



PAS MEMO

How to Design Your Scenario Planning Process

By Janae Futrell, AICP

Scenario planning has a long track record of helping the private market, the military, and planning agencies better prepare for a more desired future. More and more, urban and rural planning practitioners are interested in applying scenario planning to support decision making within their organizations' planning efforts.

The benefits of scenario planning include helping planners navigate uncertainty or pinpoint a preferred combination of variables to reach a specific target. Scenario planning activities often support subject-specific planning efforts, including visioning, long-range transportation plans, climate change action plans, and many others.

There are several ways to link scenario planning with urban and rural planning (Figure 1). These include but are not limited to the following (Goodspeed forthcoming):

- Scenario planning as a defining concept for plan organization
- Scenario planning to generate ideas or insights for more detailed planning work
- Scenario planning as a component within a larger planning process

When planning practitioners embark on scenario planning for the first time, there are a number of key decisions to be made long before the actual scenario planning work begins in earnest. In addition to pinpointing the best way to link scenario planning with their planning work, they also need to define which specific scenario planning activities will take place, when they will take place, and who will take part in them.

This PAS Memo provides a "how-to" guide on preparing to implement scenario planning, moving through sequential steps to create a "roadmap" for the process. A workbook for designing a scenario planning process helps planners test-drive this guidance. The proposed sequential steps are suggestions and do not illustrate the only way or the best way to design a scenario planning process for all situations. They are intended as a general guide only, as each individual scenario planning process may require steps to be removed or added to address unique needs.



Figure 1. Ways to link scenario planning with urban and rural planning. Courtesy Consortium for Scenario Planning/Janae Futrell.

This article will be particularly useful to help first-time scenario planners understand all the general steps involved in a scenario planning process, gain support for the process within their organizations, and design the process. It will also be helpful for seasoned scenario planners in need of more structure to inform a more rigorous design process.

This *PAS Memo* lists a number of “key resources” within an overall summary of scenario planning process design. The Consortium for Scenario Planning (see sidebar) will host forthcoming and in-process resources as they become available at www.scenarioplanning.io/resources.

The Need for Scenario Planning Process Design

Planning projects commonly have a “planning process” serving as an overall summary of the activities to be undertaken to lead to the project goal. The planning process addresses general activities, the nature of stakeholder engagement and public participation, key analysis steps, and products. Often organized

along a timeline, these documents range in sophistication but help all participants understand the overall project.

In this *PAS Memo*, the phrase “process design” refers to the act of working towards a clearly defined roadmap, tailored to the specific needs of a planning agency, that outlines tasks needed for a successful scenario planning process. Once a planning agency has developed such a roadmap, it has a well-defined scenario planning process ready to implement.

There are a number of reasons why it is necessary to carefully design a scenario planning process. First, starting a project by laying out a transparent process will reduce barriers for first-time scenario planners. Planning professionals new to scenario planning tend to dive in — often into the deep end — with a lack of certainty about what it involves and where it will end. This sometimes results in confusing changes in direction along the way, and it also deters those who require more up-front information from getting started in the first place. Clear guidance in laying out a clear process leads to more confidence.

The Consortium for Scenario Planning

The Consortium for Scenario Planning, an initiative of the Lincoln Institute of Land Policy, is a participation organization established in 2017 to foster growth in the application of scenario planning in rural and urban areas. Participants range from rural, city, county, and regional planners to urban managers and more. It works toward a vision of communities regularly using scenario planning to help make important decisions, increasing their capacity to act strategically in pursuit of equitable, prosperous, and sustainable places in a complex and uncertain world. Its mission is to improve the practice of scenario planning and broaden its use in communities of all sizes across disciplines.

The Consortium for Scenario Planning offers a broad array of educational resources to all, coordinates peer exchanges to help scenario planning practitioners share information and learn from one another, and holds an annual conference and workshops at other events (Figure 2) (Consortium for Scenario Planning 2019a, 2019b). For more information, or to join the consortium, see www.scenarioplanning.io.



Figure 2. Scenario planning session at APA's 2017 National Planning Conference. Courtesy Consortium for Scenario Planning.

Second, without a clear roadmap, agency staff members have difficulty communicating with colleagues about what scenario planning involves and may face challenges in garnering internal support to start scenario planning. An organization

often considers applying scenario planning for the first time because one or a few staff members decide it is of value. When staff members seek to gain internal support, they need to be able to communicate clearly and confidently about the level of

Scenario Planning Project Examples

A number of planning agencies have applied scenario planning because of its compelling benefits. These projects serve as an illustration of the different ways that scenario planning can be linked with urban and rural planning, as mentioned in the introduction.

The Oregon Department of Transportation leveraged scenario planning as a *defining concept for plan organization*, providing a useful guidance document to help agencies integrate scenario planning into their land-use and transportation planning work (Oregon Department of Transportation 2013).

The Delaware Valley Regional Planning Commission (DVRPC), based in Philadelphia, used scenario planning among professionals and experts to *generate ideas or insights for more detailed planning work*. DVRPC described its effort, called “Future Forces,” in the following terms:

As the first step in updating the region’s long-range plan, the Delaware Valley Regional Planning Commission convened the Greater Philadelphia Futures Group, with experts in economics, land use, the environment, public health, transportation, and

technology coming from academia, the private sector, nonprofit organizations, and government to collaboratively identify key regional Future Forces. . . . This endeavor does not try to identify a “preferred” scenario for the future. Rather, it focuses on the types of change that are likely to occur, and what the region can do to better prepare for them.

Though DVRPC considered the scenario planning effort to be primarily a part of its long-range transportation planning effort, the knowledge gained from “Future Forces” also impacted DVRPC’s work in long-range planning goals to build livable communities, manage growth, and improve connections to the global economy (DVRPC 2016).

The Mid-America Regional Council (MARC), based in Kansas City, Missouri, built a scenario planning effort into the center of its Regional Transportation Plan 2050 transportation planning effort (Figure 3) as a *component within a larger planning process* (Rivarola 2019). In addition, MARC led an interdisciplinary scenario planning process for the region as a whole, with the knowledge gained feeding into the transportation planning effort (MARC 2018).

