

# PUBLIC WORKS DESIGN GUIDE UPDATE

City Council Regular Meeting July 16, 2024

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# PUBLIC WORKS SPECIFICATIONS MANUAL

Specifications Manual is made up of several documents:

- Public Works Design Guide
  - Establishes standard principles, criteria, and practices for the design of infrastructure and to protect and preserve the public welfare
- Technical Specifications
  - Identify the specific material and workmanship requirements of public infrastructure construction project
- Standard Construction Details
  - Detail (typically graphically) particular installation elements of construction of public infrastructure

# PUBLIC WORKS DESIGN GUIDE 2024 UPDATE

- First update since 2016
- Clean up of typos, inconsistencies
- Clarification of vague guidance
- Establishment of increased standards for higher quality, more sustainable infrastructure

# PUBLIC WORKS DESIGN GUIDE 2024 UPDATE

## SECTION 1 - GENERAL

- Clarified applicability of design standards to public and private development

# PUBLIC WORKS DESIGN GUIDE 2024 UPDATE

## SECTION 2 – REQUIRED SUBMISSION OF PLANS

- Updated requirements to reflect digital submittals
- Added requirement of submittal of engineered plans for retaining walls
- Added requirement of profiles of 12” water mains (previously only required for 16” and greater mains)

# PUBLIC WORKS DESIGN GUIDE 2024 UPDATE

## SECTION 3 – STREET REQUIREMENTS

- Pavement Design
  - Increased pavement design parameters related to loading and structural numbers
  - Removed preference against the use of lime for subgrade stabilization

# PUBLIC WORKS DESIGN GUIDE 2024 UPDATE

## SECTION 3 – STREET REQUIREMENTS cont'd

- Streets Layout
  - Revised specifications (including nomenclature and right of way and pavement widths) to be consistent with Master Thoroughfare Plan
  - **Increased minimum allowable pavement slopes**
  - Added limitation of responsibility of roadway dedication and pavement based on limitation of current state statute
  - Added reference to multiuse path (per Master Thoroughfare Plan)
  - Increased strength of concrete for sidewalks and alleys
  - Removed provisions related to overhead utilities in alleys

# PUBLIC WORKS DESIGN GUIDE 2024 UPDATE

## SECTION 3 – STREET REQUIREMENTS cont'd

- Minimum Testing Requirements
  - Removed reference to geogrid for use as a mitigation technique for soils with high plasticity (swelling soils)
  - Increased required testing frequency for roadway construction

# PUBLIC WORKS DESIGN GUIDE 2024 UPDATE

## SECTION 4 – STORM DRAINAGE REQUIREMENTS

- General
  - Clarified design frequency requirements
  - Added explicit requirement for stormwater discharge to mimic existing or predeveloped flow characteristics so as to not cause adverse impact to downstream property
- Water Quality
  - Added stronger encouragement of provision for post construction water quality BMPs and requirement of consideration for future retrofit of facility to meet future water quality standards

# PUBLIC WORKS DESIGN GUIDE 2024 UPDATE

## SECTION 4 – STORM DRAINAGE REQUIREMENTS cont'd

- Storm Drainage Design Criteria
  - Added statement disallowing use of Modified Rational Method for computing stormwater runoff
  - Reduced size of drainage area considered “small” from 200 acres to 50 acres and disallowed use of Rational Method for peak flow calculation if time of concentration is greater than 20 minutes
  - Removed reference to City-maintained hydrologic and hydraulic models
  - Specified minimum total time of concentration as 5 minutes
  - Reduced maximum distance allowable for time of sheet flow in time of concentration calculations from 300 feet to 100 feet
  - Adopted NOAA Atlas 14 precipitation frequency data for stormwater runoff calculations

# PUBLIC WORKS DESIGN GUIDE 2024 UPDATE

## SECTION 4 – STORM DRAINAGE REQUIREMENTS cont'd

- Storm Drainage Design Criteria cont'd
  - Increased design loading of crossings, culverts, and bridges to HS-25
  - Increased freeboard depth required for channels between 5- and 10-foot depth
  - Decreased allowable earthen channel side slopes from 3:1 to 4:1
  - Decreased channel side slope allowance for railing to be required from 2:1 to 3:1 (for channel depths greater than 2 feet)
  - Decreased the minimum bottom width of earthen channel requiring a concrete trickle channel from 12 feet to 8 feet
  - Added requirement of access manholes at all storm sewer junctions

# PUBLIC WORKS DESIGN GUIDE 2024 UPDATE

## SECTION 4 – STORM DRAINAGE REQUIREMENTS cont'd

- Storm Drainage Design Criteria cont'd
  - Added control of 2-year frequency event to detention facility design
  - Removed reference to regional detention facilities
  - Added additional criteria that must be met in order for the consideration of a detention facility with a permanent wet pool
  - Added requirement for the provision of adequate space for the transition of flow from a drainage outfall to predevelopment conditions prior to leaving property

# PUBLIC WORKS DESIGN GUIDE 2024 UPDATE

## SECTION 5 – SANITARY SEWER REQUIREMENTS

- Minimum Standards
  - Added requirement of property line cleanout on all laterals and removed reference to cleanouts otherwise used on public mains
  - Added requirement for sampling port on all non-residential laterals
  - Updated requirement for flowable fill to encapsulate all manholes
  - Clarified waiting period prior to testing after final backfill and/or pavement construction

# PUBLIC WORKS DESIGN GUIDE 2024 UPDATE

## SECTION 6 – WATER REQUIREMENTS

- General
  - Reduced distance required between fire hydrant and structure from 500' to 400' or as required by the Fire Marshal
  - Added section related to private fire lines limiting length of single connection to public main to 1000' and citing references for design criteria and construction specifications
  - Added prohibition of domestic connection to dead end mains and clarified looping requirement
  - Clarified requirement for construction of cross-connecting supply and distribution mains including those on the water master plans and where distance to nearest mains exceeds minimum
  - Added prohibition of combined domestic and fire service lines for private facilities

# PUBLIC WORKS DESIGN GUIDE 2024 UPDATE

## SECTION 6 – WATER REQUIREMENTS cont'd

- Design Criteria
  - Added default requirement for encasement of pipe beneath commercial driveways – provision for exception based on certain considerations included
  - Added requirement for encasement of mains crossing existing or future thoroughfare roadways
  - Added storz connection to fire hydrant specification
  - Added requirements and standards for replacement of asbestos cement (AC) pipe when new connection is being made or where cover is decreased over an existing AC main

# PUBLIC WORKS DESIGN GUIDE 2024 UPDATE

## SECTION 7 – INSPECTIONS, TESTING, AND CHARGES

- Increased testing frequency for street subgrade and base
- Updated infrastructure acceptance submittal requirements to specify only digital formats and specified that asset locations must be surveyed
- Brought into alignment with UDC by citing two-year warranty period for public improvements

# PUBLIC WORKS DESIGN GUIDE UPDATE 2024

## NEXT STEPS:

- Stakeholder Meetings
- Planning and Zoning Commission
- City Council Ordinance

# COMMENTS AND QUESTIONS

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