

 City of Dallas	Document Number:	COD-EMS-PRO-001	Revision Number:	4
	Approved By:	OEQ Managing Director	Effective Date:	12/01/2017
	Description of Last Change:	Changes to bring procedure up to date with ISO 14001:2015 standard.		
Document Title:	Environmental Aspects, Impacts, and Risk ISO 14001:2015 6.1			

1. **PURPOSE:** This document describes the procedure for identification of environmental risks, opportunities, aspects and impacts for the City of Dallas (City) Environmental Management System (EMS) and determining significance.
2. **SCOPE:** This procedure applies to all City employees when engaged in City related work activities within the scope of the EMS.
3. **ENVIRONMENTAL:** Utilization of environmental management systems, as appropriate for our operations, to provide a framework for systematically reviewing and reducing our environmental footprint.
4. **DEFINITIONS:**
 - 4.1. **Activities:** Functions or duties of an organizational unit that occur within the fenceline and that may have a positive or negative environmental impact.
 - 4.2. **City-wide EMS Core Team:** The Environmental Representatives designated by City Departments to develop and implement the EMS, chaired by OEQ.
 - 4.3. **Environmental Aspect:** Element of an organization’s activities, products, or services that can interact with the environment.
 - 4.4. **Environmental Impact:** Any change to the environment, whether adverse or beneficial, wholly or partially resulting from an organization’s activities, products, or services.
 - 4.5. **Fenceline:** The area, and associated activities, in which an organization chooses to implement its EMS – a department, division, or specific operation.
 - 4.6. **Life cycle:** The consecutive and interlinked stages of a product (or service) system, from raw material acquisition or generation from natural resources to final disposal. The life cycle stages include acquisition of raw materials, design, production, transportation/delivery, use, end-of-life treatment and final disposal.
 - 4.7. **Risk:** The effect of uncertainty, often expressed in terms of a combination of the consequences of an event (including changes in circumstances) and the associated likelihood of occurrence.
 - 4.8. **Risks and Opportunities:** Potential adverse effects (threats) and potential beneficial effects (opportunities) related to the organizations important environmental issues (its context), scope and EMS requirements.
 - 4.9. **Significance Criteria:** A system of rating environmental and/or economic impact of an environmental aspect using a facility-by-facility method. A minimum significant threshold is established based on: (1) environmental concerns (such as scale of the impact, severity of the impact, probability of occurrence, and duration of impact) and (2) business concerns (such as potential regulatory and legal exposure, difficulty of changing the impact, cost of changing the impact, effect of change on other activities and processes, concerns of interested parties, and effect on the public image of the organization).
5. **RESPONSIBILITY & AUTHORITY:**
 - 5.1. The Office of Environmental Quality (OEQ) is responsible for the following:
 - 5.1.1. Assisting Departments within the EMS fenceline with identifying risks, opportunities, activities, environmental aspects and impacts.

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- 5.1.2. Developing significant aspect criteria for review and approval by the City-wide EMS Core Team.
- 5.1.3. Assisting Departments in applying significant aspect criteria to the aspects identified for each activity.
- 5.1.4. Maintaining a comprehensive list of significant aspects within the City's ISO data management system.
- 5.1.5. Maintaining a variety of EMS tools and guidance documents for use by Departments.
- 5.1.6. Auditing department's aspects and impacts in the City's ISO data management system.
- 5.2. City Department Environmental Management Representative (EMR) are responsible for the following:
 - 5.2.1. Identification of activities, environmental aspects and impacts, considering a life cycle perspective where feasible, within their Department and entering into the City's ISO data management system.
 - 5.2.2. Applying significant aspect criteria to each activity and associated environmental aspect and impact within the Department.
 - 5.2.3. Notifying OEQ of any change in processes or activities which may alter the EMS developed at their facility and updating the EMS accordingly.

