

## Information Needs for Regional Planning for Re-use of Real Property Assets

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### ABSTRACT

In March 1993, the White House announced competitive technology reinvestment projects to stimulate the U.S. economy, slowed because of wide-spread national and global factors. A major asset necessary to economic growth is a nation's built infrastructure. Planning for restructuring requires information concerning land resources, transportation and utility systems and buildings. This article discusses the participants in the planning process and how automated technologies for planning information access and development may benefit the planning process.

### Key Words

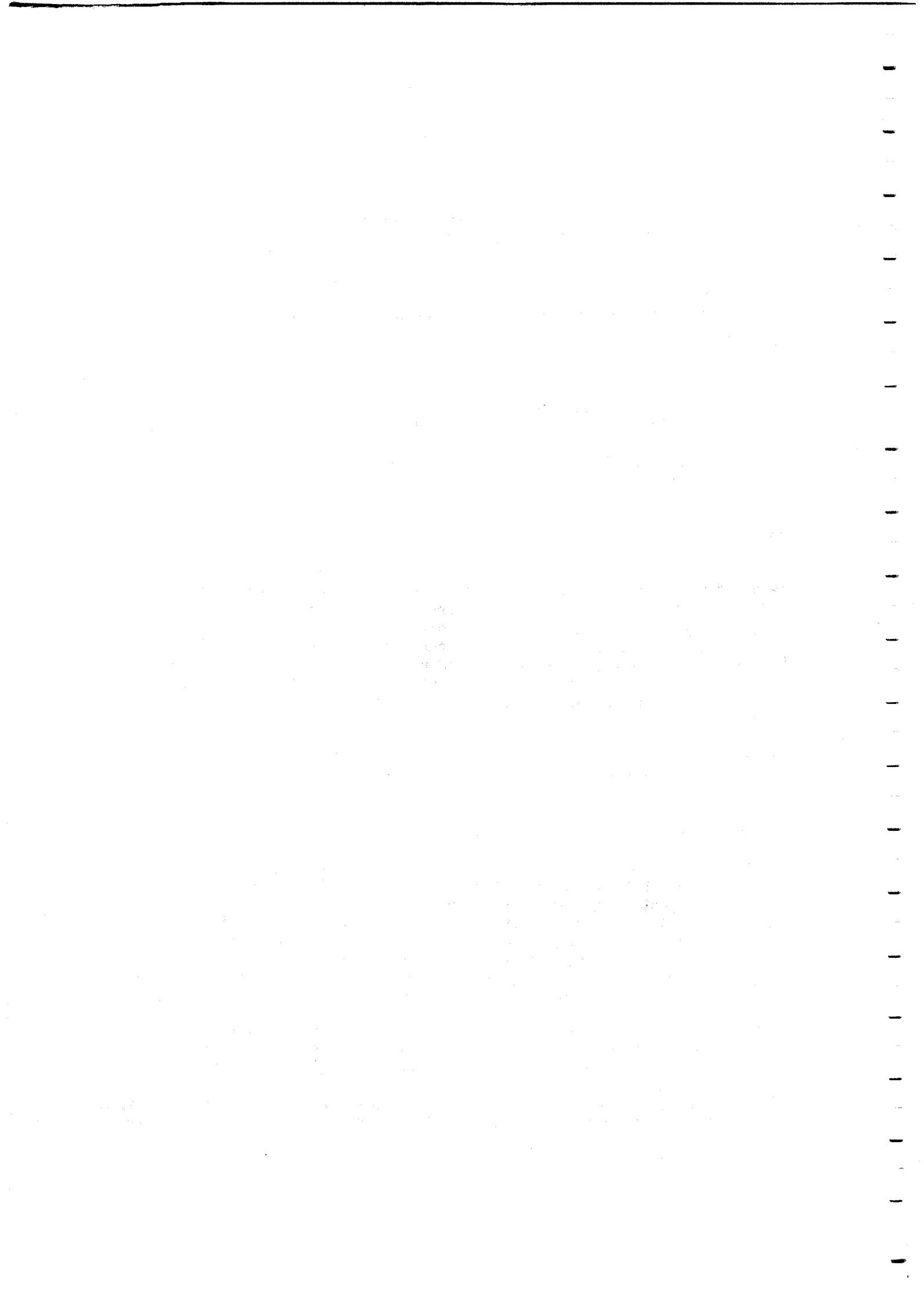
Information Technology, Infrastructure Planning, Group Decision Support Systems

### INTRODUCTION

The developed nations are experiencing economic changes caused by globalization of markets and production. These changes result in vacating industrial plants and commercial properties. Large numbers of small to medium parcels of real property, land and improvements, have become available in many regions throughout the developed world. There are no clear, definitive plans for the most suitable reuses for these available assets. These properties once held high economic value in the local regions; yet now the properties are under-utilized in an economic sense.

Several decades ago, these properties would have been targeted for light industrial or commercial use. Industries using higher cost labor of developed countries are not as competitive in the global marketplace. In general, throughout the developed world, there is an excess capacity of administrative, commercial office space, medical facilities, and some types of commercial and industrial space. Plans for alternative uses of these





available property assets should take into account unique regional characteristics, such as the location and existing labor availability.

