# Risk Communication
# Basics

## About This Publication

Some of the most challenging decisions in coastal management stem from the relationship between people and the environment. NOAA provides technical assistance to coastal management professionals addressing complex human-based problems.

*Risk Communication Basics* is the ninth in a series of publications developed to bring information to coastal managers about the use of social science tools in their field of work. This document shares insights into why people respond to risk the way they do. Coastal managers will find examples and tips for working with residents to explore solutions and make decisions to improve the resilience of coastal communities. This material is linked to the interactive training webinar provided by the Office for Coastal Management, Seven Best Practices for Risk Communication (see *coast.noaa.gov/digitalcoast/training/risk-communication*).

This guidebook was developed through a partnership of the NOAA Office for Coastal Management and the Jacques Cousteau National Estuarine Research Reserve, with contractor Sarah Watson, graduate student at Rutgers University.

## NOAA's Office for Coastal Management

"Coastal management" is the term used by communities and organizations striving to keep the nation's coasts safe from storms, rich in natural resources, and economically strong. The national lead for these efforts is NOAA's Office for Coastal Management, an organization devoted to partnerships, science, and good policy. This agency, housed within the National Ocean Service, oversees major initiatives that include the Coral Reef Conservation Program, Digital Coast, National Coastal Zone Management Program, and National Estuarine Research Reserve System.

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# Introduction

Communication is never as easy as it seems. Too often what we think we say is not what the other person hears. That's because people often present information using the data and stories most pertinent to their point of view. But to be truly heard, understanding the audience's perspectives and values, and addressing their specific concerns, is crucial.

This approach is particularly important for communicating about risk. Community leaders who interact with a diverse group of residents can better understand the emotions and values that affect how individuals perceive and respond to risk. Together they can explore various solutions and make decisions that are best for their families and the community in the short term and for the future. Good risk communication is an essential element of good community health.

This guidebook provides an overview of risk communication best practices. Also included is information about how and why people perceive risks differently, how to learn more about the audience, and ways to frame responses, as well as sample conversations to illustrate these techniques. This guide is only an overview. A list of related resources and a bibliography are included at the end.

# Why People Do What They Do

Every person is different. Social science research, however, provides insights on how a person's risk perception and actions are influenced by experiences, feelings, personal values, and the ideas held by friends and family. Understanding these influences enables the communicator to facilitate more effective conversations with a wide variety of audiences.

This section provides an overview of the concepts that help us answer that age-old question—"why do people do what they do?"

## Information Shortcuts

People typically process information in two key ways: through emotions and experiences, or analytically. These can be thought of as thinking fast or thinking slow. When thinking fast, people act on feelings and past experiences. Thinking analytically, on the other hand, takes time and energy. Making the decision to get out of the house if someone smells smoke, for instance, takes a lot less time and mental energy than determining whether a coastal storm poses a flood risk to one's home!

Because analytical thinking requires time and effort, people create mental shortcuts to make decisions about risks. These shortcuts rely on a number of biases that both help and hinder people.

Shortcuts can affect the ability to make the right decision at the right time, cause people to underestimate some risks and overestimate others, and even lead people to deny a risk exists! For example, confirmation bias may lead someone who believes climate change is not occurring to consider a big snow storm as proof of that belief. Someone's optimism bias may lead them to think their house won't flood during a hurricane because their town is rarely affected by tropical cyclones. But the inverse can be true, too. A combination of availability and social amplification shortcuts may lead someone whose house recently was flooded in a serious storm to think that their home is at risk of being flooded in every storm. Understanding how these shortcuts work can help communicators recognize how their audience perceives a risk and better understand the action an audience takes, if one is taken. Communicators also can acknowledge some of these shortcuts in their communications.

## Common Mental Shortcuts

- **Status quo:** Doing nothing because change is hard.
    - ▷ **Example:** "I sometimes think we should elevate our house, but we just haven't gotten around to doing it."

- **Optimism:** Assuming bad things happen to others, not you.
    - ▷ **Example:** "I didn't evacuate because I didn't think the storm would be that bad. We just don't get those kinds of floods here."

- **Anchoring:** Thinking the impact of a previous event is the worst you'll ever experience.
    - ▷ **Example:** "I lived through Hurricane Katrina and my house didn't flood. My house will always be safe."

- **Confirmation**: Cherry-picking information to confirm what you already believe.
    - ▷ **Example:** "What global warming? We just had the most frigid winter I've ever been through."

