Introduction

Communication plans can be simple or complex depending on the requirements of the site or project. Not all situations will require implementing all of the steps at the same level of detail. The tools included in this communication plan template are examples to be considered and used as applicable for different situations. Document users should consider what aspects of the plan template could be useful for their project. A complete and robust plan is more likely to result in effectively communicating a message. Consider the communication plan to be a living document; as situations or projects change, update the plan and share with the project team.

Establishing a communications plan can accomplish the following:
• Develop shared goals and objectives for the issue or problem at hand.
• Clarify the relationships between stakeholders, messages, methods, activities and materials.
• Define staff members, stakeholders and others' roles and responsibilities in the process.
• Develop effective messages using stakeholder input.
• Promote consistent use of messages by staff and stakeholders.
• Identify applicable engagement methodologies and tools to meet objectives.
• Evaluate the success of your efforts and determine follow-up action items.

This plan template, adapted from the work of NJDEP (2014), facilitates development of project-specific communication plans to be developed at each stakeholder engagement and/or outreach phase of a project. Of note, the NJDEP 2014 document relied on the work of Caron Chess, Billie Jo Hance, and Peter Sandman, Environmental Communication Research Program, Cook College, Rutgers University, as published by the New Jersey Department of Environmental Protection. Having a communication plan supports an ongoing stakeholder engagement process, identifies communication methods and tools, and acts as a record keeping form to achieve meaningful and effective risk communication. A communication plan supports the five principles of risk communication: building trust and credibility, explaining risk, interacting with communities, understanding how communities see risk, and understanding when to release information. Communication planning also supports reassessment of communication methods and approaches to improve or help craft better, more effective messages. Figure 4-1 presents the iterative eight step process of risk communication. In addition, the communication plan incorporates ways to ensure effective stakeholder engagement. The success of a risk communication plan depends on building a working relationship between stakeholders and those conducting and overseeing the project. Appendix A provides a risk communication plan template that users may find helpful to download and fill-in as they developed their own risk communication plan. The template includes a brief description of each risk communication planning step.

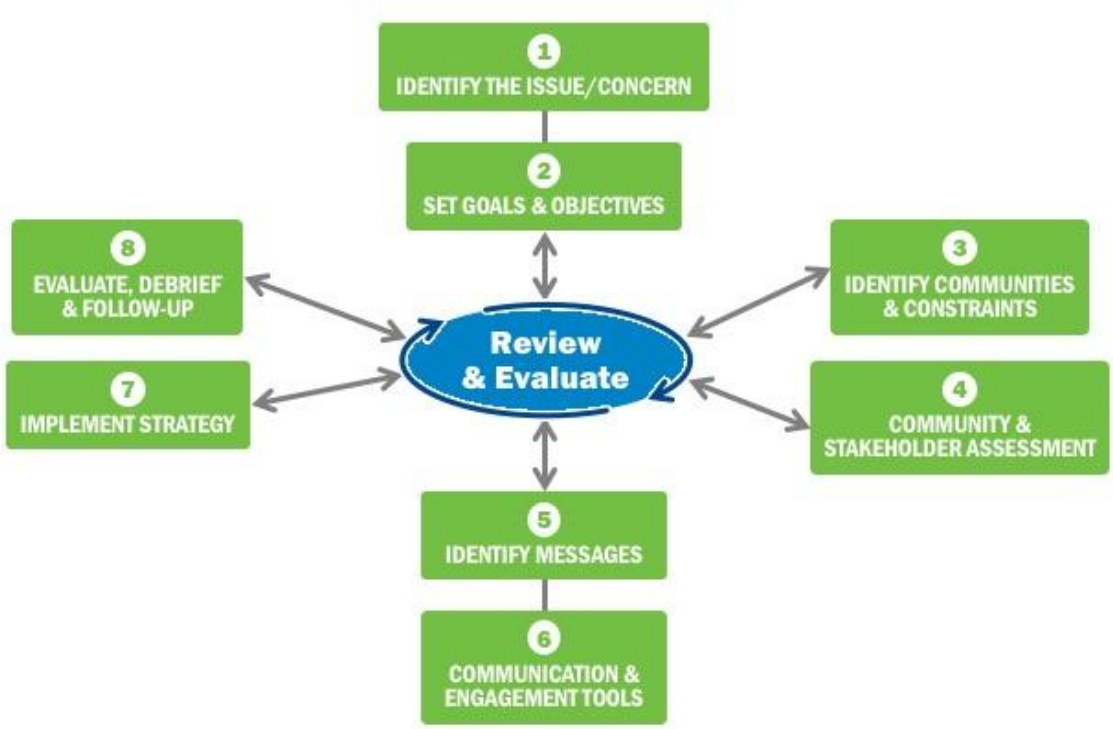

Figure 4-1. Communication plan process diagram

Source: Modified from (NJDEP 2014)

4.1 Step 1: Identify the Issue/Concern

Communication planning begins when an issue or concern involving an agency or organization and the public emerges. The lead organization's management identifies a communication coordinator. Subsequently, management and the coordinator discuss the nature of the issue, the roles and responsibilities of the communication team, and identify those people in the organization who may need to be involved in the issue. Internal work groups may consist of people across different programs or functions, press or public relations groups, or in state agencies or organizations, depending on the circumstances.

The first step is to understand the regulatory requirements, relevant policy and science-based perspective on the issue and the community context. Community context can be understood based on the project team's knowledge and publicly available information, including media sources, community forums, interactions between staff and stakeholders (email, calls) and municipal demographic data.

