



PHASE II: PLAN

Phase II is a continuation of planning of the Plan-Do-Check-Act (P-D-C-A) cycle. Activities in this phase mark the start of the development of specific EMS elements, which lay the foundation for the EMS. You identify how your organization can impact the environment and then prioritize these items which will be the focus of the EMS. Once you have prioritized and have identified your significant environmental aspects, you can then determine in what areas you want to improve by setting objectives and targets.

Securing employee involvement at various levels in the organization is critical to this phase of activities. As has been the case in a number of other organizations, the activities in this Phase may be the first time environmental and operational people work together.

Activities of Phase II include (6 months):

- Determining a procedure for understanding and communicating legal and other requirements.
- Conducting a thorough inventory of the environmental aspects (both regulated and non-regulated) of their operations, activities, and services.
- Developing criteria for determining the "significance" of their environmental aspects and identifying them based on these criteria.
- Setting realistic objectives and targets based on your significant aspects and environmental policy commitments.
- Drafting and communicating an environmental policy.



DEFINING YOUR ENVIRONMENTAL FOOTPRINT (ENVIRONMENTAL ASPECTS AND IMPACTS)

TROUBLESHOOTER'S GUIDE

If there is one area that sends fear into the hearts of even the bravest EMS trooper it is the identification of aspects, impacts, and ultimately significant aspects. Folks have gotten so bogged down in trying to define what an aspect is, that it is often months before they can even start doing the analysis, they are so hung up on defining the terms.

Many municipalities suggest that instead of using the term "aspect" you may consider "cause" or "risk" and instead of "impact" you might use "effect" or "hazard"

Aspect → Impact
Cause → Effect
Risk → Hazard

Once you are over the language issues, it's useful to start with what you know to be your environmental issues. Most organizations do not have trouble going with what they already know. In no time flat they can develop a pretty hefty list of the causes and effects, or risks and hazards, of their environmental issues. With that as a start, ask some additional questions: Is there anything that comes in (inputs) that might cause some environmental effect? Is there anything we have not accounted for in our operations (processes) that might pose an environmental risk and an associated hazard? Is there anything that goes out (outputs) that might be an aspect with an environmental impact? Voila...you have your aspect and impact list.

The process of identifying environmental aspects and impacts is a challenging task that requires focus and time and is essential to the ultimate success of your EMS. This task requires an analysis of each activity, product or service conducted or provided by your organization. The inventory of aspects helps an organization visualize its environmental footprint and brings focus to your EMS efforts.

ASPECT	IMPACT
Air Emissions (CO & NOx)	Degradation of Air Quality
Energy Usage (Gas & Diesel)	Reduction in Natural Resources
Used Oil Recycling	Conservation of Natural Resources
Solid Waste Generation	Reduction in Landfill Space

WHO SHOULD BE INVOLVED?

When conducting this exercise it is important to have enough areas of expertise represented when identifying the environmental aspects and impacts in each location within your fence line. Designate a team to oversee the process to identify your environmental aspects and impacts. Typically the Core Team oversees this activity and pulls in assistance from the shop floor.

"The process mapping exercise was a great team building exercise between Environmental and the shop floor employees."

Port of Houston Authority
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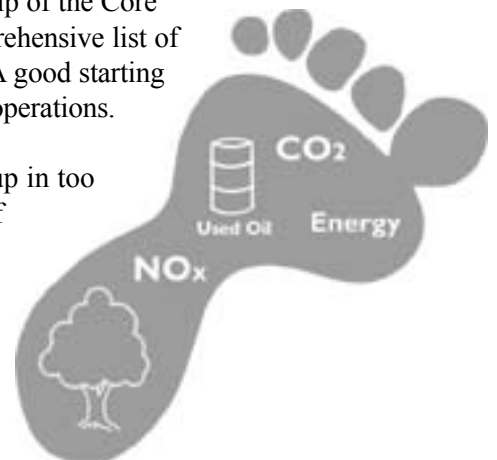
Involving personnel on the shop floor is a good way to generate ownership and ensure buy-in to the EMS. Employees involved with the operations and activities typically know best the associated environmental issues.

"DON'T GET TOO FAR DOWN IN THE WEEDS"

Before you undertake the aspect/impact identification process take a step back and think about how it is your organization impacts the environment. With the help of the Core

Team you may be able to generate a fairly comprehensive list of environmental aspects off the top of your head. A good starting point is often with your regulated activities and operations.

