

SDRU 2021 ENVIRONMENTAL MANAGEMENT SYSTEMS TRAINING

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OVERVIEW

- ✘ What is an Environmental Management System
- ✘ Why Environmental Management System (EMS) is important
- ✘ Review SDRU's FY 2021 EMS Goals and Milestones

WHAT IS AN ENVIRONMENTAL MANAGEMENT SYSTEM?

- ✘ A systematic approach to identifying and managing an organization's environmental obligations and issues
 - + A way to continually improve environmental responsibilities
- ✘ A continual cycle of planning, implementing, reviewing, and improving processes and actions an organization takes towards meeting its mission and environmental goals.
- ✘ Our EMS is follows the "Plan, Do, Check, Act" model
 - + Plan – develop policy and EMS goals
 - + Do – training, implementation, and documentation
 - + Check – internal audits, evaluate performance indicators
 - + Act – Management Review
- ✘ Encompasses environmental awareness, regulatory compliance, pollution prevention, conservation of natural resources, and energy conservation

WHY ARE ENVIRONMENTAL MANAGEMENT SYSTEMS IMPORTANT?

- ✖ All federal agencies required by National Environmental Policy Act (NEPA) to consider the potential impacts of their projects on the environment
- ✖ An Executive Order signed by President Bush in 2007 requires all federal agencies to:
 - + Use an Environmental Management System to address environmental aspects
 - + Establish objectives and targets
 - + Collect, analyze, and report EMS performance
- ✖ Ensures that while we are working to achieve our research mission that we avoid negatively impact the environment when possible and we reduce our impact on the environment

WHAT IS THE EMS TABLE?

- ✘ Developed annually by the SDRU EMS Committee as part of the “Planning” cycle
- ✘ Identifies 10 environmental aspects or activities that have or can have a negative environmental impact
- ✘ Establishes goals, milestones, target dates for reducing the environmental impacts associated with each aspect
- ✘ Signifies the individuals responsible for each goal
- ✘ At the end of the year we must report the percentage of goals achieved.
 - + One measure of our EMS performance
 - + The next 20 slides presents the 2021 EMS table and describes each aspect and along the goals, milestones, target dates, and responsible individuals for each.

ASPECT 1: PAPER, CARDBOARD, ALUMINUM, PLASTIC, REFRIGERATOR, FREEZER, FILE CABINET, GLASS, ELECTRONIC USE

- ✗ Impact - Depletion of natural resources
- ✗ Goal – Minimize solid waste going to landfills

ASPECT 1: SOLID WASTE

Goals	Milestones	Target Dates	Responsibilities	Management Actions
Minimize solid waste going into landfills			All SDRU Employees	
	reduce paper use through duplex printing and maximizing use of electronic documents	Sept. 30, 21	All SDRU Employees	
	Tracking of paper purchases and usage	Sept. 30, 2021	Diane Perry, Michael Maybury	
	Minimize waste and pollutant generation through source reduction.	Sept. 30, 2021	All SDRU Employees	
	Divert at least 50% of non-hazardous solid waste, which includes food, net-zero waste, and any other type of non-hazardous waste, from landfills	Sept. 30, 2021	All SDRU Employees	
	Maintain log of solid waste recycled	Sept. 30, 2021	Kaitlyn Scott	
	Promote recycling of solid waster	Sept. 30, 2021	EMS Committee	
	Use environmentally sound disposal practices for excess or surplus electronic products.	Sept. 30, 2021	Michael Maybury	

ASPECT 2: GENERATING UNIVERSAL WASTE (E.G., FLUORESCENT LIGHT TUBES, BATTERIES, ETC.)

- ✗ **Impact – Pollution of land and water**
- ✗ **Goal – Comply with universal waste disposal rules**

ASPECT 2: GENERATING UNIVERSAL WASTE

Goals	Milestones	Target Dates	Responsibilities	Management Actions
comply with universal waste disposal rules			All SDRU Employees	
	All ARS laboratories use the OSU EHS waste program	Sept. 30, 2021	All SDRU Employees	
	Maintain log of recycled batteries	Sept. 30, 2021	Kaitlyn Scott	
	Employee training	Sept. 30, 2021	Safety Committee	
	Minimize waste and pollutant generation through source reduction.	Sept. 30, 2021	All SDRU Employees	

ASPECT 3: PRODUCT CONSUMPTION

- ✖ Impact – Depletion of natural resources
- ✖ Goal – Sustainable acquisition, proactive procurement, green purchasing