Follow these steps as the issue is identified:

- Briefly describe why you need to communicate about a specific issue, concern, or about specific information.
- Define the problem you are trying to solve with communication.
- Summarize context, facts, and events surrounding the issue including:
    - site characteristics (for example, new release/source, existing source/site, contaminated media, exposure routes, potential acute and chronic exposures, location near residential properties, remote location) and assessment of affected community(s) including exposed sensitive populations (for example, schools, daycare)
    - scientific and health information (what is known or not known)
    - political/local government information (what is known or not known)
    - geographic information system (GIS) information (for example, geospatial data on sources and potential receptors)

4.1.1 Tools

Several different tools are available to identify the issue or concern. Document users should consider which tools will be valuable to their specific issue or concern.

4.1.1.1 Issue List Template

It is important to document the information described in the bullets above for a specific site. Throughout the risk communication process, additional issues may be identified. Keeping an ongoing issues list helps to track and prioritize the open issues and concerns for a site. The new issues are added into the risk communication planning process. The issues list should include characterization of the community, environmental issue(s) of concern, and unique challenges of performing risk communication and public outreach due to emerging and/or immediate public health risk(s). The communication plan template, provided in Appendix A, includes a table to summarize the environmental issue/concern.

4.1.1.2 Develop an Issue Profile

The profile should include the characteristics of the community as well as the characteristics of the environmental concern (for example, drinking water contaminant). The lead organization is likely to know this information. It may not be comprehensive. Below is a list of sample questions to assist with creating a comprehensive profile of the environmental issue and developing the risk communication plan. In the case of emerging contaminants, because the risk is typically unknown and uncertain, imposed upon the community, and exotic in nature, the community will likely view this as a greater risk, and the public is likely to be more fearful, outraged, and demanding of immediate solutions. Additional or different questions may be relevant for a particular site or situation. The environmental issue profile can be in any form – narrative, bullets, or table, as in the communication plan template presented in Appendix A.

▼*Read more*

Information for the issue profile can be developed based on different sets of factors, adapted from NJDEP (2014):

Environmental/Regulatory Factors

• Is this an emerging contaminant?
• What environmental media are impacted?
• What other projects is the regulator/responsible party working on in the area?
• What other environmental problems exist in the area or occurred previously?
• How did the agency, organization or responsible party respond to these other problems?
• What were the community's or stakeholders' perceptions of how the agency, organization or responsible party responded?
• Are the health impacts known?
• Is the source known?
• Is it a long-term or short-term issue?
• Can immediate protective measures that can be taken?
• What is the extent of the contamination?
• How long has the problem been present?

Community/Socioeconomic Factors

• How big is the community?
• What is its economic base?
• What are its social networks?
• What is its political structure?
• What are the demographic characteristics?
• Who are the key leaders?
• Who are the affected stakeholders?
• What are the priorities of key leaders?
• What are the concerns of residents?
• What groups or individuals are already involved?
• Who are their leaders?
• What is the scientific literacy of the community?

4.1.1.3 Form a Communication Team

Communication is best accomplished through a team approach. The team will consist of anyone in the lead organization who would contribute to the development of an outreach plan. This will include technical personnel, communication experts, and project managers who may be familiar with the community or the environmental issue or concern. It is beneficial to also include the following decision makers and impacted parties as part of the communication team: a representative of each regulatory agency, responsible party, property owner, and stakeholder group (for example, a water purveyor and a community liaison).

The team will vary from situation to situation depending on the issues and the community affected. Select a communications lead to coordinate with the technical experts, decision makers, and other key personnel. Identify roles and responsibilities for communication team members and the communication lead. Identify an approval process and chain of command for group actions.

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Communications lead tasks may include, adapted from NJDEP 2014:

● Develop and track the communication strategy.
● Coordinate information gathering, development, and review of communication activities and products.
● Participate in all internal and external meetings on the site.
● Consult on communication best practices throughout planning, development, implementation, and evaluation processes.
● Help technical staff present technical information clearly and in plain language.
● Be a liaison between community/stakeholders and leadership/project manager
● Incorporate audience concerns into the process.
● Develop appropriate communication methods as identified in the audience assessment to meet the needs of stakeholders.
● Implement and evaluate the agreed upon strategy. Follow up on remaining stakeholder questions or concerns identified through evaluations.

When building a team, consider including other stakeholder agencies and departments from the beginning that could be

directly and indirectly affected by the communication strategy and community input, for example, local and regional health departments, water purveyors, fish and wildlife representatives, local and state government officials, toxicologists or other scientists specializing in a particular environmental issue or remedial activities, water enforcement and permitting programs, and local public health professionals. In addition, a trained facilitator or someone assigned to work with the public may be an appropriate team member to assist with capacity building among decision makers and with audiences. Including the broad range of participants in your team will facilitate building relationships and collaborative work with your partner agencies, stakeholders, and community. This ensures that other points of view are represented in your communication and contributes shared intellectual and physical resources to the project. It also builds support for common communication objectives and consistent use of messages across disciplines, contributing to a unified voice. Partners can then develop complementary agency, stakeholder, or community-specific communication plans as well.

A team list table is provided in the communication plan template in Appendix A.

4.1.1.4 Agenda for First Communication Team Planning Meeting

It is important that when the communication team meets for the first time, there is a clear road map on how the team will work together and what needs to be accomplished. This introductory meeting will likely not address all the issues associated with the problem. As such, be prepared for the items from the first meeting to carry over into subsequent meetings. Assignments on who will be responsible for what tasks should be determined.

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Below is a suggestion for an agenda for a first meeting (NJDEP 2014:

- Present and clearly identify the issue (science and technical matters that are relevant to the particular immediate/emerging environmental concern or issue).
- Define roles and responsibilities of communication team.
- Have group members share their knowledge of the issue.
- Decide if others should be part of the work group.
- Identify communication goals.
- Acknowledge regulatory program requirements and policies, and identify constraints.
- Try to identify the stakeholders and assess their concerns.
- Discuss actions stakeholders can take to improve their engagement, knowledge and safety.
- Discuss the messages you want to send to audiences.
- Discuss the best methods to send these messages.
- Decide who will coordinate the communication activities.
- Assign whatever tasks you feel are needed at this time, with deadlines for doing them.
- Plan how you will evaluate whether the strategy achieved the goal.
- Identify gaps in the communication team and actions to address them.

