

Giant Mine Remediation Project



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Environmental Management System Update



Update by Giant Mine Project Remediation Team
1st Floor Waldron Building, Yellowknife, NWT
March 5, 2012

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Agenda:

No.	Item	Time Allotted	Presentation By
1	Greeting and Introductions	1:00 – 1:15	Adrian Paradis
2	Meeting Purpose and Objectives	1:15 – 1:20	Lisa Dyer
3	Introduction to the GMRP EMS, and Concept & Approach to EMS Development	1:20 – 1:30	Mark Palmer & Octavio Melo
4	Open Discussion	1:30 – 1:40	
5	Introduction of the draft EHSC Policy	1:40 – 1:50	Octavio Melo
6	Open Discussion	1:50 – 2:00	
7	Overview of Key EMS Elements	2:00 – 2:15	Octavio Melo
8	<i>Break</i>	2:15 – 2:30	
9	Open Discussion	2:30 – 2:45	
10	Environmental Management Plans	2:45 – 3:45	Erika Nyyssonen
11	Open Discussion	3:45 – 4:00	
12	Implementation Plan	4:00 – 4:30	Octavio Melo
13	Open Discussion	4:30 – 4:45	
14	Closing Remarks	4:45 – 5:00	Adrian Paradis

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Greetings and Introductions

Welcome and Roundtable Introductions

Overview of the Meeting

Purpose

- To provide an informal update on the current activities of the Giant Mine Remediation Project (GMRP) team on the Environmental Management System (EMS) and seek feedback from interested parties to inform both content and process for the further development of the EMS.

Objectives

- To communicate the overall approach for development and implementation of the EMS
- To provide an update to GMRP parties on progress in design and development of the EMS
- To seek feedback on the approach and suggestions for appropriate times and means for engagement with interested parties

What we said at the Technical Sessions

- Develop an Environmental Policy establishing overall direction for environmental management for the Remediation Project
- Complete internal EMS “Gap Analysis” (common first step in formalizing management practices)
 - ❖ A project-wide assessment of current processes, procedures and documentation to determine the Project’s initial conformance with ISO 14001 and DAR commitments
- Develop EMS Implementation Plan based on results of Gap Analysis and stakeholder engagement
 - ❖ Plan will comprise the Framework for implementing the EMS
 - ❖ Plan will include scheduled dates, identified resources, timelines, and organizational responsibilities for implementing a Project-wide EMS consistent with the Giant Mine Remediation Project EMS policy

What we said at the Technical Sessions

- Gap Analysis and detailed work plan to begin in the winter of 2011/12
- EMS development completed by water licence hearing
- Implementation prior to initiation of full Remediation Plan

What we have done

- Responded to Information requests
- Completed Gap Analysis of overall EMS as well as EMPs
- Developed draft Policy

