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PRACTICE INSIGHTS

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Next generation engagement: Setting a research agenda for community engagement in Australia's infrastructure sector

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Abstract

The global infrastructure sector is thriving. But community opposition to major projects is also rising. Australian examples demonstrate the policy backflips, reputational pitfalls, and financial costs of project delays and cancellations. Failures to engage communities are surprising, given the widespread adoption of community engagement (CE) principles and the increasing professionalization of CE roles. If acceptance of the need for CE in infrastructure is more widespread than ever, why are we not seeing smoother project delivery, reduced protest, and cost savings? This paradox is the driving force behind the Next Generation Engagement project. This article offers a practitioners' perspective to introduce the project and present key findings from its 12-month pilot study aiming to establish a transdisciplinary, industry-led research agenda for CE in Australia's infrastructure sector. The article contributes to our understanding of CE literature and research codesign. It maps out the top five priority themes for future research to support infrastructure selection, planning and delivery.

The research agenda provides guidance for policy, and practice, offering consolidated, research-based insights for policymakers and practitioners.

KEYWORDS
codesign, community engagement, infrastructure, research agenda

1 | INTRODUCTION

Australia's infrastructure sector is thriving. And it is not alone. Worldwide, population growth drives increasing requirements for new and upgraded infrastructure, representing energy, water, transport, housing, and social needs. Responsibility to deliver these resources stretches across diverse industries, including mining, extractives, electricity, water, and sewerage, architecture, construction and urban planning, engineering, and social welfare. The McKinsey Global Institute estimates that US$57 trillion is needed in global infrastructure investment up to 2030 simply to keep pace with demand (Dobbs et al., 2013). This is even before addressing considerable gaps in asset maintenance.

In Australia, the focus of this study, current estimates show spending of more than AU$100 billion on infrastructure projects (hereafter, "projects") in development (Infrastructure Australia, 2018; NSW Government, 2017b; Victorian Government, 2017).[1] In 2017, the Commonwealth Government budget "fast-tracked" a range of road, rail, and other projects to the tune of AU$70 billion to 2026–2027 (Australian Commonwealth Government, 2017).

The large investments required to deliver Australia's infrastructure needs equate to big business. In 2014–2015, major infrastructure industries represented 10.2% of Australia's GDP (DIRD, 2015). The number of public–private partnerships (PPPs) is increasing steadily to meet demand. Commonwealth Government figures show that private sector involvement in infrastructure construction has increased from less than half a percent of GDP in the late 1980s to more than 1.5% by 2015 (DIRD, 2015).

Industry growth and the substantial investments that come with it, however, do not mean that all projects are acceptable to Australian communities. PPPs, for instance, have triggered a range of policy questions (Hodge, Greve, & Boardman, 2017), accountability issues (Stafford & Stapleton, 2017), and socioeconomic critique (Zwalf, Hodge, & Alam, 2017; see *AJPA* September 2017 Special issue on PPPs). Recent examples from around the country show that many communities are unhappy with the way certain projects have been proposed or delivered (De Martin and Moyan, 2017). From the industry perspective, social opposition contributes to increased costs and barriers to infrastructure delivery, including substantial delays and cancellations (Harris, Hodges, Schur, & Shukia, 2003). This is not to mention the stresses and difficulties placed upon project staff. From communities' perspectives, there may be dissatisfaction about how they are engaged in the planning and delivery of major projects, or simply with the projects themselves.

Recent studies suggest that community opposition and protest, on all manner of public matters and policy issues, is on the rise (Carothers & Youngs, 2015). Where community protests result in the temporary or even permanent closure of major infrastructure, such as mines or gas fields, studies estimate costs of up to US$20 million per week (Davis and Franks, 2014). The costs to communities in opposition are also high but less simple to quantify. Many of those who oppose projects do so in their own time, as volunteers working on behalf of other locals (Mati, Fengshi, Edwards, Taraboulsi El, & Smith, 2016). Studies in engagement demonstrate that such situations impact communities across a variety of

indicators (Cox, Frere, West, & Wiseman, 2010). Oppositional relationships also take a toll on individuals, contributing to increased stress levels, possible time away from paid work, reduced resilience, and a sense of lack of control (Vella-Brodrick, 2017).

Projects also beget environmental costs, often experienced as a loss of visual amenity, decreased land access, or substantial changes to an environment communities call home. The resulting "solistalgia"—a sense of distress induced by environmental change and a longing for the preexisting landscape—is very real (Albrecht, 2005).

Escalating protests and related project costs signal a breakdown in project–community relations. Yet the current infrastructure boom is occurring within the most advanced community engagement (CE) environment to date. Corporate social responsibility (CSR) and related sustainable development practices are widely institutionalized, especially by multinational corporations of the type responsible for infrastructure delivery (Bice, 2017). CE, while not yet formally professionalized, is a widely recognized sector with an identifiable cohort of experts (Mayo, Hoggett, & Miller, 2007), its own international associations, including the International Association for Public Participation (IAP2) and the International Association for Impact Assessment (IAIA), and shared guidance to support best practice (e.g., IAP2, 2015; Vanclay, Esteves, Aucamp, & Franks, 2015). Training in CE practice is readily available, and CE roles are being defined progressively on their own merit, having been largely disaggregated from communications or marketing roles. An aligned but distinct field of public participation professionals are establishing a "deliberative market" (Hendriks & Carson, 2008) through which communities are proactively engaged in deliberative democratic processes to inform decision making (Bherer, Gauthier, & Simard 2017). In principle, widespread acceptance of the need for CE should result in smoother project delivery, reduced protest, and cost savings. So, why do recent Australian experiences suggest otherwise?