4.2 Step 2: Set Goals and Objectives

In establishing a risk communication plan, it is essential to create measurable goals and objectives for the risk communication outreach effort based on what needs to be fulfilled as an agency or organization, as well as the needs of the public. During this step, consider possible methods for how the team will evaluate whether communication was effective.

Working through the issue identification step will help begin goals formulation. Goals are general guidelines that explain what you want to achieve. Goals are brief and clear statements of outcomes to be reached within a measurable and achievable time frame. Examples of goals may include raising awareness, increasing knowledge, and promoting an action or intention. Goals do not state how to do something, but rather what the results will look like.

Objectives are the specific strategies or steps taken to reach your goal. They are specific, measurable, and have a defined completion date; they are the “who, what, when, where, and how” of reaching the goal. Different contexts sometimes use goals and objectives interchangeably, based on a specific project; users may choose to use one or the other, or both.

The communication team uses goals to develop messages and materials. Goals that relate to how stakeholders will be

involved in the process should reflect core values for public participation, such as those set by the International Association of Public Participation (IAP2)(https://www.iap2.org/page/corevalues). The IAP2 has established the following core values for the practice of public participation:

- The public should have a say in decisions about actions that could affect their lives.
- Public participation includes the promise that the public's contribution will influence the decision.
- Public participation promotes sustainable decisions by recognizing and communicating the needs and interests of all participants, including decision makers.
- Public participation seeks out and facilitates the involvement of those potentially affected by or interested in a decision.
- Public participation seeks input from participants in designing how they participate.
- Public participation provides participants with the information they need to participate in a meaningful way.

Public participation communicates to participants how their input affects the decisions. In scenarios where trust between the community and decision makers is broken, inclusion of a third, neutral party to facilitate and assist with public engagement can help address and potentially overcome distrust. Examples of relevant neutral third parties include academic institutions, public health professionals, and community interest groups. Engagement of community leaders, such as tribal council leaders and local organizations, also assist with building a unified front among stakeholder groups and regulatory agencies to maximize public trust. Additional resources on community engagement include ATSDR *Principles of Community Engagement* (ATSDR 2011) and the International Association of Public Participation spectrum of public involvement (http://ncdd.org/rc/item/1426/).

The PFAS Little Hocking Case Study (PFAS Technical and Regulatory Guidance Document, Section 15.4.1) provides an example of general principles set up by the community advisory group.

4.2.1 SMART Goals and Objectives

Types of goals and objectives to consider include the standard communication goals presented in the following bullet list. Goals and objectives should be developed using the SMART (specific, measurable, attainable, relevant and timely) approach.

ITRC (2011) includes additional information about SMART objectives. Examples of SMART Goals and Objectives are presented in Appendix B

The following sections provide information about communication goals are adapted from NJDEP 2014 and Hance, Chess and Sandman 1991.

4.2.1.1 Universal Goals and Objectives

▼*Read more*

● Establish and maintain dialogue with affected stakeholders.
● Build and maintain agency, organization or responsible party credibility with affected stakeholders.
● Coordinate actions within and between agencies and responsible parties so that messaging to stakeholders is consistent by all communicators from the various agencies.
● Avoid unnecessary conflicts with stakeholders.

4.2.1.2 Process Goals and Objectives

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● Involve affected stakeholders as early and as often as possible.
● Provide opportunities for stakeholder input, and involvement in the decision-making process on decisions that affect them.
● Seek input from stakeholders in designing how they participate.
● Provide stakeholders with the information they need to participate in a meaningful way.
● Follow through on commitments and communicate to stakeholders how their input affected the decision.

4.2.1.3 Information Goals and Objectives

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Adapted from NJDEP (2014):

● Provide stakeholders with the data they need to understand the issue.

● Explain what the agency, organization or responsible party has done, is doing, and plans to do about the problem, and what it cannot do, and why.

● Answer stakeholder questions and concerns.

● Provide a summary of the project's sequence of events and regulatory or statutory milestones.

● Solicit feedback to ensure that the lead organization is responding to stakeholder concerns.

4.2.1.4 Legally Mandated Goals

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● Provide appropriate advance notice and explain the process for stakeholder input and agency, organization or responsible party response.

The communication plan template in Appendix A includes a table to identify SMART goals and possible evaluation methods

4.3 Step 3: Identify Communities & Constraints

Learn who will be most affected by the information and their level of interest, knowledge and concern. Some of this may already be known through the issue profile step. This step will help provide any missing information. Additionally, don't assume that the communication team knows what people are concerned about; community stakeholders may not be concerned with the actual risk, but the perceived risk. Recognize that people may be skeptical that the lead organization is telling the truth, cares about them, and is willing to work with them. Research the full range of opinions and concerns including general attitude, knowledge and perceptions about the issue, the message and the messenger. This can be accomplished by regularly asking community leaders and the stakeholders you are working with if there are other groups of individuals who are missing from the outreach and who should be involved. For contaminant- or issue-specific information on stakeholders, see the associated section on Stakeholder Perspectives for example:

- PFAS Technical and Regulatory Guidance Document, Section 13, Stakeholder Perspectives.

Also, identify and develop solutions to address constraints that may hinder stakeholders or communities from participating in the communication process. Examples of constraints include travel to remote locations, limited access to the internet, and inability to attend community engagement events.

Include people from various groups, such as residents, academia, government, and non-profits. Be sure to consider internal organization/agency stakeholders and external communities. Consider cultural diversity, including language diversity (non-English speakers), socioeconomic diversity, and vulnerable populations. Determine if sensitive populations are present, such as children or pregnant women.

