

PARTICIPANT  
GUIDE

# YAHARA2070

## DISCUSSION GUIDE

FULL-LENGTH VERSION

---

*Creating a desirable future for  
water and people*

# YAHARA2070

## DISCUSSION GUIDE

The Yahara 2070 scenarios and discussion guide are part of the Water Sustainability and Climate Project at the University of Wisconsin-Madison, a research effort to understand how water and the other benefits people derive from nature could change over time. The five-year project (2011–2016) focused on the Yahara Watershed in southern Wisconsin and was funded by the National Science Foundation.

Visit [wsc.limnology.wisc.edu](http://wsc.limnology.wisc.edu).

### PROJECT SPONSOR

This material is based on work supported by the National Science Foundation under grant DEB-1038759. Any opinions, findings, conclusions, or recommendations expressed in the material are those of the author(s) and do not necessarily reflect the views of the National Science Foundation.

### WRITER

Jenny Seifert

### CONCEPT ADVISOR

Stephen R. Carpenter

### CONCEPTUAL AND EDITORIAL INPUT

Peter Bakken, Lauren Beriont, Eric Booth, Corinna Gries, Mindy Habecker, Elizabeth Katt-Reinders, Christopher Kucharik, Steven Loheide, Jim Lorman, Adena Rissman, Peter Shively, Jeremy Solin, and Monica Turner

### GRAPHIC DESIGN

Danielle Lamberson Philipp

Special thanks to members of **Madison Christian Community** and the following individuals for taking part in the discussion guide's pilot run: **Lauren Beriont, Mindy Habecker, Meredith Keller, Johanna Lathrop, Maria Marenno, Kelly Maynard, Kristi Minahan, Rebecca Power, Susan Sandford, and Nancy Sheehan.**

# TABLE OF CONTENTS

|    |  |
|----|--|
| 4  | How to Use this Guide                          |
| 6  | Introduction                                   |
| 9  | Discussion Group Roles and Responsibilities    |
| 10 | Tips for Fruitful Discussions                  |
| 11 | Yahara 2070 scenario summaries                 |
| 13 | Discussion 1: A lens for the future            |
| 19 | Discussion 2: “What ifs” for the future        |
| 23 | Discussion 3: Envisioning our desirable future |
| 28 | Discussion 4: Building our desirable future    |

## HOW TO USE THIS GUIDE

This discussion guide will help your group use the Yahara 2070 scenarios to talk about the future of water and people. But we encourage more than talk. Your group likely came together with a desire to do something about the future. As such, this guide is a springboard for conversations we hope will evolve into efforts to work toward a desirable future.

There are two versions of this discussion guide to accommodate various capacities. This one is the full-length version and contains two more discussions than the abridged version. We recommend this version if your group has the time to complete it and/or if your group already has a good understanding of natural resource issues in Wisconsin.

This participant guide is for group members who are not playing the roles of organizer or discussion leader.

The discussions cover a lot of ground. We recognize the amount of time and energy this process demands and thank you for making this investment for future generations.

### The Discussions

#### DISCUSSION 1

**A LENS FOR THE FUTURE** will help your group explore what long-term thinking means.

#### DISCUSSION 2

**“WHAT IF?” FOR THE FUTURE** will help your group compare the possibilities presented in the Yahara 2070 scenarios and identify elements you would like to include in your vision of a desirable future for water and people.

#### DISCUSSION 3

**ENVISIONING OUR DESIRABLE FUTURE** will guide you through the process of creating your own scenario of a desirable future for water and people.

#### DISCUSSION 4

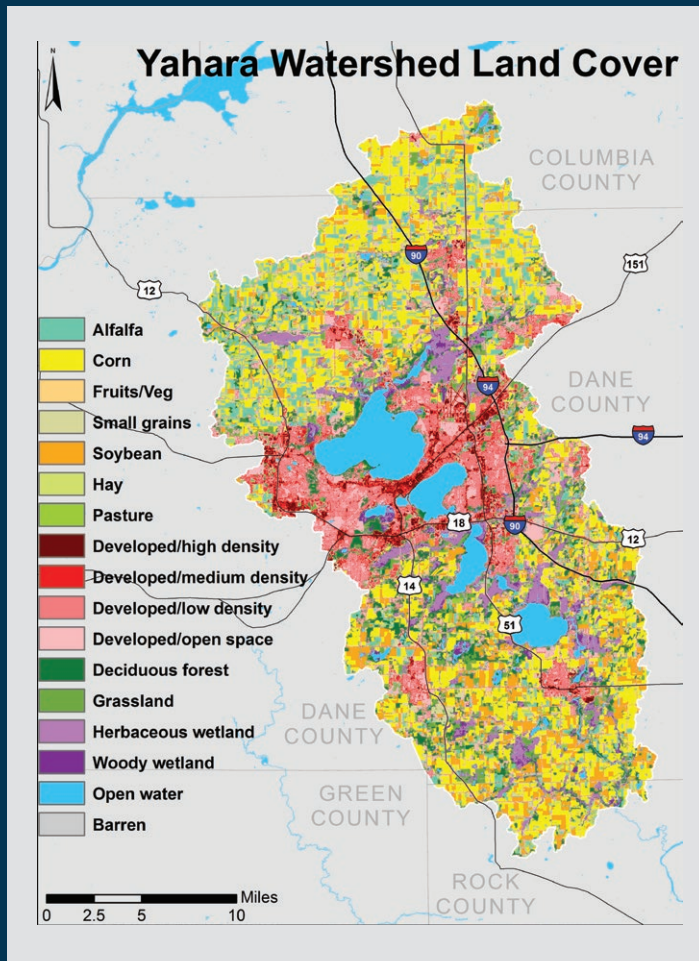
**BUILDING OUR DESIRABLE FUTURE** will help you start to identify what your group can do to achieve your desirable 2070.

### Whom is this guide for?

This guide is for groups in the Yahara Watershed and beyond that are interested in helping to create a desirable future for our waters and communities, such as the following:

- A neighborhood or community group
- Place-based stewardship groups, such as “friends of” lake or watershed groups
- Religious congregations or organizations
- Non-profit organizations and their members
- Public groups organized by municipalities, counties, other governmental organizations, or elected officials
- Policy or government boards or committees
- Student groups at the university level
- Informally organized groups of engaged residents (e.g., book groups)
- Businesses
- Coalitions of any of the above

This guide can be used with people who live outside the Yahara Watershed. Many of the issues the Yahara 2070 scenarios raise could apply to all of the counties the watershed lies in—Dane, Rock, and Columbia—and to other parts of Wisconsin, too.



