Option ranking against MCA-1 sub-criteria

				1	2	3	4	5	6	7	8	9	10
				Port and Transport Corridor Access	Land Availability and Complexity of Land Acquisition	Land Use Compatibility	Net Amenity Impacts	Heritage	Capital and Land Acquisition Costs	Operations & Maintenance Costs	Terrestrial Environment	Marine Environment	Infrastructure capacity, scalability and operational efficiency
Region	**No**	**Option**	**Description**	**RANKING**									
Fremantle	1	FP01-L1	Conventional Large	10	22	22	11	16	15	11	1	1	3
	3	FP01-L2	Conventional Large	22	22	23	12	15	1	8	1	1	4
Bunbury	5	BP01-L1 Conventional Large	Conventional land backed port	16	1	18	1	16	22	20	22	17	18
	6	BP01-M1 Conventional Medium Shared Fremantle Option 2		22	1	18	1	16	21	19	22	17	21
	7	BP01-L2 Conventional Large		1	1	18	1	6	20	22	20	17	21
	8	BP01-M2 Conventional Medium Shared Fremantle Option 2		1	1	18	1	6	23	21	20	17	21

				1	2	3	4	5	6	7	8	9	10
				Port and Transport Corridor Access	Land Availability and Complexity of Land Acquisition	Land Use Compatibility	Net Amenity Impacts	Heritage	Capital and Land Acquisition Costs	Operations & Maintenance Costs	Terrestrial Environment	Marine Environment	Infrastructure capacity, scalability and operational efficiency
Region	**No**	**Option**	**Description**	**RANKING**									
Kwinana	9	KP01-L Conventional Large	Parallel offshore port south of Alcoa jetty linked to Rowley Road using an AGV alignment	10	12	14	13	20	4	2	9	14	4
	10	KP01-M Conventional Medium Shared Fremantle Option 2		1	12	14	13	20	13	14	9	14	4
	11	KP02-L Large Light Footprint		1	5	1	13	9	5	7	9	8	4
	12	KP02-M Medium Light Footprint Shared Fremantle Option 2		1	5	1	13	9	12	16	9	8	4
	13	KP04-L Conventional Large	Hybrid partial land-backed and partial offshore port linked to Anketell Road	16	16	8	9	1	3	3	3	17	1

				1	2	3	4	5	6	7	8	9	10
				Port and Transport Corridor Access	Land Availability and Complexity of Land Acquisition	Land Use Compatibility	Net Amenity Impacts	Heritage	Capital and Land Acquisition Costs	Operations & Maintenance Costs	Terrestrial Environment	Marine Environment	Infrastructure capacity, scalability and operational efficiency
Region	**No**	**Option**	**Description**	**RANKING**									
	14	KP05-L1 Conventional Large	Parallel offshore port linked to Anketell Road	16	16	8	7	6	6	4	3	17	1
	15	KP05-M1 Medium with Blue Hwy Shared Fremantle Option 4		10	16	8	9	1	19	23	6	14	17
	16	KP05-M2 Conventional Medium Shared Fremantle Option 2		10	16	8	7	1	14	13	6	17	4
	17	KP06-L Large Light Footprint	Parallel offshore port south of AMC connecting to Latitude 32 IMT and Rowley Rd using an AGV alignment	16	5	1	19	9	10	10	15	8	4
	18	KP06-M Medium Light Footprint Shared Fremantle Option 2		10	5	1	19	9	17	18	15	8	4

