

Where's the Disconnect?
Analyzing barriers to web-based e-participation tools for planning

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ABSTRACT

Online interactions, collaborations, and user-generated content are increasing at an exponential rate, and the rapid adoption of these Web 2.0 applications is putting an ever increasing pressure on public entities to adapt and adopt. Governing bodies are exploring the benefits and possibilities of Web 2.0 applications, and are developing strategies for integration into the public process. Previous studies have researched the promising use of these tools in planning and community development departments serving the largest cities in the United States. Relatively little study has been done on the use and incorporation of these tools in planning and community development departments that serve smaller, less densely populated areas; areas that by their remote or sparsely populated nature could benefit greatly from easily accessed information exchange. The purpose of this work is to provide a benchmark study for how online, e-participation tools are currently used within planning and community development departments serving communities of 100,000 in population or less. The research also analyzes the demographic characteristics of the populations served by the departments using e-participation tools to explore developing trends in use. Finally, the study examines current barriers for incorporation of these tools into public processes, and attempts to offer developing and future solutions to these barriers. The goal of this research is to help planning departments serving relatively small populations make informed choices as how to best incorporate web-based, e-participation tools into their public process and daily functions.

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DEFINITIONS

Web 2.0 – The term given to describe a second generation of the World Wide Web that is focused on the ability for people to collaborate and share information online. Web 2.0 basically refers to the transition from static HTML Web pages to a more dynamic Web that is more organized and is based on serving Web applications to users. Other improved functionality of Web 2.0 includes open communication with an emphasis on Web-based communities of users, and more open sharing of information. Over time Web 2.0 has been used more as a marketing term than a computer-science-based term. Blogs, wikis, and Web services are all seen as components of Web 2.0. (http://www.webopedia.com/TERM/W/Web_2_point_0.html)

ICT - Stands for "Information and Communication Technologies." ICT refers to technologies that provide access to information through telecommunications. It is similar to Information Technology (IT), but focuses primarily on communication technologies. This includes the Internet, wireless networks, cell phones, and other communication mediums. (<http://www.techterms.com/definition/ict>)

Crowdsourcing - A type of participative online activity in which an individual, an institution, a non-profit organization, or company proposes to a group of individuals of varying knowledge, heterogeneity, and number, via a flexible open call, the voluntary undertaking of a task. (<http://www.crowdsourcing-blog.org/wp-content/uploads/2012/02/Towards-an-integrated-crowdsourcing-definition-Estell%C3%A9s-Gonz%C3%A1lez.pdf>)

e-government - The use by government agencies of information technologies (such as Wide Area Networks, the Internet, and mobile computing) that have the ability to transform relations with citizens, businesses, and other arms of government. These technologies can serve a variety of different ends: better delivery of government services to citizens, improved interactions with business and industry, citizen empowerment through access to information, or more efficient government management. The resulting benefits can be less corruption, increased transparency, greater convenience, revenue growth, and/or cost reductions. (<http://web.worldbank.org/WBSITE/EXTERNAL/TOPICS/EXTINFORMATIONANDCOMMUNICATIONANDTECHNOLOGIES/EXTGOVERNMENT/0,,menuPK:702592~pagePK:149018~piPK:149093~theSitePK:702586,00.html>)

e-democracy - The use of information and communications technologies and strategies by 'democratic sectors' within the political processes of local communities, states/regions, nations and on the global stage. E-democracy includes ICT governance applications (i.e., e-government), its reach extends to areas including media, political organizing, and voting. (<http://www.publicus.net/articles/edempublicnetwork.html>, (Sanchez & Brenman, 2013))

e-participation- The use of ICT for enabling and strengthening citizen participation in democratic decision-making processes. Depending on the aspect of democracy being promoted it can employ different techniques:

1. For increasing the transparency of the political process;
2. For enhancing the direct involvement on participation of citizen;
3. For improving the quality of opinion formation by opening new spaces of information and deliberation

(<http://www.intellitics.com/blog/2008/05/26/what-is-e-participation/>)

INTRODUCTION

“The concept of the ‘Live City’ or ‘Digital Space’ has been identified as one of the main targets of these projects. The main idea for these projects was to use modern technologies to build a digital layer within the city that integrates with the physical layer and involves citizens as resources and beneficiaries of information.” (Sinnari & Al-Nuaim, 2012)

“Local planning debates have generally several institutional features that don’t facilitate public participation. The procedures are long (3 to 6 years from diagnosis to policy plan), the texts are over 100 pages, the themes are complex, uncertainty is high and sponsors and organizers have limited resources.” (Desquinabo, Ferrand, & Marlier, 2010)

“Knowledge produced in a new way – pervasive, contextualized and unplanned – will help to develop social activism even further. This gives an opportunity to a higher level of public participation... In this way we might experience a citizenship model where local government and public administration represent just nodes in a decentralized network whose topology responds to demands for greater public participation and democracy.” (Pereira, Rocha, & Poplin, 2012)

“Nevertheless till [sic] 2010, civic participation has in many countries still not reached the expectations affiliated with the hype of e-participation and Web 2.0.” (Scherer, Wimmer, & Ventzke, 2010)

*“In **conclusion**, web 2.0 presents significant opportunities as well as risks for government.” (Osimo, 2008)*

These quotes represent a “state of the conversation” surrounding the developing interactive capabilities of the web and the potential these capabilities hold for public participation of citizens in their representative, governing institutions. The prevalence of Web 2.0 and Information and Communications Technology (ICT) in today’s society and the growing public expectation of not only immediate access to information, but also immediate reaction to their responses leads to the reasonable expectation that the demand for these tools in public institutions will only increase. Yet currently in the realm of public planning, that demand is only just beginning to be met.

E-participation is defined as *the use of ICT for enabling and strengthening citizen participation in democratic decision-making processes* (<http://www.intellitics.com/blog/2008/05/26/what-is-e-participation/>). However, it is the application and intent of e-participation tools that dictate how they will facilitate citizen participation. For the purposes of this paper, the web-based tools utilized by planning departments have been categorized into three types: information sharing e-participation tools, information gathering e-participation tools, and collaborative e-participation tools. Web-based, information sharing tools comprised the first iteration of e-government, in which public information was made readily accessible through ICT and the internet. Based on the categorization of these tools in this research, this form of tool is considered a unidirectional communication technique from governing entity to public body. Online information gathering tools have also been gradually adopted by a significant portion of planning and community development departments, albeit still not a majority. These tools enable departments to gather specific, predetermined information from the public. This again is a unidirectional communication from public body to governing entity, whereby the governing entity dictates the topic and parameters of the information to be gathered. Finally, web-based, collaborative e-participation tools are understood as tools that allow for a two-way exchange between governing body and the public, in which the topic and parameters of the discussion can be dictated by either body, but in essence are focused on development of a particular project or policy. To date, a small minority of planning and community development departments have incorporated e-participation tools of this nature into their public participation processes.

According to the APA publication *e-Government*, the majority of municipal planning departments for communities with populations over 50,000 offer online information sharing tools such as website postings of meeting agendas, minutes and ordinances, GIS maps, and digital publications of their plans. Only a small minority of these departments offer opportunities to

receive citizen input on projects and plans, through information gathering tools. Of these, the most frequent tools offered are online surveys, which are provided by about 36% of the departments. Collaborative e-participation tools, or idea exchange tools, are even less frequent, with only 11.4% of the departments surveyed offering discussion forums on their website, 7.2% offering virtual reality simulations and 0.0% offering links to project-specific social media pages (Evans-Cowley et al., 2011).

Table 1: Information and Services available on Planning Department Websites

Information sharing Tools	Have provided for more than one year (%)	Added in the last year (%)	Interaction tools	Have provided for more than one year (%)	Added in the last year (%)
Meeting agendas	94.7	1.1	Inspection status information	36.0	6.7
Ordinances	93.6	1.1	Inspection scheduling	31.5	5.5
Application forms	89.1	3.3	Google Earth	27.3	7.8
Meeting minutes	88.2	1.1	E-commerce to apply or pay for permits and applications	20.0	5.3
Static maps	86.5	1.1	Discussion forum	11.4	4.3
Plans	66.7	3.4	Virtual reality simulations	7.2	0.0
Zoning case information	63.1	3.6	Wikis	4.4	0.0
E-mail list or listserv for public	55.4	4.1	Mobile applications	3.8	7.7
Interactive GIS	51.2	5.8	Crowdsourcing	0.0	3.7
Streaming audio or video of meetings	36.5	16.5	Project-specific MySpace or Facebook pages	0.0	2.9
Online survey	36.1	4.2	Chat room	0.0	0.0
Multilingual documents	21.7	4.3			
Other audio or video	18.8	3.1			
Mashups	4.5	4.5			
Scenario planning	3.8	3.8			
Children's activities	3.0	0.0			
YouTube videos	2.9	0.0			

Source: (Evans-Cowley et al., 2011)

Several previous studies have reported on the state of online, e-participation tools for planning departments serving large populations. While not the ultimate purpose, by virtue of the information collected in the research process, this study will serve as a benchmark for how e-participation tools are currently used within planning and community development departments that serve communities with populations of 100,000 or less. This particular side-effect will also

allow for a broad comparison of adoption rates of these tools by the smaller communities studied in this research and previous studies of larger communities, adding to the growing body of knowledge on how these tools are being adopted by planning departments. More specific to its goals, this study will focus particularly on the barriers that currently exist for incorporation of web-based, e-participation tools by these departments. It will identify the most prevalent barriers in the field, and attempt to provide solutions either through identified solutions in current literature, or through the first-person experiences of the departments interviewed. It will also analyze the demographic characteristics of the populations served by these departments to see if any trends are developing between demographics served and e-participation tools utilized. The ultimate goal of this research would be to add to the growing bank of knowledge of effective practices for using e-participation tools within the planning process.

It should be noted, that while information was gathered on information sharing, information gathering, and collaborative, e-participation tools, the e-participation tools of specific interest are web-based, collaborative tools that provide an opportunity for two-way discourse between the planning authority and its constituency. These are of particular interest to the analyst because they are seen as the ultimate evolution of e-participation tools in the development of successful e-government and e-democracy models within the constructs of public planning. Examples of such tools include online forums, virtual meetings, wikis, social media, and interactive online video.

This report analyzes the results from a nationwide survey of randomly selected planning and community development departments serving communities with populations of 100,000 or less. The survey results helped identify the most common barriers to departments wishing to implement these tools. The research process also included follow-up interviews with eight

departments representing a range of demographic characteristics. These interviews provided greater insight into the challenges of implementing e-participation tools at the planning level. The interviews also provided first hand experiences of how departments currently use these tools, and the insights they gained as to how best apply the tools in their circumstances.

The results of the surveys indicated that adoption rates for information sharing, e-participation tools by smaller departments were comparable to rates for departments serving the largest populations. Information gathering tools and collaborative, e-participation tools had relatively lower adoption rates for smaller planning departments than for their larger counterparts. However, while the results will show a relatively low adoption rate for information gathering and collaborative tools, some interesting trends are developing that indicate adoption rates may quicken pace in coming years.

Background

Within the institution of planning, agencies are constantly struggling with the matter of properly addressing the views and desires of their constituency. Participatory planning models have been gradually incorporated into planning processes over the last forty years (Arnstein, 1969; Lane, 2005), however, it is only within the last twenty years that the priority placed on engagement has gained substantial ground. The recent publication, *Research on International Civic Engagement: State of Citizen Participation* illustrates this point precisely:

“Kerrigan and Hinton’s 1980 article on the educational needs of public administrators made no mention of citizen interaction skills. By the 1990s, many writers argued that

effective administrators need to understand citizen engagement” (*Research on International Civic Engagement: State of Citizen Participation in America*, 2012).

Community planning workshops, forums, and public meetings have all helped incorporate the views of the public into the future plans for their community. However, while these methods are excellent steps towards increasing involvement in local planning processes, there are still many challenges faced by existing public participation models. Information and Communications Technology, or ICT, and Web 2.0 applications have been put forth as venues for overcoming some of the challenges, and have been considered “a strategic tool for reinforcing citizens engagement for some time, through eDemocracy and eParticipation initiatives, though it has had mixed success so far” (Osimo, 2008).

Participation rates in public affairs have been well documented as having shown a decline over recent decades (Putnam, 1995) (*Research on International Civic Engagement: State of Citizen Participation in America*, 2012), and this decline has long been one of the main challenges of modern government (Finer, 1997). Local representatives and agencies must look for new ways to attract and increase involvement:

“Over the past 20 years, more and more major democracies have looked to consult and involve their citizens in societal decision-making, bringing elements of deliberative democracy into their more representational parliamentary systems. There are many imperatives behind these moves, not the least being to re-engage their electorates and address declining participation rates in elections as well as a growing public cynicism in the conduct of politics. Public participation as exemplified by

citizens juries, focus groups, stakeholder workshops, *e*-debates, etc., has become the vogue” (S. French & Bayley, 2011).

Just how “vogue” these tools have become in the U.S. for developing e-participation planning models is exactly what this study will explore in the realm of planning for small communities.

In terms of participation models, e-participation tools are in their infancy, and much is still to be determined as to how to most effectively and appropriately use them. One study that looked at weighing the value of public participation efforts stated this point best:

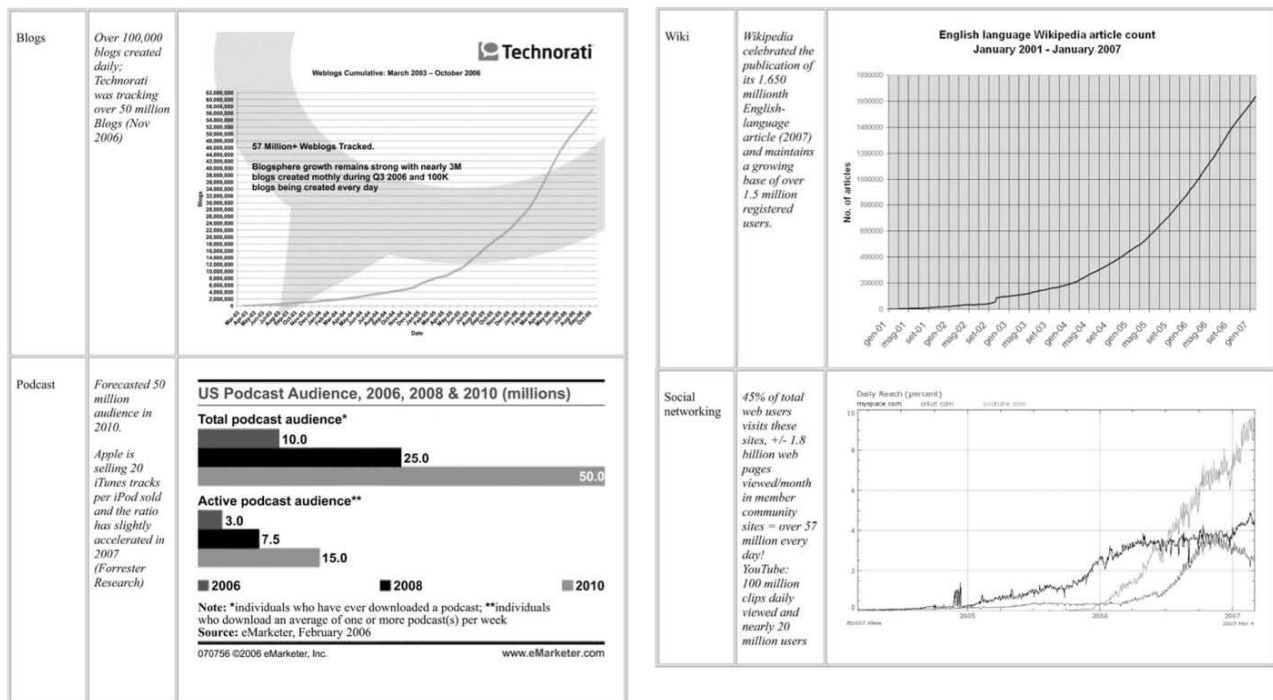
“Generally, participation is perceived as a ‘good thing’, but we have little empirical guidance on whether this instrument or that is more suitable for a particular context. If public participation is to serve truly the needs of a society, we need to understand the merits of different methods and use them appropriately” (S. French & Bayley, 2011).

While e-participation takes many forms and has many implications, this paper will specifically evaluate web-based, e-participation tools in terms of how they are currently utilized by planning and community development departments that serve populations of 100,000 or less, and what barriers exist for these tools that challenge their use in public participation models.

The use of technology in all modes of life has become pervasive, so much so that over the course of a single decade, the discourse in scholarly papers on e-participation and government has transformed from that of questioning skepticism (P. M. A. Baker & Ward, 2002; Hampton, Witte, Wellman, & Haase, 2001; Howard, Rainie, & Jones, 2001; Shah, Kwak, & Holbert, 2001) to urgent calls for immediate understanding and utilization (Bers & Chau, 2006; Dutta-Bergman,

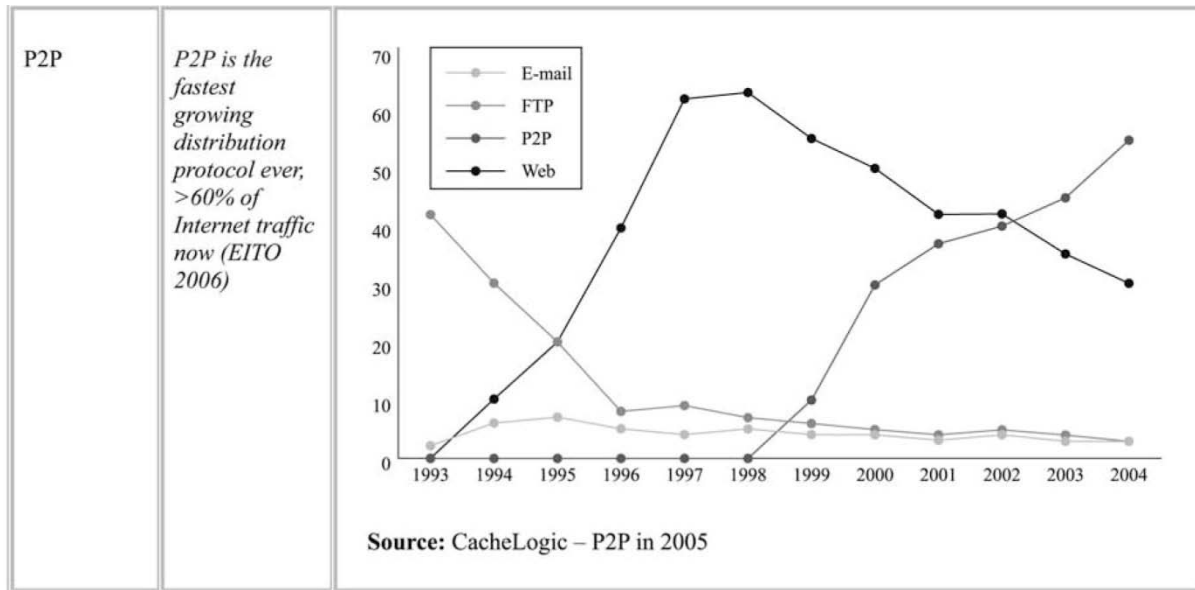
2006; Organisation for Economic & Development, 2005; Osimo, 2008). The statistics for the exponential growth and adoption of peer-to-peer and Web 2.0 technology applications are staggering (Pascu et al., 2008). One does not venture to compare the size of the Facebook network to any particular country or region anymore for fear that within a week that comparison will be dated. The following charts illustrate this point exactly (Figure 1 & 2). Of particular note is the pace of peer-to-peer exchanges as compared with other web-based technologies (Figure 2).

Figure 1: Growth Patterns of Selected Web 2.0 Developments



Source: (Pascu et al., 2008)

Figure 2: Growth Patterns of Peer-to-Peer Technologies Compared to other Internet Traffic



Source: (Pascu et al., 2008)

Logic would follow that these same tools that have become so impactful in people’s lives could be utilized as a way to reconnect them to their representative individuals and agencies. Municipalities have already begun to enlist the internet as a tool for dispersing information to their constituencies (Desquinabo et al., 2010; Jeffres, 2010; Osimo, 2008; Scherer et al., 2010; Simpson, 2005). However, for the most part, this type of communication is a one way interaction. Individuals can access needed information on their local government’s website, but have no option for providing feedback through these sites (Simpson, 2005). As a growing number of web-based sites and applications allow for user-generated content, such as with YouTube, GoogleEarth, OpenStreetMap, Blogger, and Flickr, it is suggested that planning agencies may use avenues similar to these as a way of incorporating their public’s views more consistently and holistically.