- **Single action:** Making one change and thinking that action offers enough protection.
    - ▷ **Example:** "We elevated our hot water heater and furnace last year. That's all we need to do to protect us from a flood."

- **Solutionism:** Assuming that someone will find a solution, quite often a technological one, which overrides the need to take action now.
    - ▷ **Example:** "They will build a flood wall around the town in a few years. We don't need to elevate our house now."

- **Availability:** Allowing the strength of a memory, and the feelings associated with that memory, to affect how you view future events.
    - ▷ **Example:** "Sandy's storm surge was terrifying. I never want to go through that again. I know next time we will evacuate."

- **Social amplification:** Paying the most attention to risks commonly discussed.
    - ▷ **Example:** "I see so many stories and videos about tornados that I'm much more afraid of those than I am of flooding from a nor'easter."

## Finite Pool of Worry

Humans are best at perceiving risks that are personal and immediate. The mind does not work as well in perceiving future risks or a risk that doesn't feel like a personal threat. Additionally, people have something many psychologists call a finite pool of worry, which means people can only emotionally process so many worrisome things at a time. As a result, people prioritize the things that are the most urgent and put off those that don't feel imminent. For example, someone who is worried about moving back into a house recently damaged by a flood is most likely going to disregard information about how sea level rise will affect the house in 30 years. Another person who is struggling to pay monthly household bills likely won't pay much attention to suggestions to elevate the house to bring the structure up to current flood code. This is important for communicators to recognize so they don't cause residents to walk away from the conversation because they are overwhelmed.
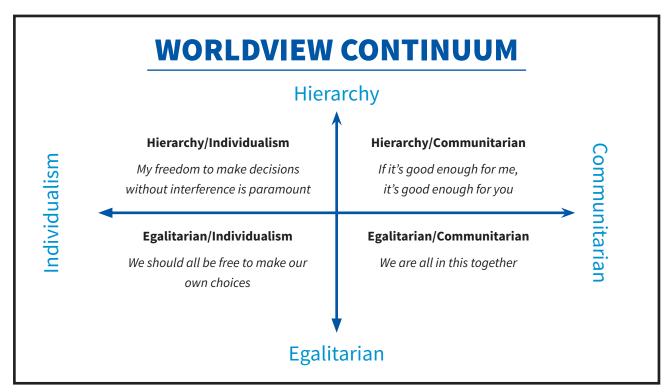
## Past Experiences

People draw on past experiences and emotions about those experiences when thinking about and responding to risk. For example, residents may be more likely to move their car when an extreme high tide is predicted if their car has been damaged in the past. But those who haven't experienced chronic nuisance flooding may not know the risk exists. Even though experienced residents may tell newcomers about the threat, mental shortcuts may lead newcomers to underestimate the impact. Emotions tied to past experiences can have a greater influence on risk response than just the recollection of the experiences themselves, particularly when strong emotions surface. Communicators can use these experiences and emotions as part of their messages about future risks to help residents remember what has happened in the past and what could happen in the future. However, it is important to invoke negative emotions sparingly, since those can cause the audience to ignore warnings or advice.

## Acceptable Level of Risk

Everyone has a different risk threshold. This threshold is influenced by an individual's previous experiences and what that person personally values. As a result, a long-time coastal resident may see nuisance tidal flooding as normal and not a threat, while someone who has never lived at the coast sees the same risk as a major threat. Someone else may value the lure of living near the coast much more than the financial and emotional challenges of recovering from a damaging flood. Another person may be extremely risk averse and choose not to move to a flood-prone area, or choose to move away after a minor flood. Communicators who understand the acceptable level of risk of the person they are communicating with will have a better understanding of that individual's response to the risk.

## Friends and Family

People rely on friends and family for cues about risks and personal values. People spend a lot of time with these groups, and this membership is an important part of a person's identity. As a result, people often unconsciously find their beliefs shifting to match others in their group. Some of this is based on the level of trust found with friends and family. When peers tend to dismiss a threat, the individual is likely to do so as well. This matters especially to communicators as they work to find trusted sources to share messages and partner on communications.

