Evaluating Public Participation Techniques: Improving the Planner's Tool Box

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Abstract

This thesis attempts to examine the variety of public participation techniques used in the creation of neighborhood plans and suggests a multi-criteria analysis to compare techniques against a set of criteria. To pair down the participation techniques studied in this thesis, the researcher used well-known techniques currently in use by planning practitioners. These include: the public hearing, the community workshop, the charrette, the focus group, the citizen panel / community advisory board, ballots or referenda, and crowdsourcing. A multi-criteria analysis is proposed as a means of examining the relative performance of each participation technique against a set of external criteria. Based on the extensive research on public participation and theory, five goals have been identified in conducting a public participation process and include a combination of process-based and outcome-based goals to reflect the nature of public participation itself as both a process and an outcome. Goals are understood as general ends or expected results for a project or process. For the purposes of this thesis, public participation goals identified by Laurian and Shaw (2008) will be used and include mutual learning, democratic process, issue-related, governance, and social outcomes. From these goals, 13 criteria are suggested to evaluate each public participation techniques' effectiveness. Criteria, are understood as measureable aspects of judgment by which a dimension of the various choice possibilities under consideration can be characterized (Voogd 1983). The researcher has suggested criteria based on previous research and theory in an attempt to achieve the predefined goals. The evaluator estimates effectiveness scores for each participation technique based on informed judgment; these scores are based on a ten-point (0-10) scale and indicate how well each participation technique fulfills each criterion. Additionally, a criterion weighting mechanism is suggested to account for various interested parties' influence and preference. By weighting criteria, individual parties' values are considered and determine the importance of each criterion. Once weighting is achieved, the weights are multiplied against the effectiveness scores to achieve weighted effectiveness scores. These weighted effectiveness scores are totaled for each participation technique and the result indicates the overall effectiveness of each technique relative to the others. An illustrative model is presented to demonstrate how this type of evaluation can be used in a real world setting and considers a neighborhood planning scenario. This illustration identifies the steps used in a multi-criteria evaluation as applied to public

participation techniques and suggests further research opportunities and limitations of this type of evaluation.

Introduction

Public participation in urban planning is an integral and central part to the overall planning process and may determine the success or failure of a completed plan. Plans that do little more than collect dust on government shelves have been an issue in previous decades and while plans may fail for a variety of reasons, lack of public involvement can influence a plan's future success. When plans lack public involvement, technical experts can dominate the process which raises fundamental issues for democratic governance (Burby 2003). Researchers such as Innes, Lindblom and Cohen, and Schon, have noted that citizens possess an "ordinary knowledge" that can help ensure plans reflect local conditions and values (Burby 2003). By not adequately tapping into this knowledge, planners ultimately ignore the population they intend to serve which historically has alienated affected parties and may reduce the effectiveness of future planning processes. Projects and plans that lack local support are well known; locally unwanted land uses (LULU) and not-in-my-backyard (NIMBY) mentalities can influence citizens' view of planning and reduce support for future plans. Therefore, it is in the planning profession's best interest to encourage active participation during every step of the planning process. While public participation can assist in creating successful plans, using appropriate public participation techniques can affect the overall success of public participation efforts. Therefore, the techniques of public participation are an important aspect of urban planning and should be studied in order to improve the planning process for all parties involved.

This thesis concerns the various public participation techniques used in the creation of neighborhood plans. This work uses a multi-criteria evaluation methodology as a pre-test to assist urban planners and politicians in making decisions in choosing the appropriate public participation technique. A review of the existing literature explores the roots and history of public participation in planning and current planning theory regarding public participation. In this review, it was found that a consensus does not exist concerning the goals, outcomes, and definition of public participation. Additionally, the literature suggests that most evaluations of public participation rely on a limited number of case studies and use pre- and post-test interviews concerning outcomes and participant satisfaction. Therefore, this thesis provides an additional technique for examining common participation techniques used in the creation of neighborhood plans. Multi-criteria evaluation methodology is used here and is the focus of this thesis.

Public participation techniques have been selected for this thesis using a prescribed set of principles. The principles reflect Arnstein's Ladder of Citizen Participation (1969) and are techniques that are used regularly within the planning process (Peterman 2000). A set of goals has been identified based on previous evaluation work and additional theoretical research within the fields of public administration, environmental conservation, and urban planning for use in this multi-criteria evaluation. These incorporate the goals and qualities identified by various planning practitioners. Weighting is also suggested to incorporate the decisions and values of the community, planning agency, and City Council. An illustrative example has also been provided to show how the evaluation framework can be used in a real-world situation.

While this thesis is exploratory in nature and relies on previous research, limitations do exist and have been documented. Additionally, a discussion of ideas for continuing this work is included as a means of continuing the ongoing dialogue, in the hope that evaluation of public participation will continue to improve. The rationale for this work is based on the current state of public participation within planning practice; specifically, in the creation of neighborhood plans. Urban planners have long espoused the benefits of public participation in the planning process as reflecting the public's values, creating consensus and buy-in, both formally and informally, and overall improves neighborhood plan implementation (American Planning Association 2005a). Public participation incorporates information from the public and helps planners dictate the outcome or future for cities and neighborhoods. Neighborhood planning, compared to city-wide planning, is more responsive to citizen needs and demands more public participation based on the various projects included in the plan (Rohe and Gates 1985). Indeed the stakes are higher at the neighborhood level as many projects are site-specific physical improvements that may affect many stakeholders. Therefore, public participation's value and importance is critical to the successful outcome of planning processes for the neighborhood.

While the value of public participation is well known, Shipley and Utz (2012) posit that there is a missing link between theory and practice, while Roberts (2004) considers that planners lack the theory to conduct successful public participation required by the profession. Furthermore, Shipley and Utz also suggest that planners are often responsible for the type of participation technique used or whether it happens at all (2012). While it is clear that planners have a responsibility to the community and attempt to act in its best interest, it is difficult to see how this is possible if planners are not receiving an education in public participation. For

instance, a survey of the five top-rated planning education programs in the United States revealed that only two offered classes in public participation (Shipley and Utz 2012). Therefore, the goal and interest of this work is to understand the various techniques used in public participation and to suggest an approach to evaluate existing public participation techniques.

Existing Research on Public Participation

This review of existing research addresses the origin and nature of public participation in planning, associated planning theories, and previous public participation evaluation measures. Additionally, this review attempts to contextualize the nature of creating neighborhood plans using various public participation techniques, and positions this thesis within the larger cannon of public participation evaluation.

While various forms of public participation have been key to American democratic processes since the country's inception, formally integrating public opinion in planning and public sector functions only emerged in the Twentieth Century. The act of soliciting public feedback, also known as public participation or public engagement, are general terms and will be used interchangeably for the purposes of this thesis. Soliciting citizen feedback began with many of the New Deal programs and was solidified in the creation of citizen advisory committees under the Housing Act of 1954. Public involvement continued under President Johnson's Great Society programs (Danke 1983).

While attempts have been made to integrate public opinion in program delivery and planning, the very definition remains as nebulous as the act; researchers do not necessarily agree on one definition of public participation but many have tried to posit their own understanding of the term(Laurian and Shaw 2008). The following is a brief examination of the various definitions of public participation. In terms of public administration and planning, Sherry Arnstein was perhaps the first to ascribe a label to the act of seeking public input and identified the various levels of public engagement that exist (Arnstein 1969). Arnstein characterized citizen engagement in terms of citizen power and the redistribution of this power, which allows the 'have-nots' to induce significant social reform (1969). This basic argument laid the foundation for Arnstein's successors to continue refining a definition. For instance, King et al. (1998), reflecting on the many failures of participation, identified the need for 'authentic participation.' Broadly, authentic participation is engagement that "works for all parties and stimulates interest and investment in both administrators and citizens, which requires rethinking the underlying roles of and relationships between administrators and citizens." In this instance, participation is positioned again as an "us" and "them" power struggle; the administration (i.e. agency, planner, or political body) is seen as holding the power and the public as lacking control. Roberts continues this assumption in her description of "direct participation" as a "process by which

members of a society (those not holding public office or administrative positions in government) share power with public officials in making substantive decisions and in taking actions related to the community" (Roberts 2004). Eventually, resulting from many urban renewal projects in the 1950s and 1960s and would ultimately cause the public to demand more control in planning (Shipley and Utz 2012).

Since the 1960s, planning theory has followed the changes, albeit slowly, in popular democratic ideals from a representative to an increasingly participatory system of governance; the role of the public had changed from being confined to policy making and deciding how policies would be put into operation to citizens being involved in managing programs (Thomas 1995). The work of Jane Jacobs, Paul Davidoff, and others greatly impacted the modern planning profession and theory during this time (M. P. Brooks 2002). In particular, Davidoff's advocacy planning was the first theory to place public participation as a fundamental objective of planning rather than simply a planning tool (Lane 2005). Laurian and Shaw (2008), as well as Lane (2005), illustrate the changes in planning theory beginning with Friedman's transactive planning model, which characterized the 1970s, and included face-to-face contact and interpersonal dialogues. The process continued with the addition of communicative theory and substantial public participation of the 1980s and 1990s. Indeed, many researchers and practitioners point to the 1970s as a decade of change for public participation: shifting from representative to more participatory democracy (Danke 1983; Thomas 1995). Furthermore, many public participation methods and evaluations occurred in the wake of the Environmental Protection Act (EPA) and have become the baseline for many subsequent examinations of public involvement in decision-making processes (Beierle and Cayford 2002; Tuler and Webler 1999; Halvorsen 2003). Planning theorists in the 1990s supported more deliberative techniques that emphasized inclusive dialogue, mutual learning, and collective problem solving; the work of Beauregard, Forrester, Innes and Booher reflect this changing discourse of public participation (Laurian and Shaw 2008). These contemporary schools of thought all emphasize the political quality of planning, assume that the public interest is varied rather than held by a singular actor, and consider participation an essential element of planning (Lane 2005). This changing theory of public participation in planning has also influenced the American Planning Association (APA). According to the APA bylaws, the role of the planner must strive to "pursue and faithfully serve the public interest" and should involve the public in the planning process (American Planning

Association 1992). Furthermore, the American Institute of Certified Planners (AICP) has also embraced a more inclusive approach to public participation by stating in the code of ethics that the public interest should be "formulated through continuous and open debate," by providing information and giving "people the opportunity to have a meaningful impact on the development of plans and programs that may affect them" and that this engagement should be "broad enough to include those who lack formal organization or influence" (American Planning Association 2005b). Therefore, it seems, through this formalized code, that the current views of public participation in planning reflect the call for increased participatory and deliberative processes.

While public participation has long been studied and implemented, whether formally or informally, evaluation of public participation in planning is lacking (Laurian and Shaw 2008). In 1983, Rosener noted that there were "no widely held criteria for judging success and failure; there are no agreed-upon evaluation methods (Laurian and Shaw 2008). Additionally, Beierle, writing in 1998, noted that the state of evaluation had not progressed fifteen years after Rosener. The current field of evaluation literature relies on pre- and post surveys of public participation processes and is situated around a limited number of case studies. Within this field of work, evaluations of mandated participation (Innes and Booher 2004), exploration of the National Environmental Policy Act (NEPA) and participation (R. W. S. Brooks and Harris 2008), and examinations of changing citizen perceptions through high quality participation (Halvorsen 2003). Laurian and Shaw's examination of AICP members' approaches to public participation evaluation provides various definitions of successful participation and illustrates the need for more standardized evaluation. Their findings indicate that no standardization or preferred method of evaluation is apparent within the planning profession: AICP members surveyed focus on various criteria and outcomes in gauging the success of their individual public processes (Laurian and Shaw 2008).