There has been extensive study on the various faults and successes of participatory strategies in planning. The premise of this report is built on the foundation that web-based, collaborative e-participation tools are the next iteration in creating a well-rounded participatory format for citizen engagement in planning processes, and that identifying the barriers and best practices for use of these tools is a necessary action. As stated so plainly by Evans-Cowley and Hollander, “the highest level of participation opportunities hold that all citizens must be equally empowered and fully informed to ensure that they can exert influence on decisions that affect them” (Evans-Cowley & Hollander, 2010). While it may be overly optimistic to state that the internet offers the final rung in the participatory framework, it is not overstepping to point out its broad array of opportunities for constituency inclusion.

The following literature review will begin with a statistical history of technology use within planning agencies. It will then cover some of the current arguments for employing e-participation tools within the profession. A large portion of this review will also be dedicated to identifying known and suggested barriers to the use of e-participation tools— such that the findings of previous research may be compared to the results of this study.

LITERATURE REVIEW

The Internet’s effect on Social Capital

A variety of studies have attempted to quantify the impacts internet usage has on social capital and civic engagement. In the earliest studies it was suggested that there existed two broad theorist bases: the digital-world supporters who believed it will increase knowledge and create wired communities, and the digital-world detractors who believed it erodes psychological well-

being and reduces community involvement (Dutta-Bergman, 2006; Dutta-Bergman, 2005; Shah et al., 2001). Over the course of the last decade, the numbers of those cautioning against the erosive effects of the internet have dwindled, and generally the digital divide¹ is now mentioned as a cautionary footnote in research aimed at evaluating the *benefits* of the internet and its profound impacts on society. A relatively recent report published on the effects of Web 2.0 applications on government begins its executive summary with the assertion “ICT has long been recognized as a key driver of government modernization” (Osimo, 2008). The rapid adoption of these technologies by society has made even the relative factors of time and history seem protracted, when in actuality the benefits of these tools were heavily questioned as recently as 2001.

One such study that focused on the potential benefits of internet use, conducted by Shah in 2001, found that based strictly on time of usage, use of the internet had a weak positive correlation to civic engagement and trust. The study also found that while use of the internet for information exchange had a positive correlation with civic engagement, use of the internet for social recreation had a negative correlation to trust and contentment. From these findings, Shah concluded that the effect of the internet on social capital was related to the type of use, and that social uses of the internet did not display positive effects. A number of other studies published in that same year supported the premise that internet usage sustained social capital and civic engagement. One study found that internet usage is supplemental to interpersonal communication, organizational involvement and political participation (Hampton et al., 2001). A

¹ *the socioeconomic and other disparities between those people who have opportunities and skills enabling them to benefit from digital resources, especially the Internet, and those who do not have these opportunities or skills* (dictionary.com)

similar study, also conducted in 2001, found that internet usage builds upon other forms of social interaction (Rainie, Howard, & Jones, 2001).

A later study completed by Dutta-Bergman in 2006 took the aims of the 2001 Shah study further and explored community based internet usage as it correlated to community satisfaction and community participation. This study recognized that while previous studies had found a negative impact of internet usage on civic engagement, many of these studies had been completed before local government websites and community forums had become common. Previous theories assumed that consumption of one set of communicative activities displaced other forms, and this logic followed that private use of the internet distracts individuals from civic participation activities. Through a survey conducted by the Pew Research Center for the People and the Press, this study found that both community satisfaction and community participation were positively correlated to internet use (Dutta-Bergman, 2006).

Ongoing studies conducted throughout the time period of 2000 to 2010 on the use of internet discussion and debate found that the internet actually enhanced the quality and diversity of expression in group discussions (Lemus, 2004; Monnoyer-Smith, 2006). A study conducted in 2009 found that specifically the social networking site Facebook had a positive correlation with improved social capital (Valenzuela, Park, & Kee, 2009). A small-scale case study in 2010 confirmed a wide array of benefits from an e-participation framework in a local planning process with documented increases in information gain and “deliberative” proceedings (more opinion and thematic diversity of topics without an increase of “flames,” or inflammatory comments not beneficial to the overall discussion). It was also found that these benefits were gained while simultaneously reducing cost of the overall participation process (Desquinabo et al., 2010).

Finally, a recent study conducted in 2012 concluded that participants' satisfaction with e-participation applications "is directly associated with their assessment of government transparency and that there is a positive association between e-participants' assessment of government transparency and their trust in the local government providing the e-participation program" (Soonhee & Jooho, 2012). The progressive results of these studies build a case that internet usage has a multi-faceted impact on social capital and civic engagement that must continue to be studied and its understanding improved upon, as these networks and engagements lay the foundation for an informed and active populace.

Current Profile of e-Participation Applications

While the previous studies focused on the association between the web and social capital, other studies conducted over this same time period offer insight as to how planning and community development departments have adopted these tools over the last decade. These studies also show how certain web-based, e-participation tools, generally categorized as information sharing tools, have relatively outpaced other types of e-participation tools thus far. This section will review the results of those studies to better illustrate the "historical" trends of e-participation technology use by planning agencies.

A 2004 report published by the APA gives a baseline depiction of the initial adoption of e-participation tools by planning departments in the United States. A review of the websites of the 240 planning agencies that represented communities of 100,000 or more revealed that all but two had departmental websites (Evans-Cowley, Conroy, & American Planning Association. Planning Advisory, 2004). It was also found that among the websites reviewed, 74% provided zoning ordinances on their website, 72% provided an email contact for the department, 37%

and 31% provided meeting minutes and agendas respectively, and 25% provided GIS applications on their website. In addition to these findings it was noted that 46 cities provided list serve options for current news, 23 cities provided streaming video of meetings, none with interactive capabilities, and only a small number had e-commerce capabilities.

A similar study conducted in 2004 surveyed all 1,432 planning agencies representing municipalities with a population equal to or above 25,000 to determine their levels of technology use (Simpson, 2005). Of the agencies responding, 95% reported having a web presence. With regards to web-based information sharing tools, 92% provided contact information for the department, 83% provided local zoning ordinances, 82% provided meeting agendas, 62% provided meeting minutes, and 40% provided some form of GIS mapping. A notable percentage of these agencies offered information gathering tools such as forms for questions and/or feedback, with a total of just under 50% of respondents. Online, collaborative, e-participation tools were reported at very low levels, however, with only 2% of respondents reporting the use of any.

Several studies have been completed more recently, allowing for a trend analysis of e-participation tool adoption. A survey of 683 planning departments within Virginia was conducted in 2010, providing a depiction of technology use for that state (Akers et al., 2010). From the responses gathered, 64% reported using project websites and email alerts to share information with the public, and just over 40% provided live-streaming video of meetings over the web. In terms of information gathering tools, 35% reported using online surveys. Social media use was reported at 27%, but it is unclear whether this type of e-participation tool was used for information sharing, or enabled collaborative interactions as well, such as through commenting threads. Other collaborative, e-participation methods reported by departments included virtual

forums, with 15% reported use, and interactive capability associated with web video, with 10% reported use.

A similar study was completed in 2011 that covered all 586 websites for cities with a population of 50,000 or more (Evans-Cowley et al., 2011). This study found that of the websites reviewed, 94.7% provided meeting agendas, 93.6% had zoning ordinances, 88.2% offered meeting minutes, and 51.2% had GIS maps. In the realm of information gathering tools, 89.1% provided application forms and 36.1% offered online surveys. However, the high adoption rates for these tools were still balanced against noticeably low adoption rates for collaborative options. Of the websites reviewed, 11.4% hosted discussion forums, 7.2% provided a form of virtual reality tool, and only 3.8% hosted scenario planning tools.

Table 2: Sequential Comparison of e-Participation Studies

Information Sharing e-Participation Tools								
	Public Meeting Agendas	Zoning Ordinance	Application Forms	Public Meeting Minutes	Listserv or Email Notification Systems	Interactive Mapping (GIS)	Archived Video of Public Meetings	Streaming Audio or Video of Public Meetings
Evans-Cowley, 2004	31%	76%		37%	19%	25%		9%
Simpson, 2005	82.0%	83.0%	20.0%	62.0%	54.0%	40.0%	18.0%	12.0%
Akers, 2010					31.0%		53.0%	43.0%
Evans-Cowley, 2011	94.7%	93.6%	89.1%	88.2%	55.4%	51.2%		36.5%

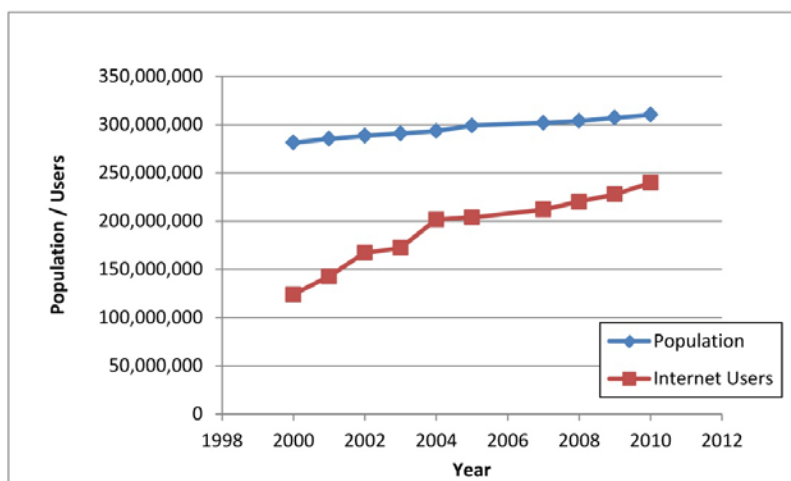
Information Gathering e-Participation Tools								
	Online Survey	Inspection Status Information	Inspection Scheduling	Filing for Variance	Google Earth	E-commerce to apply or pay for permits and applications	Form to ask questions	Discussion Forum
Evans-Cowley, 2004								Mentioned, but no data provided
Simpson, 2005	26.0%	15.0%	15.0%	6.0%		2-9%	49.0%	2.0%
Akers, 2010	35.0%							11.0%
Evans-Cowley, 2011	36.1%	36.0%	31.5%		27.3%	20.0%		11.4%

Collaborative e-Participation Tools								
	Interactive Public Comments Form	Virtual Reality Simulations	Wikis	Streaming Video of Public Meetings with Web-Interaction	Project Websites (Social Media or other)	Social Media	Chat Room	Bulletin Boards
Evans-Cowley, 2004								
Simpson, 2005	9.0%	2.0%					2.0%	19.0%
Akers, 2010			1.0%	10.0%	64.0%	27.0%		
Evans-Cowley, 2011		7.2%	4.4%		0.0%		0.0%	

When reviewing these reports in total, the adoption of e-participation tools displays an obvious schism. While unidirectional information tools were widely implemented even in 2004, especially in the form of information sharing tools, collaborative tools have lagged noticeably. Today, nearly all planning firms with constituencies larger than 50,000 provide multiple options for information sharing, and a large percentage offer one or two options for controlled information gathering, but two-way participation tools remain at extremely low levels of incorporation.

The potential for these tools to grow is supported by a combined understanding of the growth of internet usage by the US population, as seen in Figure 3, and a recent study completed by the Pew Center for Research. The figure below shows a comparison of the rate of population growth in the U.S. from 2000 to 2010 and the rate of internet user growth over that same time period. As shown, the number of individuals using the internet is paced to reach 100% of the population within the next decade.

Figure 3: Internet Usage and Population Growth



Source: (Sanchez & Brenman, 2013)

While keeping these statistics in mind, a survey conducted by the Pew Center for Research in 2009 of 2,258 adults 18 or older, found that 82% of internet users looked for information on a government website in the 12 months preceding the survey (Smith, 2010). The typical internet user actually engaged in four different types of government information search. Of these types of interactions, 48% reported looking for information on a policy or issue, 46% looked up services provided by an agency, 41% downloaded government forms, and 35% had researched official documents or statistics. In the arena of participatory actions, 31% reported using a blog, social networking site, email, online video or text message to get information on government, and 23% reported using an online debate forum. As evident from these statistics, the demand for government interaction is fairly robust among internet users. And, with the number of internet users growing at a faster rate than population growth overall, planning departments should anticipate and begin to meet this growing demand for online interaction.

Why encourage e-Participation Tools in Planning?

As stated previously, as early as 2001 studies began showing that informational use of the internet was positively related to factors considered to be increases in social capital and civic engagement. Since then, web-based communication tools have continually evolved, and now users are *developing* content, in addition to consuming it. These Web 2.0 applications include such applications as “web-based communities, hosted services, social-networking sites, picture and video sharing sites, wikis, blogs, and mashups” (Nabatchi & Mergel, 2010). In the wake of dissolving civic participation and disillusionment with participatory government, web-based participation tools offer yet another avenue for reaching community members. By actively engaging the public early, it has been shown that a politician’s or agency’s message can gain a

higher level of acceptance and face less overall conflict from the community (Simon French, Rios Insua, & Ruggeri, 2007). The capabilities of Web 2.0 applications to be utilized as e-participation tools permit the possibility of “widespread public communication that is inexpensive and relatively easy to access” (P. Baker & Ward, 2001), and can amplify the public space by incorporating “the possibilities of collaboration and participation in everyday life that portable devices such as smartphones or cell phones already enable” (Pereira et al., 2012).

In evaluating Web 2.0 tools in terms of their relevance in a governing context, one report completed for the Joint Research Centre of the European Commission found the “most visible impact is certainly in the field of political participation” (Osimo, 2008). This same study identified numerous benefits to governments in taking a proactive approach to adoption and implementation of these applications, including making government entities more:

- Simple and user-oriented
- Transparent and accountable
- Participative and inclusive, and
- Joined-up and networked

The report included in its conclusions that “[t]he impact of web 2.0 is converging with other long-term societal trends such as demography, empowered customers, the rise of creative knowledge workers, the importance of informal learning, user-driven innovation, the move from hierarchy to network-based forms of organizations, and the consumerization of IT” (Osimo, 2008).

While internet based participation tools admittedly face many barriers, some of which will be covered in the following section, they also offer some solutions to the barriers currently faced by

traditional methods of community engagement. The traditional avenues for participation in local planning activities include attending public hearings or meetings, visiting the planning office in person, calling the planning office or city manager, or writing letters. However, these methods have their own challenges with constituency inclusion. Public meetings are regularly not well attended, can be inefficiently or ineffectively managed, and much of the agenda is not pertinent to the attendant's reasons for being present. Also, the traditional timing and formats of these meetings generally occur during hours not regularly free for individuals with families or demanding work schedules (Conroy & Evans-Cowley, 2006).

Online participation tools offer avenues for individuals to focus on the topics that concern them, without the rigidity and duration of a public meeting schedule (Conroy & Evans-Cowley, 2006). Forums specific to projects or phases also allow for more focused conversation with the community than can sometimes be gained from an open meeting format. Additionally, the internet is inherently more visually based than other venues, and allows for individuals to take in large amounts of complex data at once. GIS applications in particular have the potential to provide individuals with a vast amount of information in both written and spatial formats, but only if planning agencies take the initiative to tap into that potential (Göçmen & Ventura, 2010). Finally, because of the speed and reach of social networking and virtual reality tools such as Second Life, information can spread much more quickly and to a much wider audience than through the traditional channels of public engagement (Evans-Cowley & Hollander, 2010).

As shown earlier, the use of the web in public dealings is widely accepted now, and according to the recent Pew study, is being used increasingly for accessing government (Smith, 2010). Citizens are strengthening their own online communities and are sharing more information via social networks (Evans-Cowley & Hollander, 2010). Expectations of interaction are high as well,

with peer-to-peer applications growing at an astounding rate, and interactive television programming like American Idol having been in existence for more than a decade. Citizens have a vast array of outlets that not only allow them to broadcast their ideas and visions, but also receive immediate feedback from a network of other users through the use of blogs, wikis, podcasts, RSS feeds, tagging, social media networks, and massive multiplayer games. With such information and ready response available to them, it would seem only plausible that their governing agencies would be able to respond with such efficiency and ease. This pressure from the user base is already being felt by planning departments. According to the most recent E-government report put out by the APA, 80% of the planning agencies surveyed reported “Citizens” as the major group pressuring planning departments to provide more information and services via their websites (Evans-Cowley et al., 2011).

Finally, internet based participation tools offer the opportunity to engage a wider circle of participants. Evans-Cowley’s case study work determined that cities that utilized social media outlets saw involvement from new participants, in addition to the traditionally involved group of citizens (Evans-Cowley & Hollander, 2010). One study also indicates that use of e-participation tools may allow planning departments to reach a broader range of potentially underrepresented minority groups. While a study by the Pew Center admittedly found that the average internet user accessing a governmental entity tends to mirror the same age, race, and income level statistics of the demographics typically more involved in government, some interesting anomalies were uncovered. In contrast to typical governmental involvement, the racial divides are “more modest when it comes to completing basic transactions and information searches on government websites, and minority internet users are just as likely as whites to get information about government agencies using tools such as email, blogs, online video or social networking

sites” (Smith, 2010). Additionally, the report found that minority Americans are more likely than whites to agree strongly with the statement:

“government outreach using tools such as blogs, social networking sites or text message ‘helps people be more informed about what the government is doing’ and ‘makes government agencies and officials more accessible.’” (Smith, 2010)

As suggested by these studies, online participation may help expand involvement to previously uninvolved or underrepresented groups.

What are some of the Recognized Barriers to e-Participation Tools?

While there are many perceived and documented benefits that result from the use of e-participation tools, the existing and developing barriers must also be recognized. As discovered in the analysis of planning department technology use surveys, there is a relatively slow adoption of collaborative, e-participation tools on planning department websites. Transferring hard copy public information to digital format and making it available online was a logical first step for planning agencies. Providing information in a format accessible to a large majority of their constituency increases efficiency within the department and frees up staff to work on more complex issues (Conroy & Evans-Cowley, 2006). However, with a large percentage of the planning departments already providing substantial amounts of public information online, it would be assumed that attention would be increasingly focused on the issues surrounding increasing information gathering and two-way interactions via the web.

However, simply having the ability for two-way public participation does not mean that these tools will be used well, or even at all. Scherer's *Hands-On Guideline for e-Participation Initiatives* found that much of the hype affiliated with the e-participation potential of Web 2.0 applications has not yet met expectations. This report cautioned that effective use of these tools required proper design to support citizens, politicians and other stakeholders, and that flaws in the overall public participation process may only be exacerbated through the hasty and thoughtless use of e-participation tools (Scherer et al., 2010). A report recently conducted on current Open Government Plans within the federal government concluded "most agencies' plans did not fully meet the standards conducive to high quality public participation" (Lukensmeyer, Goldman, Stern, & AmericaSpeaks, 2011), exemplifying that simply providing a large amount of data to a constituency does not in turn produce quality participation.

Additional studies have echoed these frustrations over the sometimes fruitless endeavors of e-participation tools deployed by governments (Osimo, 2008; Ramboll, 2004). "Providing online services has been one of the main goals of eGovernment strategies in virtually all countries. Yet the take-up of these services is not fully satisfactory, and problems seem to lie in the usability and findability of the services" (Osimo, 2008). Sanchez and Brenman's research delineated the major faults of the initial steps in e-participation models best:

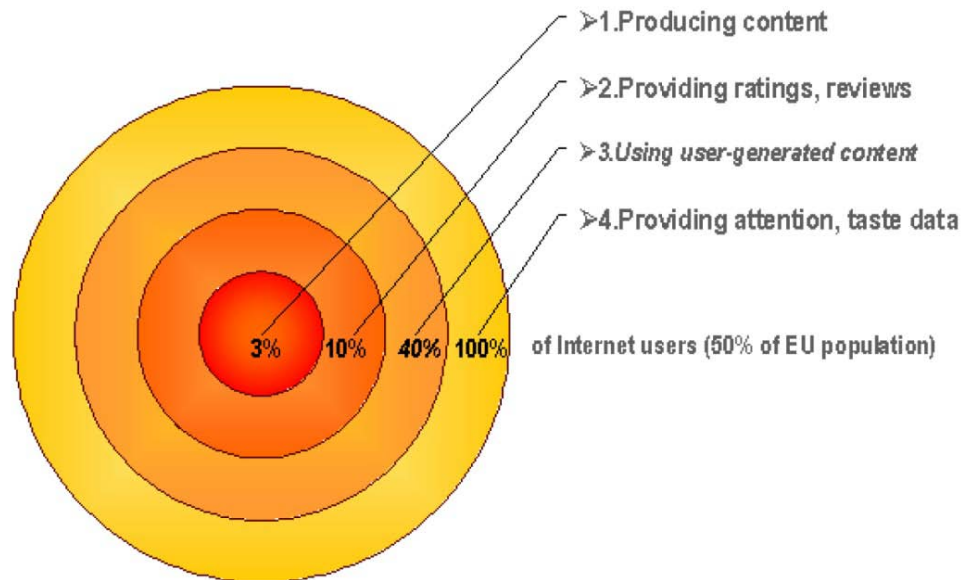
"The public is best served when its desires and preferences are known and incorporated into plans. Therefore, a democratized planning process that gathers input from nonprofessionals should also demystify the decision-making process and make the consequences and alternatives of proposed policies as transparent as possible." *Sanchez & Brenman, 2013*)

These are necessary pieces to incorporate into collaborative, e-participation models in order to achieve a successful public participation process.