## The Yahara Watershed

A watershed is a natural drainage basin for rain and snowmelt, in which all water flows to a single, low-lying point. The Yahara Watershed includes the land surrounding the Yahara lakes, where all surface water ends up in the Yahara River. The Yahara's waters flow into the Rock River and ultimately the Mississippi River. Watersheds are natural boundaries for thinking about land and water, which is why the scale is appropriate for these discussions. This map shows the boundaries of the Yahara Watershed and what types of urban, agricultural, and natural areas make up its landscape.

## Before you begin, ask yourselves...

- Why do we want to engage each other in an in-depth conversation about our future?
- What is or could be our group's role in shaping a desirable future for water and people?
- Do we already have defined goals for the future or are we looking for our path?
- Does our group currently have a process for thinking about the future? How might these discussions support this process?
- What difference would it make if our group discussed a desirable future for water and people?
- What are potential opportunities and barriers to engaging our community in a dialogue about the future?
- Who should be involved in these discussions, and how might we best engage them?



## INTRODUCTION

“ *People are embedded parts of the biosphere and shape it, from local to global scales, from the past to the future. At the same time people are fundamentally dependent on the capacity of the biosphere to sustain human development.* ”

– Carl Folke, Swedish ecologist

Considering our dependence on the entire living world—from our home place to the planet—and our influence on future generations is critical to the survival of our species. Unlike many aspects of society, nature changes slowly, and the causes and consequences are often complex. Considering our connections with future generations and addressing underlying causes of slow-moving change are important steps to reaping the consequences we want.

This discussion guide will help your group engage in long-term thinking to create a desirable future for water and people. On your journey, you will

- Learn what long-term thinking means,
- Use the Yahara 2070 scenarios to stimulate conversation about possibilities for the future,
- Develop your own vision of a resilient and desirable future, and
- Identify steps to work toward that vision.

### About Yahara 2070

The Yahara 2070 scenarios are a set of plausible stories about possible futures for the Yahara Watershed. They are based on a range of social and environmental changes that could impact the region's land and water resources and, ultimately, the well-being of future generations. They can help watershed residents consider the causes and consequences of long-term change, imagine different futures for their home, and envision a future that is desirable. By providing a more structured way to think about the inherent uncertainty of

the future, they can help us act more effectively in the present.

The goals of this discussion guide reflect those of Yahara 2070:

- to encourage more long-term thinking in our decisions and actions today, and
- to stimulate broad discussion about what kind of future is both desirable and possible, and what we should do today to help bring about that future.

**Yahara 2070 is not a set of predictions.** The scenarios are explorations of the question “what if.” They are not about what will happen to us, but about four possible futures we could consider. The real future will likely include elements from all four, in addition to numerous other alternatives. By discussing what is possible, we can identify ways to bring about what is desirable, avoid what is undesirable, and be prepared for the unexpected.

### None of the scenarios portray an ideal future.

The outcomes of each have advantages and disadvantages. This discussion guide helps you consider all four together, weighing the benefits and costs that living in each of these futures might offer.

Ultimately, Yahara 2070 rises from the understanding that we have some control over the future, and that knowing where we want to go helps us understand how we could get there.

Visit [yahara2070.org](http://yahara2070.org) to learn more.



*“Water is the most critical resource issue of our lifetime and our children’s lifetime. The health of our waters is the principal measure of how we live on the land.”*

– **Luna Leopold**, hydrologist and son of Aldo Leopold, a Wisconsin native and conservation thought leader.

## Why Talk About The Future of Water?

Yahara 2070 is focused on how we might ensure clean and abundant freshwater as we experience changes in land use, climate, and human demands into the future. Using scenarios like Yahara 2070 to encourage long-term thinking about the health of our waters and communities can therefore help us build resilience as a society.

Resilience means our ecosystems and communities can handle changes and continue on a path of progress, prosperity, and well-being. It also means we can adjust our course if what we are doing isn’t working. For example, building resilience is improving the health of our lakes so they can withstand climate change and increasing demands for food, both of which

could worsen water quality problems if not properly addressed.

Water provides an appropriate focal point for conversations about resilience because it connects us to each other, to the entire living world, and to past and future generations. It is especially important to the culture, economy, and quality of life of communities throughout Wisconsin. Given these connections, the future of water could determine the future of people.

We hope your discussions will inspire creative, game-changing solutions that could help make our waters and communities more resilient and lead us toward a positive future.

## NATURE'S LONG-TERM NATURE

A central issue in the Yahara 2070 scenarios is impaired water quality resulting from nutrient pollution, especially that from phosphorus, a fertilizing nutrient that is abundant in the soils and surface waters of the Yahara Watershed. This abundance causes algal blooms in the Yahara lakes, which can ruin people's enjoyment of them, threaten public health, and make the lakes and our communities vulnerable to disease, economic losses, or even political disruption. This challenge is tied to the region's history as a growing state capital surrounded by productive agriculture—a history that began in the mid-1800s. Throughout this time, the region has undergone shifts in how people use land and, more recently, changes in weather trends, such as more frequent heavy rainstorms. These long-term trends further complicate water quality problems and our ability to solve them, which, in turn, necessitates adopting a long time horizon when making decisions that will affect the health of our land, waters, and communities.

## NOTES

[illegible]



## DISCUSSION GROUP ROLES AND RESPONSIBILITIES

The three leadership roles needed to conduct the discussion series are the organizer, the discussion leader, and the scribe. More than one person can take on each role. Below are the responsibilities.

### The organizer

At least one person should be the lead organizer who will make sure everything gets done. Having someone at the helm is important for steering the ship and making sure the wind stays in the sails. This person will be responsible for the following:

- Recruit discussion group members, as needed.
- Organize meeting logistics, such as place, time, and supplies/materials.
- Lead communication with the group, such as setting up the meetings and sending reminders.
- Make sure there are a discussion leader and scribe for each discussion.
- Distribute the discussion notes to the whole group after each discussion, such as via email.