6. PROCEDURES

6.1. Determining Activities, Environmental Aspects, and Impacts

- 6.1.1 Each Department will identify all the activities within its EMS fenceline that could potentially have an environmental impact, whether positive or negative. Activities that may have a negative environmental impact could include items such as changing oil, construction, painting, storing chemicals, vehicle fueling, or using electricity or water. Activities that may have a positive impact could include items such as recycling, using electricity from renewable energy sources, or conserving water.
- 6.1.2 From the inventory of activities generated, associated environmental aspects and impacts must be classified into operational categories of normal, abnormal (if applicable), and emergency (if applicable). A description of the categories is as follows:
 - Normal conditions – Environmental aspects and impacts that occur from conducting the activity on a regular basis in normal operating conditions.
 - Emergency conditions – Environmental aspects and impacts that occur when the activity and/or an unforeseen combination of circumstances or events results in a need for immediate and or urgent action such as a spill, fire or flooding.

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- Abnormal conditions – Environmental aspects and impacts that occur from unexpected or infrequent activity or irregular schedule, one-time event or during unexpected conditions such as using backup equipment while primary equipment is being maintained (does not lead to an emergency condition).

6.1.3 Each Department must also identify activities, products, or services where equipment malfunctions and deterioration, operator errors or deliberate malfeasance are causing, or have the potential to cause:

- Unplanned or unauthorized releases of hazardous contaminants to the environment;
- A threat to human health or the environment;
- Nonconformance with the EMS; or
- Noncompliance with legal requirements.

6.1.4 To assist in determining environmental aspects, activity charts, flow charts, interviews, and lists can be used with the personnel conducting the activity. A listing of environmental aspects and their associated environmental impacts is attached as Table 1. (Table 1 is not intended to be a comprehensive list.)

EXAMPLE

Activity	Input	Condition	Aspect	Impact
Changing Oil	Oil	Normal	Material Consumption	Use of Natural Resources
	Absorbent	Emergency	Spills	Degradation of Water Quality
	Used Oil	Normal	Recycling	Natural Resource Conservation
Fueling of vehicle (vapor recovery system is not working)	Gasoline	Abnormal	Air Emissions	Worker's Health
Tank Management	Gasoline	Emergency	Groundwater	Degradation of Water Quality

6.1.5 Departments should consider a life cycle perspective for identified activities, products and services where control or influence can be exercised.

6.1.6 After the activities, environmental aspects and impacts are identified, the Department shall enter the inventory into the City's ISO data management system.

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6.1.7 Aspects may receive a different score based on the greater impact of the input, legal and other requirements, or the facility's desire to set an objective and target for a specific input associated with an activity.

6.1.7.1 An example would be as follows:

A facility which changes oil may have inputs of oil, rags, and absorbent. The ultimate impact from the use of oil versus the use of rags and absorbent is different due to the increasing cost and reliance on foreign oil. Therefore, the scoring would be different for the oil input. The aspects entered into the City's ISO data management system could be Material Consumption (Oil products) and Material Consumption (Products other than Oil).

6.2 Significant Aspects

6.2.1 After a Department's activities, environmental aspects and impacts have been identified and entered into the City's ISO data management system, the department must determine which of the activities and associated environmental aspects are significant and should be a priority. To accomplish this, each activity and environmental aspect will receive a score from one (1) to five (5) in each significant criteria category. While scoring each activity and environmental aspects, associated risks shall also be considered for each significance criteria. (See Table 2 for scoring guidelines). The attached Table 2 provides a brief definition of each of the significance criteria and a guide in how these scores shall be assigned. The individual scores will be multiplied to arrive at a total score.

6.2.2 The Department shall then determine the minimum score (significance threshold) that will be considered significant. All scores above the significance threshold will be considered significant aspects. This significance threshold will be set by considering the following components:

- number of aspects that can be addressed due to limitations in staff and financial resources,
- relative significance to compliance and
- improvement of the City environment,
- ability to affect the aspect.

6.2.3 Documentation of the considerations leading to the setting of the significance threshold shall be kept by the department for review in an internal audit. The scores selected for each activity and environmental aspect in each category shall be entered in the City's ISO data management system.

6.3 Identifying Risks and Opportunities

6.3.5 OEQ and department EMRs will conduct an analysis of strengths, weaknesses, opportunities and threats (S.W.O.T. Analysis) related to the City's compliance obligations, significant aspects, and internal/external issues that impact, or have

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the potential to impact, the effectiveness of the City’s EMS. The S.W.O.T. Analysis will be conducted at the regularly scheduled EMR meeting in the 4th quarter of each fiscal year. Results of the S.W.O.T. Analysis will be documented by OEQ staff and shared with all participants.

