



<i>Environmental Management System Manual</i>	
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1.0 INTRODUCTION

1.1 Policy and Scope

The City and County of Denver (“CCD”) has implemented an Environmental Management System (“EMS”) to more effectively manage environmental and sustainable development issues throughout CCD. The EMS is based on the ISO 14001 Standard and is managed and coordinated by the EMS Program Administrator, Department of Environmental Health (“DEH”).

The EMS is designed to support the requirements defined in the CCD’s Environmental Public Health Policy and advance the CCD sustainable development initiative (“Greenprint Denver”). The scope of the EMS for CCD covers all properties and operations of the CCD, excluding Denver International Airport (“DIA”), which operates under its own EMS.

- Related Document: [*CCD-101 Environmental Public Health Policy*](#)

The scope of CCD’s ISO 14001 Certification is contained in CCD-103 ISO 14001 Scope.

1.2 Structure of the EMS and this Manual

This EMS Manual (“Manual”) describes what CCD has implemented to manage environmental and sustainable development aspects associated with its properties and operations. All the requirements contained within the Manual are incorporated into the CCD EMS.

The EMS has been structured around the requirements of ISO 14001 to provide a continual improvement cycle for CCD. The general intent is to explicitly follow a **Plan – Do – Check – Feedback** cycle that considers all of CCD environmental aspects controls and explicitly manages those that can create a significant impact to the environment.



The Manual is a primary-level document that illustrates the entire EMS by referencing subsidiary documents for specific procedures and programmatic descriptions for each element within the EMS.

Document numbers for all the secondary and tertiary level documents that are not contained in this manual are noted where appropriate to provide additional direction to the reader.

The Denver Zoological Foundation (“DZF”) has implemented a Sustainable Management System (“SMS”) to more efficiently and effectively monitor and manage environmental and sustainable development practices throughout DZF. The DZF will be working in conjunction with the City and County of Denver to assure that the SMS meets or exceeds the City-wide



standards set forth through *Greenprint Denver*. The SMS Manual describes what has been implemented by the DZF and how this SMS is managed.

- Related document: DZF.SMS-102 SMS Manual

1.3 Key Elements the EMS

- Policy, Management Commitment, and Review. The CCD Environmental Policy represents the commitment made by senior management regarding CCD’s position towards managing environmental issues. The commitment described by the Policy, along with regular EMS performance information, is regularly reviewed by CCD senior management.
- Aspects and Impacts. CCD maintains a process to identify and control its significant environmental risks and opportunities.
- Regulatory Compliance Programs. Legal and other requirements are identified and managed across all environmental media.
- Objectives, Targets, and Planning. An annual planning cycle ensures that management priorities are set while considering past performance and future challenges.
- Roles and Responsibilities. Roles and responsibilities are set for DEH staff, focal points throughout CCD, and general CCD and tenant staff.
- Guidelines for Activities. Environmental guidelines set minimum performance requirements and provide recommended guidance for conducting environmentally critical activities throughout CCD in a safe and responsible manner.
- Training and Communication Programs. Environmental awareness training is provided for all staff and training needs are assessed for staff with specific environmental responsibilities. Communication programs ensure that awareness stays at a high level.
- Documentation and Records Management. The EMS is represented in the form of a hierarchy of documents, centrally maintained by DEH.
- Emergency Response Program. CCD has integrated environmental considerations into emergency response programs, ensuring that environmental issues are included when responding to an incident.
- Inspections and Internal Review Program. Regular inspections are conducted to ensure activities are being conducted per EMS requirements. Regular internal



reviews are also conducted to ensure that the overall EMS is functioning as intended, supporting the commitments described in the Environmental Policy.

1.4 Document Hierarchy

The documents representing the EMS can be organized along the following hierarchy:

“Why do the EMS?”	<u>Level 1</u> CCD Environmental Policy
“What is in the EMS?”	<u>Level 2</u> CCD EMS Manual
Overview of “How the EMS works”	<u>Level 3</u> Processes and Catalogs
Details of “How the EMS works”	<u>Level 4</u> Guidelines, Registries, Aspect Control Diagrams, Procedures, Plans, Work Instructions, Calendars, Schedules
“What’s been done as a result of the EMS?”	<u>Level 5</u> Records

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2.0 PLANNING

2.1 Environmental Aspects and Control

CCD maintains a process for identifying and prioritizing the environmental aspects of its activities, products, and services that it can control and over which it can expect to have an influence. CCD identifies those operations and activities that are associated with the identified significant environmental aspects in line with its policy, objectives and targets. CCD plans these activities, including maintenance, in order to ensure that they are carried out under specified conditions by:

- Establishing and maintaining environmental guidelines to cover situations where their absence could lead to deviations from the environmental policy and the objectives and targets;
 - Stipulating operating criteria in the guidelines; and
 - Establishing and maintaining guidelines related to the identified significant environmental aspects of goods and services used by the organization and communicating relevant procedures and requirements to suppliers and contractors.
- Related Document: *[CCD-201 Environmental Aspects and Impacts Identification and Assessment Process](#)*

2.2 Legal and Other Requirements

CCD maintains a procedure to identify and have access to legal and other requirements to which the organization subscribes and is applicable to the environmental aspects of its activities and services. These legal requirements include federal, state, regional, and local requirements in the form of statutes, regulations, ordinances, and permits. DEH's Division of Environmental Quality is responsible for:

- Maintaining a system for identifying legal and other requirements applicable to the environmental aspects of CCD operations;
- Acting as CCD liaison with the authorities and industry associations on the development of environmental legislation relevant to CCD;
- Ensuring that legal and other requirements are communicated specifically to the relevant pieces of the CCD organization, and on a general level to the organization as whole;
- Ensuring compliance with legal requirements, including conditions on permits, exemptions, consents, authorizations, etc, and other organizational [environmental] requirements;



- Identifying non-compliances and communicating them to the appropriate level within the organization; and
- Tracking and implementing corrective actions, including changes to procedures or environmental guidelines, through an appropriate tracking system.

The Division of Environmental Quality will screen the legislation and assess the impact on CCD, provide guidance to other groups and support services to facilitate implementation, and thus help ensure compliance. Additionally, all subsequent legal requirements, permits, required procedures, and critical compliance tasks (such as reporting) are cross-referenced in the Legal and Other Requirements Catalog.

➤ Related Document: [*CCD-203 Legal and Other Requirements Process and Catalog*](#)

2.3 Objectives, Targets, and Planning

CCD documents its environmental objectives through an annual planning process; the results of which are reviewed annually by senior management. Wherever possible, objectives and targets are cascaded through each relevant function and level within CCD. At a minimum, CCD will set targets for environmental compliance. While setting and reviewing the objectives, CCD will consider:

- Legal requirements;
- Identified significant environmental aspects;
- Technological options;
- Financial, operational and business requirements;
- Remedial actions;
- Views of interested parties; and
- Available resources.

Progress towards achieving its goals will be documented annually as part of the review process. Objectives and targets will be consistent with the Environmental Policy.

➤ Related Document: [*CCD-204 Annual Planning Process*](#)



3.0 IMPLEMENTATION AND OPERATIONS

3.1 Structure and Responsibility

CCD maintains an organizational structure and clearly assigns responsibility with the intent of fully implementing the Environmental Policy. Roles, responsibility, and authorities are defined, documented, and communicated in order to facilitate effective environmental management. Management shall provide the technological and financial resources, including personnel with specialized skills, essential to implementation and control of the EMS.

CCD identifies those operations and activities that are associated with the identified significant environmental aspects in line with its policy, objectives and targets. CCD delineates environmental roles and responsibilities associated with these operations and activities within the Environmental Guidelines.

- Related Document: [*CCD-301.03 Environmental Guideline Process and Catalog*](#)

3.2 Training

CCD maintains a program to ensure all employees and others managing environmental aspects on behalf of CCD are properly trained and aware of their environmental responsibility through environmental awareness training. Personnel performing tasks, which can cause significant environmental impacts, shall be competent on the basis of appropriate education, training, and/or experience. General awareness training is extended to non-city employees, but limited to the scope of the EMS.

Competence is defined as the knowledge, skills, and abilities necessary to perform tasks repeatedly to the required standard under real conditions. Competence in any field or discipline is acquired from education, training, and experience over time. Employees should be aware of the hazards, aspects, and risks they are facing and the main controls for those risks as well as their responsibilities in maintaining those controls. Training will serve the purpose to assure that all relevant personnel are aware of:

- The importance of conformance with the Environmental Policy, any relevant procedures or environmental guidelines, and with requirements of the EMS;
- The significant environmental impacts, actual or potential, of their work activities and the environmental benefits of improved personal performance;
- Their roles and responsibilities in achieving conformance with the Environmental Policy, procedures and environmental guidelines, and with requirements of the EMS, including emergency preparedness and response requirements; and
- The potential consequences of departing from standard operating procedures or environmental guidelines.



➤ Related Document: *CCD-302: Training Process and Catalog*

3.3 Communication

CCD maintains procedures for communicating environmental information both internally and external of the organization. Procedures are maintained for the following functions:

- Internal communication between the various levels and functions of the CCD;
- Receiving, documenting, and responding to relevant communication from external interested parties, especially in regards to significant environmental aspects; and
- Mechanism to communicate externally about CCD’s environmental programs including significant environmental aspects.

