Mass Potential

Exploring crowdsourcing as a tool for public participation in urban planning

By

Andrea Hamilton

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Executive Summary

Purpose of the Research

Canadian planners may not be making the most of online tools to engage communities during the public consultation process and, therefore, may be limiting the extent of public participation as well as the quality of planning outcomes. Crowdsourcing is one example of an online tool that can be used by the public sector to drive citizen engagement to generate innovative ideas and solve complex problems.

Crowdsourcing is defined as “a mechanism for leveraging the collective intelligence of online users toward productive ends” (Brabham 2009, 250). Due to its accessibility online and the potential anonymity that is offered by the internet, crowdsourcing may overcome challenges associated with more traditional forms of public participation (attendance, managing special interests, body language, identity politics, cost, time). Therefore, web-based tools like crowdsourcing may be able to realize new opportunities for collaboration in ways that more conventional models of public participation cannot (Brabham 2009). To explore this potential, two research questions were posed in this report:

1. Is crowdsourcing an effective tool for public participation in urban planning?
2. Based on an analysis of case studies where crowdsourcing was used for public participation, what lessons can be learned that could guide the application of this tool for planning purposes in Canada?

Methods

This report followed a multiple case study design to explore the topic of public participation in urban planning and the specific application of crowdsourcing as a tool for pub-
lic participation. The two primary methods used were a comparative case study analysis and interviews. A targeted literature review was also conducted.

The following three cases were selected for analysis to understand the potential usefulness of crowdsourcing as a public participation tool:

1. City of Melbourne, Future Melbourne Wiki (2008) where a wiki was used to engage the public in the drafting process of the City’s 10-year plan.
2. City of Calgary. Our City. Our Budget. Our Future. (2011) where two different crowdsourcing tools were used to gather input from citizens on valued services and city budget allocations.
3. City of Albany, Capital Region Sustainability Plan (2012) where a crowdsourcing tool was used as part of a public participation strategy to develop a regional sustainability plan.

Each of the case studies was analyzed using a conceptual framework and assessment developed by Beierle and Crayford (2002) which sought to understand the success of crowdsourcing tools to achieve five social goals associated with public participation exercises. The five goals were: to incorporate public value into decisions, to improve the quality of decisions, to resolve conflict among competing interests, to build trust in institutions, and to educate the public. The framework includes questions to investigate attainment of outcomes and rankings (‘low’, ‘medium’ and ‘high’).

Case study assessment relied on secondary sources such as government websites, evaluation reports, journal articles and selected media sites. Primary research was also undertaken through interviews with key informants involved in the delivery of the participation exercises. These interviews were used to fill gaps in understanding and to gather deeper insights about crowdsourcing tools used.

Main Findings

Overall, this report provided evidence that the use of crowdsourcing tools as public participation mechanisms results in positive social gains for the community and for government institutions. This was particularly the case in Melbourne and Calgary where
web-based engagement tools generated capacity building gains through exposure to new technologies, increased awareness of civic issues and operations, increased trust between citizens and government, and the collection of innovative and high quality ideas and input resulting in improved decision-making by government.

From this analysis and a review of the emerging literature, this report identified seven main findings to guide the use and application of these technologies in urban planning:

1. Crowdsourcing tools can excel in generating innovative and high quality contributions and bringing a new level of transparency and accessibility to the participation process.
2. Crowdsourcing tools may not be as suitable for addressing conflict within a community as compared with more traditional, face-to-face participation mechanisms.
3. Using online participation tools will require planners to become more knowledgeable about how to build and manage online communities.
4. As a best practice, participation processes should strategically layer a variety of mechanisms for public participation.
5. Mechanisms should be selected based on their ability to provide value through meeting the needs of citizens and achieving the goals identified with the process.
6. The evaluation of public participation processes must improve in order to support the identification of best practices and assist planners in selecting appropriate mechanisms.
7. Using new, web-based tools for citizen participation may require external-facing “champions” to overcome organizational barriers to their adoption.

Conclusions

This report concludes that crowdsourcing tools can be a useful addition to the planner’s toolkit but that more work needs to be undertaken to fully understand the variety of web-based tools, and where and how they can add the most value to public participation exercises. Until this awareness has been achieved, it is recommended that crowdsourcing tools be used in concert with other trusted citizen participation mechanisms as was demonstrated in each of the case examples in this report.
As this is an emergent area of research and practice, there is much opportunity for further study. Additional work is necessary if crowdsourcing is to reach its potential as a public engagement tool. Three areas of further research are proposed:

1. Investigating best practices related to building and managing online communities (including the metrics that are used to measure success and uptake) would be useful for planners interested in evaluating the effectiveness of their efforts to engage citizens online.

2. The question of cost and impact in a world of tight fiscal constraints is an important one. A cost-benefit analysis of these types of participation activities would be valuable for vetting their appropriateness in the Canadian planning context.

3. Exploring the skills and competencies that planners will require as the world moves to more network-based forms of connection, interaction and power. Understanding if planning education is shifting to meet the requirements of planning work in today's world and how that might occur is an important next step.

It is hoped that further research into this topic as well as opportunities to test out these tools in a variety of planning activities will result in planners having a better understanding of the applicability of crowdsourcing tools and their ability to positively impact public engagement exercises. With this understanding, agencies and citizens alike can benefit from improved opportunities to work together.
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I wish to acknowledge the incredible support I received from my Supervisor, Dr. Patricia Streich. Without her wise words, fantastic insight and continued dedication I would never have completed this report. I also wish to thank my family for their ongoing support and encouragement. Finally, I would like to thank the professors and staff at the School of Urban and Regional Planning at Queen’s University all of whom made my time in Kingston an inspiring and exciting learning experience.

Introduction

Canadian planners may not be making the most of online tools to engage communities during the public consultation process and, therefore, may be limiting the extent of public participation as well as the quality of planning outcomes. Crowdsourcing is one example of an online tool that can be used by the public sector to drive citizen engagement to generate innovative ideas and solve complex problems.
For the purposes this report, crowdsourcing is defined as “a mechanism for leveraging the collective intelligence of online users toward productive ends” (Brabham 2009, 250). The term “crowdsourcing” is attributed to Jeff Howe who wrote a WIRED magazine article called, The Rise of Crowdsourcing, in 2006 focusing on its use in the private sector. Howe defines crowdsourcing as, “the act of taking a job traditionally performed by a designated agent (usually an employee) and outsourcing it to an undefined, generally large group of people in the form of an open call”. While crowdsourcing came to life in the private sector, its use in public and non-profit sectors is increasingly being explored due to its ability to engage diverse populations and leverage talent through relatively low-cost, online applications (Brabham 2009).

This research takes, as its point of departure, the fundamental premise of public participation in planning, namely that the public has an important role to play both as stakeholders and innovators in planning practice. Leading from this premise, new ways to inform and engage the public need to be identified if we are to overcome current and looming fiscal and quality of life challenges in our communities. Therefore, the current research is not intended to evaluate the need for public participation but rather to identify where advances in technology can support an enhanced participation process. For urban planning, crowdsourcing represents an evolution in public participation techniques and approaches that seek to leverage local insight and knowledge and engage a larger proportion of citizens. Building on Castell’s theory of the “informational society”, Booher and Innes (2002) argue that there is a real opportunity for collaboration of a different kind via the exchange of information and ideas through diffused networks. Due to its accessibility online
and the potential anonymity that is offered by the internet, crowdsourcing overcomes many of the challenges associated with more traditional forms of public participation (attendance, managing special interests, body language, identity politics, cost, time). Therefore, web-based tools like crowdsourcing may be able to realize these new opportunities for collaboration in ways that more conventional models of public participation cannot (Brabham 2009). To explore this potential, two research questions were posed in this report:

1. Is crowdsourcing an effective tool for public participation in urban planning?
2. Based on an analysis of case studies where crowdsourcing was used for public participation, what lessons can be learned that could guide the application of this tool for planning purposes in Canada?

While examples of this tool in practice in Canadian planning are limited at this time, there are cases of governments and planners experimenting with different types of crowdsourcing tools as potentially powerful additions to the planner’s public participation toolkit. This paper explores three of these cases to understand the potential usefulness of crowdsourcing as a public participation tool. The cases explored are:

1. City of Melbourne, Future Melbourne Wiki (2008) where a wiki was used to engage the public in the drafting process of the City’s 10-year plan
2. City of Calgary. Our City. Our Budget. Our Future. (2011) where two different crowdsourcing tools were used to gather input from citizens on valued services and city budget allocations.
3. City of Albany, Capital Region Sustainability Plan (2012) where a crowdsourcing tool was used as part of a public participation strategy to develop a regional sustainability plan.

The cases differ in terms of the types of planning activity to which the tool was applied and in each case study a different crowdsourcing tool was used. In selecting the cases an attempt was made to identify examples of crowdsourcing in the United States, Britain or Australia where planning approaches, methods and requirements for public participation are relevant to Canadian practice. Given the relative newness of crowdsourcing, all case examples occurred post 2007.

Each of the case studies was explored using a conceptual framework and assessment developed by Beierle and Crayford (2002) which sought to understand the success of crowdsourcing tools to achieve social outcomes associated with public participation exercises. Case study assessment relied on secondary sources such as government websites, evaluation reports, journal articles and some media, however, a strong reliance on media sites was avoided. Primary research was also undertaken through interviews with key informants involved in the delivery of the participation exercise. These interviews were used to fill in gaps in understanding and to gather deeper insights about the use of crowdsourcing tools.

This paper is organized into five major sections. Following this introduction is a chapter outlining the methods used to investigate the research questions. The third section provides an overview of the literature on public participation in planning and the potential of new web-based tools for citizen engagement. After this theoretical overview, the report
dives into exploring the three case studies through an analysis of the context, process and results of participation exercises and their ability to achieve social outcomes. A chapter on general findings from these cases follows. The report closes with a final section concluding the report with a determination on the research questions posed and outlining pertinent areas for future research.
Research Method

This report follows a multiple case study design to explore the topic of public participation in urban planning and the specific application of crowdsourcing as a tool for public participation. The two primary methods used were a comparative case study analysis and interviews. A targeted literature review was also conducted.

Literature Review

A tightly scoped literature review was undertaken to explore public participation as an element of urban planning as well as the use of crowdsourcing as a public participation tool. An examination of peer-reviewed articles enabled a variety of theoretical propositions to surface and guided the case study analysis (Yin 2009). Using this method enhanced the validity of this research for two reasons: firstly, the internal validity was strengthened by addressing conflicting explanations; and, secondly, the external validity was improved by drawing on developed theories to expand the understanding of the selected cases, leading to further theory development that can be used to examine other case studies of a similar nature (Yin 2009).
Comparative Analysis of Cases

The purpose of the comparative analysis was to examine each case study using a common set of criteria that would expose the effectiveness or ineffectiveness of crowdsourcing as a public participation tool. The criteria would also need to support investigation into the process underlying the crowdsourcing exercise so that converging and diverging approaches could be exposed and common themes between cases could be highlighted and understood. It was also determined that three cases would be analyzed and compared in order to allow the formation of general hypotheses about this type of participation tool.

Rather than developing a set of new criteria for this analysis, this report relies on precedent research in evaluating public participation exercises. In order to identify an appropriate precedent, the focus of the criteria had to be determined – was the research exploring process or outcome? As Creighton explains, assessing the process under which an exercise is executed versus the outcomes of that exercise requires two different types of evaluation criteria (2005). However, the framing of the research questions for this report required an investigation into both process and outcome and, therefore, this report sought to identify a set of criteria that covered both aspects of a public participation exercise. A sound method was identified in Beierle & Crayford’s approach to evaluation using a conceptual framework that looked at the context of participation, the process of participation and the results of participation (2002).
Beierle & Crayford’s Method and the Social Goals of Public Participation

Beirele and Crayford’s study, *Democracy in practice: public participation in environmental decisions* (2002) was, at the time, the largest study to use a consistent approach to measuring the success of public participation activities in environmental planning. Their “systematic analysis” of cases, using a case survey approach, covered 239 distinct public participation activities in the United States over the last 30 years. The purpose of the study was two-fold; the researchers wanted to understand the social value of public participation and they wanted to know what made some processes successful and others not successful. From over 1,800 potential cases, the researchers focused their analysis to a heterogeneous group of cases that covered a variety of public participation techniques and a variety of environmental topics. Cases came from journals, books, conference proceedings and government reports and were included so long as there was enough information on context, process and results in the secondary case study material to support evaluation.

In order to investigate the cases, Beierle and Crayford (2002) developed a conceptual framework that covered three general components of analysis - context, process, and results - and the major attributes associated with each component:

<table>
<thead>
<tr>
<th>Table 1: Conceptual Framework (Beierle and Crayford 2002)</th>
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<tr>
<td><strong>Context</strong> – defined as the “features of a given situation that the public participation activity confronts”. Three major attributes were associated with context:</td>
</tr>
<tr>
<td>I. the type of issue the activity was addressing</td>
</tr>
<tr>
<td>II. pre-existing relationships in the community (citizen to citizen and citizen to government)</td>
</tr>
<tr>
<td>III. the institutional setting (level of government involved and degree of lead sponsor’s involvement)</td>
</tr>
</tbody>
</table>
Table 1: Conceptual Framework (Beierle and Crayford 2002)

Process – looking at what actually happened and what kind of mechanism was used for the public participation activity (meeting, advisory committee, etc). Four major attributes were associated with process:  
I. the role of the lead agency  
II. motivation of participants  
III. quality of deliberation  
IV. public’s degree of control over the process

Results – defined as the context plus the process. Five goals were used to evaluate three major attributes associated with results. Performance on the five goals defined the case’s overall success:  
I. Outputs  
a. Incorporating public values into decisions  
b. Improving the substantive quality of decisions  
III. Relationships  
c. Resolving conflict among competing interests  
d. Building trust in institutions  
V. Capacity  
e. Educating the public

Using this broad conceptual framework and more than 100 other related attributes associated with these major attributes, the researchers took the relevant qualitative data within the case studies and coded and scored it, thereby allowing for the creation of quantitative data and the possibility for rigorous statistical analysis across the large set of cases. Most attributes were scored using a ranking system of high, medium or low based on set descriptions of what the particular score meant for that attribute. Once the scoring was complete for all cases, quantitative data analysis was undertaken to understand the relationships between different variables (2002).

Beierle and Crayford (2002) note that there has been no agreement in the literature on the best method for evaluating public participation due largely to differing opinions on the ultimate purpose of engaging the public on these types of administrative decisions. Their conceptual framework follows an approach to assessing public participation that is
based on understanding its ability to achieve social goals while also attempting to understand how context and process can affect outcomes.