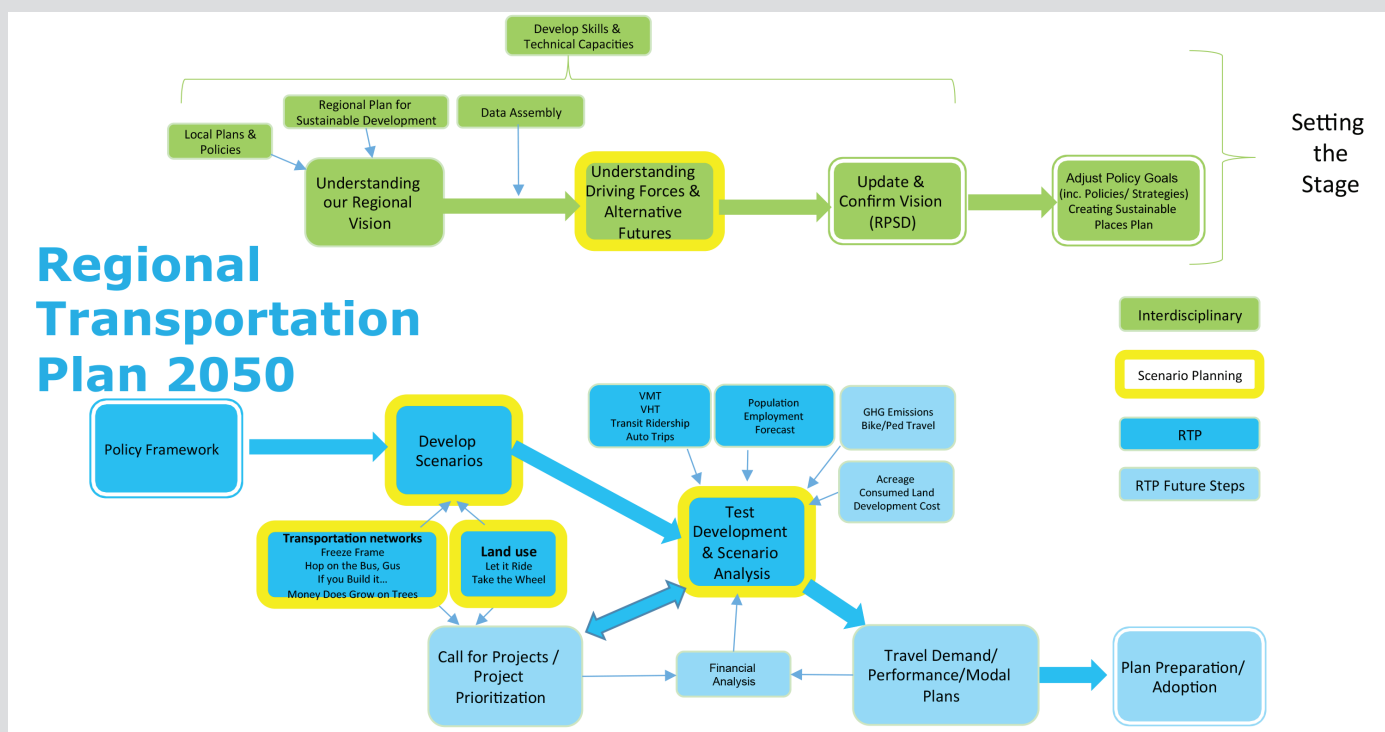


Figure 3. MARC's diagram of scenario planning activities embedded within other planning efforts. Courtesy MARC.

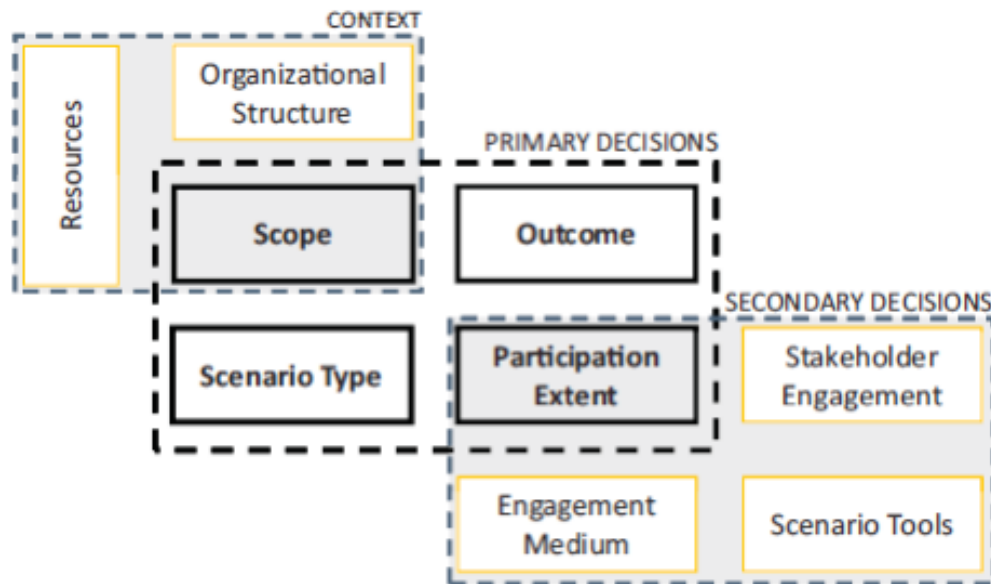


Figure 4. Components of a typical scenario planning process. Courtesy Arnab Chakraborty (from Chakraborty and McMillan 2015, © The American Planning Association, reprinted by permission of Taylor & Francis Ltd. on behalf of The American Planning Association).

commitment required and the gains that level of commitment can achieve.

Third, intentional process design from start to finish contributes to better results and more useful evaluation of the process to feed improvement over time. Scenario planning may appear at first glance to be a fairly straightforward process, but it has its own types of roadblocks and areas of confusion that can delay or even derail a project. An organization must know where it is headed to increase its chances of success, and it must be able to evaluate its work for continuous improvement.

Fourth, process design enables comparison among scenario planning projects for the development of best practices. As the foundational components of process design become further developed, an underlying structure of scenario planning will emerge. This article is a step in that direction. As the structure is better understood, planning professionals will be better able to compare and contrast different scenario planning efforts through the seemingly small decisions the organization makes along the way to orient the process — the organization's process design.

Past scenario planning resources have provided valuable frameworks to help planners understand the various aspects of scenario planning. The *JAPA* article, "Scenario Planning for Urban Planners: Toward a Practitioner's Guide," lays out a scenario typology with nine major components organized into three areas: context, primary decisions, and secondary decisions as shown (Figure 4) (Chakraborty and McMillan 2015). The process shared in this *PAS Memo* is based on this foundational resource.

The Components of Process Design

Process design for scenario planning can be broken down into three components: direction setting, approach development, and roadmap creation (Figure 5).

While each component builds upon the last in a linear fashion, in practice this is often an iterative process. Planners

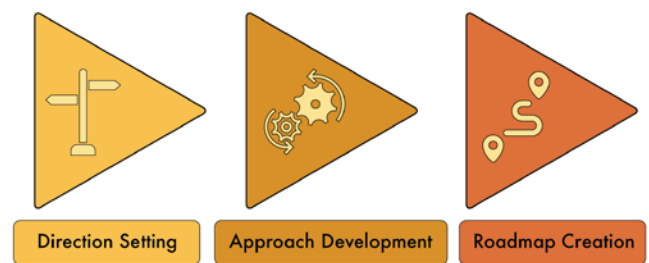


Figure 5. Scenario planning process design components. Courtesy Consortium for Scenario Planning/Janae Futrell.

should continue to revisit the steps in the process as new information comes into play, updating as needed. In addition, planners may add additional subcomponents to build in steps they find useful. The following sections walk planners through the steps of process design for scenario planning.