### The scribe

The scribe is responsible for taking notes during the discussion, recording the important takeaways and action items especially. This person should be different from the discussion leader, so the latter can focus on her or his task of facilitating the conversation. The scribe does not need to be the same person for each discussion. Here are the duties:

- Take notes on the flipchart or large pieces of paper, when appropriate, to enable the whole group to see the major points being made.
- Take clear notes of major messages, takeaways, or action items on regular paper, when a flipchart is not necessary.
- Assemble the notes from the discussion and give them to the organizer to distribute afterwards.

### The discussion leader

The discussion leader is responsible for facilitating the discussion(s). The organizer could also be a discussion leader, but that person does not need to lead every discussion. Consider sharing the role with other group members to help strengthen leadership and ownership within the group. The following are the duties of the discussion leader(s):

- Read the discussion(s) you are responsible for leading in advance, so that you know what to do when it comes time to lead it.
- Guide the group through the discussion by reading to them questions and instructions, as appropriate.
- Watch the time during the discussion. Make sure you follow the time allotments to ensure there is enough time get through everything.
- Ensure that everyone who wants to speak gets the opportunity to be heard.
- Read and follow the Tips for Fruitful Discussions on page 10.
- Make sure everyone follows the discussion ground rules.
- Check out some of the facilitation resources highlighted on page 12 of the Organizer and Discussion Leader Guide to learn techniques of effective discussion facilitation.

If you are the organizer or will lead one or more of the discussions, use the **Organizer and Discussion Leader Guide**. You can find that version online at

[wsc.limnology.wisc.edu/discussion-guides](http://wsc.limnology.wisc.edu/discussion-guides)

## TIPS FOR FRUITFUL DISCUSSIONS

**READ OR LISTEN TO THE SCENARIOS!** Before you begin your discussion series, it is important to read or listen to all four scenarios in their entirety. You may want to also review the other scenario features on [yahara2070.org](http://yahara2070.org), such as the maps and graphs of environmental changes. Think of this like a book club. Rich and fruitful discussions are more likely to happen if everyone knows the stories.

**INVOLVE COMMUNITY LEADERS.** Undertaking the task of creating a desirable future demonstrates leadership. As you participate in these discussions, think about your role in your community and how you can spread the ideas your group generates. Also, consider inviting a community leader to be part of your discussion group. Involving community leader can be important for carrying out any actions or initiatives that arise from your discussions, as well as for gaining buy-in from members of your community or organization who were not part of your discussions.

**BE OPEN TO LEADERSHIP ROLES.** Each discussion needs a discussion leader and a scribe. The organizer does not need to be the discussion leader, and the same person does not need to hold the same role every discussion. Sharing the roles can empower everyone in your group. The major responsibilities for these roles can be found on page 9. An experienced facilitator is not required for any discussion.

**SET GROUND RULES.** As a group, take a few minutes at the start of your first discussion to set ground rules to help set the tone and ensure everyone's needs are met. The adjacent text box contains examples to help you get started.

**PLACE OFF-TOPIC IDEAS ON THE “WOODPILE.”** The woodpile is a sheet of paper or other writing surface that is intended for collecting ideas or topics that are important, but not relevant to the discussion at hand. Ideas put on the woodpile can be saved for later discussion, either at the end or at a different time. If you find yourself starting to speak about something

important but off-topic, be open to putting it on the woodpile.

### FRAME YOUR PERSPECTIVE AND EXPECTATIONS.

This guide will have you discuss the scenarios together as a package, not separately. While it is important to consider the elements presented in each scenario, the point is to examine them as a set. Remember, there is no best case or worst case scenario; each has pros and cons. Think of Yahara 2070 as a sampling of ideas for the discussion table. Moreover, the scenarios do not attempt to answer every question about the future—in fact, they will likely raise more questions.

### CHALLENGE YOURSELF TO THINK DIFFERENTLY.

Thinking about the long-term future may make you feel uncomfortable—that's ok. It can be hard to think far ahead. The scenarios may present ideas and changes that wouldn't seem to work in today's world, or which might conflict with your worldview. In fact, the scenarios help highlight our values by challenging them. If you feel discomfort while reading the scenarios or in your discussions, lean into it and not be afraid to express your views. Creativity, innovation, and change rarely happen without discomfort.

### SAMPLE GROUND RULES

- Listen to each other, and respect everyone's views.
- Give everyone a chance to talk, and share the airtime fairly.
- One person speaks at a time. Do not interrupt.
- Be concise.
- Embrace and explore diversity and disagreement with open minds and empathy.
- Speak for yourself, not for any other person or group.
- Help the discussion leader keep things on track.
- *Add your own ground rules!*

## YAHARA 2070 SCENARIO SUMMARIES

### ACCELERATED INNOVATION

THE POSSIBILITY:

***What if we prioritize technological solutions to our water and climate challenges?***

**CONSEQUENCES BY 2070:**



#### OUR LIFESTYLES

- Technology influences everything
- Reliance on technology increases
- Material wealth increases
- Food comes from farms that rely heavily on technology to grow and enhance food; people eat less meat and dairy
- More people work in the tech industry than today
- Inequality still exists
- People are more disconnected from the natural world
- Individuals are vulnerable to technology failures (e.g., disease outbreaks)

#### OUR COMMUNITIES

- Dane County has become a “solution center,” where lots of innovation happens
- Urban growth has increased due to an increased population and increased wealth, but the growth is dense (i.e., less sprawl)
- Communities rely on advanced public transportation and renewable energy systems, such as solar power and nuclear
- The economy is largely based in the tech industry
- Communities are vulnerable to technology failures

#### OUR ENVIRONMENT\*

- Technology enhances the benefits people get from nature
- Nature is highly controlled
- The lakes are cleaner than they were in the beginning of the century, but still suffer from occasional algal blooms
- The environment is vulnerable to technology failures

### CONNECTED COMMUNITIES

THE POSSIBILITY:

***What if a global values shift towards less consumption and stronger communities occurs in response to our water and climate challenges?***

