support training and research vessels, vessels used for bay cruises, whale watching and diving, and smaller, high-speed overnight cruise vessels visiting local points of interest and providing sea transport services to Wilsons Promontory, the Bass Strait islands and Tasmania.

All new residential developments are mandated to have 9-Star ecoratings, with community based 'geo-exchange' infrastructure for efficient heating and cooling.

The establishment of a rich and diverse range of educational, residential, cultural, agricultural and industrial activities has justified the development of an international airport for the easy movement of residents and tourists and the export of the region's high-value horticultural and hi-tech products.

Trails and board walks now run from San Remo to Hastings, catering for activities such as walking, cycling and birdwatching, and include environmentally friendly camp sites to cater to users of the trail, as well as kayakers and trailer sailboats. There are also underwater marine observatories and guided snorkeling trails.

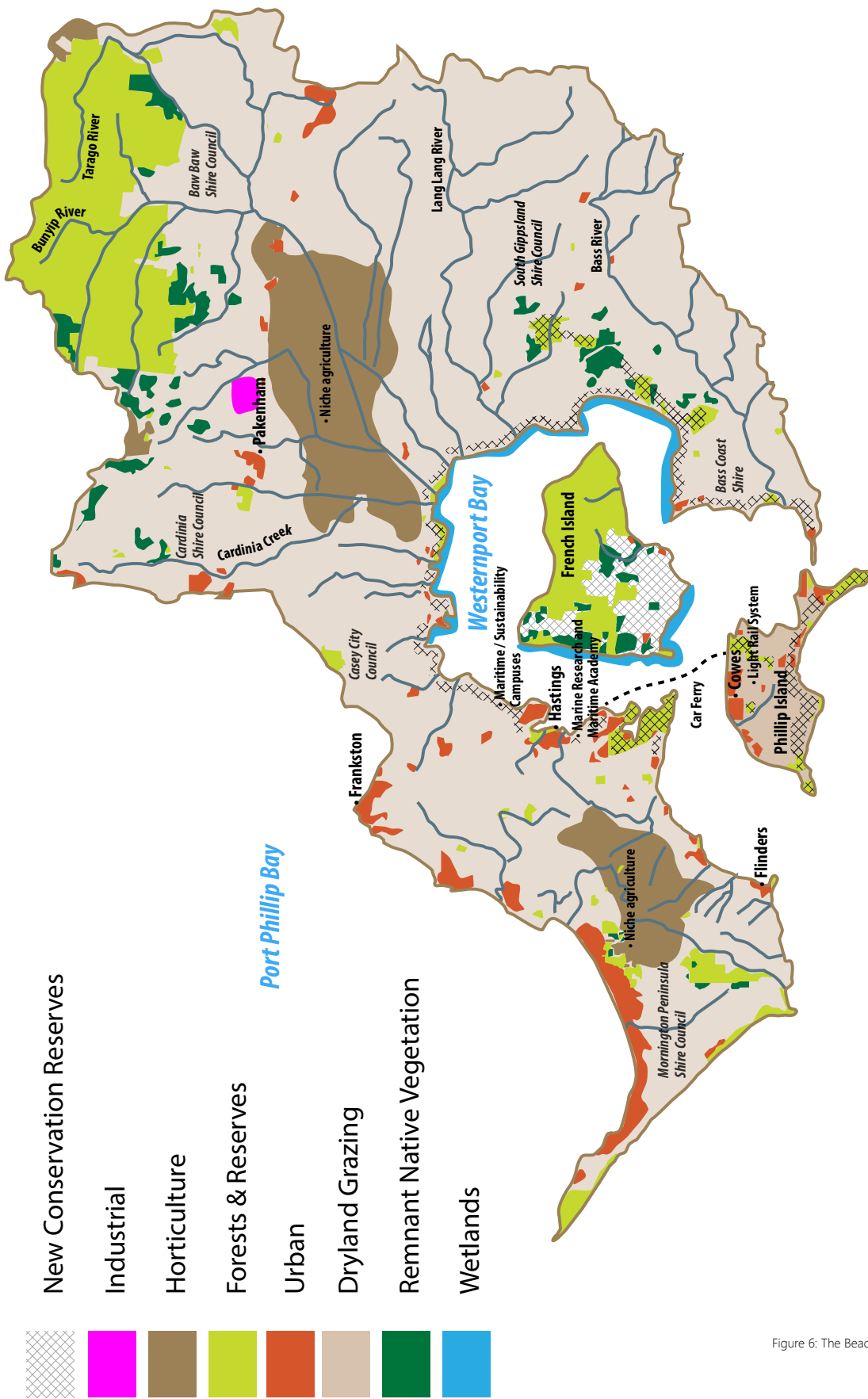


Figure 6: The Beacon proposals

Community

Environmental and social stability is more important than economic growth in the Westernport Bay Region.

Various programs promote community health and wellbeing, using new recreational facilities and yielding benefits from reduced health care costs.

There is an ongoing regional commitment to integrate Indigenous Bunurong Dreaming culture and performing and visual arts into community life.

In addition to the environmental component, housing development has incorporated affordable community housing in a 'salt and pepper' mix that now caters to all

needs and includes recreational and cultural facilities.

Natural Environment

In 2014 it was recognised that the Westernport Ramsar site was degraded. Mangrove clearing and wetland drainage for farming were causing sedimentation, algal growth, seagrass depletion and aggressive erosion, especially on the eastern shore of Westernport Bay.

The Westernport Bay Region was a significant but neglected and underused natural asset, with the existing Ramsar site and marine reserves the 'Jewels in the Crown'.

Action was taken to adapt the coastline to minimise the effects of erosion, storm surge and sea level

rise. A foreshore buffer zone was established, and the integration of high-value residential development with saltwater wetlands, mangrove, saltmarsh, freshwater creeks and billabongs, allowed the re-introduction of species such as the platypus.

The buffer wetlands now provide Ramsar habitat and meandering channels for stormwater, flood mitigation and the filtering of contaminated agricultural runoff.

The entire French Island is now a designated national park, farmland has been revegetated, feral and invasive species removed, and facilities established that cater for exclusive ecotourism and limited residential development.

SCENARIO 3: CREATIVE GROWTH

Overview

The business plan for a major expansion of the Port of Hastings failed, replaced by a reconfigured port that largely retained the existing footprint but allowed the loading and unloading of small container ships.

The Westernport Regional Council continues to implement conventional economic development policies but within the context of national and UN Sustainable Development Goals. Smart technology and infrastructure, along with centralised planning and a strict regulatory compliance regime are used to maintain growth while meeting sustainability goals.