# WORLDVIEW CONTINUUM

**Hierarchy**

**Individualism**

**Hierarchy/Individualism**

*My freedom to make decisions without interference is paramount*

**Hierarchy/Communitarian**

*If it's good enough for me, it's good enough for you*

**Communitarian**

**Egalitarian/Individualism**

*We should all be free to make our own choices*

**Egalitarian/Communitarian**

*We are all in this together*

**Egalitarian**

Adapted from Kahan, 2012

## Worldview

Risk perception also is influenced by how one views the world, particularly how one thinks society should function. Worldview influences thinking on a wide variety of issues, including public policy related to coastal risks. People unconsciously connect the risk with the actions and policies proposed as solutions. If the solution conflicts with how one thinks society should function, people often unconsciously downplay the threat or dismiss the risk altogether. Learning how people view the world can help risk communicators understand how to shape the conversation.

Four categories are useful for understanding worldview: individualism to communitarianism, and hierarchy to egalitarianism.

Those who lean toward individualism tend to think society functions best with fewer regulations and restrictions. These people are more likely to use words such as "my" or "I" when describing themselves or their

families. For these people, framing the conversation to focus on individual preparedness or taking care of the individual may resonate most.

People who lean toward the communitarian side of the equation tend to think society functions best when people work together for the common good. They are more likely to use words such as "our" and "we" when describing their families or neighborhoods. For these people, framing the conversation to focus on working together and community preparedness may resonate the most.

People who lean toward a hierarchy worldview tend to value more clearly defined ranking systems within social roles and norms. Those who lean toward egalitarianism tend to value equality of all people without clearly defined ranks and social norms.

These are not foolproof clues, but they can help. If in doubt, try to use the same words the audience is

using. By reflecting the audience's tone and language (provided it's not angry or disrespectful), communicators demonstrate respect and help build trust.

These categories do not explain everything about how someone sees the world, and rarely do people fall into one discrete category. But understanding a person's or group's worldview is helpful when designing an approach and crafting a message.

## What People Value

Risk perception is influenced by what's important to people, such as their homes or their way of life. One way to think about this influence is to consider how people react negatively to the potential to lose or have restrictions placed on things they value. For example, someone who feels as though their bulkhead has protected their home for many years may be upset about new community requirements to replace older hard structures with a living shoreline. If this person leans toward the individualism side of worldview, the risk communicator may want to highlight the direct benefits of such a system to that homeowner. But if this person leans toward the communitarian side of worldview, the risk communicator may instead want to highlight the benefits to the entire community. If communicating about this topic with a diverse audience, such as at a public meeting, highlighting the benefits to both the community and individual homeowner may be the best strategy.

Recognizing how people perceive risks, through common shortcuts, personal experience, or other factors described here, helps communicators understand barriers and why people behave the way they do. Knowing why we behave the way we do, what other people value, and how they see the world helps communicators better shape their message and their overall approach to risk communication. But people don't wear their values, worldviews, or experiences on their sleeves. It is up to the risk communicator, through observations and instincts, to decide how to shape the

conversation. This skill takes time to learn and plenty of practice. In the end, it's about truly *listening* to understand someone else's worldview, demonstrating respect for other viewpoints, and reading other cues in order to respond in ways that address individual needs. Communicating one-on-one is the best way to do this, though discussing risks in larger groups and public meetings still offers opportunities to listen and build relationships.

# Inspiring Risk-Wise Behavior

The primary goal of risk communication is to help people understand risk and make decisions that keep families and communities as safe as possible. This section connects risk perceptions with communication strategies. Understanding what not to do is a good place to start.

## Don't Do This

Social science researchers say that two approaches often employed by people and organizations are often the most ineffective—providing people who seem unreceptive with more and more information, and invoking fear or anxiety without offering realistic and actionable solutions. These approaches are explored below.

### Provide More Information without Action

Why do some people fail to respond to a coastal flood threat or fail to evacuate when a storm is approaching? Why don't people construct beyond minimum flood code standards when building an oceanfront home? Do you feel these actions are hard to understand?

People often assume that others feel and think the same way they do, and that whatever information is meaningful for one person will be meaningful for all. Hurricane evacuations provide a good example, since there are many reasons why people don't leave. Some people are afraid to leave their property or have a pet that is difficult to transport. Others think the storm won't damage their house because they've never had storm damage in the past, or they think the threat is being overplayed by the media.

Simply providing more information about a risk will not work. In discussing risks—especially long-term coastal hazards—communicators should highlight what is important to individuals and what they should do to address the risk. Communicators should not assume everyone agrees with the same solutions, that every solution is realistic for everyone, and that making decisions to reduce a risk is a simple mental process.

