

ISSUE 3 | APRIL 2019 | MULTI-CRITERIA ANALYSIS



## What is our approach?

The Western Australian Government has tasked Westport with determining the best long-term supply chain solution for Perth and surrounding regions for the next 50 years and beyond, with a focus on the port precincts at Fremantle, Kwinana and Bunbury. In the *Westport: What we have found so far* report released in December 2018, the Westport Taskforce identified that the key factor determining the overall Westport Strategy is the location of Perth's future container port/s and the associated landside supply chain network. This will have the most significant infrastructure, land use, environmental and social impacts.

In this context, Westport presented Eight Strategic Options on how containers might be allocated across the three ports:

1. The Base Case (current situation) – this must be included as a baseline for Infrastructure Australia's\* assessments;
2. Optimise Fremantle and transition containers to Kwinana over time (staged approach);
3. Optimise Fremantle and transition containers to Bunbury over time (i.e. no containers in Kwinana);
4. De-industrialise Fremantle and move all containers to Kwinana ASAP;
5. De-industrialise Fremantle and move all containers to Bunbury ASAP;
6. Fremantle and Kwinana both have containers for the long-term;
7. Fremantle and Bunbury both have containers for the long-term; and
8. Only Fremantle has containers for the long-term.

Consistent with this, the Eight Strategic Options reflect different possibilities for container port location and operational transition timing.

Westport will bring all these criteria together using a multi-criteria analysis (MCA), a commonly used tool for assessing quantitative and qualitative indicators of land use, environmental, economic, operational, social and amenity impacts.

Westport will work with stakeholders and technical specialists to 'weight' the criteria in terms of importance. The weighted indicators will then be used to assess and compare the infrastructure options. We will also perform sensitivity testing to establish whether an increased emphasis on a specific indicator (e.g. environmental) would change the outcome of the assessment. Westport will provide the full list of criteria, weightings and the scores from our multi-criteria analysis to Government as part of our advice.

## What is an MCA?

A multi-criteria analysis (MCA) is a systematic decision-making tool often used in infrastructure planning to evaluate a series of options.

Defined sets of assessment criteria with different weights are used to analyse and score the performance of each option. The weighted scores enable the options to be ranked by overall performance which helps determine which options are most suitable.

Infrastructure Australia, the independent statutory body that advises the Commonwealth Government on nationally significant infrastructure, recommends the MCA method as part of an assessment framework for determining the best infrastructure solutions.

## What does Westport's MCA process look like?

**Westport's option assessment methodology and MCA process have been tailored to meet the specific requirements of the program and have been progressively updated as the project's scope and constraints have become clearer.**

The high-level MCA process will compare specific port and transport network infrastructure options aligned to each of the eight strategic options using:

- **specifications** to assess if the infrastructure options are physically capable of meeting the minimum and optimum trade task requirements over specific time horizons;
- **criteria** to enable ranking of those infrastructure options that meet the specifications; and
- **scenarios** to assess the sensitivity of the infrastructure options in various economic and technological contexts.

