

Anticipating Alternative Futures: Using Scenarios for Long-Range Planning in Hawaii

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Hawaii's physical isolation and economic dependence on tourism makes it highly sensitive to national and global economic conditions. The recognition that an economic recession in Japan or the North American mainland can result in the loss of thousands of expected tourists—and hundreds or thousands of local jobs—has heightened interest in 'the future' and methods and strategies for forecasting, anticipating, imagining or designing alternative futures for the state, geographic subdivisions, specific industries or particular organizations. In 1970 a major statewide futures conference was held. A variety of initiatives were identified including the establishment of Hawaii Research Center for Future Studies at the University of Hawaii and a State Commission on the Year 2000. Hawaii 2000 also inspired the state judiciary to create a futures studies component in its strategic planning unit. Papers from the conference were published in a book, *Hawaii 2000*.

While interest in 'the future' has remained strong, the impact of 'futures studies' on conventional public planning in the state has not been dramatic. The state plan, county general and development plans and other special area plans rarely anticipate conditions more than ten years in the future. Public planners and legislative officials argue that the future is unknowable and that, in any case, they are overwhelmed by current planning and management problems.

The obvious need for longer range perspectives in planning and the inspiration of the work of the Hawaii Center on Futures Studies led several faculty and students in the Department of Urban and Regional

Planning, University of Hawaii to consider ways we might incorporate multiple futures more explicitly in our planning efforts. Over a period of several years we encouraged several clients to consider taking a longer range perspective and to use scenarios as a tool for anticipating alternative futures for specific geographic areas and organizations. Our purpose was to encourage participants in a planning process—including ourselves—to rethink 'mental models' of the future and how the present is connected to the future. We wanted participants to recognize the possibility of multiple futures, to imagine narratives of change linking current conditions to these future images and to think about positive and negative aspects of future conditions. We also wanted to draw attention to how making-or avoiding-decisions in the present shapes which future emerges. In this paper we outline the uses of scenarios in these projects to anticipate future conditions. We also offer some reflections on the use of scenarios in these and other planning projects.

Incorporating 'Futures' in Planning

Anticipating future conditions is generally regarded as a core responsibility—or at least a key preoccupation—of government and corporate planners (Myers, 2001). We are expected to project population growth, anticipate the future demands for housing, roads, classrooms, water, electricity, parks, health care facilities, security and all the other services and amenities associated with planned urban settlements. Courses on planning methods expose students to some of the tools of projection

and forecasting. Most planning students learn how to do population projections and get at least some exposure to trip generation models in transportation and similar tools for projecting demand for services or resources. Access to large data sets and a variety of models has led some planners to treat anticipating future conditions a technical issue to be addressed by improved models and data. At the same time, some planners are incorporating 'visioning' exercises as part of conventional planning practice (Helling, 1998). However, neither improved technical means of projection nor increased use of community 'visions' has done much to make futures anticipation central to how planners see their work. The professional ambivalence about the future has been well described by Dowell Myers:

"First, the future consequences of planning actions are not knowable with much certainty. The context is often complex, with many interconnected elements, and planning actions such as those regarding land use or major public works often will have consequences many decades ahead. Second, amidst this uncertainty, decisions about the future require gaining agreement among a great many stakeholders, many of whom hold markedly different valuations of key factors, often backed by passionate, vigorously asserted views.

The twin hazards of uncertainty and disagreement form an essential context for planning's ambitions of shaping the future. In practice, planners may retreat to shorter-range decisions with more limited consequences. Or they may resort to public relations devices that may gain agreement in superficial ways. Still another response is to hide behind technical analyses that are not fully shared with the public, neither revealing the true level of uncertainty nor exposing judgments to potential disagreement" (Myers, 2001).

What is missing from contemporary planning is a more politically acute, less technocratic approach to anticipating futures and the planning methods to support such an approach. Among those methods are techniques for envisioning alternative futures (Cole, 2001). There is, of course, a long tradition in planning of envi-

sioning specific normative futures, such as Howard's Garden City (Hall, 1996). Tools for envisioning—science fiction, visioning, and scenario development—offer possibilities for anticipating multiple possible futures. They also offer the opportunity for more inclusive processes for creating alternative futures.

This paper examines one such envisioning method, scenario building, and its application in several planning projects in Hawaii.