Direction Setting

The first component, direction setting, helps orient the process towards specific needs, outcomes, and stakeholder identification. By understanding this component and its steps, an organization will have a solid base for the next two components, approach development and roadmap creation.

Choose the Appropriate Scenario Planning Model

There are two primary models of scenario planning: normative scenario planning and exploratory scenario planning. Both are viable approaches for a planning effort, but each helps to address different challenges that organizations commonly face.

The primary purpose of *normative* scenario planning is to reach a specific target. For example, let's say a planning agency

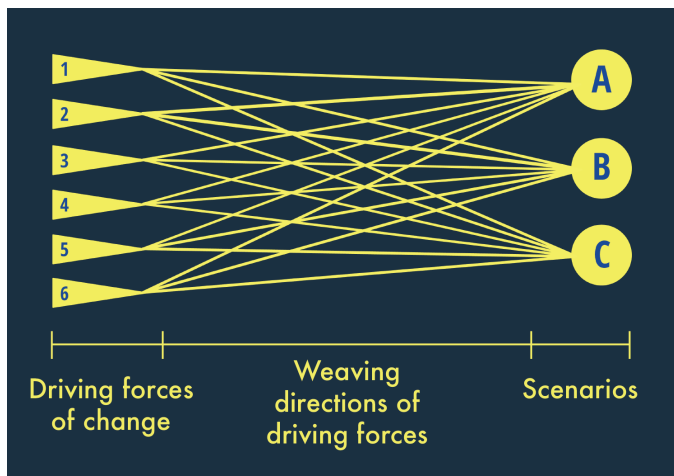


Figure 6. Weaving directions of “driving forces of change” into scenarios. Courtesy Consortium for Scenario Planning/Janae Futrell.

is working on a housing plan. The specific target is adding a certain number of housing units to meet future demand 10 years from now. While the target is clear, there are a number of variables to take into account for *how* the target is reached: geographic dispersement, proximity to public transit and other mobility options, housing types and density, land availability, real estate developer requirements, and others. These variables can be packaged into many different combinations, or *scenarios*, for reaching the target, each with different benefits and concerns.

Ofentimes, scenarios are compared to each other according to how the variables “score” (e.g., a 10-point scale for proximity to public transit, 9 = very high proximity), aiding the evaluation process. Ultimately, a “preferred scenario” (or “preferred alternative”) is identified for the plan, and then steps can be implemented to work towards that scenario.

In contrast, the primary purpose of *exploratory* scenario planning is to navigate uncertainty. For example, let’s say an economic development authority is working on an economic development plan. The local economy has been built around manufacturing and retail for decades, but there are a number of concerns: many of the manufacturing businesses have closed and those remaining have not kept up with the latest technology; existing retail is primarily big-box style and has not adapted to changes in online shopping; and the area has recently experienced more frequent and more damaging flooding, which has affected manufacturing and retail buildings.

In this case, the economic development authority may embark on exploratory scenario planning to first identify all the factors that are causing challenges in the present, as well as those likely to cause challenges in the future — perhaps some they have not even considered yet. Then, they will combine these “driving forces of change” into plausible future end states (Figure 6). These are *scenarios*, or depictions of possible futures, often explained as stories to appeal to a broad audience. There are a variety of approaches to constructing exploratory scenarios, ranging from highly quantitative to qualitative.

Once these exploratory scenarios are clear, viable responses to the scenarios are drafted. Responses can include initiatives, projects, new services, or new policies, and are either *contingent* or *robust* responses (Chakraborty, Kaza, Knaap, and Deal 2011).

Contingent responses are those put in place only under certain circumstances when there is a large amount of uncertainty or unknowns in the situation (e.g., significant sea level rise may be projected, but the actual pace and amount is yet unknown). The planning process establishes “tipping points” or “triggers” to clarify when an unknown is now known, which becomes an alert system of sorts for when contingent responses should move forward (e.g., hitting a threshold of 0.25 inches of sea level rise by a certain date may indicate the pace and future amount to address). The tipping point becomes an indicator of a more significant, and now more certain, future event.

In contrast, *robust* responses work well across all scenarios and can become part of a plan under most any future circumstance. This is because there is little uncertainty surrounding the challenge at hand and general agreement that there is a need for the response. Through exploratory scenario planning, it is acknowledged that the future cannot be predicted, but preparation and proactive action can and should take place.

In addition, there is a third model of scenario planning: *predictive*. Scenario planning is predictive if “the scenarios are designed to depict the most likely future based on data-driven trends and input from actors (forecasting), or if the future outcomes are a direct result of decisions made in an earlier period” (Chakraborty and McMillan 2015). This *PAS Memo* focuses on the normative and exploratory scenario planning models because they are the most commonly applied of the three.

It is important to keep in mind that normative scenario planning and exploratory scenario planning can both be used in the same planning process, depending on the needs of the organization.

Determine the Desired Outcome






What outcome will the organization be counting on after the scenario planning process is complete? In general, scenario planning can pursue three outcomes: education and awareness, strategic direction, and action identification.

A scenario planning process focused on education and awareness seeks to educate staff, stakeholders, and the public to increase their awareness about the various issues at hand and perhaps influence future decision making. Education and awareness also have a strong role to play in consensus building, which may be needed for some planning efforts.

As an example, the Chicago Metropolitan Agency for Planning (CMAP) incorporated a robust public engagement component, including more than 120 workshops and other events, into its ON TO 2050 planning effort for transportation, housing, economic development, environment, and other issues (Figure 7, p. 6).

