# Guide to New Construction
## COMMERCIAL

*Provided by Metro Water Services*
**Revision Date: April 2008**

The Metropolitan Government of Nashville and Davidson County, Tennessee
*This handbook is provided for informational purposes only. It is not intended to be a legal document.*


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# Introduction

Dear Customer:

We are pleased to provide this guide to introduce customers to our department's policies and procedures regarding new commercial construction. Metro Water Services is a department of the Metropolitan Government of Nashville and Davidson County that provides service to more than 171,000 water accounts and more than 183,000 sewer accounts.

Our department supplies drinking water to customers in Davidson County as well as portions of Rutherford and Williamson Counties. Two water treatment plants serve this community: The K.R. Harrington and the Omohundro Water Treatment Plants have a combined capacity of 180 million gallons of water per day. The drinking water is conveyed by a distribution system consisting of more than 2,700 miles of water main, with our largest pipe being five feet in diameter.

Wastewater is treated by one of three wastewater treatment plants: Central, Whites Creek and Dry Creek. These facilities serve customers in Davidson and portions of Sumner, Robertson, Wilson, Rutherford, and Williamson Counties. The Central Wastewater Treatment Plant, our largest, is able to treat 330 million gallons of wastewater per day. The Dry Creek and Whites Creek Wastewater Treatment Plants have a combined capacity to treat more than 129 million gallons per day. Our wastewater collection system has more than 3,000 miles of piping, the largest of which is 16 feet in diameter. On an average day, we treat more than 150 million gallons of wastewater.

Responsibility for Nashville's Stormwater management was transferred to MWS from the Department of Public Works in 2002. The Stormwater Division utilizes both educational and regulatory initiatives to improve water quality by reducing the amount of pollutants entering rivers and streams as a result of Stormwater run-off. The division reviews plans for new development projects for compliance with Metro Stormwater regulations, issues grading permits, and inspects construction sites for proper erosion control measures. It is responsible for maintenance of the storm sewer system, construction of Stormwater capital improvement projects, and compliance with Metro's Municipal Separate Storm Sewer System Permit.

We hope this guide will make it easier for you to do business with Metro Water Services and answer many of your questions. Telephone numbers and Web site references are provided throughout for additional information. Please contact us with any questions or issues not addressed in this guide.

Metro Water Services encourages the involvement of our customers. The Trades Advisory Council offers plumbers, engineers, contractors and developers a unique opportunity to get involved. This group reviews changes in policy that affect customers that want to connect to our infrastructure and makes suggestions to help make it easier to do business with the department. If you would like to get involved or request more information, please contact the MWS Permits Office at 862-7225.

Thank you for allowing us to serve you.

Scott Potter
Director

**THE MISSION OF METRO WATER SERVICES IS:**

To provide drinking water, wastewater treatment and stormwater management services to our community so we can enjoy a vital, safe and dependable water supply and protected environment.

# Process overview

**Step 1** >> Submit request for water and sewer availability to MWS Development Services

**Step 2** >> Development Services performs capacity study

**Step 3** >> Development Services sends letter outlining capacity fees and requirements to MWS Permits Office and customer

**Step 4** >> Pay capacity fees to MWS Permits Office

**Step 5** >> Development Services sends availability letter to customer

**Step 6** >> Is a water or sewer extension necessary?

- No? Skip to step 12
- Yes? Continue with steps 7-11

**Step 7** >> Submit two sets of construction plans for approval by MWS

**Step 8** >> Pre-construction meeting is held after plans are approved

**Step 9** >> Apply to MWS Permits Office for construction permit

**Step 10** >> Construct public water and or sewer extensions (including all water and sewer service lines) to MWS specifications as directed by MWS inspector. Request MWS inspector to schedule run to curbs (water only) after completion of the water main

**Step 11** >> Deliver letter of equity transfer to MWS Permits Office

**Step 12** >> Submit three sets of site utility plans with cross connection specifications and application for water/sewer tap permits to MWS Permits Office

**Step 13** >> MWS reviews plans

**Step 14** >> Is an excavation permit required?

- No? Continue with step 15
- Yes? Obtain excavation permit from Department of Public Works and service/set meter permit from MWS, then continue with step 15

**Step 15** >> MWS issues permits after any tap fees due are paid

**Step 16** >> Purchase calibrated meter complete with properly connected MXU unit

**Step 17** >> Call the MWS Permits Office to schedule a crew to tap a public water or sewer main, having completed excavation of tap location prior to MWS crew arrival and having all materials available and ready to install

**Step 18** >> Request inspection of water and sewer taps

- *Water and sewer taps*>>Call MWS Permits Office to request inspection
- *Sewer Service Lines*>> Call Metro Codes to request inspection

**Step 19** >> Install water meter and water meter box

**Step 20** >> Call MWS Cross Connections for inspection of backflow prevention device.

**Process End**

Once all items are installed correctly and pass inspection and all remaining sewer capacity fees are paid, MWS Permits Office releases its portion of the use and occupancy building permit

# Process detail STEPS 1-4

## 1 >>
## Availability Request

All proposed commercial, institutional, and industrial developments within the Department's water or sewer service areas require a determination of the availability of water and/or sewer services.

Industrial customers, including food establishments, permanent car washes and other types of industrial customers, should contact the MWS Environmental Compliance group (862-4590) for requirements regarding excessive strength wastewater. For more detailed information for industrial users, please refer to Appendix 1.

Developers and property owners, or their representatives, should contact Development Services to determine water and sewer availability. Requests for water and sewer availability may be made via letter or using the Request for Water and Sewer Availability form (Appendix 2).

The following information must be included:

- Location of the property with tax map and parcel number, Council District
- Total acreage of the site
- Intended type of development or use of the property, along with total square footage of proposed buildings
- Projected wastewater flow in gallons per day (GPD)
- Subdivision development plan with finished floor elevations

Submit the request letter or form, development plan and application fee (see Fee Schedule Insert). Make check payable to Metro Water Services and mail to:

*Metro Water Services*
*Development Services*
*Attn: Availability Request*
*1600 2nd Ave. North*
*Nashville, TN 37208*

For assistance or additional information, please contact MWS Development Services at (615)862-4598 and follow instructions for a list of options.