Creating Scenarios of Futures

We tend to speak of "the future" as if there is only one possible future. However, as futurist Jim Dator is fond of reminding us, we ought to recognize the multiple possible futures that could unfold out of current trends, cycles, wild card events and the millions of large and small decisions made-or avoided--by corporations, government agencies and individuals.¹

One way to explore a select number of "futures" is to create a variety of scenarios. While the current practice is to use multiple scenarios of alternative futures, the development and promotion of scenarios of one 'preferred future' has a long tradition in planning. Imagining perfect communities is a tradition in philosophy, architecture and planning that stretches back to Plato, but has its fullest expression in the late 19th and early 20th century. Among the urban utopian thinkers, few have been as influential as Ebenezer Howard. Reacting to the poverty, crime, and squalor of Britain's industrial cities, Howard imagined a well designed 'garden city' that would contain the best aspects of the city and the countryside. In *To-morrow: A Peaceful Path to World Reform*, published in 1898 (and republished a few years later as *Garden Cities of Tomorrow*) Howard borrowed heavily from the ideas about the ideal socialist community detailed in *Looking Backward* Edward Bellamy's *Looking Backward* and the industrial villages described in Peter Kropotkin's essays. His ideas about housing, town design, economic base and social relations were a mix of his experience visiting industrial villages, such as Cadbury's Bourneville, wide reading and extensive contacts with other utopian thinkers.

There are other notable examples of imagining a single future by means of a scenario. Herman Kahn's *The Next Hundred Years, An Inquiry into the Human Prospect* by Robert Heilbronner and Alvin Toffler's *The Third Wave* are prominent examples of a detailed image of a single future. Relatively fewer books can be found using multiple scenarios to examine possible or potential futures. Among those that are available *Seven Tomorrows* (1982), *Military Misfortunes* (1990) and *Russia 2010 and What it Means to the World* (1993) are notable.

Scenarios of alternative futures are developed to serve a variety of purposes including decision analysis, crisis management and exploration of impacts of potential technological, economic, societal or environmental changes (Schwartz, 1991). Another use of scenarios—one consistent with planning traditions—is to try to create consensus around a preferred future. Organizational and community planning efforts frequently involve participants in an effort to first examine multiple possible futures and then to create a preferred future. This normative future is then used to stimulate discussion about what organizational or community strategies would help create the preferred future.

Scenarios can also help organizational staff, community residents or others explore the implications of alternative futures. Some of the futures might be based on changes in a single condition. How, for example, might a non-profit social service agency respond to a forecast budget cut of 10%? To a budget cut of 15%? How might services be different? More complex exploratory scenarios can also be developed to examine the implications of multiple factors

such as different rates and patterns of community growth.

How are scenarios constructed? Composing scenarios involves several tasks:

- identifying an organizing question;
- describing the current context for the organization or community;
- identifying "driving forces" that will help shape alternative futures; and
- identifying key uncertainties in the change processes;
- actually composing a future 'story'.

Scenarios can be constructed by individuals working alone, in teams or by workshop participants. This may be done as stand alone activity or part of a larger planning process. The challenge is to create credible stories of a plausible future.

The Hawaii Scenario Projects

All four of the recent Hawaii projects made disciplined use of scenarios in anticipating alternative futures. While scenarios provided the foundation for the analysis, they were developed in somewhat different ways for each project. One was done in close collaboration with workshop participants while the others were developed by specialists and presented to clients. For some projects, each scenario also involved 'back-casting'—the identification of plausible 'stories' of how the scenarios emerged. Some land use scenarios also involved detailed analysis of their implications for public services and facilities.

The Hawaii scenario projects are summarized in Table 1:

Table 1: Summary of Hawaii Scenario Projects

Project	Client	Motivating Question	Planning Horizon	# of Scenarios
Agricultural Lands in Transition: Waialua and Beyond	Dept. of Planning, City and County of Honolulu	What are some potential futures for 34 sq. miles of land scheduled for withdrawal from sugar cultivation? What are the impacts of these alternative futures?	19 years	Six
Hanapepe Community	Office of State Planning	What type of community is Hanapepe likely to become in 20 years? How can residents shape Hanapepe's future?	20 years	Four

Waikiki Transportation	Outrigger Enterprises	What are transportation alternatives for events involving 10,000 participants? An event involving 30,000 participants?	7 years 22 years	Two
Hawaii Summit: A Strategic Plan for Action	Hawaii State Executive Office on Aging	What are preferred futures for Hawaii's elderly? What actions should be taken to create preferred futures?	13 years	Five

Each of these projects is outlined below. For each project, we describe the planning context in which it was prepared and how the scenarios were developed. We also outline the key features of the actual scenarios, and the 'driving forces' on which they were based. We also briefly discuss how the scenarios were used.

