Cape Fear Public Utility Authority

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NC Environmental Stewardship Initiative

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PARTNER

Environmental Management System Manual

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The Cape Fear Public Utility Authority is a consolidated and independent public body providing water and sewer services for the residents of the City of Wilmington and New Hanover County with core principles of stewardship, sustainability and service, and a mission to provide high-quality service in an environmentally responsible manner while maintaining the lowest practicable cost.

Controlled

ONE TIME USE DOCUMENT

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SECTION I – INTRODUCTION: Context of the Organization

The Cape Fear Public Utility Authority (CFPUA) is a consolidated and independent public body providing water and sewer services for the residents of the City of Wilmington and New Hanover County with core principles of stewardship, sustainability and service, as defined in the strategic plan for the organization and a mission to provide high-quality service in an environmentally responsible manner while maintaining the lowest practicable cost.

Wastewater Treatment Operations
James A. Loughlin Wastewater Treatment Plant, 2311 North 23rd Street, Wilmington, NC 28401
M'kean Maffit Wastewater Treatment Plant, 3436 River Road, Wilmington, NC 28412

Water Supply and Treatment
Sweeney Water Treatment Plant, 1833 N. 5th Ave., Wilmington, NC 28401
CFPUA Nano Filtration WTP, 637 Groundwater Way, Wilmington, NC 28411

*Utility Services
Utility Services Operations and Maintenance, 633 Groundwater Way, Wilmington, NC 28411
Utility Services Water and Sewer Pipeline Construction and Distribution System Water Quality, 2310 North 23rd Street, Wilmington, NC 28401

*Administration, *Engineering, Finance, Information Technology, Customer Service, and Human Resources
CFPUA, 235 Government Center Dr., Wilmington, NC 28403

*Environmental Management
628 Groundwater Way, Wilmington, NC 28411

In order to improve the management of environmental issues, at the aforementioned locations, CFPUA is implementing an Environmental Management System (EMS). CFPUA has made a commitment to understand and take into account the needs of our customers, employees, regulators and any other interested parties during the establishment, implementation and maintenance of the EMS.

SCOPE

Ultimately the scope of CFPUA's EMS will include all areas of the organization. However, at this time the EMS scope covers operations under the control of the Utility Service's Operation and Maintenance of the Collections and Distribution Systems, the Environmental Management Department and the Engineering Department.

The Operations Utility Services group consists of preventative and corrective maintenance task through line cleaning, video assessment, pump station maintenance and operations, outfall maintenance, construction maintenance and locating of water and sewer lines and water quality related to the distribution system. The Environmental Management Department consists of the Community Compliance, Laboratory and Emergency Management for CFPUA. The Engineering Department consists of Development Services including inspections, Planning and Design, and Project Management for CFPUA.

The Safety Program, including its procedures and documents are not considered an auditable part of CFPUA's EMS scope. It may be included in various EMS documents for convenience and tracking purposes only.

As each Department is incorporated into the EMS, the scope will be expanded and third party audits of these Departments will be conducted for certification purposes. The EMS only includes identified environmental and public health activities, products, and services that relate to water and sewer services.

The Scope of the Environmental Management system will be made available to the public in hard copy form upon request and is available on the CFPUA website at www.cfpua.org.

EMS Design and Manual

This Environmental Management System (EMS) Manual presents the environmental policy, organizational structure, management system structure, and associated documents for the CFPUA. The EMS is designed according to the requirements set forth by the International Organization for Standardization (ISO-14001) Standard. Each section provides specific information or instructions necessary for complying with the requirements identified in the ISO-14001Standard.

The EMS manual is the responsibility of the Environmental Program Manager (EPM) and is to be reviewed yearly and updated as appropriate.

SECTION II - DISTRIBUTION, REVISION, AND CONTROL

The control and distribution of this manual **(EMS-0015)** shall be conducted by the EPM, or designee. This manual will be controlled in accordance with the Authority's Document Control Procedure (**EMS-0002)**.