**The application of Beierle and Crayford’s method to this report**

There are two aspects of Beierle and Crayford’s method that are not applicable to this research report: firstly, the focus on a variety of public participation methods in the environmental sector, and, secondly, the case survey approach to support quantitative analysis.

Whereas Beierle and Crayford were interested in understanding the variable success of different participation techniques within a particular type of planning (environmental), this research report focused on a particular type of participation mechanism (crowdsourcing) across a variety of planning types. This meant that certain attributes or measures that Beierle and Crayford created in order to score and rank activities were not applicable to this report. While the focus on environmental planning is not apparent in their high-level conceptual framework, it is evident in some of the variables they had selected to understand the major attributes. For example, within the context attributes, the “type of issue” attribute was broken down into a number of variables, one of which categorized the issue as being specifically facility siting, hazardous waste cleanup or permitting.

The second and most obvious difference in approach is that Beierle and Crayford used a quantitative method while this report uses a qualitative method. Inherent in the design of the case survey approach taken by Beierle and Crayford was a requirement to take qualitative data from written case studies and turn it into quantitative data that could be
investigated through statistical analysis. This made sense given the large study set that the researchers were investigating and their desire to understand the success of public participation over a long period of time. Due to the newness of crowdsourcing and its limited application in the real world of planning, this report has far fewer potential cases to draw on and required a more qualitative, explorative approach to understand the potential effectiveness of this type of mechanism for planning exercises. While this research also relied on secondary sources to provide insight into both process and outcome, this report also required more insight than the secondary literature alone could provide, thereby necessitating interviews with key informants involved in each of the case examples.

Despite the differences noted above, the research questions for both studies focus on assessing the success of participation mechanisms and understanding the process elements that led to success or failure. This alignment around research goals meant that regardless of the approach taken, the high level, conceptual framework established by Beierle and Crayford had relevance to this report in terms of guiding the research and organizing and assessing the findings both from primary and secondary sources. Further, while their research was specifically related to the environmental sector, the validity and applicability of the evaluative framework, particularly the defined social goals, to all types of participation activities that seek to include the public in areas of administrative decision-making was argued in the literature (Creighton 2005).

Finally, the attributes and variables supporting Beierle and Crayford’s framework aligned with other evaluation criteria in the planning literature. For example, the context and process attributes captured key elements of criteria developed by Frewer, Rowe and
Marsh (2001) in their evaluation toolkit developed for the UK Department of Health including important process elements such as resource accessibility, task definition and transparency. And, in a similar approach to Beierle and Crayford (2002), Astrom and Gronlund (2012) in their case survey study of online participation exercises, designed a framework around a participation lens, a deliberation lens and made a final determination on the extent to which the participation impacted policy creation. Again, many of their attributes overlap with those identified by Beierle and Crayford such as how participants are invited to engage (voluntary, strategic selection, random sampling) and the stage at which participants are asked for input (agenda setting, policy analysis, policy decision-making, implementation, evaluation). While both Frewer et al. (2001) and Astrom and Gronlund’s (2012) criteria would also have been applicable to this report, the decision to use Beierle and Crayford’s (2002) framework for this research was ultimately based on their use of social goals as the measure of success of public participation.

**Adapting Beierle and Crayford’s conceptual framework**

Each case study was explored using Beierle and Crayford’s conceptual framework looking at the context for participation, the process for participation and the results of participation. In using Beirele and Crayford’s framework, this research also adopted their definition of public participation as, “any of several “mechanisms” intentionally instituted to involve the lay public or their representatives in administrative decision-making” as a starting point for exploring this topic (2002, 7). “Mechanisms” do not include voting, referenda,
lobbying, striking and violence but are formal bureaucratic processes like town meetings, focus groups or advisory committees (2002, 7).

Since this was not a quantitative study, attributes were not scored using a ranking system; however, the high, medium and low standard descriptions on the social goals were used to guide the overall assessment of each crowdsourcing exercise’s effectiveness. The tables below provide a breakdown of the conceptual framework as it was applied to this research report. Table 2, below, covers the major attributes and key considerations associated with the context within which the participation exercise occurred.

| Table 2: Context of participation and key considerations (Beirele & Crayford 2002) |
|---------------------------------|-----------------------------------------------|
| **Major Attributes**            | **Key Considerations**                        |
| Type of issue / type of planning| I. Identify the type of planning activity that the mechanism was serving, e.g. longterm sustainability plan |
| Pre-existing relationships      | I. Conflict among the public – pre-existing among participants? In the wider public? Other indications of conflict? II. Mistrust of government – pre-existing between government and participants? Wider public? Other indications of mistrust? |
| Institutional setting           | I. Level of government (local, regional, provincial, federal) II. Identity of lead agency III. Level of involvement of lead agency – directly leading the participation process or not |

Table 3, below, cover the major attributes and key considerations used to investigate the process undertaken to deliver the participation exercise.

| Table 3: Process of participation and key considerations (Beirele & Crayford 2002) |
|---------------------------------|-----------------------------------------------|
| **Major Attributes**            | **Key Considerations**                        |

Mass Potential: Exploring crowdsourcing as a public participation tool in urban planning
### Table 3: Process of participation and key considerations (Beirele & Crayford 2002)

<table>
<thead>
<tr>
<th>Type of Mechanism</th>
<th>I. Characteristics – duration, ongoing vs. finite participation, access to technical information/resource accessibility</th>
</tr>
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<tbody>
<tr>
<td></td>
<td>II. Selection of participants – open access or selective participation, outreach to engage?</td>
</tr>
<tr>
<td></td>
<td>III. Type of participant - socio-economic representativeness</td>
</tr>
<tr>
<td></td>
<td>IV. Type of output – scope of tasks, how it will be used</td>
</tr>
<tr>
<td>Variable Process Features</td>
<td>I. Responsiveness of the lead agency – indications of commitment (direct and indirect), communications between agency and participants</td>
</tr>
<tr>
<td></td>
<td>II. Degree of public control – bottom up versus top down, timing of participation, participants control over process execution, participants or agency determine scope?</td>
</tr>
</tbody>
</table>

Table 4, below, outlines the major attributes of the results of the public participation exercise defined by the five social goals, key questions to investigate their attainment and associated rankings.

### Table 4: Results of participation - social goals, questions and rankings (Beirele & Crayford 2002)

<table>
<thead>
<tr>
<th>Major Attribute - Outputs</th>
<th>Social Goal</th>
<th>Key Questions</th>
<th>Rankings</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Incorporating public value into decisions</td>
<td>I. How much influence did the public have on decisions made? II. Was the public accurately represented? Was there a broad group of stakeholders participating? III. How was input solicited from the wider public?</td>
<td>High – public input made or substantially changed decisions Medium – public input may have informed analysis but did not significantly affect the decisions made Low – public input had little impact on analysis or decisions</td>
</tr>
<tr>
<td></td>
<td>Improving the substantive quality of decisions</td>
<td>I. Did the quality of decisions increase? II. Did participants contribute a. Creative solutions b. Innovation ideas c. New information d. Technical analysis</td>
<td>High – quality increased Medium – quality did not change Low – quality decreased</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Major Attribute - Relationships</th>
<th>Social Goal</th>
<th>Key Questions</th>
<th>Rankings</th>
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</tbody>
</table>
### Table 4: Results of participation - social goals, questions and rankings (Beirele & Crayford 2002)

<table>
<thead>
<tr>
<th>Social Goal</th>
<th>Key Questions</th>
<th>Rankings</th>
</tr>
</thead>
</table>
| Resolving conflict among competing interests | I. Did the level of conflict decrease from the beginning of the process to the end?  
   II. Was conflict avoided by avoiding contentious issues?  
   III. Was conflict avoided because certain parties were excluded or chose not to participate? | High – pre-existing conflict resolved or good relationships maintained  
   Medium – pre-existing conflict on only some issues or only among some participants  
   Low – pre-existing conflict not resolved or conflict made worse |
| Building trust in institutions               | I. Was trust at the beginning of the process lower than at the end?             | High – trust was built by the process or a high state of trust was maintained  
   Medium – trust improved only moderately or only among some participants  
   Low – trust decreased or a state of low trust was not improved |
| **Major Attribute - Capacity building**      |                                                                              |                                                                          |
| Social Goal                                  | Key Questions                                                                 | Rankings                                                                 |
| Educating the public                         | I. Did the public learn enough about the issue to actively engage in decision-making?  
   II. What was the extent and effectiveness of educational outreach? | High – learning was high, enabling them to be effective partners  
   Medium – participants learned about the issue but not enough to feel effective in the process  
   Low – participants learned little |

Each case was analyzed using this conceptual framework and received individual rankings against the five social goals. They were then considered comparatively and, where possible, qualitative information on context and process informed findings related to best practices and the future application of crowdsourcing tools. These would be identified as converging approaches or common themes across cases, against the different attributes. Where required, attributes were altered to suit the purposes of this study with its focus on crowdsourcing across different planning issues. For example the “type of issue” at-
tribute under context was expanded to also include the type of planning. However, in general, the comprehensive and loose framework that was developed by Beierle and Crayford (2002) was well suited to assessing these crowdsourcing case studies.

The selection of cases

Given the relative newness of crowdsourcing in planning the selection of cases was left fairly open in order to ensure at least three comparable cases could be identified. As stated earlier, the selection of cases was not limited to a particular type of planning and the cases did not have to use the same type of crowdsourcing application. Nevertheless, the following parameters helped to narrow the potential cases that could be used in the comparative analysis:

• The public participation exercise had to use an online, crowdsourcing application where crowdsourcing is defined as, “a mechanism for leveraging the collective intelligence of online users toward productive ends” (Brabham 2009, 250)
• The public participation exercise had to have occurred in the last 5 years and the crowdsourcing element of the public participation strategy had to be complete.
• The exercise must have been sponsored by a local or regional government although the actual exercise may have been executed by a third party.
• The cases should have occurred in English-speaking jurisdictions with similar planning regimes as those in Canada.
• A reasonable amount of secondary research should be available on the crowdsourcing activity including information on the selected approach, goals of the exercise and access to evaluation reports.

Based on these requirements, three case studies were identified as suitable for this analysis:

1. Future Melbourne Wiki– In 2008, working with private sector firm, Collabforge, the City of Melbourne used a wiki to engage the public in drafting the City’s 10 Year Plan. Interviews were undertaken with a member of Collabforge’s team and a staff member from the City of Melbourne.

2. City of Calgary “Our City. Our Budget. Our Future” - The use of two crowdsourcing tools as part of a larger strategic planning exercise to develop the City budget in 2011. An interview was conducted with a staff member from the City of Calgary who led the design and execution of the participation strategy.

3. Capital Region Sustainability Plan, City of Albany (2013) – working with Place Matters and using CrowdBrite crowdsourcing technology to generate ideas from the public in an “online open house” format on a long-term sustainability plan for the region. An interview was conducted with a member of the Place Matters’ team.

Each case study was explored using data obtained through secondary sources such as academic and professional literature, policy documents, organizations’ websites and evaluation reports.
Structured interviews on the case

Once the initial analysis was completed, structured interviews were held with key informants involved in the delivery of the public participation process to delve deeper into the social goal criteria or, to answer additional questions that arose as a result of the case exploration. In this way, interview data was used to guide further inquiry and analyze theoretical explanations (Yin 2001, 107). An interview guide was created to ensure that pertinent areas of research were covered (Appendix C).

Addressing biases, limitations and risks

A number of potential biases could have affected the findings of this research as a result of its design. Key informants could be biased to the process and tools they selected for public participation exercises and could, therefore, have presented their means of engaging the public as being more effective than it actually was or than another participant in the process may have perceived it to be. This was an obvious limitation of this research design although not one which could be easily addressed given the scope and time allotted for this research project. The fact that all of the public participation exercises selected for this research report were designed, delivered and evaluated by the same organizations is highly problematic from an objectivity perspective although not uncommon in the public sector. Where possible, this research considered the potential bias of interviewees when conducting the analysis and generating findings and recommendations. Media sources were considered and examined as a possible source of supplementary information and some relevant media sources are cited in this report. However, the media was not found to
be a useful source of information on the merits of these participation exercises. The challenge of finding multiple sources of data upon which public participation exercises can be assessed was highlighted through this research report and highlights a need for third party evaluations of these types of exercises.

As mentioned above, time and resource constraints presented obvious limitations in terms of the scope of this research and the number of interviews that could be conducted. Ideally, the interview component would have included conversations with a larger number of professional planners and participants.

Finally, there were no known risks to undertaking this research. All documents used are in the public domain and planners consulted with were asked only for their professional perspectives and opinions.
The purpose of this section is not to provide a review of the literature that defines and discusses the value of public participation in urban planning. There is little debate in our western, democratic society regarding the value and necessity of public participation and influence in governmental decision-making. As Sherry Arnstein argued in her seminar, A Ladder of Citizen Participation: “participation of the governed in their government is, in theory, the cornerstone of democracy” (1969, 216). In Canadian planning practice, too, the professional planner is understood to demonstrate an ethical practice as defined in the Canadian Institute of Planners Code of Professional Conduct. The first of these outlining the planner’s responsibility to the public interest and covering important activities such as encouraging discussion on planning matters, the provision of clear and thorough information, and finally, providing “opportunities for meaningful participation and education in the planning process to all interested parties” (2013). Certainly, in the Canadian context, public participation must be recognized as an essential element of planning practice with the ultimate goal to “ensure that citizens have a direct voice in public decisions” (Cogan et al.1986, 283).

With this basic foundation, this section of the report will instead attempt to draw out the benefits and challenges associated with engaging the public in planning matters. A variety of perspectives on how new technologies like crowdsourcing may further
challenge or improve the effectiveness of public participation in planning will be presented. For the purposes of further exploring this topic, this report will rely on Creighton’s definition of public participation:

“Public participation is the process by which public concerns, needs and values are incorporated into governmental and corporate decision-making. It is two-way communication and interaction, with the overall goal of better decisions that are supported by the public.” (2005, 7)

This definition was selected to ground this exploratory paper due to its emphasis on the important role of public participation processes to draw out, communicate and incorporate the “concerns, needs and values” of citizens to inform decision makers. Additionally, Creighton’s final point that true public participation is a collaborative process reliant on two-way dialogue and interaction between stakeholders and decision-makers in ways that allow stakeholders to influence outcomes is strongly echoed by others. Examples include Cogan et al. who state, “citizen participation is a process which provides private citizens an opportunity to influence public decisions” (1986, 283) and Goodspeed who argues that:

“The work of creating plans is not limited to individual communications with the general public, but involves working with groups of people to identify problems and build consensus.” (2008, 5)

**The strengths and weaknesses of traditional participation methods**

Beyond the democratic principles supporting public engagement in urban planning exercises, there are, of course, many other identified benefits. According to the literature (Brabham 2009; Cogan et al 1986; Creighton 2005; Evans-Cowley and Hollander 2010) public participation can:
• Bring legitimacy to the planning activity and ease the implementation of plans
• Build trust and cooperation between planners and citizens
• Resolve local conflict
• Create opportunities to share information
• Identify alternative solutions
• Improve the quality of decisions
• Build social capital
• Access local and non-expert knowledge.