Agricultural Lands in Transition:
Waialua and Beyond

Planning Context. Plantation agriculture, once the economic backbone of Hawaii, was in rapid decline in the 1980s and '90s. In 1900, there were just over 57,000 agricultural workers compared to 33,000 workers in other occupations. Agricultural employment peaked in 1930 at over 63,000 employees. High labor costs relative to foreign sources of sugar and pineapple and increasing demand for the use of some agricultural lands for urban expansion led to the closure of one plantation after another. By the early 1990s, agricultural employment accounted for only 13,700 workers.

By 1990, Oahu had two remaining large scale sugar plantations, both of which were scheduled to close. The Ewa area, site of Oahu Sugar, was already the subject of a long-range regional plan for increased urbanization. Waialua Sugar, by contrast, occupied 12,000 acres in the heart of the North Shore. Waialua retained a strong 'country' culture with a history of resistance to urbanization.

The conversion of thousands of acres of agricultural land presented many uncertainties to both corporate managers and government land use planners. As the report put it:

"The decline of the sugar industry will result in a major structural change in land use in Hawaii, along with an array of potential consequences. The ripples will be felt across many dif-

ferent sectors in major regions in the state. For example, over the next several years, thousands of acres of prime agricultural lands and millions of gallons of water may be available for alternative uses. This will require that multiple issues be explored; including the implications that a significant loss of prime agricultural lands, irrigation water, and open space resources would have for such areas as tourism, diversified agriculture, housing, employment and the environment.

One aspect of this situation must be underscored: the impact of large-scale agriculture's decline will involve a crisis of land use, economics, regional (rural or urban) design and cultural transition. In a very real sense, the decline of sugar is also the partial deconstruction of Hawaii's self-image. In one way or another, that image will be reconstructed. In the coming years through whatever new forms the landscape takes on as new uses proliferate. For state and county governments and many of Hawaii's large landowners, this presents a range of problems and opportunities (Atwater, et al 2-1)."

The Scenario Development Process. The client, the director of the City and County's Planning Department, was primarily concerned about alternative uses for the 12,000 acres likely to be withdrawn from plantation agriculture. What alternative uses are possible and likely? What public land use management issues are likely to arise? To what extent will new management tools be required?

Students had about fifteen weeks to grapple with these issues. They visited the site with a representative of the landowner. As in any land use planning effort, they analyzed environmental characteristics of the site, access to infrastructure and services and other plans for the area that had been developed.

Because this planning process occurred at a

time in Hawaii in which an external event, the Gulf War, was having substantial unanticipated negative impacts on the state's visitor industry, the idea of thinking about alternative futures arising from unexpected events as well as current trends appealed to the participants. They considered several possible 'stories' for a twenty year future for the 12,000 acres. From a long list of possible futures, they chose five 'future stories' to develop into scenarios. The five scenarios and their key features are summarized below:

- General Plan Waialua (615 acres of agricultural land absorbed by residential development and 315 housing units added to regional housing inventory)
- Ranchettes Waialua (2,337 acres of agricultural land has been converted to 300 large country lots)
- Agribusiness Waialua (100 acres converted to development of 500 plantation houses with 11,900 acres converted to agricultural use)
- Plantation World Waialua (55 acres have been developed into a commercial theme park)
- Green Waialua (700 acres of agricultural land have been subdivided into 100 small farm lots and 17 acres have been committed to commercial activity)
- Bedroom Waialua (2,490 acres have been converted to urban use and master-planned for 3,130 residential units).

Scenario Use. For each of the scenarios, students calculated possible impacts of the proposed land use changes on supply of agricultural land, population growth, traffic, demand for water, sewage and other urban services. They also analyzed the scenarios in terms of how they affected future agricultural options, regional rural design and fiscal impacts.

