

Chapter 9 Computer Systems for Public Participation

Table 9.1 Types of public involvement, according to Vindasius (1974), quoted by Sarjakoski (1999)

Type of public involvement mechanism (Vindasius 1974)	Descriptive dimensions				
	Focus in scope	Focus in specificity	Degree of two-way communications	Level of public activity required	Agency staff time requirements
Informal local contacts	*	***	***	**	**
Mass media (newspapers, radio, TV)	***	*	*	*	*
Publications	***	**	*	*	**
Surveys, questionnaires	**	**	*	**	**
Workshop	*	***	***	***	***
Advisory committees	**	***	***	***	***
Public hearings	**	*	*	***	**
Public meetings	**	*	**	**	**
Public inquiry	***	*	*	**	**
Special task forces	*	***	***	***	***
Gaming simulation	*	***	***	***	***

Legend: * Low, ** Medium, *** High

9.1 Objectives for public participation & different ways of involving citizens

- objectives for public participation
 - to expand public's role, to increase public participation, to enable wider public involvement
- different media can be used to involve people (table 9.1)
- characteristics of public participation process to be efficient
 - community-based, reciprocal, contribution-based, unrestricted, accessible & inexpensive, modifiable

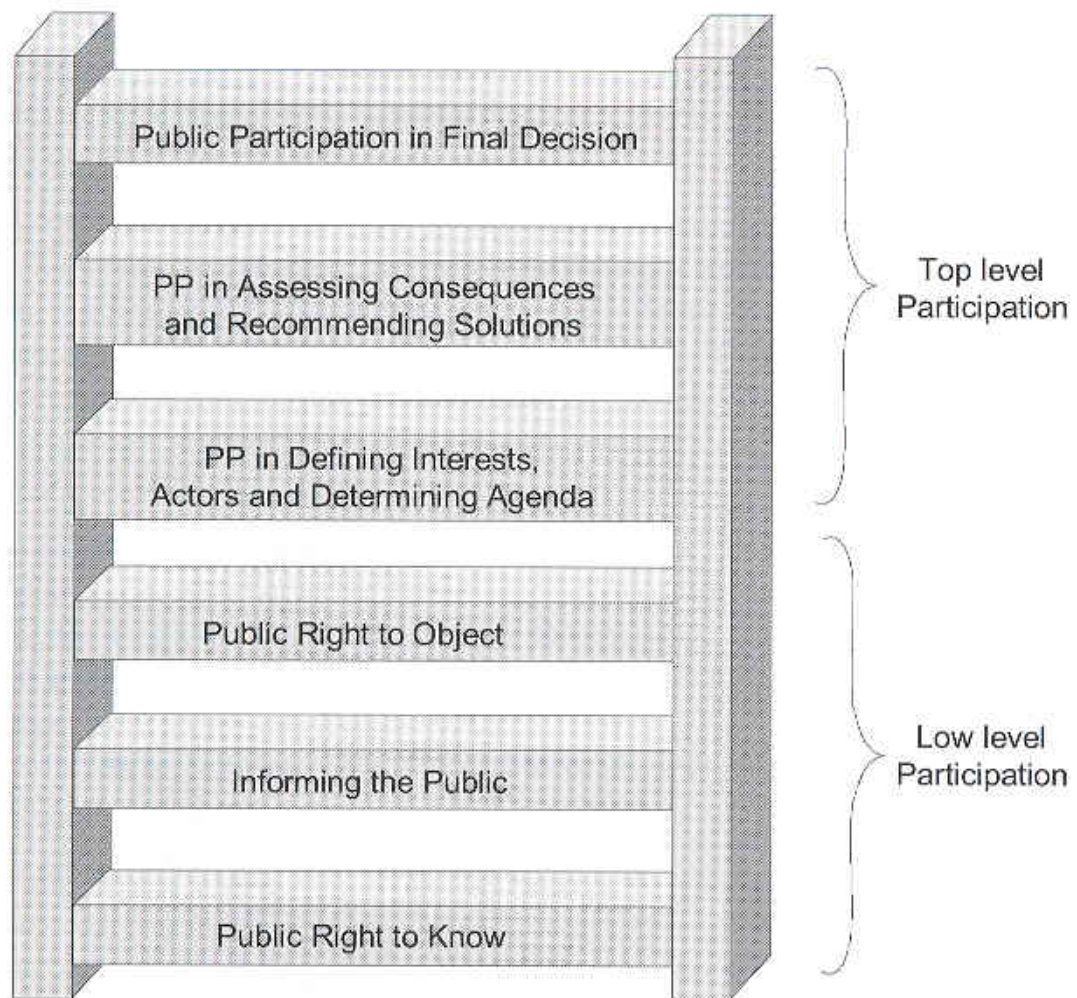


Figure 9.1 The public participation ladder.
According to Kingston (1998a, 1998b) with modifications.

From Arnstein ladder to Kingston ladder

- Arnstein ladder (8 steps)