The EPM, EMD Director, and the Executive Director shall have the responsibility for reviewing the manual at a minimum of once per year.

Recommendations for revisions shall be forwarded to the EPM. The EPM, or designee, shall be responsible for all revisions to the manual. He/she shall maintain all records of distribution and obsolete copies shall be kept on file.

SECTION III: STRUCTURE OF THE CAPE FEAR PUBLIC UTILITY AUTHORITY

The structure of the Cape Fear Public Utility Authority can be found on the Authority's shared drive linked below, and maintained by Human Resources Department.

..\..\..\..\..\..\Human Resources & Safety\FY17 Approved Org Charts

The organization structure of those defined in the scope of the EMS can be found on pages 1, 2, 3, 4, 6, 10, 11 and 14 of the organization Chart.

SECTION IV: Leadership

Through the commitment of Top Management at CFPUA the Environmental Management System has and will continue to improve as each department is incorporated into the scope of the EMS. Several processes of the EMS are already being incorporated throughout the organization such as the developing of standard operating procedures, documented training, contractor awareness, corrective and preventative actions and Management Review.

CFPUA ENVIRONMENTAL POLICY

The EPM and MRB will review the policy at least annually. Necessary policy revisions will be brought before the Authority Board for adoption at any time during the year that the Board determines that a change is necessary to ensure that the policy continues to be appropriate to the nature, scale and environmental impacts of its activities, products or services.

The primary objective of the Cape Fear Public Utility Authority is to provide water and sewer services to current and future customers consistent with our mission, strategic vision, and the guiding principles of stewardship, sustainability, and service. We will achieve our objectives through commitments to:

- **C**onduct educational outreach to interested parties as it relates to our activities, products, and services
- **F**ulfil our compliance obligations with all applicable federal, state, and local laws, regulations, statutes and other environmentally related requirements to which the organization may subscribe;
- **P**rotect the environment by managing our operations in an environmentally and fiscally responsible manner to maximize prevention of pollution and minimize waste and our impact on natural resources;
- **U**nderstand the needs of our interested parties when establishing and reviewing progress on each year's environmental objectives;
- **A**chieve continual improvement in the management of our activities, products and services;

In keeping with this policy, the Authority will establish, maintain and implement an Environmental Management System that conforms to the ISO 14001 International Standard. The CFPUA shall provide regular communication of this environmental policy to all Authority employees; those persons working on our behalf, and interested parties of this organization.

The Authority's Environmental Policy will be made available to the public in hard copy form upon request and is available on the CFPUA website at www.cfpua.org.

ROLES, RESPONSIBILITIES, AND AUTHORITIES

CFPUA has defined, documented and communicated the roles, responsibilities and authority of personnel in order to facilitate effective environmental management. These are identified through position descriptions and in the roles, responsibilities, and authorities' procedure (**EMS-0007**). Additionally, staff assigned to specific EMS responsibilities is listed on the EMS Roles, Responsibilities and Authority Chart **(EMS – 0007A).**

The Environmental Program Manager is responsible for ensuring that this EMS is established, implemented and maintained as well as reporting on its performance to top management

CFPUA Departments shall appoint and maintain a listing of staff **(EMS – 0007A)** appointed to serve on department EMS Teams and Audit Team.

SECTION V: PLANNING

During each cycle of planning of the EMS the CFPUA takes into account the context of the organization and the needs and expectations of its interested parties. When evaluating process whether new, existing, planned or unplanned the CFPUA determines any risk or opportunities associated with the processes environmental aspects, compliance obligations associated with the process and any emergency situations that could arise from the process. The CFPUA will take action to ensure significant environmental aspects, compliance obligations and risk and opportunities are addressed when developing standard operating procedures, developing objectives and capital improvements, or implementing operational controls to reduce the impact on the environment.

