

October 2023

navigate

Westport Program Update



Taking a closer look at some of the science, thinking and technical processes behind one of Western Australia's largest ever infrastructure projects.

Managing Director's Message



'Westport' is a bit of a misnomer – you could be forgiven for thinking we're just planning a port. But the reality is, Westport is about redesigning WA's container supply chain, which extends far beyond the terminal footprint.

Westport has a unique opportunity to look at the *whole of the container supply chain*. In Western Australia we have the enviable planning environment where Government owns our container port, the road and rail networks, and runs the land planning required to protect and enable our transport corridors and logistics/industrial lands.

Because of this, our cross-government team can develop a holistic plan to ensure container trade is efficient, scalable, sustainable, and net zero. This means optimising everything from a vessel arriving in or leaving Cockburn Sound, all the way through to the 200-plus locations where most containers are unpacked or packed around the State. This approach means we can deliver real value for Western Australia and optimise the cost of the project to address the most important bottlenecks and opportunities.

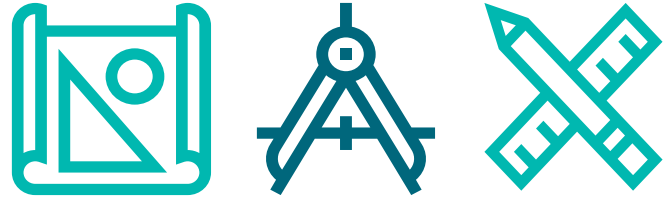
The variety of stakeholders we've engaged to guide our multi-criteria analysis/decision making process reflects the breadth of Westport's scope. In a series of workshops, that you'll read about in this edition of Navigate, we engaged with operators, logistic specialists, scientists, economists, conservationists, fishers, policy makers, and more.

Later this year, we will release a final concept for not just the terminal, but the entire supply chain from anchorages to intermodal terminals.

Patrick Seares
Managing Director, Westport



Narrowing design options



Westport has used a multi-criteria analysis (MCA) process to evaluate, define, and narrow design options for the port terminal. Recommended by Infrastructure Australia, an MCA quantitatively compares, ranks, and filters options using methods such as selection criteria, scoring and weightings.

To help Westport reach a preferred design option for the terminal, we are following a 3-phase, iterative MCA process. An original list of 30 terminal options were filtered against

deliverability considerations to reach a short list of 7 terminal options. This list was further narrowed to 3 terminal options through the Phase 2 (long-list phase) MCA. Phase 3 (short-list phase) will determine a preferred terminal option to be progressed into the business case for submission to Government in mid-2024.

The criteria used to assess the options are based on Westport's goals and subgoals, which were translated into scoring criteria and measures to enable assessment.

Westport Goals

What do we want the new terminal to achieve?

Criteria

What will this look like?

 <p>1. Better trade outcomes for exporters, importers, and the economy</p>	<p>1.1 Efficient – operating costs for movement of containers across the network</p> <p>1.2 Reliable – predictability and visibility of shipment movements</p> <p>1.3 Resilient – capacity to better withstand, and recover efficiently from, disruptions</p> <p>1.4 Scalable – capacity to expand or adapt to meet forecast trade and population growth</p> <p>1.5 Flexible – ability to adapt to future market trends and operator innovation</p>
 <p>2. Local economic growth and jobs are created</p>	<p>2.1 Western Trade Coast's growth is enabled</p> <p>2.2 New technological innovation is introduced Western Australian technological innovation is leveraged</p> <p>2.3 High quality jobs and training are created</p>
 <p>3. Acceptable impact on the State's finances</p>	<p>3.1 Value for money</p> <p>3.2 Attractive to private investment through commercial and Environmental, Social, and Governance (ESG) opportunities</p> <p>3.3 Minimised impact on utilities and business</p>
 <p>4. Plan, build and operate the most sustainable port in Australia</p>	<p>4.1 Cockburn Sound is protected</p> <p>4.2 The container Supply-Chain is carbon neutral</p> <p>4.3 Infrastructure development and operations are sustainable</p>
 <p>5. Benefits to the community and indigenous peoples</p>	<p>5.1 Recreational values protected or enhanced</p> <p>5.2 Indigenous and non-indigenous heritage is protected and promoted</p> <p>5.3 Aboriginal economic opportunities are delivered</p>
 <p>6. Safety for workers and the community</p>	<p>6.1 Safe interaction between freight network and the community</p> <p>6.2 Safe port operations</p>



Patrick Seares, Westport's Managing Director, speaking with stakeholders as part of the MCA workshops.

Refining and validating the MCA process with key stakeholders

As part of the Phase 3 MCA process, a series of workshops were held with over 30 key stakeholder groups.

At these workshops, stakeholders focused on the Westport goal most relevant to them, checking for any gaps in the proposed criteria and re-evaluating the goal and sub-goal weightings used in the Phase 2 MCA. Stakeholders also had the opportunity to provide feedback on the shortlisted options. This valuable input changed some areas of scoring, including a range of sensitivity tests that were run as part of the option evaluation process.