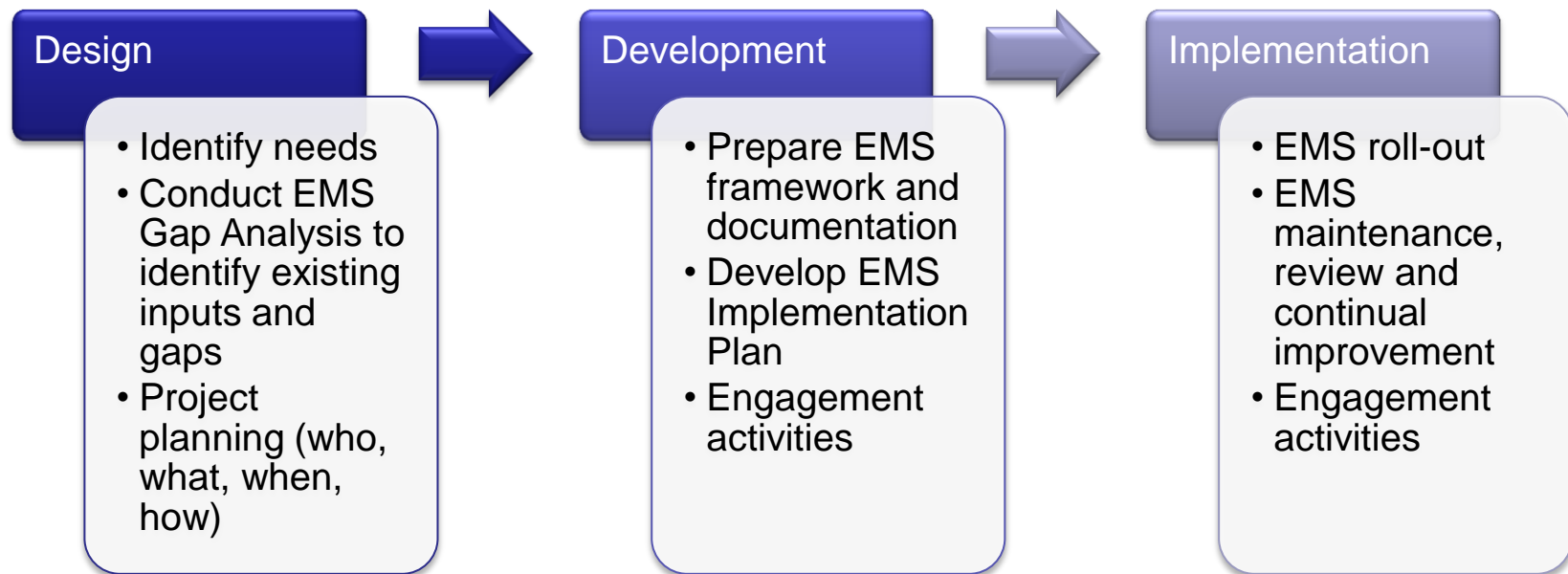
Introducing the GMRP EMS:

Defining the Environmental Management System

- The core approach to managing, monitoring and reporting on environmental , and health & safety issues
- Consistent with the internationally recognized standard ISO 14001
- Includes integration of an assurance program, including third-party auditing, and a management review process

Approach to EMS Development:

Environmental Management System Development



Introduction of draft EHSC Policy: Environment, Health, Safety and Community Policy

- **Concept:** Developed to integrate and synthesize relevant environment, health, safety and community policy direction and commitments related to the GMRP
- **Purpose:** This Policy is intended to provide guidance for the management of environment, health, safety and community elements of the Giant Mine Remediation Project in order to achieve the project objectives
- **Scope:** All of the activities required to achieve the environment, health, safety and community objectives of the project throughout all phases including design, construction, adaptation and long term monitoring