Today, environmental constraints and statutes complicate and slow down transfer of real property or conversion of real property to other uses. Environmental clean up actions are extremely costly and perhaps unaffordable. Changing the type of use of the property requires involving many participants and interests in the community, a lengthy and cumbersome, yet important process. Urban and regional planning research organizations and our practicing planners are being asked to find new methodologies for planning in the 21st century. The process needs to be systematized with more efficient and effective ways to involve the many participants in the planning process. It is important to develop effective plans for future reuses, since acquiring, changing or disposing of real property assets is a lengthy and costly process.

### **PLANNING INFORMATION**

Necessary to good planning is the availability of planning information to the planning participants, including baseline real property, natural and cultural resources and socio-economic and demographic data. From this baseline information, using historical trends, planners and decision makers can predict future economic and environmental scenarios for deriving alternative facilities requirements, on which long range real property investment plans are based.

Just as important as the content of the information, the format in which the information is presented to the planning group should be chosen carefully. More useful information formats include graphical and video formats. Group decision support systems based on advanced hypermedia systems would provide useful tools for planning group working sessions. The research into these information management methodologies is addressed in this paper, with explanations of how more convenient access to this information will benefit the overall quality of ideas and decisions throughout the regional planning process.

Real property assets involve many stakeholders:

- owner
- user
- financer
- neighboring jurisdictions
- interests groups and individuals
- businesses

The concerns of these stakeholders should be taken into account in the property actions, and it is best to involve these stakeholders in the planning process, where applicable and/or required by legal statute. Long range planning is a collaborative process among the participants, some of whom may be adversarial to each other in short range planning, i.e., the decisions and negotiations affecting near term actions. Therefore, information technologies which, today, are focused on individual information needs, are expanded to support group work, which takes on two forms: collaborative work, as well as negotiations. Collaborative work involves free and open access to information, with controlled, unified

update access. Negotiations requires individually controlled read access to information, again with controlled, unified update access. A negotiations work system has more powerful information control access than a collaborative, open group information system. Both types of systems need features for controlling the unified updating of the group work product.

Off-the-shelf systems, such as Lotus Notes © (a product of Lotus Development Corporation), offer capabilities for scheduling, managing, and supporting group work. The "publish" and "subscribe" features in the Apple Macintosh operating System 7 also offer group information management capabilities. Specialized systems for managing "hypermedia" are also available off-the-shelf. There are collaborative systems available for brainstorming and voting, using anonymous features to enhance eliciting of information and preferences. It is important to assess these information technologies and develop a group planning methodology which utilizes these tools to benefit the overall efficiency and quality of the planning effort. These tools would be particularly useful for groups making decisions on real property assets available for possible re-uses. These decisions may address long range planning goals or may address near term immediate property actions which affect the participants in the planning and/or negotiation process.

#### **OBJECTIVES OF THE PARTICIPANTS IN THE PLANNING PROCESS**

The participants in the planning process, the owner, user, financier, and other interested parties have differing, conflicting objectives in establishing re-use or transfer of real property. Whether the property involves public or private interests is not so important to the objectives as the role in the property action: owner, user, financier, or other parties. The owner's objective typically is to gain the highest economic value possible for the property use. One objective may be to minimize encroachment of the new property use. The financier's objective is to maximize the security of the property as collateral. The user wishes to minimize the cost for using the property. There can be other participants in the planning process, including agents, such as real estate agents, construction agents, and legal agents. For purposes of simplicity, we treat only these principal players in the process.

#### **MAXIMIZING ECONOMIC VALUE: THE OWNER'S OBJECTIVE**

The owner's objective is to promote, among all acceptable alternative uses, the one giving the highest return for sale or leasing of the real property. In Reddy et al (1992), the authors discuss the owner's use of break even analysis to evaluate the economics of facility investment decisions. Local jurisdiction of the property has authority in determining the type of land use, for example commercial, residential, agricultural, conservation, etc. This determination may or may not be the land use type which gives the U.S. taxpayers the highest selling or leasing price. There are constraints due to critical wildlife habitats, topography and geological aspects, and location factors. The interested parties influence the communities' juridical bodies in their determining the land use zoning. In some cases, however, the owner's objectives are met in that the real property assets are zoned for the highest economic use. Often, this use gives the highest economic vitality to the community.

It is important for the owner to provide other parties access to information regarding the real property assets. See Table 1, Real Property Inventory Information, below, which shows the categories of information useful for describing real property assets. This information can be provided in numeric data formats, maps, legal descriptions and drawings.