This paradox drives the Next Generation Engagement project (Next Gen), a transdisciplinary initiative that seeks to deliver research evidence to support more joined-up understanding of the linkages between communities' involvement and successful infrastructure selection, planning, and delivery. This article offers a practitioner's perspective to introduce the project and its early work. The 12-month, national pilot study into CE in Australia's infrastructure sector, detailed here, involved research codesign to define a priority research agenda to progress work on the key risks, challenges, and opportunities facing the sector. In outlining the codesign process, the article contributes to methodological literature concerning an emerging field of research codesign. The research agenda generated through this process—the first of its kind—contributes to a shared understanding of the top five priority research needs to inform the Australian infrastructure sector's involvement of and impacts upon communities. Pursuit of this research agenda can assist policymakers and practitioners to generate and access the insights required to support successful infrastructure selection, planning, and delivery.

Before discussing the research agenda, it is helpful to understand what CE is and is not, and how an improved understanding of CE theory and scope offers insights for practitioners. This article, therefore, also contributes to a growing body of literature on the practice, regulation, and relevance of CE to successful project planning and delivery (Cowell and Devine-Wright, 2018; Innes & Booher, 2004). This includes emergent thinking on coproduction (Alford & Yates, 2016) and PPPs (El-Gohary, Osman, & El-Diraby, 2006; Hodge et al., 2017), as well as the professionalization of CE (Kemp & Owen, 2013) and growing concerns about a "social license to operate" (Bice, 2014). In exploring this diverse literature, the article seeks to integrate insights from different disciplinary perspectives, all of which inform CE but many of which rarely speak to one another.

The discussion is guided by the following questions: Broadly, given the depth and breadth of infrastructure challenges facing Australia today, what research is needed to support improved CE policy and practice? In attempting to answer this question, the paper also considers how a transdisciplinary

approach to understanding the risks, challenges, and opportunities for CE in infrastructure might generate a holistic research agenda? Specifically, how can the direct involvement of those industry, government, and civil society professionals working throughout the sector's value chain (i.e., from investors to engineers to CE specialists) collaborate to create a meaningful and robust research agenda?

The paper proceeds by identifying key ideas from CE literature, including the relationship of practice to policy design and delivery. Considerable attention is then given to the project's novel method before the research codesign findings are presented. Following this, the five priority research themes for CE in Australia's infrastructure sector are detailed, and future research directions are presented alongside areas for policy and practice focus.

2 | UNDERSTANDING COMMUNITY ENGAGEMENT: FOUR KEY FIELDS OF LITERATURE

A substantial literature base provides insights into the theory and practice of CE (Arnstein, 1969; Day, 1997; Innes & Booher, 2003). First and foremost is the consideration of what, exactly, CE is. For purposes of this research, CE refers to commitments and activities to involve community members in policy and project planning, delivery, or evaluation processes. Such involvement might range from informing communities through direct communication (e.g., newsletters or websites) to fielding questions at town hall forums, from establishment of community consultative committees to deliberative democratic processes (Fischer, 2002). Aligned literature highlights the proactive involvement of communities in public service delivery through nascent practices of coproduction (Alford & Yates, 2016). Indeed, coproduction represents an innovative extension of more traditional approaches to CE in many ways. At its best, coproduction holds the potential to turn traditional consultation on its head by recalibrating the power between "the engagers" and "the engaged."

A full discussion of what CE is and is not is beyond the purview of this article. But it is still important to set out boundaries for what constitutes genuine engagement. Although many CE roles in Australia's infrastructure sector may be located within "Communications" or "Marketing" units of their respective corporations, for instance, CE is not media-focused messaging derived from public relations or marketing. It is not a "spray-on solution" to address or dampen public outrage, nor is it necessarily deliberatively democratic in nature, although it prizes more bottom-up approaches and public participation (Head, 2007, 441). CE is therefore perhaps best understood as "coordinated network" relationships and solutions that prioritize joint planning and programming of autonomous members (Head, 2007), focused on project delivery with reduced or avoided negative impacts and optimized community benefits.

For our purposes, it is also clearly important to consider both how community is defined and how CE relates specifically to the infrastructure sector. Although this research did not focus on defining "community" *per se,* we understand the term as socially constructed, regularly used as a political football and defined differently depending upon stakeholder perspective (Head, 2007). Disparate approaches to how community is defined and deployed are borne out in recent research that looks into national and international efforts to integrate CE into policy concerning infrastructure planning or project delivery (Cowell and Devine-Wright, 2018; Nabatchi & Jo, 2018). Transport, urban planning, and housing scholars contribute to an entire subgenre of research concerning community responses to particular projects (De Martin and Moyan, 2017), planning politicization (Legacy, Cook, Rogers, & Ruming, 2018), and the role of new planning paradigms in what certain scholars argue is a "post-political" era (Legacy, 2015). Each of these contributions points simultaneously to the challenges of defining community and to setting clear boundaries and expectations for CE practice.

