# 1 Introduction

The USEPA defines “risk communication” as the process of informing people about potential hazards to their person, property, or community. Risk communication is a science-based approach for communicating effectively in situations of high stress, high concern, or controversy (USEPA 2019c). Effective risk communication provides people the best available scientific, public health, and environmental information about potential hazards so that they can make informed choices. This is best delivered in language easily understood from trusted sources. Risk communication projects can address a wide variety of issues ranging in scale and complexity. The tools provided in this document are intended to be sufficiently diverse and flexible to cover the development and implementation of a wide range of communication plans regardless of their size, complexity, or timeline. The toolkit should be used by parties (for example, responsible parties, regulatory or site managers, risk assessors, or stakeholders) tasked with community engagement while facing an issue of potential public concern.

This document includes a brief overview of risk communication, walks through the steps in developing a communication plan, presents an overview of risk communication concepts, applies these principles in case studies, and includes various tools (as appendices) to facilitate risk communication plan development. This toolkit is applicable to current, immediate, and emerging environmental issues and concerns. Examples of various tools, as presented in this toolkit, were developed by issue-specific ITRC teams; however, they are generally applicable to environmental issues and concerns. Additional examples will be developed by ITRC teams going forward and linked to the web document in the future. This toolkit will be updated with links to case studies published by future ITRC teams.

Risk communication can be particularly challenging when dealing with contaminants of emerging concern where science is rapidly evolving. Communicators must grapple with competing interpretations of uncertain science and risk management strategies, while earning community trust and promoting meaningful engagement. Other environmental concerns that pose an immediate risk to public health are also challenging, such as the detection of harmful cyanobacteria in a recreational waterbody. The ability to communicate potential and immediate risks to human health and the environment is a vital component in facilitating community participation and decision making.

A common misconception among environmental professionals is that risk communication occurs only after a crisis or emergency. In fact, it requires consistent communication through multiple avenues well before public concern develops. It is often in the form of a dialogue between the risk managers and the affected community. The heart of good risk communication is building trust among all participants by providing the best available scientific, public health, and environmental information about current and emerging environmental issues and their hazards in a manner that is easily understandable for the public to make informed choices.

The following toolkit sections provide guidance to perform the risk communication planning process for both simple and complex risk management public outreach. Review of risk communication fundamentals, the planning process, and examples of engagement tools will aid in communication strategy development. The type of hazard and severity of the risk may dictate the level of effort needed to complete the risk communication planning process. However, this toolkit can be used for both general and specific risk communication activities that encompass immediate to long-term environmental issues and concerns. Throughout this document, examples, tips, and links to issue-specific information are provided as good starting points to communicate risk.

The discipline of community engagement is interwoven with risk communication and associated planning. Therefore, this toolkit touches upon community engagement and techniques, providing some examples, but is not all-encompassing. Some resources on community engagement are provided in this document.

**Approaches to Risk Communication**

From Lundgren and McMakin (2013):

“No one approach to risk communication can be applied equally well to all the purposes, audiences, and situations for which risk is being communicated. Instead approaches to risk communication come from a variety of disciplines, each of which can provide insight to those who are communicating the risk. Understanding the various approaches and their implications can provide us with a repertoire of ways to develop our risk communication efforts, giving us a greater chance of success than if we were communicating without this knowledge.” (pg. 21)

Lundgren and McMakin (2013) provides summaries of the following approaches in chapter 2:

- communication process approach
- National Research Council’s approach
- mental models approach
- crisis communication approach
- convergence communication approach
- three-challenge approach
- social constructionist approach

- hazard plus outrage approach
- mental noise approach
- social network contagion approach
- social amplification of risk approach
- social trust approach
- evolutionary theory approach
- extended parallel process model approach