

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

Welcome to 2024, a significant year for Westport with our business case on track for submission to the WA Government in the middle of the year.

In the lead up to completing the business case, we are refining the concept design of the preferred option for the port and associated supply chain. In the next stages of Westport, further project definition will be carried out with detailed design to be undertaken before delivery. We are also continuing work on a commercial framework model that will outline funding and development approaches for construction and operations.

During February, we will commence the process for environmental impact assessment with referrals to State and Commonwealth regulators. This process will include a public comment period where anyone can comment on whether the proposals should be assessed.* In 2025, the community and

stakeholders will have the opportunity to comment on both proposals. We will notify our email subscribers when all public comment periods commence.

In this edition of Navigate, we take a closer look at the first published WAMSI reports. The WAMSI-Westport Marine Science Program is helping inform Westport's environmental approvals process, infrastructure design and mitigation planning.

The team and I look forward to updating you throughout the year with project news, design analysis, and research findings.

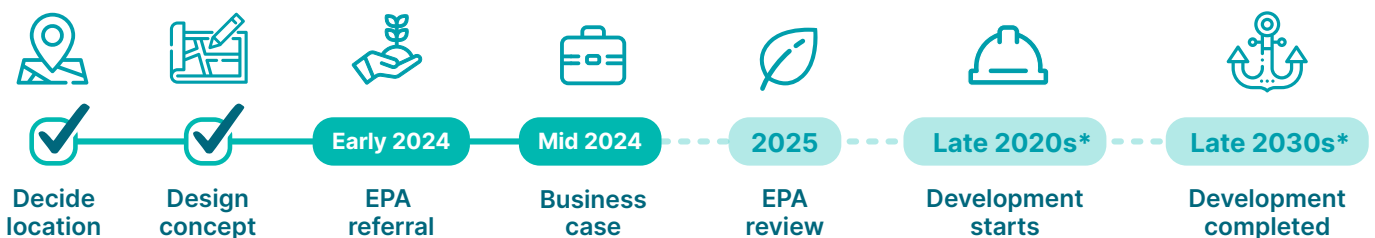
Patrick Seares
Managing Director, Westport

There are two separate referrals as part of Westport:

- A referral for the maritime infrastructure (shipping channels, breakwater, and port facility) and land side infrastructure within the Kwinana Industrial Area; and
- A referral for Anketell Road (from Kwinana Freeway to the Kwinana Industrial Area).

As the delivery partner for Westport's road infrastructure, Main Roads Western Australia will be the proponent for the Anketell Road upgrades.

The process for planning the new port and supply chain at Kwinana.



*These timings are indicative only. In mid-2024 Westport will provide the State Government with recommendations on the timing for the new port and supply chain, as part of our Business Case submission.



Deep dive into published WAMSI Reports

Westport has partnered with the Western Australian Marine Science Institution (WAMSI) to deliver the \$13.5 million WAMSI-Westport Marine Science Program. This 3-year program is developing the latest data, information and modelling on the complex environmental systems and community values associated with Cockburn Sound.

4 reports from the Program are now available on WAMSI's website. Below, the Westport team has provided a summary of these reports and their key findings.

Project 2.3: Seagrass restoration

Cockburn Sound is a temperate environment, home to slow-growing seagrass. The seagrass meadows in the area are important to the overall eco-system, acting as nurseries for snapper spawning, crabs, and whiting.

However, like many other seagrass habitats around the world, the seabed meadows in Cockburn Sound have been heavily impacted by industrial activities, particularly wastewater discharges from nearby facilities.

“The work being done by scientists now will enable us to undertake significant seagrass restoration programs, where more seagrass is replaced than is impacted, and setting a new standard for seagrass restoration programs that can be used by other marine and conservation groups around the world.”

“This report on seagrass restoration programs is critical to the mitigation strategies we are developing to restore seagrass that may be impacted by the development of the port.”

- Westport's Environmental Impact Assessment Manager

A positive outcome of moving the port southwards as part of the preferred design released in late 2023 is that the port and breakwater have been moved away from perennial or ephemeral seagrass meadows, avoiding direct impacts on the Kwinana shelf.

