

**20452030 COMPREHENSIVE PLAN**

**INFRASTRUCTURE  
ELEMENT**



**November 2010-FEBRUARY 2022**

***The Honorable Lenny Curry  
Mayor***

***William B. Killingsworth  
Director of Planning & Development***

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**JACKSONVILLE PLANNING AND DEVELOPMENT DEPARTMENT**  
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~~*CITY OF JACKSONVILLE*~~  
~~*The Honorable Lenny Curry, Mayor*~~

~~*CITY COUNCIL MEMBERS 2015-2019*~~

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## INTRODUCTION

~~Pursuant to the requirements of Chapter 163, Part II, Florida Statutes (F.S.) and Chapter 9J-5, Florida Administrative Code (FAC), the City of Jacksonville adopted the 2010 Comprehensive Plan, which included an Infrastructure Element, on September 1990. Section 163.3191, F.S. requires that the plan be updated periodically. Prior to the update of the plan, the local governments are required to prepare an Evaluation and Appraisal Report (EAR) on the adopted plan. The City of Jacksonville's first EAR was submitted to the Florida Department of Community Affairs (DCA) for review on September 1, 1997 and determined to be sufficient on October 31, 1997. The City of Jacksonville's second EAR was submitted to the DCA on October 1, 2008.~~

~~The first EAR for the 2010 Comprehensive Plan comprises the 1990-1995 period and the second EAR comprises the 2000-2007 period. The second EAR identifies major issues of concern to Jacksonville residents, reviews implementation of the plan since the last EAR, assesses achievements, successes and shortcomings of the Plan, identifies necessary changes and provides updated population projections.~~

~~The update of the Infrastructure Element, presented in the following pages, reflects changes recommended in the second EAR. New policies have been added as recommended in the EAR and mandated by updates to the Florida Statutes and Florida Administrative Code, including extending the planning time frame to 2030 and renaming the plan the 2030 Comprehensive Plan. Issue statements have been removed in an effort to streamline the element and to remove text not belonging in the Goals, Objectives and Policies Section of this document. Various editorial, organizational and other appropriate agency or reference name changes have been made as well.~~

~~In addition to the aforementioned revisions, the Background Report of this document has also been updated to support the amended Goals, Objectives and Policies.~~

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Infrastructure Element  
Revised November 2010*

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**20452030 COMPREHENSIVE PLAN**

**INFRASTRUCTURE  
ELEMENT**

**NATURAL GROUNDWATER  
AQUIFER RECHARGE  
SUB-ELEMENT**

**A**

**GOALS, OBJECTIVES  
AND POLICIES**

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**JACKSONVILLE PLANNING AND DEVELOPMENT DEPARTMENT**

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## GOALS, OBJECTIVES AND POLICIES

### GOAL 1

Manage the fresh groundwater resources in the City to assure an adequate quantity and quality of water for potable, commercial, industrial, utility and agricultural uses. Such City management shall be in compliance with all State, regional and federal rules, regulations, laws and mandates as applicable.

**Objective 1.1** The City shall quantify at least once every five years the existing uses and project the future uses of fresh groundwater resources.

#### **Policies 1.1.1**

The City's Environmental Quality Division (EQD) shall request from the St. Johns River Water Management District (SJRWMD) existing permitted users of water with approved future increases in fresh groundwater allocations for the duration of existing consumptive use permits, and the identification of the area location and producing zone of the hydrogeologic regime from which the withdrawals are made.

#### **1.1.2**

Reserved

#### **1.1.3-1.1.2**

JEA shall utilize the projected land uses, population, and other industry forecasts as applied to accepted unit water consumption rates to identify by area the projected demand within the City and to quantify potential future water requirements.

#### **1.1.4-1.1.3**

The Environmental Quality Division (EQD), and JEA shall annually review processes to coordinate City regulations regarding water use to ensure consistency with all applicable laws and regulations including Chapter 366 of the City of Jacksonville Municipal Code.

#### **1.1.5-1.1.4**

JEA shall maintain and update as needed, as a component of the City's water master plan, a Total Water Management Plan and an Annual Water Resource Master Plan, which ensures adequate available City wide resources and that water withdrawals comply with City standards.

#### **1.1.6**

~~The Air and Water Quality Division (EQD) shall coordinate with JEA in order to compare projected water demand with best current groundwater resource assessments to~~

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~~determine if adequate capacity is available and shall update this analysis every five (5) years.~~

**Objective 1.2** The City will rely on the St. Johns River Water Management District's (SJRWMD) most current water supply management and GIS coverages for hydrologic and geologic data.

**Policies 1.2.1**

The City shall utilize SJRWMD water supply management and GIS coverages for hydrologic and geologic data for groundwater resource management and planning purposes.

**1.2.2**

The EQD and the JEA shall follow the SJRWMD and the Total Water Management Plan delineation of site specific areas in the groundwater basin deemed prone to contamination or overdraft resulting from current or projected development, and establish the best management practices for implementation to mitigate or avoid resource degradation within two years of the SJRWMD determination.

**1.2.3**

The City shall continue to coordinate with the SJRWMD and utilize the best available resources and information including the latest update of the Floridian Aquifer Recharge GIS grid coverage to protect the functions of the natural groundwater aquifer recharge areas and to discourage urban sprawl.

**1.2.4**

~~Within one year of receipt, the EQD shall adopt the criteria and inventory developed by the SJRWMD and for the Water Resources Management Plan establishing minimum seasonal surface and groundwater levels within the City.~~

~~1.2.5~~ **1.2.4**

In accordance with the Regional Water Supply Plan and related policies under CCME Goal 6, EQD and JEA should select and implement water resource project options from the Regional Water Supply Plan.

~~1.2.6~~ **1.2.5**

JEA shall continue to study existing sources of wastewater discharge suitable for reuse, sources of potable water, conservation, and other integrated water management strategies to meet future demand, conserve water, and ~~remove~~ reduce nitrogen loading to the Lower St. Johns River.

**~~1.2.7~~ 1.2.6**

JEA shall continue to comply with the SJRWMD issued consumptive use permit ~~determine potential quantities of water available for consumptive use by the City to~~ assure that adequate resources are developed. The City shall utilize water conservation and water reuse practices to supplement and increase the effective life of its groundwater resources.

**~~1.2.8~~ 1.2.7**

Within two years of establishment by the SJRWMD and the Water Resources Management Plan of prime recharge areas for the Floridian Aquifer, the Planning and Development Department shall prepare maps of such designated areas showing the special zoning and land use consideration the City has established for such areas as designated by the latest update of the Floridian Aquifer Recharge GIS grid coverage.

**~~1.2.9~~ 1.2.8**

The City, in coordination with JEA, shall support the development of reuse water and other alternative supplies. EQD will give careful consideration of available reclaimed reuse water prior to issuance of irrigation well permits. Pursuant to requirements imposed by JEA's water supply consumptive use permits, the City shall require the use of reclaimed water where economically feasible pursuant to the City of Jacksonville's Chapter 752. In addition, the City shall require the following reuse practices, where economically feasible:

- A. Installation of reuse supply lines;
- B. Connection of new development or substantial redevelopment to a reuse system to supply uses that do not require potable water, unless the use of a lower quality source is otherwise authorized by SJRWMD;
- C. Installation of dual water distribution lines that will initially use the existing water source or stormwater until the reclaimed water source is available;
- D. Installation of meters for individual connections to the reclaimed water system; or
- E. Reuse water to be used for irrigation and other non-potable needs in public areas owned by the City.

**1.2.10**

Reserved

**~~1.2.11~~ 1.2.9**

The Environmental Quality Division (EQD) shall utilize the SJRWMD Water Supply Assessment North Florida Regional Water Supply Plan (NFRWSP), SJ2006 F.S. to establish a guideline water use budget for the City in light of existing and future needs in comparison with resource condition assessments.

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**1.2.12 1.2.10**

Upon identification by the SJRWMD, the City shall give high priority status to prime aquifer recharge areas identified by SJRWMD as of importance, by giving extra matrix ranking points to sites located in such areas in comparison with other sites being considered in local land acquisition programs and request the SJRWMD to do this or mandate this for areas outside the City.

**Objective 1.3 Maintain a City well head protection and regulation program.**

**Policies 1.3.1**

The City has adopted and implemented a wellhead protection program in accordance with Subsection 1428(a) of the Safe Drinking Water Act and in conjunction with the FDEP, SJRWMD, USGS and related agencies.

**1.3.2**

Reserved

**1.3.3 1.3.2**

JEA shall comply with applicable federal regulations for wellhead protection as amended or revised by Public Law 93-523 and assist the City by further developing guidelines for the delineation of wellhead protection areas.

**1.3.4 1.3.3**

The EQD shall develop and maintain a groundwater resource management program which is designed to protect the Floridian Aquifer such that the fresh water quality is not degraded beyond acceptable raw water characteristics for associated treatment facilities required to meet Chapter 366 City of Jacksonville Municipal Code, Chapter 17-550, F.A.C. as amended, Chapter 62, F.A.C. as amended, and/or the Federal Safe Drinking Water Act requirements.

**1.3.5 1.3.4**

The EQD shall continue the City well permitting program which requires permits for drilling and operation; and for capping, filling and plugging of abandoned well; and which requires valves on all free flowing wells which are required to be closed when not in use pursuant to Chapter 366 City of Jacksonville Municipal Code and EPB Rule-8.

**1.3.6 1.3.5**

The EQD and the JEA shall jointly protect the areas within the existing public supply wellhead protection areas pursuant to Chapter 366 City of Jacksonville Municipal Code and EPB Rule-8 by implementing:

- a) a program to inventory contaminated sites; and
- b) best management practices for contamination control; and best management practices to remove or limit existing pollution sources in the areas delineated.

**1.3.7 1.3.6**

The City of Jacksonville, ~~JEA~~, EQD and the JEA shall continue to work with the SJRWMD, Northeast Florida Regional Council (~~RC~~), and JPDD (including PUD and DRI processes) to ensure that water for non-potable uses be obtained from the lowest quality water source, in proximity to the demand, consistent with the intended use in compliance with the State Water Policy, F.A.C. Chapter 373, F.S. and Chapter 62-40, F.A.C.

**1.3.8 1.3.7**

The City shall incorporate freshwater demand reduction practices as appropriate within the City Building Code. New freshwater conservation methods or technologies shall be distributed to City water users through the water conservation education program of JEA.

**1.3.9 1.3.8**

JEA shall, continue to maintain, develop pricing, rates and/or charges to equitably recover costs and not provide volume discounts for customer class utilization in excess of the water need.

**1.3.10A 1.3.9**

The City shall ensure that its Ordinance Code implements the landscape irrigation provisions in SJRWMD Rule 40C-2.042(2), F.A.C. and does, in any other manner, regulate the consumptive use of water.

**1.3.10B 1.3.10**

The City shall cooperate with SJRWMD, in accordance with the SJRWMD Water Shortage Plan, during declared water shortage emergencies by conserving water resources and by assisting with enforcement of water shortage emergency declaration, orders, and plans.

**1.3.11**

The EQD shall develop a Groundwater Recharge Area Protection Program to achieve protection of the City's groundwater aquifer recharge areas as identified by the SJRWMD.

