Introduction

Land-use planning is a dynamic, evolving field that emerged out of the convergence of two concerns:

- The provision of urban infrastructure; and
- Social reform through land-use planning.

Today land-use planning has expanded to include the development, implementation and evaluation of a wide range of policies, while at the same time continuing its underlying focus on community well-being. Urban and regional planners, in both developing and developed countries, are specifically concerned with:

- Land use planning and management, especially between rural and urban uses, in coastal zones, among contemporary urban functions, and with regard to urban form;
- Environmental management and risk management in hazard prone areas;
- The design of the municipality/city and harmonization of conflicts with the surrounding region;
- Regional planning, with particular interest in global-local interaction, uneven land-use development, industrial location and regional economic growth;
- The identification of social needs and the design and provision of services and facilities to meet these needs;
- The distribution of benefits and costs of resource allocation and use among people;
- Citizen participation in planning; and
- Decision making processes, policy and program evaluation.

The field of land-use planning is experiencing such fundamental changes that are having a profound impact on the use of computer-based models in planning practice and education. One of these key changes is the dramatically increased availability of powerful and easy-to-use **Geographic Information System(s) (GIS)** software and hardware.

An appropriately designed, funded and staffed GIS is able to present complex relationships in a simple and easily understood scenario. The information products of a GIS are invaluable to the expert and layman alike. With an ever increasing need to automate and streamline information flows within the organization, the role of computers, computer networks and the necessary support to maintain a digital infrastructure is essential.

However, there is a casually quoted statistic that roughly half of all GIS implementations fail. Most failures are related to institutional issues, resistance to change, lack of political support, insufficient funding, and the fact that GIS innovation results in a radical change in information flow within an organization. Most assessments of GIS implementation success have focused on developed countries, where user support for hardware and software, availability of trained GIS

professionals, and access to a reliable power supply are not problems. The considerations relevant for any GIS implementation are compounded by additional circumstances and constraints in developing countries.

Even when a GIS can be well executed from a technical point of view, project design strongly influences the effectiveness of the use of the information products that are generated. The timing of the user needs assessment, training, data collection, pilot phasing, and full project implementation, are critical to gaining institutional support and to ultimate project success. An awareness of land-use data products and analysis capabilities typically needs to be engendered in end-users at the outset so that the use of these products can be maximized fully.

The user needs assessment is a vital component of GIS implementation within a municipality. Thoroughly exploring potential data sources, integrating the GIS with more traditional information management within the municipality, and promoting an understanding of land use information and analysis capabilities early-on are critical to project success.

It is also important to have sufficient political support within the host institution to make the GIS installation a welcome change from the existing system of information management.

In battling with these issues, the GIS Cookbook endeavors to assist municipalities/cities that are determined to use GIS as a tool in CLUP preparation. GIS-based land-use planning tools can be used to more thoughtfully design everything from specific plans to zoning ordinances. They are also useful for eliciting and enjoining public participation not only in land use planning but also in land use decisions and visioning projects. The basic analytical methods of GIS tools include:

- Establishing a benchmark measurement of existing conditions to allow decision makers to see where the problems lie. They can then determine whether a new project will help correct these problems or just make them worse;
- Forecasting what will happen if a municipality continues to grow in the same way, then measuring the impacts – whether positive or negative – of alternative land-use scenarios;
- Comparing several alternative land-use scenarios in order to help select a preferred alternative for adoption and implementation;
- Evaluating policy decisions after they are implemented to ensure that they are meeting the original objectives.

By applying the guidelines found in the GIS Cookbook, the LGU will be able to avoid the major uncertainties usually encountered in setting up the system. The guidelines will also make the CLUP preparation process more transparent and interesting for all stakeholders.

The Guidelines are presented in a web based format on the Internet: www.hlurb.gov.ph. This electronic format will facilitate accessibility of the GIS Cookbook and will give HLURB the opportunity to keep the Guidelines most updated.

The GIS Cookbook succeeds the Mapping Guidelines, found in the previous set of Guidelines, for a municipality that is interested to test GIS as a land-use planning instrument.

The GIS Cookbook is the product of the various series of consultations and workshops held nationwide involving a multidisciplinary cross-section of potential users of the book, ranging from the LGUs, the national government agencies involved in planning, the academe, to those private individuals and institutions involved in the planning profession. The various drafts have gone through these participative sessions after which comments and recommendations have been incorporated wherever applicable and feasible. A condensed write-up of the comments made during these consultative workshops is available for cross-reference.

For the user's convenience, the pages of the document provide appropriate footers on the lower left of the page so they can be referenced with the List of Contents.