

Appendix D. Portland Water Bureau standard separations

Proposals not maintaining Portland Water Bureau standard separations require a Design Exception from the PWB Chief Engineer. They may also require a Construction Waiver from the Oregon Health Authority as appropriate. These separation standards supersede all other conflicting or contradictory separation requirements or standards shown in preceding Portland Water Bureau policies, manuals, or standard drawings, dated, or produced prior to January 1, 2022.

1. PWB below-ground standard separations

From skin of ...	To skin of water ...	Minimum horizontal separation	Minimum vertical separation	Reason	Source
1. Top of parallel sanitary or combined sewer main or lateral below the bottom of the water main or service	A. Main, vault, or service	5 feet	None (top of sewer pipe below or even with bottom of water main)	Protects the water system from cross contamination by maintaining clearances to Zone 1 requirements of OAR 333 & 340	Oregon Administrative Rules 333-061-0050(9) and 340-052-0020 (Appendix A) ; Appendix F
2. Top of parallel sanitary or combined sewer main or lateral above the bottom of the water main or service	A. Main or service	10 feet	None		
3. Perpendicular sanitary or combined sewer main or lateral below the bottom of the water main	A. Main or service 12-inch diameter or less	N/A	1.5 feet	Protects the water system from cross contamination	Oregon Administrative Rules 333-061-0050(9) and 340-052-0020 (Appendix A) ;
	B. Main or service greater than 12-inch diameter	N/A	2.0 feet		

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From skin of ...	To skin of water ...	Minimum horizontal separation	Minimum vertical separation	Reason	Source
4. Perpendicular sanitary or combined sewer main or lateral above the top of the water main	A. Main or service	N/A	Prohibited	Protects the water system from cross contamination	Oregon Administrative Rules 333-061-0050(9) and 340-052-0020 (Appendix A) ; Appendix F
5. Maintenance holes, & catch basins	A. Main or service	5 feet	Prohibited	Protects the water system from cross contamination	
6. Sumps	A. Main, vault or service	5 feet	Prohibited	Protects the water system from cross contamination	
	B. Conduits	12 feet	Prohibited		
7. Other utility pipe crossing perpendicular above or perpendicular under water main (e.g., storm sewer, non-water)	A. Main or service 12-inch diameter or less	N/A	1.5 feet	Protects water mains from construction damage. Leaves space for water infrastructure, access for operations, maintenance, replacement and repairs.	
	B. Main or service greater than 12-inch diameter	N/A	2.0 feet		
8. Other utility pipe parallel to water main (e.g. storm-sewer, gas, electrical conduit, etc.)	A. Main or vault	5 feet	N/A	Protects water mains from construction damage. Leaves space for water infrastructure access for operations, maintenance, replacement, and repairs.	
	B. Service or meter 2-inch or less	3 feet	N/A		
	C. Service or meter greater than 2-inch	5 feet	N/A		

From skin of ...	To skin of water ...	Minimum horizontal separation	Minimum vertical separation	Reason	Source
9. Any underground structure, (such as but not limited, to vault, building, foundation, footing, poles (lights, signal, signs, utility, etc. including footings), retaining wall, utility pole, etc.)	A. Main or vault	5 feet	N/A	Protects watermains from construction damage. Leaves space for water infrastructure and the structure, access, operations, maintenance, replacement, and repairs.	
	B. Service or meter 2-inch or less	3 feet	N/A		
	C. Service or meter greater than 2-inch	5 feet	N/A		

2. PWB above-ground standard separations

From skin of ...	To skin of water ...	Minimum horizontal separation	Minimum vertical separation	Reason	Source
1. Utilities and structures (such as walls, fence, cabinets, vaults, poles, obstructions). Measured from closest point, including above and below ground footings.	A. Main	5 feet	N/A	Leaves space for water infrastructure integrity, access, operations, maintenance, replacement, and repairs.	
	B. Service or meter 2-inch or less	3 feet	N/A		
	C. Service or meter greater than 2-inch	5 feet	N/A		
	D. Vault	5 feet	N/A		

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From skin of ...	To skin of water ...	Minimum horizontal separation	Minimum vertical separation	Reason	Source
2. Guy wires and anchors	A. Main	5 feet	Prohibited directly over main	Leaves space for water infrastructure integrity, access, operations, maintenance, replacement, and repairs.	PCC Title 11.60.060.D.2
	B. Service or meter 2-inch or less	5 feet from closest point of anchor to skin of service line	Prohibited directly over service or meter		
	C. Service or meter greater than 2-inch	5 feet from edge of service line or edge of vault, whichever is greater	Prohibited directly over service or meter		
	D. Vault	5 feet	Prohibited directly over service or meter		
3. Utilities and structures	A. Hydrant	6 feet from center of hydrant on both sides and 3.5 feet in back of hydrants	7 feet measured from top of hydrant	Allows for hydrant use and maintenance	Uniform Fire Code; PWB Drawing W-105
4. Electric poles, structures, and guy wires	A. Hydrant	6 feet from center of hydrant on both sides and 4.0 feet in back of hydrants	7 feet measured from top of hydrant	Allows for hydrant use and maintenance	Uniform Fire Code; PWB Drawing W-105; NESC

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From skin of ...	To skin of water ...	Minimum horizontal separation	Minimum vertical separation	Reason	Source
5. Stormwater Facility, side curb	A. Hydrant	5 ft	N/A	Fire Bureau requirement for solid surface next to hydrant for connection.	
6. Curb (curb ramps, traffic circles)	A. Main	6 feet – measured to center of pipe	N/A	Provides space for water infrastructure integrity, access, operations, maintenance, replacement, and repairs.	PBOT P-504
7. Stormwater Facility: A. outside skin of gutter pan or B. edge of stormwater facility liner	A. Main	2 feet- no lining required	N/A	Provides WQ protection and space for water infrastructure integrity, access, operations, maintenance, replacement, and repairs.	BES Drawing P-333 with no lining required per detail
	B. Main	0 - 2 feet – lining required	N/A		BES Drawing P-333 w/appropriate lining per detail
	C. Service	N/A	2 feet		BES Drawing P-332
8. Side property line extended to its intersection with the ROW line	A. Meter	3 feet	N/A	Makes sure meter installation and maintenance do not disturb neighboring property or utility poles.	8. Side property line extended to its intersection with the ROW line

From skin of ...	To skin of water ...	Minimum horizontal separation	Minimum vertical separation	Reason	Source
9. Trees: from skin of trunk where it meets the ground at maturity	A. Main or service less than 24 inches in diameter and water meter box or vault.	5 feet	N/A	Separations limit risk, prevent root damage to water system, provide space for water infrastructure integrity, access, operations, maintenance, replacement, and repairs. Separations are for ≤ 12-inch Diameter Breast Height.	Portland Water Bureau Standard Drawings P-845 & 846
	B. Main 24 inches or greater in diameter, conduits and transmission mains, and hydrants.	10 feet ¹	N/A		PCC Title 11.10.010.c PCC Title 11.50.060.c
10. Trees: from skin of trunk where it meets the ground at maturity	C. Conduit or transmission main in private PWB easements or outside City of Portland.	20 feet	N/A	Separations limit risk, prevent root damage to water system, provide space for water infrastructure integrity, access, operations, maintenance, replacement, and repairs.	Portland Water Bureau Standard Drawings

¹ Locations where proposed improvements do not meet this standard will be reviewed by the Portland Water Bureau in collaboration with Urban Forestry through the Portland Water Bureau Design Exception process to determine if different design methods or construction techniques are possible to allow an exception.