 - manipulation, therapy, informing, consultation, placation, partnership, power delegation, citizen control
- Kingston ladder

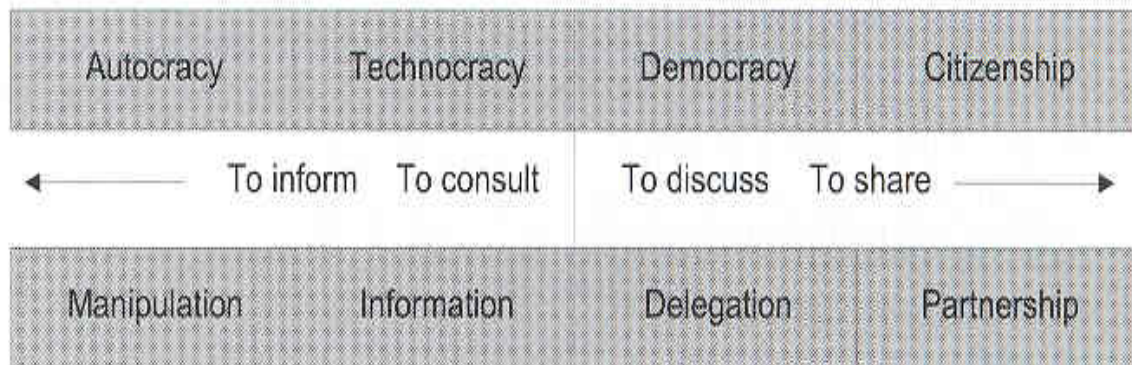


Figure 9.2 Community participation ruler together with the political profile and the proceeding status (Nobre 1999).

Nobre ruler

- another way to present different scales of involving the public
- : 4 main degrees of community participation
- > to inform, to consult, to discuss, to share

Table 9.2 Evolution of the environment for public participation (Brun 1999)

	Past	Present
Context	Growth Nationwide economies Institutional spaces Urbanisation	Cycles growth/recession Globalisation Areas with varied functions Metropolisation
Priorities	Controlled land use	Sustainability
Implementation	Quantitative and normative approaches Sectorial management	Qualitative approaches Global management of complex realities
Participation	Taylorism Institutional participation Formal procedures Restricted access to information	Task integration Negotiated involvement Interactivity Transparency
Information tools	Alphanumeric databases Drawing mock-ups Photo-camera	GIS–CAD Connected databases Multimedia
Information products	Maps Mock-up Photos Text files Calculation files	Raster and vector maps Aerial photos Satellite images Multimedia integration Simulation
Communication assistance	Paper Photos – slides Video	Data servers Internet – Intranet CD ROM

Toward new tools for public participation

- new computer tools must be implemented to facilitate the debate & citizen's involvement

