

CHAPTER 4 - MINIMUM DESIGN AND CONSTRUCTION STANDARDS

4.1 GENERAL

4.1.1 BASIS

The standards set forth in this Chapter and the Palm Beach County Water Utilities Department (WUD) Minimum Design and Construction Standards are intended to provide a basis for design and construction. Applicable Federal, State and County laws and regulations should be considered concurrently with this text. This Chapter also discusses the environmental requirements for the Department to accept a transfer of utilities for ownership.

The requirements of this Chapter shall be applicable in all cases where the facilities being constructed or to be constructed will be owned and/or operated and maintained by the Department or when private facilities directly impacts the Department's owned facilities. All applicable utility facilities shall be transferred to Palm Beach County via a bill of sale with attachment to bill of sale subject to an unconditional warranty. The warranty shall cover all materials and labor for a minimum of one year starting on the date of the first permanent Service Activation. On phased projects, the warranty period for each phase shall begin on the date of the first permanent service activation for each respective phase. Lift station pumps and corrosion barrier systems are subject to a five-year (5) warranty as described in **Section 4.5 of this Chapter**.

Any cost associated with the repair, relocation or adjustment of Utility facilities prior to Service Activation and during the warranty period shall be the responsibility of the Developer/Property Owner. The Department may perform the necessary work and bill the Developer/Property Owner "At-Cost." The Developer/Property Owner may perform this work with prior approval and inspection of the Department.

4.1.2 PREPARATION AND APPROVAL OF PROJECT DOCUMENTS

It shall be the responsibility of the developer's engineer to obtain as-built information and prepare plans in accordance with the minimum standards shown herein. As-Built information obtained from record drawings shall be field verified prior to design and confirmed prior to construction. If required, a fully executed Development Agreement must be on file prior to plan approval. All construction plans shall be approved by the Department. The approval shall be valid for one year. This approval does not relieve the Developer of the responsibility of meeting the Department's minimum design and construction standards shown herein. No changes shall be made on approved plans without specific written Department concurrence. Revisions which directly or indirectly impact utility design (for example: changes in use from retail to restaurant, adding or deleting bays in buildings, site plan changes, etc.) void the plan approval. Revised plans are required for review and approval, subject to new plan review fees. No construction shall start prior to a preconstruction meeting being held at the Department.

4.1.3 UTILITY EASEMENT/UTILITY LOCATION GUIDELINES

The location and size of utility easements shall be determined using the following guidelines:

- (a) In new developments, it is the Developer's/property owner's responsibility to coordinate that the Department's Potable Water, Wastewater, and Reclaimed Water facilities shall be located a minimum of 10' horizontal from other public utilities or privately owned irrigation mains or private utility lines when installed parallel, unless previously approved by Department. A minimum of 10' horizontal separation is also required from structures, buildings, walls and their corresponding foundations along with fountains and fences, unless specifically approved by the Department in writing.

Any fence and wall supports, such as posts and columns, must be five (5) feet minimum from any Department owned Potable Water, Wastewater, and Reclaimed Water facilities unless previously approved by the Department in writing. TV cable, phone lines and irrigation lines shall cross Department's facilities with a minimum of twelve (12) inch vertical clearance. Gas mains and electric power cables shall cross Department's facilities with a minimum of eighteen (18) inch vertical clearance. When electric power cables are in a concrete encasement then a minimum of twelve (12) inch vertical clearance is required between the concrete encasement and Department facilities.