### **1.3.12**

The EQD shall establish legal descriptions and mapping for SJRWMD delineated prime aquifer recharge areas within two (2) years of SJRWMD determination of such areas in the City.

### **1.3.13**

The City shall continue to monitor the SJRWMD identified areas of critical concern considering regional groundwater flow for areas containing:

- a) aquifer recharge;
- b) aquifer contamination; and
- c) aquifer saltwater encroachment.

### **1.3.14**

The Planning and Development Department in conjunction with the EQD and the JEA, and the Public Works Department, shall develop land use, drainage, development criteria and other revisions to the Land Development Regulations in compliance with Section 163.3202(1), F.S., to protect the prime aquifer recharge areas and to a lesser extent the areas of critical concern which buffer the prime aquifer recharge areas within one (1) year of such designation.

### **1.3.15**

The EQD shall develop and implement an aquifer recharge plan for principal aquifers which protects and/or enhances the contributory water quality and maintains or increases the volume of freshwater available for recharge.

### **1.3.16**

Within 2 years after the determination by the SJRWMD of Floridian Aquifer Prime Recharge Areas the EQD shall submit revisions to City's Ordinance Code which protect and conserve the recharge areas of the Floridian Aquifer deemed to be sensitive within the City's jurisdiction as the City's primary source of potable water.

### **1.3.17**

The City will prohibit, in areas determined to be prime Floridian Aquifer Recharge Lands, industrial activities, ~~septic tank use in subdivisions~~, and commercial activities utilizing or producing hazardous materials as identified by the Florida Department of Environmental Protection and pursuant to Chapters 470 & 366 (Septic Ordinance/Fertilizer Ordinance) City of Jacksonville Municipal Code.

### **1.3.18**

The EQD shall develop and implement regulations for irrigational practices, fertilization practices, and pesticide/biocide application practices within sensitive prime aquifer recharge areas and areas of critical concern to minimize leaching of contaminants into the fresh groundwater regime pursuant to Chapter 366 City of Jacksonville Municipal Code.

### **1.3.19**

Reserved

### **1.3.19 1.3.20**

The City shall request the SJRWMD to investigate the feasibility and/or desirability of such practices as recharge enhancement through water detention, retention ponds, flow diversion, swale systems, effluent reuse and other techniques.

### **1.3.20 1.3.21**

The EQD shall implement a system of incentives and deterrents for the development of potential prime recharge areas, buffer areas, well head protection areas and non-protected areas.

### **1.3.21 1.3.22**

The EQD shall request the SJRWMD to study the potential of the development of salinity barriers with storm water and/or reclaimed water to effect a repressurization of the aquifers and increase the thickness of the freshwater lens.

## **GOAL 2**

**Manage and conserve potable water resources in the City through conservation and water reuse programs.**

**Objective 2.1 JEA shall, implement the water reuse ordinance (Chapter 752 733, City of Jacksonville Ordinance Code) in compliance with the City's JEA's consumptive use permit requirements issued by the SJRWMD.**

### **Policies 2.1.1**

The reuse ordinance includes the following:

1. Designated reuse zones as identified by the SJRWMD.
2. A requirement that all new development within reuse zones shall include a reclaimed water irrigation system constructed to applicable standards. The reuse ordinance defines the types and sizes of development which are appropriate to be served by a reclaimed water irrigation system.

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3. A definition of the users required to accept and utilize reclaimed water when made available by the City.
4. The registration and permitting of wells of all sizes located within the SJRWMD identified reuse zones.
5. The requirement of return flow wells for heat pump discharges.

### **2.1.2**

The City shall request that SJRWMD require all non-potable consumptive use permits holders in the City to accept and utilize reuse water when made available by the City.

**Objective 2.2 JEA shall continue and expand the City's water conservation and demand reduction program in order to reduce per capita consumption of potable water by up to 10% by 2013.**

### **Policies 2.2.1**

JEA shall continue to utilize potable water conservation strategies and techniques in the operation of the City's water facilities.

### **2.2.2**

The City shall require demand reduction fixtures and low water use building techniques.

### **2.2.3**

The approval of new water system connections shall be conditioned upon compliance with City Code to assure the use of water conservation practices and techniques.

### **2.2.4**

The City's landscape and tree protection regulations require low water use features and vegetation and water conserving irrigation practices.

### **2.2.5**

The City shall enact a water conservation ordinance.

### **2.2.6**

JEA in cooperation with other departments shall implement a water conservation public education program.

### **2.2.7**

The City shall enforce Chapter 752 City of Jacksonville Municipal Code relating to the reuse of reclaimed water program.

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**~~INFRASTRUCTURE ELEMENT  
NATURAL GROUNDWATER~~**

**~~AQUIFER RECHARGE  
SUB-ELEMENT~~**

**B**

**~~DEFINITIONS~~**

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**~~JACKSONVILLE PLANNING AND DEVELOPMENT DEPARTMENT~~**

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## DEFINITIONS

~~Artesian Well – a well that penetrates a confined aquifer in which the water level in that veil rises above the top of that aquifer.~~

~~Conservation – actions which result in a reduction of water demand or protection or preservation of the quality or quantity of the water supply source, classified as either user conservation or resource conservation.~~

~~Demand Conservation – water conservation activities such as; pricing structures, public education, water reuse systems, water saving fixtures, or other regulation.~~

~~Development – a material change in the use or character of the land including, but not limited to, the placement of any structure or site improvements on the land.~~

~~Domestic Consumption – water used in direct human contact for drinking, cooking, bathing, and cleaning purposes inside a residential or commercial establishment.~~

~~EPB – City of Jacksonville Environmental Protection Board.~~

~~EPA – United States Environmental Protection Agency.~~

~~EQD – Environmental Quality Division~~

~~F.A.C. – Florida Administrative Code.~~

~~FDEP – Florida Department of Environmental Protection.~~

~~FGS – Florida Geological Survey~~

~~Floridan Aquifer – those earth materials first penetrated at varying depths greater than two hundred fifty feet (76.3m) below the ground surface in the City and that compose one or more of the following stratigraphic formations: limestone of the Ocala Group, Avon Park Limestone, Lake City Limestone or Oldsmar Limestone. The approximate depth to which wells first penetrate the Floridan Aquifers is shown in the 1978 Water Resources Investigation report, 77-144, prepared by the United States Geological Survey, or as revised.~~

~~Free Flowing Wells – those wells which are uncapped or leaking and which are releasing groundwater under pressure from an aquifer to flow freely to grade level.~~

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~~F.S. – Florida Statutes.~~

~~FSDWA – Florida Safe Drinking Water Act~~

~~Groundwater – water beneath the surface of the ground, whether or not flowing through known definite channels.~~

~~Groundwater Resource Management – all actions which are necessary to accomplish the objectives of the City's Ordinance Code associated with protection of Jacksonville's groundwater resources.~~

~~GWBRAI – Ground Water Basin Resource Availability Inventory project directed by the St. Johns River Water Management District.~~

~~High Recharge Areas – Areas with recharge rates of 12 or more inches per year.~~

~~JEA – Water, Sewer, and Electric Utility serving community in and around Duval County; previously known as the Jacksonville Electric Authority.~~

~~Monitoring Well – an artificial excavation having a permanent casing which is only used for locating and sampling groundwater quality and/or quantity.~~

~~Natural Drainage Features – the naturally occurring features of an area which accommodate the flow of significant amounts of stormwater, such as streams, rivers, lakes, sloughs, floodplains and wetlands.~~

~~Natural Drainage Flow – the pattern of surface and storm water drainage through or from a particular site before the construction or installation of improvements or prior to regrading.~~

~~Non-Potable water – water which is not approved as meeting health standards applicable to potable water or which is generally undesirable for domestic use.~~

~~Piezometer Well – an artificial excavation not having a permanent casing which is only used on a temporary basis, maximum three months, to locate groundwater levels or identify areas of groundwater contamination.~~



~~Potable Water – water used for drinking, culinary purposes, personal hygiene or other domestic purposes which is approved as meeting the standards contained in F.A.C. Rules 100-4, 17-550, or 17-555, F.A.C.~~

~~Potable Water Wellfield – The site of one or more water wells which supply potable water for human consumption to a water system which serves at least 15 service connections used by yard-round residents or regularly serves at least 25 year-round residents.~~

~~Prime Recharge Area – An area so designated by the appropriate water management district governing board. Recommended prime ground water recharge areas to the Floridian aquifer are areas that contribute the greatest volume of water per unit area to the Floridian aquifer in a ground water basin. Prime recharge areas are those areas mapped as high recharge areas. High recharge and prime recharge areas shall receive a level of protection commensurate with their significance to natural systems or their status as current or future sources of potable water.~~

~~Public Water Supply System – any water system meeting the requirements of either F.A.C. Rules 17-550, 17-555, or 17-560, F.A.C., for "community or non-community" or F.A.C. Rule 100-4, for "other public" categories. Such systems serve more than four private residences, or commercial facilities serving the public at least sixty (60) days per year.~~

~~Reasonable Beneficial Use – the use of water in accordance with Chapter 373, F.S. and standards promulgated by the SJRWMD.~~

~~Recharge Area – location where the replenishment of groundwater in an aquifer occurs, primarily as a result of rainfall infiltration and secondarily by the movement of water from adjacent aquifers or surface water bodies. Such areas have been classified as having generally no recharge, low to moderate recharge, high recharge, or prime recharge (also see Prime Recharge).~~

~~RESD – Regulatory and Environmental Services Department.~~

~~Resource Conservation – actions necessary to protect the City's water supply sources such as well head protection, identification of and protection from groundwater contamination or degradation by such as salt water intrusion, developing alternative water supply sources and encouraging their use.~~

~~Shall – the word "shall" is used to indicate a mandatory action.~~

~~Should – the word "should" is used to indicate an action that is strongly advised.~~

~~SJRWMD – St. Johns River Water Management District.~~

~~Supply Conservation – water conservation activities such as water metering, leak detection and repair, utility water audits, pressure reduction and wellfield management.~~

~~Tent Well – wells used for monitoring, sampling, location or improving groundwater quality and resolving groundwater pollution problems (also see Monitor Well).~~

~~User Conservation – functions generally recognized as the responsibility of the water user or water supplier. These functions are classified as either supply conservation or demand conservation.~~

~~USGS – United States Geological Survey.~~

~~Waste – the flow of water as defined in Section 373.203(4), F.S., and as further defined by the Board in a manner consistent with Section 373.203(4), F.S.~~

~~Water Source Heat Pump – includes single or reverse cycle mechanical devices for heating or cooling which require the use of water as a medium for heat transfer.~~

~~Well – any artificial excavation on submerged or unsubmerged land, excepting wells covered by Chapter 377, F.S., pertaining to oil and gas well, having a diameter of not more than 120 inches (304.3 cm) the intended use of which is for the location, acquisition, development or artificial recharge of water.~~

~~Well Head Protection Area – An area consisting of a 750-foot radial setback distance around a Public Potable Water well or Wellfield where the most stringent measures are provided to protect the ground water source for a potable water well and includes the surface and subsurface area surrounding the well.~~

**2030-2045 COMPREHENSIVE PLAN**

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**INFRASTRUCTURE ELEMENT**

**DRAINAGE  
SUB-ELEMENT**

**A**

**GOALS, OBJECTIVES  
AND POLICIES**

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**Exhibit 8  
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## GOALS, OBJECTIVES, AND POLICIES

### GOAL 1

The Public Works Department shall provide a stormwater management system which will increase the efficiency of the existing systems, create regional facilities where appropriate and improve water quality by reducing non-point sources of pollution.