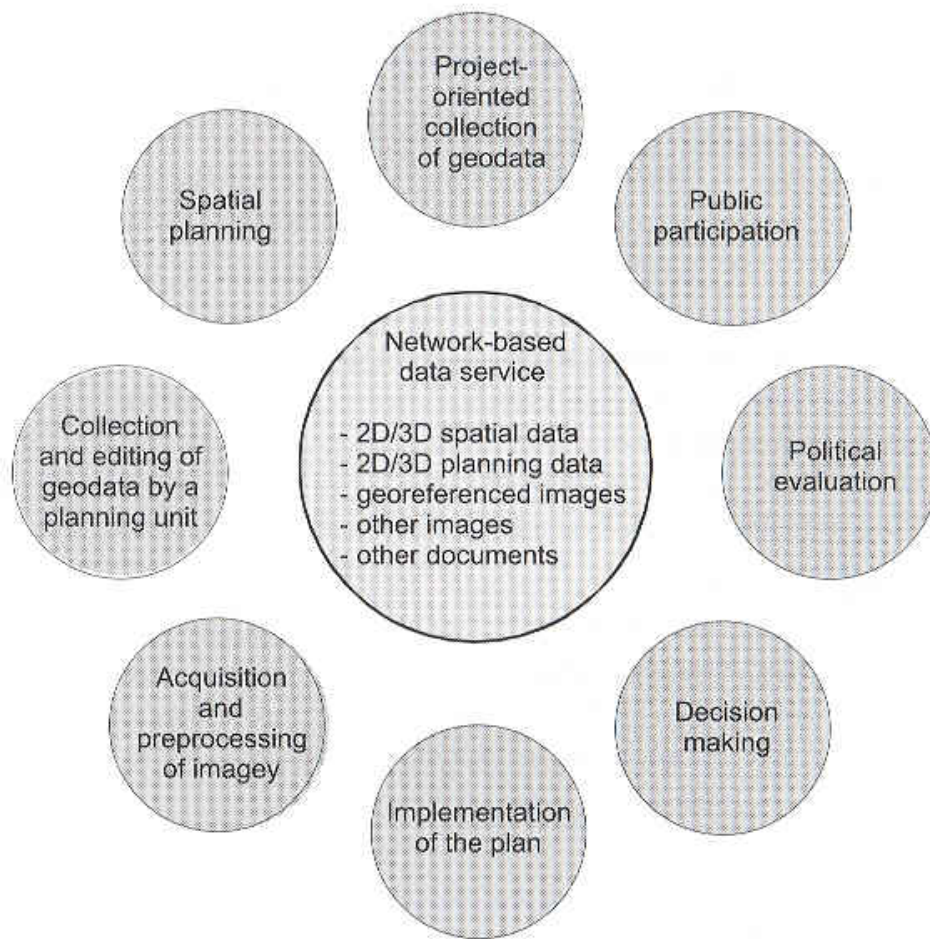


Figure 9.3 Outline of some of the processes related to spatial planning, including public participation (Sarjakoski 1998).

9.2 First specification of an info sys for public participation

Roles & actors

- computer functional architecture for public participation includes network-based data service

Table 9.4 Functional capabilities for PPGIS (adapted from Nyerges *et al.* 1997)

Level 1: Exploration/communication support	Level 2: Enhanced analysis/deliberation support
<p>(1) Group communication: idea generation and collection through anonymous input, exchange and synthesis, identification of common ideas. Tools: data/voice transmission, electronic voting, electronic white boards, discussion groups, computer conferencing, and public computer screens.</p> <p>(2) Information Management: storage, retrieval, and organisation of data. Tools: spatial and attribute database management systems.</p> <p>(3) Graphic Display: spatial and attribute data visualisation. Tools: shared and individual computer displays of maps, charts, tables, images, and diagrams.</p> <p>(4) Spatial Analysis: basic analytical functions Tools: proximity, buffering, overlay, data analysis, data mining.</p>	<p>(5) Process models: descriptive/simulative models of physical and human spatial processes. Tools: GIS-embedded models, specialised models linked to GIS visualisation tools, intelligent agents, expert systems, knowledge bases.</p> <p>(6) Advanced spatial visualisation: virtual realities, multimedia animations. Tools: see Chapter 7.</p> <p>(7) Decision Models: various decision rules integrating individual and group-derived evaluation criteria with alternatives performance data. Tools: Multi-criteria decision support techniques.</p> <p>8) Structured group process: facilitated/structured group interaction, brainstorming. Tools: automated Delphi, nominal group technique, electronic brainstorming.</p>

– PPGIS (public participation GIS)

main characteristics :

- role of participants – innovation/ creation
- diversity of views, managing contradictions inconsistencies
- output dedicated to public
- e-mail, archives, real-time analysis
- handling plan history & alternatives



Figure 9.4 Virtual Workbench <http://www-graphics.stanford.edu/projects/RWB/>.