However, despite these benefits, in practice, citizen engagement is a challenging activity that many researchers argue is not thoughtfully executed so as to derive the intended benefits. As Cogan et al (1986) note, the requirement for public participation can lead, in some cases, to the exercise becoming simply another item to be checked off the planner’s to do list as opposed to an important element of the planning process. This is described as a sort of procedural participation process. Evans-Cowley and Hollander (2010) agree and argue that public participation has become “institutionalized” in the traditional public meeting resulting in engagement opportunities that strictly limit the amount of time and extent to which the public can learn about a planning issue. In their opinion this typical exercise inevitably results in “less meaningful and effective” engagement (2010). This “tokenism” of citizen inclusion is Arnstein’s greatest critique of public engagement activities characterized by informing the public at late stages of the process in ways that offer little opportunity for true participation and certainly no
opportunity for collaboration and influence on outcomes (1969). As Brabham complains, local planning meetings are little more than, “top-down processes where citizens are ‘heard’ more than they are ‘empowered’” (2009, 255).

In addition to the procedural characteristic that public participation exercises can assume for planners, there are the realities of the hard costs that come with designing, executing and evaluating a public participation exercise and, on top of that, the complexities and complications that can arise when the public is invited to participate (Cogan et al. 1986). What’s more, there is the constant, underlying tension between the notion of the “expert” planner and “non-expert” citizen and a doubting by some about the value and relevance of non-expert input into what are seen to be highly technical and complex planning problems.

“Too often… public involvement causes only complications and constraints of time and money so that planners naturally feel degrees of frustration and skepticism…Because planners perceive this danger, they often delay citizen involvement until technical solutions are developed, and then seek only citizen concurrence. In these instances, it is not uncommon for citizen groups to emerge in opposition to the recommended technical solution…” (Cogan et al. 1986, 287, 290)

While planning theory and practice have evolved dramatically away from this “applied science” approach to planning, these tensions persist as evidenced in the design (format, formality, stage of process) of conventional public participation exercises. Opportunities for participation like the public meeting continue to struggle to engage the local, non-expert in exercises that truly draw on their contextual experience and allow for collaboration and co-creation of solutions. Specific issues include (Noujua 2009; Brabham 2009):

- the fixed time and place of these exercises
• the format of the meeting which often makes it difficult for the public to share their thoughts directly with decision-makers and engage in conversation with them around innovative ideas or specific concerns
• inequities with regards to access to resources to fully understanding the planning scenario
• an often formal process which is not friendly or supportive of the sharing of local knowledge
• displays of power through non-verbal communication and body language

These challenges mean that, “there is a call for novel approaches for the acquisition of local knowledge for the planning organization” (Noujua 2009, 4) which many believe may come from leveraging new technologies and applying them to the needs of planners and communities to engage in meaningful collaboration.

The evolution of public participation and technology

Foth et al. (2009) look at the evolution of public participation in planning as it relates to the introduction and production of technology and argue that planning practice has become more transparent and collaborative as technology has become more accessible and user friendly. In theory, planning has espoused a “reasoning together” (Foth et al. 2009) or “communicative and interaction-focused” (Noujua 2009) approach since the 1990s that has been bolstered by the many types of technology that now exist to support enhanced communication and interaction between parties.

Many theorists argue that traditional forms of hierarchical or representational power are diminishing as advances in communications technology like the internet both generates and enables networks of power to develop (Booher and Innes 2002;
Seltzer and Mamhoudi 2012; Brabham 2009; Mandarano et al. 2010). Building off of Castell’s theory of the informational society, Booher and Innes (2002) contend that new channels of communication and connection between different individuals and organizations in society has resulted in a new form of distributed power that becomes “a jointly held resource enabling networked agencies or individuals to accomplish things they could not otherwise”. These relational forms of power are enhanced through the abundance of new, online applications that assist in sharing information as well as creating new sources of information and new ways to interact and engage with others. From a public engagement perspective Brabham (2009) argues that in this highly connected world, representational models of participation and engagement are inadequate and that governments should be looking to new tools and methods of engagement that tap into these relational processes.

The decision to harness and use the power of the internet and its network forms of connection for the purposes of citizen engagement can be seen as both an effort by government to evolve the practice of public participation as well as a response to citizen expectations that government information and services will be increasingly available online (Evans-Cowley and Hollander 2010; Mandarano et al. 2010). The notion of Web 2.0 (O’Reilly 2005) in which consumers of content on the web are also creators of content on the web has also transferred to the public sector and is often referred to as Gov 2.0, eGov or open government. This translation sees the internet and the applications that sit alongside it as presenting new opportunities for citizens and government to work as partners in the creation and management of various government functions. Through the provision of information and the opportunity to interact, Gov 2.0 is a shift
from this hierarchical, technocratic form of government management to "transform governance, empower citizens and rebuild the social contact between political leaders and citizens" (Global Agenda Forum 2011, 5).

Harnessing the web for citizen participation in planning

In the world of planning theory and practice, this is an emerging area of interest with practitioners testing different applications in various planning scenarios and researchers attempting to understand the opportunities, challenges and implications of engaging with citizens online. While the literature exploring the use of technology in urban planning is fairly broad, the literature available on crowdsourcing as a tool for citizen engagement in planning is very limited. Furthermore, an understanding of what constitutes crowdsourcing is still evolving.

As Seltzer and Mamhoudi (2012) discover in their survey of crowdsourcing applications in both the public and private sector, there are a diverse set of tools in use which apply the principles of crowdsourcing in a variety of ways, and there are relatively few examples where a tool is being used in the strict sense of “crowdsourcing” to solve a defined planning problem. Brabham loosely defines crowdsourcing as “a mechanism for leveraging the collective intelligence of online users toward productive ends” (2009, 250) while Seltzer and Mamhoudi define it as “issuing a challenge to a large and diverse group in the hopes of arriving at solutions more robust than those found inside the organization (2012, 1). These researchers derive their definitions of crowdsourcing from the private sector where corporations, to acquire ideas and solutions that can benefit the organization’s work, have used it. As their research highlights, in the private sector, the crowdsourcing method is well-tested and has many success-
ful examples to draw on, however, in planning the concept of crowdsourcing public input is still being defined as are the essential characteristics of an effective crowdsourcing activity (Seltzer and Mamhoudi 2012; Brabham 2009).

For these researchers, the goals of crowdsourcing align well with the needs of planners to engage citizens and the strengths of the method are seen to overcome many of the challenges associated with traditional participation methods - particularly the issue of engaging a more diverse set of participants (Seltzer and Mamhoudi 2012; Brabham 2009). This is because crowdsourcing tools, by the nature of their design, rely on the networked platform of the internet to reach people. Therefore, they should be able to engage more citizens in creative problem solving and the building of plans than other participation mechanisms which continue to rely on traditional conceptions of power, relationships, information sharing and decision-making (Brabham 2009).

Listed below are a number of benefits argued to come with engaging the public in urban planning discussions through online applications like crowdsourcing (consolidated from Brabham 2009; Seltzer and Mamhoudi 2012, Mandarano et al. 2010):

• Lower costs to engage a diverse crowd online than if that same diversity was trying to be achieved through traditional methods

• Speed and reach of engagement as facilitated by the internet

• Anonymity – “can work to liberate people from the constraints of identity politics and performative posturing” (Brabham 2009, 250).

• Asynchrony - dialogue and engagement between different participants can be facilitated without the participants having to be present at the same time
• Repository for all forms of media – meaning planners and participants can make available all forms of information from documents to video, interactive maps and photographs, data – increasing transparency

• Convenience and accessibility are improved as participation is not as time-specific and is not limited to a particular geography

Despite these agreed upon benefits, the literature is clear in stating that this is an emerging area of practice and so more work must be done to understand its limitations as well as test the validity of these stated benefits. Many of the secondary sources reviewed share a number of areas for further research and consideration particularly with regards to the notion of access to technology – what is commonly referred to as the “digital divide”. Mandarano et al. (2010) point out that while we work to realize the benefits associated with online applications for participation we must also emphasize and work to resolve the inequalities in access. Brabham (2009) and Seltzer and Mamhoudi (2012) also reference the digital divide and both argue that until inequalities in access to technology are better understood and resolved, crowdsourcing as a mechanism for participation should not replace more traditional methods of engagement but be seen as a complement to them. There is also much discussion in the literature about the value of face-to-face interaction and dialogue – (1) for its ability to build trust and social capital between different actors within a community and (2) because of the values-based nature of planning decisions and the way in which plans are socially-constructed (Mandarano et al. 2010; Seltzer and Mamhoudi 2012; Evans-Cowley and Hollander 2010). For these reasons researchers are also cautioning the replacement of
more low-tech methods of participation such as the public meeting in favour of more high-tech solutions.

Finally, despite the argued benefits of these more interactive online technologies, as Goodspeed (2008) notes, the use of new internet technologies by city governments has been mainly limited to “digitizing current practice or process” rather than offering new opportunities for engagement. This trend has been documented by others who find that, in many jurisdictions, government’s use of technology continues to support primarily one-way dialogue, from government to citizen, and is used for disseminating information as opposed to supporting citizen-government collaboration and interaction (Evans-Cowley and Hollander 2010). Understanding the barriers to adoption within government and exploring methods for changing organizational culture to relax restrictions around how and where planners access information and engage with citizens online is argued to be an important next step for furthering this area of research and practice (Evans-Cowley and Hollander 2010; Seltzer and Mamhoudi 2012).
Analysis of Case Studies

This chapter explores three government-led participation processes that used a crowdsourcing tool to engage the public online. Based on Beierle and Crayford’s methodology for assessing public participation exercises, each case is investigated to understand the extent to which these online tools achieved the five social goals (see Table 5).

<table>
<thead>
<tr>
<th>Outputs</th>
<th>High - public input made or substantially changed decisions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Incorporating public value into decisions</td>
<td>Medium - public input may have informed analysis but did not significantly affect the decisions made</td>
</tr>
<tr>
<td></td>
<td>Low - public input had little impact on analysis or decisions</td>
</tr>
<tr>
<td>Improving the substantive quality of decisions</td>
<td>High - quality increased</td>
</tr>
<tr>
<td></td>
<td>Medium - quality did not change</td>
</tr>
<tr>
<td></td>
<td>Low - quality decreased</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Relationships</th>
<th>High - pre-existing conflict resolved or good relationships maintained</th>
</tr>
</thead>
<tbody>
<tr>
<td>Resolving conflict among competing interests</td>
<td>Medium - pre-existing conflict resolved on only some issues or only among some participants</td>
</tr>
<tr>
<td></td>
<td>Low - pre-existing conflict not resolved or made worse</td>
</tr>
</tbody>
</table>

Table 5: Social Goals Rankings (Beierle and Crayford 2002)
Table 5: Social Goals Rankings (Beierle and Crayford 2002)

<table>
<thead>
<tr>
<th>Building trust in institutions</th>
<th>High - trust was built by the process or a high level of trust was maintained</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Medium - trust improved only moderately or only among some participants</td>
</tr>
<tr>
<td></td>
<td>Low - trust decreased or a state of low trust was not improved</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Capacity</th>
<th>High - learning was high, enabling them to be effective partners</th>
</tr>
</thead>
<tbody>
<tr>
<td>Educating the public</td>
<td>Medium - participants learned about the issue but not enough to feel effective in the process</td>
</tr>
<tr>
<td></td>
<td>Low - participants learned little</td>
</tr>
</tbody>
</table>

The cases selected offer an opportunity to explore the use of crowdsourcing tools in three different types of planning exercises, in three different countries. The cases are:

1. Future Melbourne Wiki, Melbourne, Australia
2. Our City. Our Future. Our Budget. Calgary, Canada
3. Capital Region Sustainability Plan, Albany, United States.

In order to assess each case against the five goals, an overview of the context within which the exercise occurred and the process undertaken for executing the exercise is provided. This method for setting up the analysis was modeled from Beierle and Crayford's own research method and relies on capturing particular context or process criteria about each case. These criteria are summarized in tables in the “Overview” section. Following this introductory information, each case is then analyzed against each of the five social goals taking into consideration detail about the context, process and results. A final assessment with a ranking of high, medium or low against each goal is then provided. The literature review noted the lack of definitions for some criteria to assess certain social
goals. One example is 'quality of decisions' which was not clearly defined. As a result, the current research relies on interpretations by key informants interviewed to assess contributions to the quality of decision making. Further empirical research would be required to operationalize the key attributes in decision-making.

Analysis for all cases relied on secondary sources such as evaluation reports and website content as well as interviews with key informants from lead agencies or third party consulting firms involved in delivering the public participation exercise.

1. The Future Melbourne Wiki, Melbourne, Australia

This first case study explores the use of a wiki by the City of Melbourne’s Strategic Planning and Sustainability Department in 2008 as a public engagement tool to encourage participation in the drafting of the City’s 10-year Plan. Important details about the context surrounding this exercise and the process undertaken to deliver it are covered in a brief overview before analyzing the case and assessing it against the five social goals.

1.1 Overview

In 2007/2008 the City of Melbourne launched a comprehensive public participation strategy to support the development of a 10-year plan. The City’s Strategic Planning and Sustainability department (the lead agency) was accountable for all aspects of the plan including designing and launching the development process, engaging the public, drafting the final plan and taking it to Council for approval. According to a key informant, a Reference Group of citizens oversaw the work of the lead agency and acted as an “arms-
length” advisory board in an effort to keep the plan’s development free from political or corporate influences.

The initial phase of public participation lasted approximately 12 months and incorporated many different and unique types of engagement from public meetings and workshops to art exhibitions and online discussion forums. However, as a key informant recalled, when it came time to actually draft the plan, the lead agency was concerned that the transparency and participatory nature of the preceding 12 months would be lost as the plan became finalized behind closed doors.