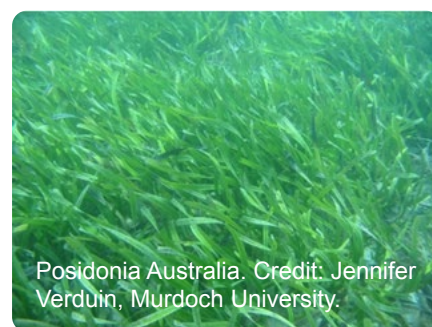
Since the 1990s, there have been more than 110 seagrass restoration projects in Cockburn Sound and Owen Anchorage, including *Seeds for Snapper* – Australia's largest seagrass restoration program to date, which is currently underway.

This study reviewed all previous restoration programs, from the methods used through to the timelines, results, and costs, to understand how well each technique works and to develop approaches for the future which can be executed at scale.

The research was commissioned by Westport and the findings have been used in the design of the proposed port and breakwater to avoid and minimise impacts to seagrass. This research (along with further research underway) will help provide a roadmap for largescale seagrass restoration activities, with the potential to rehabilitate hundreds of hectares.

What the report found:

- Seagrass meadows in Cockburn Sound are slow-growing, and many programs only last 1 to 3 years. More accurate results would be best evaluated after 5+ years.
- The methods used for seagrass restoration programs have been diverse, using shoots (sprigs, plugs, cores, hessian bags), seedlings and seeds.



Posidonia Australia. Credit: Jennifer Verduin, Murdoch University.

- Environmental conditions at the time of 'planting' and processes used are critical to the success of the project.
- To improve success rates, it's critical to identify which environments are most suitable for natural seagrass colonisation.

The report recommends further research over the coming years, with the following guidelines and detailed analysis into:

- Restoration suitability models to identify and select the areas with the best likelihood of success, particularly for large-scale restoration.
- The required volume and supply of source materials.
- Further restoration trials to optimise success and identify the best way to scale-up restoration programs.
- How restoration programs can be informed by other interrelated WAMSI-Westport science programs, including snapper spawning and benthic habitat mapping.

You can read the full report [here](#).

Project 3.3: Review of surface water drains and likely maximum influxes to Cockburn Sound

Cockburn Sound, adjacent to the Kwinana Industrial Area and the Cities of Kwinana, Cockburn, and Rockingham, has for decades been exposed to the run-off of stormwater drains, wastewater, cooling water, and process water from industrial activities.

While regulations are in place to manage industrial run-off into the Sound, there has been no recent review into the volume and quality of stormwater run-off, which can contain groundwater and nutrients like nitrogen and phosphorous that can impact the marine ecosystem.

This study sought to address this knowledge gap by reviewing the potential outlets into Cockburn Sound, the likely volume of run-off, and the quality of the water entering the Sound.

Field surveys identified 14 stormwater and 8 ocean outlet drains as opening into the Sound or its shoreline in the City of Rockingham and Kwinana, and 8 stormwater drains near industrial sites. The review included the type of drain, topography of the surrounding area, and likely run-off source, such as vegetation or roads.

Estimations around the rate of flow or flux were also made by reviewing previous data and taking samples following a major rainfall event at two of the stormwater drains.

Westport will use this report, and the further research into stormwater and nutrient run-off, to create a benchmark for stormwater flows into Cockburn Sound.

This benchmark will provide a starting point for the ongoing improvement of managing stormwater flows in the area, including on the port, to be used by local government and industries with the objective of improving the long-term health of Cockburn Sound.

What the report found:

- Surface water run-off from industrial sites has reduced over the past 50 years.
- Water fluxes, multiplied by maximum nutrient concentrations, are less than 0.1 tonnes a year, lower than earlier estimates.
- Water quality data is limited and cannot be accurately estimated on the current information available, with further research through water sampling recommended.

You can read the full report [here](#).

Project 8.1: Study on how to mitigate the impacts on Little Penguins during potential dredging activities

An iconic, pint-sized seabird, Little Penguins (or Fairy Penguins) are a much-loved feature for visitors to Rockingham's Penguin Island.

With other Little Penguin colonies located in Albany and South Australia, this Penguin Island colony is the most northern known, right on the edge of what would be considered a 'habitable' zone for their species.

It's estimated the 'Perth' colony, which inhabits both Penguin Island and Garden Island, currently numbers only 300 birds after the population was impacted in 2021 by an increase in surface water temperature caused by an El Nino event.

As well as climate change, a decline in prey is also an issue for Little Penguins, who spend most of their day foraging for fish in Shoalwater Bay (outside Cockburn Sound).