9.3 Virtual reality for public participation

- several kinds of visualization systems can be used for PP
 - : workbench systems, cave systems



Figure 9.5 Virtual LA produced by William Jepson and colleagues in the Urban Simulation Team.

Source: <http://www.aud.ucla.edu/~bill/UST.html>. Image courtesy of William Jepson, Director UCLA Urban Simulation Laboratory.

– one other possibility is to use non-immersive virtual reality tech

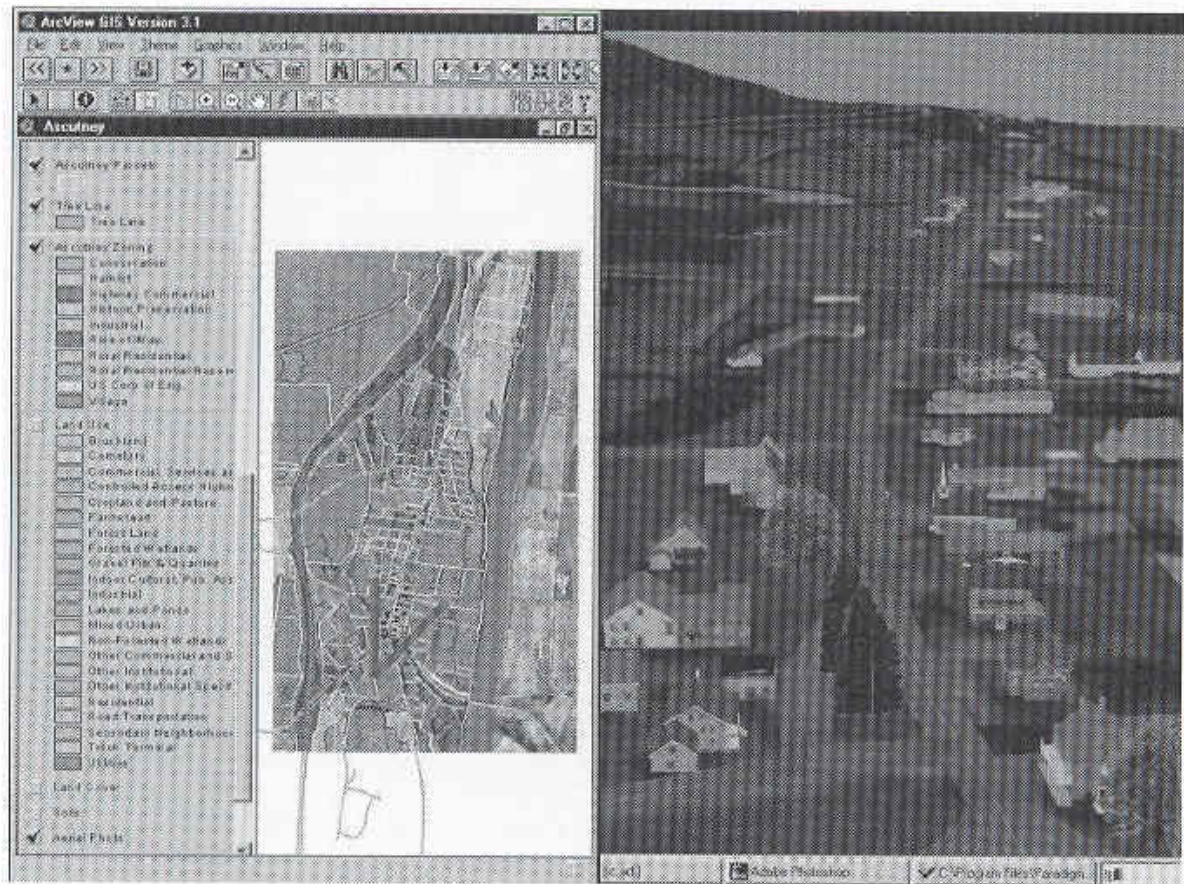


Figure 9.6 Example of project visualisation from CommunityWorks.
 Source: <http://www.simcenter.org/Projects/CPSP/CommunityWorks/communityworks.html>. Published with permission.