Another barrier that plagues e-participation tools – as it similarly plagues the public participation process in general, is that of good representation. E-participation tools suffer from the same issues of low participation rates, participation restricted to certain economic levels, and demographic restrictions (Osimo, 2008) as traditional public participation models. Fear of low participation rates may also be a deterrent to adoption of collaborative, e-participation tools by planning and community development departments. This fear is supported by the fact that “in 2007, just above 10% of European citizens used public services through the Internet at transaction level, despite the fact that the number of services available online has grown considerably over the last few years and now includes the majority of basic public services,” (Capgemini, 2007).

This issue of low participation is by no means a result of low exposure levels on the internet. Figure 3 in the previous section and Figure 4 below illustrate the pervasive reach of internet content. Figure 4 expands on this analysis in the European Union, in terms of consumption, participation, and production of internet content. It is assumed that United States user base would mirror this distribution.

Figure 4: Type and Degree of Web 2.0 Usage by European Union Population



Source: (Osimo, 2008)

As displayed by the figure above, a hundred percent of internet users are viewers of Web 2.0 applications. However, the number drops off drastically for estimates of how many active internet users are also providers of ratings and producing content. While this data cannot be exactly extrapolated to public participation rates of e-participation tools, it may display an overarching trend that departments should be aware of when they incorporate these tools. Inactivity may not be an indicator of an apathetic or uniformed public, but rather simply an expected trend of human behavior.

Still, lack of active participation can be a deterrent to incorporation of e-participation tools. One study that specifically examined the benefits of e-participation tools in the planning process ran into this problem precisely:

“Recruiting participants was very difficult and proved to be the downfall of a number of our research workshops (two had to be cancelled). We were relying on people participating for the greater good and were not offering them much in return other than the outcome of our findings; our resources were limited and we could not pay people sufficiently for their time.” (S. French & Bayley, 2011)

Another barrier e-participation tools face is the anonymity issue of the web. Not only does this issue leave discussion forums open to thoughtless and sometimes vicious commentary (Sulzberger, 2011), but it also brings into question the legitimacy of the comments (Bryer, 2010; Simon French et al., 2007). This factor also opens up e-participation venues to lower quality contributions and additional “noise,” destructive behaviors by users, and manipulation of content by parties with specially focused interests (Osimo, 2008). Adding to these challenges is the question of how a planning department weighs the comments posted anonymously on a blog or discussion forum against the raised hand or voice of a verifiable person (Charles, 2007). One way around this issue is to host all commenting and interactive areas on the planning department’s website. In this way departments can require a login with an email that at least provides a basic level of identification. However, even this basic form of sign-in may deter respondents who are protective of their identity online (Bryer, 2010), and as one interviewee put it – “any login can be scammed.”

The vast community of the web poses another barrier to expanding online participation. As all input is part of the greater public process and must be documented by the agency, the department must also be able to provide someone to monitor comments and archive input. This process can become daunting with a substantially increasing number of potential participants (Simon French et al., 2007). The access that the internet provides to local communities is

broad, and with this increased access comes increased commentary – and increased opportunities for misunderstandings. Even though social networking sites have been shown to draw new voices, many times these voices are not informed on the issues and distract from the progress of the process (Bryer, 2010). Staff may have to spend an inordinate amount of time clarifying misinformation or even censoring discussions. This issue was brought up during the Future e-Democracy Forum, in London, by Catherine Smith Howe when she challenged the widespread idea that crowdsourcing is always good. According to her, “the crowd is reduced down to the lowest common denominator, [and] the government is slow and does not perform well in the network society” (“Digital Government & Society: Future e-democracy,” 2010; Pereira et al., 2012).

This becomes the Catch-22 of online participation: involving previously uninvolved participants also invites previously uninvolved and under informed ideas, with the potential for many of these ideas to be substantially negative. A preliminary study of social networking sites by Evans-Cowley found that opposition groups were among the most prevalent of community based social media pages (Evans-Cowley & Hollander, 2010). Similarly, Nabatchi and Mergel found an issue of what they referred to as “co-optation,” which is when the more organized/vocal groups overload a public forum with commentary (Nabatchi & Mergel, 2010), edging out less passionate input. Inviting a broader range of voices to comment requires the planning departments to be highly prepared for the responsibilities of this new format. “One of the most frequent pitfalls of online debates is the high proportion of flames generally observed in online political discussion. Moderation devices and practices can reduce this problem, but their cost is high when the targeted level of participation is high” (Desquinabo et al., 2010).

This new level of responsibility represents one last barrier that will be covered here: the lack of knowledge and experience with these tools in the profession. One of the major concerns of a study conducted by French was not that these tools were inappropriate, but that they were extremely powerful tools for democracy and as such should be more fully understood before they are used on a broad scale (Simon French et al., 2007). General lack of experience and knowledge about these tools is something that has been echoed by many researchers (Evans-Cowley & Hollander, 2010; Göçmen & Ventura, 2010; Peristeras, Mentzas, Tarabanis, & Abecker, 2009). Larger cities may have dedicated departments or contractors developing their websites, with little direct interaction from planning department. Smaller town and county departments may have little or no budget to help with training for technology use. Planners are generally not trained in many of the technologies used for online participation, and even technologies they are trained for like GIS, they may only have a beginner level knowledge of the tools (Akers et al., 2010; Göçmen & Ventura, 2010). If online e-participation tools are to be incorporated within departments, at least one employee must have a strong understanding of the best methods for implementing and monitoring these tools.

Figure 5: Possible objectives that need to be considered in designing a participation process.



Source: (S. French & Bayley, 2011)

“The participation processes need to be integrated in and adapted to political processes. In order to fit the participation processes to the legislative/political processes and thereof to have the best possible impact of participation, a detailed analysis of processes and possible points of participation needs to be conducted in advance.” (Scherer et al., 2010)

Summary

Research into the topic of e-participation within the planning profession is still developing. While several benchmarking studies have been completed for levels and types of technology use within planning departments, none of these studies have specifically focused on the realm of collaborative e-participation. Additionally, while a majority of the literature reviewed for this paper remained hopeful for achieving the opportunities presented by e-participation, very few offered actual case studies of thoroughly incorporated methods. The field seems to be on the

verge of fully comprehending the possibilities of these tools, but not quite sure yet how to tap into their potential effectively. The overall focus of the current research involves a much bigger picture for where the technology is headed, with less concern for what it can accomplish now. This area seems to be the greatest void in the studies covering e-participation. This report attempts to fill a portion of that void for planning and community development departments serving small population numbers.

METHODS

Collaborative e-participation tools make up a small percentage of web-based technology tools currently used by planning departments, as compared to information sharing and information gathering tools. The purpose of this study is to identify the current barriers to collaborative web-based technology use in lower population communities, and analyze these barriers in terms of finding appropriate applications for incorporation of two-way e-participation tools.

The research portion of this study was broken into two phases. The first phase consisted of a web-based survey sent to randomly-selected planning and community development departments serving communities with populations of 100,000 or less. The second phase consisted of a set of case study interviews in which eight planning departments representing a variety of regions, government structures, and priority levels for incorporation of e-participation tools were interviewed on to their specific experiences. By analyzing both the survey data and the more specific interview data, the goal was to develop a comparison of the trends in barriers with respect to size, location, density, and population demographic characteristics of the communities. By reviewing the similarities and differences in issues voiced by each of the planning departments, barriers could be reviewed across a range of communities. The end goal

is to illustrate similar barriers that are occurring in selected communities and then suggest solutions for most effectively implementing these tools in communities with limited resources to devote.

Phase I: Web-Based Survey

The first phase of this study consisted of a web-based survey emailed to randomly selected planning and community development departments that serve populations of 100,000 or less.

Survey Design

The web-based survey was developed using the online survey company SurveyMonkey (<http://www.surveymonkey.com/>). The survey consisted of eighteen questions, the first twelve consisting of questions related to the topic of the research, and the last five being administrative in purpose. The survey was designed purposefully through the progression of questions to gradually introduce the respondent to the topic of research and then end the survey with the three most pertinent questions to the research focus. The leading questions asked the respondent about the structure of the online presence of the department, followed by questions on current web-based tool usage, and concluding with questions on relative levels of use and perceived barriers to use.

The first question of the survey confirmed consent of the respondent for participating in the online survey. This question was followed by three questions about the department's website. These questions began by asking if the department had a web presence, and then asked the respondent to consider how the website was structured within the greater online presence of the county's or town's government websites. These three questions were used as introductory

questions to help the respondent ease into the survey and begin thinking about the department's current online presence.

The following three questions requested details on how the department uses its website currently. The questions asked whether the department used specific tools to distribute electronic output to the public, to receive electronic input from the public, and to provide public meeting information to the public in an electronic format. All of the options provided in these questions consisted of current online methods for performing these tasks. While the information provided in these questions was useful from a benchmarking standpoint, these questions were mainly used to setup the respondent for the last series of questions, on which most of the analysis would take place. It was believed that by making the respondent think critically about all of the tools and options available and potentially already being used, they would be able to understand the basis for the last series of questions.

Questions eight through twelve comprised the foundation of the research questions to be analyzed. Question eight solicited information on the relative frequency with which a variety of tools are used by the department. The tools listed in the table included a range of information sharing, gathering, and collaborative, e-participation tools. Question nine then asked the respondent to indicate the magnitude of the barrier each challenge posed to the expansion of e-participation tools. The respondents were asked to rate each barrier on a scale ranging from "extremely limiting use" to "does not limit use at all." As this question was limited to a defined set of challenges, it was followed up by an open response question asking respondents to list any other challenges not listed in the preceding question. These three questions formulated the basis for this study.

Questions eleven and twelve asked the respondent about funding and priority levels for web-based e-participation tools. It was assumed that funding levels and priority levels for these tools would have a strong association, but information was gathered on both topics in order to confirm this assumption. Additionally, the priority level question was used as the basis for comparison when determining trends across population, location, and demographic characteristics of the department's surveyed. This question provided a simple scale for determining the importance placed on incorporation of these tools into the public planning process.

The survey concluded with several questions asking about the job title and jurisdiction of the respondent's department. This information helped confirm the town or county the respondent was representing and who within the department was answering the questions. The final questions of the survey allowed respondents to volunteer to have their contact information included in the sample pool from which respondents for the follow-up interviews would be selected.

Survey Sample Selection

The survey sample for this research was selected from a nationwide list of communities that contained populations of 100,000 or less. The first step of this process required identifying all counties, cities, and towns with populations of 100,000 or less within the United States. To do this, the U.S. Census Bureau American Fact Finder website (<http://factfinder2.census.gov/faces/nav/jsf/pages/index.xhtml>) was used to collect all county and place subdivisions that met this parameter based on the 2010 U.S. Census.

The American Fact Finder research produced a search result of the 2010 Demographic Profile SF. The data sets were then downloaded, with 29,515 total places within the United States and

3,222 total counties within the United States meeting the population size requirements. These two data sets were then exported to Microsoft Excel and sorted in ascending order by population total. All counties and places (cities, towns, villages, etc.) with populations over 100,000 were then discarded from the sample set. After this step, 28,979 places and 2,565 counties remained in the list. After performing a preliminary online search of the lowest population towns, cities and counties, it was determined that a lower bound for population size would be set at 3,000, as most towns, cities and counties smaller than this size did not have planning or community development departments. After all places and counties with populations less than 3,000 were removed from the list, the final list consisted of 8,439 places and 2,402 counties.

A distributive sample was then developed given the combined population breakdown of these two categories. A base sample of five hundred was selected for the population segment of 3,000-20,000, which comprised almost 72% of the total number of places and counties meeting the survey parameters. As a proportionate sample would have created categories with samples too small to create statistically significant data, a slightly modified approach was utilized. Because the focus of this research was small population communities, it was determined that the first two categories combined would account for over 80% of the sample to receive surveys, and then subsequent categories would account for the same percentage of the previous segment as the total population. The resulting breakdown of the survey sample follows:

Table 3: Combined Total of County and Places for each Population Segment in the U.S. and Associated Sample Size

Population Segment	Total	% of Previous Segment	Sample Size	% of Previous Segment	Final Response Rate
Total	10,840		847		
3,000-20,000	7,779	71.76%	500	59.03%	39.60%
20,001-40,000	1,764	22.68%	200	40.00%	41.50%
40,001-60,000	694	39.34%	79	39.50%	45.57%
60,001-80,000	373	53.75%	42	53.16%	35.71%
80,001-100,000	230	61.66%	26	61.90%	42.31%

Because of the time and resource constraints of this study, the objective was to achieve at least three hundred completed surveys in order to amass a large enough sample size for analysis. Based on the response rates reported of previous cold-call surveys of this type, a 30%-35% response rate was assumed, thus necessitating an initial sample size of about 850. Factoring in the proportionate sample constraints already discussed, this created a total sample of 847. As seen in the final column of Table 3, the final response rate across all population segments was fairly consistent, ranging from 35.71% to 45.57%.

The combined list of counties and places was then sorted into these categories, and each population subset was imported into SPSS. A random selection of twice the desired sample size was generated for each population subset. This was done because it was assumed that not all counties and places selected would have their own planning or community development departments.

After the randomly selected lists were generated, each county or place name was input into Google Search (www.google.com) to determine if the entity had a planning or community development department. If a Google Search did not return any hits for the county or place

name, then an attempt was made to call the government offices of the place or county to determine if it had a planning or community development department. If a Google Search did return a hit for the place, then the local government website was searched for indications of a planning or community development department. If a site for the department was found, then contact information was collected from that site. If it was clear that there was a department, but only a phone number was provided for either the government offices or the department, then it was copied down and the department was contacted at a later time. This process was used to collect all data for the total 847 sample departments selected.

Information collected about each county or place included the county or place name, state, population, population range, contact's first and last name, title, email, phone, address, and website address. If a contact individual could not be found, but an email for the department was provided, then this information was used to distribute the survey. Once all of this information was collected and vetted, an introductory email (Appendix A) was sent to each of the selected departments informing them that they had been selected for the survey, the reason for the survey, and the distribution date for the survey. An introductory email was sent ahead of time for two reasons: to clear any emails that may have spam software in use, and to ask for appropriate contacts if the receiver was not the most appropriate individual to take the survey.

The selected email addresses were then loaded into the Survey Monkey website and selected for distribution. The initial survey was sent out on June 4th, 2012. A second survey request email was sent out on June 11th, 2012, only to non-respondents. A final reminder was sent out to non-respondents on June 19th, 2012. A total of 349 responses were collected through the online survey. This constituted a response rate of 41.2%, which was above the estimated 33.3% response rate expected from a cold-contact survey distribution such as this one. The

goal of the survey was to collect at least 300 responses with a good distribution across all population categories. The resulting response breakdown occurred as follows:

Table 4: Characteristics of Survey Respondents

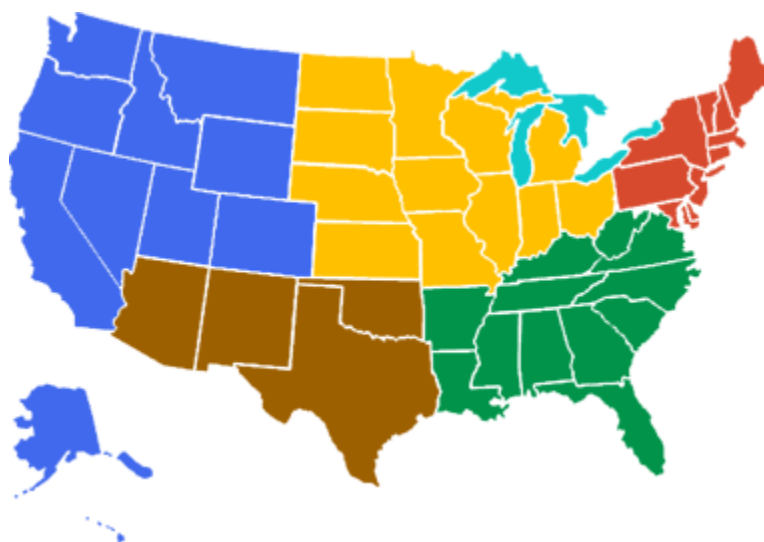
States Represented	45	Jurisdiction Breakdown	
		City	220
Region A Breakdown		County	76
Alaska/Pacific	4	Town	28
Midwest	101	Village	19
Northeast	33		
Southeast	86	Population Range Breakdown	
Southwest	20	3,000-20,000	198
West	99	20,001-40,000	83
		40,001-60,000	36
Region B Breakdown		60,001-80,000	15
Central Plains	18	80,001-100,000	11
Great Lakes	80		
Mid Atlantic	22	Other Demographic Ranges	
Northeast	22	Population Density (people per sq mi)	2 - 18,229
Pacific	33	Median Household Income	\$20,379 - \$203,438
Pacific Alaska	37	Median Age	22.7 - 57.2
Rocky Mountain	39		
Southeast	73		
Southwest	19		

Phase II: Department Interviews

Once all of the surveys were collected and analyzed, requests for participation in follow-up interviews were sent to willing respondents. Question fifteen of the original survey asked respondents to indicate whether they were willing to participate in a follow up interview, and question sixteen then asked for contact information to be provided for the interviewee. In total, 94 respondents indicated that they would be interested in participating in a follow up interview. The survey information for these 94 respondents and their contact information was then exported to an Excel spreadsheet for analysis and selection of interviewees for the report.

In order to ensure a varied cross-section of interviewees, respondents selected to receive interview request emails were chosen based on five factors: population category, jurisdiction of the department (whether the department served a county or town/village/city), regional location of the department (Northeast, Southeast, Southwest, Midwest, or West, See Figure 6), priority rating as indicated in the survey, and funding level as indicated in the survey.

Figure 6: Regional Subdivisions of Department Locations



Source: <http://www.rvt.com/popups/regionmap.htm>

Although it was originally planned to have at least one respondent from each of the population subsets surveyed, after several rounds of request emails were sent, none of the potential interviewees in the 80,000-100,000 population category responded to the request. As such this population group did not have a representative interview conducted. This lack of representation is notable, but not highly troubling since the study was to focus on low population communities, and as such more interviews were possible for the lower population subsets.

From August through September, several rounds of request emails were sent to selected respondents to schedule phone interviews. The request email included a re-introduction to the study, a request that the respondent reply with time available to participate in the interview in the coming weeks, an attachment of the interview questions to be asked, and an attachment of the IRB Consent form with signature required (Appendix C). In all, forty-one request emails were sent out over the two month period, and eight interviews were conducted as a result. The cross-section of the interviewee characteristics follows:

Table 5: Selected Characteristics of Departments Interviewed

Jurisdiction	Population Range	Region	Funding Level	Priority Level
County	3,000-20,000	West	\$0	Very Low
County	3,000-20,000	Southeast	\$0	High
Village	3,000-20,000	Southeast	Do not know	Very Low
City	3,000-20,000	Southeast	No response	No response
City	20,001-40,000	Midwest	Do not know	High
County	20,001-40,000	Northeast	\$1-\$2,000	Neutral
City	40,001-60,000	West	\$2,000-\$5,000	Neutral
County	60,001-80,000	Midwest	Do not know	High

The interviews were conducted from Aug 31, 2012 to Oct 19, 2012, and lasted between 20 and 50 minutes each. The interview consisted of eighteen questions that were distributed to the interviewees prior to the interview (Appendix C). During the course of the interview, some questions were adjusted to more accurately address the department’s current technology use. The questions were categorized into groups and covered the topics of department website visibility, information dissemination and website maintenance, external barriers, and website interactive capabilities. The questions were developed to access some of the more nuanced information not provided through the survey responses. The responses to the questions were varied, and will be addressed in the analysis portion of this report.