This had a two-fold objective. First, CMAP wanted to increase the public’s awareness of future challenges in the Chicago region, such as further intensification of climate change

CMAP Alternative Futures Outreach Engagement

-  Academic
-  Non-Profit
-  Architecture/Design
-  Miscellaneous
-  Municipal/Government
-  For-Profit/Corporate
-  LTA/ON TO 2050 Outreach
-  Kiosks

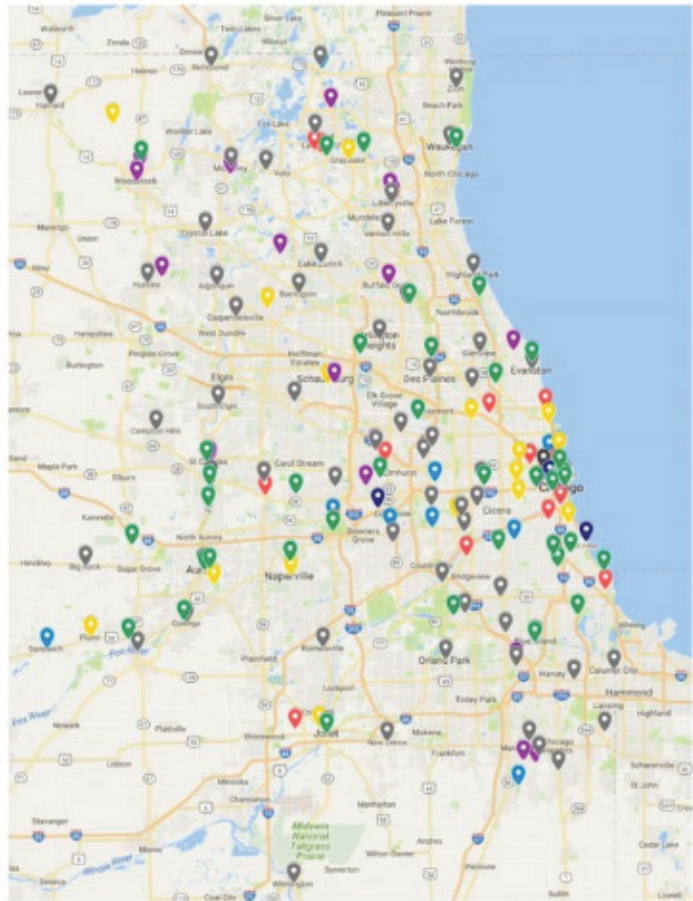


Figure 7. Map of public engagement for the “alternative futures” phase development of CMAP’s ON TO 2050 regional plan. Courtesy CMAP.

impacts and further constraints on public resources, while preparing them for opportunities pertaining to technology and changing regional preferences. Second, CMAP wanted to hear from the public on issues of concern as the region moves towards 2050. A two-way dialogue was designed to give and receive information to influence the exploratory scenario planning process (CMAP 2018).

Another possible outcome is strategic direction. For example, an organization embarking on a new planning effort may need a clear strategy, or set of strategies, to orient the planning effort. Normative scenario planning can help identify the preferred combination of variables that reveal clear strategies to work towards the target. Exploratory scenario planning can help establish various “driving forces of change” and generate a set of strategies to help navigate specific areas of uncertainty.

The third option, action identification, targets decision making and often takes the form of policy and project pinpointing and selection. Through this option, the scenario planning effort directly influences specific, planned actions for operations and implementation. In a normative scenario planning process, the variables that are part of the “preferred

scenario” would inform the concrete actions chosen for implementation. In an exploratory scenario planning process, the contingent and robust responses would provide similar decision-making direction.

A scenario planning process may incorporate more than one type of outcome. Metrolinx, which manages and integrates road and public transportation for the Toronto and Hamilton metro area in Canada, leveraged exploratory scenario planning for its regional transportation plan. As a direct result of scenario planning, Metrolinx came to the conclusion that the organization should widen its emphasis from providing transit infrastructure to include other strategies such as increasing active transportation (i.e., walking and biking), rethinking regional parking (e.g., making transit more attractive), and fostering transit supportive development, incorporating the entire mobility picture — a greater variety of transportation options and supportive policies to enhance their viability (Metrolinx 2018). Metrolinx also evaluated multiple portfolios of transportation projects based on their potential resiliency under various scenarios, influencing their actions in the form of project selection. In this example, Metrolinx oriented its exploratory

scenario planning efforts towards outcomes in both strategic direction and action identification.

List All Relevant Stakeholders

A scenario planning process is a planning effort at its core, and planning efforts have different types of stakeholders. Early on in a scenario planning process, it is critical to identify which individuals and groups should take part at various stages of the project.

First, an organization should define its internal stakeholders, such as project leads, subject matter experts, key departments, management oversight, and others. Then it should identify external stakeholders: other organizations, special interest groups, and members of the general public. This could include, but would not be limited to, individuals and organizations with:

- Joint interests in the scenario planning effort
- Subject matter expertise in a key area
- Decision-making power or influence over the topics of interest
- Potential to be substantially affected by decisions
- Insights or preferences that decision makers need to inform their decisions
- Responsibility in implementing potential decisions

Later steps in the design process offer additional opportunities for identifying stakeholders and determining their roles, and at any point in the design process, new information may reveal that a new stakeholder should be included.

Approach Development

The second component, approach development, helps further detail the process by focusing on key factors and building out stakeholder interaction. An understanding of this component and its steps prepares an organization for the next component, roadmap creation.

List Key Scenario Planning Factors to Consider

A strength of scenario planning is that it allows different topics to be combined in novel ways. However, like all planning efforts, choices must be made about the scope and focus of each effort.

A first step in developing the approach is to draft a preliminary list of key factors. Any normative scenario planning process will have a set of variables to consider determined by the established target, while any exploratory scenario planning process will have a set of “driving forces of change” to consider determined by the areas of uncertainty that need to be navigated. This preliminary list helps to better orient the process and support additional steps in the process design, such as making sure all relevant stakeholders are involved. The list will continue to grow in content and detail once the scenario planning process, aided with the roadmap, gets under way. As a result, the scope and focus may change as new information is gained.

Determine How, When, and Why to Engage Stakeholders

A next step in developing the scenario planning approach is

developing the full list of stakeholders to engage and determining their roles in the process.

When education and awareness is the anticipated outcome, it is critical to identify who to educate and make aware, why their education and awareness is needed, and how they will become more educated and aware.

Building on the earlier exploratory scenario planning example, the economic development authority may decide to hold work sessions with local businesses to help them see how the future might unfold. Their education and awareness are needed because they are the primary decision makers for their businesses, which in turn determine the types of local jobs available. To increase their education and awareness, an interaction approach could include surveys and facilitated sessions, using data collection and storytelling both in person and online.

In addition, the types and points of input should be established. For some stakeholders, more input will be needed than with others. In this example, local businesses may be open to explaining their future plans, and only they could provide such information. As the interaction approach is developed, it is also necessary to identify specific points of input — at what point in the process will they explain their future plans? Once these input types and points are established, it becomes clear what type of information will serve as process inputs and when the information would be gained.

Likewise, for strategic direction and action identification, it is critical to establish which stakeholders are needed and how exactly they will be involved. In addition, it should be made clear which stakeholders are able to influence the strategy and actions and to what degree — establishing the influence level (e.g., low, medium, and high levels). For example, setting an effective strategy may require participation from all stakeholders — from the external organizations with specific subject matter expertise to the local members of the community who know their place the best — but the ultimate decision-making authority for action identification may lie solely with the organization running the process. On the other hand, some organizations may take a more collaborative approach and directly involve other stakeholders in decision making for action identification. In either case, the scenario planning process should be built to clearly indicate who should be involved, how, and when.