The broad CE literature offers insights into values, philosophies, and approaches to inform/involve communities affected by public initiatives (Bohman, 2000). Through these studies, we know that CE is more successful when it prioritizes two-way consultation, rather than unidirectional information campaigns (Gutmann and Thompson, 2009). Such studies demonstrate the importance of community empowerment to influencing decisions in project design and implementation processes (Cowell and Devine-Wright, 2018) and highlight the contributions of CE guidelines to support greater community involvement in decision-making processes (IAP2, 2015). Related literature distills the roles of environmental and social impact assessments in delivering an evidence base for community decision making and outlines how various agreement types may reduce negative project impacts or secure community benefits (Harvey & Bice, 2014; Nish & Bice, 2012). Importantly for this study, these literatures—all of which consider values and philosophies underpinning best practice engagement—speak infrequently to one another.

2.1 | Policy, regulation, and CE

Evidence-based CE approaches are often the result of regulation, with a further subset of literature exploring the relationship between policy mandates and effective CE (Day, 1997; Innes & Booher, 2004). In Australia, many states and territories require stakeholder engagement as part of the approvals process at various project stages (NSW Government, 2017a; Queensland Government, 2018; Victorian Auditor General's Office [VAGO], 2017; NT-EPA, 2013). Very recently, several states have begun investigating ways to improve engagements driven by these requirements. New South Wales, for instance, recently completed an inquiry into stakeholder engagement practices as required in impact assessments related to the Secretary's Environmental Assessment Requirements for state significant resource projects (NSW Government, 2017a). Around the same time, a VAGO report recommended that a "whole of government framework to provide the Victorian public sector with guidance and parameters for public participation" be developed, including "guidance about governance and oversight, capability development, access to expertise and monitoring, and evaluation mechanisms" (VAGO, 2017, p. xi).The VAGO recommendations reflect concerns in critical literature that point out the lack of accountability mechanisms in much CE (Innes & Booher, 2004).

Critical literature also questions the effectiveness of various engagement efforts (Abelson et al., 2003; Cowell and Devine-Wright, 2018), the equal participation of vulnerable or Indigenous communities (Nish & Bice, 2012), and the extent to which deliberative engagement is meaningful, influential, or in the worst cases, tokenistic (Dryzek, 2000). This literature illustrates that policy and regulation to guide best practice CE remains wanting. Recent, government-led investigations, including those detailed above, however, suggest that Australian governments are interested to address the situation.

2.2 | Digital era CE

We also know that CE is becoming complicated by the geographic boundary-dissolution and increased stakeholder interconnectedness possible through online social media. Recent studies suggest online interconnections are fueling new forms of activism and protest (Einfeld, Bice, & Li, 2018). A small but emerging field of research into digital CE details new modes of engagement, largely through real-time monitoring of satellite-based geographic information systems (Brown & Kyttä, 2014), the use of "big data" or government data-sharing (Desouza & Jacob, 2017; Moon, 2002), and online networks (Mandarano, Meenar, & Steins, 2010). It also notes new challenges in defining affected communities, due to the creation of meaningful virtual "communities" (Sinclair, Peirson-Smith, & Boerchers, 2017).

These studies speak to broader debates concerning "digital era governance" (DEG)—an approach that acknowledges information and communication technology's centrality and its commensurate changes to management systems, citizen interactions, cultures, behaviors, and organizations (Dunleavy, Margetts, Bastow, & Tinkler, 2006). DEG's rise is especially pertinent for PPPs and their related styles of CE, as research in other sectors suggests that private corporations are more active social media participants and consequently more likely to come under community fire via social media (Einfeld et al., 2018). Taken together, literature concerning "digital era CE" demonstrates that CE policies and practices are only further complicated by a need to adapt to the advent of social media and online communities.

2.3 | Social license to operate, social risks, and CE

A separate but very relevant literature interrogates the relationships between projects and a "social license to operate"—the level of acceptance of a policy or project by an affected community (Bice and Moffat, 2014; Moffat & Zhang, 2014). Governments investing in major infrastructure projects appear increasingly interested in a social license, with certain policy instruments highlighting the securing of such a license from communities as vital to project implementation (Bice, Brueckner, & Pforr, 2017). Global studies reveal the costs of lost social licenses (Davis and Franks, 2014) but also caution against adoption of inappropriate CE or development practices as a means to secure a social license (Harvey & Bice, 2014). The CE work necessary to obtaining and maintaining a social license is frequently presented in terms of risk management for projects (Bice et al., 2017), although such sociocultural risk is rarely granted the attention or legitimacy of financial, actuarial, or environmental risks (Haines, 2011). At a very practical level, the work to earn and maintain a social license falls consistently to those in CE roles (Owen & Kemp, 2013).

2.4 | Professionalization of CE

If the social license literature speaks to the centrality of CE to earning project acceptance, a parallel literature details how CE roles function. These studies inform the training, job definitions, and professionalization of CE. They seek to define the perimeters of an emerging profession that regularly struggles for legitimacy alongside the more technical roles necessary to major infrastructure projects, including engineering and finance (Kemp & Owen, 2013). In many instances, discussion of role legitimacy is linked back to difficulties measuring the indirect/intangible effects of CE, leading some to describe the work of CE practitioners as "a black box" (Bice, 2013).

