



Title	ES-102: Environmental Management System Manual
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1. Introduction

1.1. A. EMS Scope; Organization and Its Context

In order to more effectively manage environmental issues at Denver International Airport (DEN), DEN has chosen to implement an Environmental Management System (EMS) based on the ISO 14001 Standard. The DEN EMS is designed to support the requirements defined in the DEN Environmental Policy statement. This manual describes what DEN has implemented to manage the environmental aspects associated with operating an international airport. All the requirements contained within this document are incorporated into the DEN EMS.

The Environmental Policy, established by the airport's CEO, outlines its commitment to environmental protection, preventing pollution, fulfilling compliance obligations, and continual improvement by enhancing environmental performance. DEN sets environmental objectives to support the Environmental Policy and monitor how the airport's EMS achieves its intended outcomes.

The scope of the EMS covers all properties and operations within the property boundary lines of DEN. These boundaries are clearly demarcated on the Airport Layout Plan (ALP). The City of Denver owns and operates Denver International Airport (DEN). Under the city charter, the management, operation and control of DEN is delegated to the city's Department of Aviation. All activities, products and services conducted by Aviation at DEN are within the scope of the EMS and are commonly referred to as being conducted by DEN. All elements of the EMS apply to those activities.

"DEN business partner" means any person or legal entity that provides services on behalf of DEN or uses DEN property and facilities to operate a business or not-for-profit activity. DEN and its business partners create mutual obligations in written agreements that are enforceable by law. DEN business partners conducting ongoing operations on behalf on DEN are typically doing so in accordance with an operating agreement, and those that provide short-term services typically do so in accordance with a contract or purchase order. These types of business partners are commonly referred to as contractors, subcontractors, and vendors. DEN business partners that are operating their own business or not-for-profit activities at DEN are typically doing so in accordance with a use and lease agreement, access permit, license, or other legal authority. These types of business partners are commonly referred to as tenants, concessionaries, lessees, sub-lessees, permittees, and federal partners.

While DEN's business partners maintain independent operational control of their activities, products and services, their conduct must be compliant with environmental requirements and legal agreements. The Denver City Charter specifically authorizes DEN to adopt rules and regulations to direct activities conducted at DEN, and through that authority DEN requires that all entities doing business at DEN or on behalf of DEN conform to certain elements of the ISO 14001 EMS standard. The provisions of Part 180 of the Airport Rules and Regulations specify that, all DEN business partners must be aware of the DEN Environmental Policy, identify the significant environmental aspects that they affect, and develop programs to manage these aspects in a manner that complies with environmental requirements, and further, must ensure the competency of their staff with respect to environmental responsibilities. DEN business partners retain operational control over the environmental aspect or impact and have discretion on the means and methods used to meet environmental requirements. EMS documents provide guidance and communicate expectations to DEN business partners.

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DEN has many interested parties. Its business partners are surely important members of that larger group. The ISO standard defines an interested party as a *person or organization that can affect, be affected by, or perceive itself to be affected by a decision or activity.*

1.1.B. Leadership and Commitment; Environmental Policy

The Environmental Policy, established by the airport’s CEO clearly communicates commitment and leadership of the EMS throughout top management of the organization. As part of the annual management review process, the annual plans including environmental objectives past and present are reviewed and approved. Reviewing intended outcomes, allocating necessary resources, all assist in the continual improvement and alignment with DEN’s strategic direction.

➤ Related Document: *ES-101 DEN Environmental Policy*

1.2. Structure of the EMS and this Manual

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



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

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

Key Elements of the DEN EMS

Policy, Management Commitment and Review, and Resources

The DEN Environmental Policy represents the commitment made by senior management regarding DEN’s position towards managing environmental issues. The commitment described by the Policy, along with regular EMS performance information, is regularly reviewed by DEN top management. Top management ensures the appropriate personnel have the appropriate responsibility and authority to make the EMS effective.

Environmental Aspects and Impacts

DEN maintains a process to identify actions to address risks and opportunities associated with its significant environmental aspects, and risks & opportunities.

Compliance Obligations

Environmental requirements and voluntary commitments are identified and managed across environmental media, including air, wastewater, stormwater, natural resource management and wastes.