### Invoke Fear and Anxiety

People worried about coastal hazards and climate change often assume that sharing their emotions will spur others to take action. These people tend to use dread or fear as the dominant theme in their message. But people can only worry about so many things at one time. Invoking fear, dread, or anxiety as the sole theme of the message—without discussing concrete and realistic ways to reduce the risk—frequently causes others who don't feel the same way to shut down, tune out, or leave the conversation altogether.

For example, when discussing how sea level rise will affect a coastal community, using dramatic language and imagery of the aftermath of a storm may reflect the communicator's emotions and feelings. But this same information can overwhelm others, making them feel

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**COMMUNICATION TIP:**

## Make it local, not about the science

Chances are that readers of this guide find the science and technical details about coastal flood risks compelling. But others may not receive this information in the same way. One way to overcome this discrepancy is to focus on what people can observe in their community, such as increases in street flooding, storm surge impacts, and erosion. Focusing on what residents have observed is a way to bring the message closer to home, which makes the impacts real and personal and avoids a debate about technical details.

helpless about their ability to prepare for the risk, or they may tune out entirely thinking the risk is blown out of proportion. Use language that is more neutral, and if using post-storm imagery or sea level rise maps, include information that shows how residents can respond. This information can reduce feelings of helplessness and help turn fearful emotions into realistic actions.

## Do This Instead

To inspire risk-wise behavior, communicators must work to overcome communication hurdles. So what *does* work?

It's important to remember that minds and behaviors don't change overnight. There are no magic words, and there are no perfect phrases. Risk communication research has continually shown that **people gradually change their minds and behaviors when presented with information that affirms how they view the world and what they already believe.** This does not mean telling people what they already know, but rather really listening to understand the audience's worldview and what matters to them. Multiple trusted sources must present the information, and it must be repeated often. Information also must be paired with realistic actions and solutions. Effective risk communication efforts use an approach that allows a diverse set of stakeholders to explore risk and identify appropriate solutions together, while addressing the emotions and values that influence response.

This approach takes time to learn and plenty of practice.

Listed below are a few key steps to take when engaging in a conversation about risks.

- Recognize how individuals perceive risks and why those perceptions affect their actions. Identify what is behind the other person's point of view.
- Learn what the audience values and how these values influence risk perception. Understand what the audience cares about.
- Shape or frame the message to affirm the values of those receiving the message. Frame the conversation to meet individual needs.

Not every communication situation is the same. There are one-on-one interactions and conversations with small groups whose members have different worldviews and values. Sometimes it is a one-time conversation, other times, it is a continuing dialogue.

Addressing these situations requires different methods, but there are a number of risk communication best practices that are important for all types of engagement.

### Get to Know the Audience

Communicators can't craft an effective message if they don't know the audience and what matters to that audience. Learn who they are, what they care about, and what challenges they may face in addressing risks. When speaking with a larger group, ask questions before or even during the presentation through various facilitation techniques, such as instant polling. If talking

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**COMMUNICATION TIP:**

### Stories make a difference

Stories, examples, and even relevant metaphors are important learning tools. Stories help information become real and relevant, allowing people to see the effects of a potential risk. However, it's important to select examples that are appropriate and realistic to the audience and to refrain from overdramatizing.

with someone one-on-one, listen actively and ask good questions to learn about the person and make better decisions about communicating.

## Know the Goal

Have an action-oriented goal that identifies the desired behavior change. The goal may be to help homeowners understand why building their houses to exceed current flood standards is prudent, or to educate residents so they can provide informed opinions on future flood reduction plans. Identifying these goals helps communicators determine how to proceed.

## Develop a Communication Plan

Knowing the audience and goal are crucial first steps. Identify the approach for discussing the risk, the tone, relevant solutions, and responses to potentially challenging questions. Having a good plan helps presenters deliver the message effectively and reach the risk communication goals.

## Explain the Risk in a Manner That Is Clear and Appropriate

Talking about risks using technical terms can be a recipe for misunderstanding. It's important to discuss risks in a way that resonates with the audience. Focus on local and observable impacts, because those make the risk tangible and real. Acknowledge what is known and unknown when responding to questions. Avoid overloading the audience with too much information at one time.

## Speak to the Audience's Interests, Not Yours

Local planners may be most interested in finding support for new ordinances. Construction officials may be most interested in getting builders to exceed minimum flood codes. Residents may be more concerned about property values or beach access. Learn what the audience cares about. Frame the conversation to connect these interests with the overall risk messages.