Governance

- Consistent with UN Sustainable Development Goals
- Strong national standards within regional agreements
- Westernport Regional Council integrates local municipalities for consistent planning and regulation



- Strict compliance regime to ensure sustainable growth
- Strategic planning overlays

Economy

- Port of Hastings adapted for small container ships
- Innovative and technologically advanced manufacturing industries
- Intensified agriculture
- Incentive scheme to encourage green and blue carbon farming
- Car ferry (Stony Point to Cowes) and a new airport at Caldermeade
- Growth in sustainable housing



Community

- More equal access to essential services of education and health
- Strict limits on openness and transparency of Regional Council decision making on issues that impact the community
- Increased surveillance of communities to ensure regulatory compliance



- Volunteers work to improve environment, care for vulnerable people and support sporting and recreational activities

Built Infrastructure

- Rail to a new Dandenong Container Hub
- Smart roads include water sensitive design, wildlife crossings
- Focus for Melbourne's health and medical research
- Desalination plant fully operational
- High-speed broadband
- Hi-tech pollution and waste management and water recycling



Natural Environment

- Climate change action
- French Island BioArk
- Restoration, rehabilitation and revegetation of remnants
- Environmental bonds on major infrastructure projects and Environmental Protection Zones
- Biosphere Foundation partnership



Conventional Economic Development Policies (CEDs): National and Global

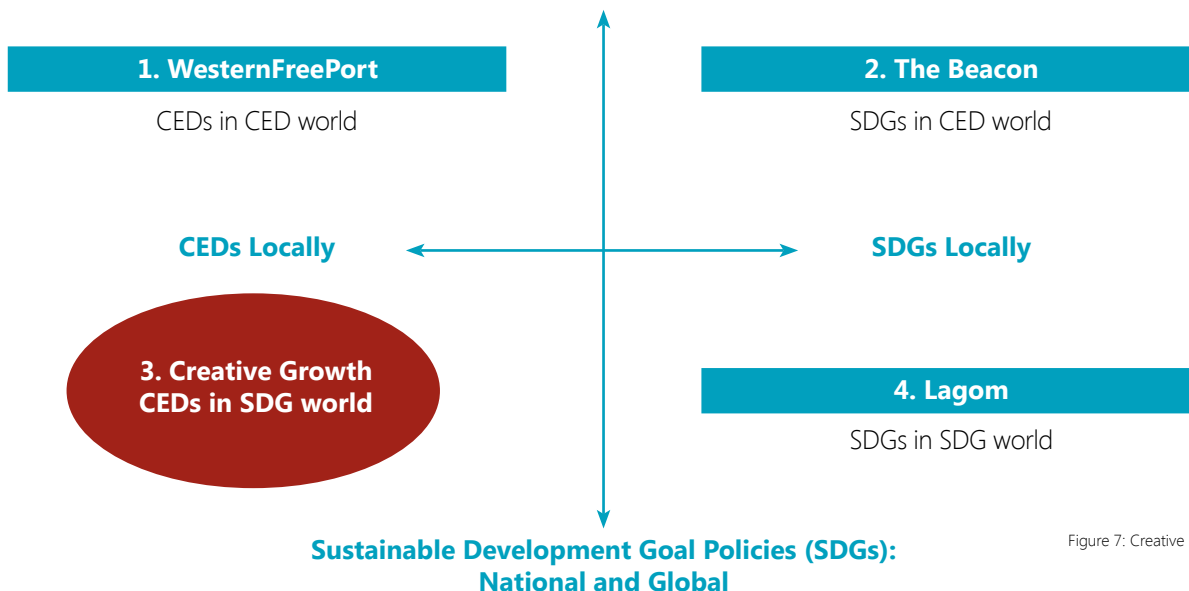


Figure 7: Creative Growth quadrant

Governance

Australia signed international agreements, including an emissions trading scheme, and has a national framework with standards and laws that reflect the nation's commitment to the UN Sustainable Development Goals.

Although the region has continued to implement conventional economic development policies, the integrated Westernport Regional Council, formed by all councils in the Westernport Bay Region, applies regulations and innovative technologies to monitor compliance and ensure economic growth is maintained while also achieving the UN Sustainable Development Goals.

The Victorian and federal governments fund the municipalities in the Westernport Regional Council to stretch their economic development policies to meet the UN goals. This funding also supports education, economic development and ecoplanning/urban development.

The focus of regional governance is the efficient and effective delivery of economic development policies within the limits of the natural environment. Technological and regulatory solutions have enabled the region to support a growing population, protect the natural environment and encourage economic development, industrial growth, agriculture/aquaculture, community development, tourism and urban growth. A creative balance now exists between economic growth and environmental protection.

The Westernport Regional Council works to ensure a better quality of life by achieving better environmental practices and econeighbourhoods. It has also formed a strong and productive partnership with the Biosphere Foundation and industry

to establish on-the-ground sustainability projects.

Economy

The Port of Hastings expanded its activities but not its footprint, and was retrofitted to enable the loading and unloading of small container ships, reducing the need for dredging.

Under the Westernport Regional Council's managed growth approach there has been an increase in manufacturing and logistics, and a greater use of the Port of Hastings. The Bluescope Steel infrastructure was converted for the advanced manufacture of innovative technologies, in particular renewable energy technologies (wind turbines, solar panels) and the conversion of waste. This has provided opportunities for the training of local and overseas apprentices (who take their learning back to their country to aid in its development).

While the region's population has increased significantly, there has been progress towards self-sufficiency and the control and management of consumption, waste and energy use: reduce, reuse and recycle is now a way of life, a successful business model and a major contributor to the region's innovative economic development.

Increased activity in the primary industry sector includes commercial fishing, carbon farming (blue and green), aquaculture, horticulture and intensive dairying. The encouragement of organic/biodynamic farming has given it a competitive edge while at the same time minimising the risks to water quality from agriculture. A new airport has assisted the export of both primary produce and manufactured goods.

Domestic and international

tourism has grown significantly and diversified. Ecotourism opportunities include whale watching, dolphin swims, orchid festivals and EarthWatch-type experiences on French Island. New infrastructure supports the increase in tourist traffic and includes a small car ferry between Stony Point and Cowes. There are also increased recreational fishing opportunities with appropriate support infrastructure (marinas and boat ramps where consistent with Westernport's natural carrying capacity).

The Westernport Bay Region's housing stock has been substantially increased and satisfies a range of needs, including low-cost housing and the eco-retrofitting of old housing to serve the rapidly expanding population in Melbourne's growth corridor.

The erosion of the Westernport Bay's east coast was accepted and saltmarsh and mangrove habitats were allowed to migrate inland, rather than constructing sea walls and levees that stop them. Their stored carbon is sold, along with carbon farmed in other parts of the region, in the international carbon-trading scheme. Seagrass meadows were also given greater protection – no boating access – to enable their stored carbon to be traded.

Community

Mandated regulations backed by severe penalties have transitioned the Westernport Bay Region and its community towards sustainability. However, the Westernport Regional Council acknowledges that action is always needed to create a more equal society with better education, health and public transportation for all. The centralised and highly regulatory regional governance has statutory obligations for public comment, but there are

strict limits on the openness and transparency of Regional Council decision making on issues that impact the community. Surveillance of communities has increased to ensure compliance with regulatory measures designed to meet the UN Sustainable Development Goals.

As the region moved to new technologies for logistics, manufacturing, urban development and waste management, the threat of local extinctions of flora and fauna was acknowledged and community volunteers have worked with the Biosphere Foundation to improve the environment; French Island BioArk is the shining example.

The community works tirelessly with the Westernport Regional Council and volunteers to repair the environment, care for vulnerable people, and support sporting and recreational activities.

Built infrastructure

Infrastructure is designed and built to meet the needs of the community, industry and the environment, consistent with the UN Sustainable Development Goals. It is based on the smart and mandated use of technology that encourages timely and sustainable solutions for a growing and diversifying economy.