Finally, the nature of neighborhood plans has been studied at considerable length, across both the fields of public administration and urban planning. Neighborhood and grassroots community efforts became vital in redevelopment of American cities in the 1960s and 1970s. At that time, it was seen as a break from the traditional role the Federal Government played in directing urban policy from the top: this was the role the Federal Government had played since the Great Depression (Peterman 2000). With the passage of the Housing and Community Development Act of 1974, urban problem solving switched from the Federal level toward local

municipalities where such problems existed and decentralization occurred (Peterman 2000). The need therefore arose for neighborhood organizing and planning. Rohe and Gates (1985) provide a comprehensive examination of the neighborhood, its defining characteristics, and have identified characteristics of neighborhood planning that differ from citywide planning. These characteristics include: increased government responsiveness, a need for citizen participation, and projects that focus on physical improvements. Additionally, neighborhood planning processes must address a wider range of problems than city-wide planning and increase social interactions and access to government processes (Rohe and Gates 1985). The creation of neighborhood plans involves a smaller geographic area and typically, a smaller proportion of citizens than citywide planning. This allows for concentrated and meaningful engagement in decision-making.

This review of existing research positions this thesis within the previously described context. The proposed evaluation framework within this thesis considers the existing research and understanding of public participation. Additionally, this thesis considers the context in which it is written: a changing 21st Century and modern planning environments and considers the increasing utilization of modern technology in planning.

Selected Public Participation Techniques

Selection Rationale

Through the review of existing research in preparing this thesis, it is apparent that numerous formal and informal public participation techniques exist. The definition of public participation technique for the purposes of this thesis refers to the instrument or tool used in conducting a public participation process. For instance, the Institute for Participatory Management and Planning (IPMP), a company dedicated to assisting public agencies in achieving their missions and making participation attainable, identifies approximately 70 different community participation techniques in their Needs Assessment tool (The Institute for Particpatory Management & Planning 2013). Furthermore, the increased popularity and proliferation of internet-based, social media, and mobile applications has only increased the quantity of public participation techniques available to planners. While a comprehensive examination of all available participation techniques would be useful and a major contribution to the planning field, it is outside the scope of this work. By examining current planning theory and previous studies, the researcher narrowed the techniques for study and inclusion in this thesis.

For the purposes of this thesis, the researcher considered public participation techniques that were identified as commonly used in preparation of neighborhood plans based on existing research. Laurian and Shaw (2008) explored various participation approaches used by AICP members, and found that certain public participation techniques were identified as popular or common approaches across the United States. Their survey of 761 respondents found that 75 percent organized public meetings, 61 percent used public hearings, 57 percent used workshops or charrettes, and 48 percent used taskforces or advisory groups (Laurian and Shaw 2008). These public participation techniques were used for a variety of planning projects: including comprehensive planning, zoning regulations, neighborhood revitalization plans, and environmental plans. While some of these projects may not occur at the neighborhood scale, the public participation techniques used are common at the neighborhood level. Furthermore, almost all of the respondents (90 percent) used more than one method of public participation. This further reinforces the notion that selected participation techniques must be flexible and relate to the needs of the community involved (Laurian and Shaw 2008). Additionally, common public participation techniques used in neighborhood planning have been identified and illustrated by Bernie Jones in his seminal work on neighborhood planning (Jones 1990). Additionally, Shipley

and Utz have also identified common public participation techniques in their exploration of public participation in planning and many have been incorporated in this thesis (Shipley and Utz 2012). The selected participation techniques include: the public hearing, the community workshop, the charrette, the focus group, citizen panels or advisory boards, ballots or referenda, and crowdsourcing.

It should be noted that these public participation techniques fall at various levels on Arnstein's Ladder of Citizen Participation (Figure 1)(1969). Various researchers attempt to organize public participation techniques based on their level of community power and engagement along Arnstein's Ladder (International Association of Public Participation 2013). However, it is the opinion of this researcher that merely focusing on certain "rungs" of the ladder would eliminate common public participation techniques from the discussion within this thesis. For instance, King et al. identify numerous problems with status quo participation techniques, or those that fall on the low end of Arnstein's ladder, as mere "window dressing" and the lack of follow-up or give and take portrays participation "out of fear that they (administrators) are going to look bad (King, Feltey, and O'Neill Susel 1998). Furthermore, the shifting notion of public participation, which began in the 1970s, from representative democracy to participatory democracy, suggests that the public demands more deliberative, intensive, and participatory engagement (Danke 1983). These more-intensive processes, while considered to be more engaging, also have been found to leave participants out or ignore certain issues. The question that remains to be answered is how to harness the problem solving capabilities of these intensive techniques with the broad participation often found at lower levels (Beierle and Cayford 2002). For these reasons, it is difficult to focus on only participation techniques that fall at the upper end of Arnstein's ladder when there is inherent value in those that fall at the lower end. Therefore, both will be examined within this thesis.

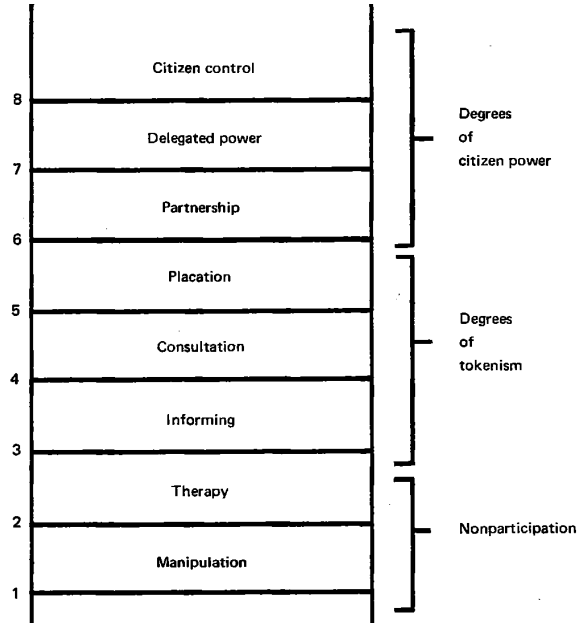

Figure 1

Selected Public Participation Techniques

The following section provides information regarding the seven selected public participation technique included in this evaluation framework. What follows is a brief description of each technique, its functions, and outcomes as identified in the literature. Additionally, problems or shortcomings of each technique, if applicable, are identified. It should be noted that the claims and pitfalls made by each technique reflect previous research and evaluations and should be understood as aiding in the technique's description. Claims made here reflect the existing research on each technique should be regarded as tentative and are used as a description of what each technique can and cannot do. These claims will be addressed within the multi-criteria evaluation in this thesis.

Public Hearing

Perhaps the most common form of structured public participation, the public hearing is ubiquitous to urban planning where various parties may be affected by legislative decisions. An agency usually holds these meetings, either voluntarily or legally mandated, to present detailed information at any time in the planning process (Rosener 1978). While the public hearing is accessible and open to everyone, it provides limited time for individual public response and very little discussion between participants (Beierle and Cayford 2002; Rosener 1978).

While the public hearing is the most common technique of public participation, its' shortcomings are well known and generally include the lack of public discussion and often the loudest and most aggressive participants' opinions are heard. These opinions, however, may not be representative of the community at large (Sanoff 2000; King, Feltey, and O'Neill Susel 1998; Rosener 1978; Thomas 1995). Additionally, if attendance is representative, the opinions may not represent everyone; due to time constraints, the speakers at public hearings may not share representative opinions as many find public hearings too large and unwieldy which often prevents discussion (Thomas 1995). Finally, critics also suggest that public hearings seldom influence government decisions; according to Checkoway (referenced in Thomas 1995) "evidence indicates that agency officials may either give cursory consideration to or ignore altogether certain views expressed in hearings." While this argument may be made for any participation technique, the lack of response by the planning or government agency reduces the responsibility or need to act upon these opinions. Therefore, it seems that public meetings may

be used as rituals: only providing the appearance of public involvement (Thomas 1995). It should be noted that the public hearing is different from a community workshop in that a community workshop is typically task-oriented and will be discussed further.

Community Workshop

Through an examination of existing research, the term "community workshop" may have various definitions depending on geography and context. For simplicity and clarity in this thesis, a community workshop is understood as a structured working meeting used to discuss a technical issue or idea and attempt to reach an understanding of its role and importance in the planning process (Rosener 1978). Furthermore, the community workshop is centered around the ideas of group interaction, collective learning, and may include various participation techniques (Sanoff 2000). However, this group process may also give rise to conflict; group members may often feel that individual voices are not being heard and the process may require subtle facilitation by planners. Workshops can also generate new ideas and alternatives, resolve conflict, promote interaction of groups and support or minimize potential opposition to the proposed projects (Rosener 1978).

Charrette

The modern day charrette is understood differently than the original, 19th Century French term. Anecdotally, the charrette was a cart used to collect final architecture drawings in the Ecole des Beaux Arts as students frantically finished their work (Lennertz and Lutzenhiser 2006). The modern understanding of a charrette refers to both a product and a process that continues to involve rapid paced work and high amounts of energy (Sanoff 2000). Modern approaches to charrettes may also describe these efforts as "dynamic planning" due to their highly flexible and collaborative nature (Lennertz and Lutzenhiser 2006).

The modern charrette, as outlined by the National Charrette Institute (NCI), alleges to have specific qualities, operational characteristics, and benefits that set it apart from traditional community meetings and public processes. By the NCI's definition, modern-day charrettes by their nature are: inclusive, collaborative, address holistic change, process-focused, and bring into being a collective intelligence (Lennertz and Lutzenhiser 2006). Operationally, charrettes involve various interdisciplinary practitioners from the design and planning fields and three specific

phases of dynamic planning: preparation and information gathering, the charrette itself, and plan implementation. Additionally, charrettes can seek to improve the social, economic, and physical well-being of people, places and the natural environment. Furthermore, the charrette encourages collaboration and transparency: since the charrette is completed over several days with multiple feedback loops or opportunities for the planning team to address participant concerns, all information is available to all stakeholders involved and the decision-making process is clear and understandable (Lennertz and Lutzenhiser 2006). Shared learning is also a key component of the process. The value of shared learning facilitates new understanding that changes perception, and can reduce the need for costly re-work. Throughout the entire charrette process, multiple feedback loops are built in, allowing for constant and immediate public participation and response by the charrette team (Lennertz and Lutzenhiser 2006). However, due to the immersive nature, charrettes may only be used for communities that adequately understand the issue at hand, which may take additional time and additional resources. The charrette is different from the community workshop in that it has multiple feedback loops allowing the planning agency to respond immediately to citizen concerns and focuses on a series of issues while the community workshop focuses on understanding one specific, and often technical issue

Focus Groups

Focus groups have long been used for research purposes and are group discussions that explore a specific set of issues. They are considered focused because they involve collective activity: such as answering a standard group of questions, similar to a group interview (Kitzinger and Barbour 1999). This process relies on the notion that more information is available from the group than from an individual (Rosener 1978). Focus groups depend on small (seven to ten people) group interactions to generate data by asking members to talk to each other or act as an "audience" for each other and participants may be selected based on a set of criteria. Group members are asked a series of questions and each member is able to answer in front of other members, which creates a common discussion. An assistant facilitator typically records the proceedings for content analysis. Focus groups claim to be useful in determining how opinions and points-of-view are expressed and constructed but may not be concerned with the collection of quantitative data (Kitzinger and Barbour 1999).Within focus groups, there are various tools and titles for the processes that may occur: brainstorming, nominal groups, and Delphi groups

are just a few as each have different selection techniques and research outcomes (Kitzinger and Barbour 1999). For the sake of clarity within this thesis, a focus group will refer to a facilitated group interview consisting of reactions to a standard set of questions. Focus groups encourage participants to generate opinions using their own vocabulary, which may provide for more authentic participation and promote interaction between various groups (Rosener 1978; Kitzinger and Barbour 1999). Successful focus groups require skilled facilitators who are familiar with the group members and must avoid being judgmental or be perceived to be acting as an expert, which can close off discussion. While the risk of the facilitator losing control is high in this technique or any participation technique for that matter, this worry may be unwarranted as freer discussion may tap into 'better data' if the situation is less subdued (Kitzinger and Barbour 1999).