In addition to scholarly work situated primarily in organizational studies, a substantial gray literature also addresses concerns related to defining and supporting CE as a professional practice. Organizations including IAP2 and IAIA provide professional development training (IAP2, 2016). Organizations like these also provide their considerable membership bases (IAIA has approximately 7,000 members; IAIA, 2017) with regularly updated, research-based guidelines, principles, and ethical standards (IAP2, 2015; Vanclay et al., 2015). These documents aim both to encourage and improve best practice but also to provide legitimacy through shared methods, via organizational reputation, and through creation of a global community of practitioners. Research into CE as a profession remains limited, however, with gaps related to the gendered nature of CE roles, lack of information on sector-specific competencies, and limited investigation into educational pathways to foster professional growth.

This necessarily condensed literature review demonstrates the establishment of defining principles and practices; direct relationships between CE, policy guidance and risk management; connections to

evidence bases vital to a social license to operate; critical challenges in measuring engagement impacts and meaningfully including vulnerable communities; and ongoing work to define the profession and raise its profile and legitimacy. The strings of literature reviewed above each offer important contributions but remain stranded in disciplinary silos. Despite a focus on CE, few studies adopt empirical approaches to explore the experiences of those "doing" CE. Additionally, many studies lump various project types together, making it difficult to unpick distinctive social effects particular to certain funding models or project types.

This study is novel in its attempt to draw together key questions, interests, and lessons from across the wider body of CE literature to offer a unique contribution. On the practical side, such attempts to consolidate CE literature are relatively rare, meaning that practitioners may have access only to "siloed" information relative to their particular practice disciplines (e.g., mining, water, energy). By adopting a more holistic approach to engagement and integrating the literature, it may be possible to make progress against the substantive questions driving the research in a way hindered by disciplinary-specific approaches to CE. CE is clearly a worthwhile and central concern in the selection, planning, and delivery of contemporary infrastructure. It is within this fascinating but complex context that the Next Generation Engagement research project operates.

3 | THE NEXT GENERATION ENGAGEMENT PROJECT

Next Gen is the largest study of CE in infrastructure in Australia, to date. Launched in 2017, the project's year-long pilot phase aimed to better understand the literature-identified gap between best CE principles and on-ground practice for infrastructure selection, planning, and delivery. Over time, Next Gen aims to deliver a robust, industry-led, shared evidence base to inform the future of CE for policy and practice in the infrastructure sector.

Next Gen represents the expertise, experience, and advice of over 200 individuals working in CE, government, peak industry bodies, institutional investors, project planners and proponents, sector recruitment, and civil society. The seed of this project formed in mid-2015 when a small group of CE practitioners and researchers came together with a shared concern about the issues detailed above. From its earliest stages, the project sought to involve the spectrum of stakeholders related to these issues. Fueled by a belief in the power of local knowledge and experience, the project aimed to establish a research agenda for which all relevant parties had "skin in the game," building commitment for policy and practice change and improvement.

3.1 | Method overview: Research codesign

Next Gen adopts a novel research codesign approach to tackle the difficult, shared social challenges at its heart. Although definitions vary, codesign typically involves efforts to understand "users' needs," paired with agile, iterative, and responsive research project creation (Kimbell & Bailey, 2017). Methods used in codesign vary widely but may include interviews, field studies, customer maps, feedback cycles, and stakeholder engagement (Kimbell & Bailey, 2017).

Historically, codesign for public policy has focused largely on digital platforms and DEG. This basis in the digital has meant that "prototyping" is common in codesign (Kimbell & Bailey, 2017). The codesign detailed in the following sections is focused more on "ideation"—the process of collaboratively forming new ideas about the issue at hand—than prototyping (Sanders & Stappers, 2008), with the latter expected to occur later, in specific research projects within the broader program of

work. Policymakers and practitioners in a variety of sectors, beyond infrastructure, could apply these methodological insights and approaches.

A codesign approach advances an innovative means of answering this article's questions about the research needed to support improved CE policy and practice. It also facilitates exploration of the relevance of a transdisciplinary approach to understanding the risks, challenges, and opportunities for CE in infrastructure, and the ways in which direct involvement of those industry, government, and civil society professionals working throughout the sector value chain might contribute to a meaningful and robust research agenda.

Importantly, the experience detailed in this article suggests that codesign may serve as a helpful first step to coproduction, the actual *delivery* of public services through multistakeholder involvement (Alford & Yates, 2016). Thus, the project's method is inherent both to its value to communities and to its contributions to participatory research methods. The project's delivery of research findings owned by participant codesigners (hereafter, participants) is unique. Codesign with multiple stakeholder groups offered the most appropriate method for the project, as it directly involved external stakeholders and supported the defining of a research agenda through a variety of perspectives. Codesign similarly to that described below could support the future of industry–government–civil society research collaboration.

3.2 | Participant ownership through research codesign

Traditional research—even that which actively involves diverse stakeholders—usually begins with predefined research questions and priorities, determined by the chief investigator(s) (CIs). Although such an approach holds obvious advantages, it also means that project priorities and aims are influenced substantially by one or a few individuals who are often approaching an issue from outside. This implicitly privileges particular disciplinary perspectives and biases (Freudenberg & Tsui, 2014). Traditional research also largely positions participants as objects. That is, participants are the focus of the research, not its explorers; the recipients of findings, not the owners of those findings.