Academic institutions can serve as a liaison to the community and assist with data collection and interpretation to address a community's immediate needs. This third-party relationship also serves as a platform for the community to participate in citizen science and answer questions encouraged by curiosity and interest (such as fluctuations in well contaminant concentrations and presence in local foods). Academic institutions can also assist with providing data in situations where, for example, the regulatory authority cannot disclose information due to pending litigation.

A technical advisor is another form of third party that can assist with relaying the community's perspective to decision makers in addition to relaying the technical information to the community. All third parties should attend site information sessions and partake in advisory boards to keep well-informed and facilitate continuous dialogue with decision makers.

4.3.1 Audience/Stakeholder Assessment Tools

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Appendix C includes an audience/stakeholder identification and mapping tool. In addition, there are publicly available data-driven tools to assist with audience/stakeholder assessment, including the following from USEPA and ArcGIS:

- EPA EnviroMapper: https://enviro.epa.gov/enviro/em4ef.home
- EPA Environmental Justice Screening and Mapping Tool (EJScreen): https://www.epa.gov/ejscreen
- ArcGIS (or other global information system [GIS] system) in conjunction with demographic data from US Census

and state/municipal entities, for example:
    - https://www.usa.gov/statistics
    - https://www.maryland-demographics.com/
    - https://bniajfi.org/
- ESRI Tapestry: https://doc.arcgis.com/en/esri-demographics/data/tapestry-segmentation.htm

These tools provide information that may assist with understanding stakeholders, including:

- identifying additional vulnerabilities that may influence communication and response
- determining the most effective outreach strategies
- considering the timing and location of outreach (for example, if most families in the target community are led by a single parent, it may be useful to consider using schools for outreach)
- considering if there is a role for a community advisory group for the issue

Once stakeholders are identified, determine individuals who can serve as stakeholder leads or affected community liaisons. Consider if a third party, such as a technical advisory group or local academic institution, is relevant and applicable.

4.3.1.1 Questions to Help Identify Target Communities

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Below is a set of questions that may help you to identify stakeholders with whom you will be communicating. Once you have the answers to these questions, the information can be used to develop a targeted outreach plan that addresses the specific concerns of specific stakeholders. Adapted from NJDEP 2014:

- Who is likely to be affected directly by agency, organization, or responsible party action?
- Who was previously involved in this issue?
- Who might have important ideas, information or opinions?
- Has the agency, organization or responsible party heard the full range of opinions on the issue?
- Who wants to know what the agency, organization or responsible party is doing without commenting on their proposals or actions?
- Who are important community leaders?
- Who is likely to be angry if not consulted or alerted to the issue?
- Are there sensitive populations that may be affected? (for example, adjacent schools, day care facilities, hospitals, environmental justice communities)

4.3.1.2 Examples of Stakeholders

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The following list of potential stakeholders is adapted from Hance, Chess, and Sandman (1991):

GOVERNMENT

- Federal or state agencies and associated divisions
- County agencies
- Municipal agencies
- Federal, state, tribal, or local elected officials
- Sewerage authorities
- Regional planning commissions
- Emergency responders
- Agency advisory committees

ENVIRONMENTALISTS

- National groups
- Statewide groups
- County groups
- Municipal groups
- Groups for specific issues (for example, Superfund, siting, hiking, fishing, watersheds, natural resources)
- Groups with specific functions (for example, legal, research, lobbying, organizing)

EDUCATION

- Colleges
- Agricultural extension
- Public and private schools
- Students and student organizations
- Preschool-age programs

GEOGRAPHICAL NEIGHBORS

- Local residents
- Local businesses
- Neighboring townships
- International border communities

CIVIC

- League of Women Voters
- Associations and clubs (for example, Kiwanis, Elks)
- Environmental commissions
- Senior citizen groups
- Ethnic groups

PROFESSIONAL AND TRADE

- Health: health officers, doctors, and nurses
- Technical: laboratories, sanitarians, engineers, biologists, and chemists
- Business: real estate professionals, planners, water purveyors, chamber of commerce, industry and small business
- Agriculture

MEDIA

- Press
- Radio
- TV/cable
- Social media
- Project website

4.3.1.3 Stakeholder and Communities Communications Worksheet

▼*Read more*

A list of people who are part of the communication landscape should be developed and maintained throughout the project.

The communication plan template, provided in Appendix A, includes a table to identify and track specific messages or anticipated communication activities for each stakeholder group.

4.4 Step 4: Assess Stakeholders/Communities

Stakeholder engagement should not be an afterthought, but rather integrated into the project staff requirements, budgets, and timetables from the beginning of the project. Project managers and their technical and legal teams should communicate with the public early on, and community involvement specialists—for organizations that have them—should be included in internal technical meetings so they are able to provide timely, accurate information about the public to the communication team.

Assess the needs of the targeted groups by learning what information they want, how they are likely to react to the information you share, what their potential interests/concerns are, how they will likely expect to be involved in the decision-making process, and what methods of communication are used in each community. Learn the technical literacy and knowledge of the community, and its cultural traditions and priorities. Focus your assessment for each group to help prioritize concerns relevant to risk exposure and management.

Individual stakeholder groups and individuals themselves process information in a variety of modes and mediums. An effective risk communication strategy takes this factor into consideration and encompasses multiple forms of outreach. In addition to informative materials, such as fact sheets, stakeholder meetings and interactive sessions (such as poster presentations, question and answer sessions) can be held to involve individuals in the learning and understanding process. Prior to selection of method, an audience/stakeholder assessment should be conducted to determine how a community communicates and to learn what tool is the most effective to use.

