

# **The Use of Technology by Planning Agencies in the U.S.: A National Benchmarking Survey**

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## **Abstract**

Most of what planning agencies do has, at its base, a geo-spatial component. The availability of computing power to assist with those geo-spatial tasks has greatly increased, as desktop computers have become cheaper, necessary, and for the most part ubiquitous. What is less clear is *how* agencies are using technology, and the degree to which it assists with day-to-day planning activity. Prior to the research reported here, no national survey has examined planning agency's use of technology, and in this instance in particular, the use of the Internet. This paper reports on the initial results of this national benchmarking survey, which was mailed to every planning agency in the United States in cities with a population of 25,000 or greater (N=1432). The response rate was 35.3%. Overall, planning agencies are clearly comfortable with a baseline of computing technology, and use the internet to communicate with the public. More intensive interactions appear to be lagging, such as transactive or interactive activity. The purpose of this survey is to establish a baseline, or set of benchmarks, of technology and web utilization, that can be consistently re-examined every two to three years.

## **Introduction**

The web has rapidly changed the world of business, but government has consistently lagged behind. In an effort to evaluate the use of on-line technology for government applications, this research examines the use of web technology as the vehicle for local government practice, specifically looking at the field of urban planning. The emergence of web technology has created

tremendous opportunities for improving the role of good government, specifically in the form of increased information, interaction with the public, and more cost effective and efficient means of conducting public transactions.

### **Why Examine Planning and Why Focus locally?**

There is a wide array of government activity on-line. The reason planning was chosen as a focus of analysis was because it can be considered representative of the various forms of interaction that occur between government and its citizens. Planning agencies are a microcosm of the various interactions that may occur in any given public agency, in that they include, in one place, several levels of interaction (identified as informative, interactive and transactive, below). The focus is on local (municipal) planning agencies because they are the unit that often affects people at the “parcel” level, and planning agencies actively seek community input for short and long range planning issues and plans. Critical Planning Theory indicates that improved information should lead to better decisions and planning processes, but that has yet to be proven along digital lines.

### **Citizen Interaction with Local Government**

One way of examining the role of Government as it occurs on-line is to look at the manner in which citizens interact “off-line.” In the case of planning, which is representative of other governmental units, citizens interact in one or more of the following three ways:

#### **1. Information Seeking (informative mode).**

Citizens typically want to know things like: What are the applicable zoning ordinances for my property? What is the plan for growth in my community? When are public hearings

scheduled? How do I file for a permit/variance? With respect to doing this on-line, these kinds of information seeking activities may be called “informative” in that the citizen can find the information online and/or download it, but there is no other interaction other than receiving the information.

## 2. Interactivity and Public Participation (interactive mode).

Citizens want to share their thoughts regarding how things are being done in the community and what is planned in the future. They want to have a voice. Prior to web technology the citizen had limited choices- they could attend a public hearing/meeting, they could visit the planning office in person, they could call the planning office/city manager, or write a letter. For many forms of interaction the web has provided additional options that make interactivity more accessible. Citizens can download permit application forms; they can review plan proposals on line and then comment on them. In some cases there are on-line forums and chat rooms that are open to residents to discuss issues before the community. The new 24-hour availability of these functions makes government more accessible to more people and offers additional communication channels that are intended to improve information availability and better decision-making.

## 3. e-Commerce (transactive mode).

Many of the activities that would have previously required a citizen to visit the local government offices, can now be conducted on-line. Some examples from planning are the purchase of copies of the Comprehensive Plan or Zoning Codes, the filing of permits, variances and appeals, and the paying of associated fees for permit and other applications. The introduction of e-Commerce web activity adds a “transactive” quality to planning web sites, that allows more

efficient and cost-effective transaction by automating the payment and order process.

These three areas represent potentially better government performance across the board by making information more readily available, by increasing opportunities for citizen participation and feedback, and by making purchase transactions available on-line. Accessibility to these functions for those with alternate working hours, physical limitations, or other restrictions would now be available 24 hours a day.

There have not, however, been any studies that systematically evaluate this new approach to local government planning organizations. There is no question that the web has the potential to alter the way community residents interact with their local government. The assumption that it increases performance has yet to be evaluated. Further, the quality and content of planning web sites would seem to be a determinant factor in the value added of an on-line component of planning agencies.

With these issues in mind, a survey was developed to send to planning agencies to determine their use of web technology. Given the lack of research in this area, it became clear that this was an opportunity to "benchmark" the state of practice in planning with respect to web technology and applications.

## **Research Design**

In order to benchmark web technology use by planning agencies, it was determined that the most appropriate sampling strategy would be to target municipal planning units, and to target those that are sufficiently large enough to have some familiarity with computer technology and the internet. Thus all municipal planning units in the United States with a population of 25,000

were chosen, and a sampling rate of 100%. This number was close to 1,500 (actual N=1,432).