## 2 >>
## Capacity Study

Upon receipt of a request for availability, Development Services will perform a capacity study based on the projected flows for the proposed development in gallons per day (GPD). Please see Appendix 3, for examples of projected flows for various developments.

## 3 >>
## Fees and Requirements

Upon completion of the capacity study, Development Services will send the customer a letter outlining capacity fees (See Fee Schedule insert) and any special conditions or requirements for providing water and/or sewer service to the development.

Sewer and water capacity fees are currently assessed per unit of flow. A unit of flow is equal to 350 gpd. (See Appendix 3 for a list of projected flow examples.) This study usually takes 15 working days to complete, depending on the size and complexity of the proposed development.

For assistance or additional information, please contact the MWS Development Services Office at (615)862-4598 and follow instructions for a list of options.

## 4 >>
## Capacity Fees

Bring a copy of the letter outlining capacity fee(s) and requirements to the MWS Permits Office and pay capacity fees.

Note: If construction of the proposed project has not begun within one year or required additional capacity fees has not been paid, a renewal of availability letter will be required. Capacity for the remainder of the development must be requested and purchased in order to reserve full capacity. The balance due must be paid prior to the issuance of a sewer connection permit.

## 5 >>
## Availability Letter

After payment is made, Development Services will send an availability letter to confirm the point of connection for the water and sanitary sewer, as well as:

- Water service elevations
- Existing water main size
- Capacity purchased

The statement of sewer and water availability is effective for one year from the date of the availability letter. If, after approval of sewer and water availability, construction has not begun within the established time period, a renewal of the availability statement will be required and all applicable departmental regulations and fees in force at that time will be imposed.

## 6 >>
## Water and Sewer Extensions

Is a water or sewer extension necessary?

- No? Skip to step 12
- Yes? Continue with steps 7-11

## 7 >>
## Construction Plans

If a proposed development requires the extension of a public water main or sewer line, the owner or developer shall retain the services of a State of Tennessee Professional Engineer to prepare construction plans.

Two sets of plans must be submitted to Development Services along with the appropriate fee (See Fee Schedule insert). The engineer's seal must be affixed to the proposed plan. Plans will be reviewed and returned with any necessary revisions.

A letter of credit will be required if a plat is not involved. The amount of the letter of credit will be determined by MWS Development Services.

For additional information, call MWS Development Services at (615)862-4598 and follow instructions for a list of options.

**Plan Submittal Requirements**

MWS has adopted the following general guidelines for all proposed water and sewer system extension plans. These guidelines are intended to aid in the preparation of construction plans and are not intended to supersede standards of the Tennessee State Health Department criteria. These guidelines should not be considered as all-inclusive requirements. Where circumstances warrant, additional information may be required. A Construction Plan Review Checklist is provided in Appendix 4.

**Schedule**

Plans must be submitted at least 30 days prior to the date on which action by MWS is requested. In the case of pump stations and other special circumstances, a longer review period may be required. Plans will not be accepted for review until the minimum capacity fees due have been paid.

**Initial Submittal**

The initial submittal shall consist of two sets of construction plans (paper) as well as electronic drawing files in *.dwg format. Electronic files shall be in AutoCAD Civil3D. Plans are to be prepared in or converted to model space, and no paper space drawings will be accepted. Electronic drawings should be adjusted horizontally and vertically to NAD 1983 Tennessee State Plane Coordinate System. Electronic drawings shall not contain special fonts or attributed data with the files. Standard AutoCAD fonts only are to be used in all cases.

When a project is to be built in phases, an overall plan of the entire project shall be submitted with the first phase. Future phases will require two sets of construction plans, electronic files and any changes to the overall plan. Should additional phases be added or if changes in the layout are required, an update to the overall drawing shall be submitted at the earliest date possible.

**Requirements for Connections to Public Mains**
**Master Water Plan**
All water distribution system design shall generally conform to the master water plan published by the department. In addition to department requirements, all state health department requirements in effect at the time of construction shall be followed. In case of conflict, the more stringent requirement shall apply to the proposed construction.

Online resources for additional information regarding state requirements:

**Sewer:** **www.state.tn.us/environment/gwp/**
**Water:** **www.state.tn.us/environment/dws/**

**Construction Plan Design Guidelines**
Plans will be reviewed and returned to the engineer with any necessary revisions indicated. Format and content of the plans shall be as follows:

- All plans shall be sealed by a Tennessee Licensed Professional Engineer
- The Engineer shall contact the Fire Marshall's office to determine the required fire flow for the development
- The Engineer shall contact the MWS Dispatch office at (615)862-4600 and follow instructions for a list of options to schedule a Two Hydrant Flow Test for the design of all water mains
- A cover sheet shall be made a part of all plans, and shall incorporate a location map on an approximate scale not less than 1"=1,000 feet, the name of the project, the council district, and the names, addresses and telephone numbers of the developer and the engineer
- Plans shall be drawn on standard 24" x 36" sheets. Note: No other size will be accepted
- Standard Plan Notes (Appendix 5) shall be shown on all plans submitted for review

Water line plans shall be shown on the overall plan. Indicate all conflicts with other utilities and label all sleeves, valves, fire hydrants, proposed service locations, etc.

- Plans shall be drawn on a 1"=50 feet scale and the profile shall be drawn on a scale of 1"=50 feet horizontal and 1"=5 feet or 1"=10 feet vertical. In areas where the topographic features are dense, detail sheets may be required on a scale of 1"=20 feet, with the clearance between the proposed main and existing structures clearly defined and noted
- All plans shall include a Benchmark based on USGS Datum and referenced to State Plane Coordinates
- Show all topographic features such as driveways, pavement, right-of-ways, property lines, storm drainage structures, etc.
- Show all property lines on the plans as well as map and parcel information for each parcel. Where possible, show lot numbers and/or street addresses
- All plans must show the locations of the existing utilities, including but not limited to gas lines, underground utility conduits, power and telephone poles, water mains, sanitary sewer lines, storm sewers, etc., with measurements and/or details of proposed clearance of same
- Any mains/services to be abandoned must be cut and capped at a point to be determined by MWS
- The direction of North should be clearly shown on all plans
- Careful attention to development sites and finished floor elevations is necessary to insure adequate water pressure. The engineer is responsible for providing accurate elevation data and determining finished floor elevations adequate for service
- All water mains shall have a minimum of 30 inches cover and located in paved areas
- All sewer mains shall have a minimum of 48" cover in paved areas
- All water meters installed must be equipped with electronic MXU device