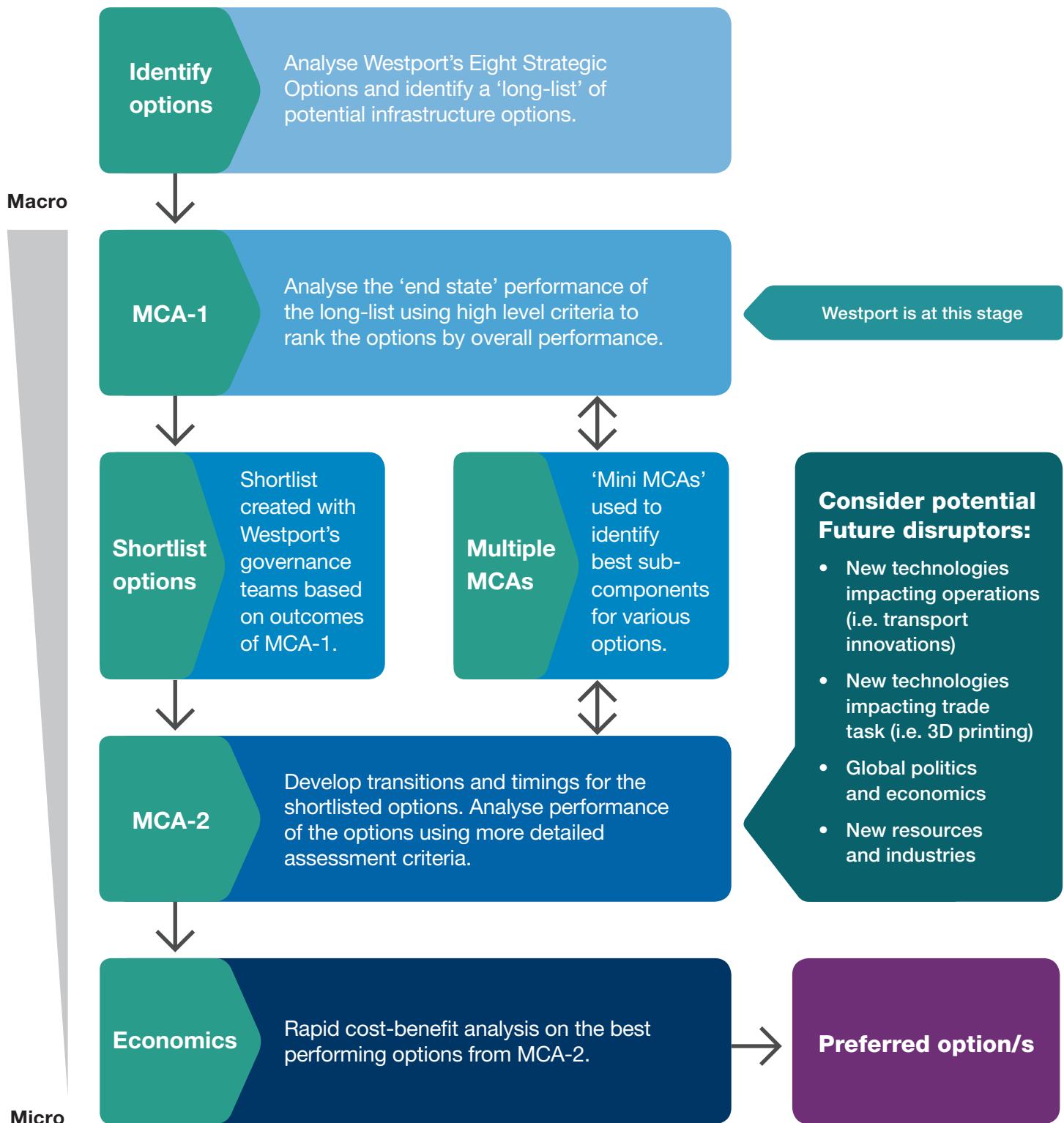
The MCA is part of Westport's overall assessment framework, which includes a cost-benefit analysis and aligns with the Infrastructure Sustainability Council of Australia's (ISCA) Infrastructure Planning Rating version 2.0.

The MCA will also deliver the economic, social and environmental inputs for the cost-benefit analysis, to be conducted on the shortlisted options in line with the Infrastructure Australia Assessment Framework.

Westport is currently in the process of finalising the MCA timing, criteria and inputs. The diagram overleaf shows Westport's MCA process in more detail.



# Westport's MCA process



## Who is being consulted in Westport's MCA process?

**Westport's MCA process aims to capture all the learnings gained from: past research; newly-gathered data, projections and modelling; consultation with the 100-plus members of the Westport Taskforce; and community feedback.**

Westport works closely with organisations and individuals on the Westport Taskforce. We have captured these stakeholders' expectations in relation to economic, environmental and social perspectives through workshops and submissions, and used them to develop our potential option assessment criteria.

We also introduced [mysaytransport.wa.gov.au/westport](http://mysaytransport.wa.gov.au/westport), where members of the community have had the opportunity to have their say on issues important to them. We will use this information in our assessment process as well.

The potential criteria include:

- **Economic** – capital and land acquisition costs, operations and maintenance costs
- **Environment** – marine and terrestrial impacts
- **Governance and operations** – infrastructure capacity and scalability, resilience
- **Land use** – transport corridor access, land availability and compatibility
- **Social** – safety, amenity and heritage impacts

## Can I still have input into the Westport Strategy?

There will still be many opportunities to provide your input to Westport this year, including:

- community surveys [mysaytransport.wa.gov.au/community-survey](http://mysaytransport.wa.gov.au/community-survey)
- interactive map [mysaytransport.wa.gov.au/have-your-say](http://mysaytransport.wa.gov.au/have-your-say)
- events [mysaytransport.wa.gov.au/westport-events](http://mysaytransport.wa.gov.au/westport-events)
- Westport Beacon feedback



“The City has welcomed the collaborative and open approach that the Taskforce has taken towards the process.”

- City of Kwinana

## Next steps

Westport is currently finalising preparations for the MCA, which will take place over the next few months.

Subscribe for Westport updates at: [mysaytransport.wa.gov.au/westportbeacon](http://mysaytransport.wa.gov.au/westportbeacon)