COLLABORATIVE ENGAGEMENT POST-PANDEMIC:

CONTRASTING IN-PERSON VS. ONLINE ENGAGEMENT

A Culminating Project Presented to the Department of Public Policy and Administration

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Executive Summary

Collaborative engagement is a form of meeting in which groups of people choose to work together for a common purpose. Often, collaborative engagement is used by public entities to connect with the public and/or key stakeholders regarding the co-creation or implementation of policy goals. Government entities that are designing collaborative engagement efforts may choose from amongst in-person, online, and even hybrid formats for meeting. As an important factor in the engagement process, the method of engagement format offers practitioners both opportunities and challenges for their engagement effort. This choice can affect the quality of the individual experience or have equity concerns, but may also be limited by resources and technical expertise.

This Culminating Project examines the tradeoffs from utilizing different engagement formats for public engagement efforts, drawing on recent case studies. This research is not limited to a particular policy area of engagement - rather, the focus of my research is on dissecting the tradeoffs inherent to different forms of format in engagement. I consider these tradeoffs through their implications for both practitioners as well as participants involved in a given effort. I find that common themes include differences of costs to practitioners and participants, logistical considerations to be considered during the planning process, and equity considerations for participants. Other considerations include the quality of secondary characteristics, such as the quality of networking between participants, which may not be the central goal of an engagement effort but can be considered important nonetheless.

Section 1 provides an overview of collaborative engagement. I include a conceptual model and set of definitions to outline what aspects of engagement that I focus on in this paper. This section provides a foundation for the rest of the paper.

Section 2 utilizes existing academic literature to set the stage for my research. I introduce case studies from scientific conferences that begin to delve into my research question but also show the relative lack of literature in this area for public engagement. This section also demonstrates initial audience engagement preferences based on the included case studies.

Section 3 presents the methodology that I employ for my research. I describe how I determine and conduct my interviews as the primary method of original research. I also briefly describe the different case studies of interest in this paper.

Section 4 is the first section on findings for this paper. The focus of this section is on in-person format, considering lessons learned from the practitioners that I interviewed as well as implications from two identified case studies based in the literature.

Section 5 is a findings section that focuses on online engagement efforts, taking into account my interviews as well as a case study on a recent online engagement effort by the California Department of Transportation (Caltrans).

Section 6 focuses on findings for hybrid engagements, also based on a combination of the interviews and a case study led by the California Department of Conservation.

Section 7 discusses the findings described in the previous sections. I distill the lessons learned into common themes and present them in juxtaposition to try to offer a sense of what the strengths and weaknesses of each format type are for both practitioners and participants.

Section 8 offers my perspective on the implications of this research. I also identify where future research may supplement the findings of my own.

Section 9 concludes my paper, synthesizing the lessons learned from my research and offering key takeaways for the reader.

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Abstract:

Collaborative engagement describes a set of practices that at their core connect government with the public and key stakeholders. Partially as a consequence of advancements in technology and the necessity for conducting online meetings as brought on by the COVID-19 pandemic, there are more ways than ever for engagement practitioners to connect with stakeholders and the broader public. This paper considers three broad categories of collaborative engagement format - in-person, online, and hybrid - and analyzes some of the tradeoffs associated with utilizing one form over another for the consideration of practitioners that are planning such efforts. Through interviews and an examination of the literature, I find that some of the biggest differences between these formats exist in terms of associated costs (to both practitioner and participant), logistics required for planning and running an effort, and participation equity. Secondary participation aspects, such as the quality of networking outside of meetings, are also discussed.

1. Introduction

Collaborative engagement describes a set of practices that at their core connect government with the public and key stakeholders. Relatedly, public engagement practitioners (shortened to "practitioners" for the remainder of this paper) are those professionals that actively plan and conduct engagement efforts. Key stakeholders typically include relevant constituency groups that either have a "stake" in the process in terms of who will be affected by policy or are relevant to the decision making process in some way. As is often the case with collaborative engagement with public agencies, members of the general public are important participants in the engagement process. Practitioners working with the stakeholders or the public may have different reasons for sponsoring an engagement effort ranging from simply informing participants or actively sharing decision-making powers along a spectrum known as the IAP2 engagement spectrum (International Association for Public Participation, n.d.). Motivations for participants to engage range from being materially invested in the process or through voluntary interest in the process - though there are also many factors that affect ability to engage voluntarily, ranging from education level to having enough spare time/financial resources to support participation (Schlozman et. al., 1999).

Like many other practices and industries, the ways in which governments and practitioners chose to conduct engagement efforts had to be adapted in response to the COVID-19 pandemic. In particular, governments at all levels have begun to utilize remote, online meeting formats to conduct engagement efforts. However, as pandemic-era travel and mask restrictions have come to an end, public entities designing collaborative engagement efforts may again choose to do so in the more traditional, in-person formats. Yet as a consequence of years of remote work, both professionals and the public at large have become more familiar with online

meeting formats and the knowledge required to participate in them. This is reflected in everyday discourse, with "Zoom" becoming a familiar household platform name. Taken together, government entities that are designing collaborative engagement efforts may choose from amongst in-person, online, and even hybrid formats for meeting.

The goal of this paper is not to determine whether or not one format is superior to others when designing collaborative engagements - rather, it analyzes the tradeoffs inherent to the different meeting formats. Format implications are relevant at all levels of government, from a city-led effort to one sponsored by federal government agencies. Similarly, this analysis is not limited to one field of collaborative engagement as the formats and associated practices discussed are generalizable to efforts within a wide variety of fields, whether it be for collaborative engagement efforts in the healthcare industry or regarding labor reforms. This paper is guided by the question: what are the important process implications for practitioners and participants in collaborative engagement efforts regarding the differences between in-person, online, and hybrid engagement formats?

Collaborative Engagement

The term collaborative engagement is often used interchangeably with similar terms (e.g., public engagement) and can refer to a wide variety of practices. Broadly speaking, collaborative engagement refers to a variety of methods used for convening different stakeholders to collaborate on important issues that are common to the interests of the group (Nabatchi & Amsler, 2014). "Collaborative" refers to the aim of the effort, wherein participants work together towards a common goal; "engagement" serves to imply a more organized effort than is conveyed by "participation." Terms such as public engagement, public participation, and stakeholder engagement are therefore similar but not necessarily interchangeable; public engagement

necessitates public participation towards goals of public interest, public participation may not be collaborative, and stakeholder engagement might not include members of the public (Nabatchi & Amsler, 2014). Within those definitional confines, collaborative engagement can occur upstream of (before) or downstream of (after) when government policy decisions are made, and regardless of meeting format (Nabatchi & Amsler, 2014).

Collaborative engagement is a valuable process for different democracies. In the context of the United States, collaborative engagements are not a new phenomenon. Local meetings amongst members of the public have a rich history in the United States dating back to before the country's formal inception (Nabatchi & Amsler, 2014). However, public engagement practices have become more formalized over time and have increasingly become a tool utilized by governments as a method of soliciting public feedback. In a modern context, collaborative engagements are often legally mandated - whether as defined by statute or as imposed by legal rulings (Nabatchi & Amsler, 2014). Establishing buy-in to the decision-making process and the decisions made by the larger group is an important factor that influences the long-term sustainability of those agreements (Kaner, 2014).