- Public water mains on private property or in alleys are not normally approved
- When crossing under an interstate highway or railroad, a minimum size carrier pipe of 18 inches will be required (steel)
- A minimum of 10 feet of horizontal clearance between water mains and sanitary sewers shall be maintained whenever possible. When the 10 feet of separation is not possible, a minimum vertical separation of 18 inches shall be maintained. When the vertical separation cannot be maintained, the sewer must be built to water main specifications. Whenever sewers must cross under water mains, the sewer shall be laid at such an elevation that the top of the sewer is at least 18 inches below the bottom of the water main
- Water mains proposed to serve property where the serviceability is questionable shall indicate the service elevation, where this condition exists and must be clearly indicated on the plan and profile. On lots where the structure will be above the service elevation, 20 P.S.I. must be provided at the street with the lot served by a privately-owned and maintained booster pump
- A connection must be provided for each parcel or proposed lot. The tap location will be shown on the plans and an appropriately sized service line extension to the curb indicated, where applicable, for each parcel
- The following agencies may also require approval of the construction plans:

  **U.S. Army Corps of Engineers**

  **Metro Public Works**

  **Tennessee Valley Authority**

  **Tennessee Department of Transportation**

  **Railroads**

  **Private property owners**

  **TN Department of Environment and Conservation (required for stream crossing)**

- Easement agreements with owners of private property involved with the construction must be obtained and a right of entry notification executed before construction begins

**Recording Easements**

Easements for sanitary sewer extensions may be documented in two ways:

1. *Easement Document on Standard Metro Form*
   Submit to MWS Development Services and include map and parcel number, legal owner's name, instrument number or deed book and page number, legal description of the easement, and notarized signature of owner. MWS must approve and will record the easement at the developer's expense.
2. *Recorded with Subdivision Plat*
   A preliminary development plan of the subdivision must be provided at the time of plan submittal. This plat must clearly define the easement to be recorded. A licensed Professional Engineer or Registered Land Surveyor will stamp the final subdivision plat assuring that the easement is recorded, as shown on the preliminary plat.

**Redevelopment of Previously Developed Property**

Consistent with the latest MWS specification on service line ownership, all service line renewals, as a result of redevelopment, will be the responsibility of the developer for both water and sewer. Further, it shall be the responsibility of the developer to investigate, evaluate and determine if existing services are compliant with current standards or should be renewed. All costs associated with these determinations will be at the developer's expense. Should the redevelopment of property require the relocation or abandonment of existing easements that contain facilities owned and operated by MWS, the approval of the Metropolitan Planning Commission and subsequent passage of an approving ordinance by the Metro Council is required. Easement documentation on standard Metro forms is required to relocate an existing easement. These approvals must be completed prior to the demolition of the old easements and facilities. The relocation, inspection and acceptance of the relocated facilities should take place prior to the

legislation being passed. As significant time is required to complete this activity, developers should provide the required information to MWS Development Services as early as possible to avoid delays to the project.

Once reviewed and all review comments have been incorporated, submit 10 paper sets of plans for approval. Sealed, approved plans will be distributed to appropriate parties for their use.

**Easement Requirements**

*Public Facilities*

When constructing public sanitary sewer lines or water mains outside a public right of way, an easement must be provided and conveyed to the Metropolitan Government. Documentation of the easement should be submitted to MWS Development Services, which will approve and record it with the Register of Deeds for the county in which the property is located. Recording fees are the responsibility of the Developer.

| *General Requirements* | |
|---|---|
| Minimum width Permanent easement | 20' for all sizes |
| Minimum total width | 30' (20' permanent + 10' temporary) |

*Additional Requirements*
Sewers – 8" through 24"

| Depth | Easement Width |
|---|---|
| 0' to 5' | 30' (Minimum 20' Permanent + 10' temporary) |
| 5' to 7.5' | 35' (Minimum 20' Permanent + 15' temporary) |
| 7.5' to 10' | 40' (Minimum 20' Permanent + 20' temporary) |

Depending on specific site conditions, additional easements may be required. Please contact MWS Development Services at (615)862-4598 and follow instructions for a list of options.

For requirements for larger diameter lines, please contact MWS Development Services at (615)862-4598 and follow instructions for a list of options.

## 8 >>
## Pre-Construction Meeting

After all approvals and easements required are obtained, inspection fees paid and the application for public utility extension has been secured, a pre-construction meeting will be held. (See Fee Schedule insert) The project engineer, developer and contractor are required to attend the pre-construction meeting conducted by the MWS Senior Inspector and Project Inspector. The contractor shall provide sewer construction cut sheets in acceptable MWS format where applicable. The agenda for the meeting includes construction requirements and any questions on materials and any other specific concerns relating to the project.

All water and sewer related construction shall be inspected by MWS. The builder or developer shall reimburse MWS for the cost of inspection (See Fee Schedule).

## 9 >>
## Construction Permits

Upon conclusion of the pre-construction meeting, the permit for extension will be signed by the licensed municipal utility contractor or licensed master plumber involved at the Permits Office at the Metro Office Building. Construction may begin after the permit is signed.

**Temporary meters for water main construction**

If water service is required for construction of the new mains, a temporary meter may be issued for use on a public fire hydrant. Un-metered use of Metro fire hydrants and service lines is strictly prohibited. Please call the MWS Customer Service Center at (615)862-4600 and follow instructions for a list of options to request a temporary meter for use on a fire hydrant.

# Process detail STEPS 10-12

## 10 >>
## Water/Sewer Extension Construction

Construct public water and/or sewer extensions, including all water and sewer service connections, to MWS specifications as directed by MWS inspector. Request MWS inspector to schedule run to curbs (water only) after completion of the water main.

A licensed municipal utility contractor (for sewer or water) or licensed master plumber (for water and service lines) is required to perform all proposed public utility extension work. Contractors shall construct all water and/or sewer facilities according to MWS specifications, in conformance with applicable Metropolitan Code.