RESULTS

In development of the research methods for this study, it was determined that the survey results would provide the foundation for the results analysis, and the follow-up interviews would serve as supplemental data. This approach was deemed appropriate for two reasons, 1) the survey results represented a much greater sample of planning and community development departments within the study parameters, and 2) the follow-up structure of the interviews necessarily positioned them supplemental to the survey responses. As such, the analysis of the results will focus primarily on the survey results, with reference to specific interview responses as they relate to relevant topics. The first section of the analysis will review the response results of the survey. The results of a Chi Square Test association analysis conducted for some of the responses will then follow.

Survey Analysis

This preliminary analysis will review the results of the survey, with minimal manipulation of the data. A full summary of the survey results can be found in Appendix B. This analysis will focus on the most pertinent questions to the focus of this research.

As noted previously, the first series of questions asked about the structure of the responding department's website. Question two of the survey asked if the department had its own website or homepage on the internet. Of the responses, 82.6% responded "Yes" and 17.4% responded "No." However, when the responses to this question were adjusted based on the results of question three, "How is the website structured?" it was determined that the percentage of departments with a web presence was closer to 96%. This was concluded because a larger number of departments identified that their website as a subpage of the higher governing entity's website (304) than responded "Yes" to the previous question (285). It was assumed that

some of the respondents may have confused the first question as an inquiry into the department having its own, stand-alone website, separate from the larger government website. When then asked if a hyperlink to the department's website was found on the local government homepage, 79.0% responded "Yes."

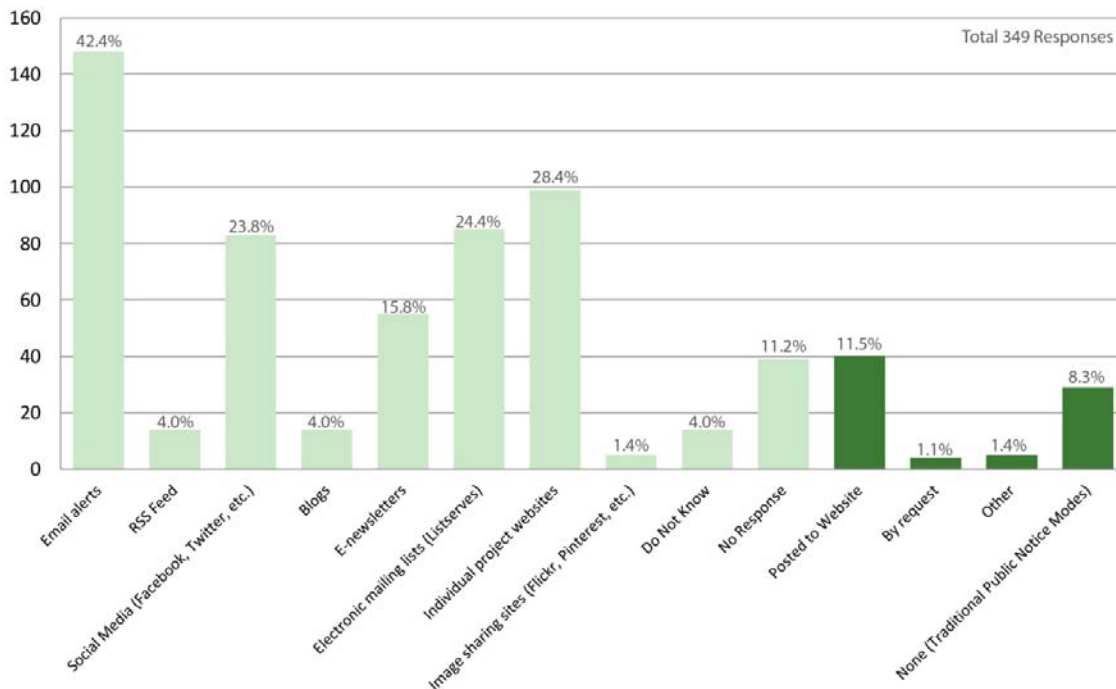
These questions were asked to determine existing web presence for the respondents. As the focus of this survey was to determine barriers to web-based online participation tools, the first item to review was whether or not the departments had an established web presence through a website or homepage. With 96% of the departments having some form of webpage available online, this provided a good basis for the results for the remainder of the survey. The question regarding hyperlinks to the planning department's website was a way to assess visibility and navigability for the public accessing the website. With nearly 80% of departments having a hyperlink on their local government website, it is assumed that the majority of the departments have acceptable visibility of their website. These findings are consistent the studies reviewed under the section *Current Profile of e-Participation Applications*.

Of note, in collecting the survey sample information for this research, every feasible attempt was made to find departments based on information sources other than the internet, but as it was an avenue utilized to collect data, a department had a greater likelihood of being included in the list of departments selected to receive a survey if it had a web presence. Nevertheless, as the data collected for this sample was consistent with previous studies, the analyst believes this study can still serve as a benchmark for studies in the future.

The next group of survey questions focused on how departments use the internet to interact with the public they represent, in both how information is shared and how it is received. When

asked how the department shares electronic output with the public, the most common method was through email, with 42.4% of the respondents indicating this method was used. This was followed by individual project websites with 28.4% affirmative responses, electronic mailing lists with 24.4% affirmative responses, and social media with 23.8% affirmative responses. This question included an open response item for other methods. After the open responses were coded (represented in dark green below), the response breakdown developed as follows:

Figure 7: Response Summary to Q5. How does your department share electronic output with the public? (Check all that apply)



The most common “Other” method for distribution of information was posting information to the department website. The next most common “Other” response was that none of these methods were utilized, and instead traditional public notice methods were used (newspaper notice, radio or TV broadcast). Most surprising in the responses to this question was the high number of respondents indicating use of individual project websites. This method requires a higher understanding of website design and maintenance, and thus may be an indicator of 1) a higher

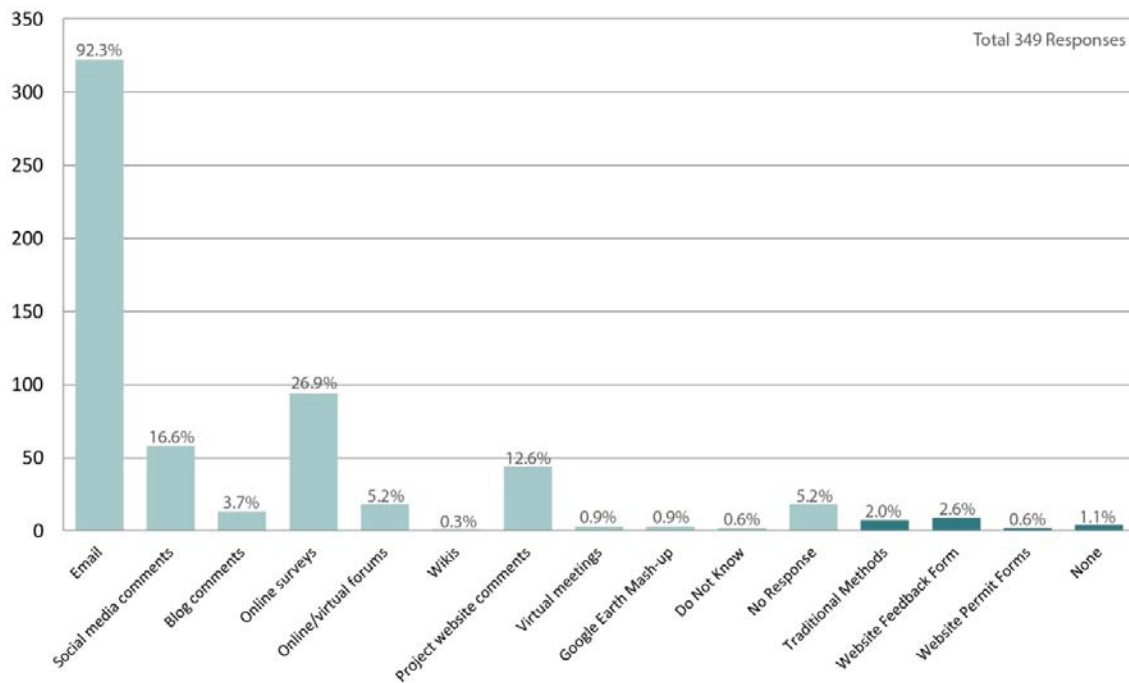
level of technological understanding within the department and/or 2) a higher availability of user friendly platforms with which to design these sites.

A review of interview responses may shed light on this response rate. When asked what types of web-based outlets had been used by the interviewee's department to engage the public, four of the respondents indicated only the department's website had been used thus far. Two respondents said their departments had developed additional project websites, and one respondent indicated that the department had used online surveys. Five of the departments interviewed indicated that all website updates were handled within the department, and two others said it was a combination of department handling and work outsourced to an IT consultant. These responses indicate a relatively high proficiency in website use and maintenance.

When questioned further about the website platforms that the individual departments were using, it was clear that perceived ease of maintaining the website was a significant factor. Two interviewees indicated that the webpage developing platform Dreamweaver was incredibly difficult to use, with one of these individuals currently migrating their website off of this platform for this very reason. Interviewees that were using more controlled platforms such as CivicPlus and Wordpress found making updates to the department website, and even developing new web pages, a much simpler process. As such, as these platforms are developed further, we may see an increase in project specific websites being developed by planning and community development departments. While a certain level of web design knowledge is necessary, the learning curve for these programs is leveling, and no longer requires expertise in areas such as html code or site maps.

Question six was very similar to question five, requesting the departments to list methods for receiving input from the public. Almost all of these methods showed lower utilization than output methods, which again is consistent with the studies in the section *Current Profile of e-Participation Application*. Email was by far the most utilized tool, with 92.3% of respondents indicating they use email for receiving input. Use of any other methods dropped off significantly after that with online surveys following with 26.9% of respondents indicating affirmative responses. Social media likes/comments/posts as a method of receiving input had 16.6% affirmative responses, and project website comments followed with 12.6% affirmative response. Evident from these results is that information sharing tools still highly outpace information gathering and collaborative tools. An analysis of the open response “Other” category did not indicate any additional strong leaders (represented in dark blue in the figure below).

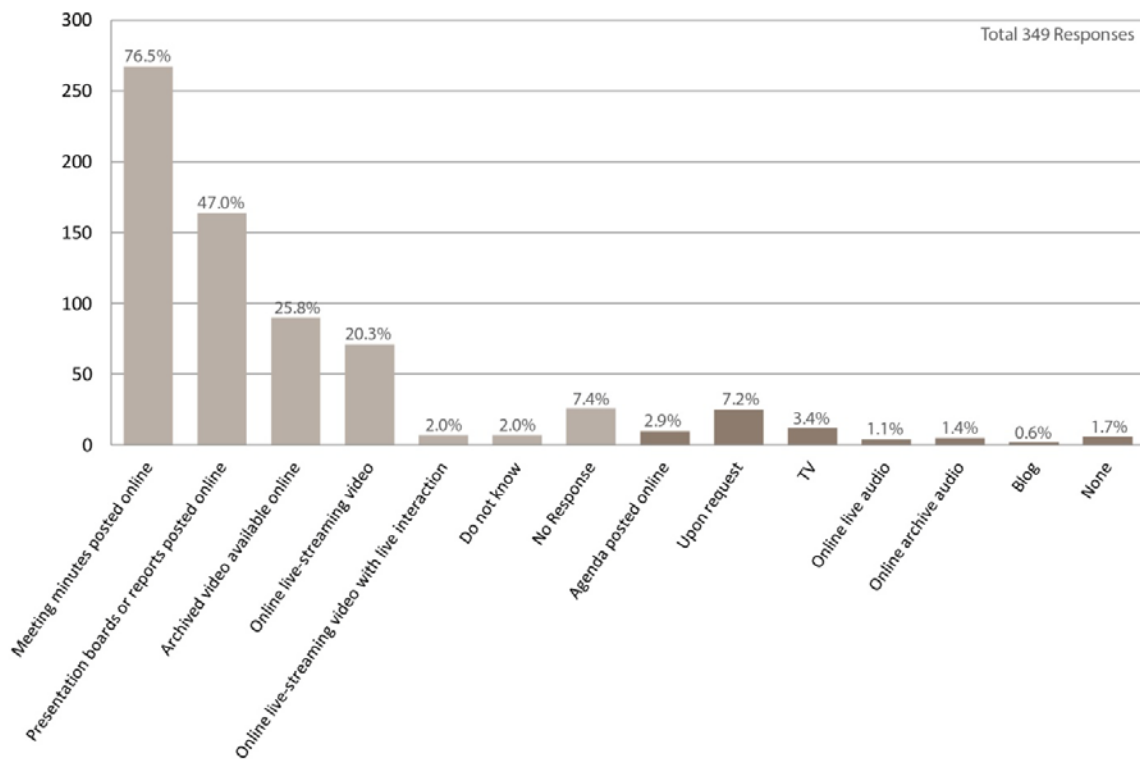
Figure 8: Response Summary to Q6. How does your department receive electronic input from the public? (Check all that apply)



Question seven reviewed one last approach for determining how departments allowed for public participation through web-based applications. When asked how public meetings and presentations are available to the public other than by attending in person, 76.5% responded that meeting minutes were available online. This was followed by 47.0% of the departments responding that presentation boards or reports were posted online. Archived video and live-streaming video were available online for 25.8% and 20.3% of the departments respectively.

When the “Other” response was coded and included in the analysis, the most comment response was that information was available upon request (represented in dark brown in the figure below):

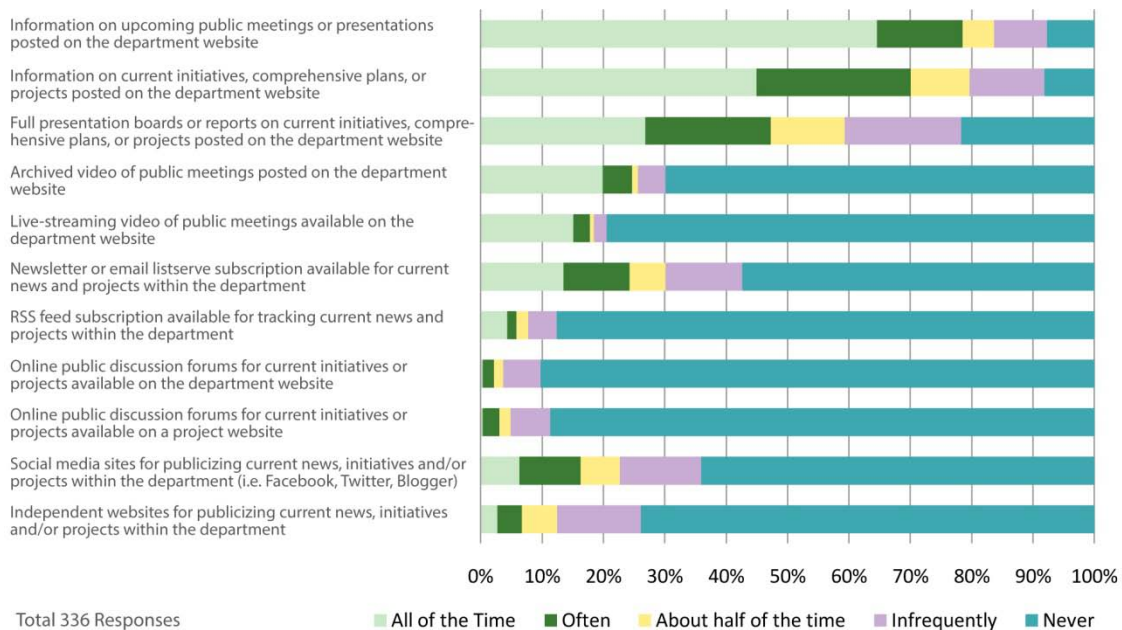
FIGURE 9: Response Summary to Q7. How are your public meetings and presentations available to the public, other than by attending in person? (Check all that apply)



The live-streaming video response rate was surprisingly high given the expense and technological requirements for this method in terms of budgetary constraints for smaller departments. Evans-Cowley's e-Government report found that only 36.5% of planning departments that serve populations of 50,000 and greater provided live-streaming video of public meetings (Evans-Cowley et al., 2011). The interview responses provided little insight on this question. Only two departments offered video of public meetings, and only one of those was live-streaming. This department served a population between 40,001 and 60,000 and was located in a developed area of California, so this provision was not completely incongruous. This data should be compared against the findings of future studies to confirm and help explain the cause for such high adoption.

Question eight began an analysis of the frequency of use for online tools for distributing and receiving information to and from the public. The graphic of results follows:

FIGURE 10: Response Summary to Q8. In the following table, please indicate how often your department uses each web-based method for providing public access to this material.



Clearly, information posted to the department website is the most commonly used method, indicated by responses to the first three descriptions, and is used “all of the time” by the largest proportion of respondents for publicizing information on upcoming public meetings, current initiatives, and for information on current projects. All other web-based methods were used highly infrequently, with the most common response being “Never.” This indicates a large gap between the methods available to planning departments for engaging the public and the methods being utilized. The table below categorizes the tools above into information sharing, information gathering, or collaborative e-participation web-based tool.

Table 6: Question 8 Options Categorized by e-Participation Tool

	TYPE OF E-TOOL		
	Information Sharing	Information Gathering	Collaborative, e-Participation
Information on upcoming public meetings or presentations posted on the department website	X		
Information on current initiatives, comprehensive plans, or projects posted on the department website	X		
Full presentation boards or reports on current initiatives, comprehensive plans, or projects posted on the department website	X		
Archived video of public meetings posted on the department website	X		
Live-streaming video of public meetings available on the department website	X		
Newsletter or email listserve subscription available for current news and projects within the department	X		
RSS feed subscription available for tracking current news and projects within the department	X		
Online public discussion forums for current initiatives or projects available on the department website	X	X	X
Online public discussion forums for current initiatives or projects available on a project website	X	X	X
Social media sites for publicizing current news, initiatives and/or projects within the department (i.e. Facebook, Twitter, Blogger)	X	?	?
Independent websites for publicizing current news, initiatives and/or projects within the department	X	?	?

The posting of information on the department website seems to be the most preferred method for providing information to the public. This type of tool is considered to be an information sharing tool and does not facilitate collaborative, e-participation. The collaborative, e-participation tools included in question eight had some of the lowest frequencies of use of all the listed options. Social media sites such as Facebook, Twitter and blog sites appeared to have the highest use rates of any of the potentially collaborative, e-participation options. This may indicate that the use of these sites may help a department transition into the use of other, more sophisticated collaborative e-participation tools.

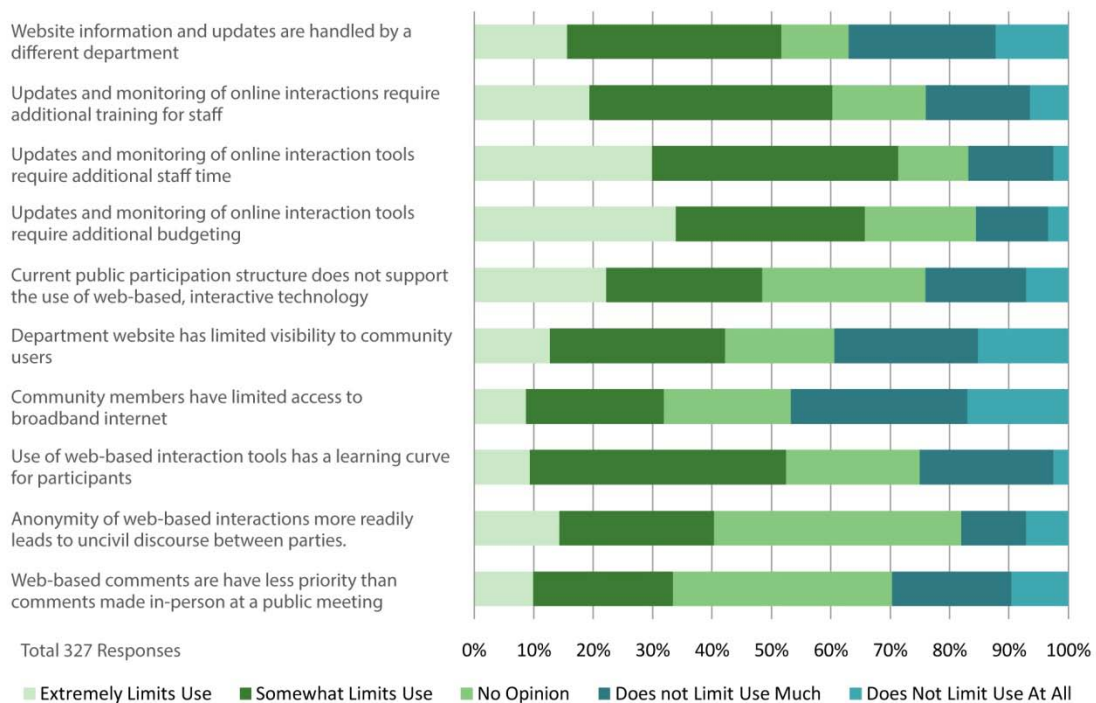
While the use of social media sites was reported by only one department interviewed, responses to other questions may foreshadow future adoption of this kind of web-based tool. When asked if the anonymity aspect of web commenting was seen as an issue in terms of promoting more negative or inappropriate commenting, five of the departments indicated that this was not a concern. Even departments that did not currently allow commenting on any of their websites shared anecdotes of other departments not experiencing major issues with this perceived barrier. One interviewee even shared an anecdote about an adjacent county that had had to remove the ability for commenting from their Facebook page because some individuals in the community had complained that the department was providing too much direct feedback to Facebook comments- efforts the community members felt was taken away from other public services.

