

Scenario Planning - an Overview

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1. What is scenario planning?

A scenario is “an internally consistent view of what the future might turn out to be – not a forecast, but one possible outcome” (Porter 1985). A process that uses scenarios to assess the future – a “scenario planning” process – utilizes a series of scenarios to gauge possible future conditions. The expectation is that through the process of conceiving, crafting, and evaluating a series of scenarios, an appropriate course of action can be identified.

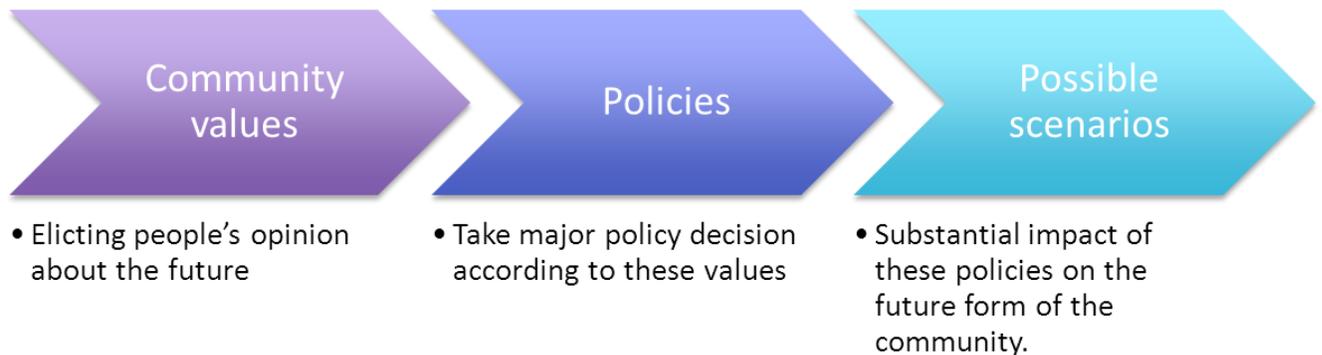
The goal of scenario planning is to provide a comprehensive view of the interrelated pros and cons of potential futures by breaking out of traditional decision-making through an analysis of different possibilities. Scenario Planning is an effective way of specifying and assessing these futures - whether for regional visioning, comprehensive planning, or project site planning (Kwartler and Longo 2008). The scenario approach was extensively used in the context of urban growth in recent planning efforts in the US and Western Europe. For long-range planning, it involves comparing the results of following one alternative scenario to those of following another. This method is an integrated decision support framework that precipitates the linkages between aggregated demographic and

socio-economic datasets, disaggregated environmental and physical datasets, and citizen's desires for their future on a focus area.

In a global context of fast urbanization process, metropolitan areas need to develop planning strategies to ensure a smooth demographic transition help to adapted social and economic policies. Scenario planning is a solution to adapt these long-term strategies to the upcoming challenges: a) uncertainty/changing of conditions (such as climate change for example), b) new policy ideas assessed by their future impact, c) contingency planning for more "resilience".

2. The normative and exploratory approach

Normative scenario planning is used to articulate the values of a community or region by eliciting people's opinions about different possible visions of the future (Hopkins and Zapata). In this type of planning, the scenarios are frequently applied to major policy decisions that could have a substantial impact on the future form of the community, such as funding and locating transportation infrastructure or changing land use regulation.



The **exploratory scenario** planning is used to anticipate the impact that different future conditions may have on values, policies, or goals that have been established or are being considered (Weber 2006). The desired end result of such a process is a set of robust or contingent strategies that policy makers can use to achieve agreed-upon goals under a wide variety of possible but uncertain futures.

Exploratory scenario planning is expected to become more important for developing sustainable approaches to address increasing uncertainty.



3. Institutions and entities using scenario planning

i. City and county users

Scenario planning helps test policies and prioritize strategies. Scenarios can be utilized to demonstrate to stakeholders how key future conditions could impact their community and to consider which approaches may be most robust across a variety of potential future condition. Through the development of interactive tools a participatory approach can be adopted, allowing the city and county users to share their opinion and their values regarding the future of the community.

ii. Metropolitan planning organization users

Many scenario planning tools have been developed to respond to regional growth challenges, and thus are particularly well-suited to planning on a large scale. Metropolitan planning organizations (MPOs) tend to use these tools to encompass a geography beyond individual cities and counties. Examples include regional transportation plans (RTPs), integrated regional land use and transportation plans, regional visioning, and plans to reach GHG reduction targets.

