

	<b>Standard Operating Procedure: EMS-0100.003 Aspect &amp; Impact Analysis</b>	<b>Corresponding Requirements:</b> ISO Standard: 4.3.1 EMS Manual: 4.3.1
Prepared By: Beth Eckert, Environmental/Administrative Manager; Modified by Arlene Roman, EMS Coordinator		Revision Date: 11/13/08 Revision #: 15
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## Aspect & Impact Analysis

- 1.0 Purpose:** This procedure is to provide guidance for the development and review of environmental aspects and impacts and for the determination of significance. This procedure also provides guidance for an environmental impact review of proposed changes to an aspect activity.
- 2.0 Definitions**
- 2.1. Aspects: Element of an organization's existing or planned activities, products or services that can interact with the environment, positively or negatively.
  - 2.2. Impact: Any change to the environment, whether adverse or beneficial, wholly or partially resulting from an organization's existing or planned activities, products, or services.
  - 2.3. Aspect Activity: Capital improvement projects, changes in legal and other requirements or a significant process changes will result in a review of aspects.
  - 2.4. Controlled Aspect: Aspect that has significant impacts but is sufficiently controlled as determined by the Aspect and Impact Analysis Form EMS-0101.003G . Controls must be maintained to continue to mitigate impacts.
- 3.0 Associated Documents:**
- 3.1. City of Gastonia EMS Manual: EMS-0100.000
  - 3.2. EMS-0101.003F Aspect and Impact Preliminary Analysis Form
  - 3.3. EMS-0101.003G Aspect and Impact Evaluation Form
  - 3.4. ISO 14001 Standard: ANSI/ISO 14001-2004 Environmental management systems – Specifications with guidance for use
- 4.0 Procedure**
- 4.1. When a Division is initially setting up an EMS program, the EMS Coordinator or designee will train each Division's EMS Team on this SOP and assist with the initial aspect and impact analysis.
  - 4.2. Each division's EMS Team, which may include the EMS Coordinator or designee, will annually analyze their areas' programs, processes and activities and perform a comprehensive review of their aspects and impacts.
  - 4.3. Activities that meet the above definition of Aspect Activity will prompt an aspect review at any time throughout the year such that the Aspect and Impact listing will continue to be current.

- 4.4. If at any time during the year changes are proposed or planned that are not a routine part of the operation of the Department, the appropriate supervisor must complete form EMS-0101.003F and submit a copy to the EMS Coordinator and the Division Manager of the area.
  - 4.4.1. If the activity is implemented, the supervisor in the area of implementation shall notify an EMS Coordinator or designee to determine if a formal aspect and impact analysis is required. If so, the review shall be done using the form EMS-0101.003-G.
- 4.5. Analysis of each aspect will be documented on Form # EMS-0101.003G. Each Aspect will be rated for Impacts using the EMS Team's best professional judgment. They will consider impacts that may occur during normal and abnormal operating conditions.
- 4.6. The Impacts on the following will be appraised using the Impact Ratings Section
  - 4.6.1. Surface Water: streams, rivers, lakes and ponds and their associated flora and fauna
  - 4.6.2. Ground Water
  - 4.6.3. Soil: including associated flora and fauna
  - 4.6.4. Air
  - 4.6.5. Natural Resources: use of water, electricity, natural gas, fuel oil
  - 4.6.6. Wastes: hazardous and landfill
  - 4.6.7. Legal and Other Requirements
  - 4.6.8. Costs
  - 4.6.9. Public Acceptance: appearance, noise, odor, and perceived dangers
  - 4.6.10. Accidental Release
  - 4.6.11. Public Health
- 4.7. Impact Ratings:
  - 4.7.1. -3=High Impact. Potentially life threatening or life altering to humans or wildlife, or significant long term effects on the environment
  - 4.7.2. -2=Moderate Impact. Danger of non-life threatening health affects to human or wildlife, or short term effects on the environment
  - 4.7.3. -1=Low Impact. Little impact to the environment and/or no danger to the health of humans or wildlife
  - 4.7.4. 0=No impact
  - 4.7.5. NA=Not applicable at this time
- 4.8. Each aspect will be rated for each category of impacts (surface water, ground water, etc.)
- 4.9. Next "Effectiveness of Operational Controls" will be rated for each aspect.
  - 4.9.1. The only "control" categories that must be rated for each aspect, are those that had a "impact" rating of -2 or -3 .