Finally, they assessed how well the existing land use management system addresses problems that were identified in the scenario. No attempt was made to identify a preferred scenario. The report was presented to the planning director and circulated among community groups. No formal follow-up was made by the planning director, but community groups in the Waialua area found it useful and requested additional copies.

Hanapepe Community Study

Planning Context. Hanapepe, a small town on the west side of Kauai, had a population of about 1,350 when the study was done in 1991. Most of Kauai's resort facilities and visit attractions are centered around Koloa and Poipu in east Kauai. West Kauai, by contrast, was characterized by sugarcane plantations and coffee and macadamia nut cultivation interspersed with plantation towns and a few larger settlements. Other significant land uses include the Navy's Pacific Missile Range facilities at Barking Sands in Kekaha and light industrial facilities at Hanapepe and Port Allen (Hanapepe Community Study, 8). Hanapepe is considered the gateway to the west side of the island.

While it was primarily a bedroom community for people working on plantations or in Lihue, the county seat and primary urban center, Hanapepe had previously been identified in several plans and proposals as an "underutilized area" that is ripe for development (Hanapepe Community Study, 1). There was, however, little agreement about the types, pace and location of new development in the community. As the study puts it:

"...future development of Hanapepe means different things to different people. Some residents envision a resurgence of community-level commercial businesses centered around a re-vitalized port and industrial uses. Others prefer more recreational and visitor activities in anticipation of capturing some of the economic benefits these can bring. Still others imagine a quiet residential community where people can live and raise their families. Finally, government agencies and private investors may have completely different sets of expectations and propositions for the area. Each alternative has a different path to Hanapepe's future, each with a unique set of outcomes, impacts, costs and benefits."

Much of the report reads like a conventional community planning study. It includes sections on general characteristics of the community, physical environment, socio-economic characteristics, physical and social infrastructure of the

community and a land use sub-section. What sets the report the section on "alternative future scenarios" and "choices."

The Scenario Development Process. Participants in the community study decided early to use a scenario process:

"...we feel strongly that in order to plan for the future of Hanapepe, it is necessary to examine not only historic and existing conditions (as presented in the profile and land use sections), but also to look at emerging trends and issues and anticipate how they may interact and impact the community... One methodology for doing this is to develop and look at a range of alternative future scenarios. Scenarios allow us to imagine the "what ifs" and to trace their possible consequences. They can illustrate some of the opportunities that accompany different developments as well as uncover possible tradeoffs and impacts. They may also foster a critical evaluation of present plans and proposed projects."

The scenario development process:

"...involves four steps: the identification of trends which may impact the organization or community; the articulation of a range of alternative scenarios which could evolve from existing conditions and emerging trends; the creation of a preferred vision of the future which may or may not draw upon those trends and scenarios for components; and the development of a set of strategies to achieve that vision. This report only works toward the first two stages of this process—identification of trends and articulation of a set of alternative scenarios for Hanapepe" (Hanapepe Community Study, 4).

The report identified several regional trends and issues affecting Hanapepe:

- Increasing globalization of the economy and markets;
- Distance of Hawaii from viable markets;
- Decreasing viability of sugar production in Hawaii;
- Questionable feasibility for diversified agriculture;

- Attraction of Kauai as a visitor destination; and
 - Lack of investment capital.
- It also identified key local trends and issues:
- Heavy concentration of land in the hands of a few owners;
 - State owns 30% of land in Hanapepe;
 - Strong sense of agricultural, industrial and commercial history;
 - Inadequate infrastructure;
 - Youth moving out in spite of strong community ties;
 - Economic blight.

Based on these trends, the review of existing conditions and potential futures identified in interviews with residents, four scenarios were developed. The scenarios "are listed roughly in order of population density and are structured around the key spatial sectors of the Hanapepe area identified as having high potential for change in the previous section: the Hanapepe Town area, the Port Allen area and the Salt Pond peninsula." The four scenarios and their key features are summarized below:

- **Tomorrow-Just Like Today** (Town Center is budget travel attraction; few new economic opportunities)
- **Commuter Suburb** (Hanapepe has become bedroom community serving surrounding area)
- **Plantation Tourist Town** (Restoration of sugar mills, hotels, museum/park with some low-rise residential development)
- **Commercial/Industrial Center** (Hanapepe has become a center for small food processing business).

