



PHX WATER SMART

Design Standards Manual for Water and Wastewater Systems (DSM)

2026 REVISION UPDATE



Manual Update Timeline

- Existing manual was being updated between 2024 and 2025
- Updated manual was sent to DAB sub-committee and Home Builder Association of Central Arizona (HBACA) in mid February 2026 for information and feedback
- Updated manual was presented to DAB Sub-committee on March 6 and received multiple feedback
- Staff met representatives of HBACA on March 18 and discussed all the updates
- Updated manual was revised based on the received feedbacks in March 2026
- 2026 updated manual is being presented to DAB for Information and feedback in April
- Final updated manual is recommended to be adopted in May 2026



Manual Update List

MAJOR ITEMS TO BE INCLUDED IN 2026 REVISION UPDATE:

Chapter III. General Water and Sewer Design Criteria

- Water and Sewer Master Plan Reports,
- Water and Sewer Stubs or Taps Ahead of Paving,
- MOPO.

Chapter V. Wastewater Collection System

- Sewer Service Connection for Accessory Dwelling Unit (ADU) and Middle Housing Unit,
- Industrial Discharge Pretreatment Requirements.

Chapter IV. Water Distribution and Transmission Systems

- Water Service Connection Requirements: Spacing and Cover,
- Domestic Service Connection for Accessory Dwelling Unit (ADU) and Middle Housing Unit.

Chapter VI. Appeal Process for Water/Sewer Requirements (NEW)



Chapter III

General Water and Sewer Design Criteria

Chapter III.B.3.f.8:

The easement shall be granted to convey drainage away from any existing vaults or assemblies within the easement to prevent flooding. Easement shall be vehicle accessible for maintenance and free of any trees, block walls, fences, or grades.

Chapter III.B.4:

In general, all encroachments into water or/and sewer easements require approval from WSD, through technical appeal process.



Chapter III

General Water and Sewer Design Criteria

Continued

Tables 5 and 6 have been updated:

- Force main separation requirements have been added.
- Notes have been updated:
 - Extra protection is required for water mains and private fire line service that are between 1 and 2 feet above sewer main, storm drain or irrigation line, and less than 1 foot above a sewer service. Extra protection is required when water mains and private fire lines services are installed below sewer main and force main, regardless of distance. Extra protection is also required when water mains and private fire lines services are installed below storm drain or irrigation line. Minimum Separation and extra protection shall be in accordance with the requirements set forth in Arizona Administrative Code AAC R18-5-502, MAG Specification 610.1, and MAG Standard Detail No. 404-1; or as approved by WSD.
 - Where trenching operation crossed under existing 12 inch or smaller ACP Waterlines, Section 601.2.10 of the City Supplements to MAG must be followed. If trenching operations “expose” the ACP main, the ACP main shall be replaced with DIP.
 - For separation between water mains and sewer force mains, the minimum vertical separation is 2-ft (outside to outside) under all conditions. If sewer force mains cross above water mains (at any vertical distance), or sewer force mains cross below water mains with less than 6-ft vertical clearance, A.A.C. Article 5 Section RI 8-5-502 requires extra protection of sewer force mains. For public force mains (most of the time HDPE pipelines), please consult with WSD about preferred extra protection methods. For private DIP force mains, WSD usually requires concrete encasement of the private force mains for minimum 10-ft beyond the crossing at both directions or throughout the ROW, whichever is less.
 - Concrete encasement of VCP sewer mains is not allowed.



Chapter III

General Water and Sewer Design Criteria

Continued

Chapter III.D.1:

This Section has been updated for Water and Sewer Master Plan Reports Requirements, such as example of:

- land use plan data table,
- projected population table,
- water system modeling of proposed improvements,
- phasing schedule,
- planning level cost estimate if required by zoning stipulation or the City,
- etc.



Chapter III

General Water and Sewer Design Criteria

Continued

Chapter III.E.2:

A Hazen-Williams pipe roughness coefficient, C-value, of 120 shall be used for all pipe diameters and materials.