Agencies and other responsible parties sometimes prematurely conclude that there is minimal stakeholder interest at a site because of low attendance at official public meetings or open houses. Audience/stakeholder assessment can help determine strategies for reaching people who may be unaware of the issue. This assessment may also identify areas where residents have limited English-language capability so that translation needs can be included in the communication plan. Audience/stakeholder assessment can be used to identify where funding may be needed for community relations, advisory boards, and independent technical assistance. Investing in audience assessment pays off in better decisions and smoother progress, and potentially positive public recognition of the project. Finally, audience/stakeholder assessment supports identifying environmental justice communities potentially affected by the site or project.

Community education about the science of the issue or concern may be part of the assessment. The PFAS document includes information about Bennington College's program to provide community education about PFAS (see PFAS Technical and Regulatory Guidance Document, Section 15.4.1). In addition, the case studies linked in Section 5 provide illustrations of different communication approaches to meet stakeholder needs and concerns.

4.4.1 Tools

4.4.1.1 Ways to Identify Community Concerns

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Initial outreach to identify concerns can take the form of one-on-one meetings with community leaders and elected officials, a discussion with existing community groups, meetings, a survey, a site visit to better understand the community, or some combination of activities. This level of engagement lends itself to learning the concerns, knowledge and needs of the community and how they communicate, and identifying the trusted leaders.

4.4.1.2 Questions to Ask Communities

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The following list of questions to ask communities was adapted from a Hance, Chess, and Sandman.(1991):

- What type of interaction would you like with the agency, organization or responsible party?
- How do you feel about interactions so far?
- What answers do you want?
- What technical information do you need?
- Do you have comments for the record?
- How can the agency, organization or responsible party respond better to your concerns?
- How do you get your information?
- What kinds of risks do you think you are exposed to?
- What health and lifestyle concerns do you have?
- What questions do you have about the data relating to the site or issue?
- What information on agency, organization, or responsible party procedures do you need?
- What information about risk management do you need?
- Is there information already available that you wonder if it is true or accurate?
- Are there rumors spreading that you are not sure about?

4.4.1.3 Questions Communities May Ask You

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Interactions with the people of an affected community can provide you with background information about the community and their potential concerns. Although this is useful in preparing for interaction with people and ultimately preparing

answers to questions you know will be asked, it is important to be genuine and not appear as though you have pat answers or prepared statements. In the case of emerging contaminants there are often many unknowns, therefore you may not have answers for all questions. The purpose of understanding community concerns is to be able to convey uncertainty as well as what is known. This is a critical component in establishing trust and credibility with that community. This is a dialogue. The following list of questions communities may ask you was adapted from Hance, Chess, and Sandman.(1991):

HEALTH AND LIFESTYLE CONCERNS

- Will you provide drinking water?
- What is the danger to my health and that of my family?
- Can I drink my water, eat produce from my garden?
- What can I do to find out if my health has been affected?
- What can I do to reduce the impact of past exposure?
- What can I do to prevent further exposure?
- What effects could there be on my children or my/my partner's ability to become pregnant?
- We are already at risk because of X. Will Y increase our risk?
- How will we be protected in an accident/release?
- How will this affect our quality of life, property values?
- How will we be compensated for the loss of property value or losses due to interruptions of our homes/businesses?
- What is the danger to my pets and/or livestock?

PROCESS CONCERNS

- How will we be involved in decision making?
- How and how often will you communicate with us?
- Why should we trust you?
- How and when can we reach you?
- Who else is involved in this situation?
- When will we hear from you?
- When and how can we get more information?

RISK MANAGEMENT

- When will the problem be corrected?
- Why did you let this happen and what will you do about it?
- Why do you favor the selected cleanup method?
- What are other options for correcting the problem?
- Why are you moving so slowly to correct the problem?
- What other agencies are involved and what are their roles?
- What kind of oversight will we have?

DATA CONCERNS

- How sure are you of the risk?
- What is the worst-case scenario?
- What do the risk assessment numbers mean and how did you get them?
- What documentation or support for your conclusions do you have?
- What other opinions on this issue exist?

4.5 Step 5: Identify Messages

A message is information you want or need to share with stakeholders about the issue or concern, a question that you need them to answer, or both. It is linked to the case- or project-specific SMART goals and objectives to help build trust and facilitate a shared understanding and experience in the risk management strategy (refer to Section 4.2). A message addresses key points about the issue that were learned through the audience/stakeholder assessment. You start with the stakeholders and their concerns. Effective messages reflect what your target group needs are, as well as what you need to

communicate.

In the case of emerging contaminants, elements of a message are likely to include what is known and unknown about a contaminant; acknowledgement of uncertainty; commitment to share new information when it is learned; explanation of how decisions will be made with respect to protecting public health and remediating the problem.

A key message may encompass saying “no” to a stakeholder request that may be financially or technically infeasible. Working collaboratively with stakeholders will inform practitioners on information and data needed to support decisions. In addition, if engaged early, stakeholders will be informed of project limitations and likely have a better understanding of constraints.

4.5.1 Tools

Various communication tools are described in the following sections.

4.5.1.1 Message Map Tool

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Message mapping is a process for conveying the critical information concisely. The objective is that the message is simple, yet comprehensive enough, and includes the most pertinent information relevant to your issue.

The team should collaborate on message mapping so they can agree on the contents of the main message and ensure that the science is accurate and the information is presented in a way that is most useful and responsive to stakeholder needs.

When developing messages, we should take into account that when people are stressed, they may have difficulty hearing, understanding, and remembering information. They may lose as much as 80% of the information communicated to them, become distrustful, and focus more on the negative aspects of the risk than the potential for a positive outcome. There are a few key templates to consider when developing a mapped message (Covello, Minamyer, and Clayton 2007).
Twenty-seven words is the average length of an opening paragraph in print media, both hardcopy (for example a newspaper) and electronic (for example a web-based news site). Nine seconds is the average duration of a sound bite in broadcast media. On average, the opening paragraph of a news story or a sound bite on broadcast media contains three messages (Covello, Minamyer, and Clayton 2007). This is explained further below.