Citizen Panels / Community Advisory Boards

Citizen panels, or community advisory boards, are selected subsets of the total community population that serve as representatives or proxies for the community at large. Either voluntary, elected, or appointed, these panels serve as representatives for the affected parties and make decisions on their behalf. Typically, these members act in the interest of the affected party and may often approve or deny plans and project proposals (Rosener 1978; Laurian 2005). Additionally, citizen panels or community advisory boards act as the intermediary between the public and public agency; the panels interact with the public agency, inform the public at large, and provide feedback to the public agency (Laurian 2005). The selection process must be free of manipulation in order to ensure a fair and effective process and some researchers have suggested creating a stratified sample to be representative of the larger community (Crosby, Kelly, and Schaefer 1986; Kathlene and Martin 1991). Citizen panels range in comprehensiveness and duration of engagement: from single meetings to on-going interactions based on the scale of the project (Kathlene and Martin 1991). For instance, Kathlene and Martin's examination of a citizen panel process concerning transportation in Boulder, Colorado included a citizen panel, composed of 147 residents who participated in various on-going large group and personal in-home interviews (1991). The positive and negative aspects for citizen panels vary but the Boulder, Colorado case illustrates a few qualities. In this instance, citizen participants felt that the government was listening to their concerns and opinions, that two-way conversations

occurred, and that residents were educated and able to participate easily in a decision-making process. Furthermore, Laurian contends that citizen panels or community advisory boards provide more interaction among citizens, enhances a two-way dialogue, and results in well-educated citizens compared to other public participation techniques (Laurian 2007).

Conversely, in the Boulder case, citizens felt that the time commitment to a citizen panel was too much and stated that background information would have been helpful in understanding topics and providing more useful information (Kathlene and Martin 1991). Additionally, selection of a small subset of citizens may or may not accurately represent the community at large. For instance, even though care was taken to collect a stratified sample, Kathlene and Martin found that the Boulder group was still better educated, earned higher incomes compared to the community at large, and owned their homes (1991). While these challenges can be overcome with more sampling, time and cost may prevent agencies from doing so. Finally, break down in communication between the citizen panel and the general public can take place. Based on Laurian's examination of community advisory boards and EPA toxic site clean up, the members of the board were well informed but the general public were less well-informed about the decision-making process and the feedback cycle to the general public failed (Laurian 2005).

Citizen panels and community advisory boards have various similarities to focus groups but differ in the types of information collected. Citizen panels answer the "what" question about opinions and focus groups are concerned with "how" opinions are constructed. Citizen panels collect quantitative data as participants may be asked to respond to surveys, maps, and individual interviews as forms of data collection while focus groups are concerned with understanding how opinions are made through reactions to other members' responses and tend to be reliant on group processing.

Ballots / Referenda

Ballots and referenda ensure each community members' voice is equally expressed and fairly heard. Voting can be rather versatile, used in formal settings such as referenda and elections, to simple decision-making at public meetings. Ballots allow for broader participation as they are accessible to everyone, not merely those citizens attending a meeting or other participation event (Sanoff 2000). However, as can be seen in each federal election, voting declines as voters are increasingly alienated from formal government (Innes and Booher 2004).

In the planning realm, ballots often occur within other techniques of participation such as public meetings or workshops and may occur after information has been provided. Ballots and referenda in planning may be used to identify attitudes and opinions, serve to review policy and plans, and may influence opinions of government (Rosener 1978). While ballots and referenda are useful techniques of public participation, low voter turn out, as evidenced by Federal elections, and limited interaction among citizens, and therefore limited learning, are major pitfalls.

Crowdsourcing

The newest form of public participation is online and web-based techniques or more generally known as crowdsourcing. Computer use in planning is not a new phenomenon: GIS and other computer programs have assisted planners in understanding and displaying information for the last three decades; however, new forms of online participation have begun to emerge in planning processes (Al-Kodmany 2000). The term "crowdsourcing", coined by Jeffrey Howe, is defined as a "collective intelligence system" which issues a challenge to a large group in hopes of arriving at new solutions by providing qualitative information (Seltzer and Mahmoudi 2012). The theory is based on the idea that the internet and other web-based tools, allows individuals to think creatively about problems and put them up for review by their peers (Brabham 2009). This aggregating of responses and peer review differentiates crowdsourcing from ballots and focus groups. Additionally, crowdsourcing is a rather private activity that occurs often behind the screen of a personal computer instead of in the company of other community members. Crowdsourcing tools are varied and range in sophistication from simple, static websites displaying information, to fully interactive social media websites. For the purposes of this thesis, focus will be placed on more interactive websites and tools such as social media.

Crowdsourcing has been praised for its instantaneous contact, ongoing nature, and the potential for a broader reach than typical public participation techniques (Brabham 2009). Additionally, the future of public engagement may very well lie inside these tools as more Americans have a presence on social media. For instance, internet users under the age of 50 are likely to use a social networking site and those 18-29 are the most likely to use a social networking site (83 percent) compared to any other demographic (Brenner and Duggan 2013). Furthermore, ideas are generated from both a "top-down" and "bottom-up" approach as solutions

are generated from the public as well as from the agency which can allow people to speak freely as they feel protected behind a computer screen (Brabham 2009; Seltzer and Mahmoudi 2012). The nature of online crowdsourcing encourages broader participation as citizens can participate at their leisure and ideas can be aggregated and brought forward for review.

While crowdsourcing addresses many problems that previous participation techniques did not, pitfalls do exist. For instance, crowdsourcing requires an informed crowd, which may require more education, who must be familiar with an identified problem in order to suggest solutions (Seltzer and Mahmoudi 2012). Furthermore, while a broader audience can be reached, the need for online access, high bandwidth, and technical support may discourage the public from participating; the result may be less representative of the affected parties (Evans-Cowley and Hollander 2010; Seltzer and Mahmoudi 2012). Additionally, more support by the planning agency may be required as crowdsourcing revolves around ongoing interaction and encouraging citizens to participate more than once has been found to be challenging as interest may dissipate. Furthermore, the planning agency must be responsive in order to keep the conversation going, technical support may be needed, the use of anonymous posting may occur, and online planning tools allow citizens to participate at their convenience; participants no longer have to attend public meetings and can be veiled in online anonymity if so desired. Anonymity in this case may encourage the participant to provide more candid comments than otherwise possible and would otherwise be seen as disruptive or controversial if expressed in a public setting.

Proposed Evaluation Technique

The following sections provide an explanation of the multi-criteria evaluation process and establish the framework to be used for the purposes of this thesis while examining previous public participation evaluations and theories. Additionally, an illustration is included to show how the proposed framework could be used in a real world setting.

Multi-Criteria Evaluation

Through the understanding of public participation and the role of evaluation, it is clear that successful outcomes are difficult to achieve due to the complexity that exists within the field of planning. Therefore, multi-criteria evaluation can consider numerous criteria, assist with the decision-making process, and involve various participants' views. Multi-criteria evaluation emerged during the 1970s and, according to Voogd, it was not so much the technical sophistication of these methods but rather the power lies in the conviction and transparency in creating manageable criteria (Voogd 2004). In general, multi-criteria evaluation can assist in evaluating various methods or alternatives by identifying goals, creating criteria for evaluation, and evaluating various alternatives against these criteria (Miller 2004). Multi-criteria evaluation involves understanding what the goals and objectives are that the decision, or in terms of this thesis the public participation, is meant to achieve. Several criteria are then developed from these goals and may defined as a "measureable aspect of judgment by which a dimension of the various choice possibilities under consideration can be characterized (Voogd 1983)." Using a deductive approach, criteria reflect the characteristics of the evaluation problem rather than being composed from an inventory of all features from the techniques being evaluated (Voogd 1983). Once criteria have been established, effectiveness scores are assigned to each technique being evaluated. Effectiveness scores reflect the expected performance of each technique and may be based on a scale (i.e. 0-10), where the larger the number the more completely the technique is expected to fulfill the criterion (Miller 2004). While all criteria may be assumed to be equally important, the creation of weights can discern various levels of importance based on affected parties and the goals they deem important. Finally, the effectiveness scores for each technique with respect to each criterion are multiplied by the associated weight. This results in a weighted effectiveness score, which is summed for each technique. Each step of this process is further discussed in subsequent sections.

Goal Identification

The first step in a multi-criteria evaluation is to identify the goals, which will help define the proposed criteria for techniques to be evaluated against. Goals are described as general ends or expected results for a project or process. For the purposes of this thesis, it is useful to examine the existing research on public participation goals. As mentioned in the review of research for this thesis, the means of evaluation and outcomes of public participation are varied as researchers have concluded that not one standardized method of participation evaluation exists. Furthermore, many public participation evaluations have focused on either user-based outcomes, which are concerned with participant satisfaction or rely on theoretically driven studies (Laurian and Shaw 2008). For the purposes of this thesis however, a theoretically driven evaluation will be used to evaluate participation techniques against a set of external goals. A brief discussion of the general goals and contributing research follows and will be used in identifying appropriate goals for this thesis.

As Laurian and Shaw posit (2008), public participation in general, may be conducted for the following reasons:

1. To identify solutions
2. To facilitate implementation
3. To increase legitimacy of planning and public agencies
4. To increase community empowerment and build capacity

These reasons for conducting public participation further reinforce the notion that public participation serves both the public and the public agency and the notion of shifting toward community empowerment coincides with Arnstein's theory of power distribution (Arnstein 1969). Furthermore, Beierle and Cayford, in their study of environmental decision-making and public participation (2002), have identified five social goals of public participation. These include:

1. Incorporating public values into decisions
2. Improving the substantive quality of decisions
3. Resolving conflict among competing interests
4. Building trust in institutions
5. Educating and informing the public

These goals, which have been used to evaluate environmental decision-making techniques, additionally support common reasons for public participation in urban planning; many of these goals seek to serve the same purpose and can be considered in this thesis.

Finally, while much of public participation research has been focused on the government entity involved, some research has been conducted concerning the public's understanding of successful public participation processes. Additionally, Tuler and Webler (1999), in their study of participation principles that were important to participants, identified the following seven elements for effective public participation. While these are by no means comprehensive, they do provide insight into what the public understands and desires in a successful participation process (Tuler and Webler 1999). These include:

1. Access to the process
2. Power to influence process outcomes
3. Access to information
4. Structural characteristics to promote interactions
5. Facilitation of constructive behaviors
6. Improving social conditions for future processes
7. Provide adequate analysis

Additionally, these general principles provide some indication of the types of goals and qualities inherent in public participation and provide, albeit a synthesized and ambiguous definition, of public participation and what it ought to achieve. Furthermore, many of these elements provide insight into the problems associated with public participation that practitioners and researchers have attempted to understand (King, Feltey, and O'Neill Susel 1998). Through an examination of the various goals, aims, and elements of public participation and what it should strive to achieve, goals and criteria within this thesis will be rooted in this work as well as other research on the topic.

The question arises as to what exactly is being evaluated in public participation. As researchers have identified, two theories of public participation exist: that the process itself is good or it is only good if the desired outcomes are achieved (Kweit and Kweit 1981). Laurian and Shaw's (2008) work in synthesizing various forms of participation evaluation identified two categories of goals: process-oriented and outcome-oriented. Laurian and Shaw suggest objectives and criteria that incorporate various researchers' work in understanding public participation. These include Bierele and Cayford's (2002) "social goals"; Webler's (Webler 1995; Tuler and

Webler 1999) concept of "fairness" and "competence"; Innes and Booher's (2002) focus on institutional capacity and resilience; and Laurian's (2005) exploration of power balance between agency and public. Laurian and Shaw's compilation represents one of the most current and comprehensive summaries of public participation goals and theories found in conducting the research review for this thesis. Laurian and Shaw, as well as the preceding theorists, forms the basic framework to identify goals for this thesis. An examination of Laurian and Shaw's goals and their applicability in the context of this thesis follows.