Chapter III.F:

If developers are stipulated to upsize or replace any existing water/sewer mains, existing water/sewer mains shall be abandoned pursuant to this section, and all the existing lateral water/sewer service connections shall be transferred to the new mains



Chapter III

General Water and Sewer Design Criteria

Continued

Chapter III.G. (Water and Sewer Stubs or Taps Ahead of Paving):

- The taps ahead of paving requests applies to proposed new main only.
- Taps before paving usually is only allowed after preliminary site plan approval.
- If the approved size or location of service taps changes after the installation due to design changes, or for any other reason, it shall be the property owner's responsibility to construct the new tap to the correct size/location and abandon any unused taps at the property owner's expense, as determined by the WSD.



Chapter III

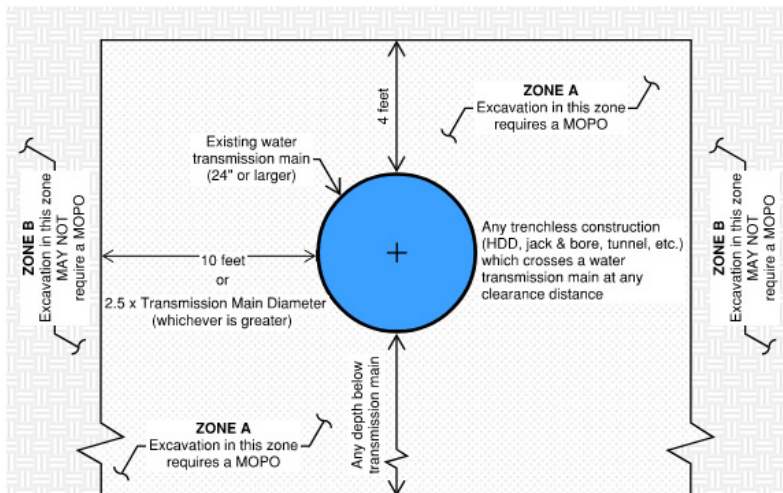
General Water and Sewer Design Criteria

Continued

Chapter III.I. MOPO for Crossing Transmission Mains:

- The section has been added to include MOPO requirements for:
- Activities around 24-inch diameter or larger water transmission mains
- Activities around large sewer gravity mains
- Excavation near sewer force main
- HBB and J&B required minimum 3-ft clearance in Zone A

This section includes what needs to be submitted and included in MOPO package.





Chapter IV

Water Distribution and Transmission Systems

Chapter IV.C.5.c. Water Service Connection Requirements:

- Minimum of 1-inch for new domestic meter taps.
- Existing 5/8 meter with 3/4-inch tap will be allowed to upsize to 3/4 meter provided allowed by the City's Plumbing Code
- For existing taps of 1.5, 2 and 4-inch, meter size may be reduced one size with a reducer. For all other existing taps, the meter size shall match the tap size and reducers on taps are not allowed.
- For new domestic taps, meter size must match the tap size and installation of reducers is not allowed,;
 - except for new 3-inch meters, a 4-inch tap may be provided with a reducer with WSD's approval.



Chapter IV

Water Distribution and Transmission Systems

Continued

Chapter IV.C.5.c. Water Service Connection Requirements: Spacing and Cover

- A minimum 5-ft separation is required between water service connections when installed on the same side of the water main (outside to outside).
- Meter service connections shall maintain a 30-inch minimum cover.



Chapter IV

Water Distribution and Transmission Systems

Continued

Chapter IV.C.5.c. Water Service Connection Requirements:

- Water Meters and Sizing Guidelines has been updated.

Domestic Meter Service Connection (Tap) Size

Domestic Meter Size

1 - inch	1 – inch meter. No reducer is allowed.
1.5 - inch	New accounts: <ul style="list-style-type: none">1.5 – inch meter. Existing accounts: <ul style="list-style-type: none">1.5 – inch meter, or,1 – inch meter with a reducer.
2 - inch	New accounts: <ul style="list-style-type: none">2 – inch meter. Existing accounts: <ul style="list-style-type: none">2 – inch meter, or,1.5 – inch meter with a reducer.
3 - inch	3 – inch meter. No reducer is allowed.
4 – inch or larger	4 – inch meter, or, 3 – inch meter with a reducer if approved by WSD.
6 – inch or larger	Meter must be the same size as the tap size. No reducer is allowed.