The focus of energy infrastructure is renewable energy. All domestic and commercial buildings are fitted with solar arrays that provide most of their energy needs. Wind and tidal energy supplement this and feed into the national energy grid.

Integrated water, stormwater and sewerage infrastructure ensure that water harvesting and recycling plants, and the desalination plant, supply the region's water needs (including third-pipe technology).

Regional infrastructure is located or

relocated to avoid the impacts of climate change, such as rising sea levels and erosion.

Integrated road and rail infrastructure link the various parts of the Westernport Bay Region along corridors that include provisions for bike paths, habitat corridors, wildlife bridges/tunnels and utilities of water, sewerage and electricity to minimise disruption to the region's rural and natural landscapes.

New subdivisions have mandated multiple densities, low-cost housing, provision for open space, habitat retention/rehabilitation and water sensitive and waste-sensitive design features. Existing subdivisions are retrofitted to mirror the objectives of new subdivisions.

Westernport Regional Broadband is supplied to all domestic and commercial buildings to ensure a smart community is able to share its ideas, learn from the rest of the world and develop flexible work-life arrangements.

Recreational infrastructure such as marinas and boat ramps are designed and located to minimise their site impact. Boating infrastructure is only constructed if its use does not undermine the natural values of Westernport Bay.

Natural Environment

The Westernport Regional Council restricted the size and capacity of ships that can enter Westernport Bay to minimise dredging and its impacts. It also enforces strict vessel pollution controls including a 100-kilometre offshore shipping pollution (e.g. ballast discharge) restriction zone for shipping to protect the coast.

The expansion of Melbourne and the intensification of agriculture have changed land use in the

Westernport Bay Region but regulations and the use of technology have minimised the environmental impact.

Environmental bonds are enforced for all major infrastructure developments including port expansion and airport development. Environmental Protection Zones protect the natural environmental assets of the Westernport Bay Region.

Environmentally significant land and marine areas have been protected with better management and strong regulations to minimise air, water and land pollution, ensuring enhanced local amenity and lifestyle.

Protected wetlands and mangroves have been allowed to adapt to climate change and retreat, and most plant and animal species have survived, thanks to the wildlife corridors and community-driven habitat restoration projects. The French Island BioArk now reflects how the rest of the Westernport Bay Region once looked and is a biological time capsule in the heart of the catchment.

The days of pollution and excessive waste are over, with innovative technological solutions, strict regional regulations and a worldwide shift to emissions reduction. The Westernport Bay Region is not as it used to be but its health is now improving towards a sustainable future.

CREATIVE GROWTH IN 2040

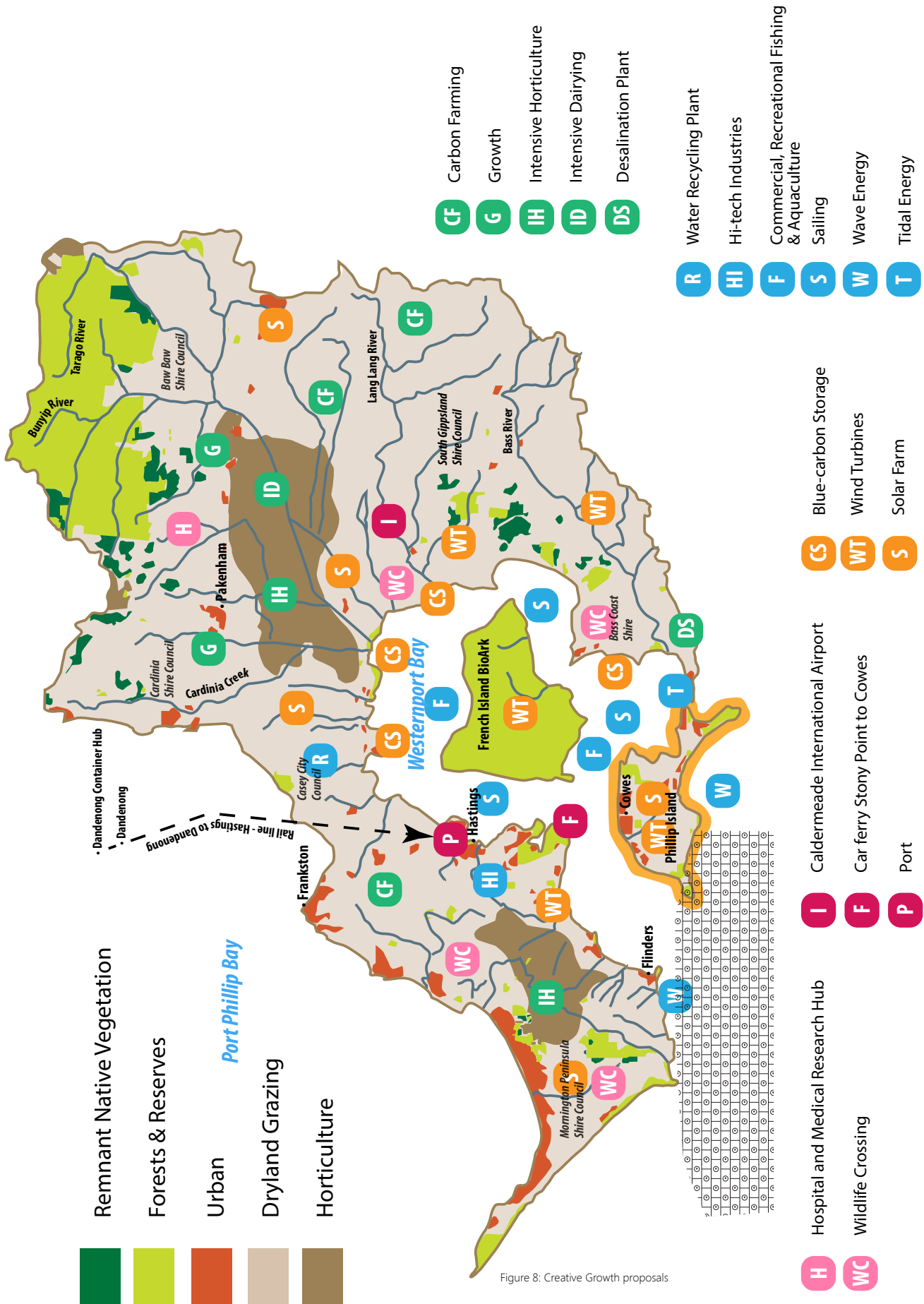


Figure 8: Creative Growth proposals

SCENARIO 4: LAGOM

Overview

In 2015 the Victorian Government abandoned plans for the expansion of the Port of Hastings on economic, social and environmental grounds and proceeded to retrofit it for a very different future. Adoption of the UN Sustainable Development Goals inspired a review of every aspect of sustainable living in the Westernport Bay Region and this became the blueprint for the future.