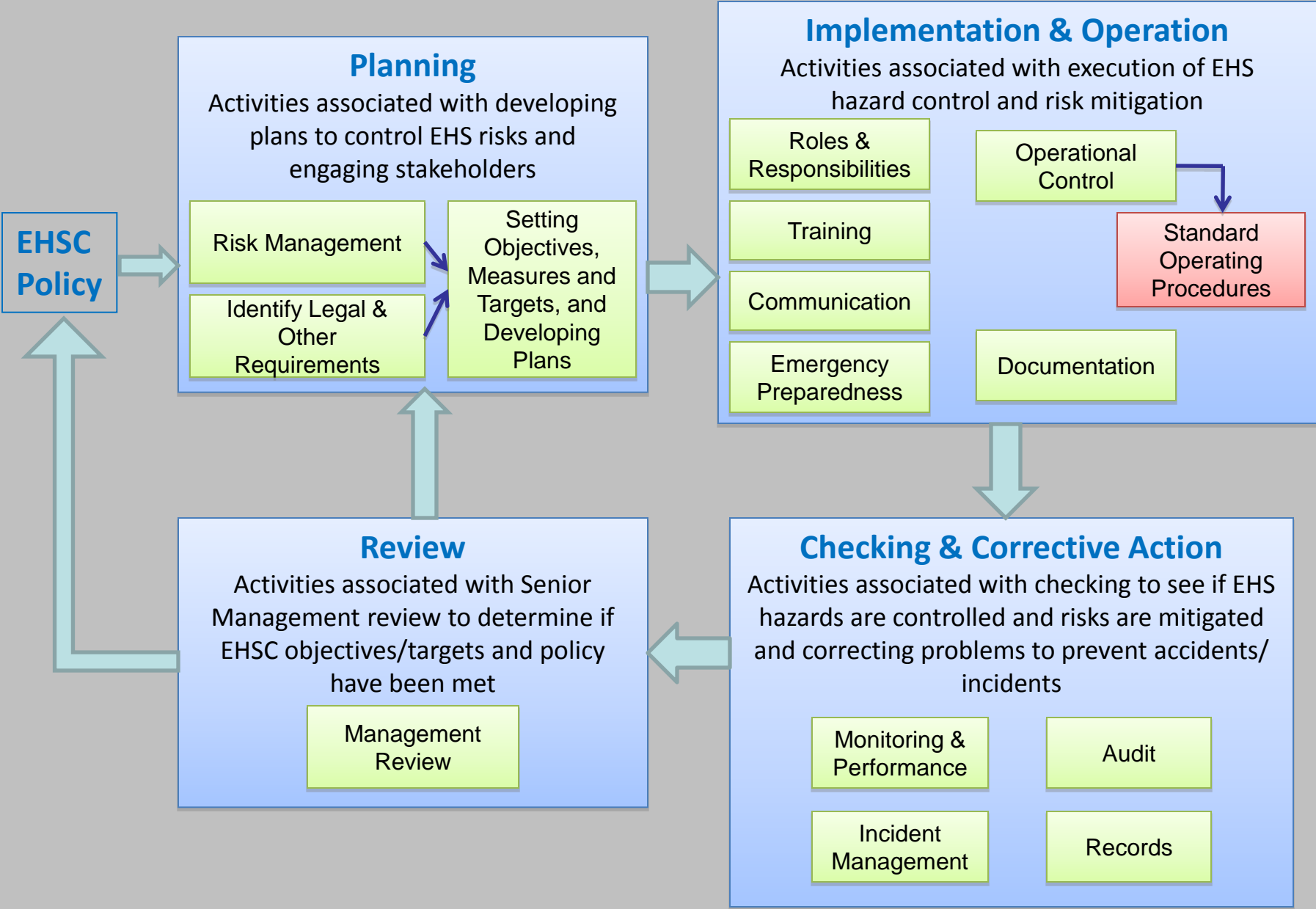
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Feedback on the Draft EHSC Policy **Open Discussion**

Overview of EMS Elements:



EMS Elements:

Roles and Responsibilities

- Top Management Representative
 - ❖ Responsible for putting in place, ensuring execution and reporting to Project Leadership Committee and Management Board on performance of the EMS
- Environment Health, Safety and Community Manager
 - ❖ Responsible for ensuring that the requirements of the EHSC Policy are met and for developing a ongoing Environmental Strategy.
- EMS Working Group
 - ❖ Individuals nominated by their constituencies to represent the interests of their constituencies
 - ❖ To advise on the development of the EMS, the Environmental Management Plans, and monitoring
- Construction Manager
 - ❖ Responsible for amplifying EHSC requirements at the operational level and onsite implementation of EHS management activities
- There will be other operational-based roles managed by AANDC and PWGSC and Prime Construction Manager

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Open Discussion

Introduction to EMPs:

Defining Environmental Management Plans

- EMPs are developed during the planning phase of establishing the Giant Mine Environmental Management Strategy for key environmental aspects
- They will be the primary method of controlling, managing and monitoring socio-economic and environmental risks
- The EMPs will address:
 - a) The environmental and social objectives, targets, and commitments of the co-proponents with respect to the Remediation Project
 - b) The application of mitigation and risk reduction measures described in the DAR, the final outcomes of the EA process and as required by regulation and licensing
 - c) Implementation and monitoring aspects of the project. As the project progresses, additional plans or amended plans will be developed as required

Introduction to EMPs:

Defining Environmental Management Plans

- The development of EMPs will follow the objective's-based approach of the MVEIRB/AADNC Draft Closure and Reclamation Guidelines.
- The process will be tailored to the approach carried out for the diamond mines.