To request copies of the specifications, contact MWS Engineering Records at (615)862-4598 and follow instructions for a list of options.

All water and sewer related construction shall be inspected and accepted by MWS. MWS will prepare the deeds of conveyance and send them to the developer, who is required to return the signed deeds to MWS upon completion of construction.

## 11 >>
## Plats and Letters of Equity Transfer

Plats and letters of equity transfer should be delivered to the MWS Permits Office. Notice for reimbursement may be made in lieu of providing letters of equity transfer.

For additional information, contact the MWS Permits Office at (615)862-7225.

## 12 >>
## Site Utility Plans

Three sets of site utility plans/drawings shall be submitted to the MWS Permits Office for review. A complete set of building plans is not necessary and will not be accepted. The site utility plan should include the following:

- Application number
- Type and size of pipe to be used
- Meter and valve details including size and connection
- Existing water and sewer location and details of proposed connection
- Location and detail of all back flow prevention devices on all water connections
- Name, address and phone number of contact person
- Fire Marshal stamp/approval of private fire protection systems (see requirements next page)
- Coordinate with private fire protection system as appropriate
- Any mains/services to be abandoned must be cut and capped at a point to be determined by MWS

Availability of water and/or sewer is confirmed by the Permits Office through purchase of the minimum required capacity fees, outlined in Steps 1-5.

The Permits staff conducts an initial review of the plans for inclusion of the items listed above and reviews the plans with the Cross Connection section.

**Private Fire Protection**
Anyone may install a private fire protection system for their home or business. Private fire protection plans, including detailed drawing and calculations, must be approved by the Fire Marshall. Requirements include:

- A detailed utility plan must be prepared and submitted by a licensed sprinkler contractor to MWS for review
- The same plan must also be presented to the Fire Marshall for review and approval
- The plan shall provide information on the size of water connection needed to supply the system and number of sprinkler heads
- The drawing will indicate meter location and all necessary valving details as required by MWS specifications
- The drawing must indicate the type of materials and devices to be used
- The drawing shall include, but is not limited to: meter arrangements, backflow preventors, pressure reducing valves and approved meter boxes or vaults
- To expedite processing, please submit a site utility plan showing domestic service detail with your submittal
- In accordance with Metropolitan Code, MWS will conduct semi-annual testing of the private fire hydrants for readiness to serve. (See Fee Schedule insert for testing fee)

**Cross Connections Specifications**
Metro Water Services is commissioned through local, state and federal law to ensure a safe, dependable, potable public water supply. A cross connection program accomplishes this purpose through the inspection of connections and any required backflow protection devices for proper installation and operation. Applicable legislation and agencies include the EPA Safe Drinking Water Act (SDWA) and the Tennessee Department of Environment and Conservation's Chapter 1200-5-1 Public Water Systems.

The staff of MWS works with owners and designers of new water customer connections to assist in the determination of the most effective and economical means of protecting the public water supply. Once the owner submits their plans, MWS reviews the proposed type of device, its location (as close as possible to the meter and/or the point of service line connection to the public main) and its installation. Approved plans are stamped accordingly for the designated device and location. When installed, the owner is responsible for notifying MWS Cross Connections to schedule inspection and testing of the backflow device. Costs for testing of new devices are billed as a direct cost to the customer. Customer representative presence and assistance during testing minimizes time requirements and cost. The testing form used by MWS requires the signature of the owner's representative to ensure the owner's knowledge of device performance and any potential corrective action.

Please refer to Appendix 6 for further details regarding cross connections policies and procedures for existing devices and testing.

If the project is a tenant build-out, swimming pool, or addition or improvement to an existing building, a Cross Connection Permit will be required and can be obtained at the Metro Office Building.

To schedule inspection of a backflow device, call MWS Cross Connections at (615)862-4600 and follow instructions for a list of options.

## 13 >>
## Plans Approval

After the initial review, if necessary, plans will be presented to the MWS Plans Review/Variance Committee. This process assures the submitter that all MWS issues have been addressed prior to beginning construction and that the approval is supported by all areas of the department.

The committee review process, if required, will be completed within three to five working days. The contact person will be notified by the Permits staff of any changes required and if it is necessary to submit revised plans.

For most efficient review of plans, please submit to MWS Permits Office before 2:00 p.m. on Friday.

For assistance or additional information, please contact the following:

- Regarding review or approval of plans or permits and payment of capacity fees, call MWS Permits Office at (615)862-7225
- Regarding backflow inspection and cross connections call (615)862-4600 and follow instructions for a list of options

*Private Property*
The Metro Department of Codes Administration

has jurisdiction within private property. For more information, contact the Codes Department at (615)862-6500 or visit the department's Web site at www.nashville.gov/codes.

## 14 >>
## Excavation Permits

Is an excavation permit required?

- No? Continue with step 15
- Yes? Obtain excavation permit from Department of Public Works and continue with step 15

**Excavation Permits**

*Public Right-of-way*

If the connection is in a public right-of-way, an excavation permit will be required. Excavation permits must be obtained from the Metro Department of Public Works prior to excavating a tap location. The contractor performing the excavation must be licensed and bonded.

For more information, contact the Department of Public Works at (615)862-8782 or visit the department's Web site at www.nashville.gov/pw.

## 15 >>
## Set Meter/Service Permits and Tap Fees

No connection permit will be issued prior to the deeding of a water/sewer main extension to MWS unless the appropriate early release forms have been signed and notarized and are in the MWS Permits Office. Construction permit completion as well as fee payment will be verified.

By issuance of a permit, MWS will collect appropriate fees, schedule and perform physical tap and subsequently inspect extension of service line to property to be served. Permitee is responsible for securing any and all additional permits from other entities, including but not limited to, Metro Public Works and/or the Tennessee Department of Transportation for any related work including excavation, lane closures and required restoration.

**WATER**

Tap fees are due at the time of application for the water connection permit. For an example of the application for set meter/service permit, see Appendix 7. Tap fees are accounted by two methods:

A. **Tap fees for water mains built by privately funded extensions**
The Metropolitan Code defines developer's equity as the cost of construction of the public main extension. This amount of equity may be used to offset any required tap fees up to the cost of the public extension. The cost of each tap is deducted from the amount of the developer's equity existing for the water main extension or reimbursed to the developer. The developer may elect to transfer his equity.