Suggested Goals Based on Previous Research

As previously mentioned, Laurian and Shaw propose process-oriented and outcome-based goals within public participation processes (Laurian and Shaw 2008). Many of the goals identified in Laurian and Shaw's work will be used in this thesis because it aggregates various goals of public participation as described previously, and incorporates both a process and outcome-based approach which attempts to better understand what is being studied in an evaluation of public participation (Kweit and Kweit 1981). The following is a brief description of each goal and associated objectives based on Laurian and Shaw's compilation.

Process-Oriented Goals

Two of the total five goals are process-oriented goals and refer to qualities that are achieved through the public participation process itself. These goals assume that the public participation process is good for its own sake and adds value for the public or agency regardless of the outcome (Kweit and Kweit 1981). Primarily, these goals reflect the need for mutual learning where both agency and public learns from the participation process, while the democratic goal includes the objectives of transparency, inclusiveness, and fairness (Laurian and Shaw 2008). For the purposes of this thesis, both of these goals and the resulting objectives will be considered in the proposed evaluation framework.

Outcome-Based Goals

The remaining three goals are outcome-based and include issue-related goals, governance goals, and social goals. The issue-related goal focuses on objectives such as meeting statutory requirements, finding solutions, and improving the quality of decisions. The governance goal

includes objectives such as increasing the legitimacy of agencies and decisions, reducing conflict, and facilitating implementation (Laurian and Shaw 2008). Finally, the social goal, which has been identified by Beierle and Cayford (2002), includes objectives such as building community capacity, building trust, building social networks and addressing the needs of disenfranchised groups.

Table 1 below is reproduced from Laurian and Shaw's (2008) work and shows the previously discussed goals and criteria.

Goals of Participaton and Evaluation Criteria (Laurian and Shaw 2008)

Goals of Participation		
Process-Based Goals		**Evaluation Criteria**
	Mutual Learning	
	Increase Public Awareness	Participants and general public are informed about issue, stakes, and decision-making process
	Increase Agency Awareness of public views	Agency is aware of public views, concerns, and preferences
	Democratic Process	
	Transparency	Public understands decision-making process. Information about issues and process is available
	Inclusiveness	Broad attendance. All stakeholders and views are given standing, expressed, heard, respected and considered.
	Fairness and power sharing	Fair ground rules, decision-making, solutions, and implmentation. No dominating group. Shared decision-making power (e.g. through binding agreements). How process fares on Arnstein's ladder of citizen participation.
Outcome - Based Goals		
	Issue-Related Outcomes	
	Meet staturory requirements	Requirements met.
	Find solution, reach consensus	Acceptable solution found.
	Improve quality of decisions	Decision integrates broad knowledge base and public input.
	Governance Outcomes	
	Increase legitimacy of agency	Agency and officials seen as legitimate by participants and general public.
	Increase legitimacy, acceptability of decisions	Assessment of implementation, level of opposition / acceptance of decision.
	Avoid or mitigate conflict	Presence / absence and degree of conflict.
	Facilitate implementation of solution	Solution implemented.
	Social Outcomes	
	Build institutional capacity, resiliency	Community capacity to participate and act in the future.
	Increase trust in planning agency	Agency seen as responsive to public input, committed, and capable to implement decisions.
	Build social networks, mutual understanding among participants, social capital, sense of citizenship	Participants feel included in governance, build trust and lasting relationships (among themselves and with administrators), understand and are committed to the public good identified
	Improve outcomes for most disenfranchised	Distribution of the costs and benefits of outcomes.
User-Based Goals		
	Participants satisfied	Overall satisfaction, staisfaction with process and outcomes.
	Other goals defined by participants	Criteria depend on participants' goals.

Table 1 Laurian and Shaw 2008 (Reproduced)

While these goals and criteria offer a basis for the creation of an evaluation framework, the criteria in particular are not well defined and many focus on the participants themselves. Since this thesis is concerned with the theoretical principles of participation, new criteria will be suggested, described, and further explored. Additionally, not all goals are applicable, as this thesis will focus on process-oriented and outcome-based goals only. Therefore, the recommended user-based goals will be disregarded since they rely on post-test evaluation measures.

Generally, Laurian and Shaw's "outcomes" will become the goals for this thesis and the specific "goals" will inspire the criteria for the multi-criteria evaluation. Therefore, Laurian and Shaw's work can be best described as an organizational framework for the purposes of this thesis. Not all of Laurian and Shaw's goals and subsequent criteria are applicable for this thesis. For instance, the goal of increasing an agency's awareness of the community will be disregarded since one basic purpose of public participation is to solicit information from the public to inform the agency (Checkoway and Van Til 1978). The public participation techniques examined in this thesis were selected since they are typical techniques used in neighborhood planning and to some extent, solicit information from the public and therefore meet this criterion outright. Additionally, the statutory requirement criterion will not be used as an objective as all selected participation techniques could fulfill this criterion as many mandated processes do not necessarily specify what participation technique to use, just as long as it happens (Kweit and Kweit 1981). Finally, the "solution implementation" criterion will be included in broader solution and consensus criterion since these criteria are similar. Additionally, the importance of finding an implementable solution in neighborhood planning can continue moving the planning process and ultimately the community, toward the end result of implementing aspects of the final plan.

Measuring Success

Inherent in evaluation, the question of measuring success arises and, as Laurian and Shaw found, the definition of success varies based on context. Therefore, these goals reflect various perspectives on what successful participation means and suggests that each participation process can promote different goals simultaneously (Laurian and Shaw 2008). Furthermore, the various participants in public participation may pursue different goals for different reasons. In an attempt

to address these concerns, multi-criteria evaluation can employ weighting techniques that will give affected parties the opportunity to place more or less emphasis on certain criteria, based on what qualities and features each party values. Weighting will be discussed separately.

Proposed Criteria

After determining goals, the next step in a multi-criteria evaluation is to establish criteria against which to evaluate each participation technique. Criteria are defined as measures and are based on the prescribed goals. The public participation techniques will be evaluated against these criteria to understand how well each technique achieves the prescribed goal in relation to the other participation techniques. The criteria may be described as deductive as they reflect the characteristics of the evaluation problem itself rather than being inductive which would reflect all features of the items being compared (Voogd 1983). The criteria developed by Laurian and Shaw is general and does not provide adequate information to use in this multi-criteria evaluation. Therefore, the researcher has developed criteria based on previous research and provides suggestions on how each criterion may be understood in terms of the features of public participation techniques. The goals and criteria are discussed in the following section with a brief explanation of each and the theoretical underpinnings that exist to support each.

Process-Oriented Goals

Goal 1: Mutual Learning – Mutual learning relies on the assumption that a better informed public and agency can improve the public participation process and in turn, create better plans (Innes and Booher 2004).

> **Criterion 1: Public Awareness – The technique informs the public of the issues and the overall decision-making process.**
>
> Researchers have noted the importance of information sharing to the success of a public participation process and have suggested that low levels of information limit the effectiveness of public participation (Laurian 2003; Santos and Chess 2003; Towler 1972). All of the techniques examined in this thesis fulfill this basic criterion of informing the public of decision-making process but may do so at different levels: some techniques may provide basic information (i.e. planning goals or outcomes) while others

may provide more adequate information (i.e. specifics concerning the planning process and supplemental information, which may be current or future development proposals, budgets, etc.…) which may improve decision-making by the public. Therefore, techniques that provide information beyond the basic level will receive higher scores.

Goal 2: Democratic Process - Public participation has become a means of democratic expression and has been ingrained in the American political process (Bryan 2004). This goal is based on the notion that public participation is key to the functioning of the American political system.

Criterion 2: Transparency – Technique makes the decision-making process open and transparent.

A transparent process allows the public to understand how decisions are made and improves the likelihood that citizens will participate in the future which may move the community along Arnstein's ladder (Lennertz and Lutzenhiser 2006). Techniques with features that encourage open and transparent decision-making processes, such as open discussions and agency and citizen interaction, will receive higher scores compared to those that lack these features.

Criterion 3: Inclusiveness – Technique should reach a broad and large group of participants to ensure an adequately representative process.

One of the problems associated with traditional public participation processes is that only a limited number of citizens have access to or attend a one-time event and may not provide a representative sample of the population (Lennertz and Lutzenhiser 2006; Thomas 1995; Checkoway and Van Til 1978). Techniques with features that provide inclusive processes or reach broad audiences, will receive higher scores compared to those that lack these features.

Criterion 4: Fairness – Technique should provide a 'level playing field', which allows everyone to participate equally.

Webler (1995) identifies fairness as providing participants equal opportunities to interact but also providing equal access to information. Additionally, fairness of the process may

also impact the final outcome as Lauber and Knuth posit that if citizens perceive the decision-making process to be fair, then they are more likely to perceive the decision to be fair and may ultimately support the outcome (Lauber and Knuth 1999). Techniques with features that treat participants' opinions equally, provide equal opportunities to participate, or equal access to information will receive higher scores compared to those that lack these features.

Outcome-Based Goals

Goal 3: Issue – Related **-** These goals concern public participation organized to achieve certain ends, such as feasible solutions or improved decision quality. Additionally, aspects of Beierele and Cayford's social goals are included within these criteria.

Criterion 5: Identify feasible solutions or reach consensus – The technique should identify solutions generated by the public and provide the option to reach consensus. While consensus may not be the ultimate desired outcome for a participation process, agreement among the affected parties is often sought to provide a collective understanding of the decision-making process which can further increase support for the solution (Thomas 1995). Techniques that include features to identify solutions and / or encourage consensus will receive higher scores compared to those that lack these features.

Criterion 6: Improve Decision Quality – Technique should improve the quality of decisions by encouraging active discussion and participant interaction.
Merely having a public participation process does not necessarily mean it will have an impact on decisions. The public may improve the quality of decisions in several ways, by offering local or site-specific knowledge, uncovering mistakes, or generating alternative solutions. The quality of deliberation has been proven to influence the success of outcomes (Beierle and Cayford 2002). Therefore, techniques that include features to promote deliberation among participants and the planning agency will receive higher scores compared to those that lack these features.

Goal 4: Governance – These goals identify the outcomes that governing agencies seek out in conducting public participation and have been identified by Halvorsen (2003), Webler (1995) and Fiorino (1990). These outcomes include both agency and decision legitimacy and conflict avoidance or mediation.

Criterion 7: **Agency Legitimacy – Technique should build the agency's legitimacy and encourage responsiveness.**

Communication between government and the public is important to the success of a participation process and helps legitimize participation in the eyes of the public and is also a characteristic of neighborhood planning (Fiorino 1990; Rohe and Gates 1985). Techniques that have features that require continued responses from the planning agency or require agencies to address public concerns will receive higher scores compared to those that lack these features.

Criterion 8: **Decision Legitimacy – Technique should build legitimacy for the decision and decision-making process.**

The technique should promote buy-in from the public by being accessible and satisfying by incorporating face to face interaction (Halvorsen 2003; Webler 1995). Techniques that include features that provide person-to-person interaction will receive higher scores than those that lack these features.

Criterion 9: **Conflict Avoidance / Mitigation – Technique should bring together different viewpoints and help create a common understanding**.

Techniques should bring together various points of view and engage in a two-way dialogue. This criterion does not focus on the interaction between public and government agency, but rather on the relationships among participating interest groups. While it may not be possible to resolve all conflicts, understanding all interests in the public process is important to the overall success of the final plan (Beierle and Cayford 2002). Participation techniques with features that encourage dialogue between various interest groups will receive higher scores than those that lack these features.