The codesign process sought to generate a research agenda over which participants have rights and influence, and which directly responds to their most pressing issues, as defined by them. To achieve this, the CIs dedicated several months to securing project partners representing the scope of Australia's infrastructure sector value chain. The project's 25 official partners included institutional investors, government, CE consultancies, major engineering and project management firms, intergovernmental agencies, peak industry bodies, and leading international civil society groups. Ultimately, over 200 professionals representing 82 organizations contributed to the codesign.

3.3 | Method details

Research codesign involves bringing the diverse stakeholders related to a research topic together to complete a series of interactive, facilitated activities, usually through steps of “discovery and insight”; ideation; prototyping; and evaluating and scaling (Evans & Terry, 2016; Sanders & Stappers, 2008). Although codesign dates back to the 1930s in the United States, its uptake by university researchers remains limited (Kapucu, 2016). Next Gen focuses primarily on discovery, insight, and ideation, pioneering a codesign method developed by two of the CIs over a 2-year period (Neely, Bortz, & Bice, 2019). This method builds the capacity of participants through a series of workshops where they are introduced to a small number of creative, iterative research design processes, including group model building (systems thinking), stakeholder and issues mapping, and research question design.

TABLE 1 Next Generation Engagement: Key activities and participant numbers

Next Generation Engagement: Research codesign process	
Activity	**Participants**
• National survey of professionals working in infrastructure	• 123 survey respondents
• National series of six codesign workshops held in Melbourne, Sydney, Brisbane, and Perth with participants testing a "Situation Analysis" developed by the team	• 182 participants
• Delivery of a draft "Research Priorities Summary" report to partner organizations	• 25 partner organizations
• Follow-up workshops with partner organizations to feedback and shape the draft report	• 32 participants
• Presentation of draft findings at key industry events to seek feedback (e.g., engage2Act Unconference, IAP2, Australian Institute of Project Management)	• over 500 participants

4 | NATIONAL SURVEY AND "SITUATION ANALYSIS"

The project began with a national survey of professionals working in Australia's infrastructure sector. The survey focused on experiences of project opposition and perceptions of CE's role relative to project success, social license, and risk management. Questions also focused on experiences of project delays, substantial variations, "mothballing" or cancellations, and the factors attributed to these outcomes. The 123 survey responses were analyzed using SPSS software.

Survey findings were incorporated into a "Situation Analysis" presented to participants to provide up-to-date information to inform their codesign (discovery and insight), assisting them to build the skills and knowledge necessary to participate meaningfully in the process (Burkett, 2012).[2] The analysis also included a review of research literature and government reports. The document was graphically designed to include visual summaries and was written in a conversational tone (see Figure 1). It was publicly available on the project's website and online deliberation platform to allow for comment prior to attendance at the codesign workshops.

The project was formally launched with official partner organizations in Melbourne and Sydney in May 2017. These launch events celebrated the coming together of diverse groups with a shared interest in improving CE. They also served as the first two of six national codesign workshops (see Table 1).

During the workshops, participants were facilitated through a series of three research design activities:

- questioning assumptions and research question design,
- opportunities and challenges for CE relative to major project phases (timeline exercise),
- group model building for successful CE practice (systems thinking).

Prior to completing these activities, the CIs presented the national survey findings and takeaways from the "Situation Analysis." Instructions on how to complete each of the activities were provided. The activities encouraged interaction via a variety of tools and aimed to get participants up and moving. This included:

FIGURE 1 Next Generation Engagement project situation analysis: Snapshot [Colour figure can be viewed at wileyonlinelibrary.com]

Source: Full text available: www.nextgenengagement.org

- a time-series set of color posters that literally walked participants through key infrastructure project phases and on which they marked up CE opportunities and challenges,
- a series of posters presenting research assumptions and possible questions which participants were invited to edit,
- discussion tables with iPads preloaded with discussion questions in Padlet, a collaborative notetaking software,

- a group model building activity.

The placement of colorful, diverse activities around the rooms animated participants to mingle with one another and they were actively encouraged to mix in groups with those from different backgrounds. Each workshop was facilitated by a recognized CE expert, under instructions from the research team to push participants by asking difficult questions. Researchers floated among participants to offer clarifications and assistance.

Data from all activities were analyzed following each workshop. Iterative findings were therefore presented to participants at every subsequent workshop, allowing them to build on their colleagues' prior work. This iterative analysis offered a form of prototyping, through the (re)presentation of key issues and questions in each subsequent workshop.

5 | DATA ANALYSIS AND DRAFT REPORT COMMENTARY PERIOD

Workshop data were analyzed using a variety of methods, including thematic qualitative analysis of time-series opportunities and challenges and research assumptions and questions. Systems diagram analysis using Vensim software was applied to the collaborative group model building data. Further literature searches and reviews of government documents were completed to support the emerging findings. A draft "Research Priorities Summary" report, distilling the research codesign outcomes into five priority research themes was created. Like the "Situation Analysis," this report was graphically designed and written in an accessible tone, aided by visuals and infographics (see Figure 2).

The draft report was then circulated to all participating organizations for comment. Two further, face-to-face feedback workshops were held with a total 32 participants. After a 1-month period for participants' comments, the report was revised and opened for public comment on the project's website and online deliberation platform for 6 weeks. During this time, the CIs also presented the interim findings at several industry forums. Feedback from this period was further incorporated into the final report.