				1	2	3	4	5	6	7	8	9	10
				Port and Transport Corridor Access	Land Availability and Complexity of Land Acquisition	Land Use Compatibility	Net Amenity Impacts	Heritage	Capital and Land Acquisition Costs	Operations & Maintenance Costs	Terrestrial Environment	Marine Environment	Infrastructure capacity, scalability and operational efficiency
Region	**No**	**Option**	**Description**	**RANKING**									
	19	KP07-L Large Light Footprint	Parallel offshore port south of AMC and north of Alcoa Jetty linked to Rowley Rd using an AGV alignment	1	5	1	13	9	8	9	9	8	4
	20	KP07-M Medium Light Footprint Shared Fremantle Option 2		1	5	1	13	9	16	17	9	8	4
	21	KP08-L Large Light Footprint	Land-backed port linked to Rowley Rd using a AGV alignment	1	5	1	21	19	9	6	15	7	19
	22	KP09-L Conventional Large		16	12	14	21	22	7	5	15	5	19
	23	KP13-L Conventional Large	Land-backed port linked to Anketell Rd	16	16	8	5	1	2	1	3	3	16
	24	KP13-M Conventional Medium Shared Fremantle Option 2		10	16	8	5	1	11	12	6	3	4
	25	KP11-M Conventional Medium Shared Fremantle Option 2	Land-backed port North of Alcoa jetty linked to Rowley Rd using a Mt Brown road alignment	1	12	14	21	22	18	15	15	5	4

Parliamentary Question C924

Supplementary Information

Summary

The information presented in this report is summarised below:

- a description of how the port infrastructure options were developed;
- a summary of Westport's long-list of options;
- a summary of how Westport's shortlist was identified; and
- a description of how the Blue-Highway performed against key criterion and why Westport's stakeholders selected it for the shortlist.

Port infrastructure options development

Since the 1950s, many investigations into new port infrastructure, and plans from both sides of politics, have concluded that the Outer Harbour is the site for Perth's next major port. As part of Stage 1, the Westport Taskforce (Westport) reviewed these studies and considered their recommendations in the port identification workshops.

Westport held three separate workshops with its stakeholders to consider the specific opportunities or constraints present at Kwinana, Fremantle and Bunbury.

The Kwinana workshop considered:

- port locations and configurations;
- transport connections;
- intermodal terminal (IMT) requirements;
- container storage locations;
- environmental impacts; and
- social impacts.

The Fremantle and Bunbury workshops considered:

- options (or expansion stages) for expanding the capacity of the existing port infrastructure;
- transport connections;
- container storage locations;
- environmental impacts; and
- social impacts.

The long-list of 25 options was the outcome of these workshops. For further information on how Westport developed its list of options, please refer to *Westport Beacon Issue 6: Westport's long-list of options*.

Westport's long-list of options

The long-list of 25 options or expansion stages comprised:

- full capacity, standalone ports in Fremantle, Kwinana and Bunbury;
- shared capacity ports between Fremantle and Kwinana or Bunbury;
- island and land-backed ports;
- conventional footprint and "light footprint" ports that rely on a nearby intermodal terminal for its operation; and
- supply chains that use combinations of road, rail and coastal shipping depending on the option being assessed.

The 25 options grouped by location are:

- Fremantle – four long-list options (Options 1 to 4)
- Bunbury – four long-list options (Options 5 to 8)
- Kwinana – 17 long-list options (Options 9 to 25)

Kwinana presented many more potential port sites and supply chain opportunities because there is no existing port in this location.

While there are 25 options in total, two of these options (Fremantle Option 2 and Option 4 – see below) have been evaluated as a pair with Kwinana or Bunbury options. Consequently, 23 separate scenarios were evaluated in the first multi-criteria assessment (MCA-1).

Fremantle Options 1 and 3 are scenarios with Fremantle handling containers for the long-term (i.e. standalone container port) and would require expansion to the existing port footprint to accommodate an increased container capacity.

Fremantle Options 2 and 4 see Fremantle continue as a container-handling facility before spilling over to a second facility – either Bunbury (Option 6 and 8) or Kwinana (Options 10, 12, 16, 18, 20, 24 and 25). The current port footprint remains unchanged. Fremantle Option 2 relies on road and rail, while Fremantle Option 4 implements a new freight mode known as a 'Blue Highway'.

Detailed descriptions of each of the long-list options can be found in *Westport Beacon: Issue 6 Westport's long-list of options*.

Westport's shortlist

The primary purpose of the MCA-1 was to provide a basis for determining a shortlist of options to be analysed in more detail in the second multi-criteria assessment (MCA-2) and in a rapid Cost Benefit Analysis (CBA).

The multi-criteria assessment and shortlist development process is illustrated below.