## Offer Realistic and Appropriate Solutions and Options

Information without specified actions leads to inaction. Pairing information about risks with ways people can respond is critical. This can be challenging because some actions may not be appropriate or feasible for some audience members. Invite residents into a conversation about things they can do and even work together to identify potential responses.

## Develop and Deliver the Right Message

Crafting the right message sounds easier than it is, but knowing the goals and the audience will help immensely. Make sure to test the message or product with members of the actual audience before expanding the effort. This helps ensure that others will understand and correctly interpret what is being said. Recognize that people have different preferences for receiving information. Some like to attend meetings or presentations, others prefer a letter or email, and some

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**COMMUNICATION TIP:**

## Talking about uncertainty

- When discussing future impacts, scientists and engineers often discuss the level of uncertainty. Someone trained in math and science thinks about uncertainty in terms of what they know. Most others hear the term and think about what they don't know. Avoid using this term whenever possible because it could undermine the argument.
- The words "could" and "may," when used to discuss a negative impact, can introduce doubt and cause people to unconsciously focus on the small probability that something might not happen.

don't use the Internet or have a cell phone. Use multiple methods of communication and keep messages consistent.

### Use Trusted Messengers

Trust is an essential component of effective communication. Delivering the message repeatedly and through a variety of trusted sources helps the audience accept and internalize the information and gradually change behavior. Make sure everyone is on the same page if using messengers from multiple organizations. One note about trusted messengers and partners: building trust with an audience may take a substantial amount of time, especially with a history of distrust. Trust can be damaged easily, and it is very difficult to rebuild.

### Respect Different Viewpoints and Acknowledge Emotions

Learning about risks can trigger strong emotions. Some people may have strong opposing views on risks and solutions. It's important to respect everyone's viewpoint and to acknowledge emotions as they arise.

Stay positive and don't be dismissive. Let people know they are not alone in how they feel. It's also important when discussing emotionally challenging topics, such as severe sea level rise impacts on a community, to help the audience find hope in the situation. For example, one foot of sea level rise may inundate an entire neighborhood in the next two decades, but the community can work together to help those affected

make decisions for their future. At the same time, it's important not to give audiences false hope. Telling residents whose homes will be permanently inundated from sea level rise in 10 years that their way of life will stay the same is not realistic.

In the end, people must be engaged in respectful conversations as part of an ongoing dialogue. These conversations may not be easy, depending on the topic, the consequences for the other person, and the person's values. Encouraging open discussion and respectful debate creates an environment of openness. This helps build trust, especially for people who may already feel shut out of a conversation because they feel they are not being heard.

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**COMMUNICATION TIP:**

## Words matter

We may think we speak the same language, but everyone has a unique vocabulary. Some words peers understand but other people do not, so it's important to be careful about using jargon and overly technical terms. A good exercise to try is to explain your job to a family member who does not know what you do. Think about the words you use. Ask them to let you know what they don't understand.

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# Communicating with the Audience

Understanding the audience is an obvious linchpin for success, and this background information should not be taken for granted. Conversation with the target audience is one of the best ways to obtain a sense of their values and perspectives. Consider using these conversation starters to obtain good information about the target audience.

- Where do you live and why did you choose that area?
- Do you consider this area to be your home? Why or why not?
- What in our community is important to you?
- What do you worry most about our community's future?
- What do you like best about where you live? Why?
- During the last big storm, did your house have any damage?
- Have you seen flooding in your community lately? What was it like?
- Are you worried about flooding? Why or why not?
- Do you have flood insurance? Why or why not?

## Framing the Conversation

When information about the audience is known, the communicator can frame the conversation to connect with personal core values. The following messages provide good examples.

1. **Be prepared.**
"Be prepared for the next storm." This empowering message appeals to a broad audience.

**Most receptive audience**: All worldviews. Individual-focused people see this as a call to take care of themselves, while community-focused people view this as a way to help the community at large. Make sure the steps the audience can take to prepare themselves are included in the conversation.

2. **Personal responsibility.**
Everyone needs to be responsible for their choices and actions. This type of approach appeals to people who believe in fewer regulations and restrictions. Highlight why it's important for people to be responsible for themselves, their decisions, and their property.

**Most receptive audience**: People who value individualism. People who value hierarchy, authority, and certainty likely value personal responsibility as well.

3. **Stewardship.**
Being good stewards and protecting the planet is important. Highlight that today's stewardship affects future generations by leaving the community and the world a better place. This approach is often focused more on future risks, such as sea level rise and climate change.