Some local governments report getting caught up in too much detail and thus generate very large lists of aspects and impacts. Remember that this is an iterative process - one with an underlying principle of continuous improvement. Your system will refine itself and mature over time. So it's okay to miss something the first go around because you will most likely catch it the next time.





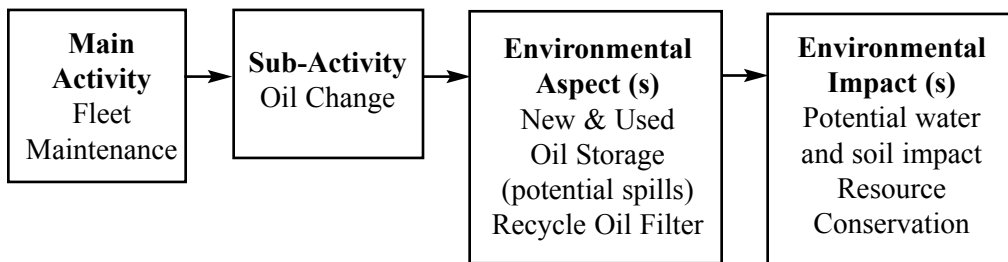
Brainstorm with your team and start cataloging what specific activities and operations can impact the environment

Brainstorm - Fleet Maintenance

New and Used Oil (storage and disposal)	Freon
Tire Disposal/ Recycling	Radiator Fluid (storage and disposal)
Vehicle Parts Disposal/Recycling	Hydraulic Fluid (storage and disposal)
Vehicle Painting (air emissions)	Battery storage and disposal
Aerosol Cans	Brake disposal

Visit the sites and analyze the inputs, activities and outputs for additional aspects and impacts you may have missed during the brainstorming exercise. This is a good time to involve your shop floor employees. Many municipalities report that the best time to engage them is during lunch - especially when it's provided.

Once you have generated the list through brainstorming you need to inventory the specific activity and associated aspects and impacts. For example let's look at changing oil in a vehicle or equipment.



For each of the items you have identified during your brainstorming session you need to go through the above exercise to capture the associated aspects and impacts. Remember to review this information with those on the shop floor. The final inventory will become your environmental aspect list. You will then review this list and identify your significant environmental aspects and impacts.

DON'T FORGET TO INCLUDE POSITIVE ASPECTS

After your organization has completed the environmental aspect identification process it will need to identify the “hotspots,” or aspects that have significant impacts. Many local governments find themselves faced with a large list of aspects. Perhaps more than resources can handle all at once. It is practical to prioritize those you will focus on through your EMS. The opportunity to prioritize will occur through the criteria you determine to identify your significant aspects. The EMS is structured to address your organization's significant environmental aspects. It is these significant aspects that you will manage in order to control or limit the associated environmental impact.

“By focusing on the creation of flow charts and the determination of impacts and aspects, we have been able to see more clearly the environmental consequences of our organization.”

Refuse Disposal Division
San Diego, CA

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SHOULD A REGULATED ASPECT BE SIGNIFICANT?

Most local governments suggest that all regulated aspects be significant by default. State and Federal regulations require that certain control measures be established for environmental activities with varying degrees of environmental impact. By labeling those aspects as significant you ensure that they will be addressed by the EMS elements that require an organization to put in place processes and procedures that can help improve its ability to meet its compliance requirements. However, don’t focus only on regulated aspects. A good EMS should address other significant aspects as well.



Significance criteria to consider:

- ♦ *Natural Resources Impact*
- ♦ *Cost*
- ♦ *Probability of Occurrence*
- ♦ *Volume*
- ♦ *Toxicity*
- ♦ *Regulated*
- ♦ *Adverse Publicity*
- ♦ *Nuisance*
- ♦ *Human Health Impacts*
- ♦ *Frequency*

Through the aspect identification process we identified serious conditions needing immediate mitigation; OSHA violations that are directly related to air pollution that employees come into contact with on a daily basis.

Berkeley, CA
Solid Waste Division

For additional information, please contact Wanda Redic-Bland, at 510-981-6350 ext. 242 or wredic@ci.berkeley.ca.us

SIGNIFICANCE CRITERIA

It was previously mentioned that you are not expected to manage all of your environmental aspects. The criteria you use to determine significance will act as a filter to identify those environmental aspects that your organization will need to manage. Some local governments choose to use a variety of criteria (See side box: Significance Criteria to consider) and an associated numbering scheme.