iii. Non-profit, business, community users

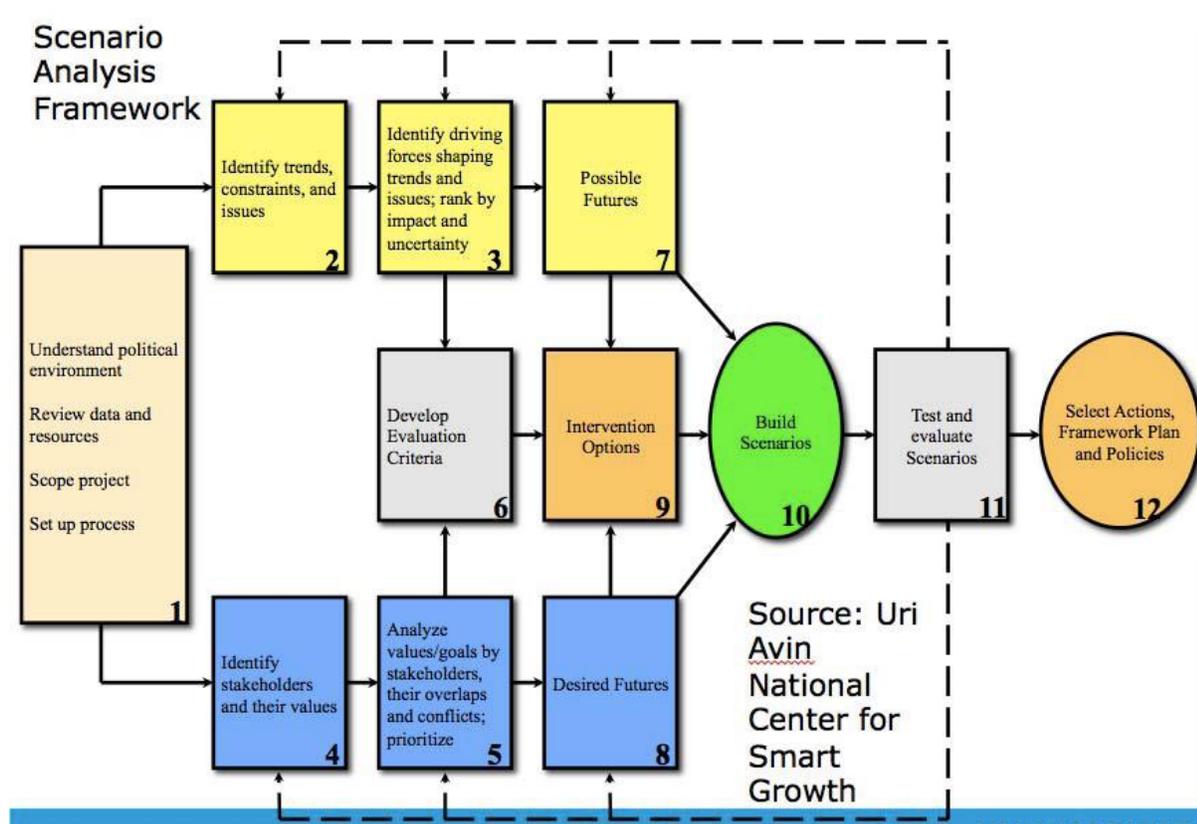
These organizations often use scenarios to advocate for their interests and ensure that their values are represented in decisions that will guide local and regional growth. Many of them also use scenario planning tools to test alternatives and assert their positions within community planning processes.

4. Scenario Planning Methodologies for urban planners (from Gerrit Knapp)

Scenario planning is not typically included in a professional planner's formal education. Gerrit Knapp, professor of Urban Studies and Planning and Executive Director of the National Center for Smart Growth Research and Education at the University of Maryland, explains how a planner should proceed.

Adopting a long-term sustainable metropolitan vision and plan requires a good understanding of the political environment in which it will be settled. Use of computer modeling and public inputs as well as sound judgment and data allows planners to create a detailed and close-to-accurate picture of the future, based on which strategies for the present can be chosen that could put the city/region on a sustainable path. It is also important to update continuously based on new information and changes in assumptions. Long-range planning at the metropolitan region level allows for tremendous efficiencies, much better land use, better coordination between their plans, and less destructive fighting between cities.

To make a scenario analysis, several steps have to be completed by the planner in charge. First of all, a phase of observation and research has to be done: the political environment in which a new planning vision will be adopted and executed has to be fully understood. Then, the available data on the city and the resources have to be collected and compiled in order to scope the project and set up the process in a realistic way. Following this first phase, two paths proceed at the main time. One of them consists in identifying driving forces in the city shaping trends and issues and to rank them by level of impact and uncertainty. In parallel, the values and goals of the stakeholders present in the city and the conflicts and overlaps between them have to be analyzed and prioritized. The evaluation skills of the planner will help him understand, through an analysis, what the possible but also the desired futures of the city are, according to these paths. After incorporating the available data and a range of criteria according to his assumptions, a few scenarios will come up. One is selected, that will orient the actions, the framework Plan and the policies of the city for the next period of time.