It is possible that new stakeholders should be added to the list due to their ability to provide insights into key factors, because of either their topical knowledge or ability to address related challenges — determining the specific role they will play. Once the key factors are well understood, the stakeholder approach should be revisited to ensure all stakeholders related to the key factors are included. Scenario planning processes involve feedback loops; stakeholders can help to better understand key factors or identify new ones in turn.

Roadmap Creation

The third and last component, roadmap creation, further supports organizations in generating a roadmap that is tailored to their specific scenario planning needs. As the culminating

A Summary of Scenario Planning Process Design

Direction Setting

Choose the appropriate scenario planning model(s)

- The primary purpose of normative scenario planning is to reach a specific target.
- The primary purpose of exploratory scenario planning is to navigate uncertainty.
- *Key Resource:* Providing a thorough grounding in the history of scenario planning and the latest developments, “Shaping Places with Scenarios: A New Paradigm for Urban and Regional Planning” will soon be published by the Lincoln Institute of Land Policy (Goodspeed forthcoming).
- *Key Resource:* To support practitioners with case studies and project examples specifically for exploratory scenario planning, the “Exploratory Scenario Planning Policy Focus Report” will be provided by the Sonoran Institute in joint partnership with the Lincoln Institute of Land Policy (Stapleton forthcoming).

Determine the desired outcome(s)

- Scenario planning can be oriented towards three types of outcomes: education and awareness, strategic direction, and action identification.
- An organization can target one, two, or all three outcome types.
- *Key Resource:* To better demonstrate the connection between scenario planning and its impact on plans and practices, the Consortium for Scenario Planning is supporting the research project and report “Do Regional Scenario Efforts Affect Local Plans: An Empirical Analysis.” This resource is in process to be provided in late 2019/early 2020.

List all relevant stakeholders

- Scenario planning process stakeholders should be identified early in the process.
- At any point in the process, new information may reveal that a new stakeholder should be included.

Approach Development

List key scenario planning factors to consider

- Any normative scenario planning process will have a set of variables to consider determined by the established target.
- Any exploratory scenario planning process will have a set of “driving forces of change” to consider determined by the areas of uncertainty that need to be navigated.
- *Key Resource:* “Using Scenarios to Make Urban Plans” is a helpful resource for exploratory scenario planning in particular that provides guidance on generating driving forces, organizing driving forces, connecting driving forces with values, and structuring scenarios (Avin 2007).

Determine how, when, and why to engage stakeholders

- Establishing which stakeholders are able to influence the strategy and actions and the degree to which they are able to influence them is key for a clear decision-making process.
- Because stakeholders can provide insights into key factors through their topical knowledge, help address challenges related to key factors, or both, the stakeholder approach should be revisited once the key factors are well understood.

Roadmap Creation

Select a scenario planning process manager

- A scenario planning process requires a “process manager” to oversee all activities and ensure connectivity between the various moving parts of the effort.

Establish milestones and list associated tasks

- There is a basic set of milestones common to scenario planning processes.
- Each milestone has a series of tasks or efforts associated with it.
- *Key Resource:* “Sketch Tools for Regional Sustainability Scenario Planning” assists practitioners in comparing and contrasting various software tools that perform scenario planning functions (Avin, Cambridge Systematics, and Patnode 2016).
- *Key Resource:* To help planners handle one of many data-related challenges, the Consortium for Scenario Planning’s working groups have been drafting a “Tax Parcels Data for Regional Planning” guidance document. This resource is in process to be provided in late 2019/early 2020.

Inventory resources and identify and address resource gaps

- Identify resources required for each task and milestone along with internal and external available resources.
- Pursue financial support and funding assistance for any resource gaps.
- If procurement is needed, it should be built into the process.
- *Key Resource:* To help clarify various funding options, the Consortium for Scenario Planning’s working groups have been working on a “Scenario Planning Funding Opportunities” guidance document. This resource is in process to be provided in late 2019/early 2020.
- *Key Resource:* To help planners avoid starting from scratch when developing an RFP for scenario planning, the Consortium for Scenario Planning’s working groups are developing libraries of sample scenario planning RFPs and scopes of work for exploratory scenario planning services ranging from workshops to technology roadmaps and long-range plans. Both resources are in process to be provided in late 2019/early 2020.

A Summary of Scenario Planning Process Design (continued)

Draft a full process roadmap aligned with related planning efforts

- Completing all the previous steps enables the development of a full process roadmap to guide the ongoing management of the scenario planning process.
- The steps of the scenario planning process should be aligned with larger related planning efforts.
- The process roadmap should be supported with a detailed budget to ensure all the financial details of the process are clear.

Additional Resources:

- The American Planning Association and the Consortium for Scenario Planning partnered on the creation of the [Scenario Planning KnowledgeBase](#) (American Planning Association 2019), a comprehensive resource that organizes a wide variety of content (e.g., reports, project overviews, books,

and others) for practitioners interested in learning more about specific scenario planning-related topics.

- To help practitioners learn from their planning peers, the Consortium for Scenario Planning provided a [five-part educational webinar series](#) in 2018 (Consortium for Scenario Planning 2018). The video recordings and slides from this series can be used to gain an understanding of how scenario planning has been applied in a range of contexts.
- The Consortium for Scenario Planning's [annual conference](#) is an annual in-person learning opportunity to dive deep into scenario planning (Consortium for Scenario Planning 2019a). Typically held in fall each year, the conference provides sessions on the latest scenario planning work in the urban and rural planning profession and enables networking with those new to scenario planning and those with decades of experience.

component, its steps require an understanding of the first two components, direction setting and approach development.

Select a Scenario Planning Process Manager

All successful projects have solid management behind them, and scenario planning is not an exception. The scenario planning process manager will oversee all activities and ensure connectivity between the various moving parts of the effort.

Establish Milestones and List Associated Tasks

While each scenario planning process is tailored to the specific needs of the organization and the project, there are a few milestones common to all scenario planning processes, each with an associated series of tasks or efforts.

The process manager, working with other stakeholders as needed, should develop and confirm the list of milestones. Then the process manager should draft a list of tasks necessary to reach each milestone. Keep in mind that that some of these measures may get generated iteratively, and milestones may need to be adjusted.

Common normative scenario planning milestones:

- Targets or goals pinpointed
- Variables connected with specific target established
- Evaluation criteria identified
- Multiple scenarios generated
- Preferred scenario selected

Common exploratory scenario planning milestones:

- Driving forces of change pinpointed
- Multiple scenarios, or plausible future end states, generated

- Contingent and robust responses drafted
- Tipping points/triggers for contingent responses established
- Contingent and robust responses finalized

For normative scenario planning in particular, quantitative analysis through data and technology is common, so focused attention should be given to this topic. The more detailed the list of milestones and associated tasks are, the clearer the data and technology requirements will be.