Everything in Threes

- Rule of Three Template
- Primacy/Recency Template
- 27/9/3 Template

Rule of Three Template

- Three key messages
- Key message repeated three times
- Each message supported by three supporting messages

Primacy/Recency Template

- State the most important messages first and last
- In high stress situations, listeners tend to remember that which they hear first and last
- Messages in the middle of a list are often not heard or remembered.

27/9/3 Template

- 27 words – the average length of the opening paragraph in the print media
- 9 seconds – the average duration of a sound bite in the broadcast media
- 3 messages – the average number of messages reported in both print and broadcast media

4.5.1.2 Message Development Questions

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The following are questions for the communication team to consider as you develop messages and answer questions from the communities, adapted from Hance, Chess, and Sandman.(1991):

What information must be conveyed?

- Does the message convey agency, organization or responsible party views?
- Does the message answer stakeholders’ questions?

● Does the message reflect the audience/stakeholder assessment?
● Are technical terms explained?
● Can graphics help explain points?
● Are graphics clear and simple or do they need explanation?
● Was the message pre-tested with members of the intended stakeholders?
● Are you prepared for questions that may arise? If not, have you identified appropriate experts to assist you?

An example, Key Message Mapping for PFAS, can be found in Appendix D. A blank worksheet to assist in constructing mapped messages is presented here.

Message Mapping Worksheet

Message development starts with a question, responds with three key ideas, is no more than 27 words, and takes no longer than 9 seconds to deliver. The goal of a mapped message is to provide focused, targeted information immediately that can then be expanded upon as communication continues.

Message Map Worksheet Source: (Covello, Minamyer, and Clayton 2007; USEPA 2007)

Stakeholder:	**Question/Concern/Issue:**	
Key Message/Fact 1:	Key Message/Fact 2:	Key Message/Fact 3:
Keywords: Supporting Facts 1.1	Keywords: Supporting Facts 2.1	Keywords: Supporting Facts 3.1
Keywords: Supporting Facts 1.2	Keywords: Supporting Facts 2.2	Keywords: Supporting Facts 3.2
Keywords: Supporting Facts 1.3	Keywords: Supporting Facts 2.3	Keywords: Supporting Facts 3.3

See also this website for a template of the message mapping worksheet:
https://www.orau.gov/cdcynergy/erc/content/activeinformation/resources/Covello_message_mapping.pdf

4.5.1.3 Messaging to Address Rumors and Inaccurate or Misleading Information in the Public Sphere

▼*Read more*

Good planning and communication activities can help you prepare for the potential need to counteract misleading information, inaccurate information, or rumors. Risk communicators need to be aware of this misleading information and respond when necessary. These are strategies and actions (Lundgren and McMakin 2018) that may be helpful:

- Invest time in building a network of support to help counter inaccurate claims and disseminate accurate information.
- Identify key people who can use credible outlets to disseminate consistent messages. For instance, ask trusted local officials or community members to be the conduit for credible information to counter rumors.
- When forming messages, avoid repeating or acknowledging the fake news content.

Communication activities include making information available in a variety of formats and delivering high-quality information as early as possible.

Sensationalized media can be a challenge to successful risk communication. Additional strategies that can be implemented to mitigate such a scenario are:

- Host press conferences to control messaging and reward media that report fairly and accurately by providing access to scientists.
- Share with media that distorted or sensationalized the content provided through the lead organization point of contact.
- Develop and share schedule and protocol for releasing information to impacted parties and the public.

- Develop a social media presence with stakeholders to provide accurate information.

4.6 Step 6: Select Communication and Engagement Methods

When selecting communication and engagement methods, consider how you will connect your message to your stakeholders or communities. Include who it will go to (community members, neighborhood groups, city officials) and the type of communication (email, print, social media). Choose your communication and engagement tool based on how stakeholders receive information in their community. The best tool depends on what information you need to share, the information needs of the targeted group like formats that are accessible (for example, various languages, braille, audio, large print), and how fast the message needs to get out.

More than one communication and engagement tool may be useful in delivering messages. An assessment of how the stakeholders or communities communicate can help you choose a suitable method to send your message. Use your audience/stakeholder assessment to inform your choice. For example, if the target group is a neighborhood association with a newsletter or regular meetings, an article in their newsletter or a presentation at their meeting might work. If these forums are not available, you may need to set up a special meeting through association leaders, go door to door, or mail a notification (NJDEP 2014).

Once the communication and engagement tools are chosen, the communication team may form a subteam can be formed to facilitate the development and implementation of communication and engagement products or projects. This subteam is an optional addition to the communication team that can provide issue-specific technical support and direct contact and collaboration within the community.

The subteam may include public information officers, local government administrators, website managers/owners, graphic designers, a communication facilitator, and other support roles, depending on the tools chosen. If a subteam can't be formed, a community liaison is another approach to provide connection for ongoing communication between the community and the project team.

It is essential to keep in mind that engagement and communication is collaborative. Stakeholders are informed while simultaneously informing decision makers of their needs and concerns and providing input that contributes to more sustainable risk management. Stakeholder engagement methods, such as surveys, design charrettes, workshops, focus groups, multicriteria decision analysis, and vision boarding, can aid in capturing and evaluating audience input.

It should be noted that although traditional written and mass communication methods are effective for communication information, techniques that include the opportunity for stakeholders to interact in-person and one-on-one are often more effective at building trust and working through outrage and emotion.