B. **Tap fees for new connection to existing MWS water mains**
A development that does not need a water main extension will be required to pay a tap fee for the privilege of tapping a MWS water main according to the water tap fee schedule. Refer to the Fee Schedule insert or visit the MWS Web site for the most current fee schedule at www.nashville.gov/water/development.

**SEWER**

A detailed site utility plan must be reviewed and approved by the Permits Office for commercial sites. This plan is also typically required prior to the issuance of a building permit.

Tap fees are due at the time of application for the sewer connection permit. For an example of the set meter/service permit application, see Appendix 7. Tap fees are accounted by two methods.

**A. Tap fees for sewer mains built by privately funded extensions**
The Metropolitan Code defines developer's equity as the cost of construction of the public main extension. This cost may be used to offset any required tap fees up to the cost of the public extension. The cost of each tap is deducted from the amount of the developer's equity existing for the main extension or reimbursed to the developer. The developer may elect to transfer his equity.

B. **Tap fees for connection to existing MWS sewer mains**

A development that does not need a sewer line extension will owe a tap fee according to the sewer tap fee schedule. Refer to the Fee Schedule insert or visit the MWS Web site for the most current fees at www.nashville.gov/water/development. MWS will make every effort to confirm the size and material type of the sewer main to be tapped; however, the individual requesting the tap must confirm the size and pipe material on site under the observation of MWS. Because some mains have been lined, visual inspection of the exposed pipe is not sufficient to identify the site material, which may be concrete, clay or PVC. Special processes exist for connecting to lined mains; therefore, the site material must be confirmed by manhole inspection.

Once required fees are paid and sewer availability and locations are determined, a service may be connected to the public sewer line.

If an existing service is present, a developer may, with the permission of the Metro Department of Codes Administration, obtain a sewer connection permit. If work must be performed in the public right of way or a new connection to the public sewer is required, an excavation permit must be obtained. Please see Step 14 for additional information about excavation permits.

**Service applications/set meter permit**

A licensed master plumber must bring completed service application (Appendix 7) to the MWS Permits Office for set meter permit issuance. Service application information will be used to establish customer account for billing of water. Sewer billing will automatically be added to accounts 90 days later.

## 16 >>
## Meter Purchase

The contractor/plumber must purchase a meter(s) complete with connected MXU unit. Commercial meters shall be purchased from a distributor in accordance with approved MWS meter specifications.

For more information, please contact MWS Customer Service at (615)862-4600.

## 17 >>
## Taps

Call the MWS Permits Office to schedule a crew to tap a public water or sewer main, having completed excavation of tap location prior to MWS crew arrival and having all materials available and ready to install.

**PUBLIC MAINS**

Call the MWS Permits Office to schedule a MWS crew to tap a public water or sewer main.

Only Metro Water Services may tap a public water or sewer main. To schedule a new tap on the Metro system, contact the Permits Office at (615)862-7225. Taps are scheduled on a first come first serve basis. Our current process is to complete a tap no later than 10 working days from date of request. The site must be prepared in accordance with MWS current guidelines.

All tap, sleeve, valves and miscellaneous fittings required to make the tap shall be provided by the contractor. Service lines shall be installed to the boundary of the property if not previously installed as a run to curb.

## 18 >>
## Inspections

Request inspection of water/sewer taps and service line extensions inside easements or rights-of-way as follows:

**Water/Sewer Connections and Service Lines (inside easements or rights-of-way)**

In accordance with the Metropolitan Code, contact the MWS Permits Office at (615)862-7225 to request inspection of water and sewer taps.

**Service Lines (private property)**

Contact Metro Department of Codes at (615)862-6550 to request inspection. Metro Codes will notify MWS of approval or non-approval.

## 19 >>
## Meter and Meter Box Installation

For all installations, the property owner, contractor or licensed plumber shall furnish the meter and meter box. Both shall meet current MWS specifications and standard details. Service connections within meter box must be flared or compression. (No soldered joints or plastic connections will be accepted.) Meter and service line will be a minimum of 24" not to exceed 28" to top of finished grade.

MWS will automatically schedule initial field inspection 15 working days after permit is issued. Customer will be notified of failed inspection and a re-inspection will automatically be scheduled. All inspection and re-inspection costs will be billed to the customer's account.

Final inspection is automatically scheduled 90 days after initial inspection is approved. All final inspection and re-inspection costs will be billed to the customer's account as well.

In accordance with MWS policy, the Metro Department of Codes Administration shall have jurisdiction within private property.

Call the MWS Permits Office at (615)862-7225 with questions concerning inspection of the meter and meter box.

## 20 >>
## Cross Connections Inspection

Installation of a backflow prevention device(s) shall be in accordance with MWS latest specifications. To schedule inspection, call MWS Cross Connections at (615)862-4600 and follow instructions for a list of options. Costs for testing of new devices are billed as direct cost to the customer.

## Process End

The MWS portion of the Use and Occupancy Permit will be granted after final MWS inspection is complete.

# Appendix 1
# Information for Industrial Users

**15.60.210 Application—Requirements.**

All industrial users of the POTW prior to discharging non-domestic waste into the POTW shall apply for and obtain a wastewater discharge permit in the manner hereinafter set forth. All original applications shall be accompanied by a report containing the information specified in Section 15.60.220. All original applications shall also include a site plan, floor plan, mechanical and plumbing plans with sufficient detail to show all sewers and appurtenances in the user's premises by size, location and elevation; and the user shall submit to the director revised plans whenever alterations or additions to the user's premises affect said plans. Any currently connected user discharging waste other than domestic waste who has not heretofore filed such a report shall file the same with the director prior to twelve months from adoption of this chapter (October 7, 1980). All correspondence to Metro required by this chapter shall be addressed to the Industrial Compliance Section, Metro Department of Water and Sewerage Services, Central Wastewater Treatment Plant, 1600 Second Avenue, North, Nashville, Tennessee. (Prior code § 40-1-187, Part I (b))