Conservation ecologist Dr Belinda Cannell undertook months-long research into the foraging and breeding habits of Little Penguins in Cockburn Sound

as part of the WAMSI Westport Marine Science Program

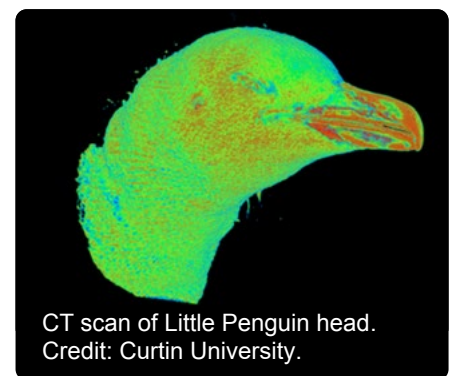
Westport will use this research to plan for activities related to the development of the new port, like dredging, so they can be timed and undertaken in ways that will reduce impacts to the local Little Penguin colony.

What the report found:

- Little penguin breeding and pre-moult season runs from April to January.
- Penguins foraging within Cockburn Sound were found to predominantly prey on scaly mackerel (*Sardinella lemuru*), anchovy (*Engraulis australis*) and pilchard (*Sardinops sagax*).
- Starvation is the second-most prevalent cause of mortality of the local Little Penguins (behind injury caused by watercraft).

The report provided several recommendations to reduce the impacts on the Little Penguins and their food sources, to be considered in Westport's planning, including:

- Avoid dredging during breeding and pre-moult periods.
- Employ best practice dredging management to control the extent, duration, and intensity of the dredge plume on penguins.
- Minimise the impact of dredging on coastal fish (the penguins, prey species) by keeping sediment concentrations below critical



CT scan of Little Penguin head. Credit: Curtin University.

thresholds, subject to definition in Project 4.4 *The effects of total suspended sediment associated with dredging on fishes* and limiting dredging during known fish spawning times.

- Ensure good food supplies during the breeding season, by using fish aggregating devices to draw fish to areas not impacted by dredging but within the typical home range of the penguins.

This advice will be incorporated into dredge planning and dredge management commitments that may be incorporated within the environmental impact assessment process. The little penguin population continues to face a number of external pressures and will require careful consideration before and after Westport's activities.

You can read the full report [here](#).



Project 8.3: Dolphin distribution

Indo-Pacific bottlenose dolphins are well-loved locals and a protected species.

These dolphins live in communities, with separate groups identified in Cockburn Sound, Owen Anchorage, and the Swan River. However, they face many threats from habitat loss, entanglement with fishing, and high mortality rates.

This study was commissioned to develop a better understanding of the current number and distribution of the dolphins in Cockburn Sound and Owen Anchorage, as well as their patterns of movement as they forage across the seasons.

Data taken from boats between 2011 and 2015 was used as the baseline for the modelling, with 72 studies undertaken in Cockburn Sound and 73 in Owen Anchorage during that period.

This historical data will be supplemented and validated by current surveys to monitor the populations and their movement over the course of a year.