4.6.1 Tools

Guidance is included in this toolkit for press releases and summary letters:

Appendix E – Guidance for Writing Press Releases

Appendix F – Guidance for Writing Analytical Results Summary Letters

Appendix I Analytical Data Package Public Information Fact Sheet

Appendix J – Tracking Form of Media Correspondence

Vermont Department of Environmental Protection staff complete an email form whenever they are contacted by the media (Appendix J). This form is filled out as soon as possible after responding to reporters and media inquiries, and the form is emailed to agency supervisors, upper management, and anyone else who may be involved with the project. A main goal of the form is to maintain consistent messaging if multiple people are interviewed by the media, so that the same messages are reinforced and not contradicted.

Additional information about communication methods, such as Fact Sheets, Frequently Asked Questions, Active Repositories, and Social Factors Vision Boards are included in this section.

4.6.1.1 Fact Sheets and Frequently Asked Questions (FAQs)

▼*Read more*

To achieve effective risk communication, it is essential for public education materials to be presented in a clear and simple manner that is understandable by nonscientists and speaks to a broad audience. Common rules of thumb include writing at a sixth-grade comprehension level, using simple terminology, and providing materials in multiple languages for nonnative speakers. Over the past few years, environmental and public health agencies, nonprofit advisory groups, trade associations, and regulatory agencies have prepared numerous fact sheets and frequently asked questions (FAQ) documents on diverse emerging and immediate environmental issues and concerns to inform stakeholders, including concerned residents, agricultural and recreational entities, water purveyors, end users, public health professionals, and others. These public education materials are typically available on the organization's website. Examples include:

- *Agency for Toxic Substances and Disease Registry* (ATSDR) FAQs
    - PFAS https://www.atsdr.cdc.gov/toxfaqs/TF.asp?id=1116&tid=237
    - 1,4-Dioxane https://www.atsdr.cdc.gov/toxfaqs/tf.asp?id=954&tid=199
- Centers for Disease Control and Prevention (CDC), Harmful Algal Bloom–Associated Illness https://www.cdc.gov/habs/general.html
- USEPA, Basic Information on PFAS https://www.epa.gov/pfas/basic-information-pfas
- USEPA, Communicating about Cyanobacterial Blooms and Toxins in Recreational Waters https://www.epa.gov/cyanohabs/communicating-about-cyanobacterial-blooms-and-toxins-recreational-waters
- California Water Quality Monitoring Council Pets, Livestock and Harmful Algal Blooms FAQs https://mywaterquality.ca.gov/habs/resources/domestic_animals.html

Fact sheets, FAQs, and other public outreach material should be distributed in multiple modes to maximize audience reach and increase opportunity for engagement. Recommended modes of distribution include mailings, websites, local municipal health departments, public health professional offices, public libraries, and information booths at community events.

4.6.1.2 Active Centralized Information Repository

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Unlike a "passive" repository of site documentation at a central location, an "active" repository refers to a platform that remains up to date on site findings and enables two-way exchange of information among decision makers and the impacted community. A common platform for an active repository is a centralized website that contains a complete compilation of site documentation (among all agencies), frequent updates on site activities, health information and regulatory policy, and a depiction of the conceptual site model (such as a source-exposure pathway graphic and geologic maps). Web-based GIS tools and other forms of data visualization can be used to help communicate about the site, including the conceptual site model. The website should also contain a platform to facilitate stakeholder involvement by providing an opportunity for them to ask questions, submit information, and join a listserv (an application that distributes messages to subscribers on an electronic mailing list).

Examples of a centralized website for emerging or immediate environmental issues and concerns such as PFAS and HCBs include:

- Michigan Department of Environment, Great Lakes and Energy, *Michigan PFAS Action Response Team (MPART):* https://www.michigan.gov/pfasresponse/

Michigan agencies representing health, environment, and other branches of state government have joined together to investigate sources and locations of PFAS contamination, to take action to protect people's drinking water, and to keep the public informed as we learn more about this emerging contaminant.

- Vermont Department of Environmental Conservation (VDEC), *Vermont PFOA Contamination Response*: https://dec.vermont.gov/pfas/pfoa

Numerous Vermont agencies, including VDEC, Department of Health (VDH), Emergency Management, Agency of Agriculture, and Agency of Education, have joined together to investigate and address PFAS contamination in Vermont. VDEC and VDH have created and maintained web pages to push information out to the public as it becomes available.

- California State Water Resources Control Board, *Per- and Polyfluoroalkyl Substances,* waterboards.ca.gov/pfas

Various California agencies, including, but not limited to, the State and Regional Water Resources Control Boards, the Department of Toxic Substances Control, and the Office of Environmental Health Hazard Assessment, are working together

to investigate sources and locations of PFAS contamination and to take action to ensure the protection of drinking water supplies. The California State Water Resources Control Board maintains a public webpage and listserv to ensure that public information is efficiently shared with all interested parties.

- California Water Quality Monitoring Council, *California Harmful Algal Blooms (HABs) Portal*: https://mywaterquality.ca.gov/habs/index.html

The California HABs Portal is the central resource for freshwater and estuarine HABs for the state. HABs can pose a health risk to people and animals, harm aquatic ecosystems, and limit the use of drinking and recreational water bodies due to the toxins, odors, and scums or mats they can produce. The portal is an informational resource for the public and also functions as a tool to support coordination with statewide partners to address HABs. The content is developed by the California Cyanobacteria and HAB Network and participating state agencies.

- Florida Department of Health, *HABs: Harmful Algal Blooms* http://www.floridahealth.gov/environmental-health/aquatic-toxins/harmful-algae-blooms/index.html

Florida's Department of Health website provides information for other agencies and the public about HABs, their health symptoms, information regarding red tide and shellfish consumption, in-depth blue-green algae (HCB) information, updates, and mapping tools.

But be aware, not all community members have access to the internet, and depending upon the project, it may be appropriate to hold regular meetings and/or office hours to provide more than one mode for stakeholders to obtain information and engage with decision makers.