**CONSEQUENCES BY 2070:**



#### OUR LIFESTYLES

- Less consumption and high life quality are central concerns
- Food comes mostly from local farmers; people eat more fruits, vegetables, and high quality foods, but less meat and dairy
- Inequality is decreasing, but still exists
- People participate more in policy-making and the democratic process
- People rely less on fossil fuels and more on renewable energy
- People spend more time with their communities
- Prices incorporate social and environmental costs, making some things more expensive and difficult, such as air travel

#### OUR COMMUNITIES

- Communities are designed to enhance connections between people and with nature (e.g., shared backyards and more parks)
- It is easy to get around and between cities and towns by public transportation, bikes, or walking
- Wealth is measured by quality of life, not by material wealth
- The local economy improves
- Urban communities are denser; urban sprawl has stopped
- Communities rely on renewable energy; energy efficiency has improved

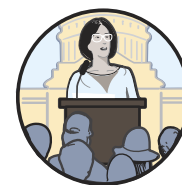
#### OUR ENVIRONMENT\*

- There are more natural areas and green spaces in the region
- Farms have become smaller and grow a high diversity of foods, which has improved biodiversity
- Lake shorelines have more vegetation to lessen flooding and help improve water quality
- Lake water quality is worse than in the beginning of the century, due to the legacy of past nutrient pollution, severe runoff events, and land-use changes that are inadequate at removing phosphorus from the soil. However, by 2060, water quality begins to trend toward improvement.

## NESTED WATERSHEDS

THE POSSIBILITY:

***What if the United States reforms how it governs freshwater, shifting to watershed-scale governance, in response to water and climate challenges?***



### CONSEQUENCES BY 2070:

#### OUR LIFESTYLES

- People prioritize water conservation and view water as “wealth”
- Food comes mostly from local farms; certain foods are more expensive due to impacts on water, such as meat and dairy
- People rely more on public transportation
- People still use fossil fuels
- Programs to improve water management have created jobs
- The Yahara is among the watersheds that gets paid to send water to the US Southwestern states experiencing severe water scarcity

#### OUR COMMUNITIES

- The Yahara Watershed Management Authority designs local water management policies and programs
- Urban growth is more controlled
- Cities and towns are designed to conserve water and help clean up the lakes (e.g., with “green” infrastructure)
- There is better public transportation
- Water management has become an important economic activity in both the public and private sectors
- Incentives have enabled urban and farming communities to better protect freshwater through infrastructure and land management practices
- Communities are still vulnerable to extreme weather, such as flooding and drought

#### OUR ENVIRONMENT\*

- There are more natural areas to help improve freshwater supplies
- Farmland is managed to treat water as a crop
- There is less farmland to help improve freshwater supplies; food production remains the same, however
- The soil is becoming healthier, which helps protect water
- The lakes have become cleaner than in the beginning of the century, but erratic weather can cause setbacks (e.g., floods)

## ABANDONMENT AND RENEWAL

THE POSSIBILITY:

***What if we don’t do enough in response to water and climate challenges, and an environmental health disaster occurs?***



### CONSEQUENCES BY 2070:

#### OUR LIFESTYLES

- People’s main concern is to survive—e.g., most people must grow their own food
- People are resourceful and waste nothing, because it is difficult or impossible to get more supplies of material goods
- Equality has increased; material wealth has decreased
- People are generally more reliant on each other
- Survival can be difficult

#### OUR COMMUNITIES

- The population is one-tenth of the size it was before the disaster
- People live on subsistence farms or in small and dense urban communities
- There is no government or centralized social support systems
- People barter goods and services, instead of using money, because of global economic collapse
- Some communities see the chance to create a new society

#### OUR ENVIRONMENT\*

- There are more natural areas, such as prairies and forests; they are growing back due to the lack of people
- There is more wildlife
- There is less farmland
- The lakes are slowly becoming cleaner, but they are still quite polluted with nutrients because of the past

\*Climate changes are not included here, as the climates depicted in each scenario are not necessarily consequences of the changes that occurred. Each scenario was given a different climate change trajectory to reflect the range of changes that could occur.

## DISCUSSION 1: A LENS FOR THE FUTURE

“ *While the future is uncertain and much of it is beyond our control, we can control many aspects of it. We choose our future: we create it by what we do or fail to do.* ”

– Wendy Schultz, futurist

### PURPOSE:

What does long-term thinking mean? This discussion will help your group adopt a long-term lens by exploring some of the key concepts of this approach and how they relate to the Yahara 2070 scenarios.

### REMINDER

It is very important to read the scenarios or listen to the audio-stories before your group's first discussion!

## DISCUSSION AGENDA

### Getting started

**10 MINUTES**

*whole group*

- Introductions
- Set ground rules

### Warm-up

**10 MINUTES**

*whole group*

- What are some first impressions you had when reading or listening to the scenarios?
- Over the past 60 years, what has changed about the following aspects of our lives, especially in terms of how they have influenced our relationship with land and water?
  - Major technological advancements
  - Major laws or policy changes that have affected our land, water, and natural resources
  - Social values
  - The health and quality of our natural spaces
  - How we develop cities and communities
  - How we grow, distribute, and eat food
  - How people interact with the natural environment

### Part 1: Consider possible changes

**30 MINUTES**

*whole group and in pairs*

1. The Yahara 2070 scenarios explore the potential impacts of four **driving forces** that could influence the future of the Yahara Watershed. A driving force is a set of trends or societal shifts that allow significant changes to occur. In Yahara 2070, these driving forces are, generally, technological innovation, social values, government reform, and environmental disaster.
  - A. What is a real, historical example of a driving force that has had major consequences on our lives today? These could be related to technology, changing values, government reform, or an environmental disaster, or fall under a different theme. What can we learn from the outcomes of these changes?
  - B. There are many driving forces that could shape the future of water and people, in addition to the four in the scenarios. What other driving forces, or sets of trends, are affecting your region, the



United States, and the world? Which of these forces would you like to consider in your vision of a desirable future?

## INSTRUCTIONS

Use the [Pathways of Change worksheet \(found on page 19\)](#) to answer the following questions.