In contrast, exploratory scenario planning is often completed with minimal application of data and technology. Because this model involves pinpointing driving forces of change and generating multiple plausible future end states by weaving together the various ways that driving forces of change may develop, focused attention should be given to this topic. In some cases, exploratory scenario planning benefits from quantitative analysis through data and technology, which can be built into the process as needed.

Inventory Resources and Address Resource Gaps

With the tasks and milestones clear, the next step is to address resources. For each milestone and the associated tasks, the process manager should list required resources. Examples include but are not limited to scenario planning expertise, subject matter expertise, financial support, data, and technology. This list is a valuable internal planning document for the professionals involved.

After drafting the list of required resources, the process manager should inventory available resources. An organization's internal resources could include staff members with scenario planning or subject matter expertise, software tools, relevant datasets, and available financial resources (which can

be used to procure scenario planning consulting services, software for quantitative analysis, or critical datasets).

An organization may also be able to tap external resources. A collaborator or partner organization may be open to sharing various resources at low or no cost, or local college or university students may be able to contribute to the effort. Staff members can teach themselves various aspects of scenario planning or leverage information shared by peers about how they completed their scenario planning processes.

After required resources and available resources have been listed, a gap analysis can be completed to identify required, yet currently unavailable, resources. From there, the process manager can pinpoint options to obtain the necessary resources, beginning with financial resources to help procure missing needs. This includes double-checking funding avail-

ability both internally and externally and identifying grants and funding opportunities.

Internal financial resources may include funds available for an upcoming year, unused funds from other projects that could be repurposed, or funds tied to specific subject matter areas relevant to the scenario planning process. External financial resources may be available from other public organizations on the local, regional, state, or federal levels or from nonprofit partners in the forms of donations, grants, or others.

If the process manager decides that moving into a procurement process will be a part of the scenario planning process, the procurement timeline should be added to the list of milestones and tasks. For instance, the process could have various needs ranging from consultants with scenario planning or specific subject matter expertise, to scenario planning software or critical

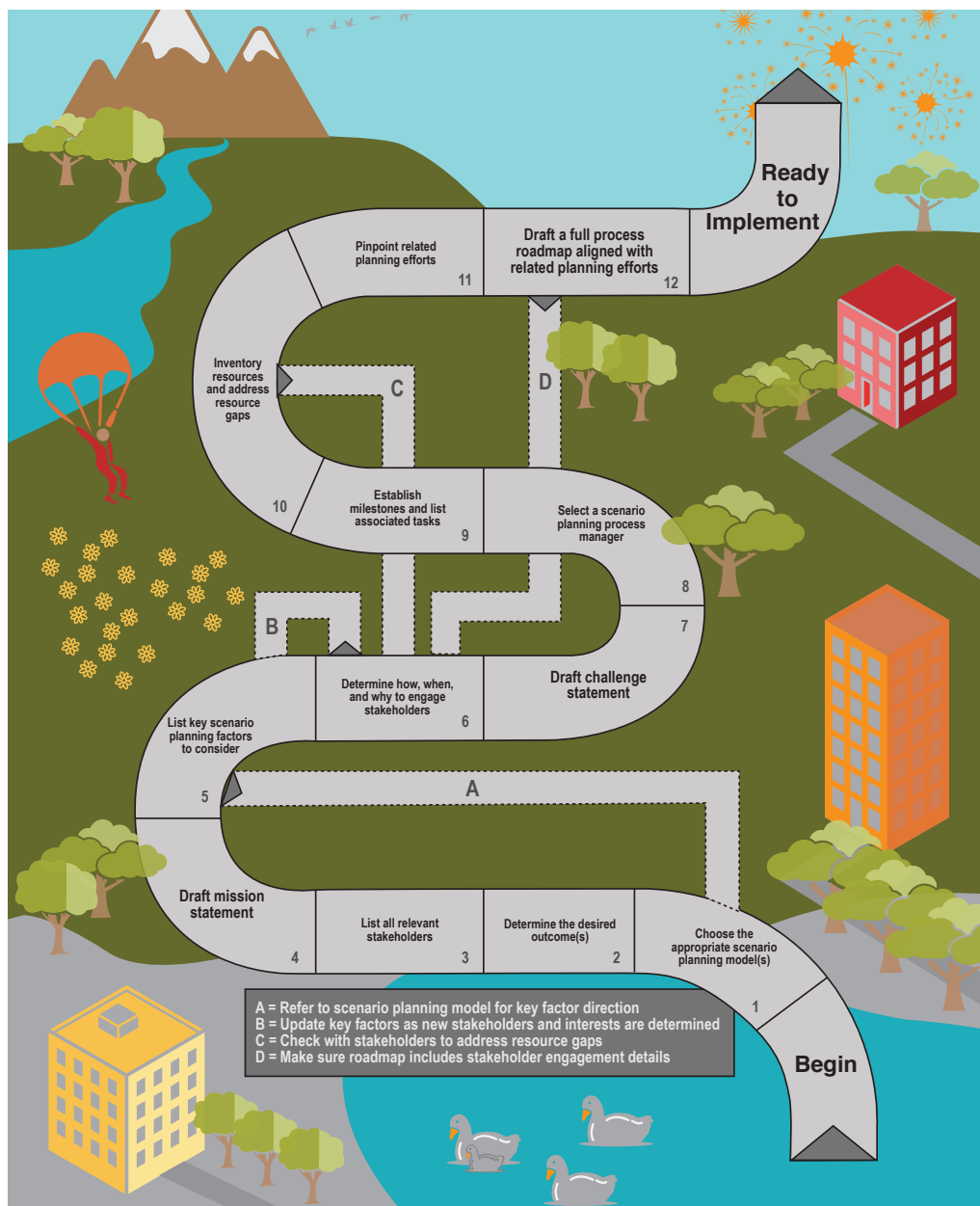


Figure 8. Scenario planning process design path. From the Scenario Planning Process Design Workbook. Illustration by Consortium for Scenario Planning/Janae Futrell.

new datasets. While there are many procurement methods, a common approach is to post a Request for Proposals (RFP).

If an organization finds that the resource gap is too broad, and that financial options are limited, it could work on designing a scenario planning process that is scoped based on its resources. Scenario planning can work on a variety of scales and budgets. In fact, an organization new to scenario planning could benefit from a small effort the first time to learn how the process works before scaling up to a larger future effort.

Draft a Full Process Roadmap Aligned With Related Planning Efforts

Many scenario planning processes are not stand-alone efforts but are undertaken in connection with larger planning efforts. Scenario planning can be linked with urban and rural planning in three primary ways: as a defining concept for plan organization, to generate ideas or insights for more detailed planning work, or as a component within a larger planning process. In these cases, the scenario planning tasks and milestones should be aligned with the timeline of the larger planning effort. From here, a full process roadmap can be drafted.