4.6.1.3 Social Factors Vision Board

▼*Read more*

A vision board can be used as a medium for stakeholders to rate their level of importance and/or interest on applicable social factors. Identified factors can then be used in further development of SMART goals and key messages, and selection of engagement methods as part of the communication process. The overall objective is to gain deeper insight into stakeholder concerns, values, and preferred communication methods to facilitate knowledge transfer and capacity building toward a successful risk management strategy.

A basic guide to the tool and PFAS-specific examples of vision boards is provided in Appendix G.

4.6.1.4 Methods to Consider for Communication

The following list of various communication methods is adapted from Hance, Chess, and Sandman (1991):

Written or audio/visual materials	**Informal meetings**
● Pamphlets	● "Open" work meetings
● Letters	● Workshops
● Postcards	● Advisory committees
● Newsletters	● Special events
● Periodic updates	● Conferences
● Displays	● Courses
● Fact sheets	● Door to door

● Flyers	● Brainstorming
● Door-hangers	● Suggestion boxes
● Educational materials	● Telephone/conference calls
● Webinars	● Open house with experts at the table
● Question and answer sheets	**Mass media**
● Placards in mass transit	● News conferences
● Videos	● News releases
● Slide shows	● Letters to the editor
● Audio tapes	● Talk shows
● Articles in organizations' Newsletters	● Call-in shows
● Inserts in mass mailings	● Feature articles
● Polls	● Press briefings
Person to person	● Public service announcements
● Presentations at meetings	● Display advertisements in newspapers
● Drop-in or availability sessions	● Legal notices
● Public hearings/meetings	● Social media
● Project office open to the public	
● Site visits or site tours	
● 24/7 hotline	

4.6.1.5 Communication Method List Template

▼*Read more*

A communication methods summary table (Appendix H) aids method selection based on the target stakeholder groups and

the purpose of communication. Use this table to plan and document methods and specific details to manage development of materials. This is particularly helpful when multiple developers are using multiple methods.

The communication plan template provided in Appendix A includes a communication and engagement tools table to document the target group, message, type of communication, cost, material development lead person, and evaluation.

4.7 Step 7: Implement Strategies

Plan the tasks needed to develop and disseminate communication products. Arrange the tasks on a timeline and assign responsibility for each task. Communicate the strategy and timeline to the communication team and partners.

Coordinating action for simple and complex strategies can be challenging. The communication plan template in Appendix A provides a framework for organizing all the tasks in the order they are due. This is intended to be a living document that is updated and customized throughout implementation of the risk communication plan for any site-specific situation.

4.8 Step 8: Evaluate, Debrief, and Follow Up

Communication efforts are almost never "done." There may be periods of time when there is not a need for active communication efforts, depending on community concerns and ongoing site activities. By setting up a long-term communication plan, you have a clear path for follow-up, as needed.

Throughout the risk communication effort, interim evaluation and insights can be gained by confirming messages and methods with internal and external target groups. Outcome evaluation, done at the conclusion of the effort, answers the following questions, adapted from (NJDEP 2014):

- Did the strategy used meet the goals and objectives?
- Were the needs of the communities met?
- Was the intended message received and understood?
- Was the method used appropriate for this case and community?
- Are there questions that require follow-up?

In addition to interim evaluation as the project progresses, the internal communication team should reconvene at the conclusion of the risk communication effort and debrief.

Determining success can be challenging. The following examples give some guidance on how to identify successes.

Plan: Consider how you will know if your communication efforts were successful. Use the SMART goals developed in Step 2 to guide your evaluation plan development.

Follow Up: Gather and review information from evaluations to inform follow-up tasks. Examples of items that may need follow-up include possible policy changes, additional communication needs identified through the evaluation process, or a new audience that has been identified. Assign a leader to each follow-up item.

Long-term Communication Efforts: Determine and communicate to communities and stakeholders how new information and monitoring or remediation site progress will be disseminated to the affected community. Communicate successes and case studies that will help inform improvements to communication activities.

- Identify data you might already be gathering that can be used to evaluate effectiveness (for example, number of phone calls, social media engagement, website traffic, percentage of answered questions, percentage of community subgroups engaged)
- Review process used to develop communication activities—what went well, what did not, how to improve for current and future projects
- Decide how often to evaluate communication efforts
- Assign responsibility for evaluation design, completion, and response/follow-up
- Determine how to use and share results of the evaluation(s)
- Document and maintain engagement with portions of the community that are not benefiting from the risk communication strategy

Evaluate whether trust and capacity building were accomplished and how they will be maintained.

4.8.1 Tools

4.8.1.1 Evaluation Plan Template

The communication plan template provided in Appendix A, can be used, along with the information developed throughout the communication planning process, to understand if you were able to reach your communication goals.

4.8.1.2 Evaluation Follow-up Task Template

The communication plan template provided in Appendix A, along with the information developed through the evaluation above, can help determine whether you were able to reach your communication goals and to identify follow-up actions.

4.8.1.3 Long-term Communication Efforts

For some sites it will be important to implement long-term communication efforts. Some examples of those efforts are:

- Community succession training to facilitate knowledge transfer and communication of long-term community needs and identification of future community liaisons.
- Identification of opportunities for community education and empowerment.

Integrate follow-up to stakeholder concerns in the project's long-term monitoring plan. Examples of applicable concerns to follow up on include property value loss, loss of sense of safe place, and paying homage to historic relics of former industry.

4.9 Training for Practitioners

It is important for the communication and project teams to be informed on the best available information or state of the science on the particular environmental issue or concern so they can properly plan and implement risk communication. ITRC documents, workshops, and webinars are available resources. Current information about training is available on the ITRC website https://www.itrcweb.org/Training.