2. As we progress through time, we reach moments when the collective choices we could make have alternate pathways with different future implications. These moments are sometimes called “**branch points**,” because of the different directions these choices could send us in. Often, several driving forces can lead up to these branch points.
  - A. Thinking about the past 60 years, what are some major branch points, when society was faced with collective choices that could have led to different consequences? It might help to think back to the second warm-up question and the previous question. Brainstorm as a group and then, individually or with a partner, pick one branch point to map out on your Pathways of Change worksheet.
  - B. What trends or driving forces led to your chosen branch point? Write your thoughts on your Pathways of Change worksheet.
  - C. What were some consequences of the choices made at the branch point? Were these consequences anticipated when the choices were made?
  - D. What other collective choices could people have made at these branch points? What do you think could have been the consequences of these different pathways?
3. The consequences of the choices we make can be **reversible or irreversible**, for better or worse. A positive example of irreversibility is the end of legal slavery in the United States. A negative example of irreversibility is species extinction.
  - A. Were the consequences of the choices you discussed in the previous question reversible or irreversible?
  - B. What social or environmental factors seem to make consequences reversible or irreversible?

## Part 2: Consider the consequences

**40 MINUTES**

*small groups*

Answer the questions on the next page for your assigned Yahara 2070 scenario. You can skip the supplemental question if you run short on time. When you are done, all of the small groups will share their main takeaways with the whole group.

## NOTES

---

---

---

---

---

---

## CHANGE AND CONSEQUENCES

## THE PROS AND CONS

## WHAT WOULD IT TAKE?

## SUPPLEMENTAL QUESTION



### Accelerated Innovation

How did the Innovation Revolution change the ways people farm, build and live in cities and communities, and interact with nature? What were some consequences of these changes?

What do you think are the pros and cons of relying on technology as a solution to social and environmental challenges?

What do you think it would take for Dane County to become a center for technological solutions to environmental challenges?

How could society anticipate and deal with negative unintended consequences of technological solutions to environmental challenges?



### Nested Watersheds

How did the Reform change the ways people farm, build and live in cities and communities, and interact with nature? What were some consequences of these changes?

What do you think are the pros and cons of government intervention as a solution to social and environmental challenges?

What do you think it would take for a government reform on the scale of Nested Watersheds to happen in the United States?

What are some other solutions you think people could undertake in response to a national water crisis?



### Connected Communities

How did the Great Transition change the ways people farm, build and live in cities and communities, and interact with nature? What were some consequences of these changes?

What do you think are the pros and cons of a values shift as a solution to social and environmental challenges?

What do you think it would take for a broad public values shift like the Great Transition to happen in your community? How about in the United States or worldwide?

How do people in Connected Communities deal with “violators” of the new social paradigm, such as companies who don’t follow sustainability norms? What other ways might people effectively uphold collectively held values?



### Abandonment and Renewal

How did the disaster change the ways people farm, build and live in cities and communities, and interact with nature? What were some consequences of these changes?

What do you think are the pros and cons of a disaster followed by social and ecological renewal?

What do you think it would take to rebuild society in the Yahara watershed or your community if a disaster of a similar magnitude were to occur in the next few decades?

How could the disaster have been prevented? Consider the roles of government, technology, values, or other driving forces of change.

## Part 3: Consider our choices

**40 MINUTES**

*whole group*

4. Many choices people make can impact the health of our waters in the future: how we build and manage cities, how and what we farm, how we treat our natural spaces, what people demand from land and water (e.g., through what they eat), and how we prepare for or respond to climate change. These choices often have **tradeoffs**. For example, in the Yahara Watershed, research has shown there are tradeoffs between water quality and agricultural production—in other words, it would be difficult to have clean lakes while also supporting a lot of dairy cows and row crops.

- A. What tradeoffs can you recall from the Yahara 2070 scenarios? (They may not all be related directly to water.) Which of these tradeoffs could you live with and which could you not live with?
- B. What tradeoffs do you think your community faces today, in terms of ensuring healthy waters and communities for future generations? How do you feel about those tradeoffs?

5. Consider this: Changes in the ways we use our land, as well as climate change, affect our waters. We can make choices about how we use our land, which gives us some control over the future, but we cannot choose or control how exactly climate change affects our waters and communities.

- A. What environmental and social changes or pressures does your community face that seem controllable, and which seem uncontrollable? Think especially about the changes or pressures that might impact your vision of a desirable future.
- B. How might we account for the things we can't control when making choices about the future?

6. The scenarios are meant to help us discuss how to build a resilient and desirable future for water

and people. **Building resilience** involves coming up with new, transformative ideas for solving the challenges we face today. It also requires us to identify the great ideas and qualities we already have, or humanity's "**bright spots**," that we should carry with us into the future, while also considering the ideas we want to leave behind.

Answer the following questions in the context of building a resilient and desirable future for water and people. Your ideas don't need to be reflected in the Yahara 2070 scenarios.

- A. What does resilience mean to you?
- B. What new, transformative ideas do you think are needed to build resilience?
- C. What bright spots should we maintain and carry forward?
- D. What ideas or practices should we leave behind?

## Supplemental Questions

*whole group or small groups*

- In every scenario, a major change happens in response to social and/or environmental crises. Do you think it is possible for humans to make changes to the ways they live without the threat of a crisis? What do you think it would take to make changes without the threat of a crisis?
- Sometimes changes that set things on a different course are unanticipated or surprising. Did any of the scenarios contain changes that surprised you? How do you think your community could prepare for or deal with such surprises? What are some examples of surprises in the history of your own community or region?
- How might different populations—e.g., wealthy versus poor, different ethnic or cultural groups—be affected by the changes that occur in the four scenarios? How might this inform your vision of a desirable future?

## Wrap-up

**10 MINUTES**

*whole group*

- How did this discussion make you feel?
- How have the major ideas that this discussion addressed—controllability, branch points, reversibility/irreversibility, and tradeoffs—influenced your thinking? How could they influence your group's vision of a desirable future?
- How could you integrate more long-term thinking into your everyday lives, both individually and as a community?

### PREVIEW OF DISCUSSION 2

In the next discussion, we will start to create our own vision of a desirable future. We will consider what is desirable or undesirable about the futures portrayed in the Yahara 2070 scenarios and begin constructing a vision we would want to work toward.