**Most receptive audience**: People who value environmentalism and are community-focused. Some environmental issues can be politically polarizing. When talking to someone who doesn't value environmentalism, avoid terms such as eco, green, saving the planet, or ecosystem.

4. **Working together.**
Working together to reduce damage from floods and extreme weather is important. Highlight why working together as a community is important to accomplish this task.

**Most receptive audience**: People who are community- and egalitarian-focused.

## Sample Conversations

Best practices can help communicators achieve their desired goals. The following sample conversation demonstrates these risk communication principles in action.

**Setting the scene:** A resident is talking with a local building official about a requirement to elevate her home if she goes forward with a major renovation project. When the resident is informed that the reason this requirement exists is to bring her house up to current flood elevation codes, the reaction may be

**Resident:** *"Why can't the town just build a better bulkhead? That would solve the flooding problem."*

The local building official could easily react in a defensive or flustered manner when posed with this question. Instead, the official should contemplate **what is really behind the question** and why this person is getting upset.

In this situation, the resident might be

- Shifting blame and deflecting responsibility, likely because she wants to avoid the cost of elevating
- Assuming that a single action (in this case, the town building a barrier) is enough to solve the problem

Here are some questions to consider before responding to the resident:

- Who is she? Is she new in town? Has she ever lived in a floodplain? Has she ever experienced a major storm?
- What does she value? Why does she live where she lives? What does she care about?
- What's her emotional state and why? Is she angry about money? Regulations?

The building official should engage in a conversation with the resident by asking about these topics. **Learn about the resident and what the resident cares about.** What is she trying to accomplish with the renovation project? If she is a developer, the answer might be very different from that of a retiree working on

a dream home. Engaging in a conversation also helps those who are upset feel like their concerns are valid and someone is listening.

Also consider the worldview continuum (on page 6.) Is the person more individual-focused? What about community-focused? Knowing this information can help communicators determine the messaging to use to **affirm audience values.** Simply responding with a blanket "these are the rules, I'm just doing my job" may further upset those who view regulations as contrary to their personal values.

Assume this person is a homeowner, intends to live in the house for many years, and has an individual-focused worldview. Given her worldview, she is more likely to view rules and regulations as a challenge to her personal values. For this person, two approaches may be the most helpful: personal responsibility and preparedness.

Here's what a sample response may sound like:

*"While the town has a bulkhead, it's still each homeowner's responsibility to make sure their property is prepared as best as possible for a flood. Even the best-built barrier can fail. If your house is up and out of the way of the water, that means the possibility of damage is reduced. This is about making you and your property better prepared for a flood."*

Framing the response to highlight the homeowner's own responsibility for preparedness helps connect to this person's individualism worldview. While the building codes may seem onerous to those who view rules and regulations as contrary to their worldview and values, highlighting their need for preparedness taps into their values about taking care of themselves and avoiding the recovery costs associated with a flood.

For someone with a community-focused worldview, the messaging should be different. A homeowner with a community-focused worldview is more likely to value the good of the community over the individual

and support measures that benefit the community at large. For this person, the "working together" and "preparedness" approaches may be most helpful.

Here's what a sample response may sound like:

*"A bulkhead that protects the entire town is very important and something we continue to work on. However, there will be storms where even the best-built barrier can fail. It's important that we work together as a town to make sure all of us are as prepared for flooding as possible. This particular requirement is an important part of this effort to help keep all of our residents safe."*

A second conversation example:

**Resident**: *"All of these ideas about reducing flooding sound interesting, but are they going to make my taxes go up?"*

**Communicator**: *"Well, let's see. First can I ask you a question? What in your community's future is most important to you?"*

If the resident responds that she wants to see development and redevelopment because that helps improve the tax base and keeps taxes lower, then it will be helpful to talk about solutions to current and future flood risks as a way of managing long-term costs.

*"Floods cost the town money. While flood control measures may cost money in the short term, we should be able to better control costs and preserve lower tax rates in the long-term because we won't have to pay for repairs in the future."*

If the resident says she likes the quality of life and the sense of community, then it is helpful to talk about solutions to current and future flood risks as a way of preserving the community's character and safety.

*"Flooding can cause people to move away because they can't afford to rebuild, or they can't afford to continue running a business if they can't get there. That causes the community's character to change, sometimes abruptly, which can cause taxes to increase."*

One final note: There is no such thing as a perfect response—there are no magic words or solutions. However, the more communicators can repeatedly discuss risks in a way that resonates with and affirms audience values, the more likely these messages will begin to have an impact.