Scenario Use. The primary use of the report was to draw attention to the possibility of multiple futures for the community and how the choices made today will shape future community conditions. As the report puts it:

"One of the most fundamental purposes of planning is to expand choice—about values, goals and objectives and the means to achieve desired ends. In the scenarios section of the report, we developed some images of what could happen given specific trends and issues which are likely to have an impact on Hawaii in general and Hanapepe in particular. While our

scenarios do not represent the entire range of what could happen, nor a statement of what would be ideal for Hanapepe, they do present an opportunity to think systematically about some of the choices facing the community" (Hanapepe Community Study, 57).

The report outlines some of the key big choices facing the community, such as how the future of the community will be decided and by whom. The report also outlined some key next steps for the community, including:

- Gathering more accurate information on Hanapepe;
- Conduct a community survey in Hanapepe and Eleele to elicit more detailed attitudinal data on growth and development;
- Conduct visioning sessions on the future of Hanapepe; and
- Initiate a community based planning process.

Getting from Here to There: Transportation Alternatives for the Hawaii Convention Center and Waikiki

Planning Context. The Honolulu Convention Center (HCC) was constructed at one end of Waikiki in the mid-90s. It was built to provide a venue that could accommodate large national and international conventions-and thus to fill Waikiki hotel rooms in the spring and fall. The HCC houses more than a million square feet of usable space. It was intended to accommodate exhibitions, trade shows and conventions attracting between 2,000 and 14,000 people (HCC, EIS, 1994).

From the earliest planning days of HCC, traffic was viewed as one of the biggest issues. Prior to construction, the main arteries around the site were congested (LOS: E) at peak travel times. Transportation studies done for the EIS indicated that some of the main thoroughfares around the HCC would be "substantially affected" by 10,000 person events at the Convention Center (EIS, 5-9).

Scenario Development Process. This scenario process was designed to provide analysis for decision making about transport to and from Waikiki hotels to the HCC. The planning team

analyzed two scenarios: events attracting 10,000 people and those attracting 30,000 people. For those two types of events, they then estimated the number of those traveling to the HCC on foot and those using vehicles. For each mode of transportation they then identified several types of problems, including access/mobility, efficiency, way-finding, environmental quality and safety. For each problem they then identified possible mitigating measures. The two key scenarios-and a few impacts associated with each--are summarized below:

- 10,000 person event (lack of parking, inadequate bus access to hotels, inconvenient pedestrian access, vehicle and pedestrian conflicts)
- 30,000 person event (overcrowded buses, inadequate parking, traffic congestion, vehicular conflicts at entrance, inadequate pedestrian access).

Use of Scenarios. The scenarios were used to analyze the travel options of people attending a 10,000 person and 30,000 person event at the HCC. For each mode of travel, possible problems were identified as were potential problem mitigation strategies. The analysis was presented at a public workshop. Some of the comments from the workshop were also included in the report. One of the primary findings of the report was that for a 30,000 person event, the Waikiki transportation system cannot accommodate 7,500 additional travelers to the HCC during the morning peak period. The planning team examined several mass transit alternatives before recommending a specific monorail system for Waikiki's future.

Hawaii Aging Summit

Planning Context. Hawaii is the third most rapidly aging state in the nation as the percentage of those over age 65 continues to rise (*Hawaii Summit: Project 2011: 4*).

Between 1990 and 2010, the 60+ age group is projected to grow by 72% to almost 300,000 persons while the 85+ age group will grow 286% to just over 40,000 persons (*Hawaii Summit: Project 2011: 4*). In contrast, total population is projected to grow 29% over the same

period.

Hawaii's population is aging at a time of fiscal stress for state and local government. Several economists have concluded that Hawaii's economic problems are structural rather than cyclical (*Hawaii Summit: Project 2011: 5*). The fiscal challenges faced by Hawaii are compounded by uncertainties about the future of Social Security and other federal programs affecting older Americans.