Objectives and Planning

An annual planning cycle ensures that management priorities are set while considering past performance and future challenges.

Environmental Roles and Responsibilities

Roles and responsibilities are set for DEN Environmental Services staff,

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Environmental Guidelines for Airport Activities

The Environmental Guidelines set minimum performance expectations and provide guidance for conducting critical activities at the airport in an environmentally responsible manner.

Training and Communication Programs

Environmental awareness training is provided for DEN staff and training needs are assessed for staff with specific environmental responsibilities. Communication programs ensure that awareness stays at a high level.

Documented Information

The EMS is represented in the form of a hierarchy of documents, centrally maintained by DEN Environmental Services. DEN business partners also maintain records of activities as required by the EMS elements and their compliance obligations.

Emergency Response Program

DEN has integrated environmental considerations into the Operations Division Emergency Response program, ensuring that environmental issues are included when responding to an incident.

Performance Evaluation Inspections and Internal Review Program

DEN conducts regular facility inspections to measure the extent to which airport activities are being conducted per EMS requirements. Regular internal reviews are also conducted to measure the effectiveness of the EMS and promote environmental awareness and compliance. Additionally, the reviews evaluate whether the EMS is functioning as intended, supporting the commitments described in the Environmental Policy.

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1.3. Document Hierarchy

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

“Why do the EMS?”	<u>Level 1</u> ES-101: DEN Environmental Policy
“What is in the EMS?”	<u>Level 2</u> ES-102: DEN EMS Manual & Scope
Overviews of “How the EMS works”	<u>Level 3</u> Processes and Catalogs
Details of “How the EMS works”	<u>Level 4</u> Guidelines, Registries, Assessments, Plans, Work Instructions
“What’s been done as a result of the EMS?”	<u>Level 5</u> Records/Documented Information

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2. Planning Action (ES-200 Planning)

DEN considered the external and internal issues and requirements of its interested parties relevant to the activities within the scope of the department's operations and controlled by the EMS. These considerations helped DEN to establish and maintain the EMS to achieve its intended outcomes.

The EMS includes detailed plans described below to address the significant environmental aspects, compliance obligations, and risks and opportunities associated with departmental activities. Actions to implement the environmental management system plans describe how EMS processes will be integrated into departmental processes (including business processes where appropriate). These actions will be evaluated to determine their effectiveness and to identify opportunities for improvement. DEN considers its technological, financial, and operational requirements when planning these actions.

2.1. Actions to Address Risks and Opportunities

DEN 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.

- Related Document: *ES-201 Environmental Aspects and Impacts Identification and Assessment Process*

DEN utilizes a process to determine the risks and opportunities related to its significant environmental aspects, compliance obligations, and other issues and requirements. In this way, additional controls can be appraised to mitigate potential adverse effects and potential actions can be appraised to leverage and promote beneficial effects. DEN has also determined risks and opportunities related associated with the external and internal issues and requirements of its interested parties identified during the planning process. Risks and opportunities will be addressed where:

- Action will be necessary to give assurance that the EMS can achieve its intended outcomes
- Action will prevent or reduce undesired effects, including the potential for external environmental conditions to affect DEN and the communities it serves
- Continual improvement can be realized

- Related Document: *ES-202 Risks and Opportunities Process*

DEN identifies those operations and activities that are associated with the identified significant environmental aspects, compliance obligations, risks & opportunities, and in line with its policy and objectives. DEN 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 objectives;
- Communicating operating expectations 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.

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- Related Document: See section 3.1, *ES-301 Environmental Guideline Process and Catalog*

2.2. Compliance Obligations

Compliance obligations consist of environmental requirements and voluntary commitments. Environmental requirements include mandatory requirements contained in environmental laws and permits, obligations contained in legal agreements with business partners, and voluntary commitments.