A mail survey was constructed that addressed an array of ways in which a planning agency might use internet and related technology. The survey asked 33 questions, most with a closed set of selections (there were three open ended questions). Most of the questions had multiple selections, which resulted in 165 coded variables. The survey was pretested and it was estimated most respondents could complete the survey in 15 minutes or less.

A cooperative agreement with ICMA provided a set of contact addresses and names in exchange for the provision of an article to be published in the ICMA 2005 Municipal Yearbook.

A modified Dillman approach was employed to try and improve response rates. There were four separate mailings. The first mailout (complete with cover letter, survey, and postage paid return envelope) was mailed in January 2004.. The second mailing was a reminder postcard. The third mailing was another complete survey, cover letter and postage paid return envelope. The fourth mailing was a postcard that was both a thank you and a final reminder, for those who had yet to send a survey in.

All responses were compiled in Filemaker Pro, and the numerical data exported to SPSS for statistical analysis.

## **Results**

The response rate was 35.3% (N=505). This response rate is on the higher end of "cold" mailouts of this type, and it is presumed that the involvement of the American Planning Associate and the ICMA had a positive influence.

### *Location, population, and budget, and staff*

Forty-six states responded, representing a cross section of the United States. More populous states had higher representation (California, Texas and Michigan accounted for approximately one third of the respondents).

Respondents were asked to describe their planning unit's area of responsibility, and over 90% indicated that they represented a city planning unit. In terms of the population served, the average size was approximately 100,000 with 75% of the cities reporting a population of 88,000 or less. Only 5 reported more than 1 million.

Approximately 50% had agency budgets of \$600K, or lower, and 50% had an IT budget of \$10K or lower. 30% had a budget of zero for IT.

Fifty seven percent had planning staffs of 8 or fewer, while most had no dedicated in-house IT staff (60%) or only 1 staff person (20%).

### *Agency Technology Aspects*

More than 96% of the agencies said all of their staff had access to a computer, and 98.2% reported that staff had email.

95% indicated that their planning agency had a web presence. Of those, most were part of the city's main website (87%), and the others had an independent site (5%), or other host

arrangement. In most cases the web presence was maintained by an outside party (60%). Over 50% of agencies report that they do not have any money budgeted for web presence.

In general terms regarding the employment of technology in the agency, the respondents reported that they used the following technologies in their offices

Tech Tool	% reporting it “in use”
GIS	87.5
Permit Tracking software	58.0
Zoning/Code enforce mgt.	31.3
GPS	20.4
Photo interpretation	14.9
3D modeling	8.5
Planning support system	4.2
Remote sensing	3.8
Virtual Reality simulation	1.0

As for particular items on the website, the following were identified as being available, irrespective of where the website was hosted:

Item on website	% reporting in use
ordinances	83%
regulations	78%
permit forms	67%
zoning maps	48%
meeting schedules	84%
meeting agendas	82%
comprehensive plans	50%
Public hearing notices	51%
Freq asked ques.	56%
info about agency	86%
how to contact agency	92%
community events	73%
links to other sites	34%
multilingual	92%
job application	64%



Another question asked about existing and planned implementation of web applications:

avail now %		planned in next 1-2 yrs %	2-5yrs %	not planned %
33.3	feedback form	15.0	6.5	15.0
31.9	form to ask questions	13.1	5.5	15.2
37.8	website search engine	5.9	5.0	16.2
35	e-mail list / listserv	7.9	3.6	18.2
8.7	audio	5.3	3.8	36
9.5	video	5.0	4.4	35.8
6.1	live broadcasts	2.6	4.4	39.2
15.2	online surveys	13.9	7.3	23
1.0	chat rooms	0.6	1.8	46.9
9.7	bulletin boards	5.3	4.6	32.9
28.7	web GIS/mapping	22.2	13.7	7.9
13.1	apply for permit online	25.3	19.6	11.7
5.5	pay for permit online	19.6	20.4	17.4
9.5	schedule building inspection	20	15.2	18.2
9.1	check inspection status	20.8	15.4	17
1.1	discussion forums	1.6	5.3	42.2
1.0	virtual reality simulations	1.8	1.6	45.5
5.0	Interactive public comments form	8.1	7.5	32.3
3.6	filing for variance	13.5	15.8	13.5
1.2	pay filing fees	14.9	15.8	25.5
46.3	copies of minutes	13.5	7.1	7.3
9.9	buy copy of comprehensive plan	16.6	7.9	24.2
8.3	order maps	16.8	9.3	22.8

## **Conclusion**

It is clear that the internet is a valuable tool for planning agencies and that most have made an attempt to use it in some form or fashion. The results here will help take a “snapshot” of where the planning field is with respect to technology, and where it is headed.

The results indicated here are preliminary in nature and represent a first pass analysis of the data collected. More in-depth analysis is needed to understand the significance of the survey and what we can learn from it.

In general, more research is needed to fully understand the state of technological application in urban planning. The survey indicates that most planning agencies are considering the adoption of more interactive applications, but that most activity is basically information-oriented. It is unclear what technological advances or political forces will push agencies toward more interactivity.