- 4.10. Controls Ratings:
  - 4.10.1. +3=Very effectively Controlled. Potential impact is highly unlikely to occur due to programs, processes or procedures in place
  - 4.10.2. +2=Moderately Controlled. Control substantially reduces the potential of impact from occurring through programs, processes or activities
  - 4.10.3. +1=Slight Control. Control mechanisms can help limit the potential for impact or reduce the frequency or severity of impact.
  - 4.10.4. 0=Uncontrolled. High probability exists for potential impact
  - 4.10.5. NA=Not applicable at this time
  
- 4.11. Determination of Significance: For each aspect the impact rating will be added to the control rating to calculate a final score. Those aspects with an score of -2 or -3 in any of the impact categories will be considered significant.
  - 4.11.1. If an aspect is considered significant, place an X in the "Significant Aspect" column for that aspect.
  
- 4.12. Controlled Aspects: Those aspects with a score of 0 or higher in each significant impact category will be considered controlled.
  - 4.12.1. If an aspect is considered controlled, place an X in the "Controlled Aspect" column for that aspect.
  
- 4.13. List the specific reason that an impact was rated -2 or -3 in the "Specific Significant Impacts" column for each aspect considered significant or controlled.
  
- 4.14. For each aspect considered Significant or Controlled list the Corresponding Linkages in the appropriate column. This would include:
  - 4.14.1. Standard Operating Instructions
  - 4.14.2. Legal and Other Requirements
  - 4.14.3. Objective and Targets (Improvement Programs)
  - 4.14.4. Positive Benefits
  
- 4.15. The Division Manager will have approval authority of each Division's completed Aspect and Impact Analysis form EMS-0101.003G.
  
- 4.16. After priorities are established within each Division, the EMS Coordinator or designee will compile a comprehensive list of all significant aspects within the Department along with their associated impacts (EMS-0101.003G).
  - 4.16.1. The Director of Public Works and Utilities will have approval authority of a comprehensive listing of significant aspects and impacts.
  
- 4.17. This list will be maintained on the ISO read-only drive in the Reports section of EMS Documentation folder.

- 4.18. The significant aspects and impacts will be taken into account when establishing objectives and targets each year.
- 4.19. Significant aspects will be identified on the training matrix to correspond to each applicable operational control and will be updated annually by a selected member of the EMS Evaluation Team.
- 4.20. The City of Gastonia’s listing of significant environmental aspects and impacts will be made available to any interested party upon request.
- 4.21. After the annual evaluation, significant aspects that are now considered to be controlled will appear in the Division’s Management Review Board Report.

**5.0 Revision History:**

Revision		C/PAR #	Reason for Revision	Description of Revision
Date	#			
5/20/02	5	EMS-0074	External Auditor	Removal of Deviations statement from Level II procedures
5/20/02	5	EMS-0084	C/PAR	Added a modification history section
5/20/02	5	EMS-0102	C/PAR	Removal of Objectives and Targets section of this procedure – An Objective and target procedure has been created and this section is no longer needed.
2/26/03	6	EMS-0098	C/PAR	Provision for preliminary environmental evaluation of planned and/or proposed changes that are not a routine part of the operation of the Division.
5/6/03	7	149	External Auditor	Streamlining and Departmentalizing the Aspect and Impact analysis process.
5/12/04	8	355	C/PAR	Modified to reflect changes identified by EMS Team and to allow for the Division manager to approve the overall ranking form until more than one Division is operating under the EMS.
5/4/05	9			Incorporated language to meet 2004 ISO 14001 Standard. Added Public Health category to impacts and controls sections. Added how significance is determined during development and implementation of EMS.
6/27/05	10		2004/External Audit	Changed procedure to include criteria for significance determination, defined planned activity, defined controlled aspects and included a process for controlled aspects.
11/16/07	11	1020	External Auditor	Modified the procedure to allow for only evaluating controls on those aspects that can cause a significant impact based on their impact evaluation.

12/17/07	12	N/A	Refinement	Modified procedure so that aspects with total scores of less than zero (negative numbers) are significant.
6/16/08	13	1062	2008 External Audit	Removed references to Critical Control Points. Divided the Ranking of Sig. Aspects and Controlled Aspects form into 2 separate forms: Ranking of Sig. Aspects EMS-0101.003E and Listing of Controlled Aspects EMS-0101.003i. Added that significant aspects will be updated annually on the training matrix by a selected member of the EMS Evaluation Team. Added that significant aspects that are re-evaluated to be controlled aspects will be noted in the Division's MRB report.
11/10/08	14		External Audit	Removed Forms EMS-0101.003E and EMS-0101.003i; added Flora and Fauna to impact list; Impact rating became negative numbers and control ratings became positive numbers; the method by which aspects are determined to be significant or controlled has been changed; significant aspects no longer need to be ranked. Aspect and Impact Analysis form EMS-0101.003G changed significantly and now has area to list specific significant impacts and corresponding linkage
11/13/08	15	N/A	WWT EMS Team Suggestion	Changed ranking scores of impacts and controls from a 1 to 4 scale to a 0 to 3 scale. Significance determination was changed to a score of -2 or -3 from -3 or -4 because of new ranking scale