**Objective 1.1** The City shall develop a Geographic Information System (GIS) with the capability to include data regarding the existing drainage system, land use, soil types, and topographic information.

#### Policies 1.1.1

The City shall maintain an inventory of all drainage systems in conjunction with the National Pollutant Discharge Elimination System (NPDES).

#### 1.1.2

The Public Works Department shall prepare base maps showing the existing infrastructure and natural drainage system in conjunction with the National Pollutant Discharge Elimination System (NPDES).

#### 1.1.3

Upon implementation of the GIS, the Public Works Department shall require the submittal of "as-built" data in a format compatible with the GIS to facilitate the up-date of the system.

**Objective 1.2** The City has completed a Master Stormwater Management Plan (MSMP). The information in the plan will be utilized in the development of operational criteria for the drainage system. Through this process, the Public Works Department will analyze its existing stormwater management system and correct existing deficiencies by coordinating the increase in the capacity of the system, thereby encouraging infill development in the Urban Area. With completion of each phase of the MSMP, the City shall amend the ~~2030~~ Comprehensive Plan to include changes recommended in design standards and revise the Capital Improvements Element as necessary.

#### Policies 1.2.1

The City shall revise the ~~2030~~ Comprehensive Plan to implement the results of the MSMP.

#### 1.2.2

Based on the recommendations in the MSMP, the City shall reassess projects for stormwater improvements in the Capital Improvements Element and annually revise the Five Year Capital Improvement Program accordingly.

### 1.2.3

The Subdivision Standards and Policy Advisory Committee shall revise the Land Development Procedures Manual to incorporate special basin criteria, recommended as part of the MSMP.

### 1.2.4

The City shall establish and continue to utilize the three Levels of Service (LOS) standards for drainage facilities which are provided in Goal 1 of the Capital Improvements Element. ~~These Levels of Service (LOS) standards define the depth of flooding allowed within and adjacent to the street rights of way. The design storm, which shall be used, will be a 5-year design storm.~~

~~LOS A — for new systems: Hydraulic gradeline at or below inlet grate; lowest roadway grade elevation at or above the 25 year design high water elevation for the stormwater management facility.~~

~~LOS B — for retrofitted new systems: Flooding of streets and some yard areas but contained within the right-of-way.~~

~~LOS C — for existing systems: Flooding up to the finished floor elevation of structures.~~

Where:

~~Service Level A is the most advanced level of stormwater protection available and comprises the complete removal of stormwater from street surfaces during the design rainfall event. All stormwater is captured by the collection system and overland flow and street storage conditions are eliminated. Significant ponding does not occur and confined areas are drained without surcharge. This level of service obviates the health and safety concerns associated with minor flooding, eliminates transportation hazards and prevents vehicular flooding. The hydraulic grade line is generally at or below the inlet throat.~~

~~Service Level B is the next level of protection and comprises the prevention of significant levels of yard flooding but includes some flooding of street and yard areas. The sources of Level B flooding are overland flow of off-site stormwaters, surcharging of the stormwater collection system, or the ponding of confined waters. The impacts on residents in Level B service areas are primarily nuisance flooding problems related to temporary impassability of streets. The flooding of major roadways is limited to the outer lane areas but which does not prevent travel. There may be flooding of a limited duration along minor streets and flooding of yards is generally limited to 50% of the grassed area between street and structure. There is no flooding of structures. The hydraulic grade line is at or slightly above the inlet throat.~~

~~Service Level C is the minimum level of stormwater protection provided and comprises the prevention of flooding in structures or appurtenant components of residential, commercial or institutional structures. Sources of flooding in Level C situations are via overland flow, surcharging of the stormwater collection system, or ponding of confined waters. Flooding of major roadways precludes the use of outer traffic lanes while travel in inner lanes is possible but difficult. Flooding of minor streets precludes travel and flooding of front yards up to the front face of the structure, but no structure flooding is indicated based on a five year storm frequency. The hydraulic grade line is significantly above the inlet throat.~~

### **1.2.5**

The Public Works Department shall ensure that developments will not affect the existing drainage facilities by requiring pre/post development discharge restrictions or providing an analysis on the existing drainage facility to prove no adverse impacts.

**Objective 1.3 Stormwater runoff from new development shall be treated in accordance with all applicable federal, State, regional and local standards. Stormwater from existing systems, which are retrofitted, shall be treated to the best available technology.**

#### **Policies 1.3.1**

The City shall require stormwater treatment on all new developments. Treatment volume shall be based on Chapter 17.40.420, *Florida Administrative Code (F.A.C)* or current St. Johns River Water Management District (SJRWMD) rules. The City reserves its right to participate in all SJRWMD permitting, administrative and judicial appellate procedures; however, a SJRWMD issued permit, which is administratively and judicially final, will be accepted as demonstrating compliance with SJRWMD rules.

#### **1.3.2**

In existing areas stormwater retrofitting, is proposed in the MSMP, and in which traditional treatment methods are impractical, other "best management practices" shall continue to be utilized.

#### **1.3.3**

The City shall utilize construction standards for stormwater treatment facilities contained in the Land Development Procedures Manual.

#### **1.3.4**

The City shall continue to require annual reports from the maintenance entities of all stormwater treatment facilities to ensure their proper operation.

**Objective 1.4 The City shall maximize the efficiency of operations of its stormwater facilities through scheduled and proper maintenance.**

### **Policies 1.4.1**

The City shall maintain a method for financing the operation and management of stormwater facilities. The funding shall be used to reduce existing flooding, improve water quality, and preserve or restore the values of the natural systems.

### **1.4.2**

The funding established pursuant to Policy 1.4.1 shall be used in part to ensure continued proper operation, maintenance, and functioning of stormwater facilities.

**Objective 1.5** The City shall continue to protect existing streams, rivers, and floodways through its development review process to ensure that no harm is done to the natural drainage system.

### **Policies 1.5.1**

The ~~Public Works Department~~ Development Services Division of the ~~Planning and Development Department~~ shall continue to review each proposed new development and determine if it may do harm to the natural drainage system.

### **1.5.2**

The ~~Public Works Department~~ Development Services Division of the ~~Planning and Development Department~~ shall continue to deny permits to any new development that fills a flood plain without compensation for the fill by excavating an equal volume or improvement to the drainage system or a combination of both.

**Objective 1.6** The City shall coordinate extension of its drainage facilities through new developments as part of its current permitting process.

### **Policies 1.6.1**

The ~~Public Works Department~~ Development Services Division of the ~~Planning and Development Department~~ shall require that proposed development drainage facilities are adequate in capacity to serve the proposed development along with any contributing off-site drainage.

### **1.6.2**

The ~~Public Works Department~~ Development Services Division of the ~~Planning and Development Department~~ shall continue to require that the drainage systems downstream of a proposed development have the capacity or hydraulic gradient to accept the proposed development's discharge, or that the proposed development improves the downstream drainage system.

**2045 COMPREHENSIVE PLAN**

**~~INFRASTRUCTURE  
ELEMENT~~**

**~~DRAINAGE  
SUB-ELEMENT~~**

**B**

**~~DEFINITIONS~~**

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**JACKSONVILLE PLANNING AND DEVELOPMENT DEPARTMENT**

*City of Jacksonville ~~2045-2030~~ Comprehensive Plan  
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## DEFINITIONS

~~Attenuation – To limit stormwater flow to reduce downstream impacts. (See also Detention).~~

~~Best Management Practices (BMPs) – Means whereby pollutant loading to downstream elements are reduced. BMPs can be either structural (see Stormwater Treatment Facility) or non-structural practices. Non-structural practices include but are not limited to inlet cleaning, street sweeping, and detention pond maintenance.~~

~~Capacity Analysis – A determination of a stormwater management facility's ability to provide a given level of service.~~

~~Capital Improvement Plan or Program – A projected schedule of capital projects based on estimated costs and expected funding levels.~~

~~Conveyance – Transport of stormwater via pipe and/or open channel system(s).~~

~~Coastal High Hazard Areas – The Coastal High Hazard Area (CHHA) is the area below the elevation of the Category 1 storm surge line as established by the Sea, Lake, and Overland Surges from Hurricanes (SLOSH) computerized storm surge model as established by the most current Northeast Florida Hurricane Evacuation Study. It is shown on Map C-18. A property shall be deemed to be within the CHHA as depicted on Map C-18 unless site specific, reliable data and analysis demonstrates otherwise.~~

~~Design Capacity – The amount of flow a storm sewer system is designed to manage, usually expressed in cubic feet per second for flow and cubic feet or acre feet for storage.~~

~~Detailed Basin Plan or Study – An in-depth investigation into the drainage needs of a particular drainage basin. Usually limited to large basins where the expected improvements will entail large expenditures and phasing.~~

~~Detention or To Detain – To temporarily store stormwater in such a way as to limit its flow, either to limit downstream impacts or provide treatment for water quality.~~

~~Detention Basin – A stormwater facility designed to capture and limit stormwater flow (by releasing it at a reduced rate) in order to reduce downstream impacts or to treat stormwater to improve its quality.~~

~~Ditch – An open stormwater conveyance facility with side slopes steeper than three units horizontally to one unit vertically.~~

~~Drainage Basin – Any land area from which the runoff collects at a common point or receiving water.~~

~~Exfiltration Trench – A subsurface facility designed to convey stormwater into the underlying soil, providing treatment through filtration and volume reduction.~~

~~Flood-Prone Area – Areas which flood which may not be identified on the FEMA FIRM maps.~~

~~Impervious – Land surfaces which do not allow (or minimally allow) the penetration of water. An increase in the amount of impervious area will increase the rate and volume of runoff from a given drainage basin.~~

~~Inlet – A structure which allows stormwater to flow into a conveyance system.~~

~~Level of Service (LOS) – An indicator of the extent of or degree of service provided by, or proposed to be provided by, a facility based on and related to the operational characteristic of the facility. The LOS shall indicate the capacity per unit of demand for each facility.~~

~~Master Stormwater Management Plan (MSMP) – A comprehensive plan detailing water quantity and quality issues on the primary drainage system.~~

~~Models – Approximations of the hydraulics and hydrology of a drainage basin based upon mathematical derivations of quantifiable relationships between various factors. These factors usually include, but are not limited to, area, slope, drainage system characteristics, rainfall and land use.~~

~~Natural Drainage Features – Naturally occurring features of an area which accommodate the flow of a significant amount of stormwater, such as streams, rivers, lakes, sloughs, floodplains and wetlands.~~

~~Natural Drainage Flow – The pattern of surface and stormwater drainage through or from a particular site before the construction or installation of improvements or prior to regrading.~~

~~Outfall – Location where stormwater flows out of a given system. The ultimate outfall of a system is usually a "receiving water".~~

~~Percolation – The ability of water to pass through a porous medium; in most cases, the soil.~~

~~Pervious – Land surfaces which allow the penetration of water. A decrease in pervious area will increase the rate and volume of runoff from a given drainage basin.~~

~~Receiving Water – A body of water which serves as the receptacle for stormwater flow. Generally defined as lakes, rivers, bays and oceans.~~

