

Wanneroo Road and Ocean Reef Road Interchange

Fact Sheet – Interchange Type Selection

During the planning phase for the Wanneroo Road and Ocean Reef Road Interchange, a number of interchange options were considered.

Original concept

The reservation for the intersection upgrade was gazetted in the Metropolitan Region Scheme in 1995.

It included a draft concept design with two quarter loop ramps located in the north/east and south/west quadrants.

Wanneroo Road was planned to be free flowing with left-in/out movements where the loop ramps intersect, and Ocean Reef Road was to have two signalised intersections.

Review undertaken in 2016

A review of the concept design was undertaken in 2016 to ensure there was adequate land protected in the Metropolitan Region Scheme.

An extensive number of intersection assessments were carried out, which involved an independent traffic assessment of volumes for 2016, 2031 and 2050 including 27m Restricted Access Vehicles.

A number of design options were considered.

- Single point intersection:** Roundabout with Wanneroo Road over Ocean Reef Road – *local road impacts, large land requirements and unacceptable traffic levels in the PM particularly on the eastern quadrant.*
- Original concept** with traffic signals on Ocean Reef Road – *unacceptable traffic levels at both western and eastern signalised intersections.*
- Original concept with traffic signals on Ocean Reef Road, plus left exit lane – chosen option.** By introducing a left exit expressway ramp (similar to a freeway off-ramp) from Ocean Reef Road western approach to Wanneroo Road north, the option proves operationally efficient. *The options performs well in both AM and PM peak times, based on 2031 and 2050 forecasts.*
- Original concept** with traffic signals on Wanneroo Road – *not compatible with the existing road network due to local road impacts.*
- Diverging Diamond** on Ocean Reef Road, with Wanneroo Road over Ocean Reef Road – *failed due to unacceptable traffic levels.*
- Roundabouts** on Ocean Reef Road, with Wanneroo Road over Ocean Reef Road – *additional land requirements outside current project boundary, design issues and local road impacts.*
- Single point intersection:** Traffic signals with Ocean Reef Road over Wanneroo Road – *unacceptable traffic levels in the AM and PM forecasted.*
- Single point intersection:** Traffic signals with Wanneroo Road over Ocean Reef Road – *local road impacts and requirement for increased intersection size.*
- Single point intersection:** Roundabout with Ocean Reef Road over Wanneroo Road – *local road impacts and unacceptable traffic levels in both the AM and PM forecasted.*



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The chosen concept design

Original concept with traffic signals on Ocean Reef Road, plus left exit lane

The scope includes:

- Road bridge at the intersection, with Wanneroo Road going over Ocean Reef Road
- Two quarter loop ramps located in the north/east and south/west quadrants
- Wanneroo Road free flowing with left-in/out movements where the loop ramps intersect
- Ocean Reef Road to have two signalised intersections at the on-and-off ramps
- Pedestrian underpass under south/west quadrant loop
- Realignment / reconstruction of paths and pedestrian crossing points
- *Additional scope added: U-turn facility in the median on Wanneroo Road north of Villanova Street and south of East Street.*



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