Goal 5: Social Goals – These goals include Beierle and Cayford's (2002) social goals, in particular building trust in the government agency, as well as Innes and Booher's (2002) focus on community capacity, resiliency and Tuler and Webler's (1999) understanding of trust associated with public participation.

Criterion 10: **Increase Community Capacity – Technique should increase community capacity by maintaining an on-going dialogue between community and public agency.**

More deliberative techniques have shown to improve the community's capacity where capacity is understood as the public's ability to understand problems, get involved in decision making, and act to implement change (Beierle and Cayford 2002). Additionally, on going engagement can provide the necessary catalyst to encourage citizens to continue to participate in future planning efforts and may further move the community toward the upper rungs of Arnstein's ladder. Techniques with features that provide for on-going participation will receive higher scores than those that lack these features.

Criterion 11: **Build Trust in Agency – Technique should build trust in the government agency to do the right thing.**

One of the problems identified with public participation is the lack of trust in the public agency to do the right thing and ultimately the lack of trust in the decision-making process (Webler 1995; Halvorsen 2003). Trust in a public agency means that the public believes that the agency is capable of understanding the public's needs and is able to act in the public's interest (Beierle and Cayford 2002). Examining this concept of trust relies on the public's understanding of the agency's decision-making process. For instance, by using a deliberative discussion, citizens may understand views that are different from their own and therefore, may view agency decisions as reasonable given the complexity of responses involved (Halvorsen 2003). Additionally, a citizen seeing a public agency carefully planning and implementing public participation may be more likely to believe that the agency will behave appropriately in future situations (Halvorsen 2003). Furthermore, the act of listening by the agency can be key to creating trust; if citizens are able to see that their concerns are taken seriously and they are given the opportunity to

express them, while the agency listens, they are more likely to trust the agency. Therefore, techniques with features that encourage listening by the public agency will receive higher scores than those that lack these features.

Criterion 12: **Build Social Capital – Technique should build social capital or increased sense of community ownership over the plan.** This criterion is based on the notion that broadened participatory opportunities can strengthen society by ensuring that government actions are embedded in society, rather than imposed on it and a collective knowledge is then created (Thomas 1995; Brabham 2009). Planners should strive to encourage citizens to be the owners of the plan; instead of simply shaping the plan, citizens should be considered the owners and encourage policy makers to implement the plan. Providing flexible agendas or a less rigid structure within participation techniques could encourage community input on the participation process itself and this might increase community ownership of the final plan. Increasing public ownership of the plan may further encourage implementation on behalf of the policy makers and ultimately lead to more accountability (Jones 1990). Therefore, techniques that have features that encourage the community to change the participation technique itself or can accommodate additional community interests, will receive higher scores than those that lack these features.

Criterion 13: **Improve Outcomes for Disenfranchised – Technique should encourage diverse participants and remove traditional barriers to participation.** Planning as a profession has identified the increasingly diverse populations within cities and the inadequate engagement of minority and low-income groups which ultimately spurred the notion of advocacy planning of the 1960s (Davidoff 1965). Additionally, practitioners have identified the need to engage all members of society and have noted that low-income citizens participate less than those in higher socio-economic categories (Checkoway and Van Til 1978). Barriers to participation may be centered on the complexity of modern day life, which may include lack of free time to participate, scheduling conflicts if there is only one opportunity to participate, or lack of transportation if participation is centered in one location. The technique should strive to

reach a broad and representative audience that may not otherwise participate by attempting to remedy and overcome these barriers. Techniques that engage the usually underrepresented audiences or those that include features allowing citizens to engage at their leisure or provide multiple way of engagement, will receive higher scores than those that lack these features.

Effectiveness Scores

Scoring for each participation technique will be based on how well it fulfills each criterion. Since the goal of this evaluation is to compare the effectiveness of public participation techniques used in the creation of neighborhood plans. Effectiveness scores are estimations of how well each technique fulfills the given criteria. Effectiveness scores will be based on a ten point scale (0-10) with the lowest score a participation technique can receive being zero and the highest score being ten. Scores of zero indicate that the participation technique does not have any qualities that fulfill the criterion while a score of ten indicates that a technique has all of the qualities to fulfill the criterion. Participation techniques will receive low scores if they partially fulfill each criterion, and higher scores if they contain more features to fulfill each criterion. For the outcome-based goals, a public agency can additionally rely on previous experiences and successes with each technique to consider in scoring these criteria. Scoring should occur on the same ten-point scale.

Generally, scoring will be arrived at by applying informed judgment and will be influenced by past experiences and specific outcomes (if any) the agency is attempting to achieve. Since this is meant as a tool to assist in the selection of appropriate public participation techniques to use for neighborhood planning, the planning agency will supply these scores while the community will be able to influence the selection criteria through a weighting process described later. To reiterate, this evaluation framework is meant to be a decision making tool to help educate and improve the selection of public participation techniques and is intended to be used in conjunction with other decision making tools to form a final decision.

Weighting

The previous discussion of scoring assumes that each criterion is equally important in all circumstances and to all participants. However, planning decisions are not conducted in a vacuum or a utopian setting. Therefore, a weighting system should be incorporated to identify which criteria are more or less important based on the parties involved. Additionally, this weighting reflects the notion that public participation techniques should be chosen based on the affected parties involved (Thomas 1995). For the purposes of this thesis, three parties will be considered in this weighting: the planning department or agency, the community or community development corporation (CDC), and the city council. In a multi-criteria evaluation, many sets of

weights can be created and the method described here is for illustration and pertains to this thesis. These three parties were selected since they represent the most interested and invested entities involved in the creation of neighborhood plans. The following assumptions about the creation of weights by each party are discussed below. These assumptions will be used in an applied illustration of the evaluation framework discussed later.

Planning Agency

The planning agency or department falls into the "grey area" between community and government in that it may attempt to work in the public's best interest but is also under the government's constraints as it is often considered a government department. Additionally, the planning agency, depending on its capacity, may have a general knowledge about a neighborhood or may know little about the context of this particular planning process. The planning agency is assumed to follow the APA and AICP code of ethics and may weight criteria that favor more deliberative, collaborative, and higher representation of the community.

Community

The community has the most to gain and most to lose from a public participation process. The community may have a broad range of understanding about the process and may be wealthy, educated, and may have participated in a planning process before or it may be low-income, disenfranchised, and participating for the first time. Furthermore, the presence of a community development corporation (CDC) may have a better understanding of the needs of the neighborhood on a day-to-day basis than the planning agency or City Council.

City Council

The City Council may have the legal responsibility to create neighborhood plans and is generally interested in the satisfaction of its constituents. Additionally, City Council always has power of approval over the budget and may act in the interest of both their constituents as well as their re-election needs. However, the political climate may influence the decisions of the City Council; less progressive councilmembers may not see the value in planning, or participation for that matter, in their neighborhoods and may place less importance on certain criteria.

While it is impossible to account for all variables that may influence the weighting of criteria, these brief explanations of possible factors will assist in the illustration of the evaluation framework. The planning agency, community, and city council will assign points based on perceived importance of each criterion. Generally, each group will be given 100 total points to award over all 13 criteria. By budgeting these points across all criteria, less important criteria will receive fewer points, or drop out, and may elicit a judgment call from each respondent. Additionally, this can be seen as a "pulse check" to see where parties stand on certain criteria and reflect each party's values. Budgeting points allows for tradeoffs to be made, which may reflect the planning reality where budget, time constraints, and individual priorities may often influence decisions.

After each party distributes points, points are summed for each criterion and then averaged by the total number of parties involved. One illustration of this framework will use averaged weights; this means that each party's opinions are equal and is equally represented in this decision. However, in reality, this may not be the case and each party involved may not have an equal say. Depending on the context in which particular neighborhood planning operates, the planning agency, community, or City Council could have more influence in the planning process. For the purposes of this thesis, and reflecting the push for citizen empowerment expressed by Arnstein and Checkoway, the community's weights will be given precedent over the others in an applied illustration. This means that the community's opinion will be amplified compared to the others'.

To do so, the community's weights will be tripled and combined with the parties' weights. This sum will then be averaged over the total number of parties involved; in this case, the total number of points for each criterion will be divided by three. This will ultimately increase the spread of weighted effectiveness scores. It is important to remember that the "highness" or "lowness" of a score is not based on the absolute size of the number but rather on its relative size compared to the other scores which all get larger. This is one example of the way in which this type of evaluation framework and respond to the varied needs and context of the reality in which it operates.

Weighted Effectiveness Scores

Once appropriate weights for each criterion are created, the previously assigned effectiveness scores (based on the 0-10 scale) will be multiplied in order to generate weighted effectiveness scores. These scores are then totaled and participation techniques with higher scores will be preferred public participation techniques based on this analysis.

Illustrative Application

For purposes of illustration, the following discussion, tables, and figures represent the scoring, weighting, and outcomes of the proposed evaluation framework. The following information is meant as an illustrative example in order to understand how this type of evaluation may be conducted in a real-world setting. This illustration is not meant to be authoritative but explanatory based on this thesis. For the purposes of this thesis, the following scenario is suggested to guide the reader through the application of the multi-criteria evaluation.

Scenario

The city planning agency or planning department is about to undertake the latest round of neighborhood planning for a particular neighborhood. This neighborhood has not received a neighborhood plan for some time and has been experiencing growth both in terms of new residents as well as businesses. A younger, more diverse population has been moving into the neighborhood within the last few years and the need to plan for future growth must be addressed. The neighborhood does have some relatively strong community advocates, block clubs, and an informal community development corporation that is responsible for the local Business Improvement District (BID). Overall, the neighborhood has a relatively diverse mix of residents but many have not necessarily participated in planning processes in the past either due to disenfranchisement or may not have lived in the neighborhood at that time. Therefore, an impetus for and interest in a robust participatory process exists within the community. In recent years, the planning agency, under the direction of a new mayor and progressive City Council, has been tasked with encouraging increased public participation, especially to disenfranchised communities or communities that may not have participated in previous planning processes. With this scenario in mind, the following illustration provides some clarity regarding the proposed multi-criteria evaluation.

Criteria and Scoring Information

The criteria and scoring information described in the previous section will be used to evaluate the seven selected techniques of public participation. Estimation of effectiveness scores will be on a zero to ten (0-10) point scale and will be based on how well each technique fulfills each criterion. Scores of zero indicate that the technique does not contain the features needed to fulfill the criterion. Scores of one, two, three, four, or five indicate that the technique contains features to partially fulfill the criterion; this means that the technique has certain features that would partially fulfill the criterion but may be lacking others. Scores of six, seven, eight, and nine indicate that a technique adequately fulfills a criterion. Adequately will be defined here as having a majority of the features associated with the criterion but may be lacking some. Finally, a perfect score of ten indicates that a technique contains all of the features prescribed by the criterion. Table 2 shows the criteria and estimated scores provided by the researcher.

Effectiveness Scores

The effectiveness scores used here are an illustration of the evaluation framework. Scores were awarded to each technique based on informed decision-making and the research conducted by others as interpreted by the researcher for the purposes of this thesis. The maximum score a technique could receive is 130 (i.e. 13 criteria x 10 points each), if it fulfilled each criterion. The minimum possible score was zero, if it was deemed unable to meet the criterion. Figure 2 shows the total effectiveness scores, estimated by the researcher, for each technique of public participation. By summing these scores, an informal ranking of each technique is reached. Perhaps not surprisingly, the public hearing scores the lowest based on the selected criteria while the charrette received the highest total score. Table 3 displays the effectiveness scores for each participation technique.