When asked a follow-up question as to whether a required login for website commenting would help deter inappropriate posts, five departments indicated this may help the issue, but several cautioned that this action may also deter interaction by citizens who value privacy. Finally, when asked which web-based interactive tools were seen as having the greatest benefit to the

department and the community, social media sites were listed among the five methods most frequently mentioned. As such, while collaborative, e-participation tools like public forums and project discussion sites may be difficult for departments to adopt and monitor, social media sites may fill this role in the interim as departments develop better methods for online participation.

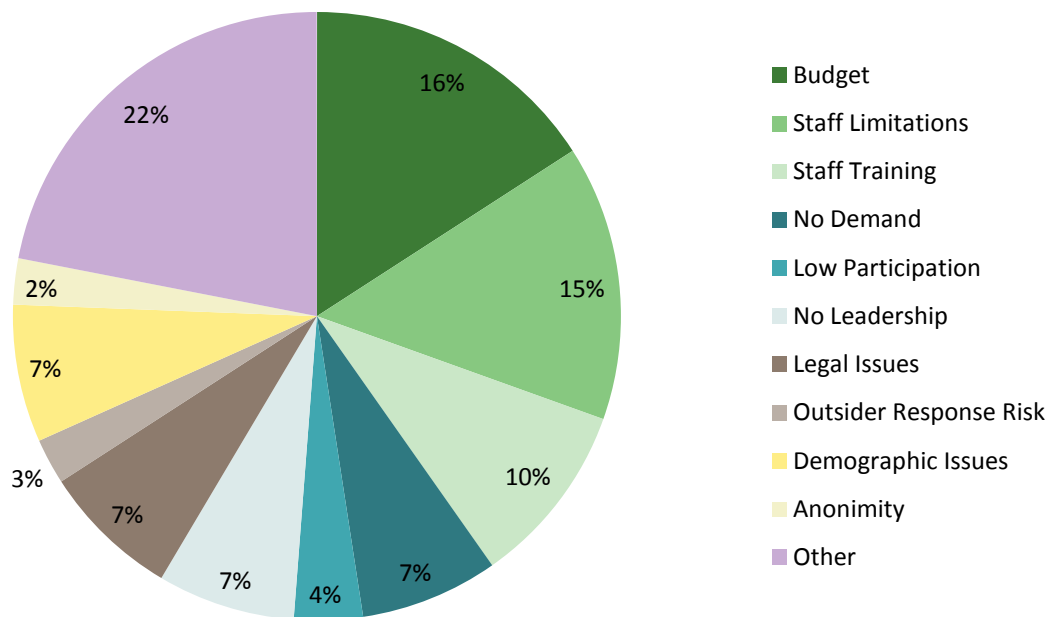
Question eight was followed up with an opinion question on the perceived barrier that a list of known challenges to e-participation tools posed. The question asked the respondent to indicate how strongly they felt each challenge limited incorporation of web-based, e-participation tools on a scale of “extremely limits use” to “does not limit use at all.” The responses are found below. This question and the following one provided the basis for identifying barriers to e-participation tools in planning.

Figure 11: Response Summary to Q9. In the following table, please indicate how strongly you feel each description limits incorporation of web-based, e-participation tools into the public participation process.



Not unexpectedly, the item perceived by most as “extremely limiting use” was the requirement of additional budgeting for these types of tools. Staff time, staff training, learning curves for participants, and website updates being handled by a different department also emerged as being somewhat limiting to use for more than 50% of the respondents. When these results were compared to the open comment option in question ten, it was clearly evident that limited funding, staff time, and staff training were perceived as the greatest barriers. No demand from constituency, low participation rates, no leadership champion, and legal issues were also commonly listed barriers in the open response question.

Figure 12: Response Summary to Q10. Please list any other limiting factors that your department has encountered that were not addressed in the preceding table.



The barrier of limited budgets will be addressed in the analysis of the following question. The barriers of staff time, staff training, and learning curves for participants were covered in more detail in the interview responses. The barrier of staff time displayed an interesting nuance

revealed in the interviews. When asked how much time they spend updating information on the department website, six respondents indicated between one and two hours a week. When compared to the high perception of this factor as a barrier, the amount of time actually spent on using current web-based tools seems somewhat insignificant. However, as several interviewees explained, the current amount of time dedicated to updating the websites allows them to provide basic information to the public. For more collaborative web-based tools, a significant amount of time would need to be invested upfront in learning how to incorporate the tools. Also, additional time would need to be dedicated weekly to monitoring online interactions. However, several respondents indicated that they were already monitoring project websites that allowed for interaction, so in this case the *perception* of higher monitoring requirements may be more of a barrier than the actual time commitment of carrying them out.

Staff training was addressed in the questions that covered who maintained the website. For the most part, it was understood that most individuals handling website updates were either self-trained or had some initial training from a consultant. However, several respondents indicated that the platform they were using for updating web information had a significant effect on what they were able to accomplish through the website. As such, the barrier of staff training may be reduced with the use of a more user-friendly website platform. Different platforms may imply different levels of cost, but free publishing sites such as Wordpress are reducing this barrier along with reducing the staff training necessary.

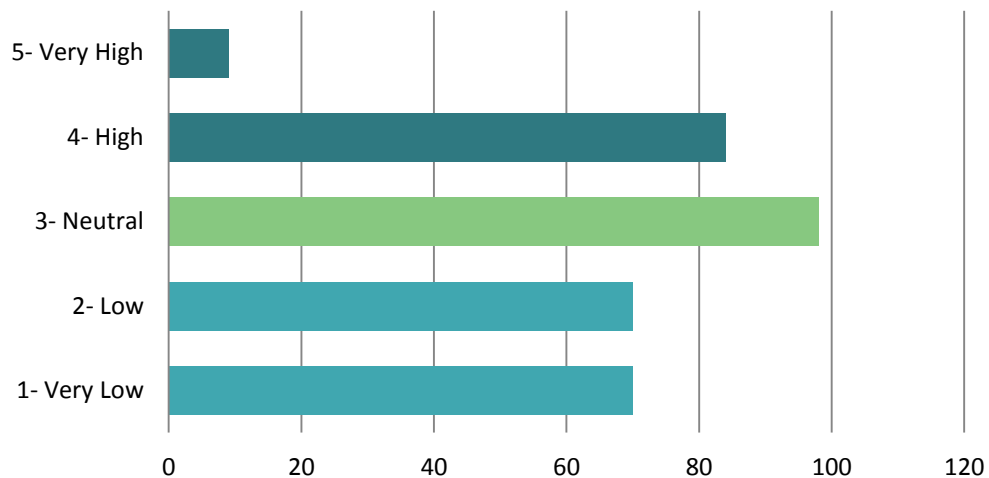
When asked if learning curve issues had been identified in the use of web-based tools, six respondents indicated that they had experienced this barrier with their department's website. For the most part, however, the learning curve issues mainly involved navigation of the department website, or problems locating specific information on the site. Several respondents

also noted that the senior population in their demographic had more difficulty navigating or even using a website than some of the other segments of the population. This was commented on in a majority of the interviews as a barrier to promoting more web-based, e-participation tools since a growing proportion of their communities comprised this segment of the population.

The issue of limited budgeting for these types of tools can be clearly seen in the answers to question eleven, which asked respondents to select the range of funding available for developing web-based tools. Fifty-one percent of respondents indicated that there was no funding available for web-based tools, followed by 22.3% indicating that funding fell within the range of \$1-\$2,000. About 16% indicated that they did not know the funding level. Only three respondents noted that funding for these tools was greater than \$20,000. Surprisingly, the respondents reporting this amount were all from departments serving populations of 3,000-20,000, and with no commonality of location, being from the Southeast, Southwest, and Western regions. While a puzzling anomaly, given these responses accounted for less than one percent of the responses to this question, they were considered outliers for the data.

Finally, the last research question asked respondents to rate the priority level of their department for incorporating web-based, e-participation tools into the public participation process. The responses were as follows:

Figure 13: Response Summary to Q12. On a scale of 1 to 5, how high of a priority for your department is incorporating web-based, e-participation tools into the public participation process?



Although the distribution did not show many responses in the “Very High” category, it was interesting to see that the two highest categories were Neutral with 29.6% and High with 25.4%. The distribution was almost evenly split into quarters across the scale from very low to high, which shows no defined direction when it comes to adoption of these tools. Of the respondents surveyed, a department was almost equally as likely to rate these tools as a very low priority as a high priority. The next section will review the results of association analyses that were run on the data collected from the survey, but this question was very telling that while not a high priority for most departments, it is on the agendas for many small community planning and community development departments.

Chi Square Test Analysis

In addition to the preliminary analysis of the survey responses, a more detailed analysis was performed to discover any associations between the demographics of the population being

served by the responding department and the answers provided. As stated earlier, the analyst is interested in comparing the reported priority held by each planning department for incorporation of e-participation tools and the characteristics of their population. The characteristics that were studied included the region in which the department was located, the jurisdiction of the planning department (town, city, county, etc.), the population range of the area served, the population density of the area served, the median household income of the population being served, the median age of the population being served², and the title of the respondent. The analyst hypothesized that there would be an association between these characteristics and the priority level placed on incorporation of these tools, presuming that the eastern and western regions of the country would report a higher priority level, that departments serving higher population, denser, more affluent, and younger aged populations would report a higher priority level, and that departments serving municipalities would have a high priority level. The title of the respondent was studied to determine if the level of authority of the respondent had any effect on the priority they reported, assuming that individuals in higher levels of authority may report a higher priority level than individuals in other levels of employment. All of this information was collected and then distributed into coded categories in order to run the Chi-Squared Test analysis for association. The coding for the categories occurred as follows:

² *Population data & median age data were collected from the 2010 US Census, DP-1 Profile of General Population and Housing Characteristics: 2010 Demographic Profile Data, Population density data were calculated by dividing the total population data by the area data provided in the 2010 US Gazetteer Files published by the US Census Bureau, and the Median household income data were collected from the DP03 SELECTED ECONOMIC CHARACTERISTICS 2006-2010 American Community Survey 5-Year Estimates. Because of the small populations of some of the cities and towns surveyed, the 2010 data was the earliest complete data set for all characteristics studied.*

Table 7: Characteristic Coding Values for Chi-Squared Analysis

Characteristic	Category	Code
Region	Northeast, Southeast	1
	Midwest	2
	West, Southwest, Alaska & Pacific	3
Jurisdiction	City, Town, Village	1
	County	2
Population Range	3,000-20,000	1
	21,000-40,000	2
	40,001-60,000	3
	61,000-100,000	4
Population Density	<1000 People per sq mi	1
	1000-1,999 People per sq mi	2
	2,000+ People per sq mi	3
Median Income	<\$50,000 Annual income per household	1
	\$50,000-\$99,000 Annual income per household	2
	\$100,000+ Annual income per household	3
Median Age	<40	1
	40+	2
Respondent Title	Other	1
	Director	2
Priority Level	1- Very Low & 2- Low	1
	3- Neutral	2
	4 - High & 5- Very High	3

A Chi-squared analysis was then run using the statistical program SPSS. Contrary to the expectations of the analyst, none of the characteristics included in the analysis demonstrated a statistically significant association with the priority level reported for incorporating e-participation tools into the responding department's public participation process. A summary of the SPSS results is found in the following table:

Table 8: Pearson Chi-Square Values for Priority Level as Dependent Characteristic

Independent Characteristic	Dependent Characteristic	Pearson Chi-Square Value	df	Asymp. Sig.	Note
Region	Priority Level	6.962	4	0.138	0 cells (.0%) have expected count less than 5. The minimum expected count is 27.91
Jurisdiction	Priority Level	2.765	2	0.251	0 cells (.0%) have expected count less than 5. The minimum expected count is 20.54
Population Range	Priority Level	1.286	6	0.972	0 cells (.0%) have expected count less than 5. The minimum expected count is 6.75
Population Density	Priority Level	3.496	4	0.479	0 cells (.0%) have expected count less than 5. The minimum expected count is 29.26
Median Income	Priority Level	6.823	4	0.146	1 cells (11.1%) have expected count less than 5. The minimum expected count is 4.80
Median Age	Priority Level	2.777	2	0.249	0 cells (.0%) have expected count less than 5. The minimum expected count is 31.89
Respondent Title	Priority Level	4.904	2	0.086	0 cells (.0%) have expected count less than 5. The minimum expected count is 32.65

These results indicate that the initial hypotheses for this study did not hold. While it was assumed that some of the characteristics may have insufficient data to determine an association, it was not expected that all studied characteristics would have no statistically significant association with the dependent characteristic, priority level. These findings may be due to the relatively new introduction of e-participation tools into the field, and as such, no association may have developed at this time. The findings may also be due to the relatively small sample size of the study. Of the 10,840 towns, cities, and counties with populations meeting the requirements of this study, only 847 received surveys (7.8%), and of those only 343 responded (3.2%). It is acknowledged that a larger sample size may have provided different results in this analysis.

With these results in mind, a second analysis was run for the dependent characteristic of priority level. The responses for funding level (Q11) were coded such that answers for “Do not know” and “Not permitted to divulge” were dropped out of the analysis, \$0 coded as 1, \$1-\$2000 coded as 2, and \$2000+ coded as 3. This recoded variable was then run as the independent characteristic against priority level in a Chi-squared test analysis. The results are below:

Table 9: Pearson Chi-Square Test Results for Priority Level (Q12) and Funding Levels (Q11)

Chi-Square Tests			
	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	36.894 ^a	4	.000
Likelihood Ratio	33.928	4	.000
Linear-by-Linear Association	28.400	1	.000
N of Valid Cases	271		

a. 0 cells (.0%) have expected count less than 5. The minimum expected count is 7.89.

As seen above, priority level and funding level for e-participation tools have an association value of 36.894, at a statistically significant value of $P \leq 0.000$. It is fair to conclude that these two responses have a high association. However, it is not clear from the survey which variable is actually the dependent variable. A high priority placed on the incorporation of e-participation tools by someone in a leadership role could lead to increased funding, or available funding could be the driver of incorporation of e-participation tools. It can only be stated that of all the characteristics studied for an association with priority level, this is the only characteristic that exhibited any association.

Next, the characteristics for region, jurisdiction, population range, population density, median household income, median age, priority level, and funding level were compared against the

responses to question eight, which asked respondents to “indicate how often your department uses each web-based method for providing public access to this material.” Of all of the characteristics studied the only characteristics that showed a statistically significant association with any of the items in question eight were population density and priority level. Population density had the highest number of associations with the subcategories of question eight. The most significant association occurred between population density and the response for how often “Social media sites for publicizing current news, initiatives and/or projects within the department (i.e. Facebook, Twitter, Blogger)” were used given a range of offered responses. The result of the analysis gave a Chi-squared value of 25.437 ($P=.001$). From these results, it would be assumed that planning departments are more likely to use social media tools if they serve a more densely populated area.

The only other category with a statistically significant association to the characteristic of population density was the relative frequency of use of “Archived video of public meetings posted on the department website.” The result of the Chi-square analysis produced a value of 21.516 ($P=.006$). Again, from these results it would be assumed that planning departments are more likely to archive videos of their public meetings if they served a more densely populated area.

While none of the other subcategories of question eight showed a statistically significant association with population density, it should be noted that this characteristic had many associations for this question that were within range of being statistically significant, and a study with a larger sample size may improve upon the results gathered in this study. For this study, the following results were obtained from the analysis of population density against the subcategories of question eight:

- Relative frequency of “Information on upcoming public meetings or presentations posted on the department website,” Chi-Square Value 15.203 (P=.055)
- Relative frequency of “Information on current initiatives, comprehensive plans, or projects posted on the department website,” Chi-Square Value 17.884 (P=.022)
- Relative frequency of “Live-streaming video of public meetings available on the department website,” Chi-Square Value 17.271 (P=.027)
- Relative frequency of “RSS feed subscription available for tracking current news and projects within the department,” Chi-Square Value 17.562 (P=.025)

From these results, it would seem that more densely populated areas are more likely to provide web-based, e-participation tools, in a wider variety of formats, than any other characteristic studied for the demographics of a population served by planning and community development departments.

Priority level was also associated with some of the subcategories in question eight at a statistically significant level. While this study was not setup to research how priority level affected use of e-participation tools, it is interesting to see what tools were used by respondents that indicated a high priority level for e-participation tools. Of the subcategories, a high priority level was associated with “Full presentation boards or reports on current initiatives, comprehensive plans, or projects posted on the department website” (Chi-squared value 31.273, $P \leq .000$), “Information on current initiatives, comprehensive plans, or projects posted on the department website” (Chi-squared value 26.491, $P = .001$), “Social media sites for publicizing current news, initiatives and/or projects within the department (i.e. Facebook, Twitter, Blogger)” (Chi-squared value 20.051, $P = .010$), and “Newsletter or email listserve subscription available for current news and projects within the department” (Chi-squared value 19.141, $P = .014$). Of these categories, the newsletter and social media tools were the least likely tools

be use across the board, and therefore would seem to indicate a higher priority being placed on e-participation tool utilization.

Finally, question nine, which asked respondents to indicate how strongly they feel each item limit's incorporation of web-based, e-participation tools into the public participation process, was compared against the same characteristics as question eight. After running a Chi-Square Test evaluation, the characteristics having an association with the response to question nine were jurisdiction, population density and the subsequent response of how high a priority the department placed on e-participation tools. The characteristic of jurisdiction had an association with only one item in question nine, "Community members have limited access to broadband internet." According to the analysis, planning departments that represented counties were much more likely to say that this factor limits use of e-participation tools than departments representing towns, villages, or cities (Chi-squared value 38.899, $P \leq .000$). This finding is plausible given that county planning departments generally serve populations that are distributed over a wider area than town or city departments, and more likely these areas would not be served by broadband internet.

This finding is also consistent with the association found between the characteristic for population density and this factor. Planning departments serving higher population densities were less likely to state that access to broadband limits use of e-participation tools (Chi-squared value 23.848, $P = .002$). Additionally, departments serving areas with high population densities were less likely to state that "Website information and updates are handled by a different department," limits use of e-participation tools (Chi-squared value 20.075, $P = .010$).

Finally, respondents who indicated that e-participation tools were a high or very high priority department were less likely to say that “Updates and monitoring of online interactions require additional training for staff” were a limit to the use of these tools (Chi-squared value 34.978, $P \leq .000$).

While some associations were discovered through this analysis, they were not the expected patterns based on previous hypotheses. The only demographic characteristic that appeared to have an influence on the type of e-participation tools used was the density of the served population. Additionally, some barriers were associated to jurisdiction and population density, but these were limited in number. As such, it was found that regardless of the demographics of the population served, a department was as equally as likely to provide a particular e-participation tool or perceive a particular challenge as a barrier as any other department serving a relatively different makeup of constituency. Given the relatively evenly dispersed results of the priority level distribution, these findings may simply reflect the infancy of this technology and a limited pattern of adoption as of yet.

CONCLUSIONS

The aim of this study was to provide not only a benchmark for how e-participation tools are currently used within planning and community development, but also to discover if any pattern existed between indicators of usage level and identified barriers and the characteristics of the population served by the planning and community development department. The goal was to identify the most prevalent barriers in the field, and attempt to provide solutions either through identified solutions in current literature, or through the first-person experiences of the departments studied. While the Chi Square Test analysis did not provide sufficient data to

suggest specific solutions to certain demographic profiles, it does indicate that developing solutions may be applicable to any department serving a small population base.

The data gathered by this study was able to identify four major barriers to the use of web-based, e-participation tools for departments serving small populations. The most significant of these barriers was that of inadequate budgets for incorporating additional e-participation tools into the department's online participation process. The majority of responding departments indicated that there was no funding budgeted for e-participation tools. Given the high association between this factor and priority level placed on incorporation of these tools, this is a barrier that must be addressed for these tools to move forward in their development. As noted in the interviews, some issues of cost are beginning to lessen with the development of free website development platforms. Additionally, the cost of developing a social media presence is free, except for the paid staff time to develop and monitor these sites.