~~Retention or To Retain – To store stormwater to prevent its discharge into receiving waters or to provide a storage facility for stormwater where no outfall is available.~~

~~Retention Basin – A stormwater facility which has no structural outfall and the discharge from which is limited to percolation, evaporation and evapotranspiration.~~

~~Storm Sewer Capacity – The ability of a storm sewer system to manage runoff, expressed in cubic feet per second for flow and cubic feet or acre feet for storage.~~

~~Stormwater – Flow of water which results from and which occurs immediately after a rainfall event.~~

~~Stormwater Solid Waste Facilities – Structures or systems designed for the collection, processing or disposal of solid wastes, including hazardous wastes, and includes transfer stations, processing plants, recycling plants, and disposal system.~~

~~Stormwater Management System – A system which has the meaning described in Rule 17-40.210(21) F.A.C. (1992)~~

~~Stormwater Treatment Facility – A structural "best management practice" (BMP) designed to reduce pollutant loading on a receiving water by either reducing the volume of flow; biological uptake of pollutants, the limiting the loading of pollutants or by allowing pollutants to settle out of stormwater flow. Structural BMPs include but are not limited to detention basins, retention basins, open bottom inlets, undercut ditches, exfiltration trenches and swales.~~

~~Surcharge – Flow out of a stormwater facility resulting from flow in excess of its designed capacity at a point upstream from the outfall.~~

~~Swale – An open stormwater conveyance facility with side slopes equal to or greater than three units horizontally to one unit vertically (generally very shallow).~~

~~Shall – The word "shall" is used to indicate a mandatory action.~~

~~Should – The word "should" is used to indicate an action that is strongly advised.~~

**2030-2045 COMPREHENSIVE PLAN**

**INFRASTRUCTURE  
ELEMENT**

**SANITARY SEWER  
SUB-ELEMENT**

**A**

**GOALS, OBJECTIVES  
AND POLICIES**

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**JACKSONVILLE PLANNING AND DEVELOPMENT DEPARTMENT**

*City of Jacksonville ~~2045-2030~~ Comprehensive Plan  
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## GOALS, OBJECTIVES AND POLICIES

### GOAL 1

JEA shall provide for economically and environmentally sound regional wastewater collection and treatment systems which protect the public health and investment in existing facilities, and that support the City's growth management policies ~~promote beneficial land use and growth patterns, and discourage urban sprawl.~~

Objective 1.1 In order to discourage urban sprawl, and correct existing deficiencies, JEA shall provide regional wastewater facilities in concert and conformance with the Development Areas Public Facilities Map as adopted in the Capital Improvements Element.

#### Policies 1.1.1

JEA shall provide for regional wastewater facilities associated with development within the Central Business District, Urban Priority, Urban and Suburban Development Areas as defined in the Future Land Use and Capital Improvements Elements, excluding improvements within the service area of an investor-owned public utility company of regional status.

#### ~~1.1.2~~

~~JEA shall provide regional wastewater facilities associated with development within the Suburban Area as defined in the Capital Improvements Element excluding improvements within the service area of an investor-owned public utility company of regional status.~~

#### ~~1.1.3~~ 1.1.2

The JEA shall not invest in sanitary sewer facilities in the Rural Area as defined in the Future Land Use and Capital Improvements Element, except where necessary to protect the public health or safety, or encourage mixed use or regional economic development. On an annual basis and as substantial updates to related policies are adopted, the Planning and Development Department shall provide JEA with a copy of the most current Development Areas Map and Comprehensive Plan policies relating to the provision of water and sewer facilities in relation to the Development Areas. ~~The JEA and the Department of Planning and Development shall coordinate on the placement of these lines to ensure compliance with the City's Comprehensive Plan and its urban and suburban boundaries.~~

#### ~~1.1.4~~

~~Appropriate interim facilities will be permitted within the City as provided in Objective 1.2 and associated policies.~~

#### ~~1.1.5~~ 1.1.3

The City shall, through its Land Development Regulations, preserve utility corridors so that future development can be served in a cost effective manner.

#### **1.1.6-1.1.4**

All City owned wastewater facilities shall be constructed in accordance with the City's Utility Standards and Specifications, Land Development Procedures Manual, Florida Department of Environmental (FDEP) regulations and other applicable requirements.

#### **1.1.7-1.1.5**

The City shall incorporate incentives in its Land Development Regulations which encourage development, and redevelopment in areas where the public wastewater system has or will have adequate capacity. Developments which qualify for mixed use and/or regional economic development must also undergo land use amendments to expand the suburban boundaries to incorporate these areas.

#### **1.1.6**

JEA and the Public Works Department shall coordinate infrastructure projects and improvement program projects that involve public water and wastewater systems to promote efficiency and to reduce the impact of public expenditures.

**Objective 1.2** In order to discourage urban sprawl and prevent adverse impacts to groundwater, surface water, and quality of life, the City will continue efforts to phase out ~~require that all non-regional~~ wastewater treatment facilities identified pursuant to Environmental Protection Board (EPB) Rule 3 ~~discontinue operation by 2010~~. Additionally, the City shall continue ~~to~~ coordination efforts with JEA to discourage regulate the use of on-site disposal facilities ~~to assure compliance with federal, State, regional, and local regulations, and to~~ install regional facilities in accordance with the Capital Improvements Element in order to reduce the number of septic tanks in new developments.

#### **Policies 1.2.1**

JEA shall continue its efforts toward the acquisition of nonregional investor or community owned public utility companies where analysis of the acquisition indicates that the costs of acquiring, integrating, and upgrading the facilities to City standards will be offset by the existing and projected rate base of the utility.

#### **1.2.2**

No new wastewater treatment facility discharges shall be permitted to the tributaries, mainstream, and mouth of the St. Johns River within the City unless otherwise physically or financially unfeasible.

#### **1.2.3**

The City shall direct industrial development that produces toxic, hazardous, or industrial wastewater or toxic or hazardous chemicals to areas that are served by a centralized wastewater collection system ~~not permit septic tanks for the disposal or discharge of industrial wastes.~~

#### 1.2.4

Existing septic tanks for estimated wastewater flows of 600 or less gallons per day (gpd) shall connect to the collection system of a regional utility company provided that gravity service is available via a facility within a right-of-way or easement, which abuts the property.

#### 1.2.5

Existing septic tanks for estimated wastewater flows exceeding 600 gallons per day (gpd) shall connect to the collection system of a regional utility company provided that a facility abuts or is within 50 feet of the property.

#### 1.2.6

~~Require new development and redevelopment within the Central Business District (CBD), Urban Priority Area (UPA), Urban Area (UA), and Suburban Area (SA) to connect to centralized wastewater collection and potable water distribution systems when centralized service is available to the site as set forth in the Future Land Use Element. Within the Suburban Boundary Map as defined in the Future Land Use and Capital Improvements Elements, new septic tanks will be forbidden pursuant to the Septic Environmental Protection Board – Rule 3; however, they may be permitted as interim facilities, provided the following requirements are satisfied:~~

- ~~1. Single family/commercial (estimated flows of 600 gpd or less):~~
  - ~~a. Requirements of Chapter 64E-6, Florida Administrative Code (F.A.C.) are accommodated.~~
  - ~~b. The collection system of a regional utility company is not available through gravity service via a facility within a right-of-way or easement which abuts the property.~~
- ~~2. Commercial (above 600 gpd)~~
  - ~~a. Requirements of Chapter 64E-6, F.A.C. are accommodated.~~
  - ~~b. The collection system of a regional utility company is not within 50 feet of the property.~~
- ~~3. Subdivision (commercial or single family):~~
  - ~~a. Requirements of Chapter 64E-6, F.A.C. are accommodated.~~
  - ~~b. The collection system of a regional utility company is greater than ¼ mile from the proposed subdivision.~~
  - ~~c. Each lot is a minimum of 1 acre unsubmerged property.~~
  - ~~d. Alternative (mounded) systems are not required.~~

#### 1.2.7

~~Residential and non-residential Subdivisions permitted with new septic tanks in the Central Business District, Urban Priority, Urban and Suburban Development Areas under the criteria of Policy 1.2.6 above shall be required to install dryline sewer systems when programmed improvements are identified in the Capital Improvements Element which will make connection to the JEA Collection System available within a five (5) year period.~~

### 1.2.8

The City shall continue the effort to phase out septic tanks in defined failure areas in conformance with Chapter 751, Ordinance Code (Wastewater System Improvement Program Septic Tank Superfund).

### 1.2.9

~~The Future Land Use Element shall include density limitations and other criteria for sites not served by a centralized wastewater collection system of a regional utility company. Septic tanks shall be permitted in Rural Areas, provided they meet the requirements of Chapter 64E-6, F.A.C., and that all lots created after shall have a minimum of 1 acre of un-submerged property.~~

### 1.2.10

Nonregional wastewater facilities may be permitted as interim facilities, provided all of the following requirements are satisfied:

1. The facility meets all federal, state, regional, and local environmental regulations.
2. The developer shall operate and maintain the facilities
3. The developer provides for phase out costs where appropriate.
4. The developer enters into an agreement with the City, specifying the date and manner of phase out.
5. The facility operator will reimburse the City for costs of enforcement of violations of water quality standards and effluent limitations.
6. Wastewater facilities must provide at least 1.0 MGD of capacity.

### 1.2.11

~~Testing~~

**Objective 1.3 JEA shall provide adequate wastewater facility capacity to meet future needs.**

#### **Policies 1.3.1**

To assure an adequate Level of Service, wastewater facilities within the City shall meet the following LOS standards listed under Goal 1 of the Capital Improvements Element:

- ~~1. Effluent discharge from wastewater treatment plants shall meet all federal, State, and local standards.~~
- ~~2. Existing and proposed wastewater collection, transmission, treatment, and disposal facilities shall be designed and constructed to maintain the capacity associated with reasonably expected wastewater generation rates consistent with all federal, State, and local standards.~~

~~Residential – 100 gallons per capita per day (gpcd) [includes an infiltration/inflow factor of 25 gpcd].~~



~~Non-Residential flows to be evaluated on a site specific basis using Section 10D-6, 48(1) F.A.C.~~

~~Peak Flows will be determined in accordance with "Recommended Standards for Sewage Works", latest edition (Ten State Standards) and the Water Environment Federation Manual of Practice #9.~~

### **1.3.2**

No development order authorizing new development or a significant expansion of an existing user shall be issued for any area of the City served by a wastewater facility which does not meet the standards in Section 163.3180, F.S. Chapter 9J-5.0055(2)a 1-3., F.A.C. Specifically, the necessary facilities are in place, the necessary facilities will be in place when the development impacts occur, the necessary facilities are under construction or the necessary facilities are guaranteed by an enforceable development agreement.

### **1.3.3**

JEA shall monitor the Levels of Service of each facility and determine the impact of a proposed development or redevelopment on the adopted Level of Service (LOS) for use by agencies which issue development orders or permits.