Activity/Service	Aspect	Impact	Natural Resources Impacts	Cost	Toxicity	Health & Safety	Legal	Total
Diesel Storage	Potential Spill/leak	Surface and groundwater contamination	2	3	2	4	1	12

The impact is scored against each of the criteria using a predetermined numbering scheme. For example: A Legal and Regulatory criteria would indicate that it is highly regulated while a 5 would indicate that it is not. For each criteria you will need to determine an appropriate numbering range. Once your Core Team has determined the scoring you will then need to establish a threshold (e.g. anything under a score of 15 is considered significant).

Other local governments choose to use threshold criteria. In this case the impact is evaluated against the significance value of the appropriate attribute. If solid waste stream is greater than 5 tons per year it is then deemed significant.

ATTRIBUTE	SIGNIFICANCE VALUE
1. Solid wastes	Any stream greater than 5 tons per year or that can be profitably recycled.
2. Energy Use	Any specific use that costs \$1,000.00 or more per month (or total usage if greater than \$10,000.00 per month).
3. Water Usage	Any use over 5,000 gallons or total use over 25,000 gallons per week.

These are two approaches that local governments use to assess significant aspects. You will need to determine which one works for you. Every local government has the flexibility to determine the criteria/approach to determine significance. This is a subjective exercise that is not based on any science.



DEVELOPING THE ENVIRONMENTAL POLICY

A local government's environmental policy states its intentions and principles in relation to its overall environmental performance. The environmental policy is a commitment that directs your organization in its environmental management. Developing the environmental policy should come after you have identified your environmental aspects and impacts. Identifying your environmental aspects, or environmental footprint, provides context when developing the policy. This will help you develop a policy that is realistic and reflects your organizational needs.



CREATING AN ENVIRONMENTAL POLICY - DOES IT ALREADY EXIST?

Most municipalities have reported that some form of a policy or related language may already exist. Identify what exists and build on it to develop a comprehensive environmental policy.

If no policy or language exists you will be starting from scratch. Designate two or three Core Team members that will be responsible for drafting a policy statement. There are plenty of policy examples that the team can review to get them started.

KEEP IT SIMPLE - MAKE SURE IT'S REALISTIC AND REFLECTS YOUR ORGANIZATIONAL NEEDS AND CULTURE

It is important that you develop a policy that reflects your organizational culture and needs. Make sure the language you choose is appropriate for your municipality and not the mini-market down the street. Truth test it - once the policy is drafted have personnel throughout the fenceline review it to make sure it hits the mark. This will help increase buy-in to the EMS.

Once you've incorporated comments and feel you have a good draft in hand put it before management for their endorsement. Management may not approve it at first. If that is the case incorporate their comments. A signature or signatures indicates a final policy approved by management. You will have already identified who will sign the policy. Again, it will be either the mayor, city council, or the city manager?

TROUBLESHOOTER'S GUIDE

They say that imitation is the highest form of flattery, and in the EMS world there's certainly a lot of flattery going on. While we concur that it is extremely useful to consider documents and models that other public entities have developed for their EMS, there are some cautions that accompany the practice and these particularly apply to the environmental policy.

The goal is to avoid developing a policy that could apply to any organization, even the corner convenience store. It's true that all policies will contain the same three key commitments to:

- ♦ compliance
- ♦ prevention of pollution
- ♦ continual improvement

But they should also reflect your mission with respect to the environment, and give some idea of what your priority environmental issues are. For that reason, many municipalities wait until they have identified their significant environmental impacts and their objectives and targets before developing their environmental policy. It is also a good idea to review any environmental policies whether city-wide or department/division specific for ideas that will make your environmental policy unique to your city.



CASE STUDY

The City of Berkeley, through the gap analysis exercise, identified existing pieces of policy statements in various documents throughout the City. Berkeley used these pieces as the basis for developing a new comprehensive policy.

For additional information, please contact Wanda Redic-Bland, City of Berkeley, CA, at 510-981-6350 ext. 242 or wredic@ci.berkeley.ca.us

COMMUNICATED AND UNDERSTOOD BY ALL EMPLOYEES

The environmental policy directs your municipality's environmental management activities. Personnel on the shop floor are typically where the rubber meets the road. It's important that all personnel understand the policy and how it relates to their job. How do employees fulfill the commitments of the policy?