## HOMEWORK

To prepare for Discussion 2, take a few minutes to think through this question for each scenario, jotting down ideas you want to bring up in discussion:

*Imagine a loved one that might be alive in 2070. What would their life be like in each scenario? In what ways does life seem better or desirable, and in what ways does it seem worse or undesirable?*

To refresh your memory of the scenarios, you could review the scenario summaries on page 12-13 or watch the video trailers on [yahara2070.org](http://yahara2070.org).

## NOTES

---

---

---

---

---

---

---

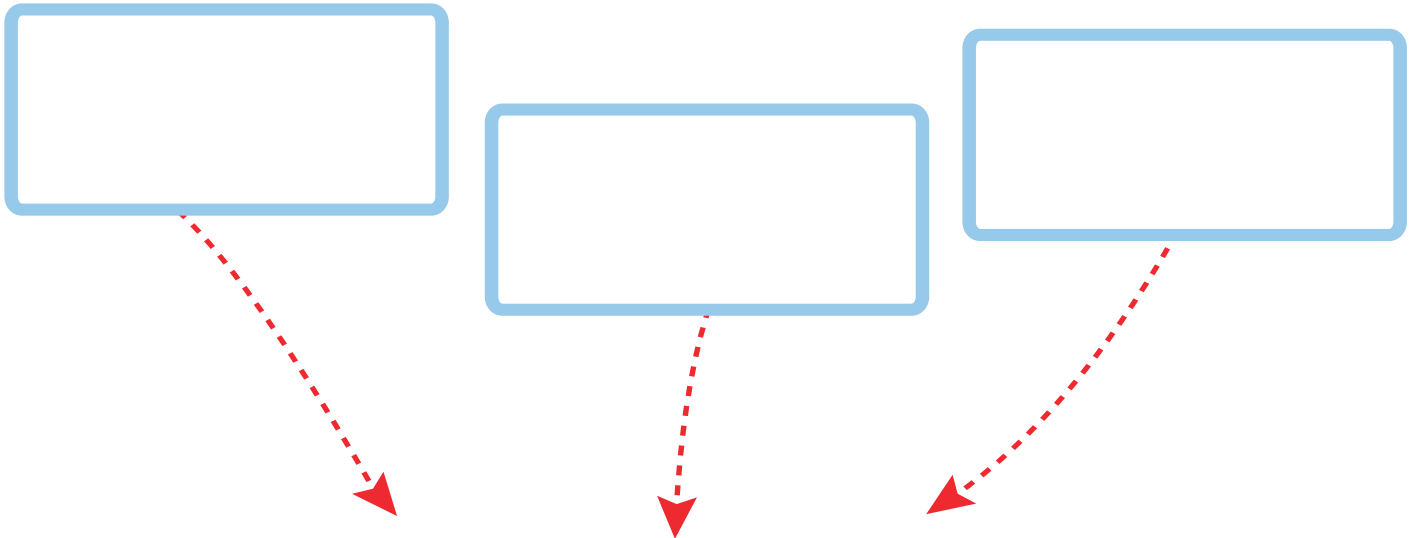
---

---

---

## PATHWAYS OF CHANGE

### TRENDS



### BRANCH POINT

What was the result of these trends?



### ACTION

What are possible solutions?

A large rectangular box with a grey border. It contains the text "ALTERNATIVE" at the top and "POSSIBLE CONSEQUENCES" in the middle.

A large rectangular box with a blue border. It contains the text "ACTUAL DECISION" at the top and "CONSEQUENCES" in the middle.

A large rectangular box with a grey border. It contains the text "ALTERNATIVE" at the top and "POSSIBLE CONSEQUENCES" in the middle.



## DISCUSSION 2: “WHAT IFS” FOR THE FUTURE

“

*Conversation is at the heart of what we know and how we know it. It is central to both constructing the future and learning how to act on it.*

”

– Andrew Curry, The Futures Company

### PURPOSE

This discussion will help you “inhabit” the worlds of the Yahara 2070 scenarios to think about what could be desirable or undesirable for the lives of future generations. In doing so, your group will generate ideas for your own scenario of a desirable future.

## DISCUSSION AGENDA

### Warm-up

**10 MINUTES**

*whole group*

- What difference do you think creating a vision of a desirable future for water and people could make in our community and lives?
- What is or could be our group’s role in shaping a desirable future for water and people in our region?

### Part 1: The possibilities

**60 MINUTES (15 MINUTES PER SCENARIO)**

*whole group or small groups*

Discuss this question for each scenario:

**What elements of life in 2070 in this scenario do you perceive as “desirable” and as “undesirable”?**

**Tip:** Imagine a loved one that might be alive in 2070 and what their life would be like in each scenario. In what ways do you think their life would be better than today? In what ways do you think it would be worse? What would you want or not want for them?

### DON’T GET STUCK IN THE LIKELIHOOD TRAP!

The Yahara 2070 scenarios reflect futures that are plausible. They are not predictions or projections of what is likely to happen. There is a difference between plausibility and likelihood. Plausibility has to do with what is possible based on the scientific understanding of the world. It is not *necessarily* the same as what seems likely, which is often based in what we are experiencing in our lives today. Put another way, plausibility is tied to the rules of nature, while likelihood is tied to social or political conditions. A lot is plausible in the natural world, even if it doesn’t seem likely given today’s culture or politics.

Long-term thinking requires us to break free from the “likelihood trap,” which can stifle our creativity. The scenarios challenge us to look beyond what seems likely or unlikely given the current state of affairs and, instead, keep our minds open to a wide range of plausibility.

## Part 2: The best ideas and worst threats

**30 MINUTES**

*whole group*

Use the worksheet **Constructing Our Vision** as you answer the following questions.

- What are the best ideas from the four scenarios that must happen in the future?
- What are the worst threats from the four scenarios that must not happen in the future?
- What other great ideas or terrible threats must or must not happen, respectively, in our desirable future?

## Wrap-up

**10 MINUTES**

*whole group*

- How did this discussion make you feel?
- What is considered desirable for the future can differ between people, based on individual preferences, cultural norms, ideologies, or socio-economic status, for example. How might our society or community find consensus on what is desirable, while also respecting this diversity of perspectives?

## DISCUSSION 3 PREVIEW

In the next discussion, we will complete our visioning process by turning our building blocks into our own scenario of a desirable future.