**Objective 1.4 JEA and the City shall coordinate, plan and provide for regional facilities to accommodate the ultimate needs of the community through creation of a water supply plan covering at least a 10-year planning period for building water supply facilities necessary to serve existing and new development and through implementation of JEA related projects listed in the Capital Improvements Element.**

### **Policies 1.4.1**

Wastewater system improvements will be evaluated for funding in accordance with the following general criteria:

1. Improvements which are necessary to protect the health, safety and environmental integrity of the community, consistent with the policies of this Comprehensive Plan and applicable federal, state, regional and local regulatory requirements.
2. Improvements which are necessary to meet existing deficiencies in capacity or in performance. These include the retrofit of deteriorating facilities which fail or threaten to fail to meet health, safety or environmental standards.
3. Improvements which extend regional service to previously unserved developed areas within the Urban and Suburban Areas as identified in the Capital Improvements Element.
4. Improvements which have been identified in adopted functional plans and which address system details beyond the scope of this Sub-element, but which are consistent with the goals, objectives and policies of this Comprehensive Plan.

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5. Cost-effective improvements to expand capacity, maximize operational efficiency, and increase productivity.

#### **1.4.2**

Wastewater facility improvements shall be undertaken in conformance with the schedule included in the Capital Improvements Element.

**Objective 1.5 JEA shall provide regional wastewater treatment facilities to accommodate the adopted Level of Service standards.**

#### **Policy 1.5.1**

JEA, through its Industrial Pretreatment Group, shall protect existing treatment facilities from adverse impacts due to discharge of deleterious wastewater to the system, by vigorous enforcement of Chapter 750, Ordinance Code, as it pertains to "Use of Public Sewers".

**Objective 1.6 The JEA shall maintain existing collection systems, and inspect new construction in order to ensure compliance with the adopted Level of Service standards and maximize the use of existing facilities.**

#### **Policies 1.6.1**

JEA shall maintain an inventory of all facilities which identify location, physical characteristics, age, service condition and structural condition.

#### **1.6.2**

JEA shall continue the rehabilitation and replacement program directed at the older portions of the existing system.

#### **1.6.3**

All required federal, State, regional and local permits shall be obtained before JEA ~~undertakes or authorizes a contractor to undertake~~ construction and/or operation of facilities.

#### **1.6.4**

The City shall inspect construction of all new facilities to be dedicated to the City to ensure the use of the best construction methods.

#### **1.6.5**

The City shall annually evaluate the JEA Standards and Specifications and the Land Development Procedures Manual.

#### **1.6.6**

JEA shall maintain wastewater design guidelines standards for system connection requirements ~~will not allow connections directly into its major force main system, as~~

~~defined in the Wastewater Master Plan, in a manifold manner except as designated in the plan.~~

### **1.6.7**

JEA shall maintain an automated wastewater management information system for facility records, mapping, Geographical Information System, preventive maintenance, stock and inventory control and other related functions.

**Objective 1.7 JEA shall provide adequate sludge utilization/disposal facilities capable of handling all sludge generated at JEA wastewater treatment facilities.**

### **Policies 1.7.1**

JEA shall monitor current sludge volumes and future population projections to predict future needs.

### **1.7.2**

JEA shall ~~ensure the provision of schedule and design construction projects~~ for sludge management facilities to meet identified needs.

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**~~INFRASTRUCTURE  
ELEMENT~~**

**~~SANITARY SEWER  
SUB-ELEMENT~~**

**B**

**~~DEFINITIONS~~**

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**JACKSONVILLE PLANNING AND DEVELOPMENT DEPARTMENT**

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## DEFINITIONS

~~Best Construction Methods – These methods delineated in the City standards and specifications.~~

~~Biochemical Oxygen Demand (BOD) – The quantity of oxygen used in the aerobic stabilization of wastewaters and polluted waters. The standard 5-day BOD value is commonly used to define the strength of municipal wastewaters, to evaluate the efficiency of treatment by measuring oxygen demand remaining in the effluent and to determine the amount of organic pollutant in surface waters.~~

~~Community Owned Public Utility Company – A water or sewer utility owned by nonprofit corporations providing service to members who own and control such nonprofit corporations, associations, or cooperatives.~~

~~Development – Has the meaning described in §380.04, *Florida Statutes*.~~

~~Domestic Waste – Human body waste and household type wastes, including bath and toilet type wastes, laundry wastes, kitchen wastes, and other similar wastes from household or established appurtenances.~~

~~Effluent – Wastewater or other liquid discharged from a treatment process or treatment plant.~~

~~EPB – Jacksonville Environmental Protection Board.~~

~~Exfiltration – Sewage leaving sewers through defective joints and cracks in pipes and manholes.~~

~~Industrial Wastes – Wastewater not otherwise defined as domestic sewage waste. Includes wastewater from floor drains in buildings and industrial or manufacturing parks, commercial laundry facilities, wastewater from animal holding facilities, etc.~~

~~Infiltration/Inflow – Groundwater entering sewers and building connections through defective joints and cracks in pipes and manholes.~~

~~Inflow – Water discharged into service connections and sewer pipes from foundation and roof drains, outdoor paved areas, cooling water from air conditioners, and unpolluted discharges from businesses and industries.~~

~~Influent – Wastewater or other liquid (raw or partially treated) flowing into a reservoir, basin, treatment process, or treatment plant.~~

~~Interceptors – Mean conduits which carry flows from the collector sewers to the point of treatment or disposal of the wastewater.~~

~~Investor Owned Public Utility Company – A water or sewer utility which, except as provided in Section 367.022, F.S. is providing, or proposes to provide, water or sewer service to the public for compensation.~~

~~JEA – Water, Sewer & Electric Utility serving community in and around Duval County previously known as Jacksonville Electric Authority.~~

~~Level of Service – An indicator of the extent or degree of service provided by, or proposed to be provided by a facility based on and related to the operational characteristics of the facility. Level of service shall indicate the capacity per unit of demand for each public facility.~~

~~Lift Station – A pumping facility which discharges flow directly into a gravity.~~

~~Local Collection Mains – Conduits which gather flows from individual buildings and transport the material to an interceptor or main sewer.~~

~~NPDES – National Pollution Discharge Elimination System~~

~~Parshall Flume – A critical depth meter which establishes a mathematical relationship between the stage 'h' and the discharge 'Q'. It is for measuring the flow in open channels.~~

~~Point Source – Specific point of discharge of a pollutant.~~

~~Point Source Pollution – Any source of water pollution that constitutes a discernible, confined and discrete conveyance, including but not limited to any pipe, ditch, channel, tunnel, conduit, well, discrete fissure, container, rolling stock, concentrated animal feeding operation, or vessel or other floating craft, from which pollutants are or may be discharged. This term does not include return flows from irrigated agriculture.~~

~~Primary Treatment – The removal of between 30 to 35 percent of the organic materials and up to 50 percent of the solids from the sewage. This is commonly referred to as physical treatment because screens and settling tanks are the most common methods of removal.~~

~~PSC – Public Service Commission.~~

~~Regional Wastewater Facilities – Those facilities identified in the WSBU Wastewater Master Plan.~~

~~Sanitary Sewer Facilities – Structures or systems designed for the collection, transmission, treatment, or disposal of wastewater and includes trunk mains, interceptors, treatment plants and disposal systems.~~

~~Secondary Treatment – Secondary treatment processes remove between 80 and 90 percent of total organic materials and suspended solids from sewage. This level of~~

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~~treatment generally requires multiple steps involving one biological process and one or more processes for removal of suspended solids.~~

~~Septic Tank – Any in-ground or above-grade wastewater treatment facility discharging an effluent to the ground or surface waters of under 5,000 gallons per day (gpd). Or an underground tank used for the deposition of domestic-type wastes. Bacteria in the waste decomposes the organic matter, and the sludge settles to the bottom. The effluent flows through drains into the ground. Sludge must be pumped out at regular intervals.~~

~~Shall – the word "shall" is used to indicate a mandatory action.~~

~~Should – the word "should" is used to indicate an action that is strongly advised.~~

~~Sludge – The accumulated solids separated from liquids during processing, or the precipitate resulting from chemical treatment, coagulation, or sedimentation of wastewater.~~

~~STS – Septic Tank Superfund.~~

~~Total Suspended Solids – The sum of all solids that float on the surface of, or are in suspension in wastewater and that are largely removable by treatment processes.~~

~~Urban Sprawl – A land use pattern typically characterized by the following:~~

- ~~• Premature conversion of agricultural areas beyond urban and suburban service boundaries into urban uses beyond the planning time frame horizon covered in the City's Comprehensive Plan.~~
- ~~• "Leapfrog" development patterns~~
- ~~• Large areas of low-density, single-use development~~

~~Development may occur beyond urban and suburban boundaries provided that it is mixed-use in nature. Otherwise, development beyond such boundaries is considered urban sprawl and is to be discouraged.~~

~~Wastewater – A combination of the liquid and water-carried wastes from residences, commercial buildings, industrial plants, and institutions, together with any groundwater, surface water, and storm water that may be infiltrated.~~

~~Wastewater Facilities – Structures or systems designed for the collection, transmission, treatment or disposal of wastewater and includes trunk mains, interceptors and treatment plants.~~

**2030-2045 COMPREHENSIVE PLAN**

**INFRASTRUCTURE  
ELEMENT**

**SOLID WASTE  
SUB-ELEMENT**

**A**

**GOALS, OBJECTIVES  
AND POLICIES**

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SW1

**Exhibit 8  
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## GOALS, OBJECTIVES, AND POLICIES

### GOAL 1

The City of Jacksonville shall provide for an integrated solid waste management system which protects the public health, sanitation, and environment and provides for operational efficiency and beneficial land use and growth patterns.

**Objective 1.1** The Solid Waste Division shall plan and implement an integrated solid waste management system to reduce the volume of solid waste disposed in landfills in Jacksonville. An integrated solid waste management system consists of a combination of solid waste management and disposal options which work together to meet the community's needs for safe and effective solid waste disposal.

#### Policies 1.1.1

Landfills shall be designated to receive those items that cannot be reused, composted, recycled, or processed for volume reduction in a technologically reasonable and economically practical manner.

#### 1.1.2

The integrated solid waste management program shall focus on the proper management of solid waste, conservation of resources and optimize landfill capacity.

**Objective 1.2** ~~Solid Waste Division shall meet and exceed the state recycling goal. The Solid Waste Division and Resource Management Department shall maintain a recycling, reuse and reduction programs for the residential, commercial, and industrial sectors.~~

#### Policies 1.2.1

The Solid Waste Division shall maintain the residential recycling program to include all residences within the City. The residential recycling program should focus on the following goals:

- a. Developing a strong partnership with a pro-active recycling center;
- b. Increasing waste to energy efforts;
- c. Identifying and determining target materials (what will be recycled) and provide educational materials;
- d. Designing a program to include collection, storage, and services;
- e. Monitoring the program for specific measurements; and
- f. Considering multifamily and commercial recycling.

#### 1.2.2

Recycling programs designed to separate newspaper, glass, plastics, and metal products; office papers, paperboard, corrugated papers and organic materials from the solid waste generated by commercial and industrial businesses shall be implemented by the private sector. This City should consider opportunities to add similar requirements for multi-family development and to add a regulatory enforcement mechanism.

### **1.2.3**

The Solid Waste Division shall continue to develop programs for the commercial/industrial sectors to examine their individual waste streams to determine those materials which may be reused, recycled or composted.

### **1.2.4**

The Solid Waste Division shall continue to implement public education and awareness programs contingent upon the availability of State grant funding to inform both the residential and the commercial/industrial sectors of the City of the need to reduce, recycle, reuse, and compost solid waste.