- b) Utility easements must be a minimum of twenty (20) feet wide in order to insure proper Department operations and maintenance of their facilities along with insuring that neither structures and/or landscape materials such as trees, shrubs, etc., are placed closer than ten (10) feet to a Department owned and maintained pipe or facility. The Department may consent to the location of trees closer than ten (10) feet to utility facilities if an approved root barrier system is installed a minimum distance of five (5) feet from Utility facilities by the Developer's landscaping contractor. In these cases, the Property Owner may be required to execute an Indemnity Agreement, in the form provided in **Chapter 3**. This agreement shall be recorded in the Public Records of Palm Beach County. Indemnity agreements may also be required for approved structural encroachments and the use of non-standard surface materials (i.e., pavers, stamped concrete, etc.) in utility easements and private right-of-ways.
- c) A ten (10) foot wide utility easement is also required parallel and adjacent to all road right-of-way lines and access tracts.
- d) Utility easements for water and wastewater service lines shall be a minimum of ten (10) feet wide and shall extend a minimum of five (5) feet beyond the Point of Service.
- e) Utility easements for fire hydrant lines shall extend a minimum of five (5) feet beyond hydrants.
- f) Wastewater pump station sites, and related access drives, that have not been specifically dedicated through the platting process are required to be dedicated by easement. The size, location, and configuration of the pump station site and exclusive easement shall be determined by the current WUD Minimum Design and Construction Standards and approved by the Department.
- g) Easements will be required for all public water supply well sites as defined in the TAPO District provision of the Palm Beach County Unified Land Development Code, as amended from time to time. The size, location, and configuration of well sites shall be approved by the Department. At least a sixty (60) foot by forty (40) foot easement for well and well head piping is required. Additional access and/or utility easements for well construction, maintenance, and off-site raw water main piping and other auxiliary utilities may be required. The Department reserves the right to control access to all or a portion of the well site through fencing or other applicable means.
- h) Private roads and access tracts shall require additional grant of easements or utility easements if such roads and tracts are not dedicated by platting. The easements shall be granted to the County prior to Service Initiation. If private roads and access tracts are dedicated by platting then the private roads and access tracts must be platted referencing that all tracts for private street purposes and driveway/parking tracts, are subject to an overlying non-exclusive easement dedicated in perpetuity to the public for utility installations.
- i) Prior to any Service Initiation, the property owner shall prepare and grant at no cost to County utility easements for proposed and existing facilities using the County's approved forms. For proposed utility facilities to be constructed on "third party" privately owned properties, recorded easements must be in place prior to design approval.

- j) A minimum 10' x 10' utility easement and applicable access easement shall be granted for Department owned monitoring wells.
- k) Utility easement sketches shall be prepared in State Plane Coordinate System and shall include Palm Beach County Property Control Number(s).
- l) A minimum 10' wide utility easement shall be granted for Department owned power and communication lines.

4.2 DESIGN AND PRE-CONSTRUCTION GUIDELINES

4.2.1 PROJECT SUBMITTAL REQUIREMENTS

Items as outlined within the Palm Beach County Water Utilities Minimum Design and Construction Standards must be submitted to the Department for project review and final project approval. The following items outlined in the Uniform Policies and Procedures Manual (UPAP) must also be submitted to the Department prior to project approval:

- a. Plan Review Fee including any franchise fees as outlined within the Uniform Policies and Procedures Manual; and
- b. Standard Development Agreement (SDA) and proof of Capacity Reservation as outlined within the UPAP; and
- c. Level 1 Environmental Site Assessment. If contamination is known to exist the contamination assessment report and remediation plan are also required.

4.2.2 PROJECT DESIGN REQUIREMENTS

All utility plans shall be prepared as outlined within the Palm Beach County Water Utilities Minimum Design and Construction Standards must be submitted to the Department for project review and final project approval.

4.2.3 PRE-CONSTRUCTION MEETING REQUIREMENTS

In order for a pre-construction meeting to be scheduled, the items as outlined within the Palm Beach County Water Utilities Minimum Design and Construction Standards must be submitted, reviewed and accepted by the Department. The following fees, as applicable must be submitted and accepted by the Department prior to pre-construction package being approved by the Department;

- (a) Inspection Fee including any franchise fees as outlined within the Uniform Policies and Procedures Manual, when projects are only associated with wastewater and/or fire lines the applicable Wastewater/Fire Line Service Initiation Fees must be paid in advance as outlined within the Uniform Policies and Procedures Manual (UPAP).
- (b) When projects are only associated with wastewater and/or firelines the applicable Wastewater/Fire Line Service Initiation Fees must be paid in advance as outlined within UPAP.

4.3 APPROVED MATERIALS AND EQUIPMENT LIST

4.3.1 APPLICABILITY

The materials and equipment set forth in the Approved Material and Equipment List (hereafter, the “List”) are approved for use within the PBCWUD Potable Water, Raw Water, Wastewater, and Reclaimed Water systems. Any party constructing improvements to the PBCWUD Potable Water, Raw Water, Wastewater, and Reclaimed Water systems, or which will become part of the PBCWUD Potable Water, Raw Water, Wastewater, and Reclaimed Water systems following construction, shall utilize materials and equipment set forth within the List. For County-initiated projects, the specifications of the project shall control the use of materials and equipment although the List should be utilized unless other materials and/or equipment are specified. The List shall be set forth in the PBCWUD Minimum Design Standards and shall be amended as required.