## NOTES

---

---

---

---

---

---

---

---

---

---

## CONSTRUCTING OUR VISION WORKSHEET

*Imagine that, 60 years from now, future generations enjoy a high quality of life with resilient ecosystems and communities. What does that look like?*

As you imagine your desirable future, consider the aspects listed in the chart below—e.g., What will \_\_\_\_ be like compared to today?

In addition to the best ideas for the future, consider what threats have been minimized or avoided in your vision.

Also consider how each of the following may or may not play a role:

- Technology
- Government
- Human values
- Economy
- Non-profit/grassroots organizations
- Land-use decisions
- Climate change
- Other forces of change

|   | BEST IDEAS FOR THE FUTURE | THREATS AVOIDED |
|---|---------------------------|-----------------|
| <b>FOOD &amp; AGRICULTURE</b><br>(what do we eat, how do farmers farm, what do farmers grow or produce, etc.)     |                           |                 |
| <b>WATER AND ECOSYSTEMS</b><br>(what is the state of fisheries, wetlands, wildlife habitat, water quality, etc.?) |                           |                 |

|  | BEST IDEAS FOR<br>THE FUTURE | THREATS<br>AVOIDED |
|--|------------------------------|--------------------|
| <b>DEVELOPMENT<br/>AND LAND USE</b><br>(housing, urban<br>areas, agriculture,<br>natural areas, etc.)  |                              |                    |
| <b>INFRASTRUCTURE<br/>AND<br/>TRANSPORTATION</b><br>(what structures<br>exist for moving<br>people, supplies,<br>water, energy, and<br>waste?) |                              |                    |
| <b>SOCIAL<br/>ORGANIZATION</b><br>(socio-economics,<br>politics, etc.)   |                              |                    |
| <b>OTHER</b>   |                              |                    |

## DISCUSSION 3: ENVISIONING OUR DESIRABLE FUTURE

“ *If you want to build a ship, don’t start with collecting wood, cutting the plank and assigning work, but awake in people the longing for the wide and open sea.* ”

– Antoine de Saint-Exupery (Citadelle)

### PURPOSE

To create a desirable future, first you need a motivating vision of what that looks like, as alluded to in the opening quote. This discussion will help your group develop your own “scenario” of a desirable future for water and people. We encourage you to design your vision around your group’s water-related priorities.

## DISCUSSION AGENDA

### Warm-up

**10 MINUTES**

*whole group*

- Revisit the **Constructing Our Future** worksheet to add new ideas
- Discuss: What are our water-related priorities that are important to focus on in our vision of a desirable future?

### Part 1: Articulate your vision

**50 MINUTES**

*whole group or small groups*

Develop a story that articulates your vision using the **Constructing Our Vision** worksheet and the **Scenario Writing Script** on page 27.

Writing tips:

- Be creative! Engaging stories can be very powerful.
- Develop a main character that is relevant to your community and describe their life.

- Focus on at least 5 elements from your **Constructing Our Vision** worksheet as starting points. For example, you could pick one idea per category that everyone in your group supports. Your story could certainly incorporate more than these 5 elements, but it helps to have a few focal points to build a story around.
- See also “Scenario Narrative Writing” on page 25 for suggested writing techniques.
- Make sure to give your scenario a name that evokes your vision—if your vision were a movie, what would it be called?

### Part 2: Choose your priorities

**20 MINUTES**

*whole group*

- Choose 2-3 elements of your vision that your group thinks should be priority action areas, for which you would like to develop an action plan. In other words, what elements must happen in the future, regardless of timescale and difficulty?



## Part 3: From vision to action

**30 MINUTES**

*whole group*

Discuss the following questions as a group. You may also use the **From Vision to Action** worksheet.

- What is our group already doing—meaning, what we’ve been doing together previous to these discussions—that could help us move toward our priority action areas?
- How must our group or community change to achieve our broader vision?
- What new actions or next steps could we undertake today—as individuals and as a group—to work toward our priority actions areas?
- What research is needed to know if we can achieve our priority actions areas?
- What resources do we need to achieve our priority action areas?
- How can we ensure follow-up on our priority action areas?
- Who else should be involved in ways to achieve the vision and/or priority action areas?

### A “SHARED” VISION

Your group will likely possess diverse views of what is desirable for the future, and that’s ok. Be open to each other’s differences. When writing your vision, complete group consensus is not necessary. Instead, look for common ground, or priorities you can all agree on.

When your group finishes your story, a simple way to make sure it adequately reflects a shared vision is to conduct a “thumb-vote.” Thumbs up indicates you fully agree that the scenario reflects a desirable future; thumbs parallel to the floor indicates you can live with the scenario, even if you don’t fully agree with it; thumbs down indicates you disagree that the scenario reflects a desirable future. If anyone disagrees, allow them to voice their reasons, and then discuss modifications to the scenario that would eliminate thumbs-down votes.

## SCENARIO NARRATIVE WRITING: TELLING YOUR STORY OF A DESIRABLE FUTURE

If your group is having trouble getting the story started, these methods might help.

### A DAY IN THE LIFE

Describe your main character. What kind of job does s/he have? What does her/his neighborhood look like, and why does it look like this? How does s/he get around? What kinds of things does s/he eat, and how is the food grown? Why does s/he eat this way? How does s/he interact with lakes, rivers, and other natural spaces? When s/he walks around a city, what does s/he see? When s/he walks around a farm, what does s/he see? Who has power over land and water decisions? Who are the winners and losers of the major land and water decisions that have been made? What decisions and tradeoffs did people need to make to get this point? Elaborate as much as you would like.

### RESPONSE TO A SURPRISE

Describe the effects of a surprise—such as a massive flood, the emergence of a new disease, or an economic recession—that impacts communities and ecosystems in your vision. Consider how several different hypothetical individuals may respond to the surprise—for example, a business owner, a person experiencing homelessness, a student, a farmer, or other types of individuals relevant to your community or organization. How would these people cope with the surprise?

### HEADLINES OF THE FUTURE

Provide a journalist’s perspective of the future by focusing on a key event or newsworthy moment in that world. Structure your story like one you would read in a newspaper or magazine, including a catchy headline.

### FUTURE BACKWARDS

Construct your vision of the future, and then consider the key turning points that happened to get there. Imagine you are telling a history of this future.