### **1.2.5**

The Solid Waste Division shall maintain a program for the mulching/composting of organic materials. The Solid Waste and Resource Management Department shall encourage back yard composting through public education and awareness programs contingent upon the availability of State grant funding.

### **1.2.6**

The City of Jacksonville shall continue to follow procurement procedures that promote a greater use of recycled paper.

### **1.2.7**

The Solid Waste Division shall apply for grant funds and such other revenue sources that may be available when needed for development of recycling, reuse, and reduction programs.

### **1.2.8**

The Solid Waste Division shall continue to develop, improve, and expand the waste reduction, reuse, and recycling programs to include additional materials, methods, or technologies.

### **1.2.9**

The City shall continue to implement the existing mandatory residential recycling program to separate newspaper, glass, plastics, and metal products, and subject to the availability of markets, a residential recycling program for paperboard, corrugated papers, and mixed papers. The residential recycling program shall permit the resident to market his or her own recyclable materials.

**Objective 1.3 The Solid Waste Division shall continue to operate solid waste management facilities in compliance with applicable air, groundwater, and surface water pollution standards established by federal, State, and local laws, regulations and guidelines.**

### **Policies 1.3.1**

The Solid Waste Division shall identify, plan, and implement improvements to solid waste management facilities which are necessary to meet environmental performance standards and other applicable regulations.

### **1.3.2**

The Solid Waste Division shall close and monitor the City's completed landfills in compliance with standards established by federal, state, and local laws, regulations, and guidelines.

### **1.3.3**

The Solid Waste Division shall continue to implement a public education program on the proper disposal of potentially hazardous wastes with the purpose of reducing the amount of these wastes entering the solid waste stream.

### **1.3.4**

The Solid Waste Division shall continue to implement a permanent local "Amnesty Days" program to facilitate proper collection and disposal of household hazardous wastes.

### **1.3.5**

The Solid Waste Division shall continue to operate a training program for landfill operations personnel to improve identification and proper handling of potentially hazardous materials.

### **1.3.6**

The Solid Waste Division shall require a training program for landfill operations personnel to improve the operation and management of the City's landfills.

### **1.3.7**

By 2002 the Solid Waste Division shall develop criteria for identifying and establishing the priority for cleanup of old dump sites within the City's jurisdiction

### **1.3.8**

The Solid Waste ~~and~~ Division shall coordinate with the ~~Regulatory and Environmental Services Department Quality Division~~ (EQDRES~~D~~) and other State and local agencies when implementing hazardous waste programs by regularly scheduled meetings and correspondence between the appropriate Departments.

### **1.3.9**

The City shall adopt Land Development Regulations that prohibit new development in the vicinity of solid waste management facilities which is incompatible with the operation of such facilities. Section 656.401 Ordinance Code of the City of Jacksonville now contains performance standards, guidelines, and criteria for these regulations.

### **1.3.10**

Peripheral buffers and landscaping shall be required at new or expanding solid waste facilities to minimize impacts to the surrounding area.

**Objective 1.4** The Solid Waste Division shall plan solid waste management facility additions, expansions, and improvements to meet the present needs and support the anticipated future growth.

**Policies 1.4.1**

The Solid Waste Division shall establish a long-range planning program to address the available capacity of solid waste management facilities for a minimum 20-year planning period.

**1.4.2**

The Solid Waste Division shall conduct an annual review of solid waste generation, disposal rates, and facility capacity to evaluate future needs.

**1.4.3**

The Solid Waste Division shall identify and evaluate funding alternatives for the continued development and operation of the integrated solid waste management system.

**1.4.4**

The City shall operate all of its solid waste management facilities in a manner that will protect the public health, welfare and safety, and control costs and performance. The City shall establish regulations to require all private solid waste management facilities to be operated in a manner that will protect the public health, welfare and safety and control costs and performance.

**1.4.5**

The City shall identify solid wastes generated within and outside of Duval County, and adopt controls using waste flow legislation to direct components of the waste stream to processing facilities prior to final disposal consistent with Policy 1.1.1 of this element. The City may opt not to accept for disposal at City owned landfills waste generated outside of the County. Waste that is dedicated to joint ventures with adjacent counties pursuant to an interlocal agreement, shall be accepted for disposal at a rate to be established.

**1.4.6**

The City's adopted Level of Service (LOS) standard for solid waste disposal is provided under Goal 1 of the Capital Improvements Element. ~~shall be a solid waste generation rate of 6.7 lbs. per capita per day.~~

**1.4.7**

No development order shall be issued for any area of the City served by a solid waste disposal facility which does not meet the standards of Section 163.3180, Florida Statutes Chapter 9J-5.0055, F.A.C. Specifically, the necessary facility is in place at the time the development permit is issued; or a development permit is issued subject to the condition that the necessary facilities and services will be in place when the impacts of the development occur; or the necessary facilities and services are guaranteed in an enforceable development agreement which guarantees that the necessary facilities will be in place when the impacts of the development occur.

**Objective 1.5** The City shall continue to implement programs to address the problems of illegal dumping of both hazardous and non-hazardous waste materials.

**Policies 1.5.1**

The City shall improve the enforcement of existing City ordinances, Florida Statutes, and federal laws concerned with illegal dumping by increasing the enforcement staff.

**1.5.2**

The City shall continue to operate a comprehensive program-concerning illegal dumping which includes education, public awareness, and enforcement penalties.

**2030 COMPREHENSIVE PLAN**

**~~INFRASTRUCTURE  
ELEMENT~~**

**~~SOLID WASTE  
SUB-ELEMENT~~**

**~~B~~**

**~~DEFINITIONS~~**

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**~~JACKSONVILLE PLANNING AND DEVELOPMENT DEPARTMENT~~**

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## DEFINITIONS

~~Aerobic Composting – The activity of aerobic microbes (requiring the presence of oxygen) during the composting process.~~

~~Anaerobic Bioconversion – The conversion of biodegradable organic matter into biogas, composed of methane and carbon dioxide, through the activity of bacteria in an anaerobic (no oxygen present) environment.~~

~~Anaerobic Composting – The activity of anaerobic bacteria (requiring the exclusion of oxygen from the process) during the composting process.~~

~~Commercial Wastes – Wastes generated by the commercial and institutional sectors. Physical characteristics of these wastes are similar to those of residential wastes, in that they consist largely of combustible materials in the form of paper and food waste from offices, restaurants, retail establishments, schools, hospitals, motels and churches.~~

~~Composting – The process by which biological decomposition of the organic constituents of solid waste under controlled conditions occurs.~~

~~Development – Has the meaning described in §380.04, *Florida Statutes*.~~

~~Facility Availability – Whether or not a facility is available in a manner to satisfy the Concurrency Management System.~~

~~Hazardous Waste – A solid waste, or a combination of solid wastes which, because of its quantity, concentration, or infectious characteristics, may cause, or significantly contribute to, an increase in mortality or an increase in serious irreversible or incapacitating reversible illness or may pose a substantial present or potential hazard to human health or the environment when improperly transported, disposed of, stored, treated or otherwise managed.~~

~~Industrial Wastes – Wastes generated by industrial processes and manufacturing operations, excluding hazardous wastes. These wastes also include general industrial housekeeping and support activity wastes.~~

~~Integrated Solid Waste Management System – A combination of solid waste management and disposal options which meet the community's needs for safe and cost effective solid waste disposal.~~

~~Landfill or Sanitary Landfill – Land on which solid waste is accepted for disposal in accordance with Chapter 62-701, FAC.~~

~~Level of Service (LOS) – An indicator of the extent or degree of service provided by, or proposed to be provided by, a facility based on and related to the operational characteristics of the facility. Level of Service shall indicate the capacity per unit of demand for each public facility.~~

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~~Recycling – Any process by which solid waste, or materials which would otherwise become solid waste, are collected, separated, or processed and reused or returned to use in the form of raw materials or products.~~

~~Residential Wastes – Mixed household wastes generated by the general population.~~

~~Shall – Used to indicate a mandatory action.~~

~~Should – Used to indicate an action which is strongly advised.~~

~~Solid Waste – Sludge from a waste treatment works, water supply treatment plant, or air pollution control facility or garbage, rubbish, refuse, or other discarded material including solid, liquid, semisolid or contained gaseous material resulting from domestic, industrial, commercial, mining, agricultural or governmental operations.~~

~~Solid Waste Facility – Structures or systems designed for the collection, processing or disposal of solid waste, including hazardous wastes and includes transfer stations, processing plants, recycling plants and disposal systems.~~

~~Solid Waste Management Facility – Any solid waste disposal area, volume reduction plant, transfer station, or other facility, the purpose of which is resource recovery or the disposal, recycling, processing or storage of solid waste.~~

~~Special Wastes – Wastes having special characteristics or requiring special handling. These wastes include tires, oversize bulky wastes, asbestos, liquids, sludges, containers, and materials generated in demolition and construction projects.~~

~~Yard Wastes – Vegetative matter resulting from landscaping maintenance and land clearing operations. These wastes are generated in both the residential, commercial and industrial sectors.~~



**2030-2045 COMPREHENSIVE PLAN**

**INFRASTRUCTURE  
ELEMENT**

**POTABLE WATER  
SUB-ELEMENT**

**A**

**GOALS, OBJECTIVES  
AND POLICIES**

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**JACKSONVILLE PLANNING AND DEVELOPMENT DEPARTMENT**

*City of Jacksonville ~~2045~~2030 Comprehensive Plan  
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PW1

**Exhibit 8  
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## GOALS, OBJECTIVES AND POLICIES

### GOAL 1

JEA shall regionalize water facilities in a manner which adequately corrects existing deficiencies, accommodates future growth, increases system capacity, ~~acquires investor owned systems and incorporates private package plants into the regional system,~~ and interconnects water systems where required while complying with all federal, State, regional and local regulations.

**Objective 1.1** In order to discourage urban sprawl, to maximize the use of existing facilities, and to coordinate the increase in the capacity of facilities to meet future needs of the City, the JEA shall provide regional water facilities in concert and conformance with the Development Areas Map (~~Map CI-1~~) ~~as adopted in the Capital Improvements Element.~~

#### Policies 1.1.1

JEA shall provide for regional water facilities associated with development within the Central Business District, Urban Priority, Urban and Suburban Development Areas as defined in the Capital Improvements Element, excluding improvements within the service area of an investor-owned public utility. Typical development infrastructure investment centers around developers being solely responsible for the survey, engineering design, permitting and construction for both on-site and off-site water/wastewater/reclaim utility infrastructure to meet the needs of their specific development.

#### ~~1.1.2~~

~~JEA shall provide for regional water facilities associated with development within the Suburban Area, as defined in the Capital Improvements Element, excluding improvements within the service area of an investor-owned public utility. The Suburban Areas should be reviewed in the development of the 2030 Comprehensive Plan.~~

#### ~~1.1.3-1.1.2~~

When requested by the Duval County Health Department and where the public water system is available to provide service, the JEA shall ~~inter-tie with~~ review and determine acceptance of private water systems whose water treatment facilities are not in compliance with federal, State, or local regulations.

#### ~~1.1.4 1.1.3~~

Investor-owned public utilities, and all parties connecting to them, shall be required to install facilities in compliance with Chapters 654 and 750, Ordinance Code.