4.3.2 PRODUCT APPROVAL PROCESS

(a) Product Evaluation Committee

A Product Evaluation Committee (PEC) shall be formed to provide technical information to the Department Director regarding the inclusion or exclusion of products on the Approved Materials and Equipment List.

The goals of the PEC are to:

- Review and evaluate new and existing technologies and products for potential application in the rehabilitation, expansion, and construction of new facilities within the PBCWUD utility system.
- Encourage and require when applicable the standardization and interchangeability of all materials and equipment as listed for use on all PBCWUD Potable Water, Raw Water, Wastewater, and Reclaimed Water systems.
- Provide the Department Director with technically sound information regarding new and existing products for addition to the List as well as removing previously approved materials and equipment from the List.

The PEC shall consist of seven (7) PBCWUD staff members. The seven (7) members shall be appointed by the Department Director. At least one (1) member shall be from the Engineering Section, Construction Services Section, Utility Maintenance Section, Utility Plant Section, and Utility Operations Section with the two (2) remaining members being from any of the aforementioned sections. The PEC shall elect a vice-chairperson. A meeting quorum shall consist of the attendance of at least four (4) members.

(b) Procedures

Upon request, the product representative will be sent a New Product Review Application Package. This package will contain instructions on how to complete the application form and list the necessary documentation required to support the application. A total of five (5) copies of the completed application form, together with all the supporting documentation, shall be submitted to the PEC Chairperson.

The product representative will be notified, in writing, that the New Product Review Application has been received and whether it is administratively complete. If items are found to be incomplete, the application

will not be forwarded to the PEC until all sections of the application are complete. Applications that are not properly completed and are not returned to the PEC within sixty (60) days of the notice of an incomplete application shall be considered void, and the process must be started over.

An administratively complete application will be forwarded to the PEC for review at their next scheduled meeting. The PEC shall determine which staff members will be assigned to review that product.

The PEC may authorize the on-line testing of a product in the PBCWUD Potable Water, Raw Water, Wastewater, or Reclaimed Water System prior to inclusion of a product on the List. Products acquired for such on-line testing shall be provided free of charge by the vendor and/or manufacturer or if required be purchased in accordance with the current Palm Beach County Purchasing requirements. The PEC may require that in order for a product to be used on a trial basis, a performance bond be posted in the amount equal to all-inclusive costs associated with the product's removal and replacement.

The PEC shall present to the Department Director all pertinent information as required related to the product including performance, costs for labor and materials, comparison with currently approved products, references from other users, spare parts availability, standardization, financial stability of the manufacturer, etc.

The PEC may also review a previously approved products that are on the List for possible removal from the List and provide the Department Director with technically sound information for decision making purposes. Prior to an approved product being removed from the List, the PEC will notify the product representative of the Department's possible concerns with the product and will be offered an opportunity to meet with the PEC prior to the PEC recommending to the Department Director for the product removal from the List.

The Department Director shall then approve or disapprove of the inclusion/exclusion of a product on the List. The Department Director may also request additional information from the PEC before approving or disapproving of the inclusion/exclusion of a product. The date of inclusion/exclusion shall be the date of Department Director approval. Materials and equipment in categories not identified in the List shall be as specified by the Department. The Department may present any changes to the List to design and construction industry groups for review and comment.

Notwithstanding the PEC product approval procedures, the Department Director may unilaterally remove a product from the List if, in the opinion of the Department Director, the continued use of the product may threaten the health, safety, or welfare of the public or creates an undue financial and/or maintenance burden on the Department and/or unilaterally add a product to the List, if, in the opinion of the Department Director, inclusion of the product or service on the List is necessary to avoid a threat to the health, safety, or welfare of the public or is necessary to avoid an undue financial or maintenance burden on the Department. WUD originated projects with Special Provisions and/or Technical Specifications in the projects' contract documents may specify product/materials not included on the Approved Materials and Equipment List as required on a case by case basis, in which case the project contract documents shall apply.

The following PEC new product evaluation form shall be used for all materials and/or equipment be requested to be added to the List.

PALM BEACH COUNTY WATER UTILITIES DEPARTMENT

NEW PRODUCT REVIEW APPLICATION FORM

Application Number _____

Date Received _____

Submittal Complete _____

(Do not write above this line, for PBCWUD use only)

Instructions:

All information requested below must be submitted in its entirety for the product to be considered for evaluation by the Product Evaluation Committee (PEC). Provide all required information in electronic format preferably flash drive with a hard copy of the new product evaluation form. One (1) application is required for each product type.