Weighting

As previously discussed, weighting is based on the distribution of 100 points over the thirteen criteria by three interested parties: the planning agency, the City Council, and the community. For the purposes of this illustration, the researcher role-played and assigned points based on assumptions and characteristics of the three parties. These weights are meant to be illustrative and are not to be understood as reliable. Most criterion received points while some received zeros to indicate that the respective party placed no value on them. These points were then averaged across the responding groups for each criterion. Table 4 shows the average weights. Generally, the highly weighted criteria focus on the democratic process goals (criteria 2 and 3, which received the highest average weight), and governance goals (criterion 8). The lowest weighted criterion is criterion 7 – agency legitimacy – which received an average weight of 1.7. The rest of the criteria received weights ranging from 5.7 to 9.0. Figure 3 displays the average weights by criterion. Additionally, Figure 4 displays the weights for each criterion and the weights assigned by each interested party.

While averaging these weights assumes that all parties' responses are valued equally, the ability to give priority to an individual party is useful considering the varied interests involved in neighborhood planning. For instance, the community group is the center of public participation and should have more control over the types of participation techniques used in creation of neighborhood plans. To accommodate this notion, the community group's weighting (or any party for that matter) can be given additional priority by doubling or tripling the individual party's weights and then combining and averaging these with all the weights from the parties involved. For purposes of this illustration, the community's weights were tripled, combined and averaged over all parties involved. Table 5 shows the community weights tripled and then averaged with the other groups' weights. By tripling the community's weights, different criteria receive priority. While criterion 3 still receives the highest weight (21.7), and criterion 8 receives the second highest score (20.3), criterion 4 becomes a priority compared to the previous results based on average weights. While the differences are subtle, the process of giving priority to various parties' weights can consider the dynamics and varying interests involved.

Weighted Effectiveness Scores

For the purposes of this illustration, two weighting techniques, using average weights and using emphasized community weights, will be used to create weighted effectiveness scores. Each outcome is discussed below.

Weighted Effectiveness Scores Using Average Weighting

The next step in a multi-criteria evaluation is to multiply the effectiveness scores for each participation technique by the corresponding weight for each criterion and achieve a weighted suitability score. For this illustration, each technique will receive a weighted effectiveness score for each criterion, which will be totaled to produce a total effectiveness score. The total effectiveness score indicates the overall performance of each technique against the 13 criteria. Table 6 displays the effectiveness scores using the average weighting. Rankings and weighted effectiveness scores are presented in the following section. From this evaluation, the charrette (1^{st}) received the highest total score (454.7); the community workshop (2^{nd}) received the second highest score (417.3); and ballots or referenda (3^{rd}) received the third highest score (378.0). The lower scoring techniques included the citizen panel / advisory board (5^{th}) (334.3); the focus group (6^{th})(260.3); and the public hearing (7^{th}), which received the lowest score (221.0). Crowdsourcing (4^{th}) received the median score (333.3). If the differences between scores are very small, this may indicate that the techniques perform at a similar level and in this case, it would not make much different which technique is recommended. Therefore, crowdsourcing (333.3) and citizen panel / advisory board (334.3) may be considered to perform at the same level of effectiveness based on the scores received. The range of scores, the difference between the highest and lowest scores, for this example is 242.4. Figure 5 displays the total effectiveness scores using the average weights.

Weighted Effectiveness Scores Using Emphasized Community Weighting

Looking at the effectiveness scores when the community groups' weights are given priority, the techniques receive similar scores but some subtle changes are noticeable. Generally, all techniques received higher total scores due to the increased weights. Table 7 displays the effectiveness scores achieved by giving the community's weights priority. Charrette (1st) and community workshop (2nd) still receive the two highest scores (789.3 and 698.7 respectively), while the citizen panel / advisory board (4th) received a higher score compared to the score received from average weighting (580.3). Ballots (5th)(549.7), crowdsourcing (6th)(511.3), and public hearing (7th) (342.0) received the lowest scores. In this case, there is a greater difference between scores and it is clear that each technique performs at different levels comparatively. The range of scores, difference between the highest and lowest scores, for this example is 466.0. Figure 6 displays the techniques and total points received.

While the differences between the effectiveness scores achieved by average weights or by giving the community weights priority are subtle, the use of emphasized community weights displays a broader range of scores. The community weights produce scores that are much higher merely due to the increased number of possible points in this example but it also allows the user to see clear distinctions between each technique. For example, in the example using average weighting, citizen panel / advisory boards received a score of 334.3 while crowdsourcing received a score of 333.3, a difference of one point. By looking at these scores alone, it could be argued that both techniques achieved a very similar level of effectiveness. However, when looking at scores produced by using the emphasized community weights, citizen panel / advisory boards received a total score of 580.3 and crowdsourcing received a score of 511.3. While the criteria are weighted differently and produce higher scores, the distance between these scores is greater compared to those produced by using average weights and is therefore easer to discern differences between each technique's performance. By examining the differences between these scores, the overall performance of one technique can be examined relative to the other techniques.

Discussion of Participation Techniques

While some discussion has been given to the selected participation techniques' weighted effectiveness scores in this illustration, a brief discussion of each is helpful to illustrate how each fared in the evaluation. In terms of estimated effectiveness scores, the charrette (94 points) and community workshop (84 points) received the highest scores overall based on how well they achieved each criterion The citizen panel / community advisory board (69 points), ballots / referenda (63 points), and crowdsourcing (59 points) fall in the middle of the range of estimated effectiveness scores. Finally, focus groups (54 points) and the public hearing (39 points) received the lowest estimated effectiveness scores. Once average weights were applied, the charrette and community workshop continued to receive the first and second place rankings respectively, with ballots / referenda in third place, citizen panel / advisory board in fourth place, crowdsourcing in fifth place, and focus groups and the public hearing in sixth and seventh place respectively. Once the emphasized community weighting is applied, subtle changes are noticeable. In particular, all of the previous rankings remain applicable while citizen panels / advisory board and ballots / referenda have changed positions as third and fourth respectively. The more important aspect of this evaluation is the relative scores between each technique and indicates the different levels of effectiveness available in each participation technique. The outcome of this evaluation can assist in the decision-making process concerning the selection of appropriate public participation techniques.

Discussion and Limitations

This thesis evaluates a limited selection of factors that affect public participation and makes assumptions concerning other relevant factors. Specifically, time and funding are both important variables affecting public participation technique selection but were ignored for the purposes of this thesis because time and funding vary broadly across geographic areas (i.e. varying neighborhood sizes) and may vary based on the public participation technique. For instance, a charrette process may cost more in time and money than other techniques. Does this mean that the charrette process is not a better choice for neighborhood planning than other techniques? Not necessarily. Examining the constraints of limited time and funding for public participation could automatically exclude certain public participation techniques from discussion or evaluation in this specific design. While time and funding were not directly identified with each participation technique, limitations were discussed when applicable and were not included in the evaluation framework. In an era where governments and planning agency operate with limited budgets and time, often the choice of techniques for public participation may be the cheaper (and often faster) technique, regardless of the quality of participation that may occur. Through the proposed evaluation recommended in this thesis, weighting can incorporate trade-offs by budgeting a limited number of points which may represent the funds available, which may be influenced by limited time and funding from the viewpoints of the parties involved. After completing this evaluation, general costs for each participation technique can be acquired. Effectiveness scores can then be divided by these costs to find an effectiveness cost or return for each technique. By converting these scores to dollar amounts, decisions may shift to using the participation technique that provides the greatest return on the investment.

Additionally, the capacity of the planning agency may also be considered a limitation of this thesis. Similar to the time and funding constraints of neighborhood planning, planning agency capacity may also influence the choice of public participation technique. Again, for the purposes of this thesis, the urban planning agency is assumed to have the adequate capacity to conduct any of the public participation techniques mentioned. For the purposes of this argument, capacity is defined as having dedicated staff, time and expertise to fully execute the participation process or have the ability to hire external consultants to facilitate the process. Similar to the funding and time constraints, planning agency capacity and expertise can be accounted for by using the proposed weighting system to incorporate trade offs, whether formally or informally.

Conclusion

Through this thesis, an understanding of the history, theory, and practice of public participation was achieved. The researcher's interest in evaluating seven common public participation techniques through a multi-criteria analysis was demonstrated through the identification of goals, creation of criteria based on current research and theory, and an illustrative example was provided to operationalize this evaluation framework and how it may operate in a real world setting. This thesis considered various theories and previous research in suggesting an evaluation framework but found that the nature of public participation does not lead to clear definitions of goals or types of participation techniques. Additionally, several other public participation goals may exist and may continue to address and refine the changing needs for public participation in a modern setting. Ultimately, this thesis does not fully answer which public participation technique is better-suited or more efficient to use than another. It does, however, provide an evaluation methodology to begin a discussion around the best practices of public participation. In particular, this thesis attempts to understand the various and often complex relationships between the public and the planning agency and suggests that public participation techniques be evaluated based on a set of criteria extern to each techniques' inherent features. Furthermore, the proposed multi-criteria evaluation encourages additional community interaction and influence by employing a weighting system that provides the opportunity for the community's voice to be heard concerning public participation. It is the hopes of this researcher that this multi-criteria evaluation can further the understanding and provide a rationale for selecting appropriate public participation techniques for use in neighborhood planning. Additionally, through this thesis, the researcher hopes that a new interest in public participation, especially by urban planning students, has been created.

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A1

TABLE 2: Criteria and Scoring

Goals of Participation

Process-Based Goals		Type of Data	Specifics about scoring
G1: Mutual Learning			
	C1: Public Awareness	Ratio	0 - 10 points; Low scores = does not fulfill criterion, High scores = fulfills criterion
G2: Democratic Process			
	C2: Transparency	Ratio	0 - 10 points; Low scores = does not fulfill criterion, High scores = fulfills criterion
	C3: Inclusiveness	Ratio	0 - 10 points; Low scores = does not fulfill criterion, High scores = fulfills criterion
	C4: Fairness	Ratio	0 - 10 points; Low scores = does not fulfill criterion, High scores = fulfills criterion
Outcome-Based Goals		**Type of Data**	**Specifics about scoring**
G3: Issue-Related			
	C5: Identify Solutions/Consensus	Ratio	0 - 10 points; Low scores = does not fulfill criterion, High scores = fulfills criterion
	C6: Improve Decision Quality	Ratio	0 - 10 points; Low scores = does not fulfill criterion, High scores = fulfills criterion
G4: Governance			
	C7: Agency Legitimacy	Ratio	0 - 10 points; Low scores = does not fulfill criterion, High scores = fulfills criterion
	C8: Decision Legitimacy	Ratio	0 - 10 points; Low scores = does not fulfill criterion, High scores = fulfills criterion
	C9: Conflict Avoidance/Mitigation	Ratio	0 - 10 points; Low scores = does not fulfill criterion, High scores = fulfills criterion
G5: Social			
	C10: Increase Community Capacity	Ratio	0 - 10 points; Low scores = does not fulfill criterion, High scores = fulfills criterion
	C11: Build Trust in Agency	Ratio	0 - 10 points; Low scores = does not fulfill criterion, High scores = fulfills criterion
	C12: Build Social Capital	Ratio	0 - 10 points; Low scores = does not fulfill criterion, High scores = fulfills criterion
	C13: Improve Outcomes for Disenfranchised	Ratio	0 - 10 points; Low scores = does not fulfill criterion, High scores = fulfills criterion