**15.60.080 Prohibited pollutants.**

A. No person shall introduce into the publicly owned treatment works any of the following pollutants which, acting either alone or in conjunction with other substances present in the POTW, interfere with the operation of the POTW as follows:

1. Pollutants that create a fire or explosion hazard in the POTW, …
2. Pollutants which cause corrosive structural damage to the POTW, …
3. Solid or viscous pollutants in amounts which cause obstruction to the flow of the sewers, …
4. Any pollutant, including oxygen-demanding pollutants (BOD, etc.), released in a discharge of such volume or strength as to cause interference in the POTW;
5. Heat in amounts which will inhibit biological activity in the POTW resulting in interference…
6. Petroleum oil, non-biodegradable cutting oil or products of mineral oil origin …
7. Pollutants which result in the presence of toxic gases, vapors, or fumes within the POTW …
8. Any trucked or hauled pollutants except at discharge points designated by the POTW;…

**15.60.070 Wastewater Pollutants – Maximum Concentrations.**

No person or user shall discharge wastewater in excess of the pollutant concentrations identified in Metro Code of Laws Title § 15.60.070 for Local Limits (TABLE A), unless:

A. An exception has been granted the user under the provisions of Section 15.60.180; or

B. The wastewater discharge permit of the user provides, as a special permit condition, a higher interim concentration level in conjunction with a requirement that the user construct a pretreatment facility or institute changes in operation and maintenance procedures to reduce the concentration of pollutants to levels not exceeding the standards set forth in the table within a fixed period of time.

**15.60.125 Food Service Establishments- Control of Fats, Oils & Grease (FOG ) Discharges.**

A. All food service establishments are required to comply with Operational Division Policy No. 2004-01:
Metro Water Services Fats, Oils and Grease Management Policy

**Sewer Meters**

Sewer flow meters can only be used for commercial purposes and there are specific criteria that must be met before approval. MWS Industrial Compliance Division will process any requests for information or consideration. Installation of sewer flow meters may require an electronic device.

For additional information, please visit our website, www.nashville.gov/water and then click on Environmental Compliance.

# Appendix 2
# Request for Water and Sewer Availability Form

## Information for the Availability / Capacity Response Letter

Date _____

Name of Requestor _____

Company name (if applicable) _____

Address _____

City, State, Zip Code _____

Phone Number _____ Fax Number _____

E-Mail Address _____

## Property Information

Address of Property _____ Council District _____

Property Map _____ Parcel (s) _____

_____

Purpose of Construction / Intended Use / # of Lots _____

_____

_____

Square Footage of Proposed Building _____

Projected Wastewater Flow (in G.P.D.) _____

**Provide Site Utility Plan and/or Plat including finished floor elevations (attach with request).**

**ALL PLAT & PLANNED UNIT DEVELOPMENT SUBMITTALS TO METROPOLITAN PLANNING COMMISSION SHALL PROVIDE PROOF OF SEWER AVAILABILITY AS FOLLOWS:**

A. A "sewer capacity fee letter" which states that adequate sewer capacity to serve the proposed project can be purchased within a time period prescribed by Metro Water Services (90 days). Final plats and final PUD's require proof of payment of at least 30% of these capacity fees as outlined in this letter. Copy of receipt of capacity fee payment shall be included in submittal package; or

B. An "availability letter" issued by Metro Water Services confirming that sewer capacity is available to the proposed development.

Enclose a check for **$500.00 made payable to Metro Water Services** for this study.
Please note, the study will take approximately **15 working days to complete.**

Address all correspondence to: **Metro Water Services – Development Section**
**1600 Second Avenue North**
**Nashville, TN 37208**
**Phone Number (615)862-4598**

# Appendix 3
# Projected Flow Examples

| Discharge Facility | Design Units | Flow in GPD |
|---|---|---|
| Single family dwelling | Per dwelling | 350 |
| General office space | Per employee | 25 |
| Office/warehouse space | Per square foot | 0.1 |
| Schools w/showers & cafeteria | Per person | 16 |
| Schools w/out showers & cafeteria | Per person | 12 |
| Boarding schools / Dormitories | Per person | 75 |
| Motels at 65 gal/person (rooms only) | Per person | 130 |
| Trailer courts at 3 persons/trailer | Per trailer | 225 |
| Restaurants | Per seat | 40 |
| Service stations | Per fuel island | 1000 |
| Factories | Per person per 8-hour shift | 25 |
| Shopping centers (no food) of ultimate floor space | Per 1,000 square feet | 150 |
| Hospitals | Per bed | 200 |
| Nursing homes (add 75 gallons for laundry) | Per bed | 120 |
| Home for the aged | Per bed | 60 |
| Child care center | Per child and adult | 10 |
| Laundromats | Per machine | 250 |
| Swimming pools | Per swimmer | 10 |
| Theaters, auditorium type | Per seat | 5 |
| Retirement living | Per resident | 100 |
| Resort camps, day & night w/limited plumbing | Per campsite | 50 |
| Luxury camps with flush toilets | Per campsite | 100 |
| Churches (no kitchen) | Per seat | 3 |
| Churches (with kitchen | Per seat | 5 |
| Car wash – (stand alone) | Per bay | 500 |
| Barber/salons | Per station | 200 |
| | | |

# Appendix 4
# Construction Plan Review Checklist

*Please photocopy this form for repeated use.*

*This checklist may be helpful by determining if your plans have all the information required by MWS and contains a list of some of the documents and/or agency approvals that may be necessary prior to final approval by the department.*