Steps to follow in developing sustainable metropolitan scenarios, from a planner’s perspective:

1. Identify areas that should be preserved as open space;
2. Identify major employment areas and areas of employment growth;
3. Identify areas suitable for infill;
4. Identify suitable locations for nodes of mixed-use activity;
5. Identify locations for new infrastructure investments;
6. Allocate growth to infill and redevelopment areas cognizant of infrastructure capacity;
7. Identify Greenfield areas for new development;
8. Develop strategy for infrastructure capacity enhancement and growth

5. Scenario planning computer tools (by the Lincoln Institute of Land Policy)

Scenario planning requires computer-based land use evaluation tools usable at multiple scales, including the site, district, city, and region. They can be applied quickly to illustrate and analyze land use and transportation alternatives based on indicators related to a community’s goals and issues. These tools are a subset of the more general

category called planning support systems (PSS) that includes other methodologies such as econometric and agent-based behavioral modeling (Brail 2008).

The following table is extracted from ‘Opening access to Scenario Planning Tools’:

TABLE 1 Summary of Scenario Planning Tools				
Tool	CommunityViz	Envision Tomorrow	INDEX	I-PLACE³S
Developer	Orton Family Foundation, Middlebury, VT; Placeways, Boulder, CO	Fregonese Associates, Portland, OR (Envision Tomorrow+ to be developed with University of Utah)	Criterion Planners, Portland, OR	Sacramento (CA) Area Council of Governments
Year Developed	2001; 2004–2005	2004	1994	2002
Summary of Approach	Spatial, GIS-based	Spatial, GIS- and Excel-based	Spatial, GIS-based	Spatial, web-based
Scale	Building to regional	Building to regional	Place type to regional	Place type to regional
Open Source Status	Proprietary with open access models	Open source, housed at University of Utah	Proprietary, in transition to open source	Open source
2D Map Visualizations	Yes	Yes	Yes	Yes
3D Visualizations	Yes	No	No	No
Cost	\$500 (Self service support) and \$850 per user (one year support and upgrades)	There is no cost associated with downloading Envision Tomorrow+.	A standard version of Index PlanBuilder costs \$1900.	Contact SACOG
Requirements	Version 4.12, is compatible with ArcGIS 9.2 and up, including 10. Windows XP, Windows Vista, or Windows 7 (with MS .Net Framework 2.0 and DirectX 9.0) is required. A Windows operating system and at least the basic version of ArcGIS Desktop are required.	Requires Windows XP or Vista, MS Office 2000 Pro or greater, and Esri's ArcGIS desktop software 9.3 or greater. The tool supports all ArcGIS license types (ArcView, ArcEditor, and ArcInfo).	Desktop tool requires Windows, MS Office 2000 Pro with Access, and ArcGIS 9.3. Web tool operates on Windows or Linux servers using a PostgreSQL/PostGIS database and a Python-centric application featuring Django, Mapnik, GEO/OGR, ExtJS, OpenLayers, and GeoExt.	Requires an Internet browser, centralized server, a JAVA virtual engine, and access to an Esri ArcGIS application and license, which EcoInteractive maintains. I-PLACE ³ S works with both the integrated 4-step travel model that requires a current Citilabs license, as well as any external travel model.

6. Three key concepts identified by the Lincoln Institute of Land Policy

According to the Lincoln Institute of Land Policy, three concepts are necessary to the development of proper Scenario Planning in the 21st century, as an approach involving communities to decide on the future of their city.

1. Collaboration

Inclusive and authentic dialog augments individual and organizational capacity to engage in collective problem solving (Innes and Booher 2010). Collaboration problem solving

facilitates resolution of interrelated issues that previously seemed too complex for one organization to resolve alone. To this extend, it is recommended to make scenario planning become a collaborative process involving:

- Organization and individuals interested in the use of scenario planning
- Planning forms, universities, non-profit organizations, software developers (tool developers)
- Government agencies, organizations, and individuals using scenario planning and scenario planning tools within public planning process
- Faculty and researchers conducting research to advance SP tools within a university, private consulting form or non-profit organizations.

2. Capacity building

The capacity of organizations and individuals to use scenario planning processes and tools is a function of the knowledge of those involved and the ability of the organization to commit resources to the effort.

3. Creation of an open environment for engagement

Collaboration is now being facilitated by Internet-enabled tools that create open environments for authentic dialogue, changing the model for advancing sciences and policy (Nielsen 2012).

