GOVERNANCE POLICIES
Western Power – Distribution Power Lines Clearances at Road Crossings & Over Land

Policy Number:	G29
Relevant Delegation:	Not Applicable
Adoption Details:	16 October 2016
Last Review Details:	16 October 2016

- Policy titled*: Placement of poles along roads with speed limit not exceeding 70km/h.*

POLICY STATEMENT:

Power poles should be installed on a standard alignment, between 2.4 and 3 meters from property boundaries, as defined in Appendix B of the *Utility Providers Code of Practice* (the Code). However, poles installed on this alignment must also comply with policy titled: *Placement of poles along roads with speed limit not exceeding 70km/h*.

Poles may be installed on other alignments, provided that an agreement in writing is obtained from any utility providers affected by the proposed location (see Sections 3.2 and 8.2 of the Code).

Poles should also be located in positions that avoid existing entrances to properties and other obstacles and provide for future development (see Section 8.2 of the Code).

As well as meeting the requirements of the Code, poles should be installed according to the following guidelines.

GUIDELINES:

1) **Maximum number of customer services:** in order to minimise costs, poles should be positioned so as to maximise the number of customers serviced from one pole.

2) **Street lighting:** distribution poles are used to carry street lights. Therefore, they should be positioned to take into account street lighting design requirements.

3) **Future extensions:** In order to minimise future costs, consideration should be given to the likelihood/possibility of extensions to the existing/proposed distribution network (e.g. requirements for "tee-offs", ground/aerial stays etc). See Figure 1.

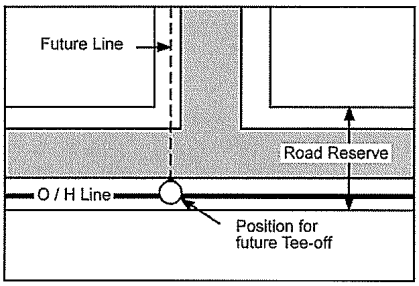

Figure 1: Consideration of future requirements

4) **Customer service poles:** consideration should also be given to any advantage that may be achieved by positioning poles on the side of a street that will minimise the number of customer service poles required when service connections are run across the road, as shown in Figure 2.

5) **Vegetation clearing:** it is important to minimise the impact Western Power's assets have on the environment. Therefore, consideration should be given to positioning poles on the side of the road that will minimise the need for vegetation-clearing, as shown in Figure 2.

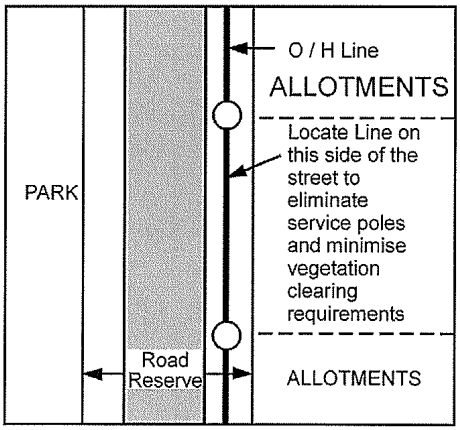

Figure 2: The advantage of careful pole positioning

6) **Deviation stays**: stays can restrict land use and obstruct pedestrian traffic. Therefore, conductor deviation angles should be avoided or installed in a way that eliminates or reduces the need for deviation stays.

If an overhead deviation angle is unavoidable, then adopt the following decision-making process to select the most appropriate option:

a) If the deviation bay length is shorter than 35 metres, use an inline stay for the main conductor and low tension (slack) for the deviation bay, without installing deviation stays.

b) If the deviation bay is longer than 35 metres, carry out an evaluation of the ground conditions and determine the suitability of a stronger pole. This is to ensure that corner poles will not be moved because of conductor tension, resulting in unacceptable conductor sag across the road.

c) If the deviation bay is longer than 35 metres and it cannot be constructed without deviation stays, deviation stays may be installed, provided they will not obstruct pedestrian traffic, access to property and will not become a visual obstruction (see Section 16 of this policy).

d) Use an underground option if deviation stays are necessary but cannot be installed without breaching the guidelines in c) above.