ENVIRONMENTAL ASPECTS

The following definitions are provided in the ISO-14001 Standard.

Environmental Aspects - Elements of the organization's activities, products or services, which can interact with the environment.

Environmental Impact - Any change to the environment, whether adverse or beneficial, wholly or partially resulting from an organization's environmental aspects.

Significant Environmental Aspect - An environmental aspect that has or can have a significant environmental impact.

In order to determine which aspect can have a significant impact on the environment, CFPUA has identified all known environmental aspects and related impacts of the Cape Fear Public Utility Authorities activities, products and services within the defined scope that it can control and/or have influence over.

CFPUA Departments shall review at least annually the lists of environmental aspects and impacts and identify the significant aspects using the Aspects and Impacts procedure (**EMS-0004**). An aspect and impact review of any new or modified operation, activity, or compliance obligation shall be performed as appropriate during the year to determine significance per the Aspect and Impact procedure (**EMS-0004**). Significant environmental aspects shall be kept up to date and considered in setting environmental objectives each year.

Compliance Obligations

CFPUA is required to comply with a variety of compliance obligations that are applicable to the environmental aspects of its activities, products and/or services. CFPUA has compiled comprehensive listings of its compliance obligations (**EMS-0015B**). Each Department Head has assigned specific personnel to track applicable compliance obligations for their respective Departments as listed on the Compliance Obligations Document **(EMS – 0015B).** Prior to MRB meetings the assigned personnel will review these listings for accuracy and the need for updating any changes to compliance obligations shall be presented at the MRB meetings per the Management Review Procedure (**EMS-0009**).

Environmental Objectives

CFPUA establishes environmental objectives annually per the Objectives procedure (**EMS-0008**) during the budget development process by taking into account all compliance obligations and its significant environmental aspects

- The Departments shall also consider the following information:
  - Protecting the environment through prevention of pollution
  - Product Quality
  - Technological options
  - Financial, operational, and business requirements
  - Authoritative information sources on relevant topics
  - CFPUA Environmental Policy
  - Context of the organization
  - Views of interested parties
  - Life Cycle perspective
  - Risk and Opportunities
  - Progress reports on the previous year's objectives

The goals and objectives shall be specific, measurable, achievable, relevant, and time bounded whenever possible. The progress on achievement of goals shall be evaluated and tracked via Management Review Board meetings.

SECTION VI - Support

Resources

Cape Fear Public Utility Authorities Top Management is responsible for ensuring that adequate human resources, other assets, and training are available to successfully implement, manage and improve the environmental performance, stewardship, sustainability of the organization.

COMPETENCE and AWARENESS

All employees within the CFPUA shall be trained on the EMS policy and training records will be maintained by the Environmental Program Manager, or designee. Based on the annual environmental aspects review, each area shall identify training needs for those employees whose work activities may affect (positively or negatively) a significant environmental aspect, or create public health risks. Training on relevant procedures shall be established and maintained to ensure employees are aware of:

- The importance of conformance with the environmental policy, procedures and with the requirements of the Environmental Management System;
- The significant environmental impacts, actual or potential of their work activities and the environmental benefits of improved personal performance;
- The individual employee's roles and responsibilities in achieving conformance with the environmental policy, procedures and with the requirements of the Environmental Management System, including emergency preparedness and response requirements;
- The potential consequences of departure from specified operating procedures.

Personnel performing tasks, which can cause a significant environmental impact, shall be evaluated for competence per the EMS Competence, Training and Awareness procedure (**EMS-0006**). This training and competence will be documented on the training sign in form **(EMS-0006A)** or the Training and Competency Record **(EMS-0006B)** and a copy submitted to the Environmental Program Manager or designee. The Environmental Program Manager and designated personnel within each Department shall maintain these records.
All new employees shall receive training on EMS related procedures, policy and requirements of the environmental management system per the EMS Competence, Training and Awareness procedure (**EMS-0006)**. New or revised procedures affecting existing personnel shall be communicated as designated in the EMS Competence, Training and

Awareness procedure (**EMS-0006**). New employees will be trained on procedures pertinent to their position by area supervisors. This training and competence will be documented on the training sign in form **(EMS-0006A)** or the Training and Competency Record **(EMS-0006B)** and a copy submitted to the Environmental Program Manager or designee. The Environmental Program Manager and designated personnel within each Department shall maintain these records.

