

Great Eastern Highway Bypass Interchanges Project

Great Eastern Highway Bypass and Abernethy Road Interchange

Great Eastern Highway Bypass Interchanges project (the project) includes the design and construction of a grade separated interchange at the intersection of Great Eastern Highway Bypass (the Bypass) and Abernethy Road.

Abernethy Road will be elevated to pass over the Bypass, with connectivity retained via on and off-ramps. The interchange will enable traffic on the Bypass to flow freely through the intersection.

Interchange design

The design of the interchange is known as a Single Point Urban Interchange (SPUI). A SPUI is an intersection design that allows a large volume of heavy vehicles to travel through the intersection safely and efficiently by reducing conflict points and the number of traffic signal phases. Like a diamond intersection, the SPUI allows opposing right turns to proceed simultaneously with only one set of traffic signals, allowing more vehicles to clear the intersection in one traffic signal cycle.

SPUI interchanges have been recently constructed on Tonkin Highway at the intersections of Collier Road and Horrie Miller Drive. Each interchange has functioned successfully.

What are the advantages of a Single Point Urban Interchange?

The term "single point" refers to the fact that all through-traffic on the Bypass, as well as the traffic turning left onto or off the interchange, can be controlled from a single set of traffic signals. The biggest advantage of a SPUI is improved operational efficiency and safety, as well as reduced right-of-way requirements. Right turning traffic from both directions of travel are able to turn simultaneously without crossing the path of the opposing right turns. As traffic passing through the interchange can be controlled by a single set of traffic signals, vehicles can clear the intersection much quicker than if there were multiple sets of traffic lights. SPUIs also allow for wider turns, easing movement for large vehicles.

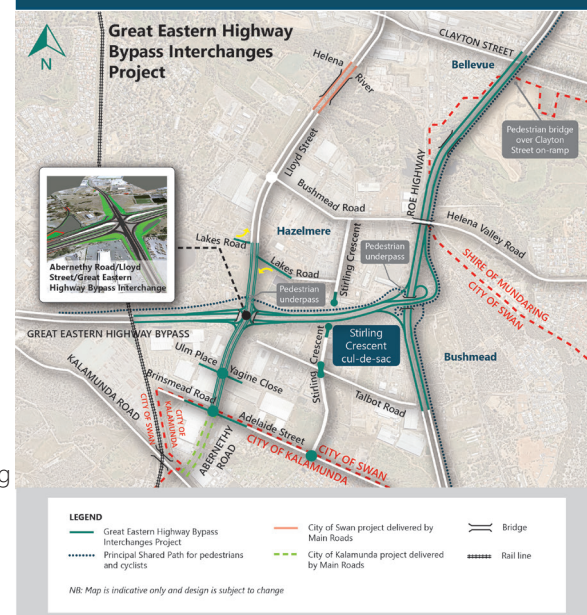
How will the Single Point Urban Interchange work?

A SPUI operates with a single, three-phase single set of traffic signals:

- The first phase will involve Abernethy Road traffic travelling straight through the intersection or turning left onto the Bypass.

Key advantages of SPUI:

- **Improved safety:** vehicles only cross paths at one location.
- **Improved travel time:** additional "green time" at traffic signals allows more vehicles to pass through the intersection.
- **Wider turns for large vehicles.**
- **Reduced right-of-way requirements.**



- The second movement will involve opposing right-turn lanes between the Bypass and Abernethy Road/ Lloyd Street. During this phase, traffic travelling along the Bypass will access the off -ramps to turn right onto Abernethy Road.
- The last movement will allow traffic on Abernethy Road/ Lloyd Street to turn right onto the Bypass via the on-ramps.

This will alleviate significant levels of congestion by allowing free flowing traffic along the length of the Bypass between Roe Highway and Kalamunda Road.

Abernethy Road and Great Eastern Highway Bypass Interchange



Great Eastern Highway Bypass and Abernethy Road Interchange design concept (subject to change)

Will there be noise walls on the Interchange?

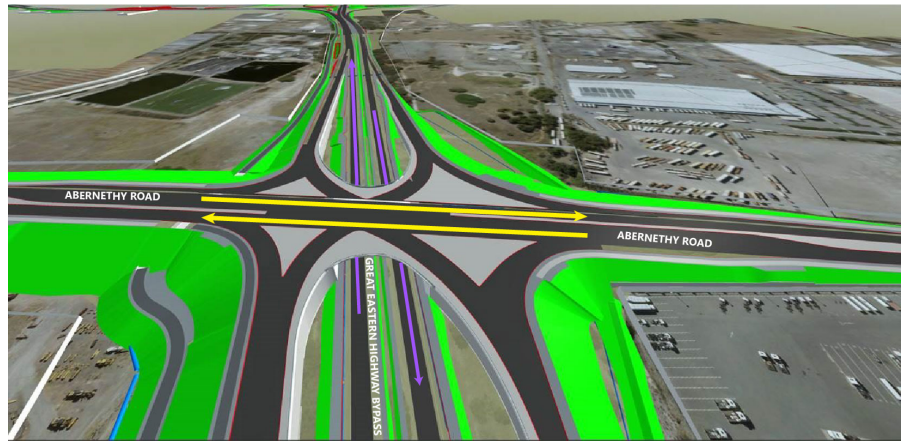
Due to the distance of the interchange from residential areas there are no noise walls included in the design. However, a 50 metre long earth mound (bund) will be constructed on the northern side of Great Eastern Highway Bypass between the Principal Shared Path and private properties. This earth mound will be located approximately 400 metres west of the new interchange. Earth mounds, or bunds, represent effective traffic noise barriers where enough space is available to construct a barrier of reasonable height. An advantage of earth mounds is they can be designed to have a low visual impact and better complement the natural environment. Earth mounds can also be landscaped with native vegetation.

Will there be pedestrian paths on the interchange?

In addition to a new Principal Shared Path (PSP) along Roe Highway and the Great Eastern Highway Bypass, the project will include construction of shared paths on:

- the western side of Abernethy Road between Kalamunda Road and the Bypass. This path will connect to the new PSP on the Bypass via a shared path connection along the alignment of the Bypass eastbound off-ramp.
- the eastern side of Abernethy Rd and Lloyd St between Yagine Close and Lakes Road the western side of Lloyd Street. This path will connect to the existing path at the approach of the Lloyd Street/ Bushmead Road roundabout.

More information on the Principal Shared Paths being constructed as part of this project is available in the Principal Shared Path Fact Sheet.



The first phase involves traffic on Abernethy Road travelling through the intersection.



The second movement involves opposing left-turn lanes from the bypass and/or exit travelling through the traffic signal on to Abernethy Road.



The last movement is for the second set of opposing left-turn lanes travelling from Abernethy Road onto the bypass.