Working with a third party consulting firm, Collabforge, the lead agency determined that an online tool called a “wiki” could provide both transparency into process as well as opportunities for co-creation and collaboration between planners and citizens. With the agreement of the Reference Group, Collabforge was hired to develop the Future Melbourne Wiki as an open, online space where anyone (in the world) could get involved in reviewing, editing, adding or removing content that was being brought together by multiple authors to build the final plan. In addition to webpages assigned to different sections of the plan, discussion groups were also set up on the wiki to facilitate idea sharing and dialogue amongst contributors. Working closely with the lead agency, Collabforge seeded the wiki with documents collected and developed from public input earlier in the process, research papers, links to other city plan websites, as well as general information on planning terms and community plans. In addition to these informational resources, instructions on how to use the wiki were provided on the site as well as through in-person training opportunities and one-on-one support over the telephone (Collabforge 2008). Finally, the wiki supported
dynamic translation to seven of the top ten languages spoken in the City of Melbourne (Collabforge 2008).

The City allocated two weeks to test the wiki with a selected group of stakeholders before it was opened to the general public for a period of one month. The entire plan was developed in this open environment with the lead agency responsible for adding and editing content, dialoguing with public and City staff contributors and managing discussions between contributors (Collabforge 2008; Key informant interviews).

Table 6: Future Melbourne Overview

<table>
<thead>
<tr>
<th>Type of planning</th>
<th>Strategic Planning - 10 year City Plan</th>
</tr>
</thead>
<tbody>
<tr>
<td>Level of government</td>
<td>Municipal</td>
</tr>
<tr>
<td>Lead Agency</td>
<td>City of Melbourne Strategic Planning and Sustainability Department</td>
</tr>
<tr>
<td>Role of Lead Agency</td>
<td>Reported to a Reference Group, created as an “arms-length” citizen advisory group to oversee the public engagement process; Editing wiki, dialoguing with contributors, taking final submissions and crafting 10 year plan for Council to approve</td>
</tr>
</tbody>
</table>
### Table 6: Future Melbourne Overview

<table>
<thead>
<tr>
<th>Role of Third Party</th>
<th>Design, implementation, evaluation of wiki tool for online participation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pre-existing relationships</td>
<td>Desire by the lead agency to go from “co-operative participation” to &quot;collaborative participation”</td>
</tr>
<tr>
<td>Crowdsourcing tool(s) used (mechanism for participation) and general functionality</td>
<td>Wiki – collaborative content development – adding, reviewing, editing content; discussion groups; shared resources and documents; tracks who is editing and changing content</td>
</tr>
<tr>
<td>Crowdsourcing part of larger engagement strategy?</td>
<td>Yes. Wiki followed an extensive public engagement strategy included workshops, public forums, art exhibition, labs, and online engagement through a forum called the “e-village”</td>
</tr>
<tr>
<td>Duration</td>
<td>Entire public participation process ran for approximately 12 months, the wiki was tested for a 2 week period with key stakeholders and then opened up to the public for 1 month - May 17th - June 15th 2008</td>
</tr>
<tr>
<td>Stage of planning process</td>
<td>Early stage - policy creation</td>
</tr>
<tr>
<td>Selection of participants</td>
<td>Open - anyone from anywhere could contribute to the plan</td>
</tr>
<tr>
<td>Outreach</td>
<td>Outreach through online blogs, podcasts, youtube videos, art exhibitions, etc</td>
</tr>
<tr>
<td>Definition of public participation (scope, tasks, outputs)</td>
<td>Good definition of how to participate (read, edit, discuss, contribute to stories). Instructions on how to use the wiki provided online, 1-1 help over the phone, training seminars hosted by Lead Agency</td>
</tr>
<tr>
<td>Access to technical information and resources</td>
<td>Yes. Included reports on current state Melbourne, “trends and challenges” research, links to planning committee agendas, minutes; Glossary of Terms; info on community plans and links to other city community plans</td>
</tr>
<tr>
<td>Other</td>
<td>Dynamic online translation provided wiki content in 7 of top 10 languages spoken in City of Melbourne</td>
</tr>
</tbody>
</table>

### 1.2 Analysis

From this high-level understanding of the context within which this participation exercise occurred and the process through which it was delivered, this section will consider the results of the exercise and determine to what extent the use of a wiki achieved the five social goals. These goals are organized under the three main themes of outputs, relationships and capacity.
Outputs

SOCIAL GOAL #1: Incorporating public values in decisions

Over the yearlong engagement process, approximately 15,000 people participated in a variety of activities (Collabforge 2008). The wiki alone received 7,000 unique visitors (captured by independent IP addresses) with an average of 2,500 page views per day, and a total of 30,000 page views over the one-month public participation period (Collabforge 2008).

However, despite these high numbers, only 131 citizens registered on the wiki, contributing roughly 200 edits to the plan (Collabforge 2008). Limited demographic information collected on registered participants indicated that while the wiki attracted a relatively even distribution of participants between ages 27 - 85 amongst Metro Melbourne residents, the majority of edits came from males aged 27 to 45 (Collabforge 2008). Data collected on gender further exposed a gap in participation with a larger proportion of males (59%) as compared with females (41%) registered on the site and men being much more likely to contribute and edit content than women, 88% to 12% respectively (Collabforge 2008). Based on this demographic information captured by Collabforge, it is not evident that the wiki was successful in engaging a diverse group of participants.

Nevertheless, for those individuals that did register to actively participate, the wiki is argued to have supported new opportunities to contribute that would not have been possible via more traditional forms of engagement:

“Not only could participants contribute traditional comment style suggestions via the discussion pages, but they were able to undertake numerous other tasks previously impossi-
ble during public consultation. For instance, the wiki allowed participants to engage as a copy editor of the plan, correcting typos and spelling mistakes, or attending to matters of formatting and presentation” (Collabforge 2008, 19).

According to interviews with key informants, as the process got underway it became clear that the opportunity to engage on the wiki would interest a smaller subset of the citizen population. However, it was strongly argued by informants that regardless of the number of public participants their contributions influenced the final version of the plan.

Interestingly, a second and potentially more profound outcome from using the wiki – transparency into the policy drafting process – was argued by key informants as resulting in a final plan that incorporated the public’s values. While only 131 people registered to edit the wiki, it was argued that the fact that 7,000 visitors came to the site was a positive outcome because it meant that the content was, in the words of one informant, “subject to the greatest accessibility and transparency in terms of how it was being developed and finalized”. In this way, opening up the process was not just about gathering further input about what the plan should include (that had been largely undertaken during the preceding 12 months of participation activities) but was also about ensuring greater access for the public, and therefore greater accountability on the part of the lead agency to develop a plan that in its final form was an honest reflection of the desires of the citizens of Melbourne. As one informant stated, “the wiki is the actual source of truth.”

While the wiki did not succeed in attracting a diverse and representative group of citizens to actively participate in drafting the 10-year plan, key informants argued that the accessibility of the policy drafting process to citizens as a result of the transparency the
wiki provided meant that there was a higher level of accountability for the lead agency to incorporate the public’s values into the final document – a result they believe was achieved. Furthermore, key informants were adamant that contributions made by participants on the wiki did influence the final version of the plan. Based on the insight gained from this primary research, in addition to the evidence that 7,000 unique visitors came to the FutureMelbourne wiki, this tool has received a ranking of High – public input made or substantially changed decisions.

SOCIAL GOAL #2: Improving the substantive quality of decisions

There is a good deal of evidence that the functionality and design of the wiki as well as the community management and “netiquette” established for it’s use encouraged the contribution of new ideas and information by the public and improved the quality of decisions made by the lead agency. In addition to supporting direct edits to the plan, the wiki’s design included pages online for “Groups” to focus submissions and conversation around certain topics. As well, each section of the plan included a “Discussion” page where dialogue between contributors could be facilitated and new pieces of information could be shared. With the wiki still “live”, it is possible to browse these pages and view the submissions online. Excerpts from the Discussion Pages of the FutureMelbourne site provided below highlight some examples of the kinds of high quality contributions made (FutureMelbourne 2009):

“Please also the UK Government’s Foresight Program, which is current investigating ‘Sustainable Energy Management and the Built Environment’ and has released a good initial scoping report ([http://www.foresight.gov.uk/Energy/Energy.html](http://www.foresight.gov.uk/Energy/Energy.html)). Importantly it also identifies the need to address both heritage…and future building needs together…”

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“A Japanese model of suburban development could be adopted. The Japanese city has been developed through the mainly private interesting of companies such as Odakyu, Keio, Suibu, Hankyu and Hanshin, to name a few. These companies identified the potential market created from rail patronage if one developed mini-activity centres around their (private) railway lines and planned subdivisions. Their business diversified into supermarkets, commercial projects and tourist travel via their rail infrastructure.”

The wiki’s design allowed citizens to actively engage with the content and ask questions, make comments and share ideas through simple hyperlinks as demonstrated in the above examples by text highlighted in blue (Future Melbourne 2008). This type of functionality made it possible for planners and participants to instantly connect to innovative approaches and best practices from elsewhere in the world (via the internet) and to consider how these examples could apply to Melbourne. According to the Collabforge evaluation report, the participants “exceeded” the lead agency’s expectations with the amount of “well developed, creative submissions”, noting that contributions were of a high quality and covered a variety of activities and topic areas (Collabforge 2008). The Mayor of Melbourne at the time of the Future Melbourne Plan, said this about participation on the wiki:

“These [contributions] spanned the spectrum from corrections of spelling and grammar through to extensive well-considered contributions on the future of the city. When compared to traditional consultation programs which often involve town hall meetings and hard copy documents, we were extremely happy with the level of accessibility and interest in the plan stimulated by the wiki and the sustainability of the process” (Scola 2008).

Beyond the functionality and design of the wiki, Collabforge and the lead agency spent time clearly communicating how people were expected to participate, the policies governing the wiki and outlining some basic “netiquette” - general rules about engaging with others online (Future Melbourne, 2008). This proactive community management ap-
approach appears to have served the exercise well as no instance of spam or offensive material was added to the wiki during the month long process (Collabforge 2008).

Based on the ability to view a variety of innovative and high quality submissions on the FutureMelbourne wiki, the secondary evidence provided in the Collabforge evaluation report and statements made by key informants and others, like the Mayor, the evidence points to the wiki supporting the contributions of high quality, innovative ideas. For these reasons, the wiki received a ranking of “High” as the quality of decisions increased as a result of the public’s participation.

**Relationships**

SOCIAL GOAL #3: Resolving conflict among competing interests

Resolving community conflict was not identified as a goal associated with this crowdsourcing activity and any existing conflict surrounding the development of the 10-year plan was not highlighted in any of the secondary sources reviewed. It is therefore difficult to assess the extent to which the wiki supported conflict resolution. In conversation with a key informant, the idea of using these types of online tools to expose and work through conflict was discussed. The informant did not believe that this was a goal associated with using the wiki and, furthermore, felt that face-to-face participation exercises were more appropriate mechanisms for dealing with issues of conflict within a community. For these reasons, the wiki is rated “Low” as any pre-existing conflicts within the City were not addressed via this participation mechanism.
SOCIAL GOAL #4: Building trust in institutions

The secondary and primary research conducted indicates that trust between government and citizens was built as a result of this process. This occurred in two ways:

First, according to a key informant, the lead agency built trust with the public by taking a historically closed process and making it open to the public. This intentional action to increase transparency and invite the public to participate in a formerly “expert-only” activity of drafting planning policy changed the nature of government-citizen relations. Both informants interviewed felt that this was a very important step forward to collaborating with the public as opposed to simply consulting them. Public participants and other stakeholders echoed this sentiment:

"I thought that the use of the wiki for the consultation on the city plan was a really good idea. The process is made more real to people if they can really participate. Seeing your words wind up in the final document, even if it’s some small aspect, is a pretty rewarding thing for people and I think that people really appreciate that. In the end, the result of this is a stronger sense of community." (Collabforge 2008, 12)

"Kudos City of Melbourne! Attention Melburnians: be sure to have your say and take advantage of this excellent site so what you think and feel the city should be like in the future is accounted for in policy development." (Collabforge 2008, 19).

Secondly, the public built trust with government by engaging on the wiki in a professional manner and providing valuable content for planners to use. According to key informants, the City’s Communications Department was initially fearful of the potential risks associated with engaging the public online. However, as the research showed, one positive result from the open access to the drafting process was the discovery that people wanted to contribute in meaningful and helpful ways. As mentioned earlier, Collabforge (2008) monitored the site daily and did not find one instance of spam, misuse or inappro-
appropriate content. This realization along with high quality contributions from the public meant many internal staff overcame their reservations and found new trust in the public’s ability to engage in this type of activity. As one key informant recalled, many within the planning group were concerned about using the wiki, however, once the process began, they embraced the tool very quickly. Another internal staff member provided a similar reflection, stating, "As soon as people got over any initial resistance or fears they had, you got people engaging differently, and the end product was a lot stronger because of this" (Collabforge 2008, 6).

For both of these reasons, the wiki has been ranked “High” as trust was built not only in institutions but also in the general public through engaging citizens using the wiki.

Capacity

SOCIAL GOAL 5: Educating the Public

Through the provision of resources on the wiki, the public had access to many different types of materials and information to support informed participation in the drafting of the plan. Resources provided directly on the site included summaries from previous consultations, research papers on various topics related to Melbourne, a glossary of planning terms and links to general information about city plans (Future Melbourne 2009). Furthermore, information about how to use the wiki was also provided directly on the site as well as through in-person training sessions and support over the phone (Collabforge 2008). There were no specific critiques in the research regarding better access to information materials or resources, however, a couple of public participants in their conversations with
Collabforge did recommend the future use of webinars to dive deeper into certain topics in the plan and to have an opportunity to dialogue with planners further (Collabforge 2008).

Educating the public about the process of drafting a city plan and providing materials to support informed participation were clearly important considerations in designing this exercise as demonstrated by the variety of resources made directly available on the wiki. And despite engaging a smaller number of active participants than had been anticipated, Collabforge argue in their evaluation report that exposure to new, web-based tools like wikis builds capacity within the larger community with every use, stating: “Each instance of online collaborative engagement is an investment in the community’s digital literacy and has positive gains beyond the life of the participation activity” (Collabforge 2008, 22). This is a compelling statement and helps to highlight the capacity building benefits that came from simply by viewing the wiki in action. Based on this body of evidence, it is believed that learning was high as a result of using the wiki, resulting in a ranking of “High” for this final goal.

1.3 Assessment Summary

Overall, the Future Melbourne wiki performed well against Beierle and Crayford’s five social goals, with four of five goals ranked “High”.