CCD regularly communicates with external parties such as governmental agencies, community stakeholders, property owners and the general public, contractors, and personnel from other city agencies. These communications include all subjects associated with the management of CCD’s significant environmental aspects and are governed by CCD’s regulatory requirements and the professional judgment of CCD staff.

➤ Related Document: *CCD-303 EMS Communication Process*

3.4 Documentation and Records

CCD maintains EMS information, in paper and/or electronic form to describe the core elements of the management system and their interaction and to provide direction to related documentation. CCD maintains a document and record control process to facilitate the effectiveness of the EMS. The procedure ensures that documents and records:

- Can be located;
- Are periodically reviewed, revised as necessary and approved for adequacy by authorized personnel;
- Are available in their current version at all locations where operations essential to the effective functioning of the EMS are performed;
- If obsolete, are properly removed from all points of use, or are otherwise assured against unintended use;
- Are kept in a standardized format, which requires them to be legible, have an owner, and be dated; and
- If obsolete, and are needed for legal and/or knowledge preservation purposes, are suitably identified.



- Related Document: [*CCD-304 Document Control and Record Management Process and Catalog*](#)

3.5 Procedures and Work Instructions

CCD maintains a variety of procedures, plans, work instructions and other guidance documentation to ensure regulatory compliance and clarity when conducting activities that can interact with significant environmental aspects.

- Related Document: [*CCD-305: Work Instructions Process and Catalog*](#)

3.6 Emergency Preparedness and Response

CCD maintains an emergency preparedness and response program to identify and respond to accidents and emergency situations, including the mitigation of environmental impacts that may be associated with them. Tests of these procedures are performed periodically to ensure competency.

CCD reviews and revises, where necessary, the environmental portions of its emergency preparedness and response procedures, after the occurrence of accidents or emergency situations. Through this review, the causes of the incident will be documented to prepare a plan for prevention of such an incident in the future.

- Related Document: [*CCD-306: Emergency Preparedness and Response*](#)



4.0 CHECKING AND CORRECTIVE ACTION

4.1 Monitoring, Measurement and Inspection

CCD maintains documented procedures to monitor, measure and inspect the key characteristics of its operations and activities that can have a significant impact on the environment. This includes the recording of information to track performance, relevant operational controls, and conformance with CCD's stated objectives and targets. Monitoring equipment shall be calibrated and maintained and records of this process shall be retained according to CCD's records management process.

- Related Document: [*CCD-401: Environmental Monitoring Program Catalog*](#)
- Related Document: [*CCD-402: Environmental Inspection Program Catalog*](#)

4.2 Corrective and Preventive Action

CCD maintains procedures for defining responsibility and authority in the handling and investigating of nonconformance, taking action to mitigate any impacts caused, and for completing corrective and preventative action.

Any corrective or preventative action taken to eliminate the causes of actual and potential non-conformances will be appropriate to the magnitude of problems and commensurate with the environmental impact encountered.

CCD will implement and record any changes in the documented procedures resulting from corrective and preventive action. Corrective actions are maintained in the EMS website or in an alternative tool.

- Related Document: [*CCD-403: Corrective and Preventive Action Process*](#)

4.3 Internal EMS Audit

CCD maintains a program to audit its activities and management system performance to ensure that the City is performing in a manner that will meet its goals. CCD also maintains a documented procedure for periodically evaluating compliance with relevant environmental regulations. The EMS Audits will serve the purpose to:

- Identify areas of potential non-compliance and allow for timely corrective action;
- Determine whether or not the environmental management system;
- Conforms to planned arrangements for the EMS;



- Has been properly implemented and maintained; and
- Provide information on the results of EMS reviews to management.

CCD's audit program, including the schedule, is based on the environmental importance of the activity concerned, and on the results of previous audits. In order to be comprehensive, the audit procedures shall cover the audit scope, frequency, and methodologies, as well as the responsibilities and requirements for conducting the audit and reporting results.

- Related Document: [*CCD-404: Internal Audit Program*](#)

5.0 MANAGEMENT REVIEW

CCD top management review the EMS annually to ensure CCD's environmental performance objectives and targets are being met. Corrective action items identified during the management review are prioritized, assigned action parties, and given targeted completion dates. The management review also addresses the possible need for changes to policy, objectives and other elements of the EMS, in light of the EMS review results, changing circumstances and the commitment to continual improvement. CCD management reviews the EMS to ensure its continuing suitability, adequacy, and effectiveness. The management review process shall ensure the necessary information is collected to allow management to perform this evaluation.

- Related Document: [*CCD-501: Management Review Process*](#)