Governance



- Local governments connected regionally under a national government
- Social and political structures provide equal access to decision making
- Decision making via binding plebiscites
- Regional carrying capacity used to develop environmental footprint policy

Economy



- Notion of work and wealth changed to one of contributing to community
- World-leading and innovative

knowledge-based technologies

- Refuse, reduce, reuse, recycle, repurpose
- Produce/process food following permaculture principles
- Increased public transport (land/ sea)
- Cooperative living initiatives and local food production
- Supported/expanded local tourism, marine and coastal industries
- Realised economic opportunities associated with climate change

Community



- Stable population linked to carrying capacity
- Wellness initiatives and self-sufficiency
- Good quality open-space facilities, play spaces etc.
- Free health care and national superannuation scheme
- Free access to education enhanced by final "transition year" of community learning and travel
- Community leadership and programs of skill sharing

Natural Environment



- UN sustainable development goals implemented with enhanced principles applying to RAMSAR
- No greenfield land for development; urban consolidation instead
- Existing market garden areas protected to provide local jobs and high-value tradable food
- Increased plantings and protection for indigenous flora and fauna
- Positive climate change response: mitigation and adaptation
- Ships use efficient fuels, sails and renewable energy

Built Infrastructure



- Small-scale local villages: mixed building types, bike paths, car sharing
- Light rail to/from Dandenong/ Cowes
- Old infrastructure repurposed as solar plants, universities, open space etc.
- Hi-tech hospital ship visits
- Renewables production/ distribution

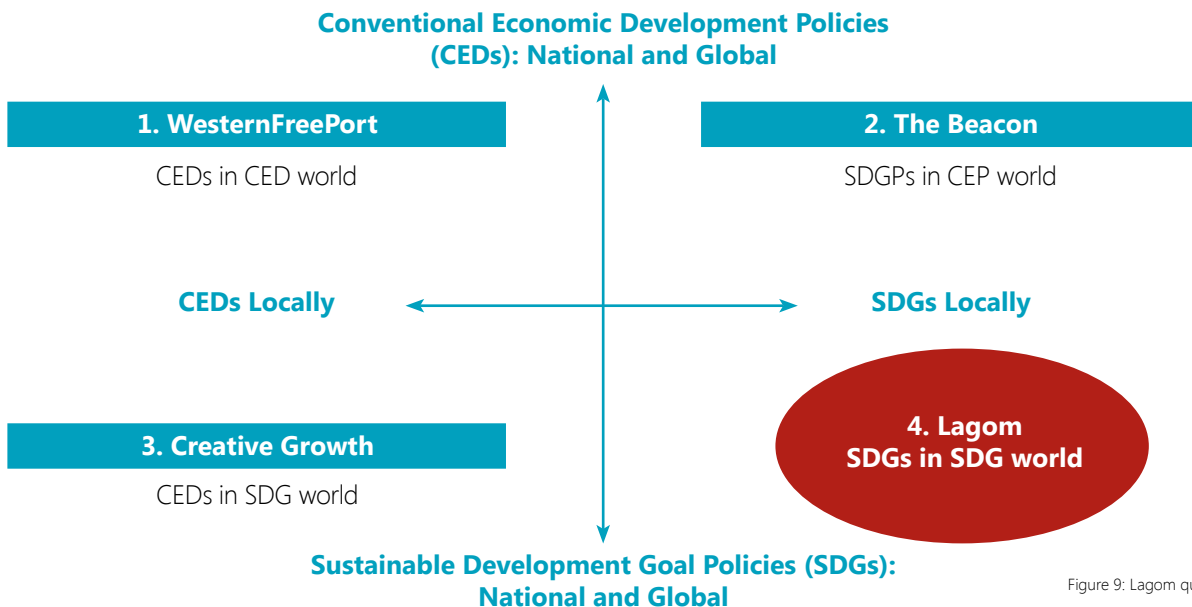


Figure 9: Lagom quadrant

Governance

Successive global financial crises, significant extreme weather events and Australia's failure to meet its 2020 emission target led to the need for global cooperative action.

Australia's response was to develop a locally decentralised governance structure connected at the global level. Global public policy networks link Australians with multiple countries and stakeholders.

New values permeate Australia in 2040. Global solidarity and strong connections between people are paramount, along with a commitment to sharing resources. Ultimately, everyone is in it together.

Whereas for many years Australia focused on its place in a global market, it now has a regional perspective. The Westernport Bay Region's governance structures reflect this by prioritising trade and development within the region, sharing what is done well with other regions, and developing economic specialties that fill niche gaps in the production of food, technologies and environmental services.

Changing the region's future course began in 2016 with the transition to participatory democracy: more citizens participating in decision making provides them with much greater empowerment than the 'representative' democracy that had become so unrepresentative by 2015.

Regional governance has expanded to encompass all members of the community, including women, Indigenous people and the disabled. Decision making, especially on contentious issues, is via plebiscites, binding on government and underpinned by funding and community education.

Economy

The change from an externally focused economy to one with a focus on regional wellbeing has brought with it many economic opportunities.

At a national level, an ethical review was conducted along the entire supply chain to determine what is traded and to whom it is traded. This now informs the Westernport Bay Region's infrastructure requirements.

Hubs of technological innovation cater for a growing business sector eager to implement ideas for a cleaner, more equitable and less energy-intensive world. Small-scale factories, some located in previously abandoned facilities, support a commitment to repair and reuse items critical to living a good life without further draining natural resources. Refuse, reduce, reuse, recycle and repurpose policies have encouraged the emergence of many new businesses.

The notion of work and wealth has changed to be one of contributing to the community even when in paid work. Good livings are made from local tourism, marine and coastal industries and renewable energy production.

Food is produced following permaculture principles and is traded regionally and nationally. The small and retrofitted Port of Hastings is a hub of activity, with food produce and other export items being transported to other coastal locations. Rather than a reliance on outmoded container vessels that require massive landside crane and storage areas, small fuel-efficient vessels with on-board cranes now load and unload cargo.

Built infrastructure

Coastal inundation mapping from early in the 21st century informed the region's response to climate change induced sea level rise in this largely low-lying region. A one-kilometre buffer zone has been established around the coastline where development cannot occur.

Outmoded hard engineering "solutions", such as seawalls, have proven ineffective and prohibitively costly to build and maintain.

Inspired by early 21st-century research, which estimated that US coastal wetlands provided \$23.2 billion per year in storm protection services alone, the extensive rehabilitation of saltmarsh, mangroves and wetlands has provided effective and low-cost coastal protection against storm surge and sea-level rise. These natural areas now provide economic, social and environmental benefits to the local tourism economy, for which traditional protective works had comprehensively failed.

While supporting local tourist activities, coastal zone infrastructure is low impact: walking paths, interpretive centres, viewing platforms etc. that can be easily removed or relocated.

People live in small-scale local villages with mixed building types; bike paths and car sharing are the norm. Public transport on land and sea has increased, driven by renewable energy, and includes a dedicated light rail corridor to and from Dandenong and The Nobbies, and ferry services between Hastings, French Island, Stony Point and Cowes.

Outmoded infrastructure, such as the Blue Scope Steel plant, has been repurposed (or removed in some cases) and now used for additional energy production, university

campuses, market places, schools etc.

Alternative energy production and distribution networks include wind, tidal and solar-energy plants to provide base-load power. There are two solar plants, one on 3,000 hectares of land at Hastings formerly earmarked for port expansion.

A hi-tech hospital ship makes regular visits to the Port of Hastings to provide specialist services to the Westernport Bay Region.

Community

Along with the rest of Australia, the Westernport Bay Region now enjoys a stable population linked to the environment's carrying capacity. There are now good-quality open-space facilities and play spaces, and wellness initiatives have been implemented and self-sufficiency is encouraged.