Creative methods may be incorporated for stretching the budgets of planning departments by incorporating web-based e-participation tools more overtly into the required public participation process of existing projects. Staff time could be shifted such that funding for a series of public meetings and traditional public notice methods could swap an online participation element for a traditional element such as one of the public meetings. As noted in a previous study, e-participation venues can actually save departments money in time and expenses (Desquinabo et al., 2010), but they must be well evaluated and focused in their use prior to beginning the public participation process.

Staff time and staff training also emerged as being substantial barriers to incorporation of e-participation tools. As discussed in the interview responses, the barrier of staff time should be

understood in two parts, the amount of time currently needed to keep information sharing methods current, and the additional time that would be necessary for more focused monitoring of information gathering or collaborative e-participation tools. Departments interviewed that did have project websites noted that there were weeks where larger blocks of time were necessary for updating project progress, up to about five hours a week, but this did not occur on a weekly basis, and for the most part, the time devoted to keeping up information on the department website and project websites was about one hour a week.

It would seem that this barrier may be more of a perception of a significant barrier than an actual significant barrier in practice. As covered in the literature review, the development of an effective e-participation model in public planning projects may account for more time and training than the actual carrying out of that process. This is especially true of smaller communities where the amount of participation in any process would be comparatively lower than communities with larger numbers. As such, the development of these models may even be better suited to trials in smaller communities because the responses and participation rates may be more easily moderated.

Limited staff training followed the barrier of limited staff time closely in the results. However, while staff time is a barrier that will mostly likely exist throughout the development of these tools, the learning curve for staff training does seem to be showing signs of slacking. Of the eight departments interviewed, only one department indicated that they had no direct control over their website. Additionally, several departments noted the level of ease their current website platforms afforded them for updating information. Website development platforms are becoming more user-friendly, and in some cases are completely free to the user. Blogging sites allow for comment threads that can be easily directed as a discussion forum for a planned development,

and social media sites allow for quick polling on simple planning issues. As both internet users and department employees become more familiar with Web 2.0 applications, the need for training for these applications will diminish. What will not diminish is the need for training in effective public participation models, and how to best incorporate focused collaboration, as can be achieved through e-participation tools, into the overall public process. This is an area that should be tackled at the academic level, and included in coursework for planning degrees. Additionally, more research on case studies of e-participation models are needed to provide guidance to planning departments wishing to utilize these powerful tools.

As uncovered in the interviews, the issues of learning curves for citizens wishing to use the tools had two major elements. The first being the overall ease of use of the website for finding information. This issue was also noted in the article *Web 2.0 in Government: Why and How?* (Osimo, 2008), stating that lack of current tools use was mainly attributed to lack of knowledge that the tools existed or the difficulty of locating these tools on the internet. This is a barrier that departments will have to work through, and may require additional education for staff as to how best present information on a public website. This is a communications and outreach issue, which again ties into the idea of providing academic training in methods of how best to reach the public.

The second element of learning curves for users was attributed to the aging population of departments' demographics, or simply citizens who had no interest in using tools available to them on the web. It is understood that some citizens will not want access their public institutions via the web, and traditional methods of outreach should not be eclipsed by e-participation methods. However, for those wishing to learn how to use these tools, but perhaps not having an affinity for internet use, there are developing solutions in the form of community

technology centers (Warschauer & Matuchniak, 2010) or community telecentres (Bailey & Ngwenyama, 2011). These hubs are being setup as technology learning centers for populations affected by the digital divide. In one particularly successful application (Bailey & Ngwenyama, 2011), adolescent users at these centers began guiding adult and elderly individuals through access and navigating virtual communities. These types of facilities help to bridge the digital divide for many factions of the population, and would simultaneously assist in overcoming this last significant barrier.

In terms of the use of collaborative, e-participation tools, the adoption rates by smaller planning departments appear to be lagging similarly to those of larger planning departments. The majority of departments surveyed have a web-presence for sharing information with the public, and about a quarter of the responding departments used online surveys to gather information from the public. Furthermore, almost 30% of responding departments reported using individual project websites to share more detailed information with the public. While project websites are not in and of themselves collaborative, e-participation tools, the development of a website specifically to accomplish a project goal is definitely a move in that direction. The use of social

media sites also seems to provide an intermediate step to incorporating collaborative e-participation tools into the public participation process. The department interviewed that had utilized social media sites noted that interactions with the public were quick, seamless, and easy to monitor. Additionally, when asked which web-



based tools were seen as having the greatest benefit to their department and their community, social media tools were among the responses given.

Other web-based operations seen as having the greatest benefit to the departments interviewed included using the web as a greater depository for department information, provision of online forms that could be filled out and submitted digitally, offering online visualization tools like interactive GIS maps and 3D visualizations of development projects, and incorporation of online public participation applications like MindMixer³. While the responses ran the gamut in terms of the continuum of information sharing to collaborative tools, it is interesting to note that again there was no association between characteristics of the population served and the respondent's answer. A respondent for a department serving a population between 40,001 and 60,000 wanted to see fillable forms incorporated into their website, and another respondent representing between 3,000 and 20,000 in population thought that 3D visualizations would best serve the community. Research should continue on the trend of adoption rates for information sharing, information gathering, and truly collaborative e-participation tools within planning departments. It may be that web-based, collaborative e-participation tools simply have a lag time for adoption behind information sharing tools, or it may be that the adoption rates will continue to be slower based on complications of process and incorporation.

³ <http://www.mindmixer.com/>

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APPENDICES

- A. Survey Recruitment Letter
- B. Survey Results Summary
- C. Interview Recruitment Letter
- D. Interview Response Summary

APPENDIX A: Survey Recruitment Letter

May 30, 2012

To Whom it May Concern:

I am a Masters candidate in the Virginia Tech Urban and Regional Planning program, as well as a planner for the Windham Regional Commission in Brattleboro, Vermont. As part of my graduate thesis research for the Urban Affairs and Planning department I am conducting a survey to help identify barriers to the use of internet-based, e-participation tools in town, county, and small city planning. My survey population consists of randomly selected Community Development and/or Planning departments that serve populations between 3,000 to 100,000 nationwide. The three main objectives of this research are:

1. To identify barriers to the use of internet-based, e-participation tools for municipal planning departments
2. To identify avenues for overcoming these barriers
3. To suggest effective practices for using specific e-participation tools within the planning process



On Monday, June 4th, I will be emailing out the official survey form (via a survey monkey link). This email serves as an introduction to myself and my research, and a request that if there is a contact in your department who is better suited to responding to this survey, could you kindly reply with their contact information (name, title, & email). I will be happy to direct the survey to the most appropriate individual based on my research topic.

Thank you very much for your time.



Cullen Meves
Virginia Tech Graduate Student
[330-861-8718](tel:330-861-8718)
VTgradplanning@gmail.com

APPENDIX B: Survey Results Summary

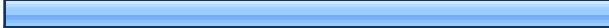



1. Consent to Voluntary Participation: I voluntarily agree to participate in this study. By completing and submitting the online survey, I confirm that the questions were answered to the best of my ability, and give my consent for the answers to be included in the research collected for this thesis. I am also aware of the voluntary follow-up interview to be conducted at a date following the closing date of the survey. If I so chose to participate in the follow up interview, I will indicate my intentions per the questions at the end of online survey and include my contact information when asked. If I chose to participate in the follow up interview, I will answer the questions to the best of my ability.

		Response Percent	Response Count
Yes		99.7%	347
No (Please do not proceed with survey if this is your selection)		0.3%	1
answered question			348
skipped question			1



2. Does your planning department have its own website or homepage on the internet?

		Response Percent	Response Count
Yes		82.6%	285
No		17.4%	60
answered question			345
skipped question			4



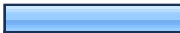



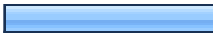



3. How is the website structured?

		Response Percent	Response Count
As a sub-site of the County/City/Town government website		91.0%	304
As its own individual website		6.0%	20
As a sub-site of an independent website (i.e. Wordpress, Blogger, Facebook, etc.)		0.9%	3
Other (please specify)		2.1%	7
		answered question	334
		skipped question	15

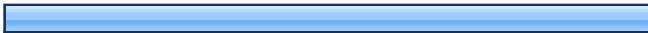










4. Is a hyperlink to the planning department's website found on the local government homepage?

		Response Percent	Response Count
Yes		79.0%	267
No		21.0%	71
		answered question	338
		skipped question	11

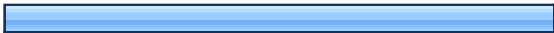






5. How does your department share electronic output with the public? (Check all that apply)

		Response Percent	Response Count
Email alerts		47.1%	146
RSS Feed		4.5%	14
Social Media (Facebook, Twitter, etc.)		26.8%	83
Blogs		4.5%	14
E-newsletters		17.7%	55
Electronic mailing lists (Listserve)		26.5%	82
Individual project websites		31.9%	99
Image sharing sites (Flickr, Pinterest, etc.)		1.6%	5
Do Not Know		4.5%	14
Other (please specify)		26.8%	83
		answered question	310
		skipped question	39

6. How does your department receive electronic input from the public? (Check all that apply)

		Response Percent	Response Count
Email		97.3%	322
Social media likes/comments/posts		17.5%	58
Blog comments		3.9%	13
Online surveys		28.4%	94
Online/virtual forums		5.4%	18
Wikis		0.3%	1
Project website comments		13.3%	44
Virtual meetings		0.9%	3
Google Earth Mash-up		0.9%	3
Do Not Know		0.6%	2
Other (please specify)		6.9%	23
answered question			331
skipped question			18

7. How are your public meetings and presentations available to the public, other than by attending in person? (Check all that apply)

		Response Percent	Response Count
Meeting minutes posted online		82.7%	267
Presentation boards or reports posted online (in PDF or other graphic format)		50.8%	164
Archived video available online		27.9%	90
Online live-streaming video		22.0%	71
Online live-streaming video with live interaction		2.2%	7
Do not know		2.2%	7
Other (please specify)		19.8%	64
		answered question	323
		skipped question	26

8. In the following table, please indicate how often your department uses each web-based method for providing public access to this material.

	All of the Time	Often	About half the time	Infrequently	Never	Response Count
Information on upcoming public meetings or presentations posted on the department website	64.6% (217)	14.0% (47)	5.1% (17)	8.6% (29)	7.7% (26)	336
Information on current initiatives, comprehensive plans, or projects posted on the department website	44.9% (150)	25.1% (84)	9.6% (32)	12.3% (41)	8.1% (27)	334
Full presentation boards or reports on current initiatives, comprehensive plans, or projects posted on the department website	26.8% (89)	20.5% (68)	12.0% (40)	19.0% (63)	21.7% (72)	332
Archived video of public meetings posted on the department website	19.9% (66)	4.8% (16)	0.9% (3)	4.5% (15)	69.9% (232)	332
Live-streaming video of public meetings available on the department website	15.1% (50)	2.7% (9)	0.6% (2)	2.1% (7)	79.5% (263)	331
Newsletter or email listserve subscription available for current news and projects within the department	13.5% (44)	10.7% (35)	5.8% (19)	12.6% (41)	57.4% (187)	326
RSS feed subscription available for tracking current news and projects within the department	4.3% (14)	1.5% (5)	1.9% (6)	4.6% (15)	87.7% (284)	324
Online public discussion forums for current initiatives or projects available on the department website	0.3% (1)	1.8% (6)	1.5% (5)	6.1% (20)	90.2% (296)	328
Online public discussion forums for current initiatives or projects available on a project website	0.3% (1)	2.8% (9)	1.8% (6)	6.4% (21)	88.7% (290)	327
Social media sites for publicizing current news, initiatives and/or projects within the department (i.e. Facebook, Twitter, Blogger)	6.3% (21)	10.0% (33)	6.3% (21)	13.3% (44)	64.0% (212)	331
Independent websites for publicizing current news, initiatives and/or	2.7% (9)	4.0% (13)	5.8% (19)	13.7% (45)	73.9% (243)	329

projects within the department

answered question 336

skipped question 13

9. In the following table, please indicate how strongly you feel each description limits incorporation of web-based, e-participation tools into the public participation process.









	Extremely Limits Use	Somewhat Limits Use	No Opinion	Does not Limit Use Much	Does not Limit Use At All	Response Count
Website information and updates are handled by a different department	15.6% (51)	36.1% (118)	11.3% (37)	24.8% (81)	12.2% (40)	327
Updates and monitoring of online interactions require additional training for staff	19.4% (63)	40.9% (133)	15.7% (51)	17.5% (57)	6.5% (21)	325
Updates and monitoring of online interaction tools require additional staff time	29.9% (96)	41.4% (133)	11.8% (38)	14.3% (46)	2.5% (8)	321
Updates and monitoring of online interaction tools require additional budgeting	34.0% (109)	31.8% (102)	18.7% (60)	12.1% (39)	3.4% (11)	321
Current public participation structure does not support the use of web-based, interactive technology	22.2% (72)	26.2% (85)	27.5% (89)	17.0% (55)	7.1% (23)	324
Department website has limited visibility to community users	12.7% (41)	29.5% (95)	18.3% (59)	24.2% (78)	15.2% (49)	322
Community members have limited access to broadband internet	8.7% (28)	23.2% (75)	21.4% (69)	29.7% (96)	17.0% (55)	323
Use of web-based interaction tools has a learning curve for participants	9.4% (30)	43.1% (138)	22.5% (72)	22.5% (72)	2.5% (8)	320
Anonymity of web-based interactions more readily leads to uncivil discourse between parties.	14.3% (46)	26.1% (84)	41.6% (134)	10.9% (35)	7.1% (23)	322
Web-based comments are have						

less priority than comments made in-person at a public meeting	9.9% (32)	23.5% (76)	36.8% (119)	20.1% (65)	9.6% (31)	323
answered question						327
skipped question						22

10. Please list any other limiting factors that your department has encountered that were not addressed in the preceding table.

	Response Count
	73
answered question	
	73
skipped question	
	276

11. How much funding is available within your department for developing web-based, e-participation tools? (Please chose one)

		Response Percent	Response Count
\$0		51.5%	169
\$1-\$2,000		22.3%	73
\$2,000-\$5,000		4.0%	13
\$5,000-\$10,000		2.4%	8
\$10,000-\$20,000		2.4%	8
\$20,000+		0.9%	3
Do not know		15.9%	52
Not permitted to divulge		0.6%	2
answered question			328
skipped question			21

12. On a scale of 1 to 5, how high of a priority for your department is incorporating web-based, e-participation tools into the public participation process?

		Response Percent	Response Count
1- Very Low		21.1%	70
2- Low		21.1%	70
3- Neutral		29.6%	98
4- High		25.4%	84
5- Very High		2.7%	9
answered question			331
skipped question			18


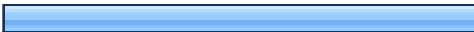
13. Respondent's Job Title (Information is simply to gauge who is responding to this questionnaire):

	Response Count
	329
answered question	329
skipped question	20

14. Department's Jurisdiction (i.e. County/City/Town the department represents- this information will only be used to analyze data based on population served, regional characteristics, etc. All survey responses will be anonymous in the final report):

	Response Count
	327
answered question	327
skipped question	22



15. Please check here and include your contact information if you would be willing to participate in a follow up interview concerning overcoming some of the barriers to using web-based, e-participation tools.

		Response Percent	Response Count
I would be willing to participate in a follow up interview		28.8%	94
I am not interested in participating in a follow up interview		71.2%	232
		answered question	326
		skipped question	23

16. Please include your contact information below if you would like to participate in a follow up interview.

		Response Count	
		93	
		answered question	93
		skipped question	256

17. Please check here and include your contact information if you would like to receive a copy of the final report.

		Response Percent	Response Count
Please sent me a copy of the report.		57.5%	172
I am not interested in a copy of the report.		42.5%	127
		answered question	299
		skipped question	50

18. Please include your contact information below if you would like to receive a copy of the report.

	Response Count
	163
answered question	163
skipped question	186

Page 2, Q3. How is the website structured?

1	It's connected through a "doing business" section on the website and as a department subpage.	Jun 19, 2012 11:34 AM
2	It is part of the Town's web-site	Jun 19, 2012 10:33 AM
3	We have a presence on the City's main site as well as two separate sites tied to specific initiatives	Jun 19, 2012 10:00 AM
4	As a set of pages accessible from the homepage of the Town's website	Jun 12, 2012 7:23 AM
5	There is no planning "department", planning is part of the community development department which has a page on the City's website	Jun 4, 2012 11:10 AM
6	Powered by CiviPlus	Jun 4, 2012 10:18 AM
7	only mentioned as a department; all 'planning and zoning' codes found within the Municipal Code accessed through MuniCode	Jun 4, 2012 10:07 AM

Page 3, Q5. How does your department share electronic output with the public? (Check all that apply)

1	Reports in pdf form are posted on-line	Jul 2, 2012 2:22 PM
2	Information is disseminated by updates to the department web page.	Jul 2, 2012 12:48 PM
3	Agenda's are posted on-line	Jul 2, 2012 12:04 PM
4	Our GIS site and the Municipal Clerk's page	Jul 2, 2012 11:45 AM
5	email to specific address when provided	Jul 2, 2012 11:23 AM
6	none of the above	Jul 2, 2012 10:46 AM
7	None	Jul 2, 2012 9:44 AM
8	Notice on Home page	Jul 2, 2012 9:43 AM
9	no	Jun 29, 2012 11:55 AM
10	post on website	Jun 25, 2012 3:05 PM
11	mostly email response to requests for information/documents etc	Jun 25, 2012 9:45 AM
12	We do not share day to day information on the web, only some of our forms and organizational information.	Jun 25, 2012 7:11 AM
13	staff reports and individual project information linked to specific agenda items on the online agenda	Jun 22, 2012 11:56 AM
14	We don't	Jun 21, 2012 9:13 AM
15	We do not use any of the above items at this time	Jun 21, 2012 8:33 AM
16	County website	Jun 21, 2012 7:25 AM
17	Does not	Jun 20, 2012 1:54 PM
18	public notice	Jun 20, 2012 11:11 AM
19	Plans and Staff Memo Placed On-line	Jun 20, 2012 10:37 AM
20	Website informational pages	Jun 20, 2012 7:11 AM
21	We don't really do anything electronically at this point.	Jun 20, 2012 6:28 AM
22	Front Porch Forum	Jun 19, 2012 3:54 PM
23	Posting agendas on web page.	Jun 19, 2012 3:52 PM
24	Updates are made to the website. Webpages are set up for specific projects. Regular planning commission packets are posted online.	Jun 19, 2012 2:34 PM
25	FTP	Jun 19, 2012 1:34 PM
26	None of the above.	Jun 19, 2012 1:06 PM

Page 3, Q5. How does your department share electronic output with the public? (Check all that apply)

27	On-line permitting software allows contractors to sign in and view their project info.	Jun 19, 2012 11:11 AM
28	None	Jun 19, 2012 10:57 AM
29	We do not share electronically. Use newspaper, radio and One Call Now system.	Jun 19, 2012 10:47 AM
30	We have no formal system other than passive website content.	Jun 19, 2012 10:42 AM
31	direct mailings and public announcements posted in public places	Jun 19, 2012 10:42 AM
32	Public notices or letters direct readers to more information on our web-site	Jun 19, 2012 10:37 AM
33	None	Jun 19, 2012 10:32 AM
34	Only for larger projects such as Zoning Code updates and master plans, as an example.	Jun 19, 2012 10:18 AM
35	The main zoning website	Jun 19, 2012 9:55 AM
36	at televised Governing Body and Planning Commission meetings and on the City's TV channel	Jun 19, 2012 9:51 AM
37	Email agendas to a distribution list	Jun 15, 2012 12:42 PM
38	Blackboard Connect	Jun 12, 2012 12:35 PM
39	Regular email to specific people, You Tube, NewsFlash on the Town's website, Calendar on the Town's website, Online Surveys	Jun 12, 2012 7:28 AM
40	post information on city or department website and email those interested in a specific project	Jun 7, 2012 9:00 AM
41	Skydrive	Jun 7, 2012 7:54 AM
42	Through the website only - posting of agendas, info on big projects, etc.	Jun 6, 2012 1:54 PM
43	We place a few noitces on the City Website.	Jun 6, 2012 11:35 AM
44	Written Public Notices	Jun 5, 2012 2:29 PM
45	Post applications and information on our home page	Jun 5, 2012 1:55 PM
46	our web page within the Village's website	Jun 5, 2012 10:45 AM
47	On our City website	Jun 5, 2012 9:43 AM
48	None of the above - our department does not have an active electronic output for information.	Jun 5, 2012 8:02 AM
49	None	Jun 5, 2012 6:54 AM
50	posted information only - not interactive with the public	Jun 5, 2012 6:53 AM