- project visualization (Community Works)

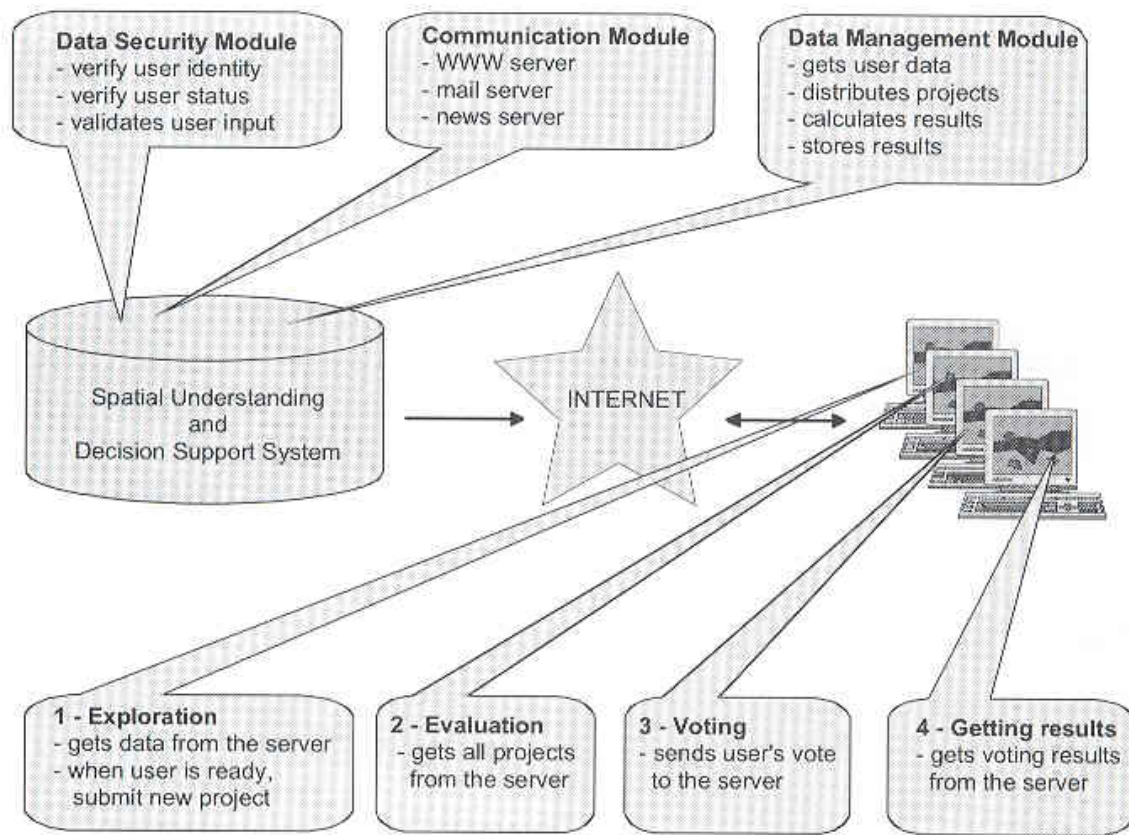


Figure 9.7 Server-client architecture of SUDSS for distributed public participation. From Jankowski 1998. Published with permission.