<table>
<thead>
<tr>
<th>Outputs</th>
<th>Relationships</th>
</tr>
</thead>
<tbody>
<tr>
<td>Incorporating public value into decisions</td>
<td>High - public input made or substantially changed decisions</td>
</tr>
<tr>
<td>Improving the substantive quality of decisions</td>
<td>High - quality increased</td>
</tr>
<tr>
<td>Table 7: Future Melbourne Rankings</td>
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<tr>
<td>-----------------------------------</td>
<td></td>
</tr>
<tr>
<td><strong>Resolving conflict among competing interests</strong></td>
<td>Low - pre-existing conflict not resolved or conflict made worse</td>
</tr>
<tr>
<td><strong>Building trust in institutions</strong></td>
<td>High - trust was built by the process or a high state of trust was maintained</td>
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</table>

The only goal that received a ranking of “Low” was Goal #3. This ranking resulted from a lack of information regarding conflict resolution in the secondary research materials and the opinion of one key informant interviewed that resolving conflict was not a goal associated with this activity. As an interesting aside, an additional outcome from this process was the elevation in Melbourne’s position globally as a creative and innovative City which was believed to result from using the wiki as a public participation tool for this purpose (Collabforge 2008).

### 2. City of Calgary: Our City. Our Future. Our Budget. Calgary, Canada

This case study examined the use of crowdsourcing tools in the City of Calgary’s planning and budgeting process in 2011. An overview of the context and process of this public participation exercise is provided before assessing the results against the five social goals.

#### 2.1 Overview

In February 2011 the City of Calgary began a three month long participation process to engage both citizens and staff in conversations about City budget allocations. Calgary was beginning a comprehensive review of city services and budgets, which happens...
in three year planning cycles. According to a key informant, recent elections had brought new councillors to the table and with them, a philosophical shift regarding the approach to budget planning and citizen engagement. Many councillors agreed that past processes had been fragmented, difficult to understand and inaccessible. There was a strong desire to make things more “citizen-centric”. With this direction from City Council, city staff engaged a third party consulting firm, Dialogue Partners, to design, implement and evaluate a participation strategy that would explore what services Calgarians valued (Dialogue Partners 2011).

Calgary’s public participation strategy was split into three phases and took place over three months from February to May 2011. In Phase 1 of the participation strategy, a “baseline study” was undertaken to understand citizens’ previous experiences engaging with the City, the kinds of information citizens would need to feel they could properly contribute to the process, and to gauge the expectations of the public. The summary report indicated that citizens were frustrated by previous participation activities and did not trust that their input would actually contribute to decision-making (Dialogue Partners 2011). This feedback provided the City and consultants with valuable insight from which to plan their
participation strategy and reinforced the importance of engaging the public early on in the process.

Two types of crowdsourcing tools were used in the participation process. In Phase 2, “Allourideas” (http://www.allourideas.org/calgarycityservices) was a web-based tool that allowed participants to vote for and prioritize ideas about city services. In Phase 3, an online budget tool instructed participants to dig into the details of the budget and make decisions on spending priorities by increasing or decreasing budget allocations to certain City departments (Dialogue Partners 2011). Information about the responsibilities of City departments and the potential implications of increases or decreases in their budget allocations were shared with participants as they worked through the different sections of this tool (Dialogue Partners 2011).

These crowdsourcing activities were part of a much larger participation strategy which included gathering input via other online applications such as facebook, twitter and web-based survey tools as well as a full suite of offline, face-to-face activities such as workshops and public meetings (Dialogue Partners 2011; Key informant interview 2013).

The public learned about opportunities to participate through more than 22 different communication vehicles that were leveraged at different points of the process (Dialogue Partners 2011). Updates via the City of Calgary’s facebook page, twitter, news blog, advertisements in relevant local media and strategically placed posters are some examples of these outreach tools.

Information to support participation was provided in print and online through the development of a Budget Kit Workbook and Discussion Guide (Dialogue Partners 2011).
These guides provided information about the City of Calgary’s departments, services and budgeting process (Dialogue Partners 2011). The guide could be accessed online on the “Our City. Our Budget. Our Future.” website and was built directly into the online budget tool. Printed versions could be picked up at different locations around Calgary, including local libraries (Dialogue Partners 2011).

<table>
<thead>
<tr>
<th>Table 8: City of Calgary: Our City Our Budget Our Future Overview</th>
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<tbody>
<tr>
<td><strong>Type of planning</strong></td>
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<tr>
<td><strong>Level of government</strong></td>
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<tr>
<td><strong>Lead Agency</strong></td>
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<td><strong>Role of Lead Agency</strong></td>
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<tr>
<td><strong>Role of Third Party</strong></td>
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<tr>
<td><strong>Pre-existing relationships</strong></td>
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<tr>
<td><strong>Crowdsourcing tool(s) used (mechanism for participation) and general functionality</strong></td>
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<tr>
<td><strong>Crowdsourcing part of larger engagement strategy?</strong></td>
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<tr>
<td><strong>Duration</strong></td>
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<tr>
<td><strong>Stage of planning process</strong></td>
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<tr>
<td><strong>Selection of participants</strong></td>
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<tr>
<td><strong>Outreach</strong></td>
</tr>
<tr>
<td><strong>Definition of public participation (scope, tasks, outputs)</strong></td>
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<tr>
<td><strong>Access to technical information and resources</strong></td>
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</tbody>
</table>
2.2 Analysis

Based on the information gathered about the context within which this participation strategy was conducted and the way in which it was executed (the process), this section will review the outcomes of this strategy related to Beierle and Crayford’s five social goals.

Outcomes

SOCIAL GOAL #1: Incorporating public value into decisions

Two important factors influenced the design of this participation strategy and resulted in a focus on the early engagement of the public and the inclusion of the public’s values in the final decision-making of budget allocations by City Council. The first was Council’s, and more specifically the Mayor’s, desire to start engaging more Calgarians in more meaningful ways. This was based on a philosophy that people wanted to be included in conversations about their City and that these public contributions should be valued and considered when City Council made decisions.

“One thing that this previous election taught us is that Calgarians are aching to be part of the conversation; that they really want to be able to talk about their own dreams, hopes and visions for the future and for the City and how we can make them real. I wanted to make sure that in our business planning process, the most important planning we do, that those voices were heard.” (Mayor Nenshi YYCBudget TV February 15th 2011).

The second factor was the baseline study conducted by Dialogue Partners in Phase 1, which revealed a number of important criticisms regarding past public engagement experiences and validated the Mayor’s stance on the topic. A commonly cited frustration was a feeling that prior consultation processes had been inauthentic and that decisions had already been made before the public could contribute or comment (Dialogue Partners
2011). With Council’s support and this qualitative evidence, the first goal established by the lead agency was to: “[Gather] values-based input from all stakeholders that will be used and considered in decision-making on the trade-offs and priorities for City services and budget cycle for 2012-2014” (Dialogue Partners 2011, 7). A body of evidence gathered through primary and secondary research indicates that this goal was achieved.

First, the participation strategy employed a variety of different engagement mechanisms including face-to-face workshops and public meetings as well as the two web-based crowdsourcing tools, Allourideas in Phase 2 and the online budget tool in Phase 3. Using the online budget tool, participants were asked to provide commentary about their budget choices and share any additional ideas or suggestions, thereby providing insight into participant values and an opportunity to contribute new or alternative practices (Dialogue Partners 2011). 890 citizens participated using the online budget tool and 173 citizens participated using the tool via the mobile application (Dialogue Partners 2011).

Secondly, with regards to gathering input that represented the population of Calgary, the process is described as securing, “an exceptional depth and breadth of participation, with people from all walks of life, backgrounds and experiences...” (Dialogue Partners, 2011). It is difficult to ascertain exactly how well the crowdsourcing tools engaged a broad spectrum of participants since all demographics collected in the evaluation report are organized by Phases as opposed to the type of participation activity used. Nevertheless, according to the report figures, in general, there was good distribution across age cohorts, with fairly equal representation between 25-34 (22%) 35-44 (22%) and 45- 54 (23%) in all three Phases. However, as Dialogue Partners note, participation rates dropped
in Phases 2 and 3 for citizens aged 55 and older (201, 32). The geographical spread in Phase 2 and 3 was also fairly representative although the Northeast of the City represented only 9% of participants versus 25% (the highest represented geography) in the Southwest. From a scan of the City’s Ward information these communities in the Northeast appear to have higher immigrant populations (between 45% and 55%) and slightly lower incomes than elsewhere in the City (City of Calgary Ward Profiles 2012). Interestingly, a further 29% of participants were from outside the City boundary or provided incorrect postal code information (Dialogue Partners 2011).

Thirdly, a number of internal actions were undertaken at the lead agency to ensure that the public’s viewpoint was informing decisions. One example of this, shared by a key informant, was a requirement for each City department to indicate how their budget breakdown aligned with what had been heard from citizens. And, to further support city staff and Council, everyone was provided with a list of questions that guided them through the development and final approval of the budget while being mindful of citizen input. Questions included “Does the approach or recommendation reflect the culmination of a diversity of views, ideas and input and improve the quality of life for all?” and “Does the approach or recommendation reflect the values of transparency, openness and authenticity?” (Dialogue Partners 2011).

At the time of releasing the summary report, Calgary City Council had not yet voted on the new budget so Dialogue Partners was not able to determine whether the first goal of the process, collecting “values-based input” that would influence decision-making had been achieved (2011). However, according to the primary research conducted, it was
strongly argued that the public’s values were represented in the final budget approved by City Council.

While the evidence collected through secondary sources indicates that the crowdsourcing tools used attracted a high number of participants, the demographic information captured by Dialogue Partners did not shed light on the extent to which these participants provided a representative sample of Calgary’s population. However, the intention behind the process as evidenced by the Mayor’s comments, as well as the design of “check-points” in the decision-making process to ensure alignment with public values all point to the realization of an output that was heavily influenced by the public. Finally, primary research conducted further confirmed this outcome. For these reasons, a ranking of “High” is given for social goal #1.

SOCIAL GOAL 2: Improving the substantive quality of decisions

While it is difficult to determine the extent to which the opinions and propositions put forward by the public improved the quality of the decisions being made, the use of tools like Allourideas and the online budget tool did provide a very direct method for citizens to share their ideas with city staff and officials. During the Allourideas online participation in Phase 2, more than 1,000 ideas about city services and priorities were submitted and voted on by other participants. Allourideas.org describes their platform as a tool to allow groups to, “collect and prioritize information in a way that is democratic, open, and efficient” (Allourideas.org). Based on the data collected, it appears that the tool was a success from the perspective of generating new “priorities” for the city to consider. While the
platform was launched with some ideas pre-populated, participants submitted more than 1300 new ideas (Dialogue Partners 2011).

This tool not only facilitated sharing new ideas, but also asked the public to vote and prioritize the ideas submitted by others thereby allowing the most popular ideas to rise to the top. In theory, this would have made it easier to identify areas of greatest consensus amongst participants and should have also made it easier for these ideas to have been considered by the lead agency. Below are some examples of highly-ranked ideas:

“Penalize the negative – garbage, smoking, slums, etc. Enhance the positive – community, living IN Calgary, Arts, etc.”

“Implementing rent hike freezes preventing landlords from raising rent more than 15% per period would provide essential tenant protection.”

“Have a public monthly 50/50 draw with the City’s half going to upgrades and savings or debt repayment!”

Image 3: Allourideas tool - uploaded ideas (red) as compared to original ideas (blue) (2012)
“NO MORE "Community Standard" should be "City Standard" Now there has to be many complaining! Where it should be same for everyone!”

(Allourideas.org/Calgarycityservices 2012)

The diversity of ideas presented on the Allourideas Calgary website highlights the broad spectrum of citizens’ considerations and concerns from the present to the long-term. It also signals the lack of instruction or direction provided on the site with regards to the types of ideas the City was looking to receive. According to a key informant, this became problematic, as the variety of inputs required a lot of filtering on the part of City staff. As more and more ideas were submitted it became difficult for the City to manage the tool and derive much value from it.

Image 4: Allourideas City of Calgary user interface (2012)

In addition to Allourideas, the Phase 3 online budget tool also resulted in the collection of public opinion but specifically focused on budget allocations. As a key informant explained, the online budget tool used a very structured format, clarified the value participi-
pants assigned to various services by asking them to allocate the budget and justify their spending, thereby focusing in on what the participants felt the City should be doing differently and why. Below are some examples of citizen commentary provided through this tool:

“These services have been typically offered at a break even point [Recreation]. For example, City arenas can be rented for approximately 160 per hour while community arenas are at 225 per hour. A small increase in rates could yield a source of revenue to offset the budget increase.” (regarding opportunities to increase revenue for the Recreation budget without increasing budget allocations)

“The entire increase should go to planning and implementing a real biking strategy for Calgary.” (regarding an increase in Transportation budget)

“Create a user pay system, where households producing more waste pay more. This should be a user-pay system as that is the only way to provide an incentive to change behaviour.” (regarding a reduction in Utilities and Environmental Protection)

Overall, it is clear that a number of suggestions were made by citizens using these web-based tools that, by design, would have made it easier for decision-makers to under-
stand and consider top priorities, key themes and innovative ideas. While the Allourideas tool delivered prioritized ideas as promised, the City’s inability to manage the number of submissions ultimately made it a less useful application for capturing public input. On the other hand, the highly structured online budget tool sought feedback in a way that the City was able to distill and use in developing its budget. Despite abandoning the Allourideas tool, this process received a ranking of “High” as the feedback generated through the online budget tool was extremely valuable to the City when developing the budget and, ultimately helped to impact the decisions the city made.

**Relationships**

**SOCIAL GOAL #3: Resolving conflict among competing interests**

The crowdsourcing tools used in the participation strategy did not provide opportunities for discussion or deliberation amongst participants. While the Allourideas tool did require each participant to consider the relative importance of the different ideas, there was no evidence of open forums for discussion between participants on the site. Similarly, the online budget tool provided participants with an opportunity to share their perspectives with the City but not with each other. In this way, the design of the crowdsourcing tools was not intended to support community dialogue and, as a result, any existing conflicts were not played out or resolved through the use of these tools. For this reason, the use of crowdsourcing tools to resolve conflict received a ranking of “Low”.
SOCIAL GOAL #4: Building trust in institutions

As described in the Overview section, Phase 1 of the engagement process sought to establish a baseline for designing a public participation process based on citizen’s expectations for engagement and their experiences with previous participation activities. This work established that there was a lack of trust by the public in the municipal government specifically around the extent to which the public’s contributions would be valued and considered by decision-makers. This low trust was the result of dissatisfaction with previous participation opportunities, which many felt had occurred too late in the process, were inauthentic and lacked transparency and clarity around the process and how their contributions would be used (Dialogue Partners 2011). As Dialogue Partners note in their report, this concern persisted throughout this participation process with participants requesting both in person and online details on the extent to which city staff and councilors had committed to listening to and taking into consideration the public’s input (2011). “Refreshing process, although I am a little pessimistic findings will be used to influence decisions, based on previous administrations’ behavior” (Participant quote, Dialogue Partners 2011, 148).