#### ~~1.1.5-1.1.4~~

Non-regional utility water treatment facilities shall continue to be phased-out and systems intertied to regional water treatment facilities.

**1.1.6**

~~JEA shall continue to acquire community and/or investor owned public utility companies and integrate the systems into the regional network, where analysis of the acquisition indicates that the costs of acquiring, interconnecting and upgrading the facilities to current standards will be offset by the existing and projected rate base of the utility.~~

**1.1.7 1.1.5**

All public water supply systems shall be constructed and operated in accordance with all applicable federal, State, regional and local regulations which apply to potable water systems.

**1.1.8 1.1.6**

All community and/or investor-owned public utility systems involved in the purchase and sales transactions shall be inspected for compliance with existing federal, State, regional and local health and regulatory standards. The acquiring entity shall be notified of all system deficiencies prior to acquisition.

**1.1.9 1.1.7**

JEA shall prepare an annual report which summarizes existing capacity and demand information for the water system and incorporates and identifies the alternative water supply projects selected or proposed.

**1.1.10 1.1.8**

JEA shall continue to allocate sufficient funding to support staffing, equipping and monitoring of water quality standards in order to maintain compliance with all federal, State and regional requirements.

**1.1.11 1.1.9**

JEA shall continue to inventory, classify and determine the useful life of its existing water system assets and renew and replace these assets when they become outdated, inefficient, or unusable.

**1.1.12 1.1.10**

All JEA water systems within the City shall be constructed in accordance with JEA Standards and Specifications, Land Development Procedures Manual, Florida Department of Environmental Protection (FDEP) regulations and other applicable requirements.

**1.1.13 1.1.11**

JEA shall implement the Five-Year Water System Capital Improvement Program which shall be updated annually and amended as appropriate.

**1.1.14 1.1.12**

New non-regional water facilities may be allowed as appropriate interim facilities, provided the following requirements are satisfied:

1. The facility meets all federal, State, regional and city environmental regulations;

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2. The developer provides for all operation and maintenance costs;
3. The developer provides for phase out costs where appropriate;
4. The developer enters into an agreement with JEA specifying the date and manner of phase out;
5. The facility operator will reimburse JEA for costs of enforcement of violations of water quality standards; and
6. Minimum fire protection levels of service as specified in Policy 1.3.1 are provided for.

#### ~~1.1.15~~ **1.1.13**

The City shall continue to amend the ~~2030~~ Comprehensive Plan as needed to implement the City's Water Supply Facilities Work Plan 2018-2028 (Jacksonville Planning and Development Department, February 2019), adopted by reference. Supporting data and analysis may be attached as appendices to the Water Supply Facilities Work Plan, and updated from time to time, without the necessity of an amendment to the Comprehensive Plan. The City and JEA shall continue to identify and implement traditional and alternative water supply projects and programs, including conservation and water reuse, that are consistent with the SJRWMD's Regional Water Supply Plan to meet the City's water needs.

**Objective 1.2 JEA shall develop and maintain a water resources plan for the City's present and future service areas, with the primary objective being the provision of an adequate supply of high-quality water, carefully planned and properly managed with due regard for the environment.**

#### **Policies 1.2.1**

JEA shall analyze the water quality of its existing water supply wells and implement improvements, modifications, and/or operational strategies to improve the developed raw water quality.

#### **1.2.2**

JEA shall investigate the water resources of the City and identify areas for new water supply development in order to meet the City's future water supply requirements. The program shall be coordinated with the St. Johns River Water Management District.

#### **1.2.3**

The City shall implement the Wellhead Protection Ordinance to protect its potable water supply source. Improperly constructed or maintained Hawthorne Group and Floridan Aquifer private wells in proximity to a Public Potable Water well within Duval County are potentially harmful to the drinking water supply of the City of Jacksonville. A Pathway Focused Approach to prevent migration of contamination from the shallow aquifer into the Floridan aquifer is reasonable and prudent to protect public water supplies. The intent of this policy is to protect and safeguard the health, safety and welfare of the residents of Duval County by establishing a Pathway Focused Approach to wellhead protection that safeguards the Floridan aquifer from intrusion of any contaminants that may jeopardize present and future public water supply wells.

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Within Wellhead Protection Areas, the following shall apply:

1. Within a 500-foot radius around an existing Public Potable Water well, those actions and uses established by the Florida Department of Environmental Protection in Rule 62-521.400, Fla. Admin. Code shall be prohibited.
2. Pursuant to Chapter 366 City of Jacksonville Municipal Code, no existing private wells shall be deepened and no new wells shall be constructed within designated Wellhead Protection Areas that penetrate a portion of the Hawthorne Group or the Floridan Aquifer without first obtaining a well construction permit from the City of Jacksonville Environmental Quality Division (EQD) as provided in Environmental Protection Board Rule 8 and including a review of areas of known contamination at or near the proposed or existing well location. All new wells within such areas must be fully grouted.
3. Pursuant to Chapter 366 City of Jacksonville Municipal Code, abandonment of existing wells shall be in accordance with applicable SJRWMD requirements and a copy of the plugging and abandonment report shall be submitted to the EQD.

#### **1.2.4**

JEA shall acquire land to obtain water and water rights for municipal uses and purposes. Such acquisition shall be conducted in areas that are selected to produce high quality and quantity of water, with minimal impact to the resource and with consideration given to reasonable cost of development. Such future supplies shall be developed in a manner as will give priority to reducing environmental effects of excessive withdrawals from concentrated areas. JEA shall request that the SJRWMD conduct investigations and develop data for use by the City in conducting this program.

#### **1.2.5**

JEA shall identify, evaluate, and select the most cost-effective means of ensuring an adequate water supply including groundwater supply, reuse of treated wastewater, surface water supply, demand reduction, conservation, and peak shaving through system integration. This evaluation shall be conducted as a part of their water supply plan.

#### **1.2.6**

Lands currently owned by the City and its various agencies shall be utilized to the maximum extent possible for water resource development prior to acquiring additional lands.

#### **1.2.7**

The transfer of water within the public utility system for purposes of water supply, water quality and/or water management shall be carried out in place of the construction of new treatment facilities which have higher capital or operating costs than the transfer

facilities.

**1.2.8**

The water supply needs of areas from which water is withdrawn by JEA must be provided for in all future water resource development projects.

**1.2.9**

JEA may enter into agreements with public and private water resource and/or reclaimed water providers as needed to ensure an adequate, high-quality water supply. Agreements shall be identified in the City’s Water Supply Facilities Work Plan.

**Objective 1.3 JEA shall provide adequate capacity at water treatment plants to meet future needs.**

**Policies 1.3.1**

To assure that an adequate Level of Service (LOS) is provided by water facilities within the Water Service Area, the LOS standards provided under Goal 1 of the Capital Improvements Element following standards shall be met:

- ~~1. Existing and proposed water facilities shall be designed and constructed in such a manner as to maintain the capacity associated with reasonably expected water demand consistent with all federal, State, and local standards. The capacity shall be based on the following minimum water consumption rates:~~

~~Residential – 100 gallons per capita per day (GPCD)~~

~~Non-Residential – As it applies to non-residential land uses, demand for potable water will be evaluated on a site specific basis, in accordance with Table PW-1.~~

<b>TABLE PW-1 COMMERCIAL WATER DEMAND IN THE UNITED STATES<sup>1</sup></b>	
<b>TYPES OF ESTABLISHMENTS</b>	<b>GPD</b>
Airports (per passenger)	3-5
Apartments, multiple family (per resident)	-60
Bath house (per bather)	-10
Camps:	
Construction, semipermanent (per worker)	-50
Day with no meals served (per camper)	-15

<sup>1</sup> ~~Goodman, Alvin S. “Principals of Water Resource Planning”, Prentice Hall copyright 1984~~

**TABLE PW-1  
COMMERCIAL WATER DEMAND IN THE UNITED STATES<sup>1</sup>**

<b>TYPES OF ESTABLISHMENTS</b>	<b>GPD</b>
Luxury (per camper)	100-150
Resorts, day and night, with limited plumbing (per camper)	-50
Tourist with central bath and toilet facilities (per person)	-35
Cottages with seasonal occupancy (per resident)	-50
Courts, tourist with individual bath units (per person)	-50
<b>Clubs:</b>	
Country (per resident member)	100
Country (per non-resident member present)	-25
<b>Dwellings:</b>	
Boarding houses (per boarder)	-50
Additional kitchen requirements for non-resident boarders	-10
Luxury (per person)	100-150
Multiple family apartments (per resident)	-40
Rooming houses (per resident)	-60
Single family (per resident)	50-75
Estates (per resident)	100-150
Factories (gal. Per person per shift)	15-35
Hotels with private baths (two persons per room)	-60
Hotels without private baths (per person)	-50
Institutions other than hospitals (per person)	5-125
Hospitals (per bed)	250-400
Laundries, self-service (gal. Per washing, per customer)	-50
Motels with bath, toilet and kitchen facilities (per bed space)	-50
Motels with bed and toilet (per bed space)	-40
<b>Parks:</b>	

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**TABLE PW-1  
COMMERCIAL WATER DEMAND IN THE UNITED STATES<sup>1</sup>**

<b>TYPES OF ESTABLISHMENTS</b>	<b>GPD</b>
Overnight with flush toilets (per camper)	-25
Trailers with individual bath units (per camper)	-50
<b>Picnic Areas:</b>	
With bath houses, showers, and flush toilets (per picnicker)	-20
With toilet facilities only (gal. Per picnicker)	-10
<b>Restaurants with toilet facilities (per patron)</b>	
Without toilet facilities (per patron)	7-10
With bar and cocktail lounge (additional quantity (per patron)	21-23
With bar and cocktail lounge (additional quantity (per patron)	-2
<b>Schools:</b>	
Boarding (per pupil)	75-100
Day with cafeteria, gymnasium and showers (per pupil)	-25
Day with cafeteria, but no gymnasiums or showers (per pupil)	-20
Day without cafeteria, gymnasiums or showers (per pupil)	-15
Service stations (per vehicle)	-10
Stores (per toilet room)	400
Swimming pools (per swimmer)	10
<b>Theaters:</b>	
Drive-in (per car space)	-5
Movie (per auditorium seat)	-5
<b>Workers:</b>	
Construction (per person per shift)	-50
Day (school or offices per person per shift)	-15

In cases where ranges are shown, the lower number shall be used for testing purposes.

2. The water supply system within the City shall operate with a rated capacity which is no less than 5 percent above the historical maximum daily flow.