Historical collaborative engagement efforts have been held through a series of in-person meetings or hearings, including such traditional forms as a series of town halls held by a local city council to a set of meetings held by a state agency to determine how to prioritize programmatic spending throughout the state (Nabatchi & Amsler, 2014). While technological development has enabled engagement efforts to take on new forms, the conceptual framework for understanding collaborative engagements has largely remained the same. The conceptual framework through which collaborative engagements can be understood is seen in **Figure 1**, as

illustrated by Nabatchi & Amsler in their 2014 review of local public engagement (though it is generalizable to collaborative engagements as well in this context).

Figure 1. Conceptual framework of collaborative engagement. (Nabatchi & Amsler, 2014)
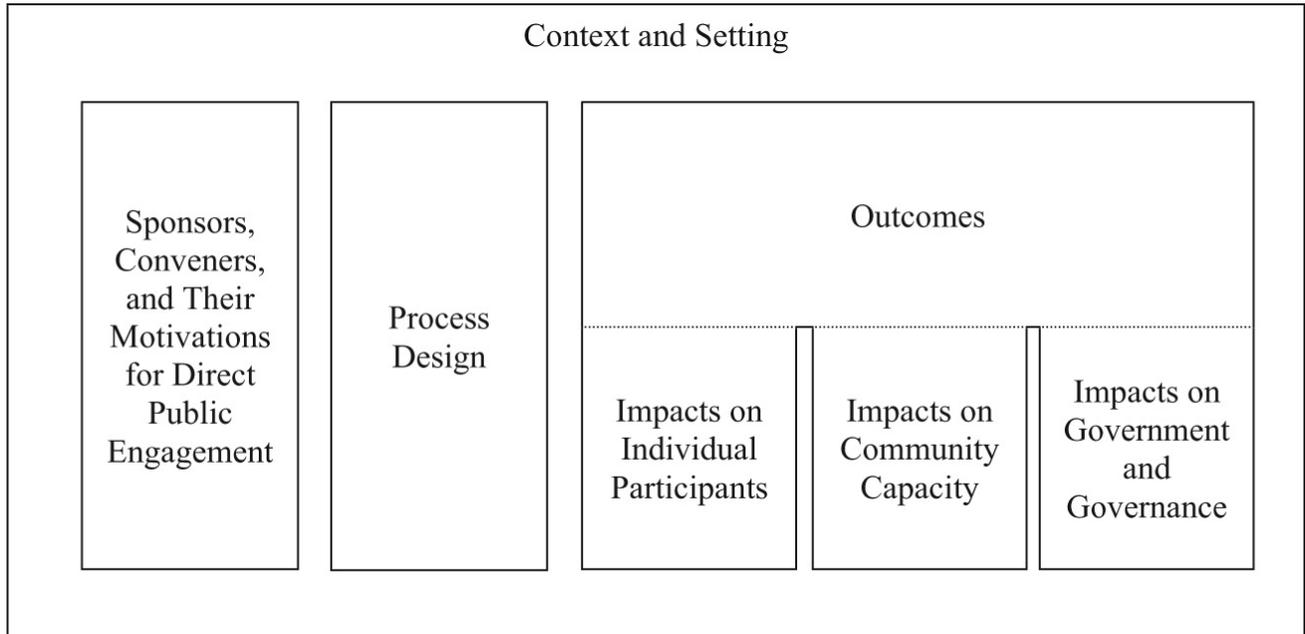
Inherent to any engagement process is the context underlying the effort and its setting - the questions of "where" and "when" does a collaborative engagement take place. Sponsors and conveners are "who" plan and facilitate the process, with their underlying motivations answering the "why" of the effort. Process design refers to the "how" of the process and the many considerations that come with it. Process design consists of such important elements as defining an effort's goals, how many participants are to be involved and how will they be determined, the plan for communicating with the broader public and participants, methods of decision-making, and the logistics of how meetings are to be convened, conducted, and repeated (Nabatchi & Amsler, 2014). It is this last element - how meetings are to be convened and iterated - that is of interest in this paper.

Meeting Formats

There are a variety of factors to consider in determining how a collaborative engagement effort may be convened - from the length of the meetings to how speaking time is allotted (if controlled for). The key aspect that is central to my analysis is the method of format used, defined as either in-person, online, or hybrid. However, because engagements are iterative in that they have more than a single meeting - indeed, they may have many more - there is a broad spectrum from all in-person to all online. For the sake of simplicity, my analysis considers collaborative engagement efforts to be in-person if at least ninety percent of an effort's primary meetings are conducted in-person, to be online if at least ninety percent of meetings are conducted online, and hybrid if the meeting formats are mixed at any ratio between the two at an overall level as well as for those engagements in which meetings combine elements of in-person and online attendance simultaneously.

The paper rests on the definitions and conceptual framework that are provided in the preceding pages. The remainder of the paper is organized as follows: 1) I conduct a review of the literature to synthesize what tradeoffs between meeting formats have already been described; 2) I briefly introduce the four case studies that are central to my analysis; 3) I describe the methodology by which I conduct the research into these case studies; 4) I focus in depth on each format analyzed in the order of in-person engagement first, followed by online engagement, and finally hybrid engagement; 5) I integrate the findings from the case studies to discuss the tradeoffs between format; 6) I offer some of the implications of my analysis for future research; and 7) I conclude the paper with the main takeaways of this research.

2. Literature Review

State of Literature

Collaborative engagement research has experienced renewed academic interest in recent years. The breadth of academic literature spans from best practices to the philosophical and ethical ramifications or greater public involvement in policy-related decision making (Nabatchi & Amsler, 2014). Technological innovations in recent decades in communication and presentation technology may also explain some of the academic interest, adding more dimensions for public engagement scholars to study in process design (Nabatchi & Amsler, 2014). Recent research has been largely centered on what leads to the success of engagement efforts in reaching their stated goals as opposed to the many examples of efforts that have failed to do so (Reed et al., 2017). Despite the interest in broader academic study, some aspects of collaborative engagement have received comparatively little attention by scholars.

There is little direct current published research regarding tradeoffs of meeting format in the context of collaborative engagement. This suggests that there are not many recent examples of online and hybrid engagement efforts that have been thoroughly documented. This is perhaps unsurprising given the historical conduct of engagement efforts being in-person formats. The recent most comparable existing research includes case studies of academic conferences that had been forced to transition to online formats as a consequence of the COVID-19 pandemic. These case studies are still a useful and appropriate comparison for investigating the format tradeoff considerations for collaborative engagement processes. While they largely operate with similar constraints inherent to the differences of format, collaborative engagement efforts and academic conferences also have similar goals in the dissemination of complex information to large groups of people with varying levels of knowledge. Additionally, the logistics of planning a conference

with iterative meetings including breakout sessions, the need to plan for potentially hundreds of attendees, and potential technological limitations are similar for the context of this analysis. Typologies as described within the context of existing public engagement research can be utilized to more directly relate academic conference format tradeoffs to what would be applicable to collaborative engagement design.

Typologies of Public Engagement

Reed et al. offer a summary of public engagement typologies in their 2017 review of environmental management public engagement literature. Their work largely builds off a typology framework developed by scholars Rowe & Frewer that groups engagement efforts into one of three categories along a spectrum of participation similar to the IAP2 spectrum: efforts are considered to be either a form of communication, consultation, or participation (Rowe & Frewer, 2005). Reed et al. reframe these three typologies of engagement based on an engagement's goals. The first typology describes engagements that exist as either top-down or bottom-up efforts interested in effecting a given policy-related decision. The second typology distinguishes engagements along the lines of motives of communicating to either come to a pragmatic decision collaboratively or meet for the sake of trust-building. The third typology relates to the exchange of knowledge, whether it be one-way (informational), two-way, or based on the solicitation of feedback (Reed et al., 2017).

In the context of the Reed et al. framework, academic conferences would lie firmly in the final typology - information exchange. This establishes the conference literature herein discussed as comparable to public engagement case studies. However, collaborative engagement efforts are notably broader and can fall into either of the other two typologies. This is an important caveat to keep in mind while the literature is applied to collaborative engagement efforts.

In-Person vs. Online Meetings

Academic conferences offer a complimentary form of communication within the scientific community, augmenting the primarily written communication found in academic journals with opportunities for networking and real-time, oral discussion (Milić et al., 2020). Two international academic conferences in 2020 that became online events are well-documented in the literature. These events are the Virtual Perovskite Conference 2020 (a conference for young scientists of the photovoltaics community) as documented by Saliba, 2020 and Milić et al., 2020 and then the conference organized by a UK-registered charity, the Deep-Sea Biology Society, known as eDSBS 2020 and documented by Stefanoudis et al., 2021. Saliba and Milić et al. rely on generalized observations and review of existing literature to draw conclusions from the Virtual Perovskite Conference, whereas Stefanoudis et al. provide original survey data and analytics drawn from the hundreds of online attendees to eDSBS.

When compared to in-person meetings, online platforms have the capacity of supporting many more meeting participants in attendance from locations around the world (Nabatchi & Amsler, 2014). The time and costs associated with traveling for an event can be mitigated by moving it to an online format, as well as dramatically reducing the carbon footprint associated with traveling potentially long distances (Milić et al., 2020). The first Virtual Perovskite Conference had over 680 participants, many more than anticipated and historically seen at the in-person conferences; participants were from around the world, including countries such as India, China, Europe, and Latin America attending simultaneously (Saliba, 2020). Online formats may also be easier to access for people with disabilities (Saliba, 2020). While the ability of researchers to attend from different parts of the world is positive for online format equity, it also has the potential to provide for inequity of experience depending on in what time zone the

meetings are based. Long periods of looking at bright screens are associated with eye straining known as video call fatigue, necessitating frequent breaks and affecting participants that are attending in the early morning and late evening to a greater extent (Saliba, 2020; Milić et al., 2020). Other potential drawback to online meetings for participants include experience becoming dependent on internet connection quality, the possibility for additional stress as a consequence of constantly viewing your own face or experiencing familial interruptions (such as for those with young children), and reduction in conversation quality due to a lack of non-verbal cues in this format (Saliba, 2020). Finally, participants perceive a reduction in secondary aspects associated with conferences when moved online, such as diminished ability for networking and personal interactions as they are largely associated with the meals, breaks, and social events associated with in-person efforts (Saliba, 2020).

Practitioners and event planners alike may see a variety of benefits in basing their engagements in an online format. Multimedia content such as videos are more seamless in online meetings and presenter speaking controls make regulating conversations easier (Milić et al., 2020). Planning for virtual meetings has been found to be cheaper and easier logistically (Saliba, 2020). Question and Answer panel sessions seem to be especially well-suited to online formats with the ease of asking questions via chat functions (Milić et al., 2020). However, one-on-one discussions have not been found to be as successful when compared to in-person conversation, and both meeting formats have coordination challenges when in a hybrid meeting setting (Milić et al., 2020). An additional consideration that practitioners have to make for online meetings is the availability and possible training of technical staff who function as support facilitators to ensure the online platform runs smoothly and questions asked in the chat are organized into

speaking lists or responded to (Saliba, 2020). Beyond this, contingency plans are necessary - if possible - should technology fail or participants be unable to utilize/engage with the format.

        The findings from eDSBS closely mirror those from the Virtual Perovskite Conference. The eDSBS conference was able to be organized with only 4% of the planning costs and significantly reduced attendance fees when compared to previously held in-person events as illustrated with other comparative metrics in **Figure 2** (Stefanoudis et al., 2021). The strict meeting conduct of regulating who is able to speak helped to ensure that presenters and participants alike were able to share their presentations without fear of interruption (Stefanoudis et al., 2021). Stefanoudis et al., 2021 provides additional data, indicating that participation rates for lower income participants are not improving when compared to in-person meetings held in developing economies. Results have been mixed on whether concentration is affected by meeting format, but survey data from conference attendees indicates a clear preference for in-person meeting formats over online as seen in the answers to Questions 2, 24, and 25 of **Figure 3** (Stefanoudis et al., 2021).

Figure 2. Comparison between eDSBS and previous in-person meetings along various participation and planning metrics (Stefanoudis et al., 2021).
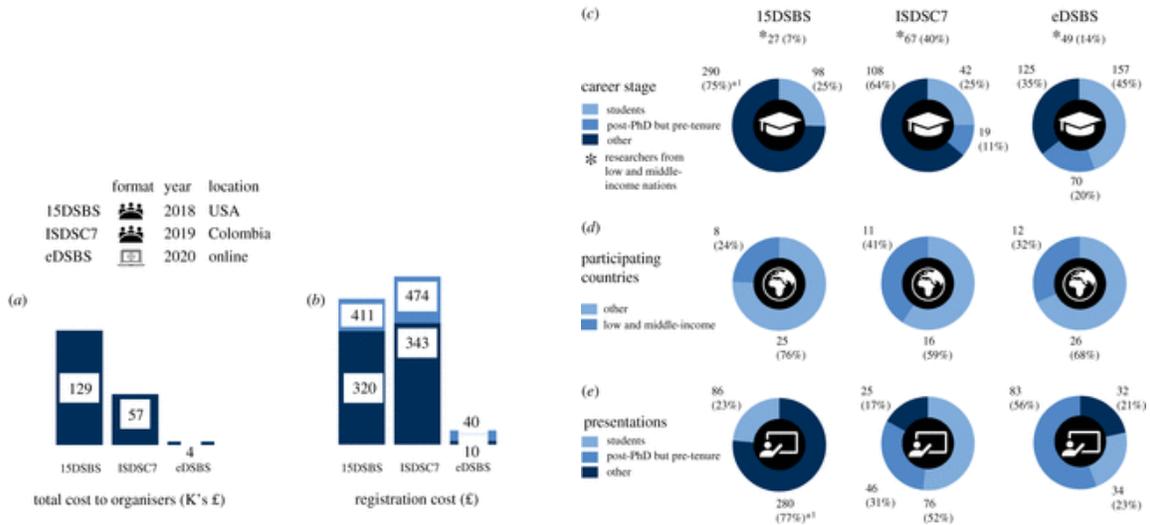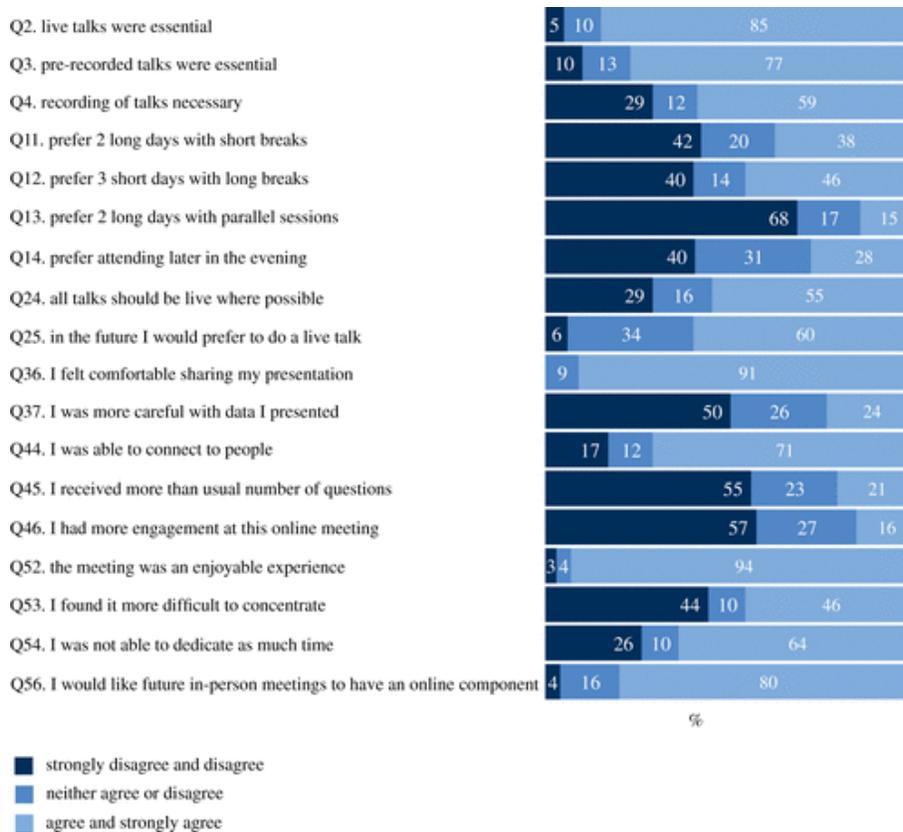

Figure 3. Ratios of answers to selected questions (Q) of a questionnaire shared with eDSBS participants (Stefanoudis et al., 2021).

Hybrid Meetings

Hybrid collaborative engagements are even less well documented in the academic literature than online engagements. This is largely due to the fact that COVID-19 era restrictions left little room for mixing online and in-person formats, favoring online-only engagements and conferences as those described above. However, hybrid arrangements are becoming more common as restrictions ease, and even through the online examples follow-up surveys have indicated a desire for hybrid events. For eDSBS, the 2020 conference case study notably found that there is significant desire for future in-person meetings to incorporate online components and effectively become hybrid meetings (Stefanoudis et al., 2021). This is seen in the survey responses as presented in **Figure 3**, Q56 in which respondents overwhelmingly indicated their desire for online components (Stefanoudis et al., 2021).

There is evidence that recent technological developments are enabling hybrid meetings to become more seamless. Yoshioka et al, 2019 describes an audio-transcription system that utilizes a 360-degree camera alongside facial recognition-based speaker tracking to record and transcribe in-person speakers in real time. This type of technology has important implications for practitioners facilitating a meeting, as it can free up staff to focus on other aspects of meeting support such as monitoring online chats for live question answering (Yoshioka et al., 2019). However, this type of meeting infrastructure is costly and hybrid events are associated with much greater costs to practitioners when compared with in-person or online only engagements (Stefanoudis et al., 2021). Simultaneous online and in-person elements of hybridized meeting attendance can be tricky to balance, with the quality of experience becoming inequitable if practitioners invest more time and effort in supporting one form over the other (Stefanoudis et al., 2021). Engagement models, such as the recently developed RUBIN model, have tried to

reconcile these aspects in providing helpful tips for practitioners to successfully pursue hybrid meeting formats (Rubin, 2023).

Case studies currently available in the literature comparing experiences between online and in-person engagement formats are limited. This literature review has considered comparable case studies from scientific conferences, but engagement examples considering format tradeoffs in the realm of public policy are lacking. For that reason, an important aspect of my research is in comparing documented in-person engagement examples with novel online and hybrid public engagements. Hereafter, this paper will refer to a different set of case studies. The following four referenced case studies are within the realm of public policy and are described in further detail below.

3. Methodology

Methodological Overview

For the methodology of this paper I used a set of two interviews and several comparative literature case studies. I interviewed two primary public engagement practitioners for their insights based on their recent efforts as relevant to a given case study as well as their developed expertise over the course of their careers. One practitioner interviewed also brought along two other practitioners to offer supplemental perspectives. These practitioners were each deeply involved with the planning of the case studies discussed later in this paper and can be considered to be collaborative engagement experts with decades of engagement experience between them. I identified each practitioner through previous working experience and based on recommendations, reaching out to each for an interview by email, and finally holding a 1-2 hour interview over Zoom. These practitioners were based with prominent state agencies in Sacramento, CA and often work with stakeholders throughout the state.

During the interviews, each interviewee offered responses to the broader questions as detailed in the appendix, as well as shared the details of the case study in which they were involved. I also followed up with both by email for more information/resources to supplement my discussion of those case studies; these questions are also detailed in the appendix. My questions were developed based on the preceding literature review and were meant to tease out what factors practitioners have considered during collaborative engagement design as well as any other details relevant to my guiding research interest (format tradeoffs). In the first interview (as relevant to the hybrid case study), I interviewed one practitioner. In the second interview, I interviewed a primary practitioner (relevant to the online case study) who also brought in other practitioners involved with the effort to offer supplemental answers.

Though the majority of my interview questions regarded what practitioners consider in collaborative engagement design, the practitioners interviewed also provided information concerning a novel case study they had a hand in designing and facilitating. I have discussed relevant details from two in-person case studies found in literature to serve as a comparative backdrop to those discussed from the interviews. The in-person case studies were identified based on their applicability for comparison with those from interviews. The criteria I used to determine what is appropriate for comparison include: whether the case study discussed what participant experience factors were considered in the engagement design, if the case study demonstrates enough innovation/use of best practices to be considered a worthy example to highlight, and if the case study details some of the logistical requirements (e.g. time commitment) for the engagement. More information on all of the case studies follows.

In-Person Case Studies

The in-person case studies that I have selected are Future Melbourne 2026 and the

Springdale Corridor Study. Future Melbourne 2026 was a public engagement process for a 10-

year plan for the city of Melbourne in Victoria, Australia. Guided by their Community

Engagement Charter, this engagement developed a plan for the future of Melbourne with long-

term goals and priorities that are agreed upon by the public and City Council through a series of

in-person meetings (Katsonis, 2019). The Springdale Corridor Study was also a public

engagement process that utilized a series of in-person events and presentations. Mediated by

consulting firm VTC Communications, this effort sought to engage as many citizens of

Springdale, IL in the decision-making process for whether the city of Springdale, IL (the name

was changed) should expand its rail infrastructure (Moore, 2016).

Online Case Study

The online case study regards the California Department of Transportation's (Caltrans)

Infrastructure Investment and Jobs Act (IIJA) stakeholder engagement process. Following the

passage of the Infrastructure Investment and Jobs Act (also known as the Bipartisan

Infrastructure Law) by the U.S. Congress in 2021, the California State Transportation Agency

(CalSTA) and Caltrans began to engage with various stakeholders throughout the state for most

of 2022 (California Department of Transportation, 2022). The details of this case study are both

from the content of an interview and based on the published first edition document of Caltrans'

IIJA Policy Narrative.

Hybrid Case Study

The case study I used to detail a hybrid engagement outlines an engagement effort based

in Clovis, CA. In 2022, the California Department of Conservation hosted orientation for

stakeholders participating in the Multibenefit Land Repurposing Program Block Grant. This

effort served 12 grantees, ranging from counties to individual irrigation districts (California Department of Conservation, 2022). The details of this case study are parsed together from one of my interviews and some background information forms from the California Department of Conservation.

4. Findings: In-Person Engagement

I introduce each findings section with some background on the format type, followed by what insights relevant to the format came up through my interviews, then insights based on the case studies used, and finally I summarize these findings in a section analyzing the takeaways. In this final portion, I also distill those lessons into tables broken down by which aspects of an engagement format are advantageous, which are disadvantageous, and other considerations; this is done for both practitioners and participants in a given format.

In-person engagement can be understood as the classical form of stakeholder engagement. It has the most history as both online and hybrid engagements have only been possible thanks to recent technological advances. As a result, most (if not all) collaborative engagement practitioners have experience with this format. There is also a wealth of literature available when compared to the new engagement formats. While in-person engagement does not inherently require reliance on different forms of technology, innovations in smartphone technology and other conferencing tools have enabled sophisticated technological integration even in this format. However, for the sake of this project, engagements incorporating technological ways of engagement do not cross the threshold into being considered "hybrid" for meetings as long as participants are physically present in the same location during the process.

Interviews

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From the practitioner perspective, planning for in-person engagements requires a significant investment of time and resources, especially if there is audio-visual recording support. Modern in-person engagements can incorporate a spectrum of technological tools. These include instant polling tools such as Mentimeter, the use of electronic presentations or videos, or other multimedia tools. However, this can also make internet connection a limiting factor for in-person meetings and require both tool testing before a given meeting and trained technical staff to be available during these meetings for support. Practitioners considering language access support may be constrained by which translators are locally available to bring in for a given engagement. With in-person engagements, the physical space is a resource for practitioners to consider as it dictates both how many participants are able to participate in an effort and what engagement activities are possible. The physical space also introduces other variables for consideration such as how sound travels in a room, if refreshments and sign-in sheets will be provided, how much seating will be available, if there will be posters/signs (possibly for writing on) on the walls, and whether or not child care assistance will be provided for participants. One of the biggest concerns for practitioners to consider is safety, as in-person engagements offer more opportunity for different forms of protest and whether or not police are invited to an engagement space can have important implications for how comfortable attendees feel.

Participants can expect many advantages with the in-person engagement format. It is often easier to confer a sense of agreement or disagreement with a speaker through body language in-person, which can enhance a sense of community and provide real-time feedback on how participants feel about a given topic. The other side of this is emotions can also run high during disagreements and more easily escalate. Likewise, back-and-forth conversations are more natural than in other formats. In-person participants have other effective means of participating,

such as expressing opinions via clothing choice and bringing signage, especially useful for participants that don't feel comfortable with public speaking. Different tactile engagement tools and networking also keep participants engaged in the process. Provided refreshments often add incentives for public participation. Shrewd practitioners can facilitate community building among stakeholder groups through carefully-planned seating arrangements (whether done by affinity groups or across interests). Finally, participants that spend time and effort traveling to an in-person meeting are more likely to remain engaged by virtue of their investment.

Case Study 1: Future Melbourne 2026

Future Melbourne 2026 follows the Future Melbourne 2008 public engagement process, in which the government and public also collaborated to develop a 10-year plan for the city of Melbourne. The City Council in Melbourne established the Future Melbourne Committee, which is responsible for the implementation of these strategic plans, the engagement processes for which have been guided by a Community Engagement Policy, accompanied with a Framework and Charter. The Community Engagement Charter, in addition to outlining guidelines for community participation, also centers "diversity of perspectives" as a central process goal. This engagement process was supported by a staff support team and a variety of resources, including a digital platform Participate Melbourne that can incorporate limited community feedback (Katsonis, 2019).

Future Melbourne 2026 was initiated in December of 2015 as the plan from Future Melbourne 2008 was set to expire in two years. Challenges facing the city that have emerged since the previous plan included rapid proliferation of new technologies, increases in CO2 emissions, and evolving methods of civic governance as a consequence of these changes. The planning effort for Future Melbourne 2026 was guided by six appointed Community

Ambassadors, chosen for their expertise and to represent perspectives from the core identified issue areas. These Ambassadors engaged with the broader community through in-person meetings, online surveys, in-person workshops, and pop up community consultations (Katsonis, 2019).

The process emphasized inclusivity as among the most important aspects of engagement, in addition to championing values of transparency and community building. To that end, the organizers were largely successful - the community had submitted over 970 ideas and 350 surveys for the project, representing over 2000 residents from a variety of backgrounds across the 31 events of the effort. With so many citizens involved, a citizens jury of 52 people served as an intermediary between the community and Ambassadors to develop a draft Future Melbourne plan from the various perspectives provided. The end result was a plan with 9 vision goals and 53 priorities to achieve them, eventually being officially adopted by the City Council (Katsonis, 2019).

This engagement process took over six months, demonstrating the substantial time commitment required for in-person efforts aiming to be as inclusive of diverse perspectives as possible. Additionally, while the staffing and cost requirements are not specified in the source, such a drawn out effort with multiple event types would necessitate non-trivial expenses and support. Despite the logistical requirement, this in-person engagement demonstrates community building as a strength of this format type, effectively engaging with different sections of the local population through targeted pop-up event locations. The success of the effort, with at least 80% of the citizen's jury agreeing on the goals as per the rules of this engagement, showcase the merits of a successful in-person engagement.

Case Study 2: Springdale Corridor Study

The Springdale Corridor Study, hosted in Springdale, IL and facilitated by VTC Communications (both names being pseudonyms), likewise was focused on inclusivity in involving the local community. While the public participation and solicitation of input was a requirement of the Environmental Impact Statement that the city was required to complete, engagement organizers had a genuine interest in establishing buy-in and involving the public in determining how rail traffic infrastructure would be developed for Springdale. Over the course of a year, facilitators organized a series of in-person events and presentations. Accompanying this was the creation of community advisory groups for more sustained discussion as well as the creation of an informational website for dissemination (Moore, 2016).

Two open houses occurred, taking the form of rotating stations in which participants could walk around to learn about different aspects of the proposals and discuss with subject matter experts one-on-one. This was to encourage more active participation and offer participants more intimate conversations. Unlike Future Melbourne, a secondary purpose of the in-person events for the Springdale Corridor Study was to establish trust between the community and facilitators, rather than facilitate community building. Other events were adapted to the needs of the community group being served, including offering childcare, support for non-English languages, and scheduling around participant availability. Regular meetings between the advisory groups and facilitation team occurred on four occasions through the year. The logistical and resource requirements for these meetings were emphasized in the case study, consisting of needing to coordinate sites and schedules, developing presentations, and providing other resources such as food, handouts, and key documents (Moore, 2016).

Over the course of the year, this engagement reaffirms some of the previous findings. The in-person events required significant logistical and resource investment, partially reflected in the

just handful of meetings conducted. The considerations made for inclusivity in the form of language access and childcare availability demonstrate the tradeoffs between cost and equity for in-person events. However, the establishment of trust between participants and practitioners was a novel goal in this effort when compared to the previous case study.

Takeaways

Table 1 synthesizes the takeaways discussed in the previous case studies and garnered from the practitioner interviews.

Table 1. Summary table of advantages, disadvantages, and other considerations for the in-person engagement format

Advantages	Disadvantages	Other Considerations
Practitioners		
Internet availability may not be a limiting factor/can be determined by shared network	May require significant logistical support	Will/can other languages be supported based on local interpreters?
Can encourage active engagement through moving around/activities	Can be financially expensive	What level of technological integration?
Refreshments can encourage greater participation	Possibility of protests can cause safety concerns	Physical space offers its own constraints and opportunities
Targeted locations can engage effectively with communities of interest		Will childcare be provided?
Can foster sense of trust		
Participants		
Interpretation of body-language	Disagreements can more easily escalate	Travel investments can be advantageous (for engagement) or disadvantageous (equity concerns)

More ways to express opinions physically		Participation dependent on location/childcare considerations
Conversation easier		
Sense of community		

5. Findings: Online Engagement

Online engagement formats have become varied through the proliferation of meeting platforms over recent years and accelerated by the travel and meeting restrictions put in place during the COVID-19 pandemic (Milić et al., 2020). Like in-person engagements, online engagements feature all participants engaging in an effort via the same method (all over the internet). Despite lacking a long and established history as a method of large-scale collaborative engagement, online engagement efforts have been shown to be possible and successful, with the effort from Caltrans being an example (California Department of Transportation, 2022). As indicated from the perspectives of the practitioners that I have interviewed, the widespread use of platforms such as Zoom has made it easier for practitioners to engage with the public and stakeholders in this format.

Interviews

The practitioners interviewed indicated that virtual efforts are the easiest to plan for logistically and easiest to execute, as well as to adapt to on the fly. One of the consequences of the shift to remote-working is that many people have become familiar with the use of various online meeting platforms, though choosing a platform to use is still an important consideration for planners. Practitioners have greater control over the process and can limit the impact of disruptive protests. Screen-sharing from the meeting hosts allows for more seamless integration

of media from different presenters. Language support becomes less region dependent in online formats and the ability to simultaneously stream a separate audio channel for speakers of other languages minimizes risk of confusion. The determination and maintenance of the speaker list may be more difficult as participants can virtually-simultaneously try to join the speakers list. The need for technical staff support therefore may be greater than for in-person meetings. Practitioners may also consider whether or not they require virtual registration or having cameras on for an engagement, with implications for participant anonymity.

Participants in the online format may experience the most barriers to engagement. This is because participation in online meetings require stable internet connections, ability to use a microphone/camera, and some technological proficiency for the platform being used. Practitioners that limit the use of cameras, microphones, or the chat function for participants may see those participants become frustrated. Participants in online meetings also indicate confusion regarding speaking order if clear communication of the speaker list isn't consistent. However, online meetings are more equitable for certain groups - eliminating the need for participants to travel long distances, as well as potential barriers for participants with disabilities. The equalizing of participants to equally sized "boxes" online can have a democratizing effect, encouraging participants to speak up in meetings where they may otherwise have been intimidated due to visible marks of authority (e.g. hierarchical seating positions in a physical space). The lack of need for travel also makes online engagements more efficient and cheaper to participate in, lowering barriers to entry and therefore enabling greater participant diversity and attendance. The practitioners interviewed also addressed a potential misconception that online meeting formats lent themselves to more distracted participants - in their experience, there isn't a

notable difference between formats as attendees often multitask in either setting and are likely to be invested in any case if doing so in an official capacity.

Case Study: Caltrans IIJA Engagement

The California State Transportation Agency and California Department of Transportation initiated a statewide, exclusively online engagement process following the passage of the Infrastructure Investment and Jobs Act (IIJA) by Congress. The goal of this process is to coordinate with stakeholders throughout California to distribute the expected $42 billion in funding that was expected to be received from the Federal Government between FY2022-FY2026. For this engagement, inclusivity and equity have been guiding principles (California Department of Transportation, 2022).

The engagement process is structured under a larger working group, with 12 subworking groups underneath focusing on specific topic/projects areas. Example areas include transit and rail infrastructure, port infrastructure, climate resilience and adaptation, and local hire/workforce development. These groups correspond to specific funding programs under the IIJA and policy area priorities for the state. The subworking groups have stakeholders specific to those interests with some working groups much larger than others. Over 400 stakeholder groups have been invited to participate in this process overall, representing a diversity of perspectives throughout the state (California Department of Transportation, 2022). While many groups were invited to participate in the process, there was also an "open door" policy wherein interested parties were free to join the meetings.

This process, while taking place over a long period of time (at least a year thus far), has been able to incorporate a large number of meetings between the various working groups. This was made possible due to the meeting format being online, as arranging so many meetings would

not be feasible with stakeholders needing to travel to a single location from across the state.

Staffing support was limited for this engagement, but with the resources available equity in

ability to accommodate so many stakeholders was a strength of this engagement.

Takeaways

Table 2 presents the various takeaways from the interviews and case study for the online

engagement format.

Table 2. Summary table of advantages, disadvantages, and other considerations for the online

engagement format

Advantages	Disadvantages	Other Considerations
Practitioners		
Quick to plan	Speakers list harder to maintain	Which platform to use
Greater control over participants	More staff	Require RSVPs?
Seamless multimedia		
Language access easier to incorporate		
Participants		
Little-to-no travel required	Practitioners have more control over cameras/microphones	May or may not be able to be anonymous
	Quality of meeting dependent on internet connection, equipment, and platform knowledge	

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6. Findings: Hybrid Engagement

Hybrid engagement efforts combine aspects of both in-person and online engagement formats. Not just in terms of which format participants use to engage, there are more options that practitioners and participants need to consider for these efforts. Though there is potential to incorporate some of the strengths of both in-person and online engagement formats, my interviews have also indicated that there are challenges in equal measure. Hybrid engagements can therefore be understood to be particularly tricky, and participant equity becomes a more prominent concern in this format when considering balancing the experience between the in-person and online participation groups.

Interviews

In planning for a hybrid engagement format, practitioners need to consider all of the aforementioned considerations for both in-person and online meetings. Because of this, hybrid engagements are the hardest to plan for. They also require the greatest amount of staff for support, with practitioners needing to consider support for both groups of participants. One of my interviewees even went so far as to specify a minimum of six support staff members to handle a single meeting, with two focusing on the online technologies and four for the in-person. Ensuring that participants can effectively communicate between in-person and online platforms requires testing beforehand. During the room reservation process in planning, care must be taken when considering the monitor and other audiovisual equipment available in the room for the in-person participants. However, practitioners may see an advantage in that this format can appeal to the broadest participant base and give options based on individual preferences of participation.

Participant experiences with hybrid formats can vary significantly. Depending on how practitioners have designed the process, either the online or in-person cohort may be favored in terms of their ability to engage in the process. This challenge was emphasized by both practitioner interviews as the primary concern with this engagement format. However, there are undeniable advantages for participants in a hybrid engagement. Participants will be able to consider the format that best suits them as an individual for each meeting and - should the practitioners allow for it in their decision - switch back and forth between attending in-person and online between meetings to meet their needs and preferences. Therefore, hybrid meetings can be seen as offering participants the greatest degree of choice.

Case Study: Multibenefit Land Repurposing Program Block Grantee Orientation

In 2022, the California Department of Conservation hosted an Orientation for grantees under the Multibenefit Land Repurposing Program. The in-person aspect of this effort was based in Clovis, CA. Online participants could attend from anywhere with the link and an internet connection. The goals of this engagement were to support grantee efforts as well as foster collaboration. The design of this effort was completely driven by participant experience, as the practitioners sought to maximize the seamlessness of the presentation and minimize inequity between the online and in-person participant groups (California Department of Conservation, 2022).

Twelve different projects were selected for the grant program, with attendees representing a variety of organizations and agencies associated with conservation work based in the Central Valley. The grantee regions in attendance had the opportunity to present their projects to peers online and in-person. Networking time was built into the schedule, allowing both in-person and online participants to enjoy the benefits of expanding their networks. At the

end of the meeting, participants were informally polled on what the strengths and weaknesses of the meeting were. (California Department of Conservation, 2022)

Through this engagement, efforts were made to ensure equity between the in-person and online participant groups. The location of the hybrid meeting was limited to a location that was accessible to those participants that wished to attend in-person while also having the technology available for a seamless integration of the online participants. The physical meeting space also had to be sufficient to accommodate the number of in-person participants as well as the support staff necessary to facilitate the meeting and administer both in-person and online exercises. All of this contributed to costs for the engagement. A technological limitation was the availability of one microphone for participants in the room. Despite this, parity between participant groups was maintained through support staff dedicated to each, parallel engagement activities, and rotation of speakers between groups. This case study demonstrates that while hybrid meetings can be challenging, done well they offer participants engagement flexibility and maximize equity.

Takeaways

Table 3 summarizes the takeaways gleaned from the interviews and case study for the hybrid engagement format.

Table 3. Summary table of advantages, disadvantages, and other considerations for the hybrid engagement format

Advantages	Disadvantages	Other Considerations
Practitioners		
Can appeal to broadest participant base	Have to plan logistics for both in-person and online components	Ensuring participation equity between groups

	Greatest need for staff support	
	Participants	
Participants have the most options for participation; can better suit individual needs	Inter-cohort equity is difficult; either the in-person or online group may more easily engage	Can consider array of tradeoffs for their own desired experience
Can engage in either/both formats in successive meetings		

7. Discussion

The interviews I conducted highlight what considerations are most important for practitioners when designing a collaborative engagement effort. These are based on logistical constraints such as time and resources (staff and finances), what outcomes are desired, and how politically charged a given topic is. The extent to which technology will be a limiting factor for practitioners varies wildly across engagements, engagement formats, and between departments (such as when staff need to be trained or not). However, when asked about the tradeoff between breadth of engagement (e.g. reaching the most participants and participant groups) and depth of engagement (e.g. the quality of the engagement's conversations and investment from participants), the interviewed practitioners indicate that depth of engagement is most often the preferred focus, especially when creating lasting decisions. Breadth of engagement may be more desirable when communication is the primary desired outcome for an engagement effort. To an extent, my interviews indicated that consensus is not necessarily the goal of engagement - rather, it is creating the sense of "I can live with this" amongst the most participants.

Collaborative engagement participants are largely at the mercy of the practitioners when it comes to the engagement format used, but they do sometimes express their preferences. Even

when not directly asked up front, participants may reach out to process designers early in an engagement to express their perspective on why a given format of engagement would be preferred. One of my interviewees estimated that this occurred about a third of the time in their experience, and depending on the reasoning, may have accommodated their request. The group of practitioners interviewed have also observed differences along generational lines, with older participants tending to favor traditional in-person engagements whereas younger participants may be more likely to express preferences for online formats. However, there is also a degree of individual format preference that can be considered amongst public engagement practitioners, as some may prefer consistency in format while others prefer switching between formats during a process to engage with different types of participants and "broaden perspectives", as one of my interviewees stated. Switching formats between meetings within the same engagement is also beneficial when perspectives from diverse groups with differing needs are desired.

The following discussion sections detail some of the tradeoffs between the different formats for practitioners and participants. Overall, there is no "best format of engagement" - rather, practitioners should consider what aspects of engagement are most important to them when designing an engagement effort. Formats that may be advantageous for practitioners may be disadvantageous for participants in a given circumstance, or vice versa. Additionally, what format may be ideal for a given engagement goal may not be feasible given other constraints. The following tables summarize these themes.

Common Themes: Practitioners

Table 4 displays the format tradeoff from a practitioner's perspective. In-person engagements benefit from a wealth of historical expertise, while also benefiting from newer technologies that allow for features such as live polling. Drawbacks include the costs to put on

successive in-person engagements and the possibility of disrupted protests. Equity considerations such as the availability of childcare often come with their own additional costs. Online formats are the simplest to plan relatively, offering practitioners a high degree of control and eliminating many logistical hurdles. However, platform choice and technical expertise are often limiting factors. While hybrid formats can be utilized to appeal to the widest variety of participants, the logistical and resource requirements are significant. The biggest challenge in this format for practitioners is to ensure equity between the in-person and online participants.

Table 4. Summary table of tradeoffs by engagement format for practitioners

	In-Person	Online	Hybrid
Advantages	Low reliance on internet connection; can have more activities for depth of engagement	Easiest/quickest to plan; greatest extent of host control over how participants engage; multimedia and language access most seamless	Greatest breadth of engagement
Disadvantages	Expensive and harder to plan; protests may cause safety concern	Speakers list harder to maintain	Twice the logistical planning for both format components; greatest staffing need
Other Considerations	Supports such as on-site interpretation, childcare have equity-cost tradeoffs	Choices over platform used affect functionality and participant engagement quality	Ensuring participation quality equity between groups is a challenge

Common Themes: Participants

Table 5 outlines format tradeoffs for participants. In-person engagements are a great way to build community and encourage active participation. Concerns for this format include travel costs (including commute time) and the possibility that disagreements become more heated in

person. For online engagements, the travel limitation is traded for technological limousines such as internet connectivity. Host controls may limit participant engagement, but the democratization of leveling attendees into boxes may encourage participants to engage more actively than they may otherwise. Finally, hybrid format participants have the greatest flexibility of attendance options to suit their individual needs and preferences. The primary drawback of this format for participants is that the quality of their experience becomes dependent on practitioner ability to balance resources between in-person and virtual participant groups.

Table 5. Summary table of tradeoffs by engagement format for participants

	In-Person	Online	Hybrid
Advantages	More ways to express opinions; sense of community; conversation more natural	Little-to-no travel required	Participants have most options for choosing how to participate; can utilize both formats over subsequent meetings
Disadvantages	Disagreements can more easily escalate	Participants have little control over camera/microphones; quality of engagement dependent on personal equipment, internet, and platform knowledge	Inter-cohort equity is difficult and one group may be functionally favored depending on meeting design
Other Considerations	Travel investments come at tradeoff of greater investment in engagement and equity concerns (who can afford to participate)	May or may not be able to remain anonymous	Considerations from either in-person or online formats apply

8. Implications

This research offers important implications for collaborative engagement practitioners, participants, and the related academic literature. Practitioners may use the examples outlined in this paper as a tool for considering format in process design. Participants may gain a greater understanding of the format tradeoffs in what may work best for their own experience. This research also hopes to serve as a basis for future research as there is not much existing literature on collaborative engagement formatting.

Future research may draw on the tradeoffs of format as offered in this paper as a basis for greater depth of study. Broadly, existing literature on format tradeoffs is limited to scientific conferences and a few engagement examples. A key limitation of existing research being based on scientific conferences is that the audiences may be different with collaborative engagements: academic conferences cater to well-educated specialists with similar interests in mutual education, whereas collaborative engagements have greater participant diversity. Therefore my assertion of the generalizability of academic conference format literature to collaborative design would need to be affirmed by future research. An example area in need of further quantitative support is tradeoffs surrounding engagement depth, or "quality of conversation" tradeoffs. Future researchers wishing to explore this topic may utilize post-engagement surveys to determine whether or not the notion that some engagement formats better lend themselves to better conversation engagement is valid.

Despite the relative novelty of online engagement methods, formal guides and tools are emerging that incorporate best practices for practitioners. An example of this is the RUBIN model, developed as a framework for state agency employees in California to facilitate engagement process design. Having gone through successive rounds of feedback solicitation, this

model incorporates many of the best practices that have been used for in-person and online formats alike, and with a strong focus on participant equity. Though it is still being finalized, the RUBIN model is a great example of a resource incorporating many of the lessons in this paper for practitioners to draw upon (Rubin, 2023).

9. Conclusion

Collaborative engagement practices have evolved over time to become an integral part of policymaking and implementation. Practitioners have a wide variety of tools to choose from when designing their engagement efforts, with new technologies providing for greater diversity of ways to engage and connect with target populations. New challenges and opportunities are being presented by the emergence of online spaces, with established methods of public participation beginning to adapt to these new realities (Chilvers & Kearnes, 2020). With online spaces becoming a viable option as a basis for meetings during collaborative engagements - if not preferred outright by some practitioners - there are important experience implications for both practitioners and participants.

The three main meeting format types for a given engagement effort are in-person, online, and hybrid. Broadly speaking, practitioners can consider the different process tradeoffs to determine which format is most appropriate for their effort. In-person engagements are ideal when costs are not a significant factor and practitioners are interested in community building. Online engagements are ideal for engagements requiring a quick planning time and when traveling is a potential barrier to engagement. Hybrid engagements offer a mix of options, being the hardest to plan and having the greatest staffing needs, but giving participants the most option flexibility.

References

California Department of Conservation. (2022). *Multibenefit Land Repurposing Program Regional Block Grant Project Summary*.

California Department of Transportation. (2022). *IIJA Infrastructure Investment and Jobs Act Policy Narrative*. https://calsta.ca.gov/-/media/calsta-media/documents/2022-caltrans-iija-policy-narrative-finala11y.pdf

Chilvers, J. & Kearnes, M. (2020). Remaking Participation in Science and Democracy. *Science, Technology, & Human Values*, 45(3), 347-380. https://doi.org/10.1177/0162243919850885

Kaner, S. (2014). *Facilitator's Guide to Participatory Decision-Making*. Jossey-Bass.

Katsonis, M. (2019). Designing effective public engagement: the case study of Future Melbourne 2026. *Policy Design and Practice*, 2(2), 215-228. https://www.tandfonline.com/doi/epdf/10.1080/25741292.2019.1621032?needAccess=true&role=button

International Association for Public Participation. (n.d.). *IAP2 Spectrum* [Infographic]. Iap2.org. https://iap2usa.org/resources/Documents/Core%20Values%20Awards/IAP2%20-%20Spectrum%20-%20stand%20alone%20document.pdf

Nabatchi, T., & Amsler, L. B. (2014). Direct Public Engagement in Local Government. *The American Review of Public Administration*, 44(4 supplemental), 63S-88S. https://doi.org/10.1177/0275074013519702

Milić, J. V., Ehrler, B., Molina, C., Saliba, M., & Bisquert, J. (2020). Online Meetings in Times

    of Global Crisis: Toward Sustainable Conferencing. *ACS Energy Letters*, 5(6), 2024-

    2026. https://doi.org/10.1021/acsenergylett.0c01070

Moore, K. R. (2016). Public Engagement in Environmental Impact Studies: A Case Study of

    Professional Communication in Transportation Planning. *IEEE Transactions on*

    Professional Communication, 59(3), 245-260.

    https://ieeexplore.ieee.org/stamp/stamp.jsp?tp=&arnumber=7515000

Reed, M. S., Vella, S., Challies, E., de Vente, J., Frewer, L., Hohenwallner-Ries, D., Huber, T.,

    Neumann, R. K., Oughton, E. A., del Ceno, J. S., & van Delden, H. (2017). A theory of

    participation: what makes stakeholder and public engagement in environmental

    management work? *Restoration Ecology*, 26(S1), S7-S17.

    https://doi.org/10.1111/rec.12541

Rowe, G., & Frewer, L. J. (2005). A Typology of Public Engagement Mechanisms. *Science,*

    Technology, & Human Values, 30(2), 251-290.

    https://doi.org/10.1177/0162243904271724

Rubin, S. (2023). *RUBIN Race & Equity Focused Public Engagement Model* [unpublished guide

    for public agency practitioners seeking to craft an equity-conscious collaborative

    engagement effort].

Saliba, M. (2020). Getting to grips with online conferences. *Nature Energy*, 5, 488-490.

    https://doi.org/10.1038/s41560-020-0656-z

Schlozman, K. L., Verba, S., & Brady, H. E. (1999). *Civic Engagement in American Democracy*. Brookings Institute Press.

Stefanoudis, P. V., Biancani, L. M., Cambronero-Solano, S., Clark, M. R., Copley, J. T., Easton, E., Elmer, F., Haddock, S. H. D., Herrera, S., Iglesias, I. S., Quattrini, A. M., Sigwart, J., Yesson, C., & Glover, A. G. (2021). Moving conferences online: lessons learned from an international virtual meeting. *Proceedings of the Royal Society B*, 288. http://doi.org/10.1098/rspb.2021.1769

Yoshioka, T., Abramovski, I., Aksoylar, C., Chen, Z., David, M., Dimitriadis, D., Gong, Y., Gurvich, I., Huang, X., Huang, Y., Hurvitz, A., Jiang, L., Koubi, S., Krupka, E., Leichter, I., Liu, C., Parthasarathy, P., Vinnikov, A., Wu, L., … Zhou, T. (2019). Advances in Online Audio-Visual Meeting Transcription. *IEEE Automatic Speech Recognition and Understanding Workshop (ASRU)*, 276-283. http://doi.org/10.1109/ASRU46091.2019.9003827

Appendix

Interview Questions

1. When considering collaborative engagement design, what are the most important factors to consider?

2. To what extent is technology a limiting factor for in-person meetings? Virtual ones? Hybrid?

3. In your view, what are the biggest advantages to holding in-person engagement efforts as opposed to virtual ones?

4. What opportunities do virtual engagements offer that differentiate them from in-person?

5. From a planning standpoint, what differentiates in-person, virtual, and hybrid engagement design?

6. How have you observed the user experience to change between the different modes of engagement?

7. Do collaborative engagement participants typically express their preferences for engagement format - and if so, to what extent is it appropriate to consider participant preference among other factors?

8. In a tradeoff between breadth of engagement (number of people involved) and depth of that engagement (loosely, participation enthusiasm and quality of feedback), which is most important to strive for in collaborative engagement efforts?

9. Does the timeline available for an engagement make a difference when considering format type?

10. When does it make sense to switch up or alternate meeting formats within the same engagement process?

Case Study Questions

1. To what extent was participant experience considered when designing this engagement process?

2. What were the most important design factors (i.e. available technology) and limitations (i.e. costs) considered in the process design?

3. Were participants surveyed during or after the process for feedback on their experience?

4. Were there lessons learned during this process that would influence design of a similar, future engagement?

5. Considering the following criteria, which aspects of this process do you think were strengths and which are areas in need of improvement: equity of engagement, cost of hosting engagement, depth of engagement, breadth of engagement, technological integration, secondary engagement characteristics (i.e. ability to network or share best practices), and staff support demand.