Figure 1: Multi-criteria assessment and shortlist development process

78 subject matter experts from 23 different organisations participated in the MCA-1 workshops to assess and score the long-list of options. The full process was independently peer reviewed by the Westport Peer Review Panel, chaired by John Langoulant AO, and it was deemed that the MCA process and workshops were sound and the findings reliable.

An explanation of the MCA-1 process and criterion weighting, and descriptions of each of the shortlist options can be found in *Westport Beacon: Issue 7 Westport's shortlist*.

Figure 2 illustrates how each of the long-list options were scored in MCA-1.

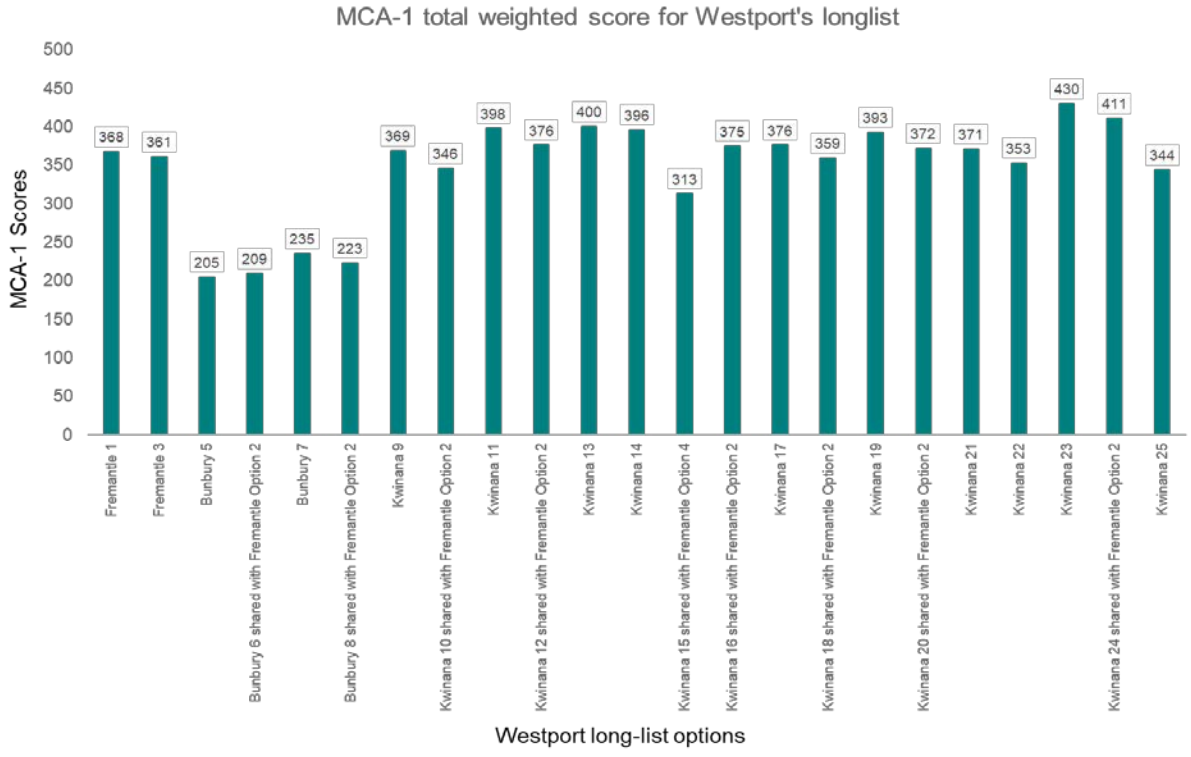

Figure 2: MCA-1 total weighted score for Westport's long-list of options

The Blue-Highway

The Blue Highway option (Fremantle Option 4 – a shared option) considered in MCA-1 did not perform well as an end-state option. However, after consultation with Westport's stakeholders, a variation of the Blue Highway scenario is included in the shortlist. This operating model is very common around the world and presents opportunities for the short to medium term.

For the purposes of MCA-2, the Blue Highway concept will be tested as an end-state. However, due to its low capital cost requirements, its feasibility as a temporary mode of transporting containers from Fremantle to Kwinana during a transition phase is more likely. This would enable a staged development of an outer harbour, delaying capital expenditure, maximising the use of Fremantle and managing any impact on the environment incrementally.