Records of training and competency determination are maintained in the Training Matrix (**EMS-0006C**) and or in the CFPUAs Computer Maintenance Management System (CMMS) Maximo.

Vendor/Contractor employee competence will be evaluated per the EMS Competence, Training and Awareness procedure **(EMS-0006)**. Upon awarding contract, the Vendor/Contractor will be made aware of the Environmental Management System and Environmental Policy. Training of Contractors specific to CFPUA will be determined on a case-by-case basis. Contractors shall coordinate work with Authority staff in order to ensure that all policies and procedures are followed.

COMMUNICATION

CFPUA has developed the Communication and Public Outreach procedure (**EMS-0012**) to handle internal communications between the various levels and functions of the organization and to facilitate and track public outreach efforts to the community. The EPM, or designee, is responsible for communicating information relative to the EMS to upper management.

This procedure also documents a process for receiving, documenting, responding to, and tracking relevant communications from interested third parties and the CFPUA response to the same. Staff members will attend public meetings and do presentations whenever possible to educate interested parties on relevant topics.

CFPUA has determined that the EMS policy, annual wastewater system performance report, annual consumer confidence report for water, compliance obligation listing, third party audit, a listing of its significant environmental aspects, and any other EMS related documentation will be provided to any interested party upon request. Additionally, the EMS policy, wastewater annual report, and the water plants consumer confidence report are available via the CFPUA website at http://www.cfpua.org. External communication pertaining to the significant environmental aspects will be handled on a case-by-case basis.

Documented Information

CFPUA has developed an EMS documentation system that is organized in a four-tier structure

EMS Manual	Level 1
EMS Procedures	Level 2
Standard Operating Procedures/Work Instructions/Reference Charts	Level 3
Forms/Records	Level 4

Documents in each of these levels will provide direction to related documents in the same and/or other levels.

CFPUA has established a Document Control System that manages all documents and data fulfilling the requirements of the ISO 14001 standard. It ensures documented information:

- can be located
- are periodically reviewed, revised as necessary and approved for adequacy by authorized personnel;
- the current versions of relevant documents are available at all locations where operations could significantly impact the environment;
- the use of obsolete documents is protected against accidental use and those retained for legal or knowledge preservation suitably identified as obsolete;
- they are legible, dated, readily identifiable and properly stored;
- documented information of external origin determined necessary for planning and operation of the EMS are identified and controlled.

CFPUA has developed procedures and responsibilities concerning the creation and modification of various types of documents as identified in the Document Control Procedure (**EMS-0002**).

Section VII: OPERATION

Operational Planning and Control

CFPUA has identified operations and activities associated with its identified significant environmental aspects. Each area shall plan these activities, including maintenance, in order to be consistent with its policy, environmental objectives, and to ensure they are carried out under specified conditions by:

- Establishing, implementing, and maintaining documented standard operating procedures to cover situations where their absence could lead to deviations from the environmental policy, environmental objectives, performance targets, activities that alter (positively or negatively) the acceptable disposal/use method or create public nuisance and public health risks.
- EMS requirements;
- Stipulating operating criteria in the procedures;
- Establishing, implementing, and maintaining procedures related to identify significant environmental aspects of goods and services used by the organization and communicating relevant procedures and requirements to suppliers and contractors.

All operating procedures are identified in the Document Control Matrices on the CFPUA's computer network. The Significant Aspect Ranking (**EMS-0004A**) lists all significant aspects and impacts along with their corresponding operational control, method for monitoring and measuring, and associated compliance obligations.