ASPECT 3: PRODUCT CONSUMPTION

Goals	Milestones	Target Dates	Responsibilities
Sustainable Acquisition and procurement,			All SDRU Employees
	Meet statutory mandates that require purchase of: i. Recycle content products; ii. Energy efficient, Energy Star and FEMP-designated products; iii. Biopreferred & biobased designated products	Sept. 30, 2021	Card holders (Philip Levison, Luis Martinez,, Michael Maybury, Barry Allred, Diane Perry) and those requesting purchases
	Purchase sustainable products and services including: i. Significant New Alternative Policy (SNAP) chemicals or alternatives to ozone depleting and high global warming hydrofluorocarbons. ii. WaterSense certified products and services iii. Safer Choice products iv. SmartWay Transport partners and SmartWay products.	Sept. 30, 2021	Card holders (Philip Levison, Luis Martinez,, Michael Maybury, Barry Allred, Diane Perry) and those requesting purchases
	Purchase environmentally preferable products or services that:: i. Meet or exceed specifications, standards, or labels by EPA; ii. Meet environmental criteria developed by voluntary consensus standards bodies consistent with section 12(d) of 995 National Technology Transfer and Advancement Act & OMB Circular A-119.	Sept. 30, 2021	Card holders (Philip Levison, Luis Martinez,, Michael Maybury, Barry Allred, Diane Perry) and those requesting purchases
	Assist agency with achieving goal of 95 percent compliance with biobased and biopreferred purchasing requirements by: i. Ensure construction and vehicle maintenance contracts are developed specifying use of biobased and biopreferred products; and ii. Ensure that contractors submit timely reports on their biobased and biopreferred purchases.	Sept. 30, 2021	Research Leader Kevin King
	Purchase 30 percent postconsumer recycled content or higher paper.	Sept. 30, 2021	Card holders (Philip Levison, Luis Martinez,, Michael Maybury, Barry Allred, Diane Perry) and those requesting purchases

ASPECT 4: UTILITIES USE

- ✖ Impact – Depletion of natural resources
- ✖ Goal – Minimize energy and natural resource waste; conserve utilities

ASPECT 4: UTILITIES USE

Goals	Milestones	Target Dates	Responsibilities	Mang Act.
Minimize energy and natural resource waste; conserve utilities			All SRDU Employees	
	Proactive procurement in purchasing energy efficient equipment and light bulbs	Sept. 30, 2021	Card holders (Philip Levison, Luis Martinez,, Michael Maybury, Barry Allred , Diane Perry) and those who request purchases	
	Conserve energy when not in individual workspace through use of energy saving measures (i.e., turning off lights) or energy efficient computer power settings	Sept. 30, 2021	All SDRU employees	
	Promote energy conservation	Sept. 30, 2021	EMS Committee	
	Inventory of Greenhouse Gas emissions (Baseline FY2010)	Sept. 30, 2021	EMS Committee	
	Increase use of renewable energy as opportunities allow	Sept. 30, 2021	All SDRU employees	
	Establish and Implement policies to enable duplex printing, and other energy efficient or environmentally preferable computer features	Sept. 30, 2021	Michael Maybury	

ASPECT 5: HAZARDOUS MATERIAL USE

- ✗ **Impact – Pollution of land or water**
- ✗ **Goal – Reduce hazardous waste disposal quantities**

ASPECT 5: HAZARDOUS MATERIALS USE

Goals	Milestones	Target Dates	Responsibilities	Management Actions
Reduce hazardous waste disposal quantities			All SDRU Employees	
	Minimize waste and pollutant generation through source reduction.	Sept. 30, 2021	All SDRU Employees	
	Proactive acquisition and efficient chemical usage	Sept. 30, 2021	All SDRU Employees	
	Maintain log of hazardous waste	Sept. 30, 2021	Eric Fischer	
	Recycle used oil and track amounts recycled	Sept. 30, 2021	Philip Levison	
	Emergency response plan and employee training for use and handling of hazardous materials	Sept. 30, 2021	Safety Committee	

ASPECT 6: DISCHARGE TO SEWER

- ✗ **Impact – Water pollution**
- ✗ **Goal – Comply with local sewer discharge limits**

ASPECT 6: DISCHARGE TO SEWER

Goals	Milestones	Target Dates	Responsibilities	Management Actions
Comply with local sewer discharge limits			All SDRU Employees	
	All ARS laboratories use the OSU EHS waste program	Sept. 30, 2021	All SDRU Employees	
	Employee training on allowable discharges	Sept. 30, 2021	Safety Committee	