During the writing and feedback period, the CIs also released a series of "expert commentary" papers to participants via regular e-newsletters. The papers were commissioned from leading researchers representing a variety of disciplines, including urban planning, psychology, business, and sustainable development. Release of the papers ensured that participants remained engaged in the project while the research team was completing analysis, and also offered participants diverse insights on issues they had identified as important.

6 | INSIGHTS FOR POLICYMAKERS AND PRACTITIONERS: FIVE PRIORITY RESEARCH THEMES

The cocreation defined a research agenda for CE in infrastructure, as articulated by those working in and with the industry. The agenda details five priority research themes vital to reducing the gap between best CE principles and on-ground practice, thereby addressing the project's foundational motivation. The agenda facilitates inquiries to inform how CE might better support the delivery of needed infrastructure more efficiently, while mitigating negative impacts and delivering benefits that communities desire. By establishing a robust research agenda for CE in infrastructure, at least in Australia, researchers are in a stronger position to address industry-defined needs. Importantly, and reflective of the project's

FIGURE 2 Next Generation Engagement research priorities summary: Snapshot [Colour figure can be viewed at wileyonlinelibrary.com]

Source: Next Generation Engagement project pilot phase, 2017.

commitment to sustained participant involvement in research, the project's codesigners have ongoing roles in future stages (Armstrong & Alsop, 2010; Martin, 2010).

Each of the five research themes identified is tied to a vision for the next generation of CE, outlined in the following discussion (see Figure 3). The focus and guiding questions defined in each of these themes offer insights for policymakers and practitioners involved in infrastructure selection, planning, and delivery.

FIGURE 3 Five priority research themes for community engagement in infrastructure [Colour figure can be viewed at wileyonlinelibrary.com]
Source: Next Generation Engagement project pilot phase, 2017.

6.1 | Theme 1: Value

Research findings show that CE lacks the recognition and influence of other project disciplines. In other words, it remains undervalued and clear evidence to articulate its value remains absent. This is despite the growing scholarly literature and the many recent practical gains made by CE. For example, participants reported progress over the past two decades related to greater acceptance of CE as a vital component of project delivery, formalization of CE roles, and increases in the number of individuals dedicated to the practice. Yet, participants also stated, "Success is [still] measured by 'on-time and on-budget', not services and community outcomes." Participants suggested that this situation is partly reflected in common funding arrangements, where funding for engagement is typically less than 1% of project budget on major projects of more than AU$1 billion. According to participants, resourcing for CE generally only increases with community outrage, leading to situations where CE is seen as a tool to address or mitigate costs incurred, instead of being valued as a proactive means of cost avoidance.

Findings related to the value of CE suggest that a better understanding of CE's value and consequent integration into the entire project lifecycle is needed. This will require a holistic approach to tackling CE challenges and optimizing benefits. Key issues pinpointed for research attention include the need for shared data on completed projects' performance and on how chosen engagement approaches impact stakeholder outcomes and project performance. Participants also voiced a desire for a longer term focus in decision making, shifting a common focus on "announceables" and "on-time, on-budget delivery" toward long-term outcomes.

The findings also suggest that future research has an opportunity to improve understanding of the negative net impact of poor or limited engagement with those directly impacted by projects. Such work might provide evidence to shift current norms commonly used to value project success.

Further findings reveal a strong desire for improved understanding of CE as a professional discipline and better recognition within organizations. Participants consistently stated that, especially compared to more traditional, "technical" disciplines, such as engineering or finance, CE lacks recognition and legitimacy. Research into the value of CE practice could help to make stronger cases for its worth to project delivery.

6.2 | Theme 2: Measurement

Findings reveal there is still much work to be done to measure the key factors contributing to community-related project costs and delays, and the outcomes of CE. On the inputs side, participants stated the sector needs tools to accurately price social risk to measure and possibly predict its impact on projects. Questions developed, for instance, included: how might social risk be measured and costed in a way that can be integrated with more traditional risk assessments, but without necessarily defaulting to cost–benefit analyses? How might data concerning social risk be used to inform estimated "days delayed" and conditioning costs? How might social risk be costed while also allowing for qualitative data and the consideration of sociocultural intangibles?

Many participants also referred to a "social license to operate," noting that project proponents, including government, consistently set expectations that a project will earn and maintain a social license. Yet the concept remains contested and its measurement unclear. Participants noted that better understanding and measurement of a social license is important for both project developers and affected communities.

For many participants, better measurement of critical project components related to CE, including social risk and social license, was linked directly to better demonstrating CE's value. As one participant codesigner said, "You can price a beam or a bridge, you can estimate the design life of an asset, but until we can deliver the same quantifiable data about engagement, we will never be on the same footing as disciplines like engineering or finance." Findings demonstrate, however, that participants currently lack the tools necessary to evaluate the impact of CE on project performance and to communicate this impact.

6.3 | Theme 3: Regulation and policy

The regulation and policy settings surrounding major projects were also identified as priority research concerns. Participants noted a need for efficient regulation and policy to support the integration of best practice CE into project selection, planning, and delivery. Findings demonstrate these concerns are not limited to the integration of CE within the infrastructure lifecycle but also to broader policy and regulatory concerns.

Policy stability emerged as a central concern within the regulation and policy theme. Participants reported that policy instability can affect engagement quality. This concern was also borne out by the earlier findings from the national survey. Here, survey respondents identified "regulatory and planning issues" as the second-most influential contributor to project delays, mothballing or cancellations, closely following "stakeholder and community pressure." Workshop participants saw these issues as closely intertwined and cited policy uncertainty and election cycles as critical factors in triggering a "declare and defend" approach to CE. Policy differences across jurisdictions further complicate this issue. As one workshop group wrote, "Each project seems to have differing policies—there is a need for a national policy [for infrastructure planning and delivery]."