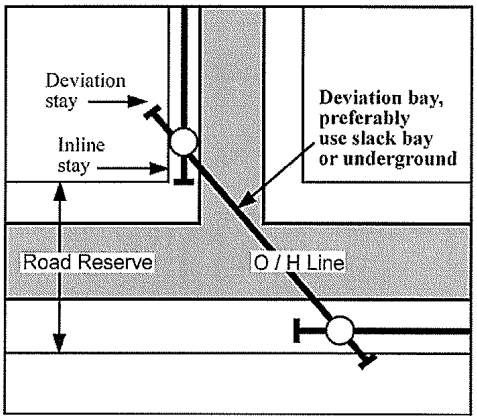

Figure 3: Deviation angles

7) **No conductors inside property**: in built-up areas it is not acceptable for new overhead power lines to be located inside property boundaries.

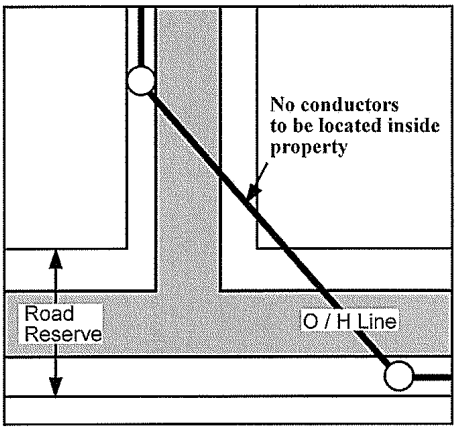

Figure 4: No conductors inside properties

8) **Compliance with ENA C(b)1, Section 9:** bare overhead power lines can be built only on the 2.7-metre alignment in areas zoned for a building setbacks of 6 metres, or in areas with a special dispensation setbacks of 3 metres. If zoning allows properties to be built along the front property boundary, bare overhead line construction should not be used.

This type of construction in these circumstances would not satisfy the requirements of ENA C(b)1, Section 9, as shown in Figure 5 below. The distance between a building and the closest conductor could be reduced to 1.3 metres as a result of blowout caused by strong wind. The required minimum clearance from the wall is 1.5 metres and from the window it is 2.1 metres.

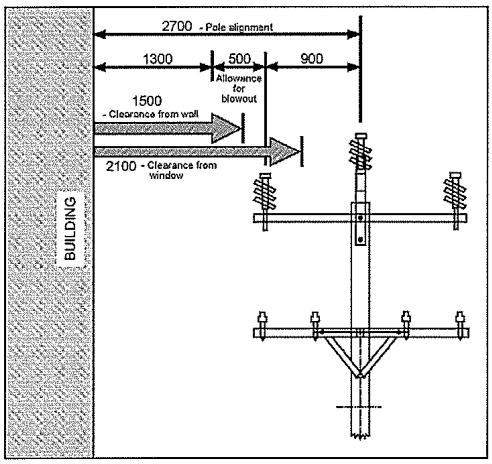

Figure 5 Compliance with ENA C(b)1

9) **Stays across driveways**: stays should not bridge existing or potential driveways. Aerial stays are best avoided and should be used only after all other options have been exhausted.

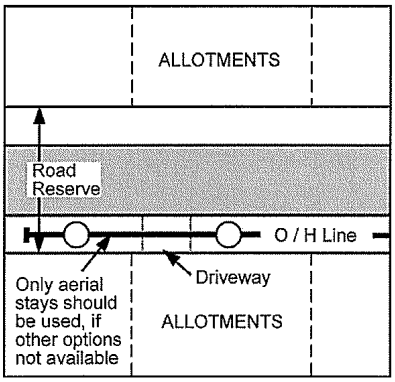

Figure 6: Location of stay poles

10) HV Earthing

a) HV earthing (e.g. earthing for conductive HV poles, pole-top-switches or pole mounted transformers) should not be located within 15 metres of telecommunication assets. This is because the telecommunication asset could be damaged, or there could be a safety hazard during their maintenance because of the voltage difference between local and remote earths. This includes telecommunication jointing pits, pillars, manholes, and telephone cabinets.

b) If an HV earth is to be located within 15 metres of any telecommunication assets (other then cables), then Telstra (or other relevant communication utility) must be notified and their written approval obtained.

b) Poles supporting pole-top-switches should not be located close to existing or proposed driveways and access ways, to avoid damage to the earthing mat during driveway construction. There should be a minimum distance of 2 metres between the driveway and a pole.