Typical process roadmap components include the following:

- Tasks/subtasks with titles, descriptions, and dates
- Milestones with titles, descriptions, and dates
- Responsible party listed for each task/subtask
- Firm deadlines and dependencies between tasks and milestones
- Resources needed for each task/subtask

The process roadmap should be supported with a detailed budget to ensure all the financial details of the process are clear.

Designing Your Own Scenario Planning Process

Ready to design your own scenario planning process? Use [this workbook](#) to walk through the steps and critical questions for putting together a scenario planning process based on the specific needs of your project or organization (pp. 13–20).

The workbook orders the components and steps of process design in the likely sequence in which they would occur, and helps you produce a roadmap to help guide your scenario planning process and associated activities.

Conclusion

Designing a scenario planning process involves a series of decisions that result in the final product. This *PAS Memo* clarifies and specifies what some of these decisions are and provides the information that planners need to effectively tailor their own scenario planning process to their nuanced needs.

The *Scenario Planning Process Design Workbook* below offers planners a step-by-step resource that takes learning gained through the text and applies it to key action steps. This helps to demystify how scenario planning works and actively encourages planners to try it for the first time.

By unpacking the wide range of decisions an agency makes to produce scenario planning efforts, this *PAS Memo* invites

planners to think of scenario planning not as a product, but as an achievable process to shape and strengthen their organization's planning efforts.

About the Author

Janae Futrell, AICP, LEED AP, a city planner and architectural designer, is the owner of a consulting business, [Civic Sphere](#). She supported the [Consortium for Scenario Planning](#), an initiative of the Lincoln Institute of Land Policy, from 2017 to 2019 in its strategic direction and operational needs. Prior to these efforts, she worked with the Atlanta Regional Commission, City of Atlanta, John Portman and Associates, and various nonprofits. Her work has also taken her to Haiti, the Netherlands, and the Philippines. Futrell holds a bachelor of business administration, MS in architecture, and MS in urban development and international cooperation. She received an Erasmus Mundus scholarship from the European Commission from 2009 to 2011.

References and Resources

American Planning Association. 2019. "Scenario Planning KnowledgeBase." Available at www.planning.org/knowledgebase/scenarioplanning.

Avin, U., Cambridge Systematics, and P. Patnode. 2016. "Sketch Tools for Regional Sustainability Scenario Planning." Study conducted for American Association of State Highway and Transportation Officials (AASHTO) Standing Committee on Planning. Available at [http://onlinepubs.trb.org/onlinepubs/nchrp/docs/NCHRP08-36\(117\)_FR.pdf](http://onlinepubs.trb.org/onlinepubs/nchrp/docs/NCHRP08-36(117)_FR.pdf).

Avin, Uri. 2007. "Using Scenarios to Make Urban Plans." In *Engaging the future*, edited by Lewis D. Hopkins and Marisa A. Zapata, 103–34. Cambridge, Mass.: Lincoln Institute of Land Policy.

Chakraborty, Arnab, and Andrew McMillan. 2015. "Scenario Planning for Urban Planners: Toward a Practitioner's Guide." *Journal of the American Planning Association* 81(1): 18–29. Available at www.tandfonline.com/doi/full/10.1080/01944363.2015.1038576.

Chakraborty, Arnab, Nikhil Kaza, Gerrit-Jan Knaap, and Brian Deal. 2011. "Robust Plans and Contingent Plans: Scenario Planning for an Uncertain World." *Journal of the American Planning Association* 77(3): 251–66. Available at www.tandfonline.com/doi/full/10.1080/01944363.2011.582394.

Chicago Metropolitan Agency for Planning. 2018. "ON TO 2050." Available at www.cmap.illinois.gov/2050.

Consortium for Scenario Planning. 2018. "Summer Scenarios: Educational Webinar Series." June – August. Available at www.scenarioplanning.io/summer-scenarios.

———. 2019a. "Events and Announcements." Available at www.scenarioplanning.io/events.

———. 2019b. "Resources." Available at www.scenarioplaning.io/resources.

Delaware Valley Regional Planning Commission. 2016. "Greater Philadelphia Future Forces." Available at www.dvrpc.org/reports/16007A.pdf.

Goodspeed, Robert. Forthcoming. "Shaping Places with Scenarios: A New Paradigm for Urban and Regional Planning." Cambridge, Mass.: Lincoln Institute of Land Policy.

Metrolinx. 2018. "2041 Regional Transportation Plan." Available at www.metrolinx.com/en/regionalplanning/rtp.

Mid-America Regional Council (MARC). 2018. "Scenario Analysis & Project Selection." Available at www.marc.org/Transportation/Metropolitan-Transportation-Plan/assets/RTP2050-Scenario-Analysis-and-Project-Selection.aspx.

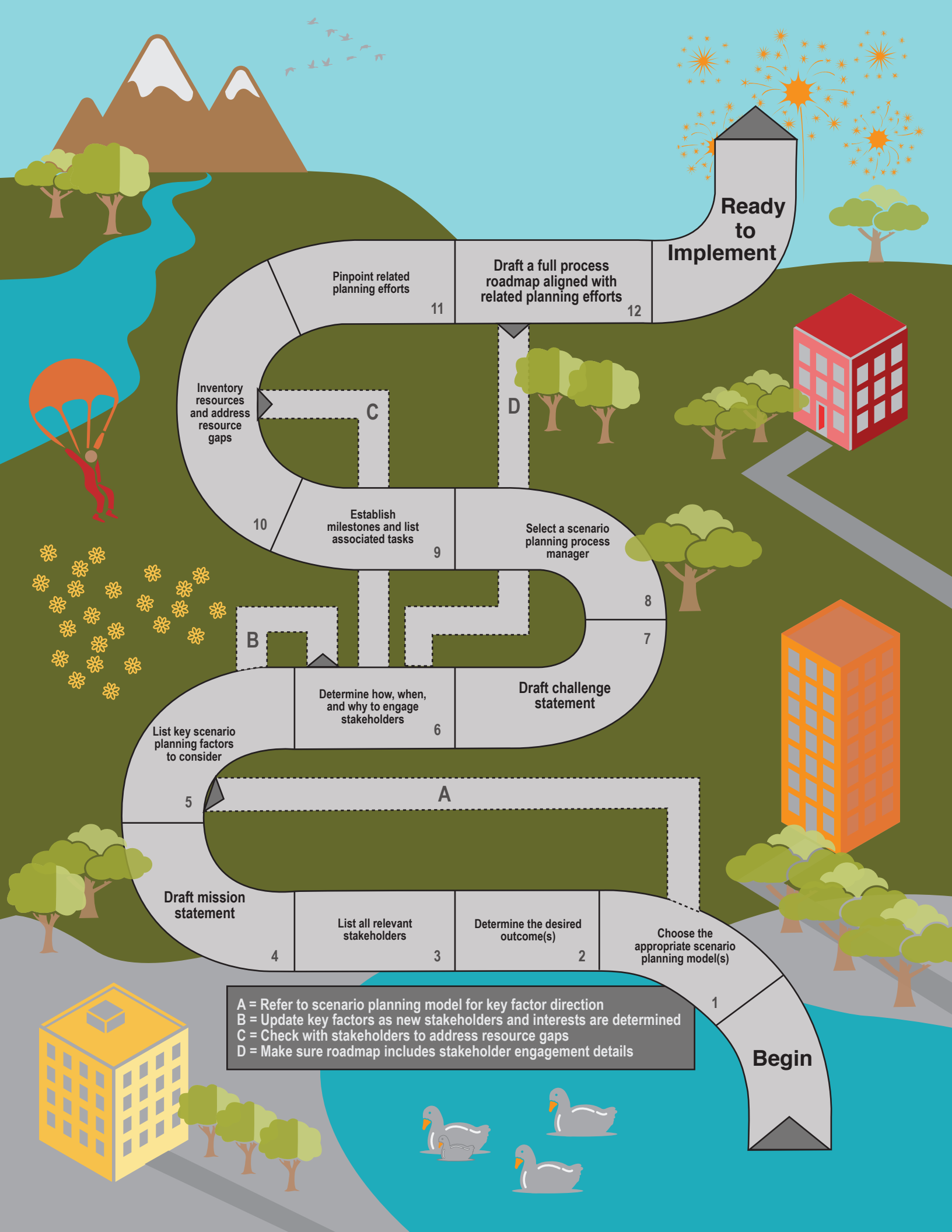
Oregon Department of Transportation. 2013. "Oregon Scenario Planning Guidelines: Resources for Developing and Evaluating Alternative Land Use and Transportation Scenarios." Available at www.oregon.gov/ODOT/Planning/Documents/Oregon-Scenario-Planning-Guidelines.pdf.