Page 3, Q5. How does your department share electronic output with the public? (Check all that apply)

51	Monthly newsletter, mailed to residents, also placed on Town web site	Jun 5, 2012 5:59 AM
52	City Council meetings state items are available on the website	Jun 5, 2012 5:22 AM
53	directly on the Planning Dept page	Jun 4, 2012 4:14 PM
54	department web page	Jun 4, 2012 1:27 PM
55	Project links on the website.	Jun 4, 2012 12:24 PM
56	posting of documentation on our website and running press releases on the local government cable channel and local newspaper	Jun 4, 2012 11:51 AM
57	email	Jun 4, 2012 11:50 AM
58	Information on the City website - an E-newsletter is done only for businesses - listserves are only used for sending agendas and minutes	Jun 4, 2012 11:24 AM
59	posting agendas/minutes /regs on website	Jun 4, 2012 11:21 AM
60	Post the information on our Website	Jun 4, 2012 11:17 AM
61	from website	Jun 4, 2012 11:02 AM
62	Post info on County home page	Jun 4, 2012 10:31 AM
63	Post project reports to website	Jun 4, 2012 10:26 AM
64	meeting notices and form for download on the Borough web-site	Jun 4, 2012 10:26 AM
65	Staff reports, and developer's application materials scanned and posted on Planning Commission or County Commissioner's agenda	Jun 4, 2012 10:20 AM
66	PDF's of Planning Commission agendas posted online prior to meeting. Emailed or uploaded on yousendit upon request.	Jun 4, 2012 10:15 AM
67	On Demand or as requested by email	Jun 4, 2012 10:12 AM
68	as requested by outside sources - usually via email	Jun 4, 2012 10:09 AM
69	Not Applicable	Jun 4, 2012 10:03 AM
70	just the website.	Jun 4, 2012 9:52 AM
71	We do not share electronically	Jun 4, 2012 9:45 AM
72	Wedb page posting mostly	Jun 4, 2012 9:28 AM
73	website, water bills, newspaper	Jun 4, 2012 9:28 AM
74	Online city newsletter in development - will include planning issues/updates	Jun 4, 2012 9:27 AM
75	We don't	Jun 4, 2012 9:19 AM

Page 3, Q5. How does your department share electronic output with the public? (Check all that apply)

76	None	Jun 4, 2012 9:17 AM
77	direct email to certain groups	Jun 4, 2012 9:17 AM
78	Agendas of meeting, minutes of meetings, information on special projects (blogs?)	Jun 4, 2012 9:14 AM
79	Post Agenda to City Website & State Meeting Notice Website	Jun 4, 2012 9:14 AM
80	We currently do not share any information electronically.	Jun 4, 2012 9:11 AM
81	news flash on the website	Jun 4, 2012 9:11 AM
82	We do not use our website to output to the public	Jun 4, 2012 9:10 AM
83	E-mail by request, or posts to the Department Home Page	Jun 4, 2012 7:16 AM

Page 3, Q6. How does your department receive electronic input from the public? (Check all that apply)

1	Submittable forms for all applications	Jul 2, 2012 10:20 AM
2	we don't.	Jul 2, 2012 9:44 AM
3	Link pages on web site for service requests	Jun 27, 2012 7:46 AM
4	e-Gov action line feature on website	Jun 25, 2012 3:05 PM
5	Most input is verbal or written.	Jun 20, 2012 6:28 AM
6	Website feedback, must create an account.	Jun 19, 2012 1:08 PM
7	fax	Jun 19, 2012 10:42 AM
8	Can send comment e-mails to the town via the town web-site	Jun 19, 2012 10:37 AM
9	fax	Jun 19, 2012 9:55 AM
10	phone calls	Jun 19, 2012 9:50 AM
11	City Website Contacts	Jun 12, 2012 12:35 PM
12	From our Report a Concern feature on the Town's website	Jun 12, 2012 7:28 AM
13	E-Gov	Jun 6, 2012 11:35 AM
14	Written Public Notices and project notices	Jun 5, 2012 2:29 PM
15	None of the above	Jun 5, 2012 12:32 PM
16	Web Q&A within our website allows anyone to ask specific questions	Jun 5, 2012 10:45 AM
17	On-line complaint system - more tied to our code enforcement/building activities.	Jun 5, 2012 8:02 AM
18	Walk in questions	Jun 5, 2012 6:54 AM
19	via telephone	Jun 4, 2012 11:51 AM
20	on-line permit center	Jun 4, 2012 11:32 AM
21	Not Applicable	Jun 4, 2012 10:03 AM
22	on-line complaint/request portal	Jun 4, 2012 9:13 AM
23	We don't	Jun 4, 2012 9:10 AM

Page 3, Q7. How are your public meetings and presentations available to the public, other than by attending in person? (Check all that apply)

1	TV	Jul 3, 2012 7:17 AM
2	Not available except as minutes and/or project files in Planning Dept.	Jul 2, 2012 1:49 PM
3	Summaries on blog	Jul 2, 2012 12:51 PM
4	Online audio available	Jul 2, 2012 10:58 AM
5	they are not available other than attendance	Jul 2, 2012 10:46 AM
6	We do audio recording only of Planning and Zoning Commission meetings. The public has to come to our office to receive a copy.	Jul 2, 2012 10:36 AM
7	Live television	Jun 29, 2012 3:52 PM
8	meeting agendas are also posted online	Jun 29, 2012 12:26 PM
9	only in person	Jun 29, 2012 9:38 AM
10	Meeting agendas posted online	Jun 26, 2012 8:58 AM
11	physical copy of the file is available for review and digital audio only of the meeting is available	Jun 25, 2012 9:45 AM
12	Cable TV voice stream available of all public meetings	Jun 25, 2012 7:35 AM
13	They are not made available to the public on the web at this time. I am working with our new IT Director to post minutes and agendas.	Jun 25, 2012 7:11 AM
14	Requist	Jun 22, 2012 5:56 AM
15	Board of Supervisor meetings have live audio internet streaming (no video), Planning Commission does not	Jun 21, 2012 9:13 AM
16	Audio recording of meetings available online.	Jun 21, 2012 8:25 AM
17	Does not	Jun 20, 2012 1:54 PM
18	available to public during office hours	Jun 20, 2012 11:11 AM
19	They may submit a written and signed letter.	Jun 20, 2012 6:28 AM
20	Minutes generally not posted online	Jun 19, 2012 3:54 PM
21	Archived audio minutes online.	Jun 19, 2012 3:52 PM
22	mail in comments	Jun 19, 2012 1:34 PM
23	streaming audio	Jun 19, 2012 1:19 PM
24	Agendas and some minutes posted online	Jun 19, 2012 10:57 AM
25	City Manager's Blog	Jun 19, 2012 10:37 AM

Page 3, Q7. How are your public meetings and presentations available to the public, other than by attending in person? (Check all that apply)

26	None	Jun 19, 2012 10:32 AM
27	Available upon request	Jun 19, 2012 10:20 AM
28	only provided if asked for, otherwise electronic copy kept on file.	Jun 19, 2012 9:55 AM
29	Parish has its own TV channel and also uses local TV station	Jun 15, 2012 8:33 AM
30	Televised	Jun 12, 2012 6:22 AM
31	An electronic copy of meeting minutes can be provided upon request	Jun 11, 2012 8:41 AM
32	city council meetings available via cable TV, but not planning commission meetings.	Jun 7, 2012 9:00 AM
33	Minites of meeting.	Jun 6, 2012 11:35 AM
34	upon request or posted on specific project websites	Jun 6, 2012 7:42 AM
35	None	Jun 5, 2012 3:36 PM
36	minutes can only be accessed thru mail or in-person pick up - minutes will be available on-line in two months	Jun 5, 2012 1:28 PM
37	local TV station	Jun 5, 2012 10:45 AM
38	The genda is posted online	Jun 5, 2012 9:43 AM
39	Printed minutes	Jun 5, 2012 7:59 AM
40	available by request via email	Jun 5, 2012 6:54 AM
41	Agenda posted online	Jun 5, 2012 5:46 AM
42	None. Will email minutes if requested	Jun 5, 2012 5:22 AM
43	archive audio file available on-line	Jun 4, 2012 11:56 AM
44	Broadcast on local cable channel	Jun 4, 2012 11:30 AM
45	Staff will email staff reports or other info if requested.	Jun 4, 2012 11:24 AM
46	Minutes available in department	Jun 4, 2012 11:21 AM
47	Agenda available at website; publication in local newspaper	Jun 4, 2012 10:38 AM
48	Nothing is posted on the website	Jun 4, 2012 10:26 AM
49	not available on web - if requested, sent via email, fax or mail - whichever is preferred by recipient	Jun 4, 2012 10:09 AM
50	Meeting agendas posted online	Jun 4, 2012 10:03 AM

Page 3, Q7. How are your public meetings and presentations available to the public, other than by attending in person? (Check all that apply)

51	online live streaming audio	Jun 4, 2012 10:02 AM
52	Some audio/video files available online; also packet materials attached to agendas	Jun 4, 2012 9:57 AM
53	Rebroadcasts are available via the local public access cable channel which broadcasts the meetings.	Jun 4, 2012 9:45 AM
54	on line agenda posting	Jun 4, 2012 9:40 AM
55	Meetings shown on public access television station the day after meetings.	Jun 4, 2012 9:27 AM
56	Online agendas with agenda materials in advance of meetings, and archived	Jun 4, 2012 9:27 AM
57	audio file, come in and ask questions, look at the information packets provided to the decision makers at the meeting	Jun 4, 2012 9:17 AM
58	Hardcopy Packets	Jun 4, 2012 9:14 AM
59	Archived audio available by request.	Jun 4, 2012 9:12 AM
60	Only hard copy minutes.	Jun 4, 2012 9:11 AM
61	They are shown both live and twice afterward on the City's cable TV channel	Jun 4, 2012 9:10 AM
62	not ALL presentations are posted online, only some.	Jun 4, 2012 9:08 AM
63	Public Access Television Station - they are televised.	Jun 4, 2012 9:07 AM
64	Audio recordings available by request.	Jun 4, 2012 7:16 AM

Page 4, Q10. Please list any other limiting factors that your department has encountered that were not addressed in the preceding table.

1	Staff resources to actively manage interactive media and handle aggressive or inappropriate	Jul 9, 2012 8:47 AM
2	Website functionality has recently been improved. We are still learning to use all of the new functions.	Jul 6, 2012 7:20 AM
3	Small county (pop. >15K), (3) staff & generally little citizen interaction at regular meetings/workshops.	Jul 2, 2012 1:54 PM
4	Apparent lack of citizen interest discourages use of valuable staff time to incorporate web outreach.	Jul 2, 2012 12:51 PM
5	na	Jul 2, 2012 11:53 AM
6	I think a department or City needs to determine the purpose of the website. Is it to create dialogue or provide information and improve efficiency for the public and the organization. Ours is the latter of the two and we don't see a need for dialogue when public meetings allow comments on the issues that are made a part of the record. What is the purpose?	Jul 2, 2012 10:25 AM
7	None	Jul 2, 2012 9:47 AM
8	na	Jul 2, 2012 9:46 AM
9	lack of staff time and budget	Jul 2, 2012 9:45 AM
10	City management has newly created position that attempts to merge assistant city manager and public information officer responsibilities. The position is ill-defined. Management has no plan or ongoing project steering committee to address web-based public participation. Until very recently, IT wasn't even its own department. Now, IT as a whole is understaffed and underbudgeted and has refused to have much of anything to do with the city website because recently the city paid a consultant to create a new replacement city website based on a content management system with constrained webpage templates with no input from IT. Management's understanding of technology is rudimentary at best, and requests for technology are always reactive or on a whim. Though the assistant city manager (who is project manager, not anyone in IT), has had permissions set so any City staff member can log-in and make changes to their department webpages, in reality very few have any interest whatsoever. Few can be bothered to keep their project into up-to-date, never mind actively think about and make use of the web to really make their projects understandable. Lastly, the assistant city manager was tasked with being liaison to a number of citizen revolts that coalesced into a citizen involvement organization (CIO) that has established itself as the paradigm for public involvement and claims to be the public participation portal for residents. The dynamic has become that the CIO has brought about so much fear and reaction on the part of the city council, management, and staff, and any department's web-based involvement is limited to an amalgamation of existing web practices (e.g. RSS feeds, project webpages) and new actions based on what the assistant city manager says to do. No one wants to go out on a limb in terms of online public participation out of fear of being a guinea pig. All direction has been word of mouth; management and staff have never documented existing or	Jun 26, 2012 9:16 AM

Page 4, Q10. Please list any other limiting factors that your department has encountered that were not addressed in the preceding table.

	desired web-based public participation procedures.	
11	Lack of adequate information systems infrastructure and technical staff expertise, limited revenues, lack of understanding or political commitment by elected officials of the value of web based systems.	Jun 25, 2012 7:13 AM
12	Management adopting online forum technology.	Jun 22, 2012 2:31 PM
13	Our budget has limited our staff. We just don't have the time to update our webpage and improve it.	Jun 21, 2012 9:15 AM
14	None	Jun 21, 2012 8:35 AM
15	Electronic correspondence/participation is hard to prove who the author is. Verification of electronically filed comments, etc., would be an issue.	Jun 20, 2012 6:32 AM
16	Web page using a restrictive template -- we may be changing to a hosted site to incorporate a better interface with public, but currently have no funding to accomplish this.	Jun 19, 2012 3:56 PM
17	It's mostly due to staff time, and the lack of clear direction/comfort from administration for such use.	Jun 19, 2012 2:37 PM
18	excludes some segment of population	Jun 19, 2012 1:36 PM
19	No demand for it from the community.	Jun 19, 2012 1:08 PM
20	Department staff of 1 conducting several functions including clerk, code enforcement officer, 4 trade building inspector, zoning, and planning duties.	Jun 19, 2012 11:15 AM
21	Providing web based interactive tools is a learning curve for city staff.	Jun 19, 2012 11:12 AM
22	Legal issues. Records retention and open meetings laws.	Jun 19, 2012 10:43 AM
23	Language barriers for the City's high immigrant population.	Jun 19, 2012 10:20 AM
24	Bidget is the most signioficant with staff web skills being the second limiting factor	Jun 19, 2012 9:53 AM
25	City employees are blocked from social media as protection for the system.	Jun 12, 2012 12:40 PM
26	Resistance of community members to use web-based tools, specifically older generations...	Jun 12, 2012 7:34 AM
27	These questions and those in previous qustions are difficult to answer for our jurisdiction. Our jurisdiction has a population of ~12,000. Accordingly, all of the City departments have small staffs and so sending all internet-related responsibilities to a single deparment (Communications) is more efficient. At the same time, because of the small department sizes, the planning department still has quick, direct access to most of the personnel setting up the interaction tools. So while these tools may technically be available through the main city website and not the planning department website, it is fair to say that they are still significantly under the department's control.	Jun 12, 2012 6:34 AM

Page 4, Q10. Please list any other limiting factors that your department has encountered that were not addressed in the preceding table.

28	Citizens have no interest in using the internet or social media to explain their problems. Increasing our website and electronic profile would cost more than it would be worth.	Jun 11, 2012 8:45 AM
29	Primarily funding ability. This was addressed above	Jun 7, 2012 7:57 AM
30	We are a small city with a small staff, so our primary barriers are lack of in-house web updating and lack of staff time/training to dedicate to e-participation. Providing more information electronically is certainly a goal and we try to further that goal whenever time or money permits.	Jun 6, 2012 2:02 PM
31	No others	Jun 6, 2012 7:06 AM
32	Structure of the county web page is controlled by Office of Information Technology.	Jun 6, 2012 5:56 AM
33	Our department does not have electronic communication with the public, except for some email questions through the City Website, but these are rare.	Jun 5, 2012 3:46 PM
34	learning curve of elected officials regarding electronic media	Jun 5, 2012 1:31 PM
35	We have been limited by state statute on what qualifies as notice to the public. This has hindered how much we can rely on electronic sources.	Jun 5, 2012 11:37 AM
36	There currently is a lack of focus on a city wide basis for how we should utilize technology to increase public participation.	Jun 5, 2012 8:06 AM
37	do not have a public interaction web site. Site is available for limited information only	Jun 5, 2012 6:56 AM
38	No clear policy, no real commitment or funds to pursue e-participation tools or technology.	Jun 5, 2012 6:06 AM
39	Our major issue is lack of internet connection (very rural)	Jun 5, 2012 5:49 AM
40	The poverty rate and number of individuals without access to the internet limits the use of e-participation and e-gov. opportunities. Staff and budgetary concerns rank high in the limitations as well.	Jun 5, 2012 5:24 AM
41	Public apathy, or no expressed desire to use electronic media.	Jun 5, 2012 5:14 AM
42	City lack sufficient funding to upgrade website and institute web based interactions with the public.	Jun 5, 2012 4:27 AM
43	we are a community with aging population that are not all "on-line". Our current City web site is limited in space and not easy for staff to manage. Information on specific large projects is included with links to the project updates. We have had concerns with the "hate your neighbor" aspect of interactive blogs, etc. and have only allowed direct comments to the City not visible to others on-line.	Jun 4, 2012 4:53 PM
44	Staff, money, limited internet access among our older population. Even when materials are online, few look at it.	Jun 4, 2012 4:16 PM

Page 4, Q10. Please list any other limiting factors that your department has encountered that were not addressed in the preceding table.