- 6.3.6 OEQ, with input from the Citywide Core Team, will review the results of the S.W.O.T. Analysis to identify potential risks and opportunities that need to be addressed.
- 6.3.7 OEQ, with input from the Citywide Core Team, will evaluate the risks and opportunities that need to be addressed and determine the actions that need to be taken to address them. This action could be at a department level or a City level depending on the specific risks or opportunities.
- 6.3.8 The OEQ led S.W.O.T analysis potentially will not identify all risks and opportunities related to departments’ specific environmental aspects, compliance obligations and internal and external issues. Therefore, departments are encouraged to conduct their own S.W.O.T analysis to fill any potential gaps.

7. NEW PROJECTS OR CHANGES TO EXISTING ACTIVITIES

As new projects arise or changes are made to existing activities, departments will review the project/activity to determine if the scoring should be revised, or if there are new or revised aspects and impacts. See COD-EMS-PRO-020, Management of Change.

8. UPDATES TO SIGNIFICANT ASPECTS

As the EMS progresses, additional information is collected and objectives and targets are met, the significance criteria ranking will change. Therefore, departments will review the significant aspects annually and update as needed.

9. DATA MANAGEMENT SYSTEM

The City’s ISO data management system is the official depository of controlled documents/records for activities, environmental aspects, impacts and significant aspect scoring, updates and reviews that are required by this procedure. Reports printed and/or saved electronically from the City’s ISO data management system, although marked with the date generated, are uncontrolled documents.

10. REFERENCES

- COD-EMS-PRO-003 Objectives, Targets, and Environmental Programs
- COD-EMS-PRO-009 Operational Controls
- COD-EMS-PRO-020 Management of Change

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TABLE 1: Example of Aspects and Impacts

ASPECTS	IMPACTS
Water Consumption	Use of Natural Resources
Material Consumption	Use of Natural Resources
Power Usage	Use of Natural Resources
	Degradation of Air Quality
Waste Generation and Disposal	Reduction in Landfill Space
Air Emissions	Degradation of Air Quality
	Degradation of Ozone or Contribution to Global Warming
	Degradation of Worker Health
Spills	Degradation of Soil, Water, and/or Sediment quality
Stormwater/Surface Water Discharges	Degradation of Water Quality
Wastewater Generation and Disposal	Degradation of Water and Air Quality
	Degradation of Public Health
Habitat Quality/Quantity	Habitat and Species Sensitivity
Land Utilization	Aesthetics and Community Environment
Generation of Noise	Degradation of Worker Health
Recycling	Preservation of Landfill Space
Exposures/Injuries	Degradation of Worker Health
Groundwater Discharges	Degradation of Water Quality
Mold, Lead Or Asbestos	Degradation of Worker Health
	Reduction of Landfill Space
Generation of Dust	Degradation of Air Quality
	Degradation of Human Health

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TABLE 2: Significance Criteria

Frequency

1. Rare – the event may occur only in exceptional circumstances
2. Unlikely – the event may occur at some time
3. Likely – the event could occur at some time
4. Expected – the event will probably occur in most circumstances
5. Almost certain – the event will occur

Severity

1. Limited impact to area of low significance *and/or* easy to remediate *and/or* no regulatory reporting
2. Minor impact to environment *and/or* damage is confined to City property and reversible *and/or* aspect may require regulatory reporting
3. Moderate short-term impact (3-12 months) *and/or* damage is reversible *and/or* extends beyond property *and/or* minor damage to non-city property
4. Serious medium term (13 months – 3 years) impact *and/or* extensive reversible damage to wildlife *and/or* property *and/or* moderate wildlife mortality *and/or* highly regulated activity
5. Severe long-term impact (3+ years) *and/or* permanent impairment of ecosystem *and/or* property *and/or* irreversible damage *and/or* will cause acute human mortality *and/or* chronic health issues *and/or* major wildlife mortality *and/or* infrastructure failure

Probability

1. Not severe, limited
2. Minor effect on City image
3. Stakeholder or community interest, negative feedback
4. Media coverage (local), negative image, may result in fines
5. Media coverage (national/international), probability of Federal interest, fines likely