7. Examples of scenario planning at different scales

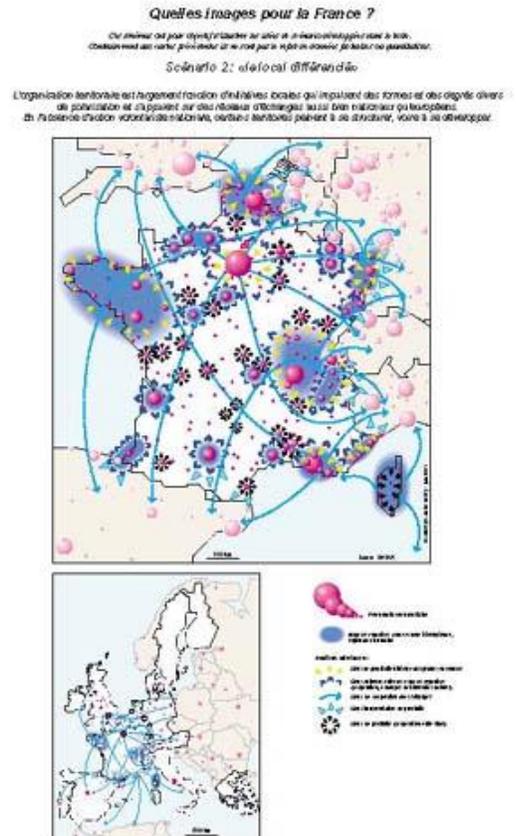
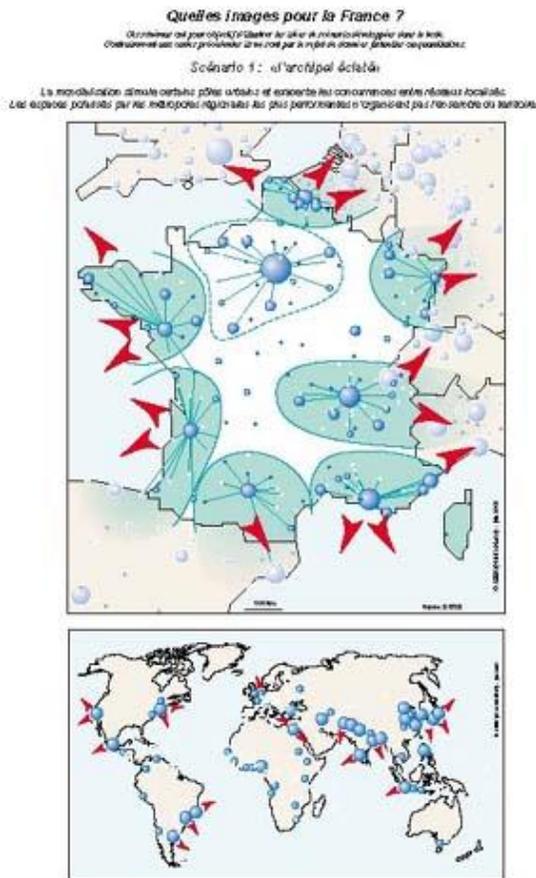
Scenario Planning at a national level: the French DATAR example

In a 2002 publication, the French DATAR (*Délégation interministérielle à l'Aménagement du Territoire et à l'Attractivité Régionale*) proposed four scenarios for France's urban development in 2020. These scenarios highlighted the importance of public action on the territory and showed the implication of policy choices on the organization of the main urban poles.

The four scenarios are the following:

- i. *“L’archipel éclaté” (the fragmented archipelago)*: characterized by internationally competitive cities and marginalized territories. The State's role is to encourage the dynamism of successful cities and afterwards help the territories going through difficulties.
- ii. *“Centralisme rénové” (restored centralism)*: the State is legitimized in his will to conserve a preeminent role in the capital in the name of national solidarity and territorial cohesion. Local policies are strongly framed, but decentralization principles remain valid.

- iii. “*Le local différencié*” (*differentiated local*): creative initiatives and economic and cultural values have multiplied and created a lot of heterogeneous entities linked together through cooperation and thematic projects. The role of the State is to regulate the conflicts between the territories in order to keep a global cohesion.
- iv. “*Le polycentrisme maillé*” (*the polycentric mesh*): tackles on a territorial re-composition and a new definition of public action. On one side, territorial dynamics rely on participative action through projects inside the territories (natural parks, agglomerations...) and on the other side on inventive cooperation between cities and regions. This mesh structuration at a micro-territorial level and the presence of important urban poles at the macro level creates cohesion at a national level that reinforces the French’s territory presence in Europe, who also made the choice of polycentrism.