This concern may have been heightened for those using the crowdsourcing tools to participate since there was no direct communication online with city staff or council members, and therefore, no opportunity for a direct response or dialogue regarding participant contributions. Councillors did attend some of the public workshops offering opportunities for discussion, connection and relationship building. As one participant exclaimed: “Not
only were there good resource people but I had an alderman come to my table to enhance
the discussion. Now that’s commitment!” (Dialogue Partners 2011, 14).

Again, specific feedback was not gathered and assessed in relation to the different
participation opportunities employed making it difficult to know whether trust was built as a
result of in person participation, online engagement or both. Nevertheless, feedback from
participants, sourced from the Dialogue Partners report, indicates that the participation
strategy as a whole positively impacted the public’s trust in municipal government.

“It seems there are many more open opportunities for the public to express their thoughts
and know they are actually being listened to” (2011, 8)

“I can’t thank the City enough for this process. Citizens feel valued if they are asked to par-
ticipate and they will develop an enhanced caring for their City as well as appreciate oth-
ers’ perspectives” (2008, 28).

“This is very important and a great first step for a process that I hope comes to be seen as
important (or more so) than voting as the years go on” (2011, 28).

Again, while an increase in trust cannot be solely attributed to the crowdsourcing
tools employed during the process, these methods for contributing input would have been
one of the most marked changes in the nature of public participation at the City of Calgary.
According to Mayor Nenshi, the process resulted in a greater understanding between gov-
ernment and the public and helped to “bridge a gap” between city staff and citizens (Berg
2012). Further, according to a key informant, the City’s public satisfaction rankings saw a
10% lift from 2011 to 2012 on the public’s perception that the city government is open and
transparent (Key informant interview 2013).

Based on these findings, these tools are ranked “High” as trust was built through
the design of a process that included citizens at an earlier stage in the process and pro-
vided more accessible opportunities for providing feedback through the use of crowd-
sourcing tools.

Capacity

SOCIAL GOAL #5: Educating the public

From the baseline study in Phase 1 flaws in prior consultation exercises related to ca-
pacity building and informed participation were highlighted. Many citizens felt that informa-
tion and resources to support engagement and to understand the problem or issue had
been inaccessible in terms of language (too technical), there was not enough depth in the
information provided to fully grasp the complexity of the issue and that when information
was made available it was usually too late in the process (Dialogue Partners 2011). As a
result, educating citizens and building understanding with regards to the complexity of
managing the City budget and delivering services was an important priority for the lead
agency (Dialogue Partners 2011). In the final evaluation undertaken by Dialogue Partners:

• 86% of participants agreed or strongly agreed that the information that was pre-
sented to them was clear and easy to understand

• 84% of community participants felt that they had a better or somewhat better un-
derstanding of the range and variety of services provided by the City than they did
prior to the participation process.

• 78% responded “yes” or “somewhat” that the knowledge or information they had
gained through participating in the process would influence their opinions or use of
city services in the future.
Again, the evaluation did not assess the education goals against each type of participation exercise offered throughout the process. Therefore, it is difficult to conclude whether or not the crowdsourcing aspects of this process facilitated greater, less or on par education outcomes as the other types of activities used. There is some indication, however, that the use of online tools was motivated by a desire to make the budgeting process more accessible in terms of access and reach than more traditional engagement methods could and in this way resulted in greater educational gains (Berg 2012). Certainly, the online budget tool forced citizens to recognize the complexity inherent in creating, reviewing and approving a budget by putting them in the shoes of City staff and councillors through a simple web interface that could be accessed at any time, even on a smart phone. Understanding the tradeoffs and impacts of their decisions also created room for new ideas, innovation and creativity as described under Social Goal 2. As Dialogue Partners stated in their report, “Connecting people to the budget as a reflection of what is most important to them has been critical as an education tool”, (Dialogue Partners 2011, 23). Finally, the educational component of the Budget Toolkit was seamlessly integrated into the online budget tool making learning and contributing a single, easy process.

The only potential critique that could be identified with regards to achieving this goal is that nowhere in the summary report did it mention the provision of materials in languages other than English. If, it is true that participation online required fluency in English, this could have been a significant barrier to greater participation from certain segments of the Calgary’s population.
Despite this shortcoming, the evidence indicates that, overall this process increased the public’s understanding of City services and enabled them to effectively contribute ideas and perspectives related to budget allocations. Furthermore, these capacity-building outcomes were argued to be greater as a result of higher than anticipated engagement on the online budget tool. As a result, a ranking of “High” was assigned to this goal.

2.3 Assessment Summary

On the whole, Calgary’s participatory budgeting process was an effective engagement exercise. High rankings were achieved for every social goal except goal #3 – Resolving Conflict. This goal was ranked low as a result of the crowdsourcing tools limited design which did not allow for deliberation amongst participants and supported primarily 1-way dialogue between citizens and the City. Further, neither the secondary nor primary research highlighted resolving conflict as a desired outcome associated with using the crowdsourcing tools. These rankings were deduced using information sourced on the City of Calgary’s website, media articles, the evaluation report conducted by Dialogue Partners and an interview with the City Staff member responsible for managing this process.

<table>
<thead>
<tr>
<th>Table 9: City of Calgary Rankings</th>
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<tr>
<td><strong>Outputs</strong></td>
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<tr>
<td>Incorporating public value into decisions</td>
</tr>
<tr>
<td>Improving the substantive quality of decisions</td>
</tr>
<tr>
<td><strong>Relationships</strong></td>
</tr>
<tr>
<td>Resolving conflict among competing interests</td>
</tr>
<tr>
<td>Building trust in institutions</td>
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Finally, this case study is the only case investigated where two different crowd-sourcing tools were used which provided an opportunity to understand their relative strengths and weaknesses within the context of one participation process. Both Allourideas and the online budget tool were successful at engaging a large number of contributors and capturing a wide variety of new and innovative ideas. However, it was interesting that the free form tool, Allourideas, had to be abandoned because the City itself was not resourced in a way to filter and make use of those unstructured contributions whereas the highly structured online budget tool was designed in such a way as to make citizens contributions easy to incorporate into decision-making. This result highlights the importance of ensuring that the tool aligns with the desired outcomes identified for the process and that planning staff, when launching an online tool, are aware of how value will be derived from the exercise.

3. Capital Region Sustainability Plan (CRSP), City of Albany, USA

This section will explore the third and final case study for this report, the public participation strategy used to develop the Capital Region Sustainability Plan led by the City of Albany. Following the same approach as with the previous cases, the context and process will be explored before analyzing the extent to which the crowdsourcing mechanism used achieved the five social goals.
3.1 Overview

In April 2012 the Capital Region of New York State launched an eight-month process to develop a regional sustainability plan that reflected a shared vision for the region in less than eight months (Capital Region Sustainability Plan 2012). The creation of a plan was motivated by access to potential funds from the state, in a program spearheaded by the Governor and driven by the New York State Energy Research and Development Authority. The program was designed to foster regional collaboration and align land-use and energy planning with the state’s economic development planning. Initial funding was provided by the State to develop a plan that would provide an initial assessment of a region’s current sustainability efforts as well as identify new projects and policies that would work towards reaching the state’s goal of a reduction of green house gas emissions 80% below 1990 levels by 2050 (Capital Region Sustainability Plan 2012). A second round of funding was to become available to the regions to execute on their plans (up to $90 million distributed across the state) in early 2013.
Due to the funding requirement for regional collaboration, the Capital Region brought together a number of county and municipal governments and formed an executive committee to oversee the creation of the plan. It was decided by this group of regional partners that the City of Albany would be the lead organization for the plan and would therefore take on the responsibility for coordination and facilitation of the plan’s development. The City of Albany hired Place Matters, a third party consulting firm, to design and implement the public participation strategy. Place Matters in turn brought CrowdBrite to the table to deliver an integrated offline and online participation approach based on their interactive technology platform.

The entire public participation process ran from May 2012 to November 2012 with access to the Online Open House (CrowdBrite platform) beginning after the first public workshops in July and continuing until after the second round of public workshops in October (Capital Region Sustainability Plan 2013).

To support this regional collaboration, a structured governance model was developed to support the creation of the plan. This structure consisted of an Executive Committee and eight Technical Committees exploring particular elements of the Plan (Land-use, Economic Development, Climate Adaptation, Liveable Communities, etc). The Executive Committee was made up of one representative from each county, the City of Albany and the Chair from each Technical Committee. This Executive Committee established the structure for the planning process (with input from the City of Albany Planning Department) and was responsible for reviewing public input, the work of the technical committees and...
finalizing the list of priority initiatives for the region. The Technical Committees consisted of 15-25 members and included a diversity of participants including members of state and municipal government, higher education institutions, the private sector and not-for-profits. Each Technical Committee was tasked with setting sustainability goals for their policy area and identifying initiatives to achieve those goals. They were also charged with confirming implementation strategies for top initiatives. A member of Albany’s Planning Department participated on each of the Technical Committees to coordinate meetings, document work and develop the “narrative” that would ultimately become the Plan (Capital Region Sustainability Plan 2013). The first piece of work undertaken was a “baseline assessment” for each policy area to better understand how the region was currently positioned. This piece of work then became the foundation upon which sustainability goals could be established and new initiatives could be developed.

The public participation strategy aligned with this governance model in that the public vetted the baseline assessment as well as the goals and strategies established by the Technical Committees at two different points within the process. The first workshop, held in July at three different locations across the region, was used to map existing examples of sustainability projects underway, to comment on the goals established by the technical committees and to develop strategies for achieving goals. The second workshop in October (again, 3 across the region) was used to provide feedback on a narrowed down and well-defined set of initiatives produced by the Technical Committees based on their work and the public’s feedback from the July workshop. After each of these in person
workshops, inputs were entered into the CrowdBrite platform so that participation could continue online (Capital Region Sustainability Plan 2013).

Participation online and in person was open to any citizen in the region and outreach to notify individuals of participation opportunities occurred using email distribution lists, media press releases and articles, a facebook page and twitter (Capital Region Sustainability Plan 2013).

| Table 10: Capital Region Sustainability Plan Overview |
|-----------------------------------|--------------------------------------------------|
| **Type of planning**              | Regional Sustainability Plan                     |
| **Level of government**           | Regional (a coalition of municipalities)/ State funding from New York State Energy Research and Development Authority |
| **Lead Agency**                   | City of Albany Planning Department               |
| **Role of Lead Agency**           | Lead the planning exercise and report back to funder and state |
| **Role of Third Party**           | Place Matters - Public Outreach and Consensus Building with Crowdbrite technology and tools assisting with public outreach |
| **Pre-existing relationships**    | Exercise undertaken as part of the Governor’s “Cleaner, Greener Communities Program” |
| **Crowdsourcing tool(s) used (mechanism for participation) and general functionality** | Crowdbrite platform |
| **Crowdsourcing part of larger engagement strategy?** | Yes - crowdsourcing ("online open houses") part of a larger engagement strategy that included 6 public meetings, online survey |
| **Duration**                      | 8 month process to develop the plan with public participation workshops and online open houses occurring in between May and October. |
| **Stage of planning process**     | Later stage - validation                         |
| **Selection of participants**     | Open participation                               |
| **Outreach**                      | Email lists developed, media (press releases, articles), face-book page, twitter |
| **Definition of public participation (scope, tasks, outputs)** | Clearly scoped role for participants online and offline - to comment on and generate additional goals for the plan, strategies to attain those goals, and voting and prioritization of strategies. |
| **Access to technical information and resources** | Very limited |
3.2 Analysis

Outputs

SOCIAL GOAL #1: Incorporating public values into decisions

While the stated goal for this engagement strategy was the development of a plan that “reflects a shared vision for the region” (Capital Region Sustainability Plan, 2013), it is unclear from the secondary sources available to what extent public contributions influenced the decisions of policy-makers and government representatives. According to a key informant, the process was highly constrained by tight timelines which meant that strategy planning happened at the Executive Committee and Technical Committee levels without the public’s input. The key informant felt that inviting the public to participate at a later stage in the process had resulted in people feeling left out.

Overall, the public participation strategy received input from more than 300 members of the public. From the “Forum Summaries” provided on the Capital Region Sustainability website, it appears that more than 600 ideas and comments were generated and added to the Crowdbrite platform although it is not clear whether they were contributed through participation at workshops or through participation directly on CrowdBrite as ideas in the workshops were captured directly on the platform so they could be accessed after the workshop had ended. In addition to capturing public input on the CrowdBrite platform, Place Matters provided Technical Committees with detailed notes and summaries of public contributions for their consideration (Capital Region Sustainability Plan, 2012).
A second challenge the process faced was the focus on a regional collaboration which meant covering a wide geographical area in which urban, suburban and rural communities existed. According to the key informant, this was the primary reason why an online participation component was added to the participation process which also included in-person workshops in 3 locations in the region and an online survey. However, according to the key informant, there was low uptake on CrowdBrite, especially in the more rural areas of the region. No further information could be found regarding the use of the CrowdBrite platform or the demographics of members of the public who used the tool to engage in the process.

At the workshops and for the online survey, demographic information was collected and highlighted that the majority of participants identified as white, with an average income of between $50,000 and $150,000 per year, and an undergraduate or graduate/professional degree (Capital Region Sustainability Plan 2013, Appendix 14). A slightly higher proportion of participants at the workshops were male, while a significantly higher proportion of survey respondents were women (67% to 33%). This data is unfortunate since Place Matters had identified a number of important stakeholder groups such as veterans, African-Americans, Latinos, other ethnic/cultural/immigrant communities, youth, seniors, low-income earners, and people living in rural communities as important groups to engage through this participation exercise (Capital Region Sustainability Plan 2013, Appendix 9).

From the limited information available through primary and secondary sources, it appears that this participation strategy was not successful in engaging a diverse and rep-
representative sample of the population. Despite attempting to overcome the challenges associated with engaging a regional population through the use of online tools like Crowd-Brite, uptake, especially by the rural population, was low. Time constraints further hindered these exercises and meant that engagement occurred at a later stage in the process and did not allow for a meaningful, values-based dialogue to occur with citizens. With this available information this exercise is ranked “Low – public input had little impact on analysis and decisions”.

SOCIAL GOAL #2: Improving the substantive quality of decisions

Unfortunately, it is not known to what extent the Technical Committees included the input of the public into their final decisions; however, it is possible to argue, based on the reference materials provided, that the public did contribute many creative and innovative ideas through this process. Further, it is possible to assert that the CrowdBrite platform provided a sound method and tool for collecting and sharing these ideas as evidenced by the Forum Summaries provided on the website (inferring that these are contributions from the first phase of public engagements) and Appendix 16 “Round 2 Workshop Summary” within the Plan itself (Capital Region Sustainability Plan 2013).