Access to universal and free health care has been preserved following its near demise in the 2010s. Privately run retirement investment schemes have been replaced by a national superannuation scheme operated by government as an extension of the former pension scheme.

Community leadership and skill-sharing programs are encouraged and use is made of cooperative living initiatives, self-sufficiency and innovation in business, community and personal endeavours.

Primary, secondary, tertiary and community education, and an expanded TAFE sector, provide free access to all those formerly excluded from pathways to economic and social success, and produce future community leaders. Free access to education at all levels is enhanced by a final "transition year" involving community learning

and travel.

Egalitarianism has emerged as a critical driver of future development. The change from consumerism to sustainability and egalitarianism has brought many benefits. In particular, there is a zero-carbon future with a cooperative, collaborative, innovative and resilient community. Collective goals and equity are more important than personal wealth and consumption.

Natural Environment

The late 20th and early 21st century trajectory of population growth, water use, forest degradation and GDP growth was unsustainable. The planet's resources were being depleted at a rate that threatened the survival of humans and many other species.

The UN Sustainable Development Goals have been implemented with enhanced principles applying to RAMSAR, and the Westernport Biosphere program is now fully realised.

Living within an environmental footprint was made possible after a thorough analysis of the carrying capacity of the Westernport Bay Region; education initiatives to stabilise the population are a key responsibility of government.

A stable population has made it easy to ensure that urban consolidation is within existing town boundaries and that no more greenfield sites are released for development. The community and governing bodies have worked hard to manage introduced pests, protect indigenous fauna, increase indigenous plantings and conserve water.

As in the early 21st century, the Westernport Bay Region's fertile land still supports the production of significant volumes of primary

produce. Market gardens provide local jobs and high-value tradable food. Food production underpins some regional, national and international trade in high-value foods.

The science of climate change was accepted and the region recommitted to investment in independent science. This positive response has realised economic opportunities and environmental benefits associated with climate change initiatives that include wind, tide and solar energy. Ships are using clean and efficient fuels, sails and renewable energy.



Figure 10: Lagom proposals.

COMPARATIVE SUMMARY OF THE FOUR SCENARIOS

Table 1 Attributes of the four scenarios				
Features	WesternFreePort	The Beacon	Creative Growth	Lagom
GOVERNANCE				
Structure	Strong, small government focused on individual property rights and free market	Strong government at regional level collaborating on Special Economic and Environment Bubble; new regional institutions coordinate planning	Westernport Regional Council (integrated and collaborative municipalities) with centralised planning and compliance regime	Regional governments connected through national government
Democracy	Limited regulations for industry and commerce; everyone for themselves; increased business influence	Strong citizen participation; consultation-based self-determination at the regional level	Managed market economy; statutory processes allow for limited community engagement in planning	Strong citizen participation; equal access to community decision making which, on contentious issues, is via plebiscites that are binding on government
Policy	Minimal policy; free market	Strong regional policies to achieve UN Sustainable Development Goals and to locally coordinate policies	Top-down regulatory control of industries and commerce to achieve regional goals	Comprehensive global, national and regional policies
ECONOMY				
Economic growth	Strong growth on average, but not for all - growing inequity	Stable or slow-growth economy with diversified activities	Moderate economic growth based on mandated technologies	Stable, no-growth economy
Key sectors	Shipping, tourism, urban development	Ecotourism; horticulture; health; education; best-practice agriculture	Renewable energy; waste management; shipping; tourism; health; intensive agriculture; blue and green carbon farming	Health; education; energy; tourism communications; marine and coastal industries; innovative knowledge-based technologies in small-scale intellectual enterprises; market gardens
Agriculture	Not mentioned	Niche agricultural products	Intensive horticulture; incentive scheme to encourage carbon farming	Permaculture; cooperative living initiatives and production of local food
COMMUNITY				
Identity	National and individualistic	Regional community	National and regional community	Global and regional community
Equity and security	Growing inequity; conflict over access to benefits of economic growth	Equity and security, high levels of trust	Equity secured by government regulation	Equity and security, high levels of trust; people contribute to the community
INDIVIDUAL WELLBEING				
Health and education	Inequality in access to privatised health and education	High priority, provided through public system; programs promote health and wellbeing and use of new recreational facilities; Marine Research and Maritime Academy	Access to healthcare and education regulated by government; health and medical research focus	High priority, provided through public and free health and education system; hi-tech hospital ship; wellness initiatives
Urban density and design	High-density living with conventional urban design	Multiple densities; affordable community housing with 9-star rating and geo-exchange infrastructure	Multiple densities; sustainably designed subdivisions (eoneighbourhoods) with water-sensitive design, wildlife corridors, open space and third-pipe water supply	Small scale local villages with mixed building types; urban consolidation not expansion; no greenfield land released for urban expansion
NATURAL ENVIRONMENT				
Environment	Biodiversity and ecosystems decline; coastal erosion	Biodiversity and ecosystems improve. Significant environmental repair; French island national park extended to cover island; foreshore buffer zone with habitat restoration to adapt coastline to climate change	Biodiversity and ecosystems decline and then stabilise; French Island BioArk; habitat restoration; pollution and waste management controls	Biodiversity and ecosystems improve; extensive rehabilitation of foreshore habitats to protect coastline from erosion; low-impact coastal infrastructure
Greenhouse gas emissions	Strong emissions growth	Initially increases and then declines	Initially increases and then stabilises	Zero-carbon future

Table 1 Attributes of the four scenarios				
Features	WesternFreePort	The Beacon	Creative Growth	Lagom
BUILT INFRASTRUCTURE				
Growth	High	Low-Medium	Medium-High	Low
Car ferry	Four-lane car tunnel between Stony Point and Cowes	Small car ferry from Stony Point to Cowes	Small car ferry from Stony Point to Cowes	No ferry
Port of Hastings	Expanded to take 9 million containers by 2060	Reconfigured for smaller domestic and international vessels with potential to upgrade for hi-tech uses	Reconfigured to enable small container ships	Reconfigured for smaller domestic and international vessels
Transport	Heavy rail freight line into Melbourne CBD; rail link to coal mines; new airport	Integrated transport systems with upgraded road and rail transport linking new rail system on Phillip Island with Pakenham, Cranbourne and Hastings; electrification of Stony Point to Frankston line; new airport	Freight line to new container hub at Dandenong for container distribution on existing transport networks; new airport inland at Caldermeade; smart roads infrastructure with wildlife tunnels/bridges	Land and sea public transport expanded with renewable energy; light rail Cowes to Dandenong; new airport
Energy	Coal	Renewables	Renewables	Renewables
Tradeoffs	Reduced constraints and large opportunities for individuals and corporations at the expense of community and environmental quality	Environmental and social stability is more important than economic growth	Controlled sustainable economic growth at the expense of community participation	Collective goals and equity at the expense of personal wealth and consumption

WESTERNPORT BAY REGION SCENARIO-PLANNING SURVEY

To build on the five-day Phillip Island scenario planning workshop's discussion of alternative futures for the Westernport Bay Region, a public opinion survey was conducted, using Survey Monkey, during September and October 2014.

