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DESIGN STANDARDS FOR WATER CONSERVATION

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SCHEDULE P

UTILITY STANDARDS AND SPECIFICATIONS AND DESIGN STANDARDS FOR WATER CONSERVATION

SECTION 1.0 UTILITY STANDARDS AND SPECIFICATIONS

Detailed standards and specifications for the design and construction of potable water, wastewater, and reclaimed water facilities that are to be constructed within, dedicated to, owned by, maintained by, or operated by the City shall be contained within the *Utilities Standards and Specifications Manual*, herein referred to as the "*Utilities Manual*".

The *Utilities Manual* shall be adopted and revised from time to time by administrative action of the City Manager, or designee, so as to provide the appropriate flexibility in its application in order for the City to be responsive to site specific considerations, changes in technology, and emerging concepts. The process for modifications to the manual shall be as follows:

- A. No less than 30-days prior to each time revisions to the Utilities Manual are to be finalized and made effective, the proposed revisions shall be posted on the City's website in an appropriate location that invite comments from the public.
- B. A public meeting with necessary City Staff will be held, as determined by the City Manager or his designee, for public comment within the 30-day window.
- C. The City Staff shall distribute a copy of the revisions to a predetermined list of outside industry experts to invite comments relative to the proposed modifications during the 30-day window.
- D. The City Staff shall post a letter of decision to the City's website summarizing the public comments received and identifying those comments that were or were not incorporated into the proposed modifications.
- E. Upon final adoption of a revision, the new Utilities Manual shall be published on the City's website.

SECTION 2.0 RECLAIMED WATER SYSTEM

In order to protect water resources and ensure that groundwater supplies are adequate to meet potable water demand, all new development shall comply with the following regulations:

A. Applicability.

In accordance with the most recent edition of the City's *Reclaimed Water and Cross Connection Control Policy*, as adopted by the City Manager, or designee and with the controlling provisions of State law, all new developments shall utilize the City's reclaimed water system for irrigation and other uses that do not require potable water. Reclaimed water facilities shall be independent of all potable water, raw water supply, wastewater, and storm water systems. Materials used in the installation and construction of reclaimed water systems shall be the same as that used for potable water facilities, with the exception of the color-coding, and shall be as specifically described in the City's *Utilities Manual*.

B. Evaluation.

For all new developments, the City shall evaluate the need of the development to incorporate the use of reclaimed water. The City shall review the take-back capacity of the proposed development to determine if connection to the reclaimed water system represents a benefit to the City. The developer's engineer shall place all take-back calculations, based on City approved wastewater flow quantities, on the development plans. Reclaimed water usage shall equal or exceed anticipated wastewater flows.

If a required irrigation system will have a negative impact on environmental systems or is inconsistent with the controlling provisions of law, the City may approve an alternative irrigation system consistent with the controlling provisions of law.

C. Mandatory Connection.

Upon completion of the evaluation, the City shall have the authority to require the development, including all individual lots and tracts therein, to connect to the reclaimed water system. A fully automatic reclaimed water irrigation system shall serve all landscaped and sodded areas of the development, including all adjacent rights-of-way and alleys. This requirement shall also apply to each lot and tract of a subdivided development. The developer shall be responsible for all costs necessary to provide onsite distribution and offsite transmission to the development. Connection to the City’s reclaim water system is mandatory under the following schedule. Distances shall be measured along public right-of-way’s, alleys, easements and railroad right-of ways. Connection distances and minimum line sizes are shown in Table 2.C below. The developer shall provide a master irrigation meter for town home and multi-family units.

Table 2.C - Reclaim Water Connection Distances

Type and Quantity of Development	Distance from Existing Reclaimed Water Line (Linear feet)	Min. Line Size (Inches)
1. Single family residences (individually owned)	100	2
2. Single-family residential developments		
2 -10 houses	400	2
11-35 houses	1,400	4
36-120 houses	2,000	6
121 or more houses	50; each additional house	8
3. Multi-family or Town home developments		
1-100 units	1,500	4
Greater than 100 units	50; each additional unit	6
4. Commercial or Industrial developments		
4,999 or less square feet	900	2
5,000 - 25,000 square feet	1,250	4
25,001 - 60,000 square feet	1,500	6
Greater than 60,000 square feet	200; each additional 100,000 square feet	8

D. Alternative Water Supply System.

1. If reclaimed water is available within the distances listed above, a new development shall be required to connect to the City's system. Developments that are not required to connect to an existing reclaimed water line and which choose not to connect shall be required to connect to an alternative water supply source for irrigation purposes.
2. The alternative water supply shall be a shallow or brackish well or storm water and all irrigation lines shall be capable of connecting to the City's reclaimed water system. The Developer shall be responsible for all costs necessary to provide an alternative water dual distribution and supply system. The City will not provide a separate potable irrigation meter for new or existing developments, including individual residences that are not required to connect to the City's reclaimed water system and cannot provide an alternative water source.
3. The City may, if it desires to accept ownership in its sole discretion, own such part or all of any alternative water dual distribution and supply system for residential subdivisions, and other developments of commercial, industrial or other types which system is located on the property owner’s side of the point of service delivery (the onsite irrigation system). As a general rule, the City will obtain ownership and maintenance responsibility only for lines and systems that are not located on private property although the City may obtain the right to spray alternative water on such properties and may, also, impose an obligation

upon a property owner to accept such delivery and use of alternative water. When the City determines that it desires to obtain any such rights, appropriate legal instruments of conveyance of such rights as may be desired by the City shall be provided by the developer to the City in a recordable form acceptable to the City and as approved by the City Attorney which shall require execution, in binding form, by the property owner. Also, as a general rule, the City shall not accept any maintenance obligation for any irrigation system located on private property. Each home shall have an individual reclaim/alternative irrigation meter consistent with City standards. All legal costs and costs of recordation shall be borne by the developer.