In the first workshop and online open house in July, participants were asked to identify sustainability projects already underway in the region to create a more robust baseline assessment for the Technical Committees to work from. Participants were also asked to comment on the goals created by the Committees and to suggest changes or improvements (Capital Region Sustainability Plan 2013). In this first workshop alone more
than 75 new goals were identified, 300 strategies to achieve those goals were developed and 266 improvements to current policies were suggested. Crowdbrite was used in these sessions to capture contributions made by the public in an open, online environment that would be accessible to those members of the public who were unable to attend the workshop (Capital Region Sustainability Plan 2013). This also removed the likelihood of redundancy and duplication since all of the information was being held in one place and additional contributions would be made with the awareness of the earlier input. CrowdBrite’s interactive “canvas” functionality allowed participants to use virtual sticky notes to share ideas, post videos, provide comments and vote on other ideas all against the backdrop of a map or particular policy initiatives (Capital Region Sustainability Plan 2013). Below are some examples of public ideas for initiatives:

Establish community street tree committee to work with City DPW to better manage street tree assets. (Saratoga Springs Summary, News, Capital Region Sustainability Plan Website 2011)

Remediate public beach/waterfront along Hudson River in Schuylerville and other communities to expand recreational opportunities and contribute to economic revitalization. (Central Counties Summary, News, Capital Region Sustainability Plan Website 2011)

Redevelop Harriman Campus as a mixed-use innovation community. (Albany Summary, News, Capital Region Sustainability Plan Website 2011)
While a great number of ideas were generated by the public, based on the information available, it is not clear to what extent the CrowdBrite tool facilitated the generation of innovative ideas or high quality contributions. According to one key informant, the platform did not attract a high number of participants. Based on this insight and paucity of additional information in the secondary source material, it is unknown to what extent the use of CrowdBrite facilitated high quality contributions from the public and resulted in improved decision-making. As a result, this goal was low.

*Relationships*

**SOCIAL GOAL #3: Resolving conflict among competing interests**

A review of the secondary source materials did not indicate any existing conflict within the community and did not highlight the resolution of conflict as an important aim of this participation process. However, through the primary research it was discovered that a number of conflicts surfaced throughout this public participation process although none
were addressed or resolved through the use of the CrowdBrite tool. According to a key informant, one conflict, related to the protection of agricultural land (highlighting tensions between rural, suburban and urban interests, all at play within the region) was addressed by the Executive Committee by including the topic of local agriculture to the list of focus areas being explored by the Technical Committees. However, other areas of tension, including political conflict heightened by local Tea Party members who didn’t believe the State should be funding these plans, were not addressed through this process. Based on the information available, it appears that the use of the CrowdBrite tool did not assist in resolving conflict within the region, and, therefore, a ranking of “low” was assigned for this goal.

SOCIAL GOAL #4: Building trust in institutions

Goals or objectives related to building trust in government were not articulated in any of the secondary source materials. Further, given the later stage engagement of the public and a key informant’s impression that members of the public had felt left out of the process, it seems unlikely that trust was built as result of this process. For these reasons, building trust in institutions is rated “Low”.

Capacity

SOCIAL GOAL #5: Educating the Public

Based on the materials available on the Capital Region Sustainability Plan website, it does not appear that any information was provided to educate the public on the topic of sustainability or the eight different policy areas around which the Plan was being devel-
oped. A key informant confirmed that there were no educational materials or resources provided to support informed participation on the topic of sustainability. Also, technical information such as the Baseline Assessment conducted by the Technical Committees was not provided to the public. In addition, a large number of comments from people in the “Round 2 – Public Workshop Summary” (Capital Region Sustainability Plan 2013, Appendix 16) indicate confusion around certain terms and acronyms being used in descriptions of suggested initiatives. This is unfortunate and would have negatively impacted the ability of many members of the public to contribute to the conversation in any useful way.

Finally, with regards to capacity-building more generally, PlaceMatters references the importance of the CrowdBrite tool for sharing information between face-to-face sessions, continuing the conversations that started at public meetings and building capacity within the public to engage online (Capital Region Sustainability Plan 2013). While these may have been intended benefits to using this platform, the lack of data indicating activity levels on the CrowdBrite platform or public feedback regarding this online tool, it is difficult...
to know whether or not these outcomes were realized.

Due to the lack of educational materials provided to support the use of CrowdBrite as a means to sharing feedback as well as to support informed participation regarding the sustainability of the region, this goal has received a ranking of “Low” as it appears that participants learned little as a result of this process.

### 3.3 Assessment Summary

Based on information available, the CRSP case did not perform well against Beierle and Crayford’s social goal criteria. These rankings are the result of poor secondary source materials which did not clearly indicate the use or value of the CrowdBrite tool as well as some insight gained through a single interview with the lead consultant from Place Matters.

<table>
<thead>
<tr>
<th>Table 11: Capital Region Sustainability Plan Rankings</th>
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<tbody>
<tr>
<td><strong>Outputs</strong></td>
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<tr>
<td>Incorporating public value into decisions</td>
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<tr>
<td>Improving the substantive quality of decisions</td>
</tr>
<tr>
<td><strong>Relationships</strong></td>
</tr>
<tr>
<td>Resolving conflict among competing interests</td>
</tr>
<tr>
<td>Building trust in institutions</td>
</tr>
<tr>
<td><strong>Capacity</strong></td>
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<td>Educating the public</td>
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According to the key informant two major challenges associated with this public participation exercise resulted in a process that did not successfully engage the public. First, very tight time constraints within which the public was informed and asked to provide
input hindered their engagement. As the key informant described, ideally the team would have had approximately 18 months to deliver this type of planning exercise but they had 8 months. This meant a lack of attention to outreach that would likely have brought more people online and very little focus on educating the public on the topic area of sustainability.

The second challenge was the regional scope of the exercise. As the key informant explained, people do not identify as being part of a region so getting them to value and buy-into the process was challenging. Additionally, the geographical spread meant including rural, suburban and urban populations with very different needs, ideas and interests on the topic.

Overall, this participation strategy appears to have occurred due to a requirement to engage the public as opposed to a thoughtful desire to understand the public’s perspectives on the region’s future sustainability. More time and information could have greatly benefited the public’s involvement in this exercise and resulted in better social outcomes.

4. Chapter Conclusion

A summary table of the social goal rankings for each case has been provided below. Based on the secondary source data available as well as insights obtained through interviews with key informants, the crowdsourcing applications used as participation tools at the City of Melbourne and the City of Calgary were found to perform well against Beierle and Crayford’s social goal criteria. In contrast, the Capital Region Sustainability Plan’s participation exercise was generally found to perform poorly against this criteria. Interestingly,
all cases received a ranking of “Low” on goal three, “resolving conflict among competing interests”.

<table>
<thead>
<tr>
<th>Table 12: Comparative rankings for each case study</th>
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<td><strong>Outputs</strong></td>
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<td>Incorporating public value into decisions</td>
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This comparative analysis of the three cases in addition to a review of the literature has surfaced a number of important findings which can provide insight into the effectiveness of using crowdsourcing tools as public participation mechanisms in urban planning. These findings are presented in the next chapter.
Findings

In this section, major findings from the case analysis chapter are presented to shed light on areas of convergence and divergence amongst the cases as well as to uncover best practices with regards to using crowdsourcing tools in public participation exercises. More general findings related to designing, executing and evaluating public participation processes also emerged from the research and are shared below.

The Effectiveness of Crowdsourcing Tools

The primary research question this report sought to answer was:

**Is crowdsourcing an effective tool for public participation in urban planning?**

For the purposes of investigating this question, “effectiveness” was defined as the ability of a tool to achieve the five social goals established by Beierle and Crayford (2002). Overall, this report provides evidence that the use of crowdsourcing tools as public participation mechanisms results in positive social gains for the community and for government institutions. This was particularly the case in Melbourne and Calgary where web-based engagement tools generated capacity building gains through exposure to new technologies, increased awareness of civic issues and operations, increased trust between citizens and government, and the collection of innovative and high quality ideas and input resulting in improved decision-making by government.
While the CRSP case study ranked poorly against the five social goals, this example provided important lessons regarding the design and evaluation of participation exercises and further clarified what worked so well in the other two case studies. Based on the literature review and the primary and secondary research undertaken for the case analysis, this report finds that crowdsourcing tools offer many social benefits and are effective mechanisms for engaging the public in urban planning activities. This was especially the case when crowdsourcing tools were combined with other participation mechanisms in a well-designed engagement strategy.

General Findings and Best Practices

From this comparative analysis of what worked and did not work in each of the case studies, the second research question this report explored was:

What lessons can be learned that could guide the application of this tool for planning purposes in Canada?

This report has been successful in identifying seven important insights based on the case study research that can inform the future use of crowdsourcing tools in Canada. These findings cover both the strengths and weaknesses of crowdsourcing tools for online participation exercises as well as more general lessons related to public participation that were surfaced through this research.

Finding 1: Crowdsourcing tools can excel in generating innovative and high-quality contributions and bringing a new level of transparency and accessibility to the participation process.
The crowdsourcing tools examined generally performed well with regards to supporting the generation of ideas and input both in very structured (Calgary’s online budget tool, Melbourne wiki) and unstructured formats (Calgary Allourideas). This outcome aligned with much of the literature on the value of crowdsourcing exercises and is echoed in the OECD’s statement that public participation is more and more seen as a “driver of innovation and value creation” through tapping into larger and more diverse groups of “experience and creativity” (OECD 2008, 3).

Moreover, most of the tools, including the CrowdBrite tool used for the CRSP, displayed public contributions back to participants in a way that increased accessibility to information and transparency of information. In the case of the CRSP this was important as it made the input of other, in-person participation activities accessible to those who may have not been able to attend and served as a record of those sessions. In Melbourne, the wiki’s design supported the “witnessing” of the policy drafting process by anyone who cared to visit the site taking a previously closed-door process and opening it up for public scrutiny and approval. Research data from Melbourne and Calgary indicated that these kinds of accessibility and transparency gains positively impacted relations between citizens and government and may have contributed to new levels of trust in these institutions.

Finding 2: Crowdsourcing tools and other online applications may not be as suitable for addressing conflict within a community as more traditional, face-to-face participation mechanisms.

All of the cases in this report received a ranking of Low on Goal #3 – Resolving Conflict - because pre-existing conflict was not resolved through the use of crowdsourcing
tools. This can be understood as a result of the design of the tools themselves as well as a result of the purpose under which they were being utilized. For example, none of the case studies identified the resolution of a particular conflict within the community as a goal associated with their participation strategies. This obviously made it difficult to assess whether or not conflict had been resolved. Further, the design of the tools themselves did not generally support dialogue amongst participants nor deliberation or consensus building which would be necessary for surfacing and working through community issues. The only exception was the Future Melbourne wiki, which did support dialogue between contributors and city planners. But as a one key informant from Melbourne expressed, conflict resolution activities should occur in-person where people can build trust through face-to-face interactions. This sentiment reflects much of the literature on the topic of using online technologies and indicates a weakness of these tools (Seltzer and Mamhoudi 2012; Mandarano et al. 2010).

**Finding 3: Using online participation tools will require planners to become more knowledgeable about how to build and manage online communities**

In order to get the most out of web-based participation tools planners will need to build their awareness and understanding of these tools, as well as develop new skills to utilize them effectively. Planners cannot be expected to understand the complexities of building and managing online consultations without training. This training should be focused on building skills in collaboration, networking, partnership development, citizen engagement, social media and new technologies (Global Agenda Council 2011). The chal-
Challenges associated with building and managing online communities were highlighted in all three case studies in this report.

The CRSP was the least successful of the three cases analyzed. In this case, the lack of participation online may have been the result of the short timelines of the participation process itself as well as limited outreach activities to get the word out to the community about opportunities to engage. While not a lot is known about the communication strategy behind the CRSP’s participation process, it contrasts strongly with Calgary’s process which used more than 22 different communication vehicles to build awareness and saw a high uptake of all of the web-based tools offered (Dialogue Partners, 2011). This aggressive, awareness-building approach is stressed by Brabham (2009) as an essential element of any online engagement activity.

In Melbourne, the difficulty of building an online community was emphasized in the example of a city planner who discovered that a fairly animated conversation about Future Melbourne, called Skyscraper City, was occurring elsewhere online. The planner created a group called “Skyscraper City” on the wiki and invited the individuals to participate, however, by that time, there were only a few days remaining in the public editing period and only one contribution was made (Skyscrapercity.com). A longer public process may have brought more people to the wiki to participate, but this story also speaks to the challenge of attracting people to your online tool when they’re already engaged elsewhere. As the World Economic Forum’s Global Agenda Council stresses:

“…the government must remember that it competes for the attention of those online. It needs to go where the action is and not just wait for citizens to come and call. People can be highly connected online but have no connection to government. It is not just a matter of
the tools governments use or the actions they take, but that they be present where their citizens are. More important than governments’ own choices are what the people want and which technologies they wish to use to interact with the government.” (2011 6)

This new reality means that an important responsibility for planners will be keeping up-to-date with where the online conversations about the city are happening and learning how to engage appropriately within these online forums.

In addition to becoming more familiar with the requirements for building online communities, planners will need to become better at managing these communities once they have been established and motivating citizens to contribute thoughtfully over time (Seltzer and Mamhoudi 2012). Again, this was a challenge in Melbourne and Calgary where city staff were suddenly faced with capturing and utilizing the contributions of the public through an online tool. In Calgary, the Allourideas tool was so successful in engaging the public in idea generation that the tool itself actually became unmanageable and the lead agency did not end up deriving much value from it. In Melbourne, a key informant expressed relief that the wiki did not engage a large number of public contributors citing a concern that the planning staff simply wouldn’t have been able to manage a higher volume effectively and meaningfully. Both of these examples highlight a need to better understand the resource requirements for running different types of participation activities online and ensuring that planning teams are trained and resourced to manage higher volumes of input through crowdsourcing-type tools.

Finding 4: As a best practice, participation processes should strategically layer a variety of mechanisms for the public to choose from.
As has been demonstrated in this report, crowdsourcing tools have both strengths and weaknesses with regards to their ability to achieve key social outcomes. And, importantly, with each case study using a variety of participation mechanisms this research uncovered that different mechanisms suit different purposes and attract different kinds of participants. In Melbourne there was a clear gender gap in participation on the wiki with far more men contributing than women. In Calgary there was a decline in participants aged 55 and older in Phases Two and Three when the process relied more heavily on web-based tools. And in the case of CRSP, the in-person workshops engaged a higher proportion of men while an online survey engaged a higher proportion of women.