9.4 Examples of info sys for public participation

Overview of SUDSS capabilities

- GIS enabled PP process involves 3 phases
 - : exploration of data to clarify issues
 - establishing a set of decision objectives
 - evaluation of feasible options of land-use planning
- developing of SUDSS (spatial understanding & decision support system) to allow participation of citizens

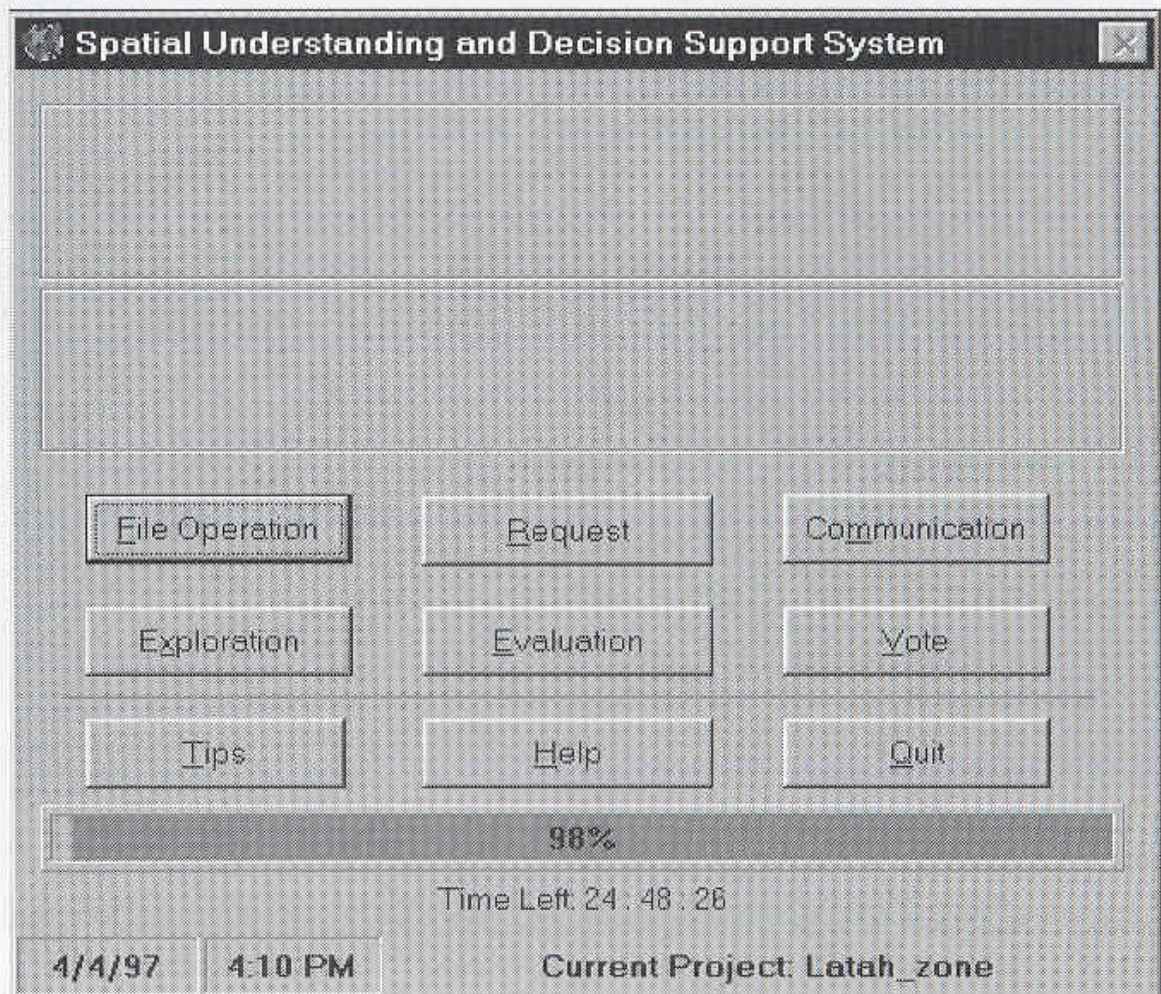


Figure 9.8 Main user interface window of SUDSS with tool buttons.
