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# Baldivis substation landscaping design community workshop

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February 2010

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# 1 Overview

Thank you for taking the time to attend this workshop. We appreciate you providing us with your ideas and preferences about the landscaping and screening design for the proposed Baldivis substation, to be located on Pike Road, Baldivis.

As you would be aware, Western Power is proposing to construct a 132 000 volt (132kV) zone substation on a site located on Pike Road, Baldivis. Zone substations transform high voltage electricity (transmission) to lower voltage (distribution) which is then sent out to homes and businesses.

The substation is required to provide reliable and secure power supplies to the area for the future, as Perth's southern suburbs continue to grow and the demand for power increases.

Zone substations need to be located central to the 'load area' i.e. the area that required the electricity.



The new substation will ensure ongoing power reliability and security for current and future residents, providing an important part of the electricity network.

The purpose of this workshop is:

- For Western Power to provide the community with an update and information about landscaping and design;
- To discuss some potential landscaping and fencing ideas for the substation;
- Seek ideas, comments and preferences from the community; and
- Answer any queries the community may have regarding how the substation will look.

## 2 Baldivis landscaping design workshop – Agenda

<b>Time</b>	<b>Activity</b>	<b>Who</b>
<b>6.00 pm</b>	<b>Welcome, introductions, meeting overview</b>	<b>Facilitator</b>
<b>6.05</b>	<b>Overview of design concepts &amp; Western Power recommendation</b>  <b>Project update</b>  <b>Landscaping - options and implications</b>  <b>Fencing of the substation – options and implications</b>  <b>Western Power’s recommendation</b>	<b>Western Power</b>
<b>6.20</b>	<b>Community comment session</b>  <b>Discussion on landscaping vision and objectives</b>  <b>In this session, community members will be invited to provide comment on the options and recommendations, suggest new options and ideas, and tell us their preferences.</b>	<b>All attendees</b>
<b>7.15 pm</b>	<b>Western Power – next steps</b>  <b>Timing and next steps for landscaping design</b>	<b>Western Power</b>
<b>7.20</b>	<b>Other items</b>  <b>Community will have the opportunity to ask any other questions about the project and make comment</b>	<b>All</b>
<b>7.30 pm</b>	<b>Summary, next steps and close</b>	<b>Facilitator</b>

### 3 Visual impact assessment summary and key considerations

The photos below show different view points (derived from the Ecoscape View Sensitivity Report) of the substation and aim to assist participants to visualise the location of the substation.

The site is referred to as 2a (please ignore 2b – unfortunately this was unable to be deleted from the photos).

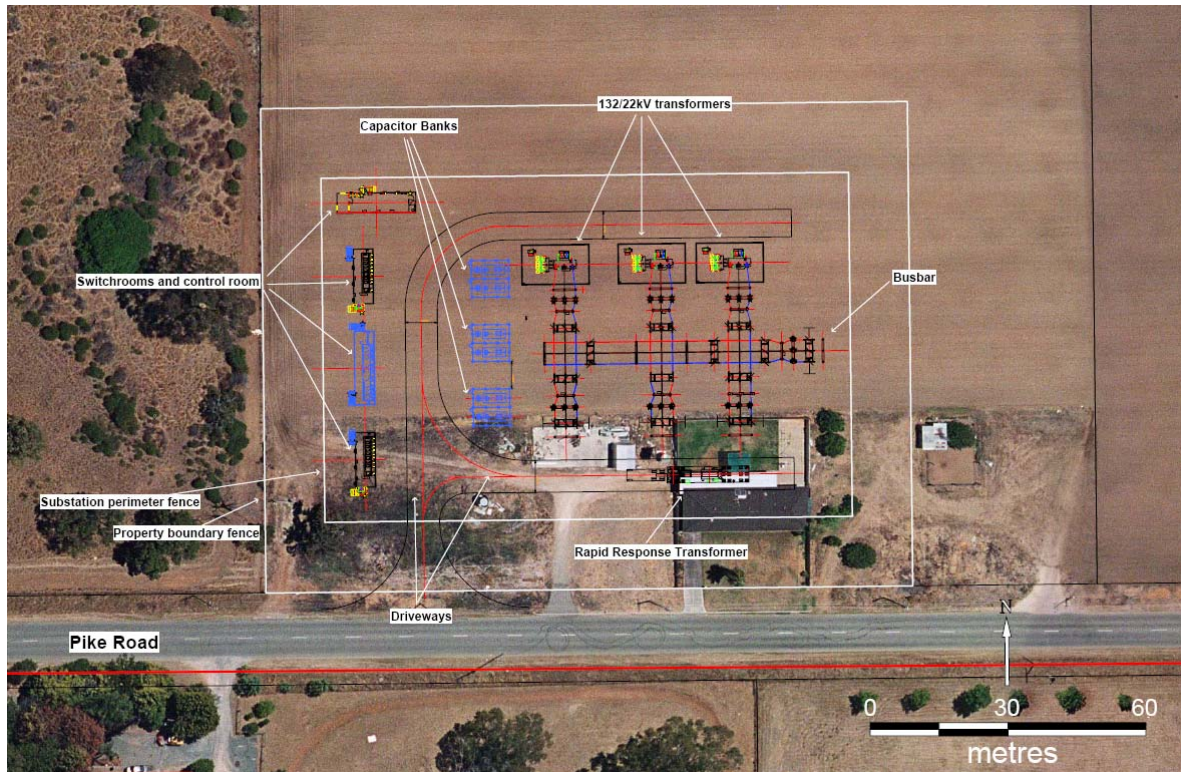








## 4 Ultimate site layout (Draft)



The approximate heights of the substation infrastructure will be as follows:

Busbar:	6 metres
Transformers:	5 metres
Capacitor Banks:	3.86 metres
Switchrooms:	5-6 metres
Perimeter fence:	3.5 metres

There will be lightning masts located at the site which are 15.3 metres in height. These are thin steel poles and examples can be seen in the photos of Waikiki substation.

## 5 Draft local structure plan

A draft Local Structure Plan has been created and is currently being negotiated with the land owners and other regulatory bodies such as the City of Rockingham and the Department of Education and Training. The plan will not be released for public comment until agreement with the mentioned parties is complete.

The plan includes the following considerations:

- Substation location with roads surrounding. The subdivision application has been approved conditional upon truncations at each corner;
- A shopping facility on Eighty Road;
- An early childhood school facility site;
- Block sizes in keeping with the City of Rockingham's environmental wedge survey – larger blocks to the west moving to urban lots toward the east;
- Drainage requirements.

These points should be taken into consideration in terms of the long and short term plans for the area.

## 6 Landscaping and Site screening examples and implications

### 6.1 Clarkson zone substation – Weld Mesh Fence



**3-6 months after planting**



**3 years after planting**

This substation used weld mesh fencing and thick native vegetation screening. No advanced trees were used. The width of the buffer zone is approximately 4-5 metres.

## 6.2 Wanneroo zone substation – use of existing vegetation and wide buffer zone



This substation has a particularly large buffer zone of approximately 20 metres in some areas and had the advantage of containing mature existing vegetation.

Due to the size of the buffer zone and existing vegetation a weld mesh fence is sufficient.

Similar design techniques can be used such as the post and wire boundary fence.

### 6.3 Waikiki zone substation - Tilt Panel Wall with replicated limestone block finish.



**At completion (April 08)**



**6 months after planting (September/October 08)**



**Photo taken 20 months after completion**

This substation utilised a combination of tilt panel wall, earth mound and advanced trees for the initial screening.

These types of plants were selected based on their seasonal growth rates, water consumption and suitability to the area. Advanced trees were used, however, need more water and take longer to establish than younger plants. Until they successfully establish their root system their chance of survival is lower.

Buffer zones at this site are quite large meaning planting was less dense. Maintenance must be considered in these instances.

Issues can include: high construction and maintenance cost, graffiti.

## 7 Western Power's recommendation & justification

**Combination of fencing:** Tilt panel wall for sensitive views and weld mesh fence for less sensitive (eg switchrooms).

**Dense vegetation:** Planting between perimeter fence and property boundary. A combination of smaller plants and a few advanced trees should be used. This will provide the best opportunity for plants to establish themselves and increase survival rate.

**Type of plants:** Use of native plants and plants used throughout Settlers Hill will ensure the landscaping maintains the visual amenity of the area and will reduce water consumption.

**Earth mounds:** Construction of earth mounds on some boundaries to raise height of shrubs. The height of the mound will depend on width of buffer zone. Mound should be planted out with mid to large shrubs to maximise benefit. If only trees are used the screening impact is minimal.

**Topping or no topping:** The perimeter fence must be 3.5 metres tall. This height can be made up of a fence or wall with a topping or just the total height of the fence or wall. Waikiki and Rivervale substations show a wall with palisade used as topping.

## 8 Community Comment sheet

Please outline your interest in the project

Directly adjacent landowner	Organisation Please specify –	Nearby community member	Other Please specify –
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

What has been your involvement in the project to date?

Attended previous session/s	Previously contacted Western Power	Received personal briefing / contact from Western Power	Received project updates, letters etc	None
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

How would you like to be engaged / involved in the future?

Regular community contact sessions as required	Public displays in local area	Online engagement – e.g. blog updates etc	Email updates	Project updates, letters etc	Other – Please specify
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Do you feel that your views were heard and considered at today's session?

Strongly Disagree	Disagree	Unsure	Agree	Strongly Agree
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Please note any comments/preferences that you have about these options, in the space provided below. Some things to think about include your preferences regarding fencing, landscaping, key views and vistas and any other ideas or comments you might have.


## 9 Next steps

With the valuable input received at this meeting, Western Power will compile all feedback and ideas, and work with landscape architects to develop a landscaping and screening plan for the proposed substation.

We will then make the plan available to the community for further comment and suggested refinement.

We expect that a draft concept will be ready in May and aim to have a finalised plan to lodge as a part of the Development Application process by late 2010.

Some key project timelines are provided below

- DA lodged – late 2010
- Construction to commence late 2011
- In service – late 2013