**Project Name: _____Project No.: _____**

| | YES | NO |
|---|---|---|
| Plan size standard 24" x 36" (no other size accepted) | | |
| Availability requested/answered | | |
| Sewer capacity available | | |
| Water pressure/volume adequate including fire protection requirements | | |
| Easement(s) provided for adjacent property in the drainage area | | |
| Easement(s) obtained and indicated on plan | | |
| State highway permit | | |
| TVA permit | | |
| Railroad permit | | |
| Corps of Engineers permit | | |
| Streets names | | |
| Private streets/open space – indicated as public utility easements | | |
| Engineer's stamp on each plan sheet – signed and dated | | |
| Location map and Council District(s) | | |
| Map and parcel numbers | | |
| Site plan (requires entire property) | | |
| Sewer service tees indicated for each lot – no bends (from main to ROW) | | |
| Sewer sized for drainage area | | |
| Existing utilities shown | | |
| Sufficient topography shown | | |
| Adequate cover (for sewer, 4 ft in street/pavement, 30" private property) | | |
| Pipe material indicated | | |
| Future extension considered | | |
| Attached plan notes correct | | |
| Water mains located 5 ft inside curbs | | |
| Water meters located 25 ft from property corners | | |
| 2" blow off valves indicated at ends of water main | | |
| Bench mark, must be based on USGS datum – NAD 83 | | |
| Valving correct | | |
| Plat received/bond set | | |
| Proper scale – less than 600 ft – 1"=20' | | |
| Proper scale – more than 600 ft – 1"=50' | | |
| Drainage conflicts – storm pipes/creeks/etc. | | |
| Water main to end within pavement | | |
| No sewer lines or manholes located on property lines | | |
| Ductile iron pipe Class 52 used if depth exceeds 15 ft (sewer) or grade exceeds 19% | | |
| 10 foot separation between water and sewer lines | | |
| Fire hydrants spaced at 500 ft intervals, with 250 ft coverage | | |
| Sanitary sewers located in the center of road when possible | | |
| Provide as-builts to MWS Engineering Review Section (hard copy and digital formats) | | |
| Provide owner's name, address and phone on cover sheet of construction plans | | |
| | | |

# Appendix 5
# Standard Plan Notes

1. All water and sewer construction shall be in accordance with specifications and standard details of the Metro Water Services.

2. The contractor is responsible for reimbursing the Metro Water Services the cost of inspection.

3. The contractor is to provide and maintain the construction identification sign for private development approved.

4. After completion of the sanitary sewer, the developer is responsible for the televising of the lines prior to final acceptance. The videotaping must be coordinated with the Metro Water Services Inspection Section. All costs will be borne by the developer.

5. All connections to existing manholes shall be by coring and resilient connector method.

6. Reduced Pressure Backflow Prevention Devices (RPBP) or dual check valve will be required on all test and fill lines (jumper) needed for water main construction and must be approved by the Metro Water Services.

7. All water meters shall be a minimum of 24" not to exceed a maximum of 28" below finished grade.

8. Upon completion of construction of water and/or sewer, the engineer shall provide the department with a complete set of as-built plans on moist erasable mylars in reverse and in digital (*.dwg) format. Sewer plans shall be sealed by a licensed professional engineer or a registered land surveyor and shall include actual field angles between lines, all actual service lines and tee locations, the distance of the end of the service line to property corners and lines and/or station and offset from sewer centerline to end of service line, the depth to the top of the end of the service line, and shall reflect all alignment and grade changes. Water line plans shall be sealed by a licensed professional engineer or a registered land surveyor and shall include offset distance from the roadway centerline, or property line right of way, line depth, locations of hydrants, valves, reducers, tees and pressure reducing devices where applicable. All drawings must be completed and submitted prior to acceptance of the sewers or water mains into the public system and any connections being made.

9. Pressure regulating devices will be required on the customer side of the meter when pressures exceed 100 psi.

10. Pressure regulating devices will be required on the street side of the meter when pressures exceed 150 psi.

11. All water mains must be located within the paved area including all blow-off assemblies.

# Appendix 6
# Cross Connections Policies and Procedures: Existing Devices and Testing

Metro Water Services conducts annual and semi-annual (as needed) inspections of existing devices and notifies owners of performance or need of correction. Records of activities are maintained for five consecutive years for reference.

The Testing Form is a MWS-generated triplicate form that indicates all pertinent information relative to related meter information and backflow protection device testing results. This form is to be signed by the MWS inspector and property owner's representative upon completion of test or retest. One copy is retained by the owner and two are retained for MWS processing.

MWS conducts testing in accordance with its latest Tennessee Department of Environment and Conservation approved Cross Connection Control Plan. As needed, appointment letters are sent to customers indicating test dates and times generally up to two weeks prior to testing. Tests are scheduled during regular business hours unless the customer requests that testing be performed at other times. This is generally done when testing procedures would interfere with business operations.

The cost of all testing is billed to our customers as a direct cost with no profit to MWS or the Metropolitan Government. The cost of testing performed during requested times that are outside of regular business hours are higher due to Federally-mandated compensation rates (usually 1.5 times regular pay). All costs are kept to a minimum and are further reduced by the required presence during testing of an owner's representative. The presence of an owner's representative during testing enables a more timely and complete test with less disruption of service to the customer.

Further, testing forms used by MWS during the course of testing require the signature of an owner's representative to ensure the owner's knowledge of device performance and any required corrective action. Once a test is performed, a MWS inspector will indicate testing results and outcome (pass or fail) on the testing form. MWS testing is the only official test accepted for compliance. MWS testing protocol follows the industry standard (based on the University of Southern California) with the point of first failure in a multi-step test as the basis for device failure. If a device fails this test, it is recommended that the owner perform the necessary corrective work and perform a check of the device for compliance prior to the date of the MWS retest. This would ensure more timely compliance and potentially less expense to the owner. The owner retains a copy of the form for their records and MWS retains a copy of the form and updates its database. Upon failure, the MWS inspector will indicate the date of retest (currently 30 days). This allows the owner to contract with a plumber or contractor to perform necessary corrective work.

On the 30-day retest date, the MWS inspector will perform another test. Upon passing, the owner retains a copy of the form for their records and MWS retains a copy of the form and updates its database. Upon failure, the MWS inspector will indicate date of another retest (currently 5 days). This again allows the owner to contract with a plumber or contractor to perform necessary corrective work.

On the 5-day test date, the MWS inspector will perform another test. Upon passing, the owner retains a copy of the form for their records and MWS retains a copy of the form and updates its database. Upon failure, MWS will discontinue (cut off) service to the customer until the service connection is brought into compliance in accordance with local, state and federal guidelines. Costs of tests and retests are the responsibility of the owner.

American Water Works Association recommends frequency of Backflow Device Test to be annually.

Physical connection to fire hydrants, blow-offs, or other appurtenances of the public water supply is strictly prohibited without the written approval of MWS. Further, approved connections require permitting and MWS designated and/or supplied backflow and metering devices. Non-compliance with this policy shall result in citation and prosecution to the full extent of the law.