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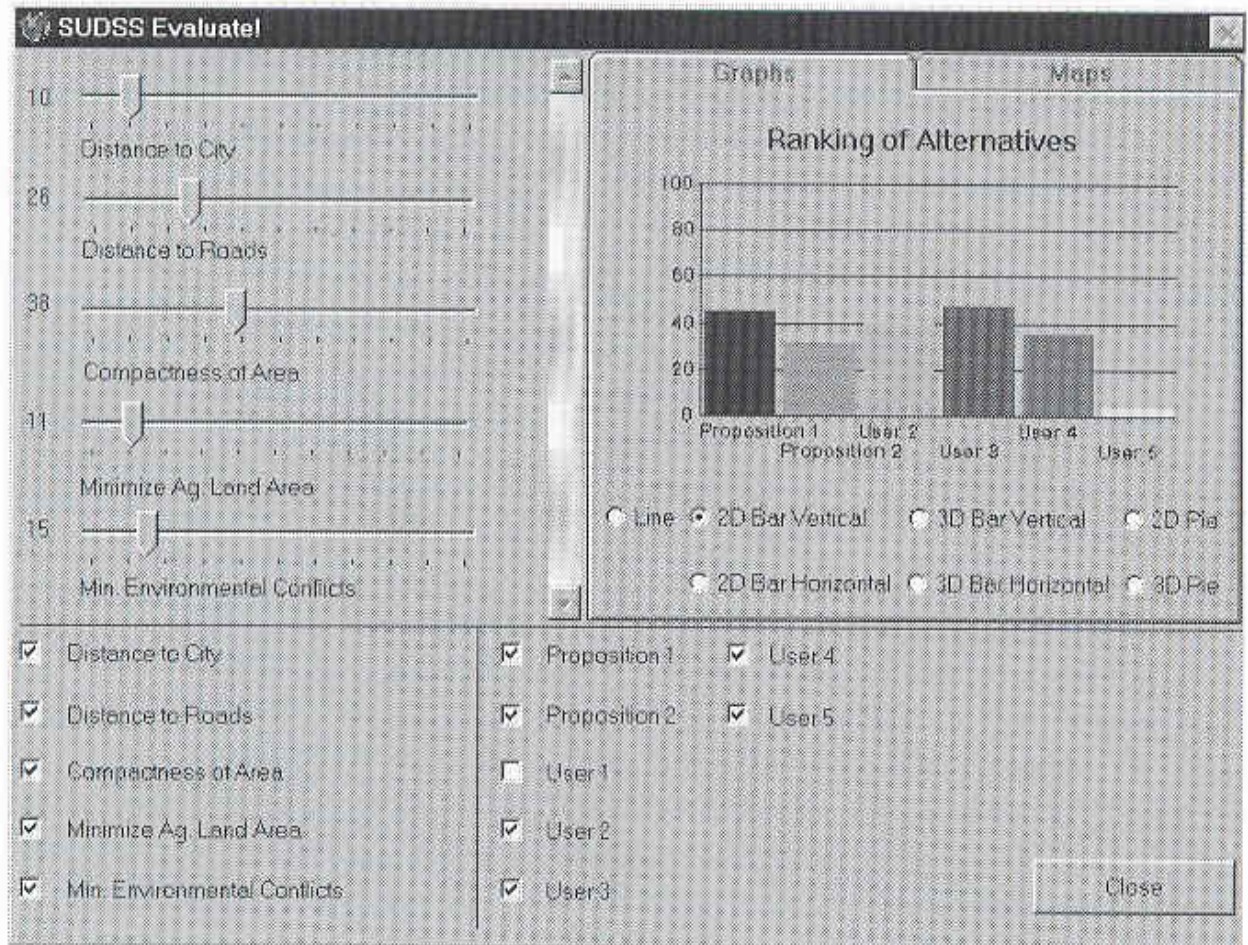


Figure 9.9 Working in the evaluation window the user can select evaluation criteria (lower left), assign criterion weights to the selected evaluation criteria (upper right), select alternative land-use plans for evaluation, (lower right), and view the evaluation results (upper right). The names alternative and proposition are synonymous and represent land-use plans.