Much of the responsibility for caring for seniors rests with families. Only 2.6% of Hawaii's elderly live in group homes including nursing homes (*Hawaii Summit: Project 2011: 4*). The rest live alone, with spouses or with other family members. The strength of the family support system will be tested in the next several years. As the report puts it:

Over the next several decades, the task of the younger generation to care for their parents may be more difficult due to the change in ratio between the younger and aging populations. According to Department of Business, Economic Development and Tourism statistics, the ratio between retirees (age 65 and over) and working class adults (age 20 to 64) will increase from 22 to 33 percent between 1995 and 2020. The ratio of older adults 85 and older to their children's generation (age 50 to 64) is projected to increase from 9 percent to 15 percent. In this respect, projections for Hawaii are again more severe than nationwide projections (*Hawaii Summit: Project 2011: 5*).

Many in need of assistance beyond the help of friends, relatives and social agencies will not be able to obtain it given the higher rate of poverty among seniors. Approximately 14 percent of older persons in Hawaii are at or below 125 percent of the poverty level (used to define poor or near poor). The percentage of those in poverty increases with age (*Hawaii Summit: Project 2011: 5*).

Scenario Development Process. Scenarios were developed a part of a large visioning and strategic planning process. The objectives of the project were to:

- develop a Hawaii perspective on aging by expanding participation from the community;

- identify key issues and concerns related to aging in Hawaii; and
- develop and implement strategic actions for addressing the needs of an aging society (*Hawaii Summit: Project 2011: 5*).

The first phase, which began with a conference in June, 1966, brought together government officials, representatives of non-profits and citizens to review data and increase awareness about the state's 'demographic revolution' (*Hawaii Summit: Project 2011: 6*). Following an initial conference, a working group spent four months identifying possible, probably and preferred futures for Hawaii's aging cohort. Five scenarios were synthesized from the group's efforts. The five scenarios included a worst case scenario and four preferred urban and rural visions for Hawaii. The scenarios and their key features are summarized below:

- **Paving over Paradise** (uncontrolled residential expansion, increasing numbers of gated communities, growing economic disparities)
- **Ohana Plus** (revision of regulatory codes allowing for greater residential densities, more family support for elders, multiple housing options)
- **Boomerville 2011** (planned residential communities for elders, multiple housing options)
- **Kaka'ako West** (concentration of elders in high rise condos in mid-Honolulu, development of senior center, easily accessible urban amenities)
- **Aloha Village** (small villages of elders each accommodating 3-30,000 on several islands, village councils)

Scenario Use. Scenarios were presented at a conference in late October, 1996. Organizers used the scenario process for identifying 'core values' to guide the remainder of the process: interdependence and dignity; self-determination, respect for elders, intergenerational connectedness; continued productivity; life long learning; interactive lifestyles; Hawaiian values; appreciation for diversity; ohana (extended family); avoiding a two-tiered society of haves and have-nots. The scenarios and core values were then used to construct a vision statement.

After the conference, three groups were established to develop sets of policies, programs

for three issues: 1) individual and community well-being; 2) economic well-being and security and 3) physical environment. Members of each group were given briefing books on trends regarding the elderly in Hawaii, the scenarios and the core values. Over the next several months, the groups developed recommended initiatives for individuals, non-profits, and government for each of the major issues. The recommendations were presented at a June, 1997 conference.

Conclusions/Observations on the Hawaii Scenario Projects

Based on our experiments with scenarios in planning processes we offer several observations.

1. The relative immediacy of the futures described in the scenarios seemed to make them more engaging to clients and participants.

The shortest range future was thirteen years and the longest was twenty years. A twenty year planning horizon is long for many planning projects, but not for most of those who think of themselves as futurists. The shorter time horizon has some perceived advantages. It made the projects more immediate and plausible to those who participated in the projects. The recognition that conditions described in scenarios might materialize in the lifetimes of project participants made the scenario process more engaging.

2. Some clients found it difficult to look beyond the 'stickiness' of current problems and planning issues.

In each of the projects, clients were uncertain of the value of focusing on what were often seen as 'distant' futures. With the exception of the Waikiki Convention Center project which focused on a relatively short-term future, some clients for the projects were concerned about more immediate planning issues—and the political implications of these issues. Enthusiasm for scenario processes seemed to vary in proportion to how much responsibility and accountability

participants had for addressing current problems. Community residents were often engaged and enthusiastic about scenario processes. Planning directors and other agency officials found the scenarios engaging, but they continually returned to a similar theme: "This is interesting, but how does it help me with current conflicts our agency faces? What do we do about the re-zoning application we face?" Confronted with local opposition to a proposed subdivision, realignment of a highway or other land use or environmental issue, the planning director has little patience for exploring multiple futures unless the connections to current actions can be made explicit. One of the challenges for the advocates of the scenario process is to show how it can be relevant and perhaps even more effective than conventional short-term planning efforts.