# Appendix 7
# Application for Set Meter/Service Permit

*PLEASE PHOTOCOPY THIS FORM FOR REPEATED USE*

METER WATER SERVICES – PERMITS SECTION
REQUEST FOR SET METER/SERVICE PERMITS
MWS PERMITS FAX: (615)862-7257

Date: _____

**TYPE OF REQUEST**:
SEWER APPROVAL _____
WATER APPROVAL _____
SET METER PERMIT _____

**PAYMENT TYPE**:
CHECK/CASH/CC: _____
TRANSFER SLIP _____
DEVELOPERS EQUITY _____

CODES BUILDING PERMIT NUMBER: _____

**SERVICE ADDRESS PROPERTY INFORMATION**:

Street address City Zip

Property description, full name of subdivision, i.e. name, phase, section, revision plus lot number

Map/Parcel number: _____

**Party responsible for bill**: _____

Address: _____

Contact person: _____ Phone #: _____

Contractor: _____

Contractor's address: _____

Contact person: _____ Phone #: _____

Contractor number (JC,PC, GC): _____

**Commercial: _____** **Residential: _____**

New _____ Existing _____ Domestic _____ Irrigation _____ Fire Service _____

Change Meter _____ Current Meter Number _____ Reading _____

Other (Meter Deduct, Cooling Tower, Blow Down, FS Flushing) _____

*Meters will be inspected 15 working days after permit is issued. Inspection fees will be charged for all meter inspections.

**Permits Staff use only:**
**Has a PRV or booster pump been recommended? Yes _____ No _____**

# Appendix 8
# Who To Call Guide

| | |
|---|---|
| **Metro Water Services** | |
| Central Laboratory Water Quality…… | 862-4591 |
| Communications Services……. | 862-4494 |
| Customer Service Center…….. | 862-4600 |
| *Service Changes* | |
| *Billing* | |
| *Customer Concerns* | |
| *IVR payments/inquiries* | |
| Cross Connections……. | 862-4563 |
| Emergency Services…….. | 862-4600 |
| *Leak in Street/Meter Box* | |
| *Sewer Overflow* | |
| Development Services/Engineering | |
| *Capacity Study*…… | 862-4598 |
| *Engineering Records*…… | 862-4598 |
| *Construction Plans Review*…… | 862-4598 |
| *Construction/Inspections*…… | 862-4555 |
| Environmental Compliance……... | 862-4590 |
| Permits/Customer Connections……. | 862-7225 |
| *Water/Sewer Tap Scheduling* | |
| *Tap Inspection* | |
| *Meter Box Inspection* | |
| Stormwater…… | 862-4600 |
| | |
| **Other Metropolitan Agencies** | |
| Fire Marshall……. | 862-5230 |
| Codes Department…… | 862-6500 |
| Metro Development and Housing Authority (MDHA)…… | 252-8400 |
| Public Works…… | 862-8700 |
| | |
| **Additional Numbers** | |
| BellSouth……... | 866-620-6000 |
| Comcast Cable…….. | 244-5990 |
| Nashville Gas…… | 734-0665 |
| NES……... | 736-6900 |
| Tennessee Department of Transportation……. | 741-3196 |
| Tennessee One Call……... | 366-1987 |
| Tennessee Valley Authority…….. | 232-6000 |

# Appendix 9
# Glossary

**Availability Letter** >> A letter issued by Metro Water Services after receiving developer payment of capacity fees that confirms water service elevations, water main size, and sewer availability/capacity.

**Backflow** >> The reversed flow of contaminated water or other liquids into the distribution system of a potable water supply.

**Backflow Prevention Device** >> Any device, method or construction used to prevent the backward flow of liquids into a potable distribution system.

**Bypass** >> Any arrangement of pipes, plumbing or hoses designed to divert the flow around an installed device through which the flow normally passes.

**Capacity Study** >> A fee charged to reserve capacity for proposed developments.

**Contractor** >> One who agrees to furnish materials and/or construction services for an agreed price.

**Cross Connection** >> Any arrangement of pipes, fittings or devices that connects a non-potable system to a potable water system.

**Developer** >> One who develops real estate for residential or commercial purposes.

**Developer's Equity** >> Equity for developer's construction of sewer/water main extension after such has been deeded to MWS with amount based on the contractor's certificates of cost showing the charges for the construction.

**Double Detector Check Valve (DDCV)** >> Backflow prevention device that may be installed on connections to the public water supply which allows flow in one direction only.

**Easement** >> A right, given to a person or agency, to make limited use of real property owned by someone else.

**Lay and Deed** >> Public water and/or sewer mains constructed and paid for by an individual or developer other than Metro Water Services. After construction, these are conveyed by deed to the Metropolitan Government to be owned and maintained.

**Metro Water Services** >> The Department of Water and Sewerage Services of the Metropolitan Government of Nashville and Davidson County.

**Licensed Utility Contractor** >> A contractor approved and licensed by the State of Tennessee.

**Reduced Pressure Backflow Preventor (RPBP)** >> Backflow prevention device that may be installed on pressurized connections to the public water supply. This device does not allow flow from a higher pressure service side system into the lower pressure public system. This is accomplished through the presence of spring-loaded check valves with a reduced pressure zone between the check valves to protect against backpressure and backsiphonage.

**Run-to-Curb** >> Water service installed from the public main to the property line or right-of-way.

**Right-of-Entry** >> Notification executed by each property owner affected by public water or sewer construction.

**Sewer Connection** >> Point of entry by new tap or connection to an existing lateral service.

**Letters of Transfer** >> Letters that must be submitted prior to issuance of permits that convey a developer's equity to the current property owner.

**Water/Sewer Tap Fees** >> A privilege fee paid to MWS prior to connection to MWS distribution system.

## The Mission of
## Metro Water Services

**To provide drinking water, wastewater treatment and stormwater management services to our community so we can enjoy a vital, safe and dependable water supply and protected environment.**

Requests for ADA accommodations
Should be directed to:
ADA Coordinator
Metro Water Services
1600 2nd Avenue North
Nashville, TN 37208-2206
(615)862-4862