EMERGENCY PREPAREDNESS AND RESPONSE

CFPUA has developed several procedures to handle Emergency Preparedness and Response activities for the Authority. CFPUA has an All-Hazards Emergency Response Plan which addresses the assignment of responsibilities and direction for establishing an organized response, and activation of an emergency operations center in the event of major emergency situations. In addition, each facility has a site-specific emergency "fast action binders (action plans - see appropriate Document Control Matrix for procedure name and number). Also, the facilities have identified areas of the process that could have a negative impact on the environment, safety, or public perception in the event of their failure and/or severe weather situations, and have developed plans and procedures taking these items into account.

The Emergency Response plan is revised as often as necessary. The water/wastewater sector is one of the 16 critical infrastructure sectors designated by the federal government. Training, exercises, and drills are conducted as recommended best practices by EPA, DHS, and FEMA. CFPUA is a National Incident Management System (NIMS) compliant organization, and adheres to the Department of Homeland Security's Exercise and Evaluation Program (HSEEP).

All CFPUA personnel who may be required to respond to emergencies receive initial and refresher training class on the Emergency Response Plan and their respective work site emergency action plans. Additionally, CFPUA employees need to be trained on their specialized responsibilities. Competency is demonstrated through workshops, seminars, drills, table-top exercises, functional and full-scale exercises. CFPUA has a goal of 3 organization-wide exercises a year, and other department or divisions hold training at least annually.

SECTION VIII – PERFORMANCE EVALUATION

Monitoring, Measurement, analysis and evaluation

CFPUA has established, implemented, and maintains a system for monitoring and measuring the key characteristics of their operations that can have a significant impact on the environment. The key characteristics for each department will be reviewed per the Management Review Board procedure **(EMS-0009)**. The CFPUA utilizes the American Water Works Association (AWWA) Benchmarking tools to evaluate to overall performance of its systems.

Monitoring and measuring equipment shall be calibrated and maintained and records kept on file with the responsible supervisor, and made available upon request. Equipment Calibration List **(EMS-0009B)** may be utilized to track calibrations.

EVALUATION OF COMPLIANCE

Departmental Staff shall evaluate compliance at least quarterly with compliance obligations identified within the compliance obligations listings for each Department. Compliance evaluations shall be accomplished through a variety of methods such as annual wastewater performance reports, monthly operating reports, discharge monitoring reports, annual environmental stewardship reports, area wide optimization program reports, etc. The results of these evaluations shall be kept on file with the responsible supervisor where applicable. Internal audit team will verify results of compliance evaluations at least annually during EMS internal audits.

Internal Audit

CFPUA has planned, established, implemented, and maintains procedures to carry out periodic audits of the environmental management system (EMS). The EMS Audit Procedure (**EMS-0014**) determines the scope, frequency, methodology, and responsibility for the audits.

- The purpose of audits is to determine if the EMS has been properly implemented and maintained per the requirements of the ISO 14001 standard and whether or not the EMS, is functioning effectively.
- Results of the EMS audits are reviewed with the area supervisor and MRB.

MANAGEMENT REVIEW

Top Management will review the progress towards objectives, corrective and preventative actions, departmental key characteristics, compliance, audits, abnormal or emergency situations, communications, and the public outreach effort to ensure continuing suitability, adequacy, and effectiveness of the EMS for the department. This review shall also assess opportunities for improvement, the need for changes to the system and identification of recommendations for improvement. Attendees to this meeting shall be determined on a case by case basis by the Executive Director to include at a minimum Top Management see Roles, Responsibility and Authority Chart **(EMS-0007A)**, additional attendees are listed in the Outlook Calendar Invite and this meeting shall be documented per the Management Review Board Procedure **(EMS – 0009)**.