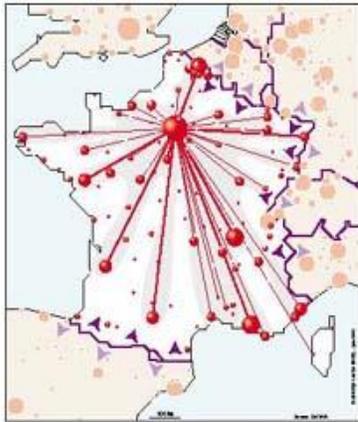


Quelles images pour la France ?

Cet schéma est pour illustrer l'impact de la géographie sur le développement de la France. C'est un schéma de référence qui ne doit pas être pris à la lettre. Il est à compléter par les données disponibles.

Scénario 3 : le centralisme renouveau

La répartition est centralisée : l'Etat assure une régulation centralisée des territoires en excluant fortement l'autonomie des collectivités locales. En conséquence, la sécurité publique s'exerce au profit des territoires en difficulté.

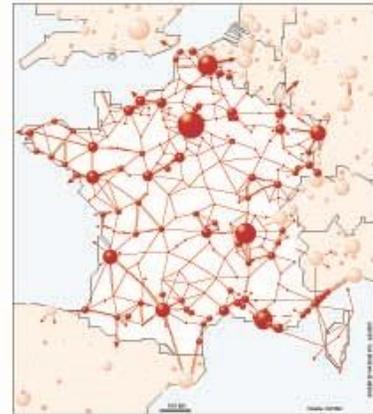


Quelles images pour la France ?

Cet schéma est pour illustrer les idées de scénario décentralisé dans le sud. C'est un schéma de référence qui ne doit pas être pris à la lettre. Il est à compléter par les données disponibles.

Scénario 4 : le polycentrisme maillé

Le développement est structuré par un réseau urbain dont le polycentrisme s'est affirmé à deux échelles territoriales : celle des entités étrangères, cadres de coopération-concurrence entre les villes, et celle des agglomérations et pays, nouvelles unités de gestion des projets locaux.



Scenario Planning at the local scale

1. Portland, Oregon

Under Oregon law, the Portland Metropolitan Region (elected regional government comprising 25 cities and three counties) pioneered in a very long-term planning in the US at regional level with the formulation of the 2040 Growth Concept regional vision in 1995. Since then it is not uncommon anymore to find 2040 and 2050 regional plans that coordinate local planning in the US, such as in Chicago (2040) or San Diego California (2050).

In parallel to the 2040 Growth concept, the city of Portland has just amended (April 2012) the 'Portland Plan', a collaboration of 20 municipal, regional and community agencies and organizations.

Two Key components of the 2040 Growth Concept regional vision

<http://www.oregonmetro.gov/index.cfm/go/by.web/id=29882>

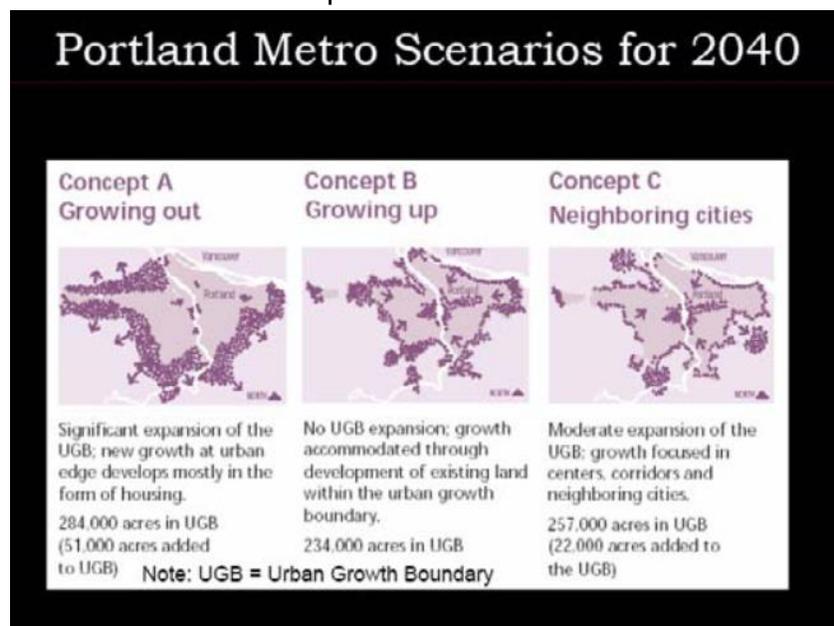
The 2040 Growth Concept in Portland was developed to guide planning in the region over a 50-year horizon and plays a crucial role in complementing the urban growth boundary concept to create dense, walkable and livable cities in the region. It concentrates higher density development along transit corridors while maintaining natural resources and the character of existing neighborhoods.