ASPECT 7: FARM EQUIPMENT AND VEHICLE USE; COMBUSTION OF FOSSIL FUELS

- ✗ Impact – Air pollution
- ✗ Goal – Federal fleet and transportation efficiency

ASPECT 7: VEHICLE USE

Goals	Milestones	Target Dates	Responsibilities
Federal Fleet & Transportation Efficiency			All SDRU Employees
	Keep vehicles tuned and running properly thereby preventing excess pollution and waste	Sept. 30, 2021	Safety Committee
	Use low GHG emitting vehicles, including AFVs	Sept. 30, 2021	All SDRU Employees
	Promote usage of E85 in flex fuel vehicles	Sept. 30, 2021	EMS Committee
	Reducing fleet-wide per-mile greenhouse gas emissions from fleet vehicles, relative to a FY 2014 baseline to reduce emissions: i. Not less than 4 percent by the end of FY 2017 ii. Not less than 15 percent by the end of FY 2021 iii. Not less than 30 percent by the end of FY 2025	2017, 2021, 2025	All SDRU Employees
	Eliminate non-essential vehicles as opportunities allow based on EMS fleet evaluations	Sept. 30, 2021	Research Leader Kevin King and EMS Committee
	Plan for the fleet to be 20 percent zero emission or plug in hybrid by FY 2020 and new acquisitions will be 50 percent zero emission or plug-in-hybrid by FY 2025.	2020, 2025	Research Leader Kevin King and EMS Committee
	Plan for charging stations or other refueling infrastructure for zero emission or plug in hybrid vehicles and vehicle-to-grid technology.	2020, 2025	Research Leader Kevin King and EMS Committee
	Document vehicle and fuel use	Sept. 30, 2021	Diane Perry

ASPECT 8: CONSTRUCTION, RENOVATION, RESEARCH AND OTHER OPERATIONS

- ✘ Impact – Generation of construction debris waste, dust, and noise
- ✘ Goal – Comply with NEPA

ASPECT 8: CONSTRUCTION, RENOVATION, AND RESEARCH ACTIVITIES

Goals	Milestones	Target Dates	Responsibilities	Management Actions
Comply with the NEPA			All SDRU Employees	
	Retain NEPA documents	Sept. 30, 2021	Kevin King	

ASPECT 9: OZONE DEPLETING SUBSTANCES

- ✖ **Impact – Depletion of ozone layer**
- ✖ **Goal – Minimize use and manage reduction of ODS**

ASPECT 9: OZONE DEPLETING SUBSTANCES

Goals	Milestones	Target Dates	Responsibilities	Management Actions
Minimize Use and Manage Reduction of ODS			All SDRU Employees	
	Survey ODS containing equipment	Sept. 30, 2021	EMS Committee	
	Replace ODS containing equipment as budget or opportunities allow	Sept. 30, 2021	All SDRU Employees	

ASPECT 10: ENVIRONMENTAL MANAGEMENT SYSTEM

- ✖ Impact – Environmental impacts
- ✖ Goal – Improve the Environmental Management System

ASPECT 10: ENVIRONMENTAL MANAGEMENT SYSTEM

Goals	Milestones	Target Dates	Responsibilities	Management Actions
Improve the Environmental Management System			EMS Committee and Research Leader Kevin King	
	Follow Aspects ID SOP	Sept. 30, 2021	EMS Committee	
	Conduct Training	Sept. 30, 2021	Environmental Location Officer Rocky Smiley	
	Annually review EMS responsibilities	Sept. 30, 2021	Research Leader Kevin King	
	Ensure EMS coordinator has a Performance Plan statement	Sept. 30, 2021	Research Leader Kevin King	
	Review EMS policy statement annually and update as needed	Sept. 30, 2021	Research Leader Kevin King	
	Conduct compliance inspections	Sept. 30, 2021	EMS Committee and Safety Committee	
	Annually conduct internal audit	Sept. 30, 2021	EMS Committee	
	Annually complete Management Review of EMS audit	Sept. 30, 2021	Research Leader Kevin King	
	OMB Scorecard	Sept. 30, 2021	EMS Committee	

CONCLUSIONS

- ✘ EMS – a systematic framework established to ensure that we don't negatively impact the environment and/or to enable us to reduce our impact on the environment
- ✘ EMS Table – annual goals and milestones for the year
- ✘ EMS is everyone's responsibility
- ✘ *Thank you to everyone who volunteered to assist with our 2021 EMS goals.*