Section IX: IMPROVEMENT

NON-CONFORMANCES, CORRECTIVE ACTION

CFPUA has established, implemented, and maintains a procedure for dealing with actual and potential nonconformance and taking corrective and preventive action (**EMS-0005**). This process is to help ensure conformance, compliance, and to drive continual improvement within the fundamental processes. This procedure includes:

- Identifying and correcting nonconformance and taking actions to mitigate impacts;
- Investigating nonconformance, determining root cause, and taking action to avoid recurrence;
- Evaluating the need for action(s) to prevent nonconformance and implementing actions designed to prevent the same;
- Recording the results of corrective and preventive actions;
- Reviewing the effectiveness of corrective and preventive actions;
- To ensure actions taken are appropriate to the magnitude of problems and impacts encountered;
- Changes to documented procedures resulting from corrective or preventative actions are recorded in the procedure's revision history.

SECTION X: REVISION HISTORY

Revision Date	Revision #	CPAR	Reason for Revision	Description of Revision
2/22/2011	1	64	Update	• Revised Section 6-5 Control of Documents and footer to reflect changes made to the Document Control Procedures. • Pg. 3 – Updated Addresses and Modified Scope Statement • Pg. 4 – Added EMS Roles, responsibilities and authorities chart • Pg. 5 – removed review board and auditor roles • Pg. 6 - removed definitions • Pg. 8 – Added EMS Chart to 6-1. • Pg. 10 – Added Monitoring and Measuring procedure to 7-1 and Legal and Other Requirements Procedure to 7-2 • Pg. 11 – Modified Management Review Section
4/25/2011	2	134 & 135	Audit	• During external audit it was pointed out that the organization chart on page 5 indicated that the Environmental and Safety Management Director reported straight to the CFPUA Board. The chart should show that the Environmental and Safety Management Director reports to the Chief Executive Officer. • Section 6.2 included sharing significant aspects and impacts with contractors that work on CFPUA behalf.
10/18/11	3		Annual Review	• Pg 3 - Modified address for the US Construction group from Operations Center Drive to 23rd Street. • Pg 5 – Modified the Chart to represent the ESMD Director as reporting to the CEO and being on the same level as the COO. • Section 5-5: ISO 4.3.3 - Changed Environmental Management Program to Continual Improvement Programs • Section 6-7: ISO 4.4.7 – Removed statement about creating an IAP for each identified situation. • Section 7-6: ISO 4.5.5 – Modified to include XMRBs and changed the Audit Procedure Number from EMS-0014.454 to EMS-0014.455.

Revision			Reason for Revision	• Description of Revision
Date	#	C/PAR		
12/12/2012	4		Annual Review	• Pg. 3 – Modified address for Sweeny Water Treatment Plant from Hilton St. to 5th Ave. • Section 4: Modifications to Environmental Policy approved by the CFPUA Board and added to the manual.
12/17/2013	5	294	Annual Review, Expansion of Scope and Change of Title	• Pg. 1 – Changed CEO to Executive Director and modified the name of the Executive Director. • Pg. 2 – Updated the Table of Contents • Pg. 3 - Modified the scope to add the Environmental Management Department (EMD) to the scope. • Pg. 4 – Changed CEO to Executive Director • Pg. 5 – Changed CEO to Executive Director • Pg. 6 - Added the structure of EMD for the scope and modified the Environmental Policy to reflect the update to the primary objective • Pg. 10 - Modified the scope to add the Environmental Management Department (EMD) to the scope. • Pg. 11 – Removed Consumer Confidence Reports from the first paragraph.
4/28/2016	6		Expansion of Scope	• Pg. 3 - Modified the scope to add the Water and Sewer Pipeline Construction and Water Distribution System to the scope. • Pg. 4 – Modified to add the Water and Sewer Pipeline Construction and Water Distribution System
3/1/2017	7	731	ISO 14001-2015 Standard update	• All sections modified to meet requirements of the ISO – 14001-2015 Standard.