Westport's project team used the feedback from these sessions to refine and inform the Phase 3 MCA. We'd like to thank all of those who participated in these workshops, including:

- ✓ City of Cockburn
- ✓ City of Kwinana
- ✓ City of Rockingham
- ✓ Cockburn Sound Management Council
- ✓ Conservation Council WA
- ✓ Deloitte
- ✓ Department of Health
- ✓ Department of Jobs, Tourism, Science and Innovation
- ✓ Department of Planning, Lands and Heritage
- ✓ Department of Primary Industries and Regional Development
- ✓ Department of Transport – Freight, Ports, Aviation Reform
- ✓ Department of Treasury
- ✓ Department of Water and Environmental Regulation
- ✓ Freight and Logistics Council of WA
- ✓ Freight and Trade Alliance
- ✓ Fremantle Ports
- ✓ KPMG
- ✓ Kwinana Industries Council
- ✓ Main Roads WA
- ✓ National Transport Research Organisation
- ✓ Recfishwest
- ✓ Shire of Serpentine Jarrahdale
- ✓ Strategic advisors*
- ✓ Supply Chain and Logistics Association of Australia
- ✓ Urban Bushland Council
- ✓ University of Western Australia
- ✓ Water Corporation
- ✓ WSP
- ✓ Public Transport Authority
- ✓ Road Safety Commission

**Strategic Advisory Group members - Jason Sprott, Lyle Banks, Dennis Koegeboehn, Ray Sputore, and Richard Mann.*

In the coming months, Westport will identify the preferred option for the container terminal and supply chain, and will share this with stakeholders and the community.



Cockburn Sound: Past, Present and Future



From the 1960s to the early 2000s, nutrient rich discharges from industry contributed to a loss of seagrass and ecosystem degradation in Cockburn Sound.¹

Government, industry and the community have since introduced a range of programs and policies to help improve the ecosystem’s health. Today, Cockburn Sound is an ecosystem in recovery supporting a diverse range of marine species. However, it still has a way to go, with historic pollutants (primarily sediment bound nutrients) continuing to affect the ecosystem.

We acknowledge that building a new port and related infrastructure will have environmental impacts in the short term. Our commitment is that the new port will be ‘net-positive’ once operational, meaning the local environment will be better off in the long-term. To achieve this, Westport is investing in a significant science program to better understand the current state of the ecosystem and the potential impact of development.

tool that will support a holistic consideration of how various planned activities across public and private sectors will impact Cockburn Sound.

By using multiple sources of data, including nutrient levels and water clarity measures, scientists are creating an integrated model of Cockburn Sound spanning oceanography, water quality (which directly impacts seagrass health) and ecology.



Kwinana shelf survey – credit Glenn Moore

Predicting future impacts

What will Cockburn Sound look like in the next 20, 50 or 75 years under different development and mitigation scenarios? This is one of the questions being asked as part of Westport’s \$13.5 million partnership with the Western Australian Marine Science Institution (WAMSI).

As part of the WAMSI-Westport Marine Science Program, scientists are developing a cumulative impact prediction



Cockburn Sound and Kwinana Industrial Area

Professor Matt Hipsey, Project Lead from the University of Western Australia, said that, “The goal is to build an integrated tool that can be used for cumulative impact assessment and help us understand all the stressors and drivers that have impacted the Sound in the past, and how it’s likely to look into the future.”

The tool is currently being validated and tested, with new data from the various WAMSI-Westport Marine Science Program projects being integrated. Ultimately, the tool will be a public resource available to industry, government, and the community to understand different scenarios in Cockburn Sound.

¹ *State Environmental (Cockburn Sound) Policy 2015 (State Environmental Policy; Government of Western Australia 2015)*



Cross-government collaboration and benefits management



As this is one of the largest infrastructure projects undertaken in WA in recent history, we've bought forward a lot of work typically done in the later stages of infrastructure development to get the planning right. This work not only improves the quality of our planning but can be shared to benefit other government, industry, and community projects.

To track how our projects are providing benefits beyond Westport, we are recording and monitoring benefits across the program.

Tracking of Westport's Stage 3 (2020 - 2024) Program Benefits will:

- describe how the benefits of the current project will be delivered and when they will be delivered, and
- identify the work being completed in Stage 3 that may also be leveraged by other government agencies and organisations in the future.

Benefits range from technical, such as greater transparency of data collection and research for public use, to strategic, including the development of skills and expertise in public sector employees. The benefits captured will be useful in the development and delivery of large and complex infrastructure projects across the broader public and private sectors.

Planning for tomorrow's innovation, today



One of the challenges and opportunities of Westport's long-term planning is designing infrastructure in the 2020s with the flexibility to adapt to technologies currently decades away from commercial viability.

Westport, in collaboration with our lead design consultant, WSP, is using an innovation register to capture potential innovations and emerging technologies from across our technical team, suppliers, industry, and other agencies. This register provides a framework to consider whether a prospective innovation is likely to be widely accepted by industry in the next 20, 50 or 100 years.

Examples of innovations captured on this register include:

- emerging electric and autonomous vehicles to move containers between the terminal and their destinations,

- alternative materials (like composite sleepers, recycled constituent material) and reused materials for rail and road infrastructure, and
- embedded sensors, digital twins, and smart containers, which improve asset management in ports, enabling real-time energy matching and grid support.

Innovations are assessed using the 'Technology Readiness Level' model, originally developed in the 1970s by NASA. This internationally recognised model helps to assess the maturity of a technology from the early stages of discovery and research to commercial deployment.

We will use this assessment to determine which innovations can be incorporated as part of future stages of Westport, including detailed design, construction and operation.

