



IOWA
Department of
Natural Resources

Environmental Management Systems

Monitoring and Measurement

September 22, 2017



G R E S H A M
S M I T H A N D
P A R T N E R S

Monitoring & Measurement – Iowa EMS Requirement

- A documented process for monitoring key activities and measuring performance related to the specific environmental objective and target, at a minimum



Monitoring & Measurement – In Layman’s Terms

- Data collection to check how your organization is doing on its objectives and targets and action plans



Monitoring and Measurement Example

- ⦿ Objective => Improved disposal of HHM in the service area
- ⦿ Target => Increase HHM collection by 5% in CY2018 compared to CY2017
- ⦿ Metric => Tons of HHM collected
- ⦿ Monitoring and Measurement =>
 1. Routinely gathering data on your metric (i.e., tons of HHM collected)
 2. Comparing that data to your target (i.e., we're on schedule/not on schedule to increase by 5%)
 3. Acting accordingly as a result of the comparison (i.e., continue to follow the action plan/change X, Y, and Z to the action plan to get us back on schedule)

How Do You Monitor and Measure?

- ◎ Understand the focus is on each Objective and Target and Action Plan
- ◎ Ask yourself how to objectively collect data and evaluate progress
 - Consider:
 - How can you collect data?
 - How often will you collect data?
 - How can you ensure the data is accurate?
 - How is the data stored?
 - What will you do to ensure your measuring tools (e.g., scales, gauges, etc.) are properly maintained?
- ◎ Jot down details of your answers

Example

- ◉ Objective => Improved disposal of HHM in the service area
- ◉ Target => Increase HHM collection by 5% in CY2018 compared to CY2017
- ◉ Metric => Tons of HHM collected
- ◉ Method for collecting data?
 - Will you weigh the amount of HHM collected or will you estimate using calculations?
 - Will you collect data during each drop-off?
 - What will you do with the data after its collected? How can you make it readily accessible?
 - What sort of analytical devices are required? Do they need to be calibrated?
- ◉ Jot down details of your answers

Example

- ◉ Objective => Improve public environmental awareness
- ◉ Target => Increase traffic to organization's environmentally focused webpage by 10% in CY2018 compared to CY2017
- ◉ Metric => Number of visits to the webpage
- ◉ Method for collecting data?
 - Will you count the number of visitors to the webpage or will you estimate using calculations?
 - Will you collect data daily? Weekly? Monthly?
 - What will you do with the data after its collected? How can you make it readily accessible?
 - Does your counter need to be reset? Could it be manipulated?
- ◉ Jot down details of your answers

Example

- ◉ Objective => Decrease environmental impacts from landfill GHG emissions
- ◉ Target => Reduce GHG emissions by 7% in FY2019 compared to FY2018
- ◉ Metric => CO₂e
- ◉ Method for collecting data?
 - Will you weigh the amount of CO₂e emitted or will you estimate using calculations?
 - How often will you collect data?
 - What will you do with the data after its collected? How can you make it readily accessible?
 - What sort of analytical devices are required? Do they need to be calibrated?
- ◉ Jot down details of your answers

How Do You Monitor and Measure? (cont.)

- Summarize your answers into a document (i.e., write a procedure)
 - Each objective and target will be monitored and measured
 - O&T leaders will delegate and communicate responsibilities for data collection
 - Data will be collected monthly unless the O&T leader establishes and documents a more appropriate frequency
 - Use of analytical instruments will be the preferred method of data collection. However, conventional calculations can be used if analytical instruments are unreasonable
 - Analytical instruments will be maintained according to manufacturer's recommendations. O&T leaders will delegate and communicate maintenance responsibilities
 - Data will be given to the EMR within one week of being collected. The EMR will store the data on the organization's server
 - ...
- Maintain the procedure



**ULTIMATELY, THE EMS IS
ABOUT MAKING
*ENVIRONMENTAL
IMPROVEMENTS...THIS
SHOULD BE REFLECTED IN
MONITORING DATA***



Monitoring and Measurement – Best Practices

- ⦿ Make Sure Metrics Match the Target
- ⦿ Keep Procedure Simple, But Specific and Meaningful
- ⦿ Write a Draft Procedure and Test it on Existing (Draft) Objectives and Targets
- ⦿ Avoid Costly Data Gathering, Where Possible
- ⦿ Ask for Help
- ⦿ Don't be Afraid to Modify Your Methods
- ⦿ Remember to Keep the Procedure Updated

**Monitoring and Measuring
Progress is an Integral Part of
Determining and Demonstrating
Success of the EMS**



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QUESTIONS?

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