**Wrap-up****10 MINUTES***whole group or small groups*

- How did this discussion make you feel?
- How could focusing on your priority action areas help you achieve a desirable future more broadly?
- Mathematician Bruce Cooperstein said, “A vision is not a list of values, goals, objectives, or principles. Rather, it is a clear and integrated proposal for the future. ... To be effective, a vision should be bold, daring, exciting, and generate hope.” Does your group’s vision give you hope, and why?

**Note:** Keep in mind that your vision is not static. Think of it as a canvas that the group or other groups can revise or enrich.

**DISCUSSION 4 PREVIEW**

Now that we have our vision, in our last discussion we will begin brainstorming how we can work towards our priority action areas. This will entail an approach called backcasting.

**HOMEWORK**

**How can we achieve our desirable future?**  
To prepare for the next discussion, brainstorm on your own about some new projects, connections, steps, or other changes you think will be necessary to achieve our priority actions areas.

**NOTES**


---

---

---

---

---

---

---

---

---

---

---

---

## SCENARIO WRITING SCRIPT

The following questions can help your group develop a story for your scenario of a desirable future. You do not need to go in the order in which they appear, but it is best to at least start with describing your character and your water-related priorities. If your group is having a hard time answering a question or seems to have run out of things to say in response to one, throw out a different question for them to tackle. Enrich your story as much as needed to bring it to life and make your vision clear.

### YOUR CHARACTER

- Develop a character that might represent your community or water-related priority in 2070. What is this character's age, ethnicity, career, etc.?
- Where does the character live, and what does the neighborhood or community look like?
- What does your character care most/least about?

### YOUR WATER-RELATED PRIORITIES

- What water-related priorities does your group want to develop a story around?
- Describe the conditions of your water-related priority by 2070.
- What social or environmental factors could have an impact on the future of your water-related priority?

### YOUR CHARACTER'S LIFESTYLE

- How does your character think about water?
- How is your character connected to your water-related priority in his/her everyday life? What impacts does your character have on your water-related priority?
- What does the character eat, how does s/he get food, and from where does the food come?
- How does your character get around?

### THE LANDSCAPE

- If the character visits an urban area, what does s/he see?
- If the character visits a rural area, what does s/he see?

### THE COMMUNITY

- What energy sources does the character's community rely on?
- What freshwater or environmental **successes** has your character's community achieved, and how did they achieve them? What social conditions contributed to these successes?
- What freshwater or environmental **challenges** does your character's community face? What social conditions are contributing to these challenges?

### THE SOCIETY

- Who holds the power over decisions related to land and water in your desirable 2070?
- Has anything transformative happened to bring about your desirable future? What turning points have occurred?

## FROM VISION TO ACTION WORKSHEET

What our group is already doing...

How our group or community must change...

New actions or next steps we could undertake today as a group...

New actions or next steps we could undertake today as individuals...

What research is needed...

Resources we need...

How we can ensure follow-up...

Who else should be involved...

## DISCUSSION 4: BUILDING OUR DESIRABLE FUTURE

“ *We are called to be architects of the future, not its victims.*

– Buckminster Fuller

”

### PURPOSE

With a vision for where you want to go, now you can figure out how to get there. One way to do this is called backcasting, an approach to identifying the critical steps or actions needed to work toward your desired future, working backwards from this future.

## DISCUSSION AGENDA

### Part 1: Now and 2070

**30 MINUTES**

*whole group*

- Describe the key differences between the state of your group's priority action area now and in your vision of 2070.
- As a group, choose one priority action area to backcast in this discussion.

### Part 2: A pathway backwards

**30 MINUTES**

*whole group*

Identify the key steps that need to occur in the long term, medium term, and near term to achieve the desired future state of your priority action area.

### Part 3: Trends, drivers, and events

**30 MINUTES**

*whole group*

Identify present-day trends, drivers, and events that could have a positive or negative impact on your ability to achieve your priority action area.

### BACKCASTING IN BRIEF

In contrast to forecasting, which is about adapting to trends that are projected from the present day into the future, backcasting is about creating the future that is desired. Today's trends should influence only the initial scale of the transition, not its directions.

Backcasting can be an iterative process. It can help you analyze what consequences and conditions are necessary for the desired future to materialize. It can also reveal the implications of different goals. In doing so, you may find that certain steps are not feasible or that certain future conditions become no longer desirable, leading you to reevaluate that component of your desired future.



## Part 4: Barriers and enablers

**45 MINUTES**

*whole group or small groups*

Discuss potential barriers and enablers to achieving your priority action areas.

### GROUP 1: BARRIERS

- How will these barriers affect our ability to achieve our priority action areas?
- Over what aspects of these barriers do we have control?
- Which of these barriers are we willing to, or must we do something about?
- What can we do to remove the barriers or minimize their impact?

### GROUP 2: ENABLERS

- How will these enablers affect our ability to achieve our priority action areas?
- Over what aspects of these enablers do we have control?
- Which of these enablers are willing to, or must we focus on?
- How do we harness them to strengthen our efforts?

## Part 5: Next Steps

**30 MINUTES**

*whole group*

- What are possible next steps? By when should these be completed, and by whom?
- What research is needed for us to know if we can achieve our priority action area and/or vision for the future?
- What resources do we need to work on our priority action area?
- Who else do we need to engage with to begin working toward our priorities?
- How can we ensure follow-up on our priorities?

## Wrap-up

**15 MINUTES**

*whole group or small groups*

- How has this process of envisioning a desirable future affected you?
- Did anything surprise you? Why or why not?
- How has this process made you feel about your influence on the future?
- How can we have conversations about the future with others in our lives?

---

## SHARING YOUR VISION

You might now be wondering how you can share your vision with others. Here are some ideas for how you could share it and get input from community members who were not involved in your discussions.

- Engage the people in your life in conversations about building a desirable future. Start conversations about your group's vision, or the future in general, at the dinner table with your family, with your colleagues or friends, or in whatever other settings feel appropriate.
  - Hold community conversations to engage the rest of your community in the vision. Present to them the vision and get their feedback on it.
  - Conduct a community assets workshop to identify the people, places, institutions, funding sources, and other resources already in your community that could help you achieve your priority action areas.
  - Organize a community art project, such as a mural or theatrical production, to depict your vision.
-