Introduction to EMPs:

Defining Environmental Management Plans

- Generally, each EMP will address specific mine components including:
 - Tailings
 - Underground works including the freeze
 - Open pits
 - Waste storage areas, contaminated soils and infrastructure
 - New water treatment plant
 - Freeze and Underground

Introduction to EMPs:

Additional Environmental Management Plans

- Regulated components: e.g. fuel storage and halocarbons
- Site Wide
 - Air, Noise, Wildlife, Permafrost, Transportation
- Long term monitoring of environmental media
 - Wildlife, Air quality, Water, Soil, Sediment.

Introduction to EMPs:

Work Completed

- Assessment of current knowledge and data gaps/research requirements initiated using a matrix type comparison.
- Matrix system mirrors that used for diamond mine assessments and ISO14001 requirements.

Introduction to EMPs:

EMP Working Categories

- **Component** - e.g. Terrestrial Environment
- **Subcomponent** - e.g. Quality of habitat
- **Objectives** - e.g. Minimize the release of contaminants from the site to the surrounding environment
- **Operational Controls (ISO)** - e.g. Hazardous materials other than asbestos and arsenic trioxide contaminated waste will be handled and disposed in an approved facility in accordance with applicable regulations and guidelines

Introduction to EMPs:

EMP Working Categories (Cont'd)

- **Contractor Management (ISO)**
- **Monitoring and Measurement (ISO)**
- **Action Criteria**
- **Research Requirements**
- **Records (ISO)**
- **Gap Closure Work Required**
- **Roles and Responsibilities**
- **Reporting and Engagement**

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Component	Closure Scenario	General Objectives/Outcomes	Criteria Guidelines (for the selection of specific measures and the establishment of targets)	Ongoing Research
Tailings and sludge containment areas	<ul style="list-style-type: none"> Tailings will be graded and covered to minimize transport of contaminants. 	<ul style="list-style-type: none"> Re-contour and cover with rock and soil to promote drainage and potential revegetation. Maintain the quality and quantity of terrestrial habitat and species assemblage and where appropriate and feasible enhance habitat and species use. 	<ul style="list-style-type: none"> GNWT Ambient Air Quality Guidelines for SO₂, TSP and PM_{2.5} Canadian National Ambient Air Quality Objectives – Maximum Acceptable Concentration for NO₂ Ontario Ministry of the Environment Ambient Criterion for PM₁₀ and Airborne Arsenic (adopted by the GNWT) Percentage of vegetation cover/vegetation types compared to targets Quantity (i.e., area) and quality (i.e., function and relative productivity with respect to the regional terrestrial community). 	<ul style="list-style-type: none"> Baseline plant community studies Development of site-specific vegetation cover and species type through consultation and site studies (Tailings cover design is dependent on monitoring results from test plots) Baseline wildlife studies Additional air dispersion modelling Development of Environmental Management Plans addressing sludge, tailings, vegetation, wildlife and earthworks factors.
Historic foreshore tailings	<ul style="list-style-type: none"> Historic foreshore tailings will be armoured to limit the exposure and transport of contaminants 	<ul style="list-style-type: none"> Cover in place. 	<ul style="list-style-type: none"> Resilience of armoured. 	<ul style="list-style-type: none"> Refinement on volumes Development of an Environmental Management Plan addressing earthworks factors.

Introduction to EMPs:

Types of EMPs

1. Some EMPs will be driven by regulatory or licensing requirements:
 - In some cases there will be limited flexibility in how these may be met. e.g. Federal Halocarbon Regulations and Federal Regulations governing fuel storage tanks

Introduction to EMPs:

Types of EMPs

2) Some EMPs will be design-linked, with environmental management options bounded by design:

- Some opportunities may exist for environmental management objectives to influence design and implementation.

Introduction to EMPs:

Types of EMPs

3) Some EMPs will have substantial latitude, such as those focused on development of long-term monitoring plans and their delivery:

- These will provide a high degree of opportunity for input.

Introduction to EMPs:

Initial Work on EMPs

- Initial work has begun on developing EMPs for Site Stabilization Plan tasks, e.g. roaster demolition.
- Process will serve as a test case for the larger project.