DEN maintains a procedure to identify and have access to environmental requirements applicable to DEN and voluntary commitments to which the organization subscribes. Compliance obligations are applicable to the environmental aspects of activities and services of DEN and its business partners. The Environmental Services Section is responsible for:

- Maintaining a system for identifying compliance obligations applicable to the environmental aspects of DEN operations;
- Maintaining a system for DEN business partners to identify their significant environmental aspects and develop programs to manage these aspects in a manner that complies with environmental requirements;
- Maintaining the EMS Master Schedule which assists in the evaluation of compliance obligations in conjunction with the Annual Plan (Master Schedule and Annual Plan ES 204 Series)

Environmental Services will screen the legislation and assess the impact on DEN, provide guidance to other groups and support services to facilitate implementation, and thus help promote compliance. Additionally, all subsequent legal requirements, permits, required procedures, and critical compliance tasks (such as reporting) are cross-referenced in the Compliance Obligations Requirements Catalog.

- Related Document: *ES-203 Compliance Obligations Process and Catalog*

2.3. Objectives and Planning

DEN documents its environmental objectives through an annual planning process, the results of which are reviewed annually by top management. Where possible, objectives are cascaded through each relevant function and level within DEN. While setting and reviewing the objectives, DEN will consider compliance obligations, the identified significant environmental aspects, risks & opportunities, its technological options, and its financial, operational and business requirements, remedial actions and needs of interested parties. Progress towards achieving its objectives will be documented annually as part of the review process. Objectives shall be consistent with the environmental policy, including commitment to prevention of pollution.

- Related Document: *ES-204 Environmental Planning Process*

3. Implementation and Operation (ES-300 Implementation and Operations)

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3.1. Structure and Responsibility

DEN 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. Top management have established the EMS, support its implementation with necessary resources, and are accountable for its effectiveness.

DEN identifies those operations and activities that are associated with the identified significant environmental aspects, risks & opportunities, in line with its policy, and objectives. DEN delineates environmental roles and responsibilities associated with these operations and activities within the Environmental Guidelines and other EMS documents.

- Related Document: *ES-301 Environmental Guideline Process and Catalog*

DEN Environmental Services has the responsibility to effectively implement EMS day-to-day business activities, report on the performance of the EMS, and request the resources necessary to support its implementation.

- Related Document: *ES-302-01 Environmental Services Roles and Responsibilities*

3.2. Training and Communication

3.2.1. Training

DEN maintains a program to provide proper training and promote awareness of environmental responsibility. Personnel performing tasks, which can cause significant environmental impacts, shall be competent on the basis of appropriate education, training, and/or experience. This general awareness training is extended to non-city employees, including tenants, 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 shall serve the purpose to assure that all relevant personnel are aware of:

- The Environmental Policy
- 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 the 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: *ES-303 DEN Environmental Training Process and Catalog*

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3.2.2. Environmental Focal Point Program

DEN maintains an Environmental Focal Point Program designed to extend knowledge and implementation of the Environmental Management System throughout the organization. Environmental Focal Points are responsible for understanding how the EMS applies within their specific organization in the airport and communicating this information, including any updates, to their fellow employees.

➤ Related Document: *ES-304 Environmental Focal Point Program*

3.2.3. Communication

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

- Internal communication between the various levels and functions of the organization (maintained by DEN ES for internal communications regarding environmental aspects);
- Receiving, documenting and responding to relevant communication from external interested parties, especially in regards to significant environmental aspects; and
- Mechanism to communicate externally about DEN's environmental programs including significant environmental aspects.

Environmental Services regularly communicates with external parties such as governmental agencies, community stakeholders, tenants, contractors, and other city personnel. These communications include subjects associated with the management of DEN's significant environmental aspects and are governed by DEN's compliance obligations. .

➤ Related Document: *ES-307 Communication Processes*

3.3. Documented Information

DEN maintains EMS information, in paper and/or electronic form, to:

- Describe the core elements of the management system and their interaction; and
- Provide direction to related documentation.

3.3.1. Document Control

DEN maintains a document control process to facilitate the effectiveness of the EMS. The procedure ensures that documents:

- Can be located;
- Are periodically reviewed, revised as necessary and approved for adequacy by authorized personnel;

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- 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: *ES-305: Documented Information Process*

3.3.2. Records

DEN maintains a records management procedure for environmental documents generated at DEN. This procedure is intended to identify and maintain all environmental records. Environmental records should be legible, identifiable and easily traceable to the activity, product, or service involved. Environmental records are stored and maintained in such a way that they are readily retrievable and protected against damage, deterioration, or loss. Retention times are established and recorded in the procedure.