Once the policy is approved you will then communicate it to all employees. Posting the policy throughout the fenceline is helpful but you should also hold meetings where you can review and discuss the policy giving employees the opportunity to ask questions and provide feedback.

AVAILABLE TO THE PUBLIC

You need to make the policy available to the public. Most municipalities report that they post the environmental policy on their website while others report that they post on the town or city hall bulletin board.



LEGAL AND OTHER REQUIREMENTS

A key requirement of the environmental policy is a commitment to legal and other requirements. In order to fulfill this commitment your organization will need to know what legal requirements apply to your operations, activities and services and how they affect what it is you do.

WHAT ARE OUR LEGAL REQUIREMENTS?

One of the first things you have to do is identify the local, state, and federal regulations that apply to the operations and activities within your fenceline. You will most likely find that an informal process for identifying and collecting this information already exists. Now it is simply a matter of developing a formal process. Ask yourself how do you know what regulations apply and where do you obtain this information? There are multiple information sources where regulatory information can be obtained. Identify those that suit your needs and incorporate them into your procedure.

Our local government colleagues have identified the following sources of information:

- State and Federal agencies
- Associations or groups that support local governments (e.g. Water and Environment Federation, American Public Works Associations, and the Local Government Environmental Assistance Network)
- Commercial Databases
- Professional Services or Consultants
- Publications

The EMS team surveyed the division to identify the current regulations and permits that affect solid waste. It started the long process of organizing a list of the environmental regulations into one clear and manageable document. The team was able to identify the current and outdated regulations to help the EMS. It also allowed the team to realize the challenges in collecting the laws and permits from the different parts of the division. The collection process enabled us to find areas needing improvement in the organizational structure of the current regulatory management system.

King County Solid Waste Division

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WHO'S RESPONSIBLE?

It's important that the people who analyze your legal requirements are qualified. Designating one or two people for this task can help eliminate redundancy. However, you may find that no one individual is qualified to identify and analyze all legal requirements so you may need to designate more than one person to ensure all bases are covered. Once the information is identified you will want to keep it on file.

HOW DO YOU KEEP YOUR REGULATORY INFORMATION CURRENT?

It's also important that employees whose work is regulated understand what the law means and how it impacts their job.

TROUBLESHOOTER'S GUIDE

How does your organization weave its way through the maze of laws, regulations, and other requirements? Cities report that everyone involved in the process has his/her favorite information resources. Public entities have found it very useful to aggregate a common list of information sources and key contacts and to post this prominently within their EMS materials. In many cases this activity has brought some duplication of effort and inefficiencies to light, and expedited the process of staying current with legal requirements.

Several municipalities have asked their state or EPA Regional offices for additional information about specific environmental laws and regulations. Each EPA Regional Office has a compliance assistance coordinator who can provide some plain language guidance that has been very useful in communicating the requirements to shop floor employees. Most state offices provide the same service.

Almost every municipality who has implemented an EMS has developed a paper or electronic database of the laws and regulations relevant to their operations. In addition, they have included the reporting dates and requirements that apply. Why is this useful? Research shows that a large number of municipal environmental violations are caused by missing permit reporting dates. In response to this, several municipalities have included email alerts to the responsible staff member 90, 60, and 30 days in advance of the deadlines, an easy and proactive way to manage this part of your compliance obligations.



Legal and Other Requirements

The Local Government Environmental Assistance Network (LGEAN) is a "first-stop shop" providing environmental management, planning, funding, and regulatory information for local government elected and appointed officials, managers and staff. Located at www.lgean.org, LGEAN also enables local officials to interact with their peers and others online.

Profile of Local Government Operations

EPA Office of Compliance Sector Notebook Project. A guidance document that provides an overview of local government operations and the applicable federal regulatory requirements. (Document number EPA 310-R-99-001)

It's not enough to generate a baseline line of your regulatory requirements. Regulations change, are updated, or are struck from the books. How do you keep this information up to date? How often will you check to see if there are updates or changes?

COMMUNICATING THE REQUIREMENTS

It's very important that the employees whose work is regulated understand what the law means and how it impacts their job. You do not need to quote the Federal Code of Regulations although you will need to communicate the information they need to know in order to conduct their job properly and ensure that regulatory requirements are being met. Typically the regulatory requirements are incorporated into work instructions or procedures.

