

FHWA Office of Federal Lands Highway

Rural Virtual Public Involvement *Synthesis and Tools*



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Introduction to the Report

This report brings together the challenges of connecting with rural communities and implementing virtual tools under the shared umbrella of public involvement. It synthesizes existing research and practices pertaining to the overlap of rural issues in virtual public spaces, acknowledging that public transportation projects sometimes need to seek input from rural communities by methods that deviate from those used in urban projects. While the Covid-19 pandemic introduced many agencies to the utility of virtual public involvement (VPI) tools, wielding these tools in rural project settings entails its own sets of challenges, benefits, and considerations. The purpose of the report is to assist transportation practitioners in developing their own, local frameworks for decision-making around how to connect with rural communities and whether virtual tools might be appropriate in doing so. In this context, transportation practitioners might include engineers, project managers, planners, or others who are weighing public involvement strategies for transportation-related projects.

The report begins by broadly discussing the Challenges and Barriers to Rural VPI through a review of existing academic and organizational literature. From there, VPI Tools and Practices delves into the various categories of virtual tools available to facilitate public involvement, emphasizing the ways these tools respond to the challenges and barriers highlighted previously. Four Case Examples then exemplify how agencies contend with rurality while making decisions about VPI tools in context of their particular transportation-related objectives. Finally, we conclude with Recommendations and steps for practitioners to take as they advance their own projects.

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Challenges and Barriers to Rural VPI: A Review of Existing Research

Introduction

There are many challenges to improving rural virtual public involvement (VPI) and many barriers to participation for rural communities. This section outlines the primary challenges for planners and agencies in this process, so that transportation practitioners can meaningfully consider solutions and apply helpful tools in their given context.

We first offer background on the criteria used to structure this review, then introduce overarching frameworks that can be useful for contextualizing the subsequent sections. We then describe the primary challenges and barriers to rural VPI reported in the literature, before highlighting three underrepresented populations.

Background

We use a definition of *rural* defined by the US Department of Transportation:¹ a community of up to 5,000 people, located outside of a US Census-designated urbanized area (an area >50,000 people). This definition includes incorporated, rural unincorporated, and Tribal communities in rural places. Rural areas cover 97% of US land area but contain about 19% of the population, have an older median age, and have a population that is more reliant on driving and has more limited transit service than urban areas.² The documents surveyed in this review include academic literature from peer-reviewed journals, as well as reports found in the Transport Research International Documentation (TRID) database. Supplementary policy documents