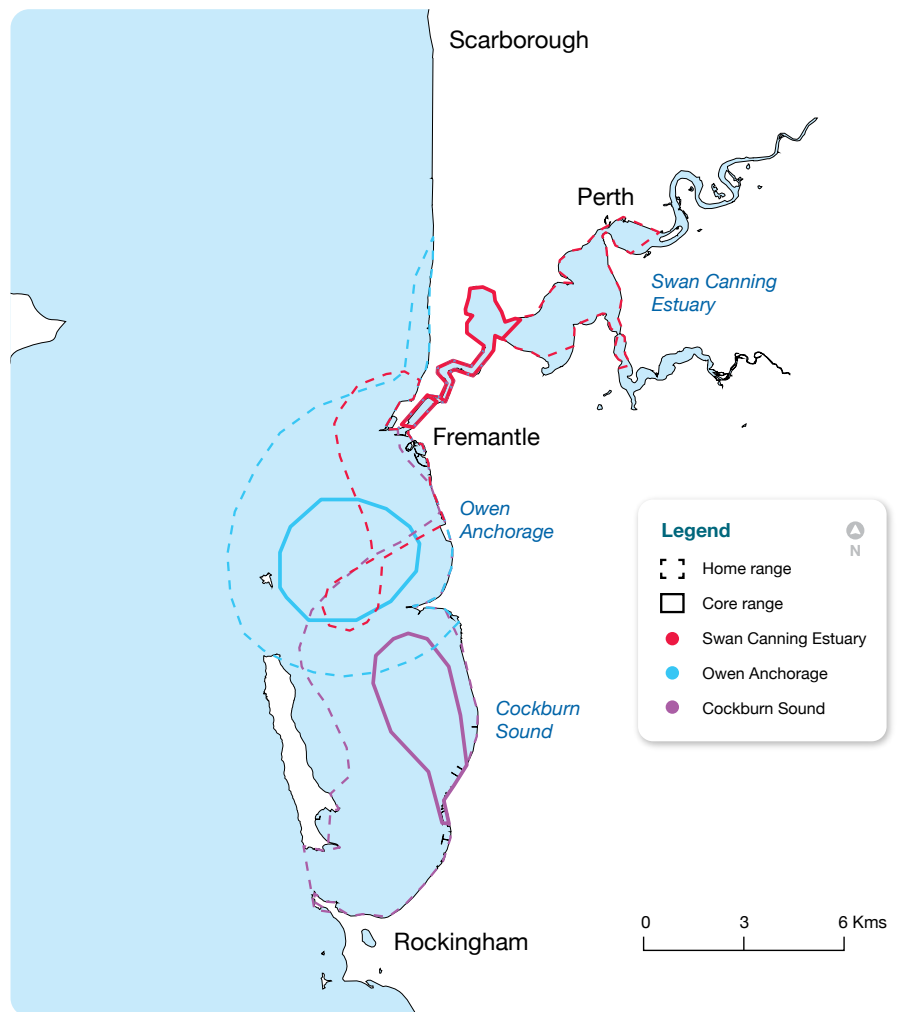
This research will help us understand potential impacts of the port development on the local dolphin community and improve the scientific knowledge available around dolphin habitat and distribution.

“The Indo-Pacific bottlenose dolphins are an important and highly visible feature of the Cockburn Sound and Owen Anchorage ecosystem” said Westport’s Environmental Impact Assessment Manager.

“Westport is committed to preserving the long-term health of Cockburn Sound and habitat supporting the dolphin population.”

What the report found:

- It’s estimated there are 65 dolphins in Cockburn Sound, 45 in Owen Anchorage, and 16 in the Swan Canning Riverpark.
- Owen Anchorage dolphins stay relatively close to the shoreline and boat ramps, with seasonal shifts in response to surface sea temperature and water visibility.



Movement of Indo-Pacific bottlenose dolphin communities in Perth metropolitan waters. Credit: Delphine Chabanne (Murdoch University).

- Cockburn Sound dolphins seek shallower waters across a range of locations in the Sound, including the northern and southern tip of Garden Island, and Kwinana Shelf.
- Seagrass beds were key foraging grounds for the Cockburn Sound dolphins.
- Owen Anchorage has experienced high usage and long-term dredging, which suggests that dolphins in this region have become accustomed to vessel traffic and industrial operations. This is the same for the dolphins in the Fremantle Inner Harbour.
- The accumulation of multiple activities and increased shipping could trigger behavioural responses, which requires ongoing research and monitoring.

The review recommended further research and dedicated studies be conducted in both Owen Anchorage and Cockburn Sound, closer to, during, and after the development of Westport.

Work currently underway will enable a fuller understanding of the dolphin population and potential effects of environmental changes on the behaviour, health, and population dynamics of dolphins that use these areas.

Project findings will be utilised by Westport to ensure future mitigation activities are designed and implemented with the greatest chance of success.

You can read the full report [here](#).