No application will be reviewed by the Product Evaluation Committee until the submittal is complete. Failure to provide full disclosure will be grounds for product disapproval.

Submit Five (5) electronic copies of the application and all supporting data to the following:
Palm Beach County Water Utilities Department
Attn: PEC Committee Chairperson
8100 Forest Hill Blvd.
West Palm Beach, FL 33413

1. General Information

Product Name: _____
Product Type: _____
Product Use/Application: _____

Manufacturer's Name: _____
Individual Contact(s): _____
Mailing Address: _____
City, State, Zip Code: _____
Telephone: _____ Fax Number: _____ Email Address: _____
Representative's Company Name: _____
Individual Contact(s): _____
Mailing Address: _____
City, State, Zip Code: _____
Telephone: _____ Fax Number: _____ Email Address: _____

2. Provide the following data on a minimum of five (5) completed installations of your product: installation date, installation location, installation client along with their contact person including telephone(s) number and address, quantity, costs. The Department will contact these references concerning product performance.

3. Describe materials and processes used in the manufacture and installation of the product.
4. Are there any special conditions required for proper performance of the product?
5. The current PBCWUD Minimum Design Standards must be adequate for inclusion of the product. If not, then requested exception(s) to the Standards must accompany the product evaluation request.
6. Provide evidence of compliance with applicable industry standards, codes (UL, FM, NSF, AWWA, ASTM, FDOT, etc.).
7. Provide a copy of the standard product installation guide which outlines special equipment, training and inspection requirements.
8. Provide information related to patents, licenses and franchises associated with the product.
9. Provide information regarding installation costs and maintenance costs.
10. Provide information regarding to replacement parts costs and availability.
11. Provide location of nearest manufacturing facility, maintenance facility and spare parts warehouse.
12. Provide information if the product is interchangeable with any other similar products.
13. Provide related information, although not required, with the application that may assist the PEC in evaluating the product for use by PBCWUD.

This information may include brochures, videotapes, product samples, photographs etc. (One copy of videotapes and product samples is sufficient for PEC review).

14. Indicate if you wish to appear before the PEC to present your product which is not mandatory. Though if you wish to present your product the presentation is limited to fifteen (15) minutes with no exceptions.

4.4 POTABLE WATER, WASTEWATER AND RECLAIMED WATER SYSTEM MINIMUM DESIGN AND CONSTRUCTION STANDARDS

The Department Director is hereby authorized to approve the Potable Water, Wastewater, and Reclaimed Water System Minimum Design and Construction Standards (hereafter, the “Standards”), and PBCWUD shall compile the Standards in the PBCWUD Uniform Policies and Procedures Manual. The Standards are approved for use within the PBCWUD Potable Water, Wastewater, and Reclaimed Water systems. Any party constructing improvements to the PBCWUD Potable Water, Wastewater, and Reclaimed Water systems or which will become part of the PBCWUD Potable Water, Wastewater, and Reclaimed Water systems following construction, shall comply with the Standards. For County-initiated projects, the specifications of the project shall control the design and construction of the project although the Standards should be utilized unless specifically otherwise specified.

Notwithstanding anything to the contrary herein, the Department Director may authorize deviations from the Standards if, in the opinion of the Department Director, said deviations are necessary to protect the health, safety, or welfare of the public or to avoid an undue financial and/or maintenance burden on the Department.

4.5 INSPECTIONS AND AUTHORITY OF INSPECTORS

The Department Inspectors may inspect all construction and materials and may also inspect preparation, fabrication or manufacture of components, materials and supplies. The Inspector is not authorized to revoke, alter or waive any requirements of the approved plans or these specifications unless approved by the Department’s Director. The Inspector is authorized and expected to call to the attention of the Developer's Engineer or Contractor any failure of work or materials not conforming to the approved plans or specifications. The Inspector shall have the authority to reject materials or suspend the work until questions of issue can be referred to and decided upon by the Department Director or his designated representative. The Inspector shall in no case act as foreman or perform other duties for the Project Engineer and/or Contractor nor interfere with the management of the work. The advice which the Inspector may give shall in no way be construed as binding to the Department or releasing the Developer, his Engineer or Contractor from performing according to the intent of the plans, specifications and the Department's Minimum Design and Construction Standards.