Municipalities report that they communicate these requirements over staff meetings in the morning or during lunch. Sometimes formal training is required. If so, you will want to document it.



SETTING OBJECTIVES AND TARGETS

Setting objectives and targets presents an opportunity to identify where you want to be in the next year or two regarding your significant aspects and hotspots. Once you have compiled your list of significant aspects, you will then determine which ones will have specific objectives and targets.

Environmental Objective: An overall goal, arising from the environmental policy, that an organization sets itself to achieve.

Example: Reduce energy used by all buildings

Environmental Target: A measurable performance requirement that arises from an objective.

Example: Reduce Energy Consumption Used by Building Y by X% by January 2003.

Your organization has the flexibility to determine what is appropriate based on your needs. Objectives and targets can be set organization-wide or for individual units (e.g. 30% energy reduction for the entire wastewater treatment operation versus 30% reduction for biosolids incineration). When you establish objectives and targets, remember the three pillars of your environmental policy:



Close consideration also needs to be given to:

- ♦ Significant Environmental Aspects
- ♦ Applicable Legal and Regulatory Requirements
- ♦ Views of Interested Parties
 - Who are your interested parties?
 - Remember your stakeholders.
- ♦ Technological Options
- ♦ Other Business Realities

When you establish objectives and targets you need to establish a baseline. This baseline serves as the point from which you will measure your objectives and targets against. If you set an objective and target to reduce hazardous waste generated by 10% by 2003 what does that equate to? 50 pounds, 100 pounds, or 1000 pounds? You will need to determine how much hazardous waste was generated the previous year. Is the information easily retrievable to make this calculation? Do you have your waste manifests on-site or do you need to contact your hauler? For each quantifiable objective and target you establish you should establish baseline data. However, you may find that no baseline data exists. If so, do not let this stop you from moving forward.

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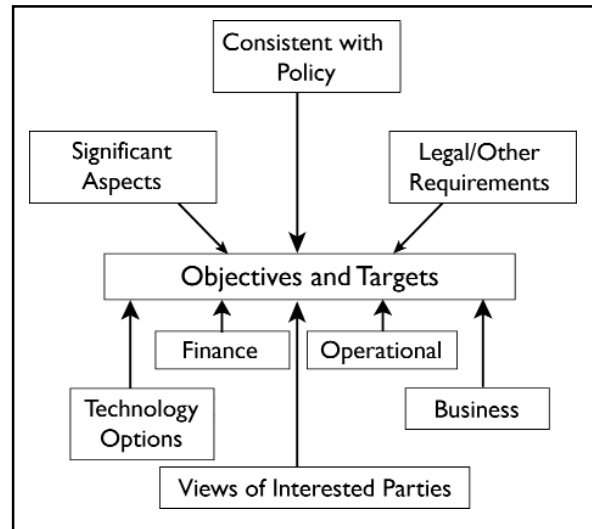
Your Objectives and Targets will need approval from top management. They'll want to know what the efforts of achieving these goals will cost in terms of staff time and capital expenditures, how long the effort will take, how it will interface with periods of high operational priority, and who will be involved in the tasks. As you develop your Os and Ts, it's helpful for your cross-functional team to brainstorm together and "guesstimate" some preliminary answers to these questions. You'll have a full picture to present to management when you ask for their sign off on your Os and Ts. Also, you should plan to update top management as you continue to develop your EMS.

As you set objectives and targets, don't forget to account for some existing programs that are working very well. For example, maybe you have an environmental preferred purchasing program, or a material substitution effort, or a recycling program that is produced promising results. Maintenance of these programs it may well serve to satisfy your policy commitment to prevention of pollution in this first cycle of EMS activity.



GETTING STARTED:

- ♦ Review your significant aspects list
- ♦ Determine which significant aspects you will set objectives and targets for this year (based on resources, technology options, etc.)
 - document the criteria and process for this decision
 - decision is usually made by Core Team
- ♦ Consider your policy commitments, views of interested parties, business realities, etc.
- ♦ List the objectives and targets (Core Team)
- ♦ Get top management approval
- ♦ Document the list and communicate as appropriate



Sample documentation for Phase II can be found in Appendix C on page C-1.