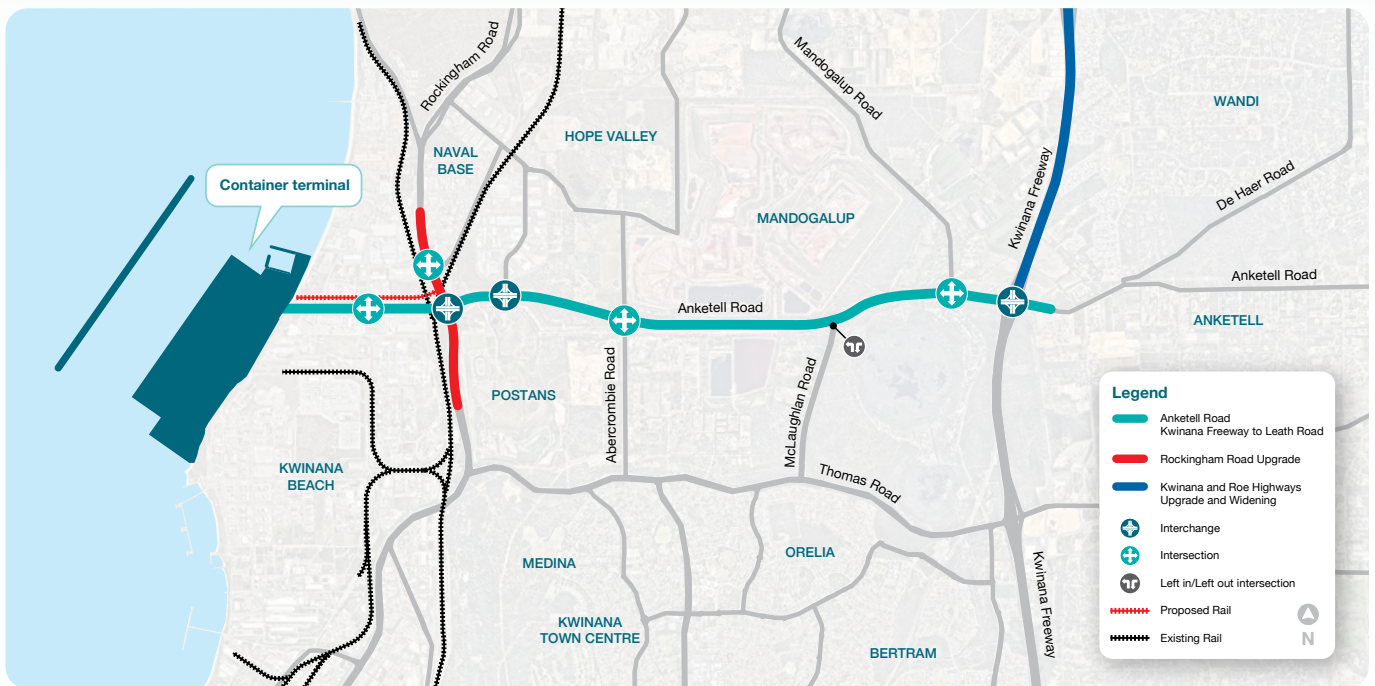
Road upgrades in the Kwinana Industrial Area

The western section of the Anketell-Thomas Road Freight corridor (between Kwinana Freeway and the port) is set to be constructed as the first stage of the freight corridor. This section will be required to construct the port and for the initial years of port operations, with the staged development based on the predicted demand and triggered by growth in the wider Western Trade Coast.

In the coming months, this 'initial' stage of the road upgrade will be referred to the State and Commonwealth environmental regulators to determine the required level of environmental assessment. This referral will be led by Main Roads WA.

Planning for the ultimate corridor (between Kwinana Freeway eastwards to Tonkin Highway) will progress in line with future growth requirements of the new port and wider industrial and urban development needs.

Anketell Road: Kwinana Freeway to Leath Road - Initial Stage



In December 2023, Westport hosted an online webinar for the Kwinana Industrial Area to provide an overview of the design concept for the initial stage of the Anketell-Thomas Road Freight Corridor. Below is a snapshot of questions we received from attendees at the webinar and our responses.

1 What is the expected timeframe to start building?

The WA Government will make an investment decision and determine next steps, including possible timing, after Westport’s Business Case submission in mid-2024.

Once the timing for commencement of operations at the new port is confirmed, we can define the exact construction schedule. This includes the initial stage of the Anketell-Thomas Road Freight Corridor needed to access the port.

It is anticipated that Main Roads WA will refer the initial stage of the project to the Environmental Protection Authority (EPA) for assessment in 2024.

2 Will access in and out of the Kwinana Industrial Area (KIA) be improved?

Access will be improved through the direct connection from Anketell Road into the KIA and upgraded access from Rockingham Road at Beard Street. Currently a two-lane road, it will be widened to four lanes with a significant improvement to the intersection at Rockingham Road.

The Westport planning process is generating a great deal of Government attention on the KIA and its road network, particularly in relation to current bottlenecks, traffic forecasting, and future road planning.

3 Why is Leath Road not grade separated?

It is important we have a free-flowing freight connection to the port area. There are lots of critical supporting functions for port operations on the western side of Rockingham Road that need to be provided for and are better supported by a roundabout rather than a grade separation.

This is something we are currently working on. Work to-date indicates that a roundabout will better support traffic movement and navigation between the terminals, the empty container parks, and staging areas.