Table: 2

A2
Table 3

Goals of Participation

Models

Criteria

Process-Based Goals		Public Hearing	Community Workshop	Charette	Focus Group	Citizen Panel / Advisory Board	Ballots / Referenda	Crowdsourcing
G1: Mutual Learning	C1: Public Awareness	5	6	7	3	6	4	6
G2: Democratic Process	C2: Transparency	4	6	10	5	5	0	2
	C3: Inclusiveness	9	9	7	4	4	10	8
	C4: Fairness	5	6	5	6	5	10	10
Outcome-BasedGoals								
G3: Issue-Related	C5: Identify Solutions/Consensu	0	7	8	0	4	7	3
	C6: Improve Decision Quality	3	7	9	5	5	4	4
G4: Governance	C7: Agency Legitimacy	3	6	8	3	6	7	5
	C8: Decision Legitimacy	2	7	8	3	6	8	5
	C9: Conflict Avoidance/Mitigation	0	7	8	5	5	0	3
G5: Social	C10: Increase Community Capacity	0	5	8	5	7	0	3
	C11: Build Trust in Agency	5	6	8	6	6	4	3
	C12: Build Social Capital	3	8	5	5	6	3	3
	C13: Improve Outcomes for Disenfranchised	0	4	5	4	4	6	4
	Total	**39**	**84**	**96**	**54**	**69**	**63**	**59**

Table: 3

A3

Table 4: Average Weights

Goals of Participation	Criteria	Parties			
		Planning Agency	Community	City Council	Average
Process-Based Goals					
G1: Mutual Learning					
	C1: Public Awareness	10	5	10	8.3
G2: Democratic Process					
	C2: Transparency	10	10	10	10.0
	C3: Inclusiveness	10	15	10	11.7
	C4: Fairness	10	12	5	9.0
Outcome-Based Goals					
G3: Issue-Related					
	C5: Identify Solutions/Consensus	5	8	10	7.7
	C6: Improve Decision Quality	5	5	7	5.7
G4: Governance					
	C7: Agency Legitimacy	5	0	0	1.7
	C8: Decision Legitimacy	11	15	5	10.3
	C9: Conflict Avoidance/Mitigation	6	0	15	7.0
G5: Social					
	C10: Increase Community Capacity	5	10	5	6.7
	C11: Build Trust in Agency	10	0	5	5.0
	C12: Build Social Capital	5	10	10	8.3
	C13: Improve Outcomes for Disenfranchised	8	10	8	8.7
	Total (100 Points Possible)	100	100	100	

Table: 4

A4

Table 5: Emphasized Community Weights

Goals of Participation	Criteria	Parties				
		Planning Agency	Community	City Council	Average	Emphasized Community Weights
Process-Based Goals						
G1: Mutual Learning						
	C1: Public Awareness	10	5	10	8.3	11.7
G2: Democratic Process						
	C2: Transparency	10	10	10	10.0	16.7
	C3: Inclusiveness	10	15	10	11.7	21.7
	C4: Fairness	10	12	5	9.0	17.0
Outcome-Based Goals						
G3: Issue-Related						
	C5: Identify Solutions/Consensus	5	8	10	7.7	13.0
	C6: Improve Decision Quality	5	5	7	5.7	9.0
G4: Governance						
	C7: Agency Legitimacy	5	0	0	1.7	1.7
	C8: Decision Legitimacy	11	15	5	10.3	20.3
	C9: Conflict Avoidance/Mitigation	6	0	15	7.0	7.0
G5: Social						
	C10: Increase Community Capacity	5	10	5	6.7	13.3
	C11: Build Trust in Agency	10	0	5	5.0	5.0
	C12: Build Social Capital	5	10	10	8.3	15.0
	C13: Improve Outcomes for Disenfranchised	8	10	8	8.7	15.3
	Total (100 Points Possible)	100	100	100		

Table: 5

A 5

Table 6: Weighted Effectivness Scores (Average Weighting)

Criteria	Models								Weighted Effectiveness Scores (Average Weights)						
	Public Hearing	Community Workshop	Charette	Focus Group	Citizen Panel / Advisory Board	Ballots / Referenda	Crowd-sourcing	Average Weights	Public Hearing	Community Workshop	Charette	Focus Group	Citizen Panel / Advisory Board	Ballots / Referenda	Crowd-sourcing
C1: Public Awareness	5	6	7	3	6	4	6	5.3	26.7	32.0	37.3	16.0	32.0	21.3	32.0
C2: Transparency	4	6	10	5	5	0	2	2.3	9.3	14.0	23.3	11.7	11.7	0.0	4.7
C3: Inclusiveness	9	9	7	4	4	10	8	7.3	66.0	66.0	51.3	29.3	29.3	73.3	58.7
C4: Fairness	5	6	5	6	5	10	10	8.3	41.7	50.0	41.7	50.0	41.7	83.3	83.3
C5: Identify Solutions/Consensus	0	7	8	0	4	7	3	4.7	0.0	32.7	37.3	0.0	18.7	32.7	14.0
C6: Improve Decision Quality	3	7	9	5	5	4	4	4.3	13.0	30.3	39.0	21.7	21.7	17.3	17.3
C7: Agency Legitimacy	3	6	8	3	6	7	5	6.0	18.0	36.0	48.0	18.0	36.0	42.0	30.0
C8: Decision Legitimacy	2	7	8	3	6	8	5	6.3	12.7	44.3	50.7	19.0	38.0	50.7	31.7
C9: Conflict Avoidance/Mitigation	0	7	8	5	5	0	3	2.7	0.0	18.7	21.3	13.3	13.3	0.0	8.0
C10: Increase Community Capacity	0	5	8	5	7	0	3	3.3	0.0	16.7	26.7	16.7	23.3	0.0	10.0
C11: Build Trust in Agency	5	6	8	6	6	4	3	4.3	21.7	26.0	34.7	26.0	26.0	17.3	13.0
C12: Build Social Capital	3	8	5	5	6	3	3	4.0	12.0	32.0	20.0	20.0	24.0	12.0	12.0
C13: Improve Outcomes for Disenfranchised	0	4	5	4	4	6	4	4.7	0.0	18.7	23.3	18.7	18.7	28.0	18.7
Table: 6								**Total**	**221.0**	**417.3**	**454.7**	**260.3**	**334.3**	**378.0**	**333.3**
								Rank:	7	2	1	6	4	3	5

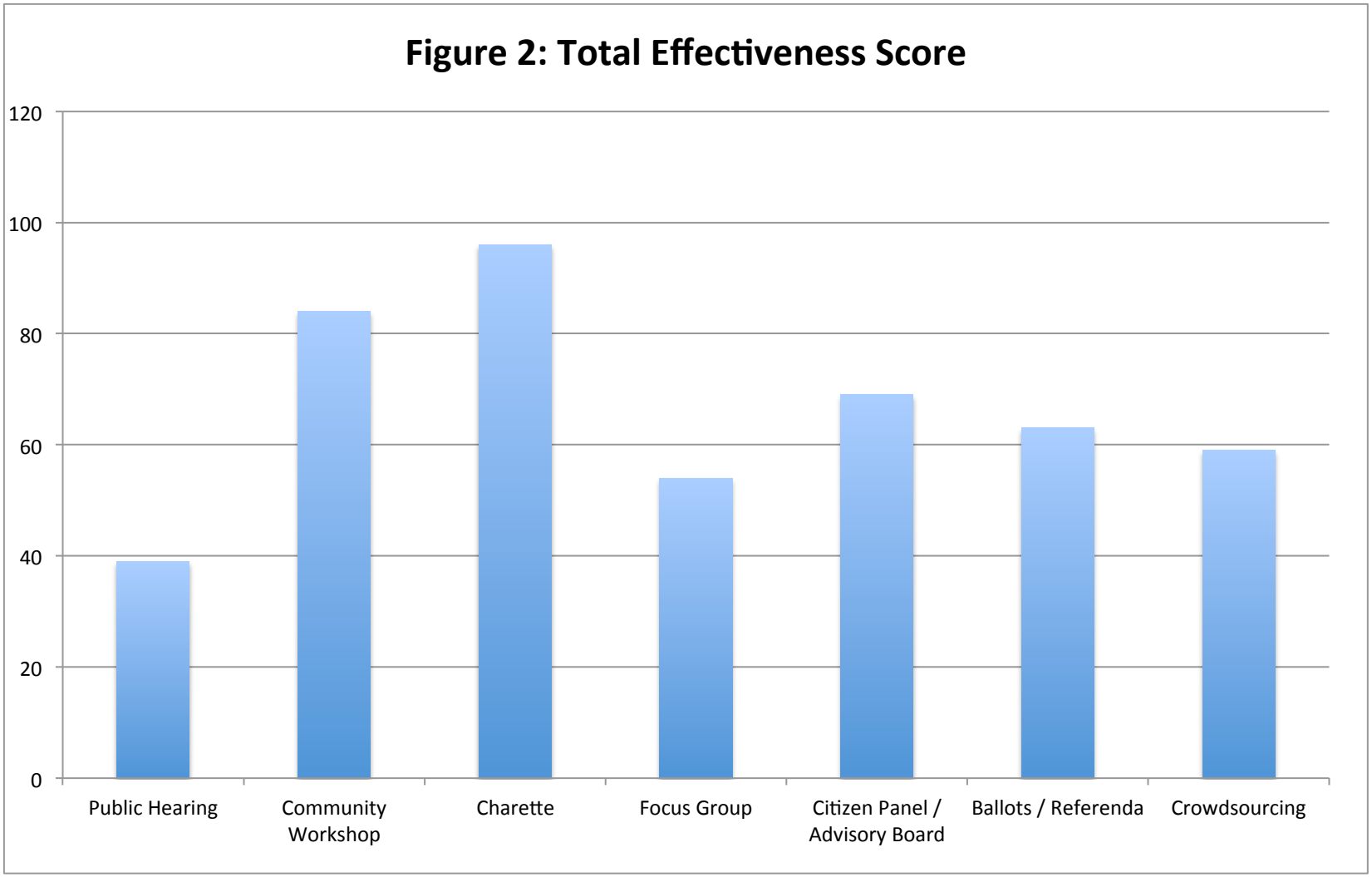
A 6

Table 7: Weighted Efectiveness Scores (Emphasized Community Weighting)

Goals of Participation		Models								Weighted Effectiveness Scores (Community Priority)						
	Process-Based Goals	Public Hearing	Community Workshop	Charrette	Focus Group	Citizen Panel / Advisory Board	Ballots / Referenda	Crowd-sourcing	Weights (Emphasized Community Weights)	Public Hearing	Community Workshop	Charrette	Focus Group	Citizen Panel / Advisory Board	Ballots / Referenda	Crowd-sourcing
	G1: Mutual Learning															
	C1: Public Awareness	5	6	7	3	6	4	6	8.3	41.7	50.0	58.3	25.0	50.0	33.3	50.0
	G2: Democratic Process															
	C2: Transparency	4	6	10	5	5	0	2	6.7	26.7	40.0	66.7	33.3	33.3	0.0	13.3
	C3: Inclusiveness	9	9	7	4	4	10	8	8.7	78.0	78.0	60.7	34.7	34.7	86.7	69.3
	C4: Fairness	5	6	5	6	5	10	10	10.3	51.7	62.0	51.7	62.0	51.7	103.3	103.3
	Outcome-BasedGoals															
	G3: Issue-Related															
Criteria	C5: Identify Solutions/Consensus	0	7	8	0	4	7	3	6.3	0.0	44.3	50.7	0.0	25.3	44.3	19.0
	C6: Improve Decision Quality	3	7	9	5	5	4	4	8.0	24.0	56.0	72.0	40.0	40.0	32.0	32.0
	G4: Governance															
	C7: Agency Legitimacy	3	6	8	3	6	7	5	9.3	28.0	56.0	74.7	28.0	56.0	65.3	46.7
	C8: Decision Legitimacy	2	7	8	3	6	8	5	9.7	19.3	67.7	77.3	29.0	58.0	77.3	48.3
	C9: Conflict Avoidance/Mitigation	0	7	8	5	5	0	3	6.7	0.0	46.7	53.3	33.3	33.3	0.0	20.0
	G5: Social															
	C10: Increase Community Capacity	0	5	8	5	7	0	3	8.7	0.0	43.3	69.3	43.3	60.7	0.0	26.0
	C11: Build Trust in Agency	5	6	8	6	6	4	3	9.3	46.7	56.0	74.7	56.0	56.0	37.3	28.0
	C12: Build Social Capital	3	8	5	5	6	3	3	8.7	26.0	69.3	43.3	43.3	52.0	26.0	26.0
	C13: Improve Outcomes for Disenfranchised	0	4	5	4	4	6	4	7.3	0.0	29.3	36.7	29.3	29.3	44.0	29.3
	Table:7								**Total**	**342.0**	**698.7**	**789.3**	**457.3**	**580.3**	**549.7**	**511.3**