Before the survey's questions and structure were finalised, a pilot version was sent to the 75 people who attended the workshop for their feedback, and that feedback was used to amend the survey before its public distribution through:

- Websites and social media platforms of the Victorian National Parks Association, Preserve Western Port Action Group, the Shire of Bass Coast and the Westernport and Peninsula Protection Council
- Emails to alumni of the Crawford School of Public Policy at the Australian National University
- Emails to all participants at the workshop, who included community, tourism, government and business interests, with encouragement of them to distribute the link to the survey to their networks
- Blue Wedges and Peninsula Speaks networks
- Bass Coast Times and the Mornington Peninsula News Group newspapers
- The Coastcare newsletter, Coastline

In all, 72 people logged into the survey, 65 of whom indicated that they had read the interim report and 53 of those choosing to complete the survey. The 36-page Scenario planning for the Westernport Bay Region: Interim report of the Phillip Island scenario-planning workshop, which was released in August 2014, contained information about scenario

planning, the region, each of the four scenarios, the UN Sustainable Development Goals and a list of workshop participants.

Most of the 53 people who completed the survey were from the Westernport Bay and Mornington Peninsula areas, there was an equal gender balance, and the majority were 55 years and older and from scientific, education and training backgrounds.

What follows is a brief description and analysis of the scenario-planning survey results.

Survey results

Question 1: I have read the interim report:

65 (90.28%) of the 72 people who logged into the survey said that they had read the report.

Question 2: Below is a list of the four scenarios that were developed during the workshop. Please rank them from most preferred (1) through to your least preferred (4) future scenario for 2040.

Of the 53 who answered this question, 54% ranked Lagom as their first preference, Creative Future was the first preference for 20.75%, WesternFreePort for 15.09% and The Beacon for 9.43%. However, The Beacon was the second preference for 60.38% of respondents.

Question 3: If you imagine yourself living in each of these futures, how satisfied would you be: Very Satisfied; Satisfied; Neutral; Dissatisfied; Very Dissatisfied?

Of the 53 respondents, 82.35% would be Satisfied or Very Satisfied with Lagom, 42.3% with Creative Future, 42% with The Beacon and 13.72% with WesternFreePort.

In terms of dissatisfaction, 78.43% would be Dissatisfied or Very Dissatisfied living under a WesternFreePort scenario, 28% for The Beacon, 19.64% for Creative Future and 11.76% for Lagom.

Question 4: For the following future statement – The Westernport region should focus on a path of conventional economic development, with little emphasis on sustainable development goals, do you: Strongly Agree; Agree; are Neutral; Disagree; Strongly Disagree?

Of the 53 people who answered this question, 11.32% Agreed or Strongly Agreed, while 83.02% Disagreed or Strongly Disagreed.

Question 5: For the following future statement – The health of the environment and an equitable society should be overarching guiding principles for future economic development decisions in the Westernport region, do you: Strongly Agree; Agree; are Neutral; Disagree; Strongly Disagree?

For this question, 90.56% of respondents Agreed or Strongly Agreed with the statement, whereas 3.78% Disagreed or Strongly Disagreed.

Question 6: Each of the scenarios had a variety of economic options. The options below are examples from each scenario. Please rank from your most preferred (1) through to your least preferred (5).

Fifty-three people answered this question and 69.81% gave their first preference to 'Diversified growth areas including ecotourism, agriculture, education and manufacturing'. Of the 53 respondents, 18.87% gave their first preference to 'Development

of co-operative living initiatives', 5.66% to Growth in environmentally sustainable housing subdivisions, 3.77% to 'Unlimited conventional economic development and 1.89% to 'Tourist entrance fees to cover major existing tourist sites'. This order of preference is largely unchanged when second preferences are combined with first preferences except for 'Unlimited conventional economic development' replacing 'Tourist entrance fees' as the lowest-ranked preference.

Question 7: Each of the scenarios had a variety of community options. The options below are examples from each scenario. Please rank from your most preferred (1) through to your least preferred (5).

The option with the highest percentage of respondents (32.08%) ranking it their most preferred option was 'Stable population linked to our carrying capacity'. The next highest percentage of respondents ranked 'Equal access to essential services, including education and health' as their most preferred option. Third (18.87% of respondents) was 'Maintenance and enhancement of public open space', followed by 'Management of population growth to try and minimise its impact' (11.32%) and 'User pays principle (9.43%). When the second-most preferred options are considered, 'Equal access' is preferred by 26.42%, 'Management of population growth' by 24.53%, 'Stable population' by 22.64%, 'Maintenance and enhancement' by 18.87% and 'User pays' by 7.55%.

Question 8: Each of the scenarios had a variety of natural environment options. The options below are examples from each scenario. Please rank from your most preferred (1) through to your least preferred (5).

'Restoration, rehabilitation and revegetation of the environment' was the most preferred option by 39.62% of the 53 respondents to this question. 'Climate change impacts are widespread and genuine attempts are made to mitigate' was the most-preferred option of 30.19% of those who responded to this question. "French Island is recognised and managed as a natural refuge' was most preferred by 15.09%, 'No more Greenfield land released for development with urban consolidation within existing boundaries' was preferred by 13.21%, while 'Ships using efficient fuels/sails/renewables was preferred by 1.89%. No respondents cited 'Reduced environmental stability' as their most-preferred. Those options given the highest support as the second-most preferred were 'No more greenfield land' (30.19%), 'Climate change' (26.42%), 'Restoration' (24.53%), French Island' (15.09%), 'Ships' (1.89%) and 'Reduced environmental stability' (1.89%). The options that were least preferred were 'Reduced environmental stability' (62.26%) and 'Ships' (24.53%).

Question 9: Each of the scenarios had a variety of built infrastructure options. The options below are examples from each scenario. Please rank from your most preferred (1) through to your least preferred (10).

Survey respondents were given 10 built infrastructure options.

'Building alternative renewable energy production and distribution' was the most-preferred option

of 54.72% of respondents, with 'Maintaining the footprint of the existing port but in the longer term is converted for a sustainable development uses' was the most-preferred option of 18.87%. 'Smart roads that includes water sensitivity, wildlife passes and land bridges' was the most preferred of 9.43% of respondents, and 'Upgraded communications network throughout region to promote smart businesses and better life-work balance was the most-preferred option for 7.55% of respondents. These options also received strong support as the second-most preferred options but were joined by 'Public transport corridor for light rail to/ from Dandenong/Cowes' (16.98%). Those options that were the least preferred by most respondents were 'Expanding the Port of Hastings into an international container port' (62.326%) and 'Casino on Phillip Island' (18.87%), with the latter give a score of 9 by 47.17%. The remaining options to be given consideration by the respondents were 'High-tech hospital ship making regular visits for specialist services', 'New regional airport' and 'Car ferry between Stony Point and Cowes', all three trending towards the least preferred side of the ranking spectrum.

Question 10: Please tick the box that represents your age.

Of the 52 respondents who answered this question, 73.08% were 55+ and 27.31% 25-44 years of age.

Question 11: What is your gender?

Of the 52 respondents, 25 were Female and 27 Male.

Question 12: What is your postcode?

Fifty of the 52 respondents were

from Victoria, with the remaining two from the ACT. Of the 50 Victorians, 41 were from areas within the Westernport Bay Region, including the Mornington Peninsula, with the remainder from the Melbourne metropolitan area.

Question 13: Please tick the box that best represents the industry sector you are currently working in or have been in the past.