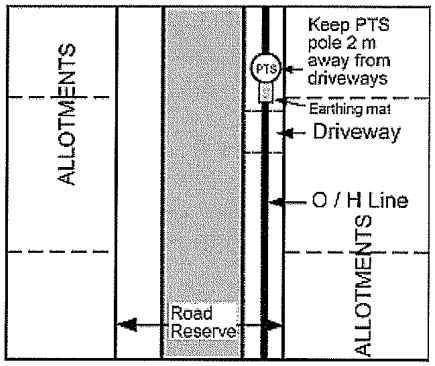

Figure 7: Positioning of earthed poles

11) **Driveway crossovers:** poles and stays should not be located within 1 metre of an existing or planned driveway crossover.

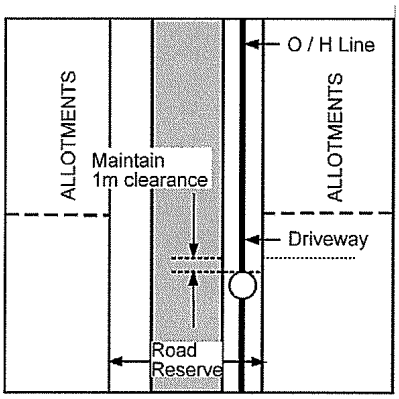

Figure 8: Poles near driveway crossovers

12) **Common lot boundary projection:** poles and stays should normally be located at the projection of a common lot boundary. However, where lots are truncated (eg. battleaxe lots) poles should be positioned on or outside the truncation projection.

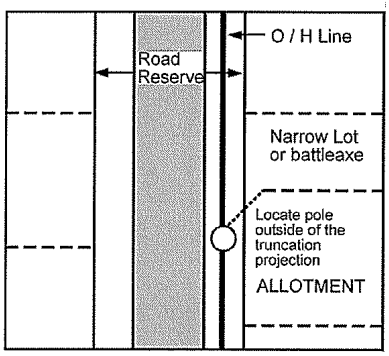

Figure 9: Location of poles on common lot boundaries

13) **Proximity to underground services**: poles should not be located in positions that prevent or inhibit access to underground services (e.g. underground power cables, road crossing conduits, gas pipelines, telephone cables or water pipes). Also, adjacent underground services may be damaged during the pole installation process.

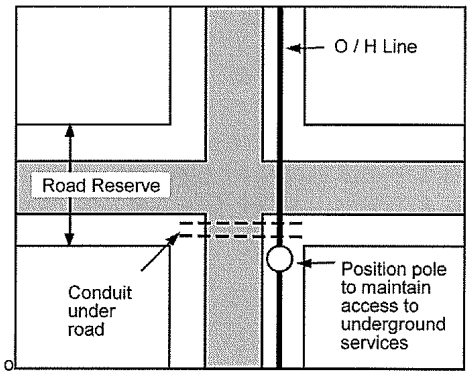

Figure 10: Proximity to underground services

14) **Road Intersections:** Poles near intersections should be installed at least 1 mete away from the roadway, as specified in policy number titled, *Placement of poles along roads with speed limit not exceeding 70km/h.*

It is necessary to discuss the placement of these poles with local government staff before finalising designs.

Poles should not be installed in the vicinity of an intersection area if they will need to be relocated due to planned intersection upgrading work.

15) **Easements:** poles and stays should not be located within the projection of sewerage, drainage and gas pipe easements existing on a property.

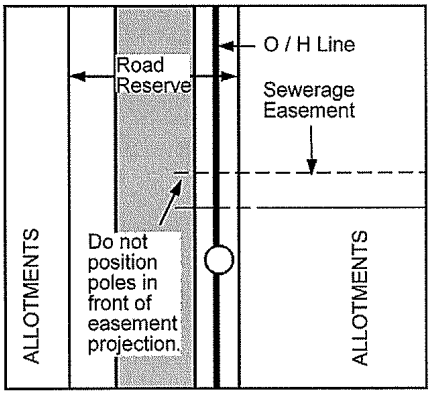

Figure 12: Poles within easements

16) **Visual obstruction:** it is important to install overhead assets so that they do not become a visual obstruction. Nor should they become significant landmarks. For example, the following situations have generated customer complaints:

- LV ABC conductors installed across a view of the lake; and
- a pole-top transformer installed above surrounding houses and trees, obstructing the view of properties on higher ground some distance away.

PENALTIES:

Not applicable.

KEY TERMS/DEFINITIONS:

Not applicable.

Responsible Officer: Chief Executive Officer

Contact Officer: Manager Infrastructure & Development Services

Relevant Legislation: Not applicable

Review History:

Date Review Adopted:	**Resolution Number**
Adopted – 16 October 2006	211006
Former Policy No:	N/A