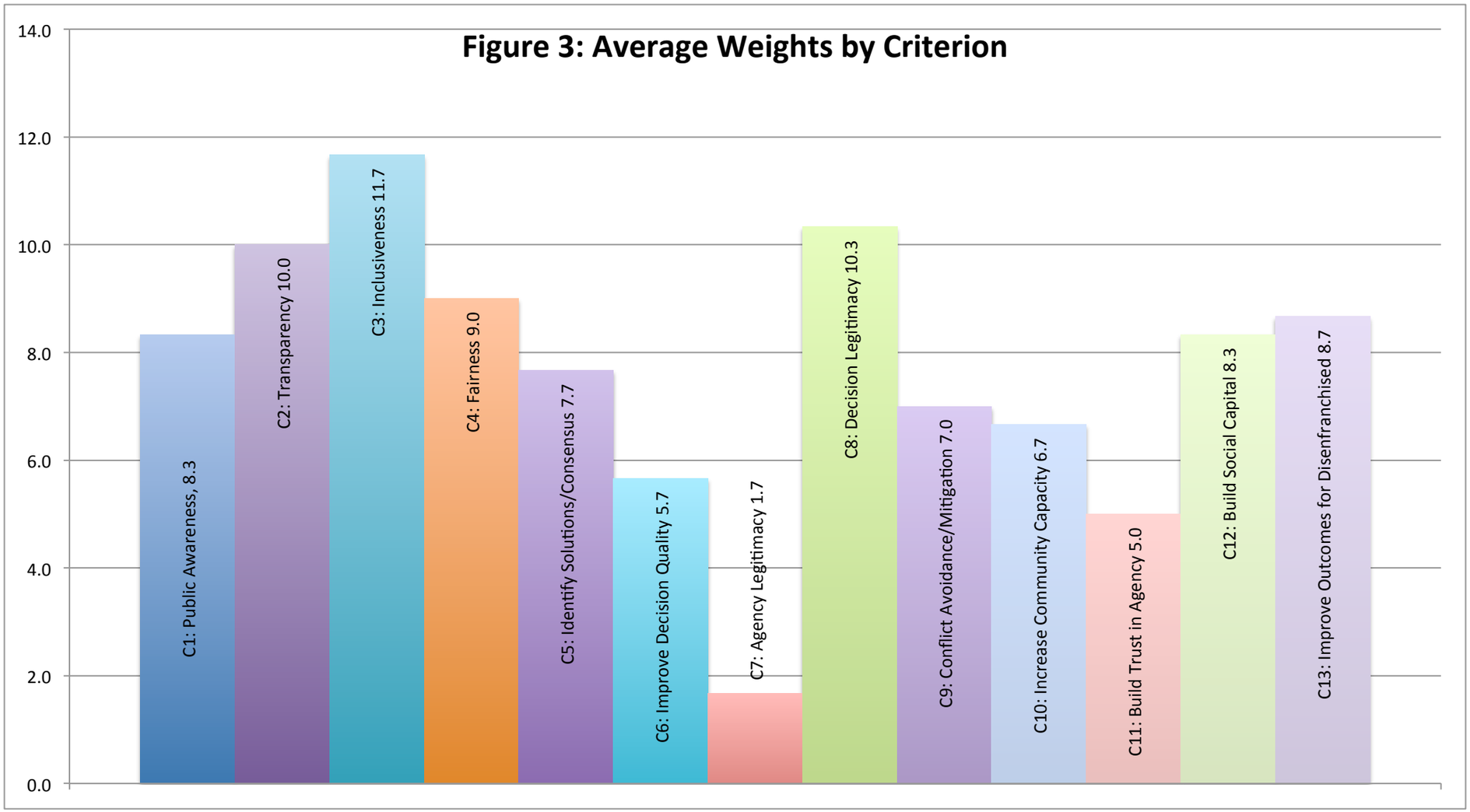
A7

Figure 2: Total Effectiveness Scores

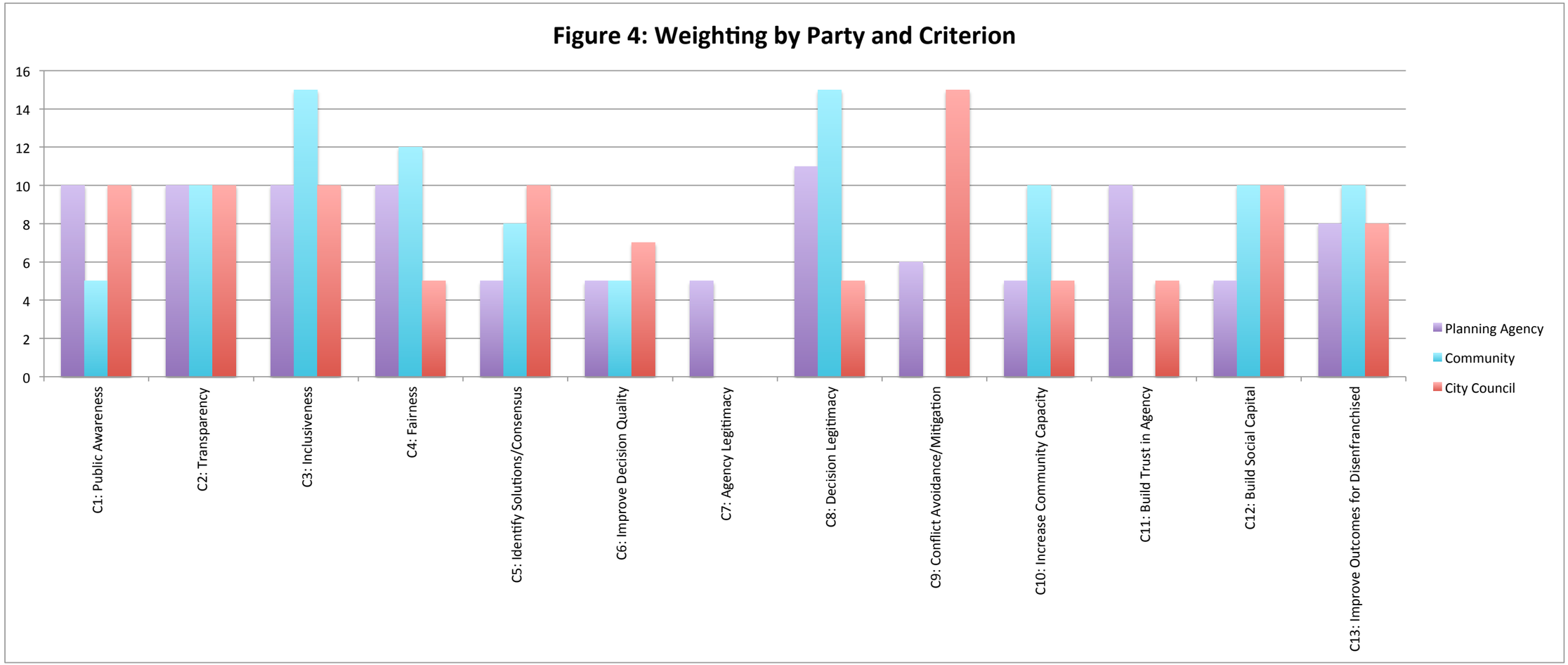


A8

Figure 3: Average Weights by Criterion



A9
Figure4: Weighting by Party and Criterion



A10

Figure 5: Total Weighted Effectivness Scores (Average Weighting)

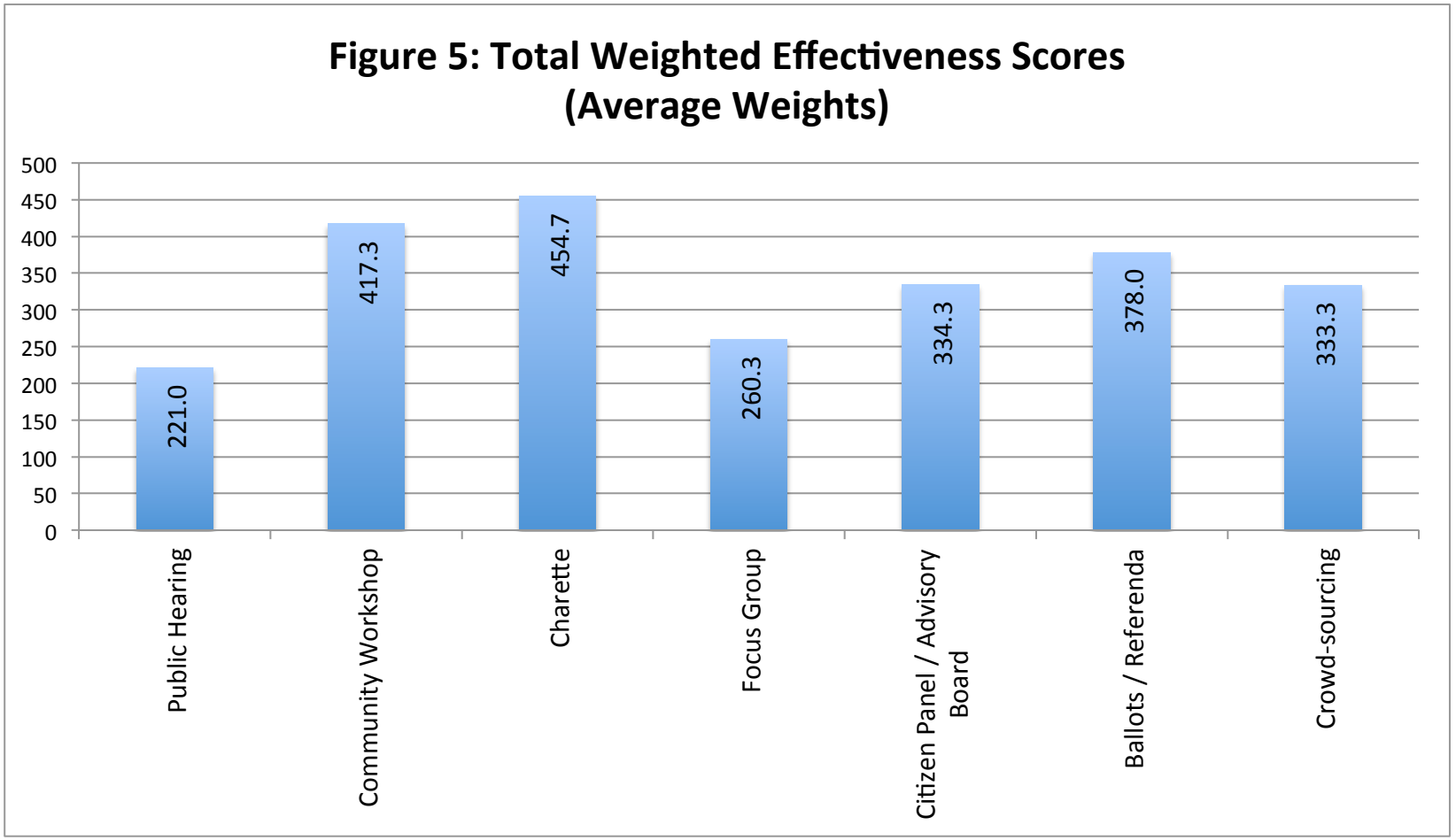


Figure 6: Total Weighted Effectiveness Scores (Emphasized Community Weighting)