DEN maintains a centralized environmental records system that includes all relevant permits, plans and procedures, as well as reports, training records, and the results of audits and reviews.

➤ Related Document: *ES-305: Documented Information Process*

3.4. Emergency Preparedness and Response

Under FAA requirement, DEN 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.

➤ Related Document: *Denver International Airport Standard Operating Guideline HAZMAT and Non-HAZMAT Spills and Release [maintained by the Operations Division in the Airport Emergency Operations Center (EOC)]*

DEN Environmental Services 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 shall be documented to prepare a plan for prevention of such an incident in the future.

➤ Related Document: *ES-306 Notification Handbook for Spills and Releases to the Environment*

3.5. Procedures, Plans, Work Instructions

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

➤ Related Document: *ES-308 Environmental Procedures, Plans and Work Instruction Catalog*

3.6. Environmental Lifecycle Perspective

DEN's EMS is planned, implemented, and continually improved considering the interlinked stages from generation/composition of resources needed to perform activities within the EMS scope, to final disposal of items used during operations. This lifecycle perspective is focused on the environmental aspects DEN can control and those influenced within the EMS scope.

Lifecycle considerations are accounted for when determining environmental aspects of DEN's projects, programs, initiatives, activities, and services. These environmental aspects may result in environmental impacts during development, implementation, change, steady state, and end of life operational activity. Identified aspects are evaluated for significance and potential environmental impacts; DEN applies appropriate controls to ensure these are managed and controlled to protect the environment.

The lifecycle perspective is also applied to purchasing materials and items that while in use or disposal may impact the environment. DEN identifies and purchases the least environmentally hazardous products that satisfy their intended purpose, informs personnel working of the importance of using products which reduce environmental impacts, and works to replace existing products with less environmentally hazardous options. DEN disposes of products in an environmentally safe manner that prevents pollution and environmental impacts. DEN informs personnel about potential impacts associated with the use, end-of-life treatment, and final disposal of products to raise awareness and reduce environmental impacts.

➤ Related Document: *ES-201 Environmental Aspects and Impacts Identification and Assessment Process*

4. Checking and Corrective Action (ES-400 Checking and Corrective Action)

4.1. Monitoring and Measurement

DEN maintains documented procedures to monitor and measure 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 DEN's stated objectives.

Monitoring equipment shall be calibrated and maintained and records of this process shall be retained according to DEN's records management process.

➤ Related Document: *ES-402 Environmental Monitoring Program Catalog*

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4.2. EMS Internal Review Program

DEN maintains a program to review its activities and management system performance to measure the extent that the airport is performing in a manner that will meet its goals. DEN also maintains a documented procedure for periodically evaluating compliance with relevant environmental regulations.

The EMS Reviews will serve the purpose to:

- Check conformity with the ISO 14001 Standard
- 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; and
 - Has been properly implemented and maintained.
- Provide information on the results of EMS reviews to management.

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

➤ Related Document: *ES-401 EMS Internal Review Program*

4.3. Corrective and Preventive Action

DEN 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. This process is described in more detail in *ES-403 EMS Corrective and Preventative Action Program*.

Any corrective or preventative action taken to eliminate the causes of actual and potential non-conformances shall be appropriate to the magnitude of problems and commensurate with the environmental impact encountered. DEN will implement and record any changes in the documented procedures resulting from corrective and preventive action.

Corrective actions for non-conformances identified during internal reviews or external audits are maintained in the DEN EMS SharePoint Site. Non-conformances identified via other mechanisms (e.g. Risks & Opportunities Assessment, or daily work) that are determined by the Director of Environmental Services to warrant corrective action (e.g. potential to result in a significant environmental impact) are maintained in the DEN EMS SharePoint Site.

5. Management Review (ES-500 DEN Environmental Management Review)

DEN top management reviews the EMS annually to ensure DEN's environmental performance and objectives are being met. Corrective action items identified during the management review are prioritized, assigned action parties, and given targeted completion dates.

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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.

DEN 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: *ES-501 DEN Management Review Process*

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