Rivarola, Martin. 2019. "Scenario Planning Mission Identification: Setting Your Direction." Presentation, Consortium for Scenario Planning, April 9.

Stapleton, Jeremy. forthcoming. "Exploratory Scenario Planning (XSP): A Planning Tool for Responding and Adapting in Uncertain Times." Edited by Kathleen McCormick. Cambridge, Mass.: Lincoln Institute of Land Policy.

PAS Memo is a bimonthly online publication of APA's Planning Advisory Service. Joel Albizo, FASAE, CAE, Chief Executive Officer; David Rouse, FAICP, Managing Director of Research and Advisory Services; Ann F. Dilemuth, AICP, Editor. Learn more at planning.org/pas.

©2019 American Planning Association and Lincoln Institute of Land Policy. All Rights Reserved. No part of this publication may be reproduced or utilized in any form or by any means without permission in writing from APA or Lincoln. PAS Memo (ISSN 2169-1908) is published by the American Planning Association, which has offices at 205 N. Michigan Ave., Suite 1200, Chicago, IL 60601-5927, and 1030 15th St. NW, Suite 750 West, Washington, DC 20005-1503; planning.org.



Scenario Planning Process Design Workbook Instructions

Use the graphic on the previous page to guide your steps and complete the worksheets as you move along the path. Each step on the path has a number to connect with the worksheets. Refer back to the *PAS Memo* for more details on the topics referenced.

Why is your organization applying scenario planning?

- ☐ Reach a specific target (normative)
- ☐ Navigate uncertainty (exploratory)

1

What is the desired outcome? (select all that apply)

- ☐ Education and awareness
- ☐ Strategic direction
- ☐ Action identification

2

Who should be involved? (select all that apply)

- ☐ Internal stakeholders
- ☐ External stakeholders
- ☐ Special interest groups
- ☐ Members of the general public
- ☐ Other _____

3

Draft the mission statement. (enter the contents from steps 1, 2, and 3, adding notes in margins as needed)

Through this normative / exploratory
scenario planning effort, we will
work with _____ 3
and _____ 3 in order
to accomplish _____ 2
and _____ 2 as we
_____ 1.

4

**What are the key
factors to consider?**

5

**For normative, write a list of the top
5-10 variables to consider.**

**For exploratory, write a list of
the top 5-10 driving forces of
change to consider.**

How should stakeholders be engaged?

6

Use one sheet for each outcome, education and awareness, strategic direction, and action identification, as needed. First, list each stakeholder/stakeholder group along with their interaction approach and influence level. Refer to the *PAS Memo* text, “Approach Development: Determine how, when, and why to engage stakeholders.” Then, list the key factors to consider from step 5. Last, draw lines from the stakeholders to the factors to establish connections between them. Depending on each stakeholder’s role, write “topical knowledge,” “address challenge,” or other descriptions on each line. You’ll quickly see if some of the factors lack stakeholder representation.

Stakeholders	Interaction Approach & Influence Level

Key Factors

Draft the challenge statement.

After detailing stakeholder involvement
and identifying key factors including

_____, _____,

_____, _____,

_____, _____,

_____, and

_____, we have developed our
approach.

7

Who is the process manager?

The process manager is

_____.

8

What milestones will be reached? (list the milestones below, referring to the *PAS Memo*)

9

**What resources are required?
(list resources below in the
correct category)**

10

Required

Currently Available (of required)

Currently Not Available (of required)

**To fill resource gaps, the
following possibilities are worth
looking into: _____,
_____, and
_____.**

**What related planning efforts
should be aligned?
(list key dates and milestones below)**

11

The related
planning effort is

_____.

The best way to link scenario planning with the related
planning effort is: (select one)

- ☐ as a defining concept for plan organization
- ☐ to generate ideas or insights for more detailed planning work
- ☐ as a component within a larger planning process

What roadmap will guide you?

In order to create your own scenario planning process roadmap, follow the instructions below.

12

Mission Statement

(write the contents of step 4 below)

Challenge Statement

(write the contents of step 7 below)

Keep in mind: Your mission and challenge statements help orient the direction and approach of your scenario planning process and serve as a continual reminder of where you are going and why.

Roadmap Elements

In a spreadsheet or the software of your choosing, draft the following:

Tasks, Milestones, and Timing

1. Generate a list of all tasks and subtasks needed to reach each milestone, using step 9 as a reference.
2. Add delivery dates to the tasks and subtasks.
3. Review the content of step 11, and incorporate related planning efforts into the tasks, milestones, and timing.

People and Resources

1. List the responsible party for each task and subtask.
2. List the resources that are not currently available from the content of step 10, devise activities to fill these resource gaps, and include these activities in the tasks, milestones, and timing.

After completing the items above, you should have a draft roadmap to use as you begin implementing your scenario planning process. You may also consider adding dependencies between tasks/milestones. Continue to refine it and consider it a work in progress as new information is discovered.