**Table 1**  
*Real Property Inventory Information*

Undeveloped Land

Location, size  
Present use  
Development potential  
Natural and cultural resources  
Critical wildlife habitats  
Topology, geology and soils

Transportation Systems

Location  
Dimensions  
System Information  
Roads, rails, airfields  
Capacities  
Planned upgrades

Facilities

Location, size  
Physical condition and age  
Structural design  
HVAC, electrical, telephone  
Architectural  
Functional uses  
Historic aspects

Utility Systems

Location  
Physical condition and age  
Capacity  
Planned upgrades

Along with information on initial costs, operating and maintenance costs information is usually developed or made available. As an example, appraisals of fair market value, historical operating utility and tax costs are typical types of information important to potential buyers or leasers. Information on the presence of toxic, hazardous, or environmentally restricted materials should be included in each of the above categories. These include such materials as lead-based paint, asbestos, fuels and lubricants and others. Natural resource factors imply or constrain certain types of uses, as does the existence of physical built environment. The geographic location and socio-economic environment of the community influence the types of uses, as well. The Geographic Resource Analysis System (GRASS) is an automated geographic information system which is presently used for storing and analyzing information on our U.S. Army land resources; including vegetation, topographic, soil conditions, and cultural resources, such as archaeological sites. An information data base of Army buildings, roads, and utilities is maintained in an alpha-numeric data system, called Integrated Facility System. Some sites have developed CADD databases of the basic information maps, building outlines, roads, utilities. The Army has defined an environmental overlay for the CADD database to maintain information on natural and cultural resources.

These geographic and CADD data bases allow the general public to easily understand the real property configuration, to assess ideas for future development or changes in uses. Combining numeric information with this graphic data, such as the costs for developing alternative capital investment plans along with the drawings of the alternatives on the existing maps, gives the lay persons involved in the planning process a quick and easy way to grasp the important information. Hypermedia systems allow this combining and associative linking, to be able to coordinate data from numeric data bases with CADD and GIS information. See Aley *et al* (1991) where the authors discuss linking sound, video and other data formats for assessing the suitability of siting of buildings in different locations within an urban environment.

#### USER OBJECTIVE

Current major land uses of former military sites in the U.S. have included:

- office/industrial park
- commercial/retail use
- vocational/technical training
- university/college/community college
- recreation
- airport
- civilian housing
- prison/rehabilitation center
- hospital
- retirement community
- agriculture
- undeveloped, conservation

The process whereby a potential user can influence the zoning process varies throughout the country, depending on the local jurisdictions. However, in general, the process is designed to receive input from all the possible interests in the community to assure that a fair, informed decision is made. "Disconnects" sometimes occur within a community where certain types of uses are seen as "inconsistent with the community". The usage may, indeed, be a great benefit to the community; but, because the community has not come together to develop long range plans and goals, limited interest groups dominate or even default in making zoning decisions. In a case like this, the user must show the community both the need to develop community objectives which are broadly based, as well as the benefits of the specific use type. As an example, undeveloped, conservation zoning is viewed by special interests as non-desirable. However, the specific economic benefits of this type of zoning can only be shown in the context of an overall long term regional plan, where joint-use land studies are performed, including economic analysis. See McMahon and Kaiser, "Fort Bragg/Pope Air Force Base Military-Civilian Joint Compatible Land Use Study," 1992.

See Spoonamore and Goettel (1991) where the authors describe group decision support tools for brainstorming and voting. These tools are shown to be effective in group planning sessions to elicit broad, diverse and minority issues and ideas, to assure anonymity of individual preferences and to give immediate group feedback on voting results.

Just as in the discussion above, the real property asset information is important in assessing alternative uses. Beyond that though, the local, regional socio-economic base needs to be available for analysis. The Economic Impact Forecasting System (EIFS) is an analysis tool based on the U.S. Department of Commerce's Bureau of Economic Analysis model, the Regional Input-Output Modelling System (RIMS). Using this tool, which contains Standard Metropolitan Statistical Area (SMSA) socio-economic data from the 1990 census and inter-industry relationships, one can predict the impacts of alternative economic activity within the region and within the nation. These systems could be more fully integrated with geographic information systems, so that one could more quickly, easily view the results of analysis of alternative plans. As an example of the type of simulation tool for the lay person, consider the popular computer game, SIMCITY. With this type of technology, one can readily view the impact of assigning land use to residential, commercial, roads, and other.

The method of analysis for a user making a capital investment decision in leasing or purchasing real property requires analyzing the physical, functional condition of the property, the efficiency of the building or system with respect to function, operation and maintenance. See Reddy *et al* (1992). The authors discuss the use of multi-attribute decision tools in making facility investment decisions.

## **CONCLUSIONS**

Infrastructure investments and real property developments inherently constrain our regional and national economic vitality, because of the long product life and fixed location of real property assets. The global marketplace requires that communities rethink and strategize their market niches and proactively plan for their future. The participants in this process, real property owners and users, as well as other interested parties, need to access the information data bases of infrastructure and land resources, as well as socio-economic models to properly analyze alternative land use plans. Futuristic tools allowing simulation of regional planning will help to involve lay persons in the planning process and invite more innovative ideas for analysis. Communities having unused, surplus or misutilized real property have an opportunity to establish long term objectives and begin specific actions for revitalizing their economic, social and built infrastructure. Planning professionals and researchers can contribute to this challenge, as well. It is recommended that several of the automated tools, such as the group decision support systems and hypermedia systems be tested with planning groups in their re-use planning activities.