# Conclusion

Presenting the same facts over and over again does not represent effective risk communication. Communicators need to understand why people respond or behave the way they do and how their minds sometimes work against their own best interests when it comes to perceiving risk. Understanding these dynamics can help officials be strategic in their communications, with the ultimate payoff being lives saved and resilience efforts that enjoy strong community support.

While there is no such thing as perfect communication, or words that will automatically change people's minds, audiences are more likely to hear and respond to messages that highlight what matters to them, affirm what they believe, and provide realistic and appropriate paths for addressing the risk. Using a variety of trusted sources to deliver the message helps people overcome mental barriers and recognize personal risks and impacts.

Change does not come overnight or after a single interaction. Good risk communication is an ongoing process. This guide is an introduction to some of the social science principles that affect risk perception and communication. And practice is a prerequisite to truly master the methods described in this guide.

# Additional Resources

**The Psychology of Climate Change Communication: A Guide for Scientists, Journalists, Educators, Political Aides, and the Interested Public**
This resource guide discusses the social science behind much of what makes communicating about climate change and related risks so challenging.
*cred.columbia.edu/guide*

**The Preparation Frame**
This guide explains using the concept of preparedness as a dominant way of crafting your message.
*climateaccess.org/preparation-frame*

**Communicating on Climate: 13 Steps and Guiding Principles**
Use these 13 simple steps for crafting a message on climate change. The guide also includes a written example of how to use these steps.
*ecoamerica.org/wp-content/uploads/2013/11/Communicating-on-Climate-13-steps_ecoAmerica.pdf*

**Climate Communications and Behavior Change: A Guide for Practitioners**
This guide combines behavior change and risk communication research into tools and recommendations.
*climateaccess.org/resource/climate-communications-and-behavior-change*

**Connecting on Climate: A Guide to Effective Climate Change Communication**
Learn the 10 principles for effective climate change risk communication in this guide, written through a partnership with ecoAmerica and Columbia's Center for Research on Environmental Decision-making.
*connectingonclimate.org*

**NOAA Digital Coast Risk Communication Resources**
This website showcases NOAA's existing risk communication tools. Additional materials are added regularly.
*coast.noaa.gov/digitalcoast/training/risk-communication*

**Risk Communication: Evolution and Revolution**
This article by Vincent Covello and Peter Sandman provides a deeper discussion about social science as it pertains to risk communication.
*psandman.com/articles/covello.htm*

**EPA Seven Cardinal Rules of Risk Communication**
Discover essential practices for effective risk communication.
*wvdhhr.org/bphtraining/courses/cdcynergy/content/activeinformation/resources/epa_seven_cardinal_rules.pdf*

**Citizen Corps Personal Behavior Change Model for Disaster Preparedness**
This guide uses social science to identify how and why someone may or may not respond to risk information. The guide also can help communicators when developing social marketing and outreach programs.
*fema.gov/media-library-data/20130726-1854-25045-1045/citizen_prep_review_issue_4.pdf*

**Understanding Risk Communication Best Practices: A Guide for Emergency Managers and Communicators**
This guide helps communicators understand how various public audiences prepare for, respond to, and recover from crises and disasters to more effectively craft and execute risk messages in a complex media environment.
*start.umd.edu/sites/default/files/files/publications/UnderstandingRiskCommunicationBestPractices.pdf*

**Risk Communication and Behavior: Best Practices and Research Findings**
Best practices for communicating about various types of natural hazards are identified in this NOAA white paper.
www.*ppi.noaa.gov/wp-content/uploads/Risk-Communication-and-Behavior-Best-Practices-and-Research-Findings-July-2016.pdf*

**How to Communicate Successfully Regarding Nature-Based Solutions: Key Lessons from Research with American Voters and Elites**
The Nature Conservancy identifies how messaging involving green infrastructure and nature-based solutions resonates with key audiences.
*conservationgateway.org/ConservationByGeography/NorthAmerica/UnitedStates/Pages/nature-based-solutions.aspx*

**Nudge,** by Richard Thaler and Cass Sunstein
This volume aimed at popular audiences goes into deep detail about some of the nuances of what influences our decisions.

**Fostering Sustainable Behavior,** by Douglas McKenzie-Mohr
This book describes the how and why of a process called community-based social marketing. This process can be used to help spur people to make small behavior changes.