~~3. Minimum Pressure—All systems and grids:~~

~~CONDITION \_\_\_\_\_ PRESSURE~~

~~Minimum \_\_\_\_\_ 20 psi~~

~~Normal Operations \_\_\_\_\_ 40 to 80 psi~~

~~4. Storage Volume~~

~~a. System-wide storage capacity for the regional system for finished water shall equal no less than 17 percent of system-wide average daily demand.~~

~~b. Nongrid systems without ground or elevated storage reservoirs shall provide for ten (10) minute retention time within the hydropneumatic tank and adequate and redundant well capacity to meet the fire peak demand condition of the system.~~

~~5. Fire Flow~~

~~Unless otherwise stipulated by the City Public Safety Department, minimum fire flows based on land use shall be maintained as follows:~~

<del><u>LAND USE</u></del>	<del><u>GALLONS PER MINUTE (GPM)</u></del>
<del>Single Family .....</del>	<del>500</del>
<del>2-family homes and Mobile Homes .....</del>	<del>750</del>
<del>Multi-family Residential, and Commercial .....</del>	<del>1,500</del>
<del>Institutional and Industrial .....</del>	<del>2,000</del>

**1.3.2**

No development order authorizing new development or a significant expansion of an existing user shall be issued for any area of the City served by a water facility which does not meet regulatory standards. Specifically, the necessary facilities, including adequate water supplies, will be in place and available to serve the new development when the development impacts occur, or the necessary facilities are guaranteed by an enforceable development agreement, issued pursuant to Chapter 163.3220, F.S.; or Chapter 380, F.S. Prior to approval of a building permit or its functional equivalent, the City shall consult with the applicable water supplier to determine whether adequate water supplies to serve the new development will be available no later than the anticipated date of issuance of a certificate of occupancy or its functional equivalent

**1.3.3**

The City shall establish procedures and programs to monitor Levels of Service (LOS) of each facility for use by agencies which issue development orders or permits within the time required by Section 163.3202, F.S.

### 1.3.4

All improvements for replacement, expansion or increase in capacity shall be compatible with the adopted Level of Service standards for water usage.

### 1.3.5

Through permit review and enforcement of State and local laws, JEA and the City shall ensure the continued distribution of potable water through both public and private water systems in compliance with the above specified Level of Service (LOS) standards.

**Objective 1.4 JEA shall plan and provide regional facilities to accommodate the ultimate needs of the community through implementation of JEA related projects listed in the Capital Improvements Element.**

#### **Policies 1.4.1**

JEA shall optimize the use of existing facilities through improvements, expansion and modification of process control systems and improvements to operational procedures before spending additional public funds for new facilities. After optimization efforts are considered, water ~~Water~~ system improvements will be evaluated for funding in accordance with the following general criteria:

1. Improvements which are necessary to protect the health, safety and environmental integrity of the community which are consistent with the policies of the ~~2030~~ Comprehensive Plan and the applicable federal, State, regional and local regulatory requirements.
2. Improvements which are necessary to meet existing deficiencies in capacity, ~~or~~ performance or reliability. These include the rehabilitation or replacement of deteriorating facilities which fail or threaten to fail to meet health, safety or environmental standards.
3. Improvements which extend regional service to previously unserved areas within the Central Business District, Urban Priority, Urban and Suburban Development Areas as defined in the Future Land Use Element.
4. Improvements which have been identified in adopted functional plans and address system details which are beyond the scope of the comprehensive plan for water facilities and are consistent with the goals, objectives and policies of the ~~2030~~ Comprehensive Plan.
5. Cost-effective improvements to expand capacity, maximize operational efficiency and increase productivity.
6. ~~JEA shall attempt to optimize use of existing facilities through improvements, expansion and modification of process control system and improvements to operational procedures before spending additional public funds for new facilities.~~

### 1.4.2

Water facility improvements will be undertaken in conformance with the schedule included in the Capital Improvements Element.

**Objective 1.5 JEA shall provide regional water supply and treatment capacity to maintain the adopted Level of Service standards.**

**Policy 1.5.1**

JEA's water treatment facilities shall supply water which meets all applicable federal, State, regional and local standards.

**Objective 1.6 JEA shall maintain the existing transmission and distribution system, and provide inspection on new construction so as to ensure the maintenance of the adopted Level of Service standards.**

**Policies 1.6.1**

JEA shall maintain an inventory of all water treatment facilities which identifies location, physical characteristics, age, service condition and structural condition.

**1.6.2**

JEA shall continue ~~a~~ ~~an~~ ~~aggressive~~ rehabilitation and replacement program directed at the older portions of the utility's existing system.

**1.6.3**

All required federal, State, regional and local permits shall be obtained before JEA undertakes, or authorizes contractors to undertake, construction and/or operation of new facilities for public infrastructure projects.

**1.6.4**

JEA shall provide for the inspection of new water facilities construction to insure that the ~~City~~ JEA and FDEP standards are enforced.

**1.6.5**

JEA shall install utility transmission mains of a size adequate for projected future needs ~~along the major water demand corridors~~.

**1.6.6**

The City shall, through modifications to Building and Zoning Codes and Land Development Procedures Manual, pursue redevelopment and renewal in areas already serviced by utilities to attain the optimum use of existing services and promote urban infill.

**1.6.7**

JEA shall continue and expand existing beneficial water system programs which may include but are not limited to:

1. Backflow prevention program
2. Leak detection program
3. Valve and hydrant operation, marking and testing program
4. Meter testing program
5. Instrumentation and control systems replacement program

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6. Operator training program
7. Water conservation program

#### **1.6.8**

JEA shall continue to utilize a system-wide, computer-based hydraulic analysis program for the determination of facility and growth needs and shall recalibrate the model as needed or every five years as part of the update of the water system master plan.

#### **1.6.9**

JEA shall conduct a water system audit periodically to minimize unaccounted for water and improve water records and accountability within its water system.

#### **1.6.10**

JEA shall on a continuing basis loop appropriate water mains to reduce dead ends, improve system water quality, increase reliability, and enhance pressure and fire protection capabilities.

#### **1.6.11**

JEA shall continue to evaluate its emergency power capability in order to ensure compliance with accepted engineering practices, utility standards and regulatory requirement.

#### **1.6.12**

JEA shall develop and maintain an automated water system management information system for its water facility records, mapping, preventive maintenance, stock and inventory control and other related functions.

**Objective 1.7 JEA and the City shall continue to enforce the City's reuse ordinance in compliance with the JEACity's consumptive use permit requirements as issued by the SJRWMD.**

#### **Policies 1.7.1**

JEA and the City shall periodically evaluate its reuse ordinance to ensure its effectiveness.

#### **1.7.2**

The City shall request that SJRWMD amend all non-potable consumptive use permits in Jacksonville issued by the SJRWMD to require that the permit holder accept and utilize reuse water when made available by the City.

#### **~~1.7.3~~**

~~In order to conserve fresh water, JEA, subject to permitting requirements of state law, shall have first priority of reclaimed municipal water use for electrical power production-related purposes, such as cooling water for generating units, because they constitute essential public infrastructure; provided, however, that following such use the remainder~~

~~of such water, if any, shall be returned to the JEA reclaimed water system for further reuse so long as all water quality requirements are met.~~

**Objective 1.8** **JEA and the EQD shall continue and expand the Citywide water conservation and demand reduction programs in order to reduce per capita consumption of potable water by up to ten percent (10%) by 2013, through implementation of effective water conservation measures and demand reduction program as reflected in Aquifer Recharge Sub-Element - Objective 2.1 and 2.2.**

**Policies 1.8.1**

JEA shall continue to establish and utilize potable water conservation strategies and techniques in the operation of CityJEA potable water facilities.

**1.8.2**

The approval of new water system connections shall be conditioned upon compliance with the Building Code requirements to assure the use of water conservation practices and techniques.

**1.8.3**

The City shall continue to implement requirements for low water use features and vegetation and water conserving irrigation practices in its landscape and tree protection regulations.

**1.8.4**

The City shall continue to implement its water conservation ordinance.

**1.8.5**

JEA in cooperation with other departments shall establish and maintain a water conservation public education program.

**~~1.8.6~~**

~~The City shall request that SJRWMD amend all non-potable consumptive use permits in Jacksonville issued by the SJRWMD to require that the permit holder accept and utilize reuse water when made available by the City.~~

**2030 COMPREHENSIVE PLAN**

**~~INFRASTRUCTURE  
ELEMENT~~**

**~~POTABLE WATER  
SUB-ELEMENT~~**

**B**

**~~DEFINITIONS~~**

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**~~JACKSONVILLE PLANNING AND DEVELOPMENT DEPARTMENT~~**

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PW14

**Exhibit 8  
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## DEFINITIONS

~~Coastal High Hazard Areas – The Coastal High Hazard Area is the area below the elevation of the category 1 storm surge line as established by a Sea, Lake, and Overland Surges from Hurricanes (SLOSH) computerized storm surge model as established by the Sea, Lake, and Overland Surges from Hurricanes (SLOSH) computerized storm surge model as established by the most current Northeast Florida Hurricane Evacuation study. It is shown on Map C-18. A property shall be deemed to be within the CHHA as depicted on Map C-18 unless site specific, reliable data and analysis demonstrates otherwise.~~

~~Community Owned Public Utility Company – A water or sewer utility owned by non-profit corporations providing service solely to members who own and control such non-profit corporations, associations or cooperatives.~~

~~Community Water System – A public water system which regularly serves twenty-five year round residents.~~

~~Cone of Influence – An area around one or more major waterwells, the boundary of which is determined by the government agency having specific statutory authority to make such a determination based on groundwater travel or draw down depth.~~

~~Conservation Uses – Activities within land areas designated for the purpose of conserving or protecting natural resources or environmental quality and includes areas designated for such purposes as flood control, protection of quality or quantity of groundwater or surface water, flood plain management, fisheries management, or protection of vegetative communities or wildlife habitats.~~

~~GUP – Consumptive Use Permit - A permit for any use of water which reduces the supply from which it is withdrawn or diverted. A consumptive use permit must be obtained from the Governing Board of the St. Johns River Water Management District before withdrawal of water shall be commenced for quantities set forth in Chapter 40D-2.031, F.A.C.~~

~~DCHD – Duval County Health Department~~

~~FDEP – Florida Department of Environmental Protection~~

~~GPCD – Gallons Per Capita Per Day~~

~~Investor Owned Public Utility Company – A water or sewer utility company which, except as provided in Section 367.022, F.S., is providing or is proposed to provide, water or sewer service to the public for compensation.~~

~~JEA – Water, Sewer & Electric Utility serving community in and around Duval County; previously known as Jacksonville Electric Authority.~~

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MG – Million Gallons

MGD – Million Gallons Per Day

Non-Community Water System – A public water system which provides water for human consumption and serves at least 25 individuals at least 60 days out of the year, but which is not a community water system.

PSC – Florida Public Service Commission

Potable Water – Water satisfactory for drinking, culinary, and domestic purposes.

Potable Water Facilities – A system of structures designed to collect, treat, or distribute potable water, and includes water wells, treatment plants, reservoirs, and distribution mains.

Potable Water Well Fields – The site of one or more water wells which supply potable water for human consumption to a water system which serves at least fifteen (15) service connections used by year-round residents or regularly serves at least twenty-five (25) year-round residents.

PSI – Pounds per square inch, a measure of pressure

Public Water System – A system that provides water for human consumption to at least twenty-five individuals at least sixty days out of the year.

Shall – The word "shall" indicates a mandatory action

Should – The word "should" indicates an action that is strongly advised.

SJRWMD – St. Johns River Water Management District, Chapter 373 Florida Statutes

Water Recharge Areas – Lands or water areas through which groundwater is replenished.

Water Wells – Wells executed, drilled, dug, or driven for the supply of industrial, agricultural or potable water for general public consumption

Wellhead Protection Area – An area consisting of a 750-foot radial setback distance around a Public Potable Water well or Wellfield where the most stringent measures are provided to protect the ground water source for a potable water well and includes the surface and subsurface area surrounding the well.