4. A customer may apply for a variance from the requirements of Subsections 1 through 3 of this Section. Such application shall be made and acted upon in accordance with the following provisions:
 - a. A potable water irrigation meter may only be set on a single lot or parcel.
 - b. The application shall be in a form established by the City.
 - c. The application shall be reviewed and acted upon by the Administrative Official.
 - d. The potable water irrigation meter must comply with all applicable land development regulations and City policies including, but not limited to: water budget plans, landscape techniques for conserving water, all pertinent utility specifications (i.e. cross connection controls, etc.), all pertinent conservation technology requirements (i.e. rain sensor, etc.), alternative water source feasibility calculation or analysis, all pertinent utility account requirements, all pertinent permits (including irrigation, electrical, etc.), all pertinent inspections (utility, building, etc.), and payment of all pertinent fees and charges.
 - e. A potable water irrigation meter size shall be restricted to 1-inch or smaller.
 - f. The Administrative Official shall manage and direct the implementation of the provisions of this Section; provided, however, that the City's operational departments shall provide timely and accurate information upon which to evaluate and base all decisions made by the Administrative Official. The Administrative Official may issue development orders as may be deemed appropriate to implement the provisions of this Schedule consistent with the provisions of Section 166.033, *Florida Statutes*.
5. The City Commission shall establish an application fee and other appropriate fees by resolution until which time or in the absence of which; however, fees shall be established by the City Manager, or designee. Appeals may be perfected in accordance with the provisions of this Code.

SECTION 3.0 WATER BUDGET PLANS

All developers shall submit to the City water budget plans prepared by a certified landscape architect or certified irrigation contractor that account for all water usage on a site. The plan must include, at a minimum, the water requirements for each landscaped or turfed area and plant location and selection. A copy of the irrigation and landscape plans shall be provided to the City and shall be binding upon the property owner. The developer shall familiarize the property owner with the proper operation of the irrigation system including the timer. Water management tools including, but not limited to, rain and soil sensors shall be incorporated into the irrigation system design.

A. Water Usage.

For residential developments, the water budget plan must demonstrate that indoor/outdoor potable usage does not exceed 300 gallons per day. Any additional outdoor usage must be addressed through an alternative water supplied irrigation. The plan must also include an assurance that the water budget plans are available to every prospective home buyer.

For commercial, industrial and multifamily developments, the water budget plan must demonstrate compliance with the City’s take-back reuse program for future growth and development. This program requires new developments that connect to the City’s wastewater system to ‘take-back’ the same amount of highly treated effluent as generated by the developments. Effluent from developments will receive tertiary treatment, which can be used for non-potable water purposes such as irrigation. Projected water usage by fixture and/or component must be provided.

B. General Requirements for Irrigation Plans.

All developments, whether on the City’s reclaimed water system or on an alternative water system, shall submit an irrigation plan on a form supplied by the City. The plan shall demonstrate compliance with the following:

1. An irrigation plan shall be required for each developed parcel, lot or tract and shall be approved by the City. Irrigation plans shall be reviewed in conjunction with engineering plan review or improvement plan review or, in the case of a single residential lot, prior to the issue of a building permit.
2. All new irrigation systems shall have a rain sensor device.
3. The developer shall construct reclaimed water distribution facilities to the proposed development and to each lot and tract within said development.
4. A fully automatic irrigation system, utilizing reclaimed water, or an alternative water system shall be installed on every lot, parcel or tract that is to be developed and shall provide total irrigation coverage for all landscaping, including hedges, trees, and grassed areas.
5. A minimum horizontal separation of 3 feet, (outside of pipe to outside of pipe) shall be maintained between reclaimed water facilities and potable water or wastewater mains.
6. All construction requirements and materials shall comply with the latest version of the *Utilities Manual*.

SECTION 4.0 LANDSCAPE TECHNIQUES FOR CONSERVING WATER

At least 20% of all landscape material obtained from off-site sources for use on any site shall have a soil moisture range of ‘dry’, as characterized in the list of plants from St. Johns River Water Management District’s publication: *Waterwise Florida Landscape* which document is incorporated herein by this reference thereto as if fully set forth herein verbatim. No more than 40% of all plant material shall have a high-water demand, characterized by ‘moist’ in *Waterwise Florida Landscape*.

Plants shall be grouped according to their water needs and soil conditions as set forth below. If plant placement is done correctly, once plants are established, little to no supplemental irrigation will be necessary:

A. Natural zone:

In this area, place plants that have adapted to the wet and dry extremes of Florida's climate so that regular watering (once plants are established) won't be necessary, except during prolonged drought.

B. Drought-tolerant zone:

In this area, place plants that can survive extended periods of time without rain or supplemental irrigation.

C. Oasis zone:

In this area, place plants that may require some watering.