Of the 52 who completed this question, 21.15% were or had been involved in Education and Training, 23.08% in Professional, Scientific and Technical Services, 7.69% in Information Media and Telecommunications, 5.77% in Health Care and Social Assistance, 3.85% in Agriculture Forestry and Fishing, and another 3.85% in Manufacturing.

Question 14: For you personally, what is the most important factor to consider for the future of the Westernport Bay region? 50 words or less.

All 52 respondents made comments here. For 34 of the respondents, factors associated with protecting and conserving the environmental values of the Westernport Bay Region were of importance. Nine others made specific reference to the need for sustainable development, three raised employment and two were concerned about climate change, while individual mentions were made of ensuring local marine produce and food security, the need for legislation to balance industry and environment, and a lack of desire for an expanded port.

Question 15: Please share any additional comments you may have about the process, the scenarios, or your preferred future for the area.

Thirty people responded to this

question. Twelve commented specifically on the process, with nine making positive comments and two of them recommending that the results be distributed widely, while three considered the process flawed, the scenarios mutually exclusive and the survey self-serving and another was disappointed that stakeholders other than those opposed to the port did not involve themselves in the workshop. One respondent felt that the Lagom scenario was unachievable, while another thought it was the best of the four scenarios.

The remaining comments were varied but generally expressed a concern for the future of the Westernport Bay Region's environment and the need for sustainable development and good planning. For one, sustainable practices should be followed in all aspects of our lives so that the next generation does not have to repair the damage that we have caused.

Several respondents expressed concerns about the expansion of the Port of Hastings, another wanted green wedges protected, while the impacts of overpopulation was also mentioned.

One respondent reminisced on the environmental planning tradition of the Hamer government and was disappointed that the current development proposals were the converse of this. In another entry the work of ecologist Edward O Wilson was mentioned to support concerns about port expansion. Long-term planning and decentralisation with a focus on the Port of Portland was an approach raised, while development and expansion at the expense of the environment was the wrong approach for another because mistakes were hard to undo.

All governments had their heads buried in the sand with regards to what the environmental sector

could deliver to the economy, according to one of the respondent, who also added that port expansion would be devastating for the local economy. For another, collaboration between government, business and the community should be paramount and economic growth not the key driver of planning.

Wave tank studies to analyse the impacts of dredging were recommended by one respondent, another believed that the impacts of recreational fishing on Westernport Bay should be investigated, while making the public more appreciative of rural activities and issues like drought was the topic of one entry.

Two respondents commented on the importance of sustainable tourism in the region's future. One of these felt that creative tourism should be investigated, along with other economic and environmental initiatives, because industrial development could create a social and environmental wasteland. The second believed that sustainable ecotourism would support agriculture, and that education, training and big-picture social planning were very important.

Analysis

In the 52 who completed the survey there was an even gender balance, most were from the Westernport Bay and Mornington Peninsula areas, the majority were aged 55 years and above and their employment backgrounds were largely from the professional, scientific and technical, and education and training sectors.

The three scenarios that had various elements of ecologically sustainable development were most favoured by survey respondents, along with the principles of environmental health and an equal

society. This was also the case with the options for environmental, economic, community and built infrastructure, and the comments made in the survey's two open-ended questions. Climate change mitigation and adaptation initiatives, the establishment of a renewable energy sector, diversified growth in ecotourism, agriculture, education and manufacturing, environmental restoration and protection projects and the linking of population to the region's carrying capacity all received strong support. The expansion of the Port of Hastings, the introduction of a car ferry, the establishment of a casino on Phillip Island and the pursuit of conventional economic development policies received limited support.

For most respondents, protecting and conserving the environmental values of the Westernport Bay Region was central to its future.

CONCLUSIONS

After a five-day workshop and the conduct of a public opinion survey, what can be said of the scenario planning exercise for the Westernport Bay Region and the views of its participants and observers?

1. The Westernport Bay region is a large and diverse one with significant environmental values, a growing population and varied land use.
2. As population growth continues in the region, there are increasing pressures on its social, economic and environmental fabrics.
3. Protecting the health of Westernport Bay was of critical importance for workshop participants and survey respondents.
4. Although the planning exercise began with a focus on the expansion of the Port of Hastings, the interests of the participants moved the analysis to a much broader review of alternative futures for the entire Westernport Bay Region. This broader view was also reflected in the comments made by survey respondents.
5. Port expansion is only one of many alternative strategies that

governments could investigate as part of their planning for the Westernport Bay Region.

6. Alternative strategies raised during the workshop and supported by the survey included ecologically sustainable development, climate change mitigation and adaptation initiatives, establishment of a renewable energy sector and smart industries, a diversification of the economy, reconfiguration not closure of the existing port, green jobs, environmental restoration and protection projects, improved and expanded public transport, community engagement, collaborative planning and the linking of population to the region's carrying capacity.

Recommendation

Use the final report of the scenario planning process to form the basis for a broader investigation of sustainable futures for the Westernport Bay Region.

APPENDIX 1: PROPOSED UN SUSTAINABLE DEVELOPMENT GOALS

These goals are to be considered for adoption by the UN General Assembly this year.

An Overarching Goal for the UN Sustainable Development Goals

By Robert Costanza, Jacqueline McGlade, Hunter Lovins, and Ida Kubiszewski

It is clear that communities, countries, and the planet as a whole need to articulate shared goals and ways to track progress toward meeting them. This is the essence of the Sustainable Development Goals (SDG) process currently underway at the UN. The SDGs are the follow-up to the UN's Millennium Development Goals (MDGs) that are due to expire in 2015. They represent a substantial commitment on the part of UN member states to carry out the shared goals that represent truly sustainable development over the next 15 years.

The SDG process is building consensus on what these shared goals are and how to measure progress toward meeting them. While discussion continues on a list of SDGs (currently 17) due to be announced in 2015, there is a critical missing element in the process. That missing element is the articulation and measurement of the overarching goal or "ultimate end" of the SDGs and how the list of sub-goals and targets contribute to achieving that larger goal. The goals are being discussed as separate elements, in isolation from each other and from the overarching goal that they contribute to.

There is broad emerging agreement about this overarching goal. There are many ways of

expressing it, but the essence is "a prosperous, high quality of life that is equitably shared and sustainable" (1).

There are three elements to this goal that cover the usual three components of sustainable development – the economy (a high quality of life or wellbeing), society (equitably shared), and the environment (sustainable – staying within planetary boundaries). There is also the understanding that all three of these elements are highly complex and interdependent and must be satisfied jointly. It is no good to have a high quality of life for an elite few that is not equitably shared or sustainable, or a sustainable but low quality of life where everyone suffers equitably, or a high quality of life for everyone that will collapse in the future. We want all three together in an integrated and balanced way and any one or two without the others is not sufficient.

It is also important to recognize that the economy is embedded in society, which is embedded in the rest of nature (2,3). These three elements are nested in a way that means that they are extremely interdependent. We can no longer treat the economy separately, without considering its strong dependence on society and the rest of nature.

The SDGs are "intermediate means" or "ultimate means" that contribute to achieving the ultimate end or overarching goal. The SDGs can therefore best be considered as "sub-goals" contributing in different ways in different times and places to the overarching goal or ultimate end.

