

Figure 2 Co-location Matrix

		WATER CORPORATION				WESTERN POWER		MAIN ROADS WA			PUBLIC TRANSPORT AUTHORITY										
		1 WATER + WASTEWATER FERROUS PIPES UNDER PRESSURE	2 WATER + WASTEWATER NON-FERROUS PIPES UNDER PRESSURE	3 GRAVITY SEWERS	4 WATER + WASTEWATER PUMP STATIONS; TREATMENT PLANTS; RESERVOIR/ TANK SITES; BORE SITES	5 TRANSMISSION LINES	6 ZONE SUBSTATION, TERMINAL STATION	7 FREEWAYS	8 CONTROLLED ACCESS HIGHWAYS	9 OTHER MAJOR ROADS	10 ELECTRIFIED HEAVY RAILWAY LINE	11 LIGHT RAILWAY LINE	12 NON ELECTRIFIED RAILWAY LINE	13 ELECTRIFIED RAILWAY STATION	14 BUS STATION	15 STATION CAR PARKS	16 ELECTRICAL SUB STATION	17 BUS DEPOT	18 ELECTRIFIED RAILWAY DEPOT / STORAGE	19 NON ELECTRIFIED DEPOT / STORAGE	20 PEDESTRIAN & VEHICLE OVERPASSES / UNDERPASSES
WATER CORPORATION	1 WATER + WASTEWATER FERROUS PIPES UNDER PRESSURE					PS, ES, PD	PS, ES, PD	PS, ES, PD	PS, ES, PD		PS, ES, PD	PS, ES, PD	PS, ES, PD	PS, ES, PD	PS, ES, PD		PS, ES, PD		ES, PD	ES	
	2 WATER + WASTEWATER NON-FERROUS PIPES UNDER PRESSURE						PS, ES, PD	PS, ES, PD	PS, ES, PD		PS, ES, PD	PS, ES, PD	PS, ES, PD	PS, ES, PD	PS, ES, PD		PS, ES, PD		ES, PD	ES	
	3 GRAVITY SEWERS							PS, ES, PD	PS, ES, PD		PS, ES, PD	PS, ES, PD	PS, ES, PD	PS, ES, PD					ES, PD	ES	
	4 WATER + WASTEWATER PUMP STATIONS; TREATMENT PLANTS; RESERVOIR/TANK SITES; BORE SITES					PS, ES, PD	PS, ES, PD	PS, ES, PD	PS, ES, PD	PS, ES, PD	PS, ES, PD	PS, ES, PD	PS, ES, PD	PS, ES, PD	PS, ES, PD	PS, ES, PD	PS, ES, PD	PS, ES, PD	ES, PD	ES	PS, ES, PD
WESTERN POWER	5 TRANSMISSION LINES							PS, ES, PD	PS, ES, PD		PS, ES, PD	PS, ES, PD	PS, ES, PD	PS, ES, PD	PS, ES, PD	PS, ES, PD		PS, ES, PD	PS, ES, PD	PS, ES, PD	
	6 ZONE SUBSTATION, TERMINAL STATION							PS, ES, PD	PS, ES, PD	PS, ES, PD	PS, ES, PD	PS, ES, PD	PS, ES, PD	PS, ES, PD	PS, ES, PD	PS, ES, PD		PS, ES, PD	PS, ES, PD	PS, ES, PD	PS, ES, PD
MAIN ROADS WA	7 FREEWAYS											ES, PD	PS, ES				ES	PS, ES, PD	ES	PS, ES, PD	
	8 CONTROLLED ACCESS HIGHWAYS										ES, PD	PD	PS, ES, PD	PS, ES, PD	PS, ES, PD	PS, ES, PD	PS, ES, PD	PS, ES, PD	PS, ES, PD	PS, ES, PD	
	9 OTHER MAJOR ROADS										PS, ES, PD		PS, ES, PD	PS, ES, PD	PS, ES, PD	PS, ES, PD	PS, ES, PD	PS, ES, PD	PS, ES, PD	PS, ES, PD	
PUBLIC TRANSPORT AUTHORITY	10 ELECTRIFIED HEAVY RAILWAY LINE											PD			PD	PD		PD			
	11 LIGHT RAILWAY LINE												PD		PD	PD	PS, ES	PD	ES, PD	ES, PD	
	12 NON ELECTRIFIED RAILWAY LINE														PD	PD		PD	ES, PD		
	13 ELECTRIFIED RAILWAY STATION																PD	PD	PD	ES, PD	
	14 BUS STATION																PD		PD	PD	
	15 STATION CAR PARKS																	PD	PD	PD	
	16 ELECTRICAL SUB STATION																	PD	PD	PD	PS
	17 BUS DEPOT																		PD	PD	ES
	18 ELECTRIFIED RAILWAY DEPOT / STORAGE																				ES
	19 NON ELECTRIFIED DEPOT / STORAGE																				ES
	20 PEDESTRIAN & VEHICLE OVERPASSES / UNDERPASSES																				

Co-location should be avoided. If sharing is to occur, adequate separation should be provided to mitigate against technical + safety issues

Moderate to severe constraints exist relating to co-location, however mitigation may be possible depending on detailed site studies

Co-location is possible as constraints are manageable subject to detailed site studies

IMPORTANT NOTE: Co-location proposals (even those shown as "green") can only be agreed in-principle until detailed studies are done for each specific location at the appropriate time to confirm (or otherwise) the acceptability of a co-location proposal and required mitigation measures (if any). The information in this matrix is indicative only.

PUBLIC SAFETY (PS)

- can be endangered in the instance of water/power failures. For example, the loss of a large amount of water may create sinkholes and result in a loss of road or rail, or compromise the structural integrity of electricity supply infrastructure. There may also be large quantities of excess water on a transport corridor.

- both present risk of serious vehicle or rail accidents, with a considerable risk to life and public safety

- can be endangered in the case of:

- wastewater pipe or pump station failure due to the health concerns of spilling untreated wastewater

- low frequency induction (LFI) and/or earth potential rise (EPR) which can pose an electric shock hazard to the public in proximity to the infrastructure adjacent to transmission lines/substations

EMPLOYEE SAFETY (ES)

- is endangered if there is insufficient room to allow maintenance crews safe access to work on infrastructure, in the event of the need for planned or unplanned maintenance or repairs

- this is particularly the case with co-location with rail infrastructure, due to the constant and relatively dangerous nature of its operations

- this can be a particular concern during peak traffic periods

- when metallic pipes/cables/structures are used in the same corridor with transmission line or power cables, there are risks of electrocution or electric shock to employees due to low frequency induction (LFI) and/or earth potential rise (EPR)

PUBLIC DISRUPTION (PD)

- can be significant if infrastructure failures impact on major commuter or freight corridors

- repair times may be lengthy

- it is not practical to shut down rail operations/freeways to maintain or repair water/wastewater/power infrastructure

- access, especially timely access, to rail reserves cannot be guaranteed

- a significant water or wastewater burst can compromise the structure integrity of electricity supply infrastructure, with associated disruption for households/business

- low frequency induction (LFI) and/or earth potential rise (EPR) which can cause interference/damage to the operation of the infrastructure adjacent to transmission lines/substations resulting in service disruptions