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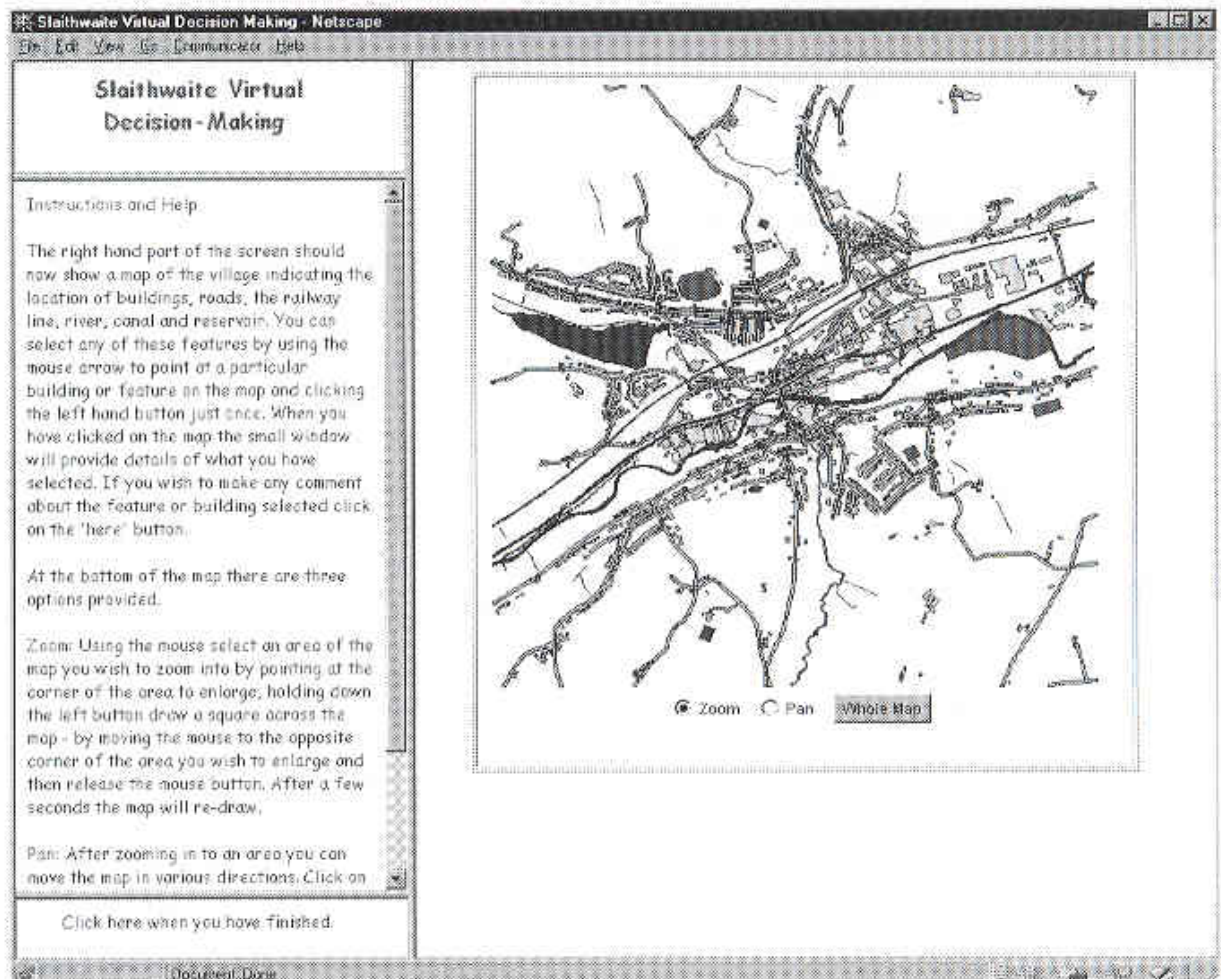


Figure 9.10 Example of virtual decision making in urban planning as a case study at the University of Leeds (Kingston 1998b) <http://www.ccg.leeds.ac.uk/slaithwaite/>.

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Virtual Slaithwaite

- virtual decision making in the village of Slaithwaite
- Virtual Slaithwaite
 - : perform zoom, navigation, query, make suggestions
 - > all user input is stored : community database