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Feedback on Environmental Management Plans **Open Discussion**

EMS Implementation Plan

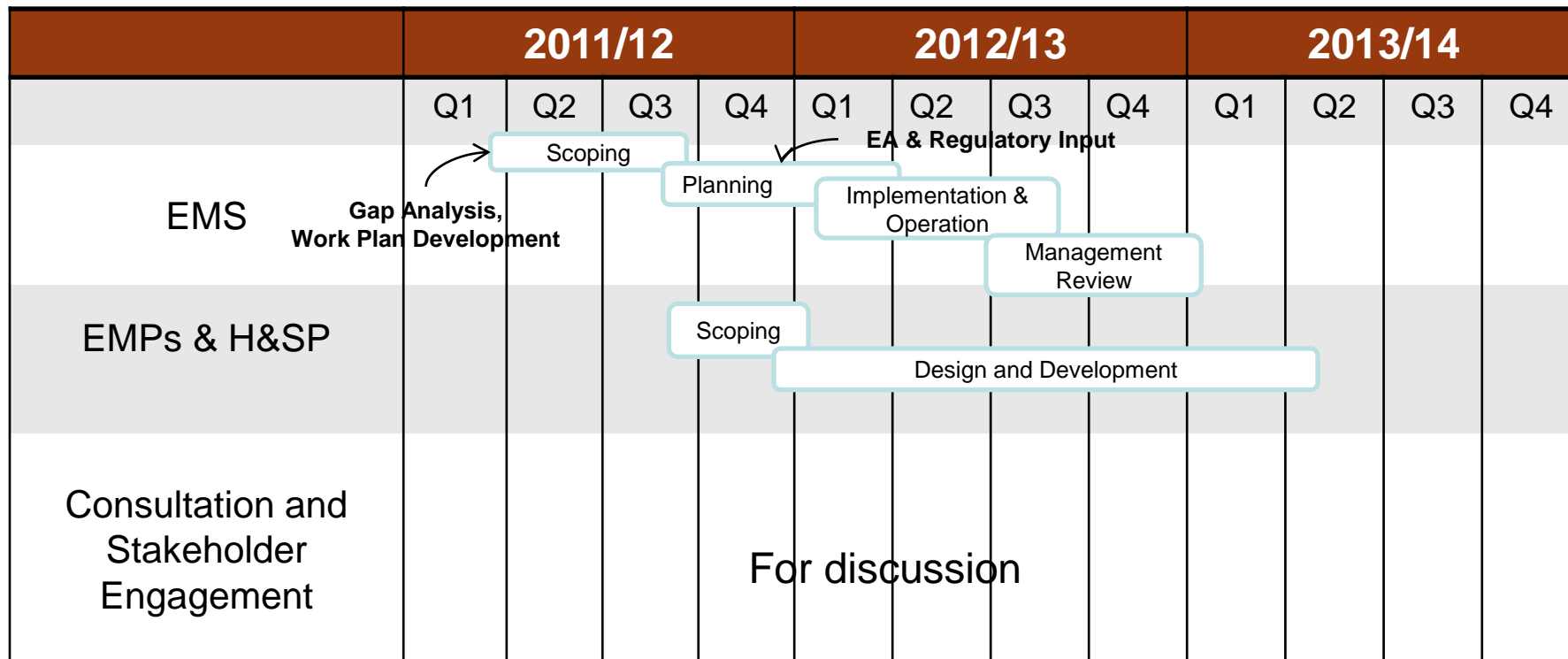
- Led by Management Board (MB) and Project Leadership Committee (PLC)
- Based on results of Gap Analysis and stakeholder engagement
 - a) Plan will comprise the Framework for implementing the EMS
 - b) Plan will include scheduled dates, identified resources, timelines, and organizational responsibilities for implementing a Project-wide EMS consistent with the Giant Mine Remediation Project EHSC Policy

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EMS Implementation Plan



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Feedback on EMS Implementation Plan **Open Discussion**

EMS Working Group:

Progress update

Structure:

- To consist of individuals nominated by their constituencies to represent the interests of their constituencies

Approach:

- To provide advice on development and implementation of the EMS, EMPs, H&SP, and monitoring and how to engage with respective communities
- Regular meetings – frequency to be determined

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Next steps and closing remarks