45	periodic updating	Jun 4, 2012 3:14 PM
46	Culturally, we have had challenges getting use in smaller communities and in lower income communities	Jun 4, 2012 1:51 PM
47	It was difficult to determine from what perspective to answer these questions. Is it supposed to be my opinion of our processes? If so, several questions are about things we don't do, although I do have an opinion of whether they may hinder participation. Others are not about either and asking for my opinion of what the public thinks. This may lead to unreliable results.	Jun 4, 2012 12:11 PM
48	Can't think of any.	Jun 4, 2012 11:07 AM
49	none	Jun 4, 2012 10:58 AM
50	Legal requirements under local and state ordinances	Jun 4, 2012 10:30 AM
51	Upper management does not see the value in web-based participation.	Jun 4, 2012 10:27 AM
52	Community members are apathetic toward local government, unless it directly affects them.	Jun 4, 2012 10:26 AM
53	Older generation of citizens do not use email and therefore participate less or with greater difficulty than younger citizens.	Jun 4, 2012 10:26 AM
54	Living in a small rural community limits access and training.	Jun 4, 2012 10:19 AM
55	For #8 above, we are in the process of creating an email newsletter to be sent to developers, designers, business owners, etc.	Jun 4, 2012 10:17 AM
56	Managing IT Department unwilling to open up the City for electronic access due to security concerns.	Jun 4, 2012 10:14 AM
57	we don't use the web for dissemination of public information unless upon request. We have used the Town's website to announce the new Comprehensive Plan and provided a link to consultant's website for an electronic copy if wanted.	Jun 4, 2012 10:11 AM
58	Social site agreements make it difficult to adequately retain records as required by state record retention requirements	Jun 4, 2012 10:02 AM
59	Badly designed city website, no access to facebook or twitter or other social networking tools on city computers.	Jun 4, 2012 9:54 AM
60	The City does not post any copyrighted materials on our websites for legal reasons. A city must also decide how/when and if web based comments are introduced as official public record. A city is also limited in addressing public discourse under freedom of speech laws. Use of social networks must be limited to only factual project information, and must be uniformly presented in order to eliminate bias on the part of a city, which effectively negates an interactive forum except amongst commenters. The Patch, an onsite, local private newspaper often reports on projects and offers an interactive forum for such dialog, so a parallel effort is not required by our City. Most importantly,	Jun 4, 2012 9:52 AM

Page 4, Q10. Please list any other limiting factors that your department has encountered that were not addressed in the preceding table.

	there is also no method to discern if a comments is local or out of area, so weighting of local opinion can be grossly diluted by 'spammers'.	
61	City Attorney has advised that e-mail comments regarding projects/petitions are NOT admissible as testimony in Public Hearings	Jun 4, 2012 9:43 AM
62	E-participation tools often make it hard to isolate city residents versus residents of neighboring jurisdictions, especially in city's that are a part of larger urban regions.	Jun 4, 2012 9:42 AM
63	limitations of converting material to meet size requirements for internet use	Jun 4, 2012 9:28 AM
64	Time and money	Jun 4, 2012 9:24 AM
65	It should be noted that the learning curve is just as much a problem for staff as it is for some of the public. Small town = small # of staff people able to educate themselves on how to implement this type of public participation. We have no on-staff IT help (we contract that out) so we would need to hire someone specifically to figure out the hardware/software, etc. if we tried to do more electronic public participation. I struggle getting the computer to talk to the printer; I don't even want to think about the troubles we would have trying to engage the public in this way under the current circumstances.	Jun 4, 2012 9:24 AM
66	Found the structure of your #9 question and subsequent statements a little disconnected ... not exactly sure what you were getting at ... awkward structure.	Jun 4, 2012 9:21 AM
67	Political suport can be a barrier. Old admin staff/boards don't understand usefulness.	Jun 4, 2012 9:18 AM
68	Lack of staff limits use. Many items, issues, are incorporated into Village website, not necessarily our homepage.	Jun 4, 2012 9:17 AM
69	The behavioral pattern of this city would make the use of the internet a waste of time and money. Citizens would prefer to make their opinions known in person.	Jun 4, 2012 9:14 AM
70	One limiting factor for us is how do we connect with the people who do have internet access and let them know we put documents online and can receive public feedback online. A large part of our County does not get a local newspaper or radio station and are physically far away from our local government offices.	Jun 4, 2012 9:13 AM
71	Below, I saw that \$0 is devoted to e-participation, but that's not to say that money couldn't be allocated to it, it's just that no money is specifically allocated that way.	Jun 4, 2012 9:12 AM
72	I believe that the biggest limiting factor is the public's unwillingness to use web based participation tools. We do listservs and participation is VERY limited. Many individuals do not check their email. I have found this to be true in most rural areas. It has got better, three years ago many people did not even have email and now about 80 percent do.	Jun 4, 2012 9:11 AM
73	Our current elected leadership does not support additional public participation opportunities other than posting to website and email responses.	Jun 4, 2012 7:55 AM

APPENDIX C: Interview Recruitment Letter

[Date]

[Recipient Name],

At the beginning of the summer I sent out a survey as part of my graduate thesis research for the Urban Affairs and Planning department at Virginia Tech. The survey questions were aimed at helping identify barriers to the use of internet-based, e-participation tools for planning and community development departments. The three main objectives of my thesis research are:

- 1) To identify barriers to the use of internet-based, e-participation tools for municipal planning departments
- 2) To identify avenues for overcoming these barriers
- 3) To suggest effective practices for using specific e-participation tools within the planning process

As part of that survey I asked respondents to indicate whether or not they were interested in participating in a follow-up interview. Of the respondents that agreed to participate, you were one of the respondents selected based on specific criteria. I have attached the list of questions I will be asking. I understand that you may not have precise data to some of these questions, and that is absolutely fine. The interview should last between 30 and 45 minutes and can be conducted over the phone or via Skype. I am currently a planner for the Windham Regional Commission in Vermont, so I understand that daytime schedules can be tight. I am happy to conduct the interview during a lunch hour, after work, or on the weekend if that would be better for your schedule. If you are still interested in participating in the interview, please provide me with some dates and times that you are available.

I have also attached a consent form. This form is a requirement for all research involving human participants conducted at Virginia Tech. It simply provides an explanation of the research being done. If you agree to participate in the interview, I would just ask that you sign and email me a scanned copy of the consent form.

Thank you again for your time.

Sincerely,

Cullen Meves
Virginia Tech Grad Student, Urban and Regional Planning
cell: [330-861-8718](tel:330-861-8718)
email: VTgradplanning@gmail.com

Follow-up Interview Questions for Planning Departments

Participant Consent Questions

- 1) Do you give your consent to participate in this follow-up interview and have your answers potentially included as a case study in the final thesis report?
- 2) Have you signed and submitted the consent form?

Department Website's Visibility

- 1) Have you tried any methods for publicizing web-based participation initiatives?
 - i. If yes, what avenues have you tried for publicizing web-based participation initiatives, and which have been most effective?
- 2) What types of web-based outlets have you used to engage the public?

Department Website's Current Information Dissemination and Maintenance

- 1) Are updates to the information provided on the web-site handled within the department or by an outside source?
 - i. If the website is maintained by an outside source, how much interaction does the department have with this source?
 - ii. If the website is maintained by an outside source, do you see this as a barrier to incorporating more interactive tools into the department website?
- 2) How much time a week does a staff member devote to maintaining and updating planning related news for the website or transmitting information to the web-developer?
- 3) Do you see the time element of updating these outlets as barrier to using more web-based interactive tools?

External Barriers to Web-based Interactive Tools

- 1) According to the Pew Research Center Study on Online Government conducted in 2009, "Two in five home broadband users (39%) prefer online contact when trying to reach government, compared with 23% of home dial-up users." [1] Do you know how many residents within your community have broadband access?
 - i. Do you see this as a limiting factor for engaging the public through online tools?
- 2) Are there language or disability barriers for residents using the tools on the department's website?
- 3) Have you encountered learning curve issues for individuals wishing to use available interactive tools?

Department Website's Interactive Capabilities

- 1) What do you find is the most difficult part of maintaining or updating these websites?
 - 2) Have you had issues with the anonymity aspect of web-based commenting and forums, as in finding more negativity or inappropriateness in web-based comments and postings?
 - 3) Would having an identity/email based login to the commenting area of the website help with this issue?
 - 4) Have you noticed any correlation between the way the information is presented on the website and the amount of traffic and interaction it receives (i.e. a PDF of a report vs. an illustrated poster or guide vs. a 3D or virtual representation)?
 - 5) What would you say has been the most effective presentational mode for information presented on the website?
 - 6) Do you see providing live-streaming video of public meetings on the website as a viable option in the future?
 - 7) Which web-based interactive tools do you see as having the greatest benefit to your department and your community?

 - 8) Do you have any other comments you would like to share on this topic with regards to your experience?
-
1. Smith, A., *Government Online: The internet gives citizens new paths to government services and information*, in *Pew Internet & American Life Project*, P.R. Center, Editor 2010, Pew Research Center: Washington, D.C.

Title of Project

Where's the Disconnect? Analyzing barriers to internet-based e-participation tools for planning

I. Investigator: Cullen Meves**II. Purpose of this Research/Project**

The purpose of this study is to identify barriers to the use of web-based, e-participation tools for county, city & town planning departments. A second objective of this study is to identify avenues for overcoming these barriers, making these tools more effective in the planning process on a more universal scale. The technology tools of interest for this study are specifically interactive tools that provide a two-way discourse between the planning authority and its constituency. Examples of such tools include online forums, virtual meetings, social media, and interactive online video. An article in this month's issue of *Planning* magazine titled "High-Touch/High-Tech Charrettes" demonstrated how "social media and web-based tools are increasing the capacity for involvement" in community planning processes. According to the APA publication *e-Government*, the majority of planning departments now offer information disseminating tools like meeting agendas and ordinances on their websites. However, only 11.4% of the departments surveyed offer discussion forums on their website, 7.2% offer virtual reality simulations and 0.0% offer links to project-specific social media pages. With the prevalence of social media in today's society and growing citizen expectations for not only immediate access to information, but also immediate response to their input, it seems that the demand for these tools is only set to increase. The purpose of my thesis research is to study the current barriers to web-based, interactive technology use in medium to small sized communities. My research will analyze the results from a nationwide survey of planning departments serving communities with populations less than 100,000. The survey results will help identify the most common barriers to departments wishing to implement these tools. The research process will also include follow-up interviews with several of the departments that will provide more depth of insight into the challenges of implementing these tools in the planning process.

III. Risks

This research consists of a survey and potential follow up interview. The only risk attributed to these tasks is the chance of mental stress caused by attempting to complete either the survey or interview.

IV. Benefits

While no individual benefits will be bestowed upon you (the respondent), the final outcomes of the survey will hopefully provide a benefit to both the public authority you represent and to other communities of similar size and structure. The objectives of this research are as follows:

- To identify barriers to the use of web-based, e-participation tools for municipal planning departments
- To identify avenues for overcoming these barriers

- To suggest effective practices for using specific e-participation tools within the planning process

No promise or guarantee of benefits has been made to encourage you to participate.

You may provide an email address at the end of the survey if you would like to receive the results of the research findings.

V. Extent of Anonymity and Confidentiality

The results of this survey will be confidential. All data collected from the survey will be displayed in aggregate form, and neither you nor the entity that you represent will be identified. You may provide contact information, but this information will not be published in the report. The answers provided by you will be coded as Case Study 01, Case Study 02, etc.

It is possible that the Institutional Review Board may view this study's collected data for auditing purposes. The IRB is responsible for oversight of the protection of human subjects involved in research.

VI. Compensation

There is no compensation to be earned from this study.

VII. Freedom to Withdraw

You are free to withdraw from the study at any time. You are free not to answer any questions or respond to experimental situations that you choose without penalty.

VIII. Subjects Responsibilities

I voluntarily agree to participate in this study. By completing and submitting the online survey, I confirm that the questions were answered to the best of my ability, and give my consent for the answers to be included in the research collected for this thesis. I am also aware of the voluntary follow-up interview to be conducted at a date following the closing date of the survey. If I chose to participate in the follow up interview, I will indicate my intentions per the questions at the end of online survey and include my contact information when asked. If I chose to participate in the follow up interview, I will answer the questions to the best of my ability. I will submit this signed form prior to participating in the follow up interview as proof of my consent.

IX. Subject's Permission

I have read the Consent Form and conditions of this project. I have had all my questions answered. I hereby acknowledge the above and give my voluntary consent:

Subject signature

Date

Should I have any pertinent questions about this research or its conduct, and research subjects' rights, and whom to contact in the event of a research-related injury to the subject, I may contact:

Investigator: Cullen Meves

E-mail: cmeves@gmail.com

Faculty Advisor/Department Head: Tom Sanchez

E-mail: sanchezt@vt.edu

David M. Moore
Chair, Virginia Tech Institutional Review Board
For the Protection of Human Subjects
Office of Research Compliance
2000 Kraft Drive, Suite 2000 (0497)
Blacksburg, VA 24060

Phone: 540-231-4991
Email: moored@vt.edu

Cullen Meves

53 PROSPECT STREET • KEENE, NH 03431 • 330-861-8718 • CMEVES@GMAIL.COM

EMPLOYMENT

REGIONAL
PLANNER

WINDHAM REGIONAL COMMISSION
Brattleboro, VT

JANUARY 2012-PRESENT

- Staff planner for the Energy, Project Review, Regional Plan Update, and Vermont Yankee Study Committees
- Managed Transportation Plan and Regional Plan Updates
- Launched social media presence and help manage [organization website](#) and [Facebook](#) pages
- Developed public participation strategy for 2014 update of the Regional Plan, and incorporated online participation through development of the [Regional Plan website](#)
- Assistant Staff for Brownfields Steering Committee, which includes managing assessment and cleanup sites that enter the WRC Brownfields funding programs,
- Co-wrote successful grant application for award of \$400,000 in EPA Assessment funding

GRADUATE
TEACHING
ASSISTANT

VIRGINIA TECH
Blacksburg, VA

AUGUST 2010 - DECEMBER 2011

- Assisted Prof. Sanchez's Technology in Planning and Community Involvement Courses
- Invited panelist for [Social Media for Planning Conference at Virginia Tech](#)
- Helped manage the UAP Program's social networking websites, including Blogger,
- Facebook, Twitter, and LinkedIn accounts
- Compiled and contributed articles to the quarterly department electronic newsletter

SENIOR
LANDSCAPE
DESIGNER

STEPHEN STIMSON ASSOCIATES
Falmouth, MA

FEBRUARY 2008 - AUGUST 2010

- Project work included academic campus planning & design, large & small scale parks planning and design, and resort master planning for over 25 different projects, including three [BSLA Award](#) winning projects
- Work focused on sustainable and LEED certification seeking project, including Harvard Allston Science Complex LEED Gold (anticipated) and UCONN Social Sciences and Humanities Buildings LEED Silver (anticipated)
- Active in all segments of the planning and design process from conceptual planning through construction documents, including subconsultant meetings and project presentations
- In house IT Support for AutoCAD and 3D modeling trouble-shooting & training

WEBSITE

[http://
thebirchstand.
wordpress.com/](http://thebirchstand.wordpress.com/)



Cullen Meves

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EMPLOYMENT

LANDSCAPE
DESIGNER / CO-OP

NBBJ DESIGN
Columbus, OH

MARCH 2005 - DECEMBER 2007

- Project work included residential campus planning & design in Beijing & Shanghai, China, mixed-use and business complexes in Moscow, Russia, a mixed-use competition in Jeddah, Saudi Arabia, and a residential and mixed-used development in Almaty, Kazakhstan
- Compiled and helped present over 30 domestic and international projects ranging from national hospital & business campuses to international mixed-use residential developments & business complexes, including three [OCASLA Award](#) winning projects

EDUCATION

MASTER OF URBAN
AND REGIONAL
PLANNING

VIRGINIA TECH
Blacksburg, VA

AUGUST 2010 - MAY 2013

- Specialization: Environmental Policy & Planning
- Thesis Topic: Where's the Disconnect? Analyzing barriers to e- participation tools for planning
- Graduating GPA: 4.00

SUSTAINABLE
EUROPE STUDY
ABROAD PROGRAM

VIRGINIA TECH
Riva San Vitale, Switzerland

SUMMER 2011

- Traveled to cities throughout Europe, including Freiburg, Germany, Zurich & Bern, Switzerland, and throughout the Canton of Ticino, studying sustainable practices currently in use in Europe
- Program included modules on the global perspective of sustainability, international economic development, and international sustainable transportation programs

BS, LANDSCAPE
ARCHITECTURE

OHIO STATE UNIVERSITY
Columbus, OH

SEPTEMBER 2002 - DECEMBER 2007

BS, AGRICULTURE/
LANDSCAPE
HORTICULTURE

- Graduating Honors: Summa Cum Laude
- Graduating GPA: 3.977

SKILLS

- MS OFFICE SUITE
- ADOBE CS6 SUITE
- AUTOCAD v2012
- SKETCHUP PRO
- WORDPRESS
- ESRI ARCGIS
- RHINO 3D
- GOOGLE EARTH

Cullen Meves

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AWARDS

2013	BSLA MERIT AWARD	UCONN ACADEMIC BUILDINGS • College and University Design	SSA
2012	BSLA AWARD OF EXCELLENT	UMASS SOUTHWEST CONCOURSE • College and University Design	SSA
	BSLA AWARD OF EXCELLENT	PHIL HARDBERGER PARK • Parks & Recreational Facilities	SSA
	AICP CERTIFICATE AWARD	ACADEMIC ACHIEVEMENT	GRADUATE STUDENT
2011	OCASLA HONOR AWARD	COLUMBUS FOUNDATION • Design Constructed	NBBJ
	CITIZENS PLANNING EDUCATION ASSOC. OF VIRGINIA FELLOWSHIP	OUTSTANDING FIRST YEAR STUDENT	GRADUATE STUDENT
2010	OCASLA HONOR AWARD	GRANGE INSURANCE HEADQUARTERS • Design Constructed	NBBJ
2009	MOORE SQUARE DESIGN COMPETITION	THIRD PLACE DESIGN	SSA
2008	OCASLA HONOR AWARD	GRANGE INSURANCE HEADQUARTERS • Environmental/Sustainable Design	NBBJ
	OCASLA SPECIAL RECOGNITION	COLUMBUS FOUNDATION • Landscape Architectural Design	NBBJ
2007	OCASLA HONOR AWARD	TSVETNOY BLVD MIXED-USE DEVELOPMENT • Landscape Architectural Design- Conceptual	NBBJ
	ASLA HONOR AWARD	OHIO CHAPTER STUDENT AWARD	STUDENT
	KNOWLTON SCHOOL OF ARCHITECTURE AWARD	LANDSCAPE ARCHITECTURE AWARD	STUDENT
	ONLA PHIL KOZEL SCHOLARSHIP	LANDSCAPE HORTICULTURE AWARD	STUDENT

APPENDIX D: Interview Response Summary

Participant Consent Questions

1) Do you give your consent to participate in this follow-up interview and have your answers potentially included as a case study in the final thesis report?

Yes 8 **No** 0

2) Have you signed and submitted the consent form?

Yes 8 **No** 0

Department Website's Visibility

1) Have you tried any methods for publicizing web-based participation initiatives?

Yes 4 **No** 4 **Planned in the Future** 1

NA 0

Announced a public meetings 2 **Included in published information** 3
Targeted Mailing 1 **Press Release** 2

If yes, what avenues have you tried for publicizing web-based participation initiatives, and which have been most effective?

Postcard mailings, Providing headline updates on website, Including the URLs in every Press Release, Press Releases about initiatives in general

2) What types of web-based outlets have you used to engage the public?

Department Website 4 **Online Surveys** 1 **Project Website** 2

Department Website's Current Information Dissemination and Maintenance

1) Are updates to the information provided on the web-site handled within the department or by an outside source?

Within Department 5 **Outside Source** 2 **Both** 1

Online Video of Meetings 2 **Social Media** 1

If the website is maintained by an outside source, how much interaction does the department have with this source?

Very Little 3

If the website is maintained by an outside source, do you see this as a barrier to incorporating more interactive tools into the department website?

Yes 1 **No** 1 **Unsure** 1

2) How much time a week does a staff member devote to maintaining and updating planning related news for the website or transmitting information to the web-developer?

0-2 Hours	6	2-5 Hours	1	5+ Hours	0	NA	1
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Note: Several respondents indicated the time element would increase when there were major updates to project websites or pages.

3) Do you see the time element of updating these outlets as barrier to using more web-based interactive tools?

Yes	4	No	4	NA	0
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External Barriers to Web-based Interactive Tools

1) According to the Pew Research Center Study on Online Government conducted in 2009, “Two in five home broadband users (39%) prefer online contact when trying to reach government, compared with 23% of home dial-up users.”[1] Do you know how many residents within your community have broadband access?

50% or Greater	2	Less than 50%	3	Do not know	3
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Do you see this as a limiting factor for engaging the public through online tools?

Yes	6	No	2
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Note: Several interviewees noted her that lack of broadband access was not the only factor limiting use online. Many communities had a high elderly population that were not a savvy with using the online tools or simply preferred to interact with government through traditional means.

2) Are there language or disability barriers for residents using the tools on the department’s website?

Language Barriers

Yes	7	No	1
Do not know	0		

Disability Barriers

Yes	0	No	4
Do not know	4		

3) Have you encountered learning curve issues for individuals wishing to use available interactive tools?

Yes	6	No	2	Do not know	
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Note: Most interviewees noted learning curve issues with navigation of the website, not using a specific tool.

Department Website’s Interactive Capabilities

1) What do you find is the most difficult part of maintaining or updating these websites?

Using the Wedpage Platform	3
Keeping information up to date	1
Finding time to update the page	3

Interfacing with website technician	2
Gathering and formatting data for the website	2
Have not had difficulties	1

2) Have you had issues with the anonymity aspect of web-based commenting and forums, as in finding more negativity or inappropriateness in web-based comments and postings?

Yes	2	No	5	NA	1
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3) Would having an identity/email based login to the commenting area of the website help with this issue?

Yes	5	No	2	NA	1
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Note:

Several interviewees cautioned against this solution, noting that it could discourage certain people from providing input

4) Have you noticed any correlation between the way the information is presented on the website and the amount of traffic and interaction it receives (i.e. a PDF of a report vs. an illustrated poster or guide vs. a 3D or virtual representation)?

Yes	6	No	0	NA	1
------------	---	-----------	---	-----------	---

Note:

The most common comments made in response to this question was that information provided was attempting to be more visual or graphic in nature, and that the department was trying to be more purposeful about the information being provided online. There were several cautions about trying to put all available information online because it can overwhelm the user.

5) What would you say has been the most effective presentational mode for information presented on the website?

Brief reports or summaries of the information	2
A mix of reports and visual information	4
Having a headline for updated information on the homepage	1
NA	1

6) Do you see providing live-streaming video of public meetings on the website as a viable option in the future?

Yes	5	No	2	Already doing this	1
------------	---	-----------	---	---------------------------	---

Note: The most common reason given for why this may not be a feasible option in the future is the low in-person attendance at public meetings currently.

7) Which web-based interactive tools do you see as having the greatest benefit to your department and your community?

Online application forms	2
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Using a program like MindMixer	2
Using the website as a depository for information	1
Using Social Media	2
Visualization tools like maps and 3D representations	2