i. Public involvement

Participatory democracy was a big asset to undertake these changes in Portland. It was an issue that was debated in local elections and people were able to change the way money was spent, and really divert resources into implementing the plan. Public engagement recognizes that people have varying levels of interest in participation. Campaigns and workshops were organized to cater to various levels of interest.

ii. Computer modeling

The innovation of Portland in this domain was harnessing computer modeling to build scenarios as if you were building a model of the future. Three alternatives planning scenarios were developed for Portland:



The concept B, “growing-up” was the one chosen for the 2040 vision, focusing growth in the central city (downtown Portland, Lloyd District, South Waterfront, the Pearl and other nearby areas), in seven designated regional centers, in 27 identified “town centers,” in scores of light rail station communities and along the roads and arterials (“main streets” and “corridors”) served by frequent bus service.

In order to correctly conceptualize the scenarios upstream and to be able to make the most sustainable choice afterwards a list of criteria had to be developed and evaluated by urban planners. In the case of the city of Portland, these were land consumption, air quality, congestion, vehicles miles travel or transit.



Upon the unanimous adoption of the Growth Concept by the Metro Council and a key local government advisory committee, MPAC, many implementation tools were developed including functional plans requiring conformance by local jurisdictions, Urban Reserve designations and Urban Growth Boundary revisions as required by state law. Each implementation tool included continuing public involvement. These efforts were consolidated into the Regional Framework Plan, which was adopted by the Metro Council in December 1997 with national and international media coverage.

The Portland Plan

<http://www.portlandonline.com/portlandplan/>

The Portland Plan is strategic and practical with measurable objectives. With an eye toward the year 2035, it sets short- and long-range goals at the city level. It focuses on a core set of priorities: Prosperity, education, health, equity.

The Portland Plan embraces federal civil rights laws, including the Civil Rights Act (CRA) and the Americans with Disabilities Act (ADA). The Portland Plan is guided by the principles of Title VI of the CRA and Title II of the ADA, which promote fairness and equity in the programs, services and activities of public entities, including the opportunity for participation. Identifying disparities to close the gaps, delivering equitable public services and engaging meaningfully with the community are all critical components of complying with federal civil rights law.

Collectively, the public agencies that operate within Portland spend nearly \$8 billion annually on activities related to prosperity, education, health and equity. To get more from existing budgets, the Portland Plan emphasizes actions that align efforts and investments, have multiple benefits and improve efficiency.

2. Chicago to 2040

<http://www.cmap.illinois.gov/2040/main>

In anticipation of increased population in the region, Chicago's metropolitan planning organization, the Chicago Metropolitan Agency for Planning (CMAP), spearheaded a long-range planning effort: GO TO 2040. The result is a regional plan for the Chicago metropolitan area that "*links transportation, land use, housing, economic growth, the natural environment, and community development with the goals of improving livability and creating sustainable prosperity*" (Institute for Sustainable Communities 2011).

As part of the GO TO 2040 planning process, CMAP was interested in developing a land-based regional scenario to accommodate the 2.8 million new residents expected by 2040. From May to September 2009, CMAP launched the "Invent the Future" initiative to engage the public in developing a preferred future scenario. To encourage interactive engagement CMAP employed an innovative new online technology, MetroQuest.

METRO QUEST GO TO 2040

Chicago Metropolitan Agency for Planning

GO TO 2040
Imagine that...

THE CHICAGO COMMUNITY TRUST
AND AFFILIATES

VISIT 2040
Take a quick tour. Change the future through a couple of choices and spend a little time in 2040! (Best with speakers on) ¿Preferies español? Entra aquí.

INVENT 2040
Get creative. Make choices about the future and see maps and graphs showing what life might be like in 2040. Send feedback on issues you care about and get your friends involved!

COMPARE 2040
Go even deeper. Dig into the GO TO 2040 scenarios and see how they stack up against each other and scenarios you build yourself.

About GO TO 2040
Population in metropolitan Chicago is expected to reach nearly 11 million by 2040. To accommodate 2.8 million new residents, our region has urgent decisions to make in the very near future. GO TO 2040 is the Chicago Metropolitan Agency for Planning (CMAP) campaign to guide development and investment decisions to accommodate our region's growth.