Inspections will be scheduled for regular working hours only, except for nights when service interruptions are involved. Work will not be scheduled for weekends or holidays unless approved in advance by the Department. Overtime pay will apply for each inspection outside of regular working hours (minimum \$300 for up to three (3) hours and \$100 per estimated hour for longer inspection, paid in advance). The Department should be provided with at least two (2) full working days’ notice for scheduled inspections, and a minimum seven (7) days’ notice is required for construction with service interruptions. Inspectors will make routine passes on call to inspect such items as thrust blocks, material on site and clearances between conflicting lines. Scheduled inspections are required for jack and bores and pipe slippage through same, filling and flushing of potable water mains, pressure testing (private and utility owned mains), flow testing of hydrants if performed by contractor, application of coatings to manholes and wet wells, setting of wet wells, installation of lift station grounding rods, installation of base elbow anchors, prior to pouring any concrete, field welding/fusion of HDPE pipe and fittings, gravity sewer main lamping (private and utility owned), lift station start-ups (private and utility owned), and tie-ins to Department facilities. Density test results shall be submitted to the Construction Coordinator/Inspector prior to pressure testing or lamping. The contractor shall keep a copy of the current approved plans on the project site at all times. Approved work schedules are required prior to the beginning of construction for main shutdowns or for modifications to operating pipe systems.

It shall be the Developer's Engineer's responsibility to schedule inspections and their qualified representative shall be present when required by the Department. A scheduled inspection will be canceled if said representative is not present within fifteen (15) minutes of the previously agreed upon scheduled time. The Engineer's representative shall be present during the entire length of the inspection. The Developer's Engineer along with the Developer's Contractor shall pre-test pressure tests and lampings to minimize inspection failures. The Developer's Engineer or a licensed Surveyor shall prepare accurate record drawings and same shall be submitted to the Department for review and acceptance for lamping and/or pressure testing purposes before a lamping and/or pressure test is scheduled. In any case, approved record drawings must be submitted prior to request of a conditional final/final inspection or service being provided to any phase of a project.

4.6 AUTHORITY OF NON –RESIDENT PBCWUD INSPECTOR

The Department Director and/or authorized representative shall be permitted to enter upon any property without prior notification for the purposes of inspection, observation, measurement, sampling, testing, review and/or photocopying of records, or investigation as maybe necessary for enforcement of the permit, ordinance, or Standards. Entry shall be made during daylight or normal operating hours unless abnormal or emergency circumstances require otherwise.

4.7 ENVIRONMENTAL REQUIREMENTS

To protect the health and safety of our employees and to allow timely repair of underground utilities during an emergency, the following are the environmental requirements for transferring water services (drinking water, reclaimed water and wastewater) infrastructure to Palm Beach County Water Utilities Department (PBCWUD):

- 1) For all new development or redevelopment, a recent Phase I Environmental Site Assessment (Phase I ESA) will be provided to PBCWUD Plan Review;
- 2) If the soil or groundwater present at the site exceeds a Contamination Target Level (CTL) as listed by the Florida Department of Environmental Protection (FDEP) in Chapter 62-777, Florida Administrative Code (FAC) or other applicable law, rule, or regulation, submit the most recent Contamination Assessment Report and Remediation Plan to PBCWUD Plan Review that has been submitted to the FDEP;
- 3) The underground infrastructure must be located in soils where the concentration of known contaminates is below the Soil CTL (SCTL) as listed in Chapter 62-777, FAC or other applicable law, rule, or regulation. The soils must be below the SCTL from the ground surface to a depth of 1 foot below the infrastructure. The soils must be below the SCTL at a horizontal distance of 25 feet from the centerline of the pipe(s), and 5 feet from centerline of the laterals to service connection. The soils at lift stations must meet these requirements at all underground infrastructure including lift station walls, and from the surface to 2 feet below grade at the remaining area of the lift station easement; and
- 4) Should a Declaration of Restrictive Covenant or other document place dewatering restrictions on the site, said Restrictive Covenant or other document shall permit PBCWUD to dewater along the easement into the nearby storm water management system for a period of up to 21 days without permit, regulatory requirement, or other encumbrance.

The property owner is responsible for ensuring that the requirements in paragraphs three (3) and four (4) Above have been met. This shall be documented in a report sealed by a professional engineer or professional geologist and provided to the Department.

Alternate SCTLs (ASCTLs) may be developed by preparing a site specific risk assessment that addresses utility repair workers. The final risk assessment, which includes the utility repair worker, must also be provided to the FDEP and placed into their online file management system OCULUS.

PBCWUD will not be responsible for maintaining a soil cap. The Owner and future owners of the property must indemnify Palm Beach County for the movement of contaminated soil or groundwater because of infrastructure failure.