These kinds of results indicate that agencies should not rely on any single tool if a goal of the process is to engage a representative and diverse sample of the population. Instead, government institutions need to provide a variety of engagement opportunities so that citizens are able to select their preferred way of participating. Providing multiple opportunities to participate helps to overcome what the OECD refers to as “objective barriers” such as time, language and access, by offering different participation options that ensure more people can participate should they choose (2008). Providing different opportunities to contribute also helps to overcome barriers to participation associated with the “digital divide”. In their survey of crowdsourcing tools Seltzer and Mamhoudi (2012) further support this finding, concluding that these tools cannot be used in isolation but should be seen as “complements to rather than replacements for more traditional citizen involvement activities” (14).
Finding 5: Mechanisms should be selected based on their ability to provide value through meeting the needs of citizens and achieving the goals identified with the process.

A requirement to provide multiple opportunities for the public to engage points to another important and related finding regarding how participation strategies are designed and how various tools are selected for use. In considering the design of the three participation processes investigated in this report it became clear that success depended on:

- A thoughtful selection of tools based on some notion of how they would work together to achieve the goals of the process and,
- An understanding of how value would be derived from their use.

This deliberate design was demonstrated in the Melbourne and Calgary case studies. In Calgary, an entire phase of the participation process was dedicated to understanding what Calgarians wanted from an engagement process. This information was then used to inform the selection of online and offline tools. In Melbourne, the lead agency was unsure about the value of using online tools but had a desire to maintain a level of transparency and engagement with the public throughout the policy drafting process. Key informants recalled how the lead agency worked with Collabforge to map the entire participation process to identify where an online tool could add value. In this way the wiki component of the participation strategy did not replace any other participation method in the City’s planning process but was described by one key informant as simply, “the icing on the cake”, adding another opportunity for the public to engage with the plan. In this example, where the value of using a particular tool is unknown, the lead agency ensured that
testing a tool would not infringe or limit the overall quality of the public participation process.

This research finds that these thoughtfully designed processes of layered participation mechanisms resulted in high quality outcomes, as demonstrated by Melbourne and Calgary’s high rankings against the social goals. On the other hand, the CRSP struggled from the outset with time constraints, according to the key informant, that limited the ability of Place Matters to undertake an initial phase of consultation with the regional population. Without this time and understanding, Place Matters chose to utilize CrowdBrite to overcome geographical challenges and make the process more accessible to rural populations. Unfortunately, as the process played out, it was clear that this tool was not well supported by the lead agency (in terms of outreach and building the public’s capacity to use the tool) and, as a result, was not used by the public to its full potential.

Finding 6: The evaluation of public participation processes must improve in order to support the identification of best practices and assist planners in selecting appropriate mechanisms.

In order to build robust and effective participation processes, planners must be aware of the relative strengths and weaknesses of different tools. To gain this awareness, complete evaluations of participation exercises must be undertaken. While this may appear to be an obvious statement, the case analyses conducted for this research report found that across all of the selected case studies, evaluations measuring the efficiency and effectiveness of different participation mechanisms were limited in scope. Only the City of Melbourne completed an evaluation against the wiki as a public participation tool. The other
two case studies explored did not provide evaluations against the different mechanisms used but evaluated the process as a whole. These high-level evaluations for Calgary and the CRSP made it difficult to assess the effectiveness of crowdsourcing tools against Beierle and Crayford's social goals and made the primary research essential for considering the relative value of the different mechanisms employed. Further, in all cases, the evaluations were not particularly robust in their collection of demographic data making it difficult to assess the merits of the tools in capturing broad, representative participation.

The literature shows that this is not an issue limited to these cases alone. In a survey of citizen engagement activities in OECD countries it was discovered that one of the most challenging principles to implement was sound evaluation of participation activities (Global Agenda Council, 2011). Without the meaningful assessment of each participation mechanism used, it is difficult to develop best practices with regards to citizen participation. If we are to begin using new tools like crowdsourcing and other web-based applications, planners will need to create far better evaluation metrics and reporting to understand the usefulness and appropriateness of these mechanisms. As the Global Agenda Council note in their report, current metrics may not reflect the new realities of engaging citizens through an online form of “networked governance” (2011) and therefore metrics should be well considered by agencies in advance of using these tools. This will be especially important for gaining new insight into how certain tools discourage or encourage the participation of often marginalized groups as well as for addressing issues related to the digital divide.
Improved evaluations should also capture information on the cost versus the impact of these tools. While resource use and cost efficiency were not in scope for this research report, it is interesting to note that information related to the cost of implementing participation exercises was not included in the evaluations conducted for any of the case studies. Thorough evaluations of public participation exercises should support a more efficient allocation of resources (time, money, human capital) by using tools that are best suited to achieve the desired outcomes of the planning exercise at hand. As Seltzer and Mamhoudi (2012) point out, adopting new, web-based tools will likely change the workload of those within the civil service tasked with managing these new mechanisms. Therefore, their impact on internal processes and resources should also be measured and recorded.

Finally, this research report attempted to overcome the shortcomings of evaluations and related secondary materials by undertaking interviews with key informants. However, in all cases explored, the same public servants or hired consultants that conducted the evaluations were also directly responsible for designing and delivering the participation exercise. Therefore, it was difficult to gain a variety of perspectives and data points to build a firmly unbiased assessment of the social value of each public participation exercise. The reality of limited and potentially biased data is a challenge not only for research investigating the value of public participation exercises but, from a practical perspective, for planners and the public to objectively evaluate them as well. For this reason, it is further recommended that planners budget for independent third party evaluations of public participation activities to be undertaken.
Finding 7: Using new, web-based tools for citizen participation may require external-facing “champions” to overcome organizational barriers to their adoption.

Utilizing new mechanisms for participation that are inherently different from traditional public consultation approaches may require a public-facing champion, such as a Councilor or a citizen advisory group, from outside the municipal bureaucracy. In Calgary and Melbourne vocal proponents of open, online engagement opportunities strongly influenced the use of these tools though, in each case, this support came in different forms.

In the case of Future Melbourne it was the Reference Group of citizen advisors who championed the idea of using a wiki to bring transparency to the process of drafting the City plan and offering the opportunity for citizens to collaborate with planners during this exercise. While the Reference Group had been established by the City to provide arms-length oversight and guidance over the Future Melbourne process, as a key informant recalled, the group quickly moved from “oversight to leadership” as a result of their level of influence within the community and their enthusiasm for the public process through the duration of the Plan’s development. When the City’s Communications and Media department expressed real concerns regarding the use of a wiki to engage the public, the support of the Reference Group meant that neither Council nor City bureaucrats could stop the exercise from being implemented.

In Calgary, the Mayor’s leadership supporting a more open and transparent form of municipal governance through connecting with citizens online was an important influencer in the decision to use crowdsourcing tools as key elements of this public participation strategy. He is described by a key informant as “infusing” council with the belief that citi-
zens who use the services of the city everyday should contribute to decision around budget allocations. It was expressed by the key informant that without a champion on Council this approach to participatory budget making would likely not have occurred. Furthermore, public demonstrations of support by councillors and the Mayor are believed to have gone a long way to building legitimacy around the process, motivating the public to get involved and building trust between the public and the City of Calgary.

Key informants in Calgary and Melbourne referenced a heavy reliance on these influential “champions” whose support was seen as essential for overcoming internal resistance to using these tools. It is interesting to note that in the least successful of the cases, the CRSP, no champion for the public engagement process was identified.
Conclusion

This research report set out to explore the effectiveness of crowdsourcing tools in public participation exercises and to identify important lessons that could be applied to the use of these tools in the Canadian planning context. For the purpose of this investigation, crowdsourcing was defined broadly as “a mechanism for leveraging the collective intelligence of online users toward productive ends” (Brabham 2009, 250) to reflect the nascent nature of these technologies and their application to public participation exercises in urban planning. Beierle and Crayford’s (2002) conceptual framework of five social goals was used to assess the effectiveness of participation mechanisms in three unique case examples – a budgeting process in Calgary, Canada, a city plan in Melbourne, Australia and a regional sustainability plan in the Capital Region of New York State, United States. Overall, Beierle and Crayford’s social goals provided a useful method for gaining a high-level understanding of the effectiveness of crowdsourcing tools used in each of the three case studies. A literature review provided evidence to further ground the findings from this case analysis.

Using this method of investigation, this report concludes that crowdsourcing tools can be a useful addition to the planner’s toolkit but that more work needs to be undertaken to fully understand the variety of web-based tools, and where and how they can add the most value to public participation exercises. Until this awareness has been achieved, it is...
recommended that crowdsourcing tools be used in concert with other trusted citizen participation mechanisms as was demonstrated in each of the case examples in this report.

As this is an emergent area of research and practice, there is much opportunity for further study. Additional work is necessary if crowdsourcing is to reach its potential as a public engagement tool. Three useful areas of research are proposed:

1. Investigating best practices related to building and managing online communities (including the metrics that are used to measure success and uptake) would be useful for planners interested in evaluating the effectiveness of their efforts to engage citizens online. Similar to Seltzer and Mamhoudi’s (2012) point on planners learning from the open innovation community, there may be much for planners to learn from businesses active in building online communities and tracking their efforts.

2. This report did not look into the cost efficiencies of running online versus offline participation activities. However, the question of cost and impact in a world of tight fiscal constraints is an important one. A cost-benefit analysis of these types of activities would be valuable for vetting its appropriateness in the Canadian planning context.

3. Exploring the skills and competencies that planners will require as the world moves more and more to network-based forms of connection, interaction and power. In 2002 Booher and Innes argued that planning curriculum would need to shift towards building capabilities in collaboration skills, facilitation and authentic as opposed to formal or technical communication. Understanding if planning education is shifting to meet the requirements of planning work in today’s world and how that might occur is an important next step.
It is hoped that further research into this topic as well as opportunities to test out these tools in a variety of planning activities will result in planners having a better understanding of the applicability of crowdsourcing tools and their ability to positively impact public engagement exercises. With this understanding, agencies and citizens alike can benefit from improved opportunities to work together.

Finally, through the investigation of these case examples it became clear that the ultimate success of a participation strategy is determined by the intentions behind it. This is because the decision to incorporate the public’s values into planning and policy activities is less about the quality or effectiveness of any particular participation mechanism and more about the legitimacy of the public participation process as a whole.

“The government needs to be genuinely interested; this is not a public relations trick. If governments try just to be “cool” by being active in the social media, the effort backfires. That is why commitment is perhaps the most of important of these principles” (Global Agenda Council 2011, 7)

A commitment to quality participation is proven out in (1) the time dedicated to engagement activities, (2) the provision of useful information and materials to build the capacity of the public to contribute meaningfully and (3) the openness and transparency through which the process is conducted and final decisions are made. The forces of our networked world are disrupting government. The system of government is changing. As a result, people within the system will need to change and change never comes easily. But, planners, as a result of their work in communities, have an opportunity to see this disruption and change in a positive light. It can be viewed as a chance to dismantle traditional structures that tend to isolate planners from the public and, instead, can create space for planners to
work with citizens to create and facilitate new models of participation, decision-making and community building. My hope is that in our professional practice and in our research, planners can embrace this opportunity, look change squarely in the eyes and commit to supporting each other to experiment with how we engage citizens in conversations about the places they live.
Appendix A: Interview Guide

Project Title: Mass Potential: Crowdsourcing as a tool for public participation in urban planning

INTERVIEW GUIDE #1 (Case Informant)

Sample Questions about the Participant:
1. Organization:
2. Did you actively participate in <insert case name>?
3. How were you involved in this public participation activity?

Sample Questions about the case:
4. Please describe the specific activity for which you were requiring public input and participation.
5. What were the goals of your public participation strategy?
6. Why did your organization choose crowdsourcing as a tool for public participation?
7. Was this the first time that your organization had used crowdsourcing? Had you been involved in any other projects that used crowdsourcing?
8. What other tools did you use (charettes, public meetings, surveys, etc)?
9. Who was your target audience?
10. Did you face any barriers internally or externally to using crowdsourcing?
11. Please describe how you used crowdsourcing?
12. How did you engage the public to use the site?
13. What worked well?
14. What didn’t work?
15. What was the impact of using crowdsourcing? Did it help you reach your goals?
16. What type of response did you get from participants?
17. What would you do differently next time?
18. Would you recommend that other organizations like yours use crowdsourcing as a tool for public participation? Why or why not?
19. What specific lessons would you share with others considering to use this tool?

Wrap-up
20. Is there any other information you’d like to add?
Appendix B: GREB Approval Letter

November 20, 2012

Miss Andrea Hamilton
Master’s Student
School of Urban and Regional Planning
Queen’s University
Kingston, ON K7L 3N6

GREB Ref #: GSURP-166-12; Romeo # 6007535
Title: “Mass Potential: Crowdsourcing as a tool for public participation in urban planning in Canada”

Dear Miss Hamilton:

The General Research Ethics Board (GREB), by means of a delegated board review, has cleared your proposal entitled “Mass Potential: Crowdsourcing as a tool for public participation in urban planning in Canada” for ethical compliance with the Tri-Council Guidelines (TCPS) and Queen’s ethics policies. In accordance with the Tri-Council Guidelines (article D.1.6) and Senate Terms of Reference (article G), your project has been cleared for one year. At the end of each year, the GREB will ask if your project has been completed and if not, what changes have occurred or will occur in the next year.

You are reminded of your obligation to advise the GREB, with a copy to your unit REB, of any adverse event(s) that occur during this one year period (access this form at https://eservices.queensu.ca/romeo_researcher/ and click Events - GREB Adverse Event Report). An adverse event includes, but is not limited to, a complaint, a change or unexpected event that alters the level of risk for the researcher or participants or situation that requires a substantial change in approach to a participant(s). You are also advised that all adverse events must be reported to the GREB within 48 hours.

You are also reminded that all changes that might affect human participants must be cleared by the GREB. For example you must report changes to the level of risk, applicant characteristics, and implementation of new procedures. To make an amendment, access the application at https://eservices.queensu.ca/romeo_researcher/ and click Events - GREB Amendment to Approved Study Form. These changes will automatically be sent to the Ethics Coordinator, Gail Irving, at the Office of Research Services or irvinggg@queensu.ca for further review and clearance by the GREB or GREB Chair.

On behalf of the General Research Ethics Board, I wish you continued success in your research.

Yours sincerely,

Joan Stevenson, Ph.D.
Professor and Chair
General Research Ethics Board

cc: Dr. Patricia Streich, Faculty Supervisor
    Dr. Leela Viswanathan, Chair, Unit REB
Bibliography and Sources