About MetroQuest
Use the tools above to create your own growth scenarios and compare them to others. Experiment with trade-offs regarding transportation, housing, economic development, open space, the environment, and other quality-of-life issues.

www.GOTO2040.org [Disclaimer & Privacy](#)

MetroQuest is an interactive tool that allows users to experiment with different variables such as development patterns, transportation options, and resource policies. Users can experiment with different combinations of preferred variables and immediately view the outcomes. The technology is useful in illustrating the relationship among land use, transportation, and resource decisions through animated maps, graphs, and charts (CMAP 2009). For the Invent the Future scenario development exercise, MetroQuest was used at public meetings, on the web, and in stand-alone kiosks in high traffic locations.

In the scenario exercise, Invent 2040, participants were asked a series of six questions on topics such as development density, development location, road network, transportation policy, and resource policy. Participants would click on their response to each of the questions and would immediately see the implications of their preferences in terms of land-use patterns on a map of metropolitan Chicago, scores on a sliding scale for impacts such as commute time, energy use, and water use, and in summary graphs for items such as government and household costs.

After creating a scenario, participants could look at alternative scenarios and different policies in the Compare 2040 module. Detailed descriptions of three pre-made

scenarios were available to read, and participants could look at each scenario individually and compare across scenarios.

3. *Brussels 2040*

<http://worldlandscapearchitect.com/exhibition-brussels-2040-three-visions-for-a-metropolis/>

Three international teams (51N4E, Studio 012, KCAP) have developed visions for how Brussels will look in 2040 and presented it in an exhibition developed by Lhoas & Lhoas architects. The three teams have produced videos, photos, models, urban master plans to present their visions which hope to provide answers for: What will Brussels be like in 2040 if its demographic growth continues? How will people get around the city if the motor car is no longer a sustainable means of transport? How can we reduce the social divide and avoid a dual city? How can we offer everyone an opportunity to live and work in the city with dignity? How can we coordinate the development of Brussels with its hinterland?

International teams: 51N4E, l'AUC, Bureau Bas Smets (with Mint, Chôros, and Urban Solutions), Studio 012 Bernardo Secchi Paola Viganò, (with CREAT, Egis Mobilité, Technische Universität München – Dept. of Building Climatology & Building Services, IDEA Consult, and Karbon'), KCAP Architects & Planners (with ARUP, Systematica SpA, and ZUS [Zones Urbaines Sensibles])

In this model for example, Studio 012 imagines Brussels without cars, the public transport network becoming an intermediary space within the strategic space of the Regional Express Network.



© Studio 012 Bernardo Secchi Paola Viganò

8. Knowledge Centers and Potential Partners

UN Habitat and the Urban Planning and Design Branch are looking for potential partners to develop a project on scenario planning in developing countries. Below, a few organizations with relevant projects developed during the last years. Developed countries focus is an important criteria for UN Habitat in scenario planning (to evaluate the access to data for example).

- **Western Lands and Communities**

www.ScenarioPlanningTools.org

Western Lands and Communities (WLC) is a partnership of the Lincoln Institute and the Sonoran Institute established in 2003 in the US. It takes a long-term strategic perspective on shaping growth, sustaining cities, protecting resources, and empowering communities in the Intermountain

To address the need of planners to face a dizzying array of visioning tools, a team convened has been working on a way to make these tools more openly accessible on a common clearinghouse website, and open-source as well, to take advantage of ideas and innovations in technology going forward. The thinking was that by better packaging critical information about these tools, planners could make informed decisions about which tools to use and how to use them – a kind of Consumer Reports model for scenario planning software.

Contact: Jim Holway, JHolway@sonoraninstitute.org

- **Hafencity University Hamburg - University Of The Built Environment And Metropolitan Development (HCU)**

<https://www.hcu-hamburg.de/en/>

This university assisted a lot of projects in HafenCity and organized workshops on scenario planning. The education and research at the HCU Hamburg are aimed at contemplating and concretising what the future of metropolitan areas could and should look like. In 2010 they worked on future visions and policy recommendations for the metropolitan region of Hamburg for example and they have a master in urban planning.

Contact: Vice President for Research, Prof. Dr. Gesa Ziemer, gesa.ziemer@hcu-hamburg.de

- **Future Cities Laboratory (FCL)**

<http://www.futurecities.ethz.ch/>

The Future Cities Laboratory (FCL) is a trans-disciplinary research centre focused on urban sustainability in a global frame. It is the first research programme of the Singapore-ETH Centre for Global Environmental Sustainability (SEC). It is home to a community of over 100 PhD, postdoctoral and Professorial

researchers working on diverse themes related to future cities and environmental sustainability. The work of the Future Cities Laboratory takes place through nine research projects, or modules. Each module consists of a team of academics, researchers, practitioners, and PhD candidates, working in collaboration with various governmental agency representatives, and industry partners.