Chapter IV

Water Distribution and Transmission Systems

Continued

Chapter IV.C.6. Water Meters and Sizing Guidelines

Domestic Meter Size

Meter Size	Maximum Allowable Flow Rate (gpm)
1"	50
1 - 1/2"	100
2"	160
3"	320
4"	500
6"	1,000
8"	1,600
10"	3,000
12"	5,000

Fine Line Meter

Meter Size	Maximum Allowable Flow Rate (gpm)
2"	97
3"	220
4"	391
6"	881
8"	1,566
10"	2,447
12"	3,524

Notes:

- (1) – 10 and 12-inch domestic meters require a technical appeal to WSD.
- (2) - Fire line velocity is not allowed to exceed 10 ft/sec.
- (3) - Reducers on 1.5 and 2-inch taps may be allowed for existing domestic meters as outlined in IV.C.5.c.3.
- (4) - Reducers on 4-inch taps may be allowed for 3-inch meters if approved by WSD.
- (5) - Reducers on taps are not allowed for all other new or existing domestic meters.
- (6) - Reducers on taps are not allowed for all fire meters.



Chapter IV & V

Water Distribution and Transmission Systems & Wastewater Collection System

Chapter IV.C.5.c. Water Service Connection Requirements for Accessory Dwelling Unit (ADU) and Middle Housing Unit:

All units shall fall under the following billing code for multiple dwelling units on a single lot:

ADUs and Two-Family Residences – Type User 20

- Duplex – Type User 10
- Triplexes – Type User 21
- Fourplexes – Type User 26
- Townhouses – Type User 26
- Three Family Residence – Type User 30

All above user types are required to have one combined (domestic water, landscape and fire) meter service connection to the City's water system.

Separate water connection service for fire lines may be allowed through technical appeal process.



Chapter IV & V

Water Distribution and Transmission Systems & Wastewater Collection System

Continued

Chapter V.D.1.f. Accessory Dwelling Unit (ADU) and Middle Housing Unit Sewer Tap:

- ADU/Middle Housing Unit must discharge sewer into the City's wastewater collection system.
- ADU/Middle Housing Unit shall share sewer services with the property lot.
- If not technical feasible, ADU/Middle Housing Unit may be allowed to have separate sewer taps connecting to the City's wastewater system through technical appeal process.
- If the existing single-family home has a functioning septic tank and the tank has capacity to receive additional flow from the ADU/Middle Housing Unit as determined by the Maricopa County, the City may allow the sewer from the ADU/Middle Housing Unit discharge into the existing on-site septic tank through technical appeal process.



Chapter IV

Water Distribution and Transmission Systems

Continued

Chapter IV.G.6. Fire Hydrant Relocation:

Added context for the functionality of black-top hydrants and clarified relocation of black top hydrants and fire Hydrants off water transmission mains need to be approved by WSD through the Technical Appeal process.



Chapter V

Wastewater Collection System

Continued

Chapter V.F. Industrial Discharge Pretreatment Requirements:

Added a new section to provide detailed guidelines on Industrial Pretreatment Program (IPP) requirements and provided sampling-point design examples:

- Sampling facility requirements
- Flow monitoring facility requirements
- Pretreatment By-pass Requests
- Commercial Facilities



Chapter VI

Appeal Process for Water/Sewer Requirements

Chapter VI.F. Utilities Crossing Property Lines and Other Appeals:

- Provide examples on technical basis for appeals
- Provide clarifications on overall technical appeal process and added guidance on “utilities crossing property lines:
 - Fire service line crossing property lines, applicants must first file a technical appeal to the City’s Fire Marshall and then WSD.
 - Water and sewer service taps and mains crossing property lines, applicants must file a technical appeal with WSD.
- **Other Appeals:**
 - No development shall discharge storm water into the City’s sanitary sewer system, unless approved by the City’s Water Services Department through a water/sewer technical appeal process.
- **All technical appeals must be submitted to WSD.Appeals@phoenix.gov to be pre-screened.**
- **A new statement added to this section and response letters:**
 - The approval for a technical appeal is valid for 5 years starting from the issued date of approval. Technical appeals that are five years or older are considered invalid and null. In addition, for technical appeals that are still valid, if the appealing section gets updated or changed during this 5-yr period, a re-submittal of the technical appeal may be required, as determined by the Water Services Department

Questions?

THANK YOU



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