Nature-based Solutions (NbS) as Pollution Prevention (P2) within the Automotive Sector

Partner Workshop Pre-Read

Background

From strategic tree plantings to wetland restoration projects, Nature-based Solutions (NbS) are quickly becoming a key part of many pollution prevention strategies. These solutions are accessible, scalable, and offer many co-benefits, like increased biodiversity and climate resilience. NbS can advance pollution prevention goals on corporate lands while enhancing ecosystem services and contributing to local, regional, and large-scale restoration efforts.

The Wildlife Habitat Council (WHC) adheres to the generally-accepted International Union for Conservation of Nature (IUCN) definition that NbS are "actions to protect, sustainably manage, and restore natural or modified ecosystems, that address societal challenges effectively and adaptively, simultaneously providing human well-being and biodiversity benefits".[1]

In terms of pollution prevention, WHC is aligning with EPA priorities within a hierarchy of environmental management: 1) prevention, 2) recycling, 3) treatment, and 4) disposal or release. For this initiative, pollution **prevention** (P2) is "reducing or eliminating waste at the source by modifying production processes, promoting the use of nontoxic or less toxic substances, implementing conservation techniques, and reusing materials rather than putting them into the waste stream."[2]

P2, in a broader context, also means source **reduction**. The Pollution Prevention Act of 1990 and EPA's Pollution Prevention Strategy (1991) further define "source reduction" to mean any practice that:

- "Reduces the amount of any hazardous substance, pollutant, or contaminant entering any waste stream or otherwise released into the environment (including fugitive emissions); prior to recycling, treatment or disposal; and
- Reduces the hazards to public health and the environment associated with the release of such substances, pollutants or contaminants."

[1] IUCN definition of NbS: https://www.iucn.org/theme/nature-based-solutions

[2] EPA Pollution Prevention Law and Policies: https://www.epa.gov/p2/pollution-prevention-law-and-policies - and - Memorandum - May 28, 1992, Subject: EPA Definition of "Pollution Prevention": https://www.epa.gov/p2/epa-definition-pollution-prevention-memorandum

Because NbS interventions have many co-benefits, integrating these options can support site-wide, or even community-wide pollution reduction efforts. When implementing NbS options, alignment with larger co-benefits can be achieved even when an option may appear to be outside the scope of pollution reduction. Within the automotive sector, NbS options supporting pollution reduction can be contextualized relative to the operating status, size of land area, community or organizational priority, and contribute to site-wide best practices and activities in pollution prevention.

Further, NbS can be aligned with **Low Carbon Resilience**, which is "an integrated climate action planning and decision-making approach that 'layers on top' of existing sustainability visions, plans, and decision frameworks to help organizations embed climate preparedness and sustainability throughout policy, planning, and decision making. It brings into focus the multiple considerations and trade-offs of policies, investments, projects, and decisions made today while acknowledging their legacies for tomorrow."[3, 4]

Other alignments can focus across the fence line when NbS policies and practices integrate community stakeholder needs, particularly with broadly impactful programs.

An example of a cost-effective pollution reduction approach that provides broader community benefit is phytoremediation, from the Greek word *phyto* (plant) and the Latin word *remedium* (restoring balance.) It involves planting trees and other plants to extract and remove elemental pollutants to lower their bioavailability and thereby clean up contaminated soil and water while stabilizing soil fertility. The Arbor Day Foundation noted:

> "Due to recent advances in plant microbiology, phytoremediation has increasingly become more cost-effective and feasible than traditional remediation approaches for a wide range of polluted sites, while providing communities with the host of co-benefits inherently offered by trees—shade, carbon sequestration, watershed health, and habitat for wildlife."[5]

Other solutions can include wetland preservation, enhancement, restoration, and creation (e.g., forest and riparian habitat, upland wetlands, emergent wetlands, vernal pools, coastal tidal marshes, mangroves). With these NbS interventions, multiple benefits ensue from

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[3] Low Carbon Resilience; Action on Climate Team (ACT), Simon Fraser University, Vancouver BC: https://act-adapt.org/icabcci/

[4] For synergies and co-benefits of a Low Carbon Resilience (LCR) approach and interventions see: Shaw, Alison, Deborah Harford, and Kacia Tolsma (2019). *Low Carbon Resilience Interventions: Case Studies at the Building, Neighbourhood, and Community Levels*. Integrated Climate Action for British Columbia Communities Initiative (ICABCCI) is an initiative of the Adaptation to Climate Change Team (ACT) in the Faculty of Environment at Simon Fraser University (Tables pp. 7-8).

[5] Arbor Day Foundation: https://www.arborday.org/partnerships/phytoremediation/?gclid=CjwKCAjwlcaRBhBYEiwAK341jXCrp4nZDAPY5VXiR8NQ8nK_MYxNZmTSPy6Ln0Quu7Xol-1Cpm83-hoCy9QQAvD_BwE

implementing appropriate wetland options, including water resource management, disaster risk reduction, pollution prevention and reduction.

WHC and Suppliers Partnership for the Environment (SP) Explore Nature-based Solutions

WHC is being funded under EPA's Source Reduction Assistance (SRA) Grant program to explore the opportunities to implement NbS for pollution reduction across the automotive industry. Through a program of technical assistance, research and analysis, stakeholder engagement and workshops, this effort seeks to develop and advance nature-based solutions as pollution prevention in the industry.[6]

Goals of the initiative Include (1) identifying business drivers and challenges that enable or hamper NbS implementation, from corporate needs to policy hurdles and operational mandates; (2) developing a roadmap to implement and/or support NbS; and (3) establishing a case for pilot projects and additional funding. An internal goal to WHC is to help advance the acceptance of NbS as pollution prevention interventions into EPA lexicon and practice.

Partners in the initiative include (1) SP members; (2) WHC corporate members: GM, WM, Stellantis, Toyota; and (3) non-members: Ford, Heritage Group, Lear, SMS, ERA.

WHC and SP Partner Workshop

The goal of the workshop is to highlight the opportunities and challenges of implementing NbS at automotive manufacturing facilities. During the workshop, participants will:

- Learn about NbS as a tool for pollution prevention
- Explore the suite of available and measurable NbS opportunities or interventions
- Discuss different operating restrictions and perspectives, and evaluate different business drivers and benefits.

The workshop consists of two sessions designed to explore these objectives by evaluating NbS interventions based on pollution prevention objectives and the associated co-benefits. By comparing and analysing these opportunities and co-benefits, participants will also be exploring the risks and challenges associated with engaging in NbS as a pollution reduction tactic at operating facilities within the industry.

A table of possible NbS interventions, options, or opportunities for pollution prevention (P2) within the automotive sector is presented for consideration (**Appendix 1**). This table is intended to serve as a quick reference and reflect options that are scalable to varying industrial settings (e.g., offices/leases, manufacturing plants, distribution centers) and

[6] Environmental Protection Agency, Region 4 Source Reduction Assistance Grant, part of the federal Pollution Prevention Grant Program, titled Nature-Based Solutions for Pollution Prevention in the US Automotive Supply Chain

feasible for implementation. The table will be used as a basis for *Breakout Session One* during the workshop.

Any action in the business world can be subject to risk management assessment. While there are thousands of examples of successes, we also want to be mindful of perceived risks. We invite attendees to participate in *Breakout Session Two* in order to better understand company needs and requirements, and also consider best ways to mitigate any substantial risk.

To learn more about NbS, refer to the list of materials provided in **Appendix 2**.