**The Feeling of Risk**, edited by Paul Slovic
This collection of research articles examines how people perceive a variety of risks. While somewhat technical in nature, this book provides an in-depth review of research literature.

# Bibliography

Cohen, Geoffrey. L. 2003. "Party over Policy: The Dominating Impact of Group Influence on Political Beliefs." *Journal of Personality and Social Psychology*. Volume 85, number 5. Pages 808 to 822.

Furnham, Adrian, and Hua Chu Boo. 2011. "A Literature Review of the Anchoring Effect." *Journal of Socio-Economics*. Volume 40, number 1. Pages 35 to 42.

Kahan, Dan M. 2010. "Fixing the Communications Failure." *Nature*. Volume 463. Pages 296 to 297.

Kahan, Dan M. 2012. "Cultural Cognition as a Conception of the Cultural Theory of Risk." In *Handbook of Risk Theory*. Roeser, Hillerbrand, Sandin, and Peterson, editors. Pages 725 to 759. Springer Netherlands.

Kahneman, Daniel. 2011. *Thinking, Fast and Slow*. Farrar, Straus, and Giroux.

Kahneman, Daniel, Jack L. Knetsch, and Richard H. Thaler. 1991. "Anomalies: The Endowment Effect, Loss Aversion, and Status Quo Bias." *Journal of Economic Perspectives*. Volume 5, number 1. Pages 193 to 206.

Kasperson, Jeanne X., Roger E. Kasperson, Nick Pidgeon, and Paul Slovic. 2003. "The Social Amplification of Risk: Assessing Fifteen Years of Research and Theory." In *The Social Amplification of Risk*. Pidgeon, Kasperson, and Slovic, editors. Pages 13 to 46. Cambridge: Cambridge University Press.

Marx, Sabine M., Elke U. Weber, Benjamin S. Orlove, Anthony Leiserowitz, David H. Krantz, Carla Roncoli, and Jennifer Phillips. 2007. "Communication and Mental Processes: Experiential and Analytic Processing of Uncertain Climate Information." *Global Environmental Change*. Volume 17, number 1. Pages 47 to 58.

Mileti, Dennis S., and John H. Sorensen. 1990. *Communication of Emergency Public Warnings: A Social Science Perspective and State-of-the-Art Assessment*. Prepared for the Federal Emergency Management Agency, Washington, D.C. Oak Ridge, TN: Oak Ridge National Laboratory. Accessed at *www.osti.gov/scitech/servlets/purl/6137387.*

Morozov, Evgeny. 2014. *To Save Everything, Click Here: The Folly of Technological Solutionism*. Public Affairs.

Moser, Susanne C. 2007. "More Bad News: The Risk of Neglecting Emotional Responses to Climate Change Information." In *Creating a Climate for Change*. Moser and Dilling, editors. Pages 64 to 80. Cambridge: Cambridge University Press.

Pike, C., K. Hyde, M. Herr, D. Minkow, and B. Doppelt. 2012. "Climate Communication and Engagement Efforts: The Landscape of Approaches and Strategies." A Report to the Skoll Global Threats Fund. Eugene, Oregon: The Resource Innovation Group's Social Capital Project.

Quattrone, George A., and Edward E. Jones. 1980. "The Perception of Variability within In-Groups and Out-Groups: Implications for the Law of Small Numbers." *Journal of Personality and Social Psychology*. Volume 38, number 1. Pages 141 to 152.

Shepperd, James A., Patrick Carroll, Jodi Grace, and Meredith Terry. 2002. "Exploring the Causes of Comparative Optimism." *Psychologica Belgica*. Volume 42, number 1/2. Pages 65 to 98.

Slovic, Paul, and Elke U. Weber. 2002. "Perception of Risk Posed by Extreme Events." In *Regulation of Toxic Substances and Hazardous Waste* (2nd edition, 2011). Applegate, Gabba, Laitos, and Sachs, editors. Pages 26 to 30. New York: Foundation Press.

Weber, Elke. 2013. "Doing the Right Thing Willingly: Using the Insights of Behavioral Decision Research for Better Environmental Decisions." In *The Behavioral Foundations of Public Policy*. Shafir, editor. Pages 380 to 397. Princeton, New Jersey: Princeton University Press.

Yudkowsky, Eliezer. 2008. "Cognitive Biases Potentially Affecting Judgment of Global Risks." In *Global Catastrophic Risks*. Bostrom and Cirkovic, editors. Pages 91 to 119. New York: Oxford University Press.

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