For simplicity in what follows, we will refer to this overarching goal as "sustainable wellbeing" or SWB, recognizing that this wellbeing or quality of life must be equitably shared, both within

and among nations, and that it is interdependent with the wellbeing of the rest of nature.

Another way of describing the three elements of SWB (3-5) is as the integrated provision of:

1. **Efficient Allocation:** Building A Living Economy
2. **Fair Distribution:** Protecting Capabilities for Flourishing
3. **Sustainable Scale:** Staying Within Planetary Boundaries

A major challenge in achieving true sustainable development is improved understanding of SWB, of how the intermediate and ultimate means listed in the SDGs contribute to SWB, and of how to measure progress toward SWB.

There are several alternative measures of progress toward SWB currently being developed and tested (1) (also see www.wikiprogress.org). They can be divided into three broad groups: (1) those that adjust economic measures to reflect social and environmental factors; (2) those that depend on subjective measures of wellbeing drawn from surveys; and (3) those that use weighted composite indicators of wellbeing including things like housing, life expectancy, leisure time and democratic engagement (1).

None of these measures are perfect, but collectively they offer the building blocks for the integrated measures of SWB we sorely need. Creating a viable and broadly accepted measure of SWB will require a sustained, transdisciplinary effort to integrate metrics and build a broad consensus. This process is underway, but can be accelerated by connecting it with the ongoing SDG process, either as an integral part of the process or as a follow on.

The SDG process represents a huge global opportunity to recalibrate our shared goals and set society firmly on the path to a sustainable and desirable future. Some will argue that building this kind of consensus is unnecessary or impossible. But the history of the MDGs shows that broad consensus around shared goals is possible and it can drive significant positive change. This needs to be accelerated and integrated in the SDG process and the overarching goal of SWB needs to be clearly articulated as the integrating element. Time is clearly running out and missing this opportunity would be a global disaster.

It is often said that you get what you measure. To build a sustainable and desirable future we need to measure what we want, SWB, remembering that it is better to be approximately right than precisely wrong.

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Efficient Allocation: Building A Living Economy

Proposed goal 7: Ensure access to affordable, reliable, sustainable, and modern energy for all

Proposed goal 8: Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all

Proposed goal 9: Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation

Proposed goal 11: Make cities and human settlements inclusive, safe, resilient and sustainable

Proposed goal 12: Ensure sustainable consumption and production patterns

Fair Distribution: Protecting Capabilities for Flourishing

Proposed goal 1: End poverty in all its forms everywhere

Proposed goal 2: End hunger, achieve food security and improved nutrition, and promote sustainable agriculture

Proposed goal 3: Ensure healthy lives and promote wellbeing for all at all ages

Proposed goal 4: Ensure inclusive

and equitable quality education and promote life-long learning opportunities for all

Proposed goal 5: Achieve gender equality and empower all women and girls

Proposed goal 10: Reduce inequality within and among countries

Proposed goal 16: Promote peaceful and inclusive societies for sustainable development, provide access to justice for all and build effective, accountable and inclusive institutions at all levels

Proposed goal 17: Strengthen the means of implementation and revitalize the global partnership for sustainable development

Sustainable Scale: Staying Within Planetary Boundaries

Proposed goal 6: Ensure availability and sustainable management of water and sanitation for all

Proposed goal 13: Take urgent action to combat climate change and its impacts

Proposed goal 14: Conserve and sustainably use the oceans, seas and marine resources for sustainable development

Proposed goal 15: Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss

APPENDIX 2: WORKSHOP PARTICIPANTS

The people listed below attended at least one day of the five-day workshop. Those marked with an asterisk (*) were members of one of the four scenario-planning groups.

David Arnold, Cowes Yacht Club

* Neil Beddoe

* Stefan Borzecki, Yaringa Boat Harbour

* Linda Bowden, French Island Community Association

* Simon Branigan, Victorian National Parks Association

Walter Broussard, Preserve Western Port Action Group

Carmen Bush, Preserve Western Port Action Group

Kevin Chambers, Preserve Western Port Action Group

Bruno Cheme, Phillip Island Conservation Society

Jean Coffey, Tenby Point Residents Association

* Gillian Collins, Phillip Island Conservation Society

Steve Cork, Australian National University

* Robert Costanza, Australian National University

Scott Coutts, Parks Victoria

Ben Cullen, Trust For Nature

Helen Dafner, Cliff Top Boutique Accommodation

Natalie Davey, Saltwater Projects

Anne Davie, Preserve Western Port Action Group

Cr Bradley Drew, Bass Coast Shire Council

James Fitzsimons, The Nature Conservancy

Roz Franklin, Mornington Peninsula Shire

Cr David Garnock, Mornington Peninsula Shire

Caroline Giles, Westernport and Peninsula Protection Council

* Doris Graham, Victorian Wader Study Group

Deirdre Griepsma, Bass Coast Shire Council

Prue Griffiths, Westernport and Peninsula Protection Council

Chris Gurney, Somers Yacht Club

* Graeme Hanigan, Mornington Peninsula Citizens for Science

* Sean Hart, Australian National University

Rosalind Jessop, Phillip Island Nature Park

Joanna Johnson, Preserve Western Port Action Group

Sam Johnston, United Nations University

* Rosie Ker, Westernport and Peninsula Protection Council

Sheila Ker, Westernport and Peninsula Protection Council

Anna Kilborn, Regional Development Gippsland

* Hugh Kirkman, Independent Environmental Consultant

Rebecca Koss, Deakin University

* Ida Kubiszewski, Australian National University

* Cr Clare Le Serve, Bass Coast Shire Council

Penny Manning, Bird Life Bass Coast

Kelly Miller, Deakin University

David Minton, Westernport and Peninsula Protection Council

Linda Moon, Deakin University

Ian Morgans, Port Phillip and Westernport Catchment Management Authority

* Barbara Norman, Australian National University

* Jeff Nottle, Preserve Western Port Action Group

* Keith Old, Riskwide Consulting
Louise Page, French Island Port Stoppers

David Paonetti, French Island

Community Association

Cr Andrew Phillips, Bass Coast Shire Council

* Leigh Phillips, Preserve Western Port Action Group

* Alison Pitt, French Island Port Stoppers

Cr Neil Rankine, Bass Coast Shire Council

Doug Robinson, Trust For Nature

Mark Rodrigue, Parks Victoria

Matt Ruchel, Victorian National Parks Association

* Jeremy Russell-Smith, Bushfires & Natural Hazards CRC

Sue Saliba, Phillip Island Conservation Society

Kay Setches, Phillip Island Conservation Society

Haans Siver, Sea Shepherd

* Chris Smyth, Independent Environmental Consultant

Kim Storey, Destination Phillip Island

Ruchira Talukdar, Australian Conservation Foundation

* Craig Thomson, Mornington Peninsula Shire Rosebud Foreshore Advisory Group

Julie Trezise, French Island Landcare Group

Peter van Duyn, Victoria University

* Dian Vasquez, Australian National University

Jillian Erhardt

Nicola Waldron, Victorian Coastal Council

* Jenny Warfe, Blue Wedges Coalition

Jarvis Weston, Phillip Island Nature Park

Ariane Wilkinson, Environmental Justice Australia

Cecelia Witton, Western Port Biosphere

Cr Phil Wright, Bass Coast Shire Council



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