3. Participation in scenario-based planning processes did not appear to have a major impact on participants' evaluation of initiatives to create or impede particular futures.

The Convention Center transportation project and the Elderly Summit project were based on what Hirschhorn called 'state' scenarios—scenarios which describe how conditions will be without describing processes leading to these future states (Hirschhorn, 1980). Relatively little detail about how the future conditions described in the reports came about is provided. The scenarios merely describe plausible futures that might occur. The Hanapepe Community Study and the Waiialua study, by contrast, were based more on brief stories that pose alternative futures and describe processes by which they developed. In the Hanapepe scenarios global economic conditions are the implicit background for the economic changes associated with Kauai's tourism industry. Natural events, including a major flood, also figured in one of the scenarios. The Waiialua scenarios were also based on processes of change triggered by local impacts of global economic changes, 'wildcard' events, such as political turmoil in Asia, local political resistance to change, and global demographic changes. In both reports, the details

about change processes make the end states described more persuasive. These process stories also make more obvious how public and private decisions (and indecision) can shape future conditions.

For all their usefulness in getting participants to question assumptions about how change occurs and recognizing the potential for multiple futures, there was little evidence that participation in the processes had a significant impact on participants' evaluation of current actions to shape desirable futures or prevent undesirable ones. Participants in the Waialua process who favored alternative agricultural uses of the area or up-scale development continued to do so. Those participating in the Aging Summit who feared increasing economic disparity in Hawaii continued to emphasize those concerns and policies that might alleviate those disparities. In short, participation in the scenario planning processes did not change current policy priorities very much, if at all.

4. Scenarios work best as a planning tool in situations in which the responsibility for managing change is concentrated.

Some planners and others value the opportunities offered by scenario based processes to explore multiple futures. Finding actions to connect the present with future conditions has proved more complicated. Our experience is that some of that complexity can be reduced by designing processes for a single authoritative decision maker or tight network of decision makers.

Participants in the Waikiki project, for example, could reflect on actions that a transit agency might take to lessen congestion or reduce travel time. That scenario process focused on two alternative transportation futures for a limited geographic area, identified problems associated with each and posed an array of interventions to deal with these problems. Hence, it focused more on describable decisions that a public official, hotel owner or other actor might make to address projected conditions.

The other studies were more 'exploratory'

in Schwartz's terminology. They outlined possible futures and some of the implications of each. In the case of the Waialua study, impacts of each scenario on land use patterns, traffic and other infrastructure were projected. One of the values of such exploratory scenarios is that they allow decision makers, organizational staff or community residents to recognize how contingent future conditions are. They allow participants in a planning process to 'try on' different futures, to anticipate interventions to enhance or mitigate processes shaping future conditions and to imagine additional futures. The futures of Waialua, of Hanapepe, of the aging population in Hawaii are much more complex. They will be shaped by a wide range of actions taken or avoided by multiple governmental agencies and private entrepreneurs.

5. Incorporating scenarios in a planning process can both illuminate futures and clarify current policy options.

These planning projects were a reminder of how useful the disciplined use of scenarios can be in anticipating possible futures and exploring their implications. Our involvement in these projects was also a reminder that 'disciplined use' is a key element. Effective use of scenarios requires an explicit motivating question to design scenarios around, a clear strategy for developing the elements of the 'stories' that are the key component of scenarios and well-designed strategies for involving stakeholders. Scenarios have several strengths. One value is in reminding participants in planning processes that future conditions are not foreordained. Identifying and tracking key trends is an important part of planning (and future studies). Creating scenarios also reminds us that futures will also be shaped by disasters, opportunities, and technological and other changes that are, at best, dimly visible to a select few. But for most planners, identifying imagined futures and creating plausible narratives to connect the present with these futures is only part of the task. Unless we can use scenarios to clarify how current policy choices shape future options and, in some cases, to identify key choices on the horizon the

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Notes

1 <http://www.futures.hawaii.edu/index.html>

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