The module 9 is a simulation platform. It aims informing design and decision-making processes with new techniques and approaches to data acquisition, information visualization and simulation for urban sustainability. In urban planning, simulations have become an indispensable method for generating and analyzing design and planning scenarios. The growing importance of simulation for these fields has been stimulated by a rapid growth in the availability of urban-related data. Despite this, most current simulations are capable of capturing and activating only a small fraction of the available data. Addressing this lack is both a matter of generating appropriate computer power to process the vast bodies of data, and accessing the data itself that is often held in hard to access databases. To contemplate possible advanced urban planning techniques that activate live and dynamic data, demonstrates that existing tools, such as GIS, are ill equipped to exploit the analytical and communicative potentials of this growing volume of urban data.

Contact: Prof Kees CHRISTIAANSE, FCL Programme Leader, Module Leader, kc@arch.ethz.ch

- **National Center for Smart Growth**

<http://www.smartgrowth.umd.edu/>

The National Center for Smart Growth Research and Education is a non-partisan center for research and leadership training on smart growth and related land use issues in Maryland, in metropolitan regions around the nation, and in Asia and Europe. The mission of the Center is to bring the diverse resources of the University of Maryland and a network of national experts to bear on issues related to land use and the environment, transportation and public health, housing and community development, and international urban development.

The project Reality Check Plus: Envisioning a Sustainable Maryland explores alternative development scenarios for the state of Maryland and provides estimates of how land development can affect energy consumption and surface water quality. The report is available at:

<http://friendsofmd.org/publications/reports-guides/reality-check-plus-imagine-maryland>

Contact: Executive Director and Professor Gerrit Knaap, gknaap@umd.edu

9. Expertise

- **Fregonese associates**

<http://www.frego.com/>

Fregonese associates are the land-use planning firm that has developed the growth plan of Portland, Oregon. The company works with leaders and their constituents to develop approaches to solving problems, addressing future growth, and always trying to engaging citizens in discussions about what they want for their future. Beside the Portland Metro plan, they developed many projects based on scenario planning. “The Grand Vision” for example, is a citizen-driven land use and transportation study that will provide a framework for the next fifty years of growth and transportation investment in Michigan’s Antrim, Benzie, Kalkaska, Leelanau, Grand Traverse, and Wexford Counties. After the alternative scenarios were developed, almost 12,000 residents in this 200,000 person region responded to a scenario selection survey and conveyed their desired direction for the region. The next step towards implementation of the region’s vision begun in 2009, supported by local, state and federal government agencies.

The project is available at: <http://www.thegrandvision.org/>

Contact: C.J Gabbe, CJ@frego.com

- **ULI (Urban Land Institute)**

<http://www.uli.org/>

www.greenprintfoundation.org

ULI, the Urban Land Institute, is a 501(c) (3) nonprofit research and education organization supported by its members. The Urban Land Institute and the Greenprint Foundation have joined forces to create the ULI Greenprint Center for Building Performance. This dedicated research center will draw on the momentum and resources of the Urban Land Institute and the Greenprint Foundation to accelerate measurement of energy and carbon emission performance of existing buildings. To do so, they use a lot of scenario planning.

Contact: Charles B. Leitner III, Chairman, cleitner@greenprintfoundation.org

- **Criterion planners**

<http://www.crit.com/>

Criterion is an urban and regional planning firm founded in 1979 to focus on the nexus of community planning and sustainability. The firm has since become a leader in planning techniques and tools that help stakeholders create places that are measurably more livable and environmentally responsible. In the past decade alone, Criterion-planned and implemented projects have saved over four billion pounds of global warming emissions from energy efficient growth and

renewables development. They designed the Chicago 2040 Regional Framework Plan, the Baltimore Regional planning Framework, etc. They mainly use INDEX software for scenario planning.

Contact: info@crit.com

- **Placeways**

<http://placeways.com/>

Placeways LLC is a software and services firm specializing in interactive tools for geographic decisions. They are the developers of CommunityViz, which is developed in partnership with the Orton Family Foundation; it is used widely throughout North America and the world for scenario-based land-use planning and 3D visualization. In addition to CommunityViz software and consulting, they offer services in community planning, 3D visualization, and custom software development.

Contact: info@placeways.com

- **Decision commons**

http://decisioncommons.org/Decision_Commons.html

“Decision Commons” is a new approach to integrating off-the-shelf technology that will allow participants to visually explore the economic and environmental implications of policies and alternative futures. It facilitates better land use, real estate development, and infrastructure decisions from the local to the regional level. Decision Commons’ mobile suite of planning and decision support tools could be used in a variety of settings - local government meetings, stakeholder workshops, private or public sector expert analysis sessions – to identify and test solutions to the complex, interrelated challenges of creating sustainable communities.

Contact: Robert Matthews, robm@decisioncommons.org

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