Both the national survey and workshop findings confirmed that policy uncertainty is seen not only as a major inhibitor to successful project delivery but also as an obstacle to attracting private sector investment. Recent research from the Singapore-based EDHEC (*École des Hautes Etudes Commerciales du Nord*) Infrastructure Institute further supports this finding. EDHEC found that "public policy reversals and the enforceability of contractual claims" are a main inhibitor to institutional investment in infrastructure, globally (EDHEC Infrastructure Institute, 2016).

Infrastructure projects' politicization is another major issue in need of research. Participants acknowledged that politicians are under increasing pressure due to the 24-hour news cycle,

changing stakeholder environments, and increasingly reactive electorates. As one workshop group reported, "…CE practitioners are subject to pressures misaligned with the timing and relationship-formation vital to strong engagement." Although politicization is part of the reality of today's public infrastructure delivery, it can detract from CE practitioners' ability to focus on and deliver best practice. As another group suggested, attention is often focused on short-term political wins "because politics focuses on announcements and the next election. And we don't have the data to show if the value of engagement outweighs the political risks."

Finally, findings suggest that a better understanding of regulation and policy is closely linked to questions around project timing. Participants identified a range of challenges related to this as early as the "problem definition" phase, including: "lack of bipartisan support of strategies and long-term bipartisan commitment to strategies," "Minister's office and project owner fearing the hard conversations," and this early stage being driven by "political and technical imperatives," without CE.

Overall, the research codesign identified that CE would benefit from research to identify stronger regulatory or policy structures to support best practice. Participants stated that, "Strategic planning and policy settings, including governance, resourcing and budgets, [could help to] set an accepted understanding of effective engagement." Recently, strong arguments, including from VAGO (2017), have suggested that engagement-focused regulation and policy structures can help to embed best practice engagement. Aims of going "beyond compliance" are *de rigueur* for most projects today. Yet best practice CE remains an optional add-on, at least as far as regulation is concerned. Or, in the words of one workshop group, "[There are] no legislation 'must-dos', i.e. like safety and environment, only EIS consultation requirements." The need for research to inform better regulation and policy guidance is critical.

6.4 | Theme 4: Timing and approaches

Participants recognized that timing and approaches to engagement affect project performance and community outcomes. But they also reported that evidence is needed to identify the best timing or approaches for a particular project or type of project. Aligning CE approaches and timing with project types and risks represents a fourth theme in the research agenda.

Workshop participants represented certain of Australia's most knowledgeable leaders in the CE field. These individuals regularly apply their in-field experiences to determine the best ways to engage communities. Findings suggest, however, that substantial value could be gained through research focused on identifying the timing and styles of CE that work best in particular project types, policy settings, or geographic locations. Findings also suggest that combining a better understanding of social risk profiles with the existing toolbox of CE approaches could support evidence-based, strategic matching between the two (without becoming overly prescriptive). If risk profiles and engagement approaches could be better understood and aligned, this knowledge could also inform engagement planning and improved assessment of whether certain approaches are likely to be successful in particular situations.

The timing of engagement on a project proved to be a contentious issue in the consultation. On the one hand, participants argued that "too early can be problematic, a level of pre-work is required." Others in favor of early engagement, however, suggested that stakeholders should be part of the conversation "at the point of options analysis," that is, even before a particular project design is chosen. Participants who fell into this group consistently stated that stakeholders were "not being involved early enough." It was noted that engagement practitioners rarely have a significant role in preliminary risk assessment or business case development and participants suggested this contributed to the lack of consideration of sociopolitical risk as part of project design. Questions about whether engaging too early would lead

to greater community comfort or stoke concerns were also prominent when discussing the timing of engagement.

Findings supporting the need for research into timing and approaches also suggest that CE needs to be better integrated throughout the project lifecycle. Participants reported that, in certain instances, late mobilization or premature winding back of the engagement team resulted in lost value and increased costs. Findings indicate there is often a lack of budget allocated to the problem definition and closeout phases. Participants suggested that evaluation of engagement could be a particularly helpful component of lifecycle integration, capturing "lessons learned, aligned to best practice engagement methods." Overall, findings suggest that current approaches to CE are often based on experience, trial, and error. Research could provide data to inform more strategic or systematized engagement.

6.5 | Theme 5: Professionalization

The fifth priority research theme concerns a need for research into the professionalization of CE. Here, research could explore the potential relationships between recognition of CE as a legitimate profession and the current state of tertiary and other qualifications available. Research within this theme could also help to inform practice standards and guidance documents.

Interestingly, participants varied in their assessment of whether CE currently has a professionalized cohort of practitioners. The formalization of CE as a profession was generally seen as crucial to the practice's legitimization. Professionalization was also seen as a vehicle for deeper integration of engagement into organizational structures and cultures, including facilitating a greater number of engagement practitioners to enter executive and senior executive leadership roles in the same manner as their engineering, finance, and project management counterparts.

A call for tertiary qualifications in CE arose repeatedly throughout the workshops, focused primarily on postgraduate-level course offerings. This raises important questions about the potential for universities or peak industry bodies to support curriculum design and course development. Research is needed to fully articulate the range of educational and training options that may contribute most to the professionalization of CE.

Participants also suggested that professionalization could improve the effectiveness of CE practitioners within their organizations. They noted that CE roles commonly hold a "lesser status" in their organizations, as compared to roles such as engineering. This situation often plays out through practitioners being absent from input into early project phases, including into the contracts that shape the stakeholder-relationship performance of contractors and consultants. Engagement practitioners are also often absent from the senior leadership table and it remains unusual to achieve career progression through to roles such as project director or the senior executive.

Power, capacity to "gatekeep," collective activity for the public good, a shared professional culture, existence of professional/practitioner groups, and exclusionary power have all been demonstrated as equally important components of professionalization (Saks, 2012). Research conducted within this theme has the opportunity to contribute to each of these considerations.

7 | CONCLUSION: OPPORTUNITIES FOR COMMUNITY ENGAGEMENT IN AUSTRALIA'S INFRASTRUCTURE SECTOR

This paper offers insights for policymakers and practitioners navigating one of the most intensive periods of major infrastructure delivery in Australia's history (DIRDC, 2018). The five priority research

themes outlined here offer consolidated, industry-informed guidance on the most critical challenges and opportunities for CE in Australia's infrastructure sector. Pursuing this research agenda could deliver strategic information and evidence to support more successful infrastructure delivery, at least in terms of CE. The early work of Next Gen has also made three important contributions to the body of knowledge for CE in infrastructure. First, it sought to engage and integrate diverse research literature to arrive at a more holistic understanding of the challenges and opportunities for contemporary CE. This work allowed the project to set out the terrain of concerns informing the research codesign.

Second, the work contributed an innovative, research-based method of codesign, involving diverse stakeholders as participant codesigners to generate a research agenda with questions steeped in practical expertise. The study's results reflect shared industry experience and research perspectives as diverse as urban planning, economics, CE, engineering, project finance, marketing and communications, social and policy science, psychology, and project management. Through this wide-reaching engagement, it nurtured ownership of the research process and findings, facilitating long-term research program sustainability via stakeholder buy-in. In this way, the project offers methodological and practice contributions.

Although broad in scope and ambition, the project's early stages have also had limitations. Perhaps most importantly, the research has yet to directly engage those communities affected by infrastructure projects. This particular omission was purposeful on the part of the CIs. Many communities throughout Australia are grappling with a highly intensive period of infrastructure delivery, involving them in a range of consultations and requiring their time. Until such point that the research agenda was more clearly defined, the researchers deemed it inappropriate to ask more, free time of members of the general public. In future stages, where specific research projects are rolled out, communities will be actively engaged in the research, as appropriate and valuable to them, as well as the researchers. The pilot phase was also limited in that its broad approach to Australia's infrastructure sector meant that the discussion was kept at a national and sector level, as opposed to an international scope or particular examination of various funding or project types. The sector's size also meant that certain subsectors, such as telecommunications, were not necessarily represented directly by Australia's major telecommunications firms, but certain research participants brought contracting experience in the telecommunications subsector.

Future work will need to consider the differences between different funding approaches and project types, as well as the capacity to incorporate community members and more subsectors. Future work in this project will also expand to an international scope. This will facilitate an improved understanding of how CE practice may be socioculturally specific. Such investigations into the implications of local culture to community-related practice have been fruitful in relation to aligned areas of "corporate social responsibility" (Turkina, Neville, & Bice, 2015). It is likely that similar, culturally embedded variations in CE practice may influence the style and effectiveness of interventions or research codesign and coproduction processes like those illustrated here.

Overall, the project contributed substantial, evidence-based research findings delineating a priority research agenda to advance CE in the infrastructure sector. Research guided by this agenda holds the potential to bridge the gap between best practice CE principles and on-ground practice, at least in the Australian context. Pursuit of this research agenda could deliver results to inform policy and practice in a number of areas. Better understanding of engagement, social risk, and social license could improve infrastructure decision making from project selection through delivery. Better measurement and understanding of social risk could prevent costly project delays or cancellations and enhance investment attractiveness, contributing to economic gains. Validated models to manage social risk would also allow for comparison between projects and jurisdictions, serving as a basis to improve policy. Research

advice on timing and approaches could result in better use of local knowledge from the earliest stages of concept development to reduce negative impacts. It could help to identify whether earlier use of CE than is currently the norm could achieve different or better results. The delivery of such research within the context of an overarching research agenda, like that defined here, can also facilitate industry-wide collecting, sharing and analysis of data, including historical data and advice from previous consultations. Such research may also offer substantial insights for CE practice, more generally, especially as it relates to government decision making and the policy processes. At the very least, the challenges and opportunities represented in this codesigned research agenda present a clear priority and direction for future research in CE in infrastructure.

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ENDNOTES

[1] Estimates for Australia's "infrastructure pipeline" range well into the $100–$200 billion range, depending on the source. The $100 billion figure suggested here is considered conservative and is based on the Commonwealth Government's 2017–2018 $70 billion budget commitment, the NSW Government's commitment to $73 billion investment to 2022, and the Victorian Government's commitment to $11 billion in the Metro Tunnel project, alone (NSW Government, 2017b).

[2] The "Situation Analysis" and other project reports are available on the Next Gen website at: www.nextgenengagement.org.

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