

## **PROCEDURES FOR SUBMISSION OF DESIGN DRAWINGS**

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Loudoun Water reviews the plans for all projects that will connect to public water or sewer. The plans are checked for conformance to the Authority's Water Distribution System – Standards and Extensions and Sewer System – Standards and Extensions.

### **Initial Submission Requirements**

1. Utility Extension Request Form (UER Form).
2. Plan Review Fees are made payable to Loudoun Water. We are unable to accept inaccurate review fees or process a refund for overpayment.

Plan Fee Calculation:           \$600.00, plus these per unit fees:  
Water:                    \$0.33 (thirty three cents) per linear foot  
Sewer:                    \$0.66 (sixty six cents) per linear foot

3. One complete set of hard-copy plans containing the following minimum information:
  - Seal, signature, and date of the Professional Engineer or Surveyor who prepared the plat or plan shall be shown on each sheet.
  - Vicinity Map on 8 1/2 x 11 paper (with off site utilities shown as appropriate and necessary)
  - North Arrow (each plan view)
  - Scale (all applicable sheets)
  - All applicable Loudoun Water Standard Notes and construction details
  - Plan and profile of all proposed Loudoun Water water and sewer lines with complete and consistent stationing (all views)
  - Depiction of all existing water and sanitary sewer facilities and easements within and immediately adjacent to proposed limits of construction. Include profile of existing pipelines if their cover is to be increased or decreased.
  - Inverts and slopes of sanitary sewer which are consistent within the plans
  - Profiles and tabulation of all sewer services (laterals)
  - Location of siamese connection on each building receiving service for fire suppression system
  - Location of water and sewer service lines to each proposed structure and to each proposed lot
  - Complete call outs of appurtenances in water main, consistent between plan and profile
  - All water and sanitary sewer crossings accurately depicted on profiles of storm sewers and other utilities
  - All crossings of storm sewers and other utilities accurately depicted on profiles of water and sanitary sewer
  - Consistency from sheet to sheet across “match lines”
  - On site plans, minimum of four grid tics based on Virginia State Plane North Coordinate System, North American Datum of 1983, High Accuracy Reference Network (NAD83 HARN). Linear units shall be US Survey Feet (not International Feet). Projects that were started prior to September 1, 2008 may use the previous NAD27 datum standard.

All new projects started after September 1, 2008 must use the NAD83 HARN horizontal datum. Plans shall clearly note the horizontal datum used.

- Vertical measurements, including elevations, shall be based on the North American Vertical Datum of 1988 (NAVD 88), with feet as the measurement unit. Projects that were started prior to February 18, 2009 may use the previously required National Geodetic Vertical Datum of 1929 (NGVD 29). Plans shall clearly note the vertical datum used.
4. One set of the digital files used to create the hard-copy drawings described in #3 above, to include at a minimum the following design features:
- Water utility pipes and appurtenances
  - Sanitary sewer utility pipes and appurtenances
  - Reclaimed water utility pipes and appurtenances
  - Right-of-way
  - Lot/parcel boundaries
  - Building footprints
  - Edge of pavement/curb and gutter
  - Project boundary
  - Easements

At the design engineer's option, submittals may also include any and all additional design features shown on the plan view drawings such as stormwater, topography, landscaping, etc. Digitally signed/sealed drawings are not required. Digital files shall be submitted, at a minimum, at the initial submission stage as well as after final approval. Loudoun Water may also require digital plans for interim resubmittals, at the discretion of Loudoun Water. Loudoun Water agrees to protect the drawings as intellectual property, and will not distribute the drawings in their submitted digital form to any third party without consent. Digital files shall adhere to the following specifications:

- Digital drawings (2D and/or 3D). The following is a list of acceptable formats/versions:
  - AutoCAD 2000-2007
  - AutoCAD DXF 2000-2007
  - Microstation SE, /J, V8
  - ESRI ArcView Shapefile
- All plan view drawings must be georeferenced to Virginia State Plane North Coordinate System, North American Datum of 1983, High Accuracy Reference Network (NAD83 HARN). Linear units shall be US Survey Feet (not International Feet). Projects that were started prior to September 1, 2008 may use the previous NAD27 datum standard. All new projects must use the NAD83 HARN horizontal datum. Plans shall clearly note the horizontal datum used.
  - Note that it is not sufficient to use a local grid coordinate system and overlay the State Plane grid ties for visual reference; the plan view drawings must store elements using real-world VA State Plane coordinates, and must not be shifted or truncated.
- Vertical measurements, including elevations, shall be based on the North American Vertical Datum of 1988 (NAVD 88), with feet as the measurement unit. Projects that were started prior to February 18, 2009 may use the previously required National Geodetic Vertical Datum of 1929 (NGVD 29). Plans shall clearly note the vertical datum used.

One complete digital document in Portable Document Format (PDF) containing the entire final, approved, sealed drawings for the plan set. Each drawing shall be captured at 1:1 scale (such that the PDF can be plotted at the original scale of the hard copy without scaling the plot). If the PDF is produced by scanning the hard-copy drawings, then the scanning shall be performed at 300 dots per inch (DPI). The scans shall be black and white, and shall be free of distortions.

**Resubmissions** - Subsequent submissions must reflect requested changes in order to receive a full review. Each resubmission must also include the following:

1. Utility Extension Request Form (only when fees are required)
2. Plan Review Fees (third submission). We are unable to accept inaccurate review fees or process a refund for overpayment.

Plan Fee Calculation:           \$200.00 plus these per unit fees:  
Water:                    \$0.11 (eleven cents) per linear foot  
Sewer:                   \$0.22 (twenty-two cents) per linear foot

3. If fees are not required for resubmission, a transmittal or cover letter containing the following information is required:
  - Loudoun Water Engineer reviewing the plans
  - Project name as shown on the plans
  - Project number as provided with Loudoun Water’s review comments on the first submission
  - Response letter stating action taken to address Loudoun Water’s comments
4. Three copies of plan, or plan sheets, with revisions redlined and revision block completed
5. Digital re-submission of plans, showing the same resubmission changes as the hard-copy drawings, and adhering to the same submittal requirements described under “Initial Submission Requirements” above.
6. Design changes that were not requested by Loudoun Water highlighted, and described in response letter
7. Bond Estimate (second submission)

**Revised Plans** – Revisions to Approved Plans must adequately reflect changes made in order to receive a full review. Each Revision to an Approved Plan must also include the following:

1. Utility Extension Request Form
2. Plan Review Fees. We are unable to accept inaccurate review fees or process a refund for overpayment.

Plan Fee Calculation:           \$200.00 plus these per unit fees:  
Water:                    \$0.11 (eleven cents) per linear foot  
Sewer:                   \$0.22 (twenty-two cents) per linear foot

3. Three copies of plan, or plan sheets, with revisions redlined and revision block completed, and with Professional Engineer’s seal, signature, and date
4. Digital re-submission of plans, showing the same resubmission changes as the hard-copy drawings, and adhering to the same submittal requirements described under “Initial Submission Requirements” above.
5. Bond Estimate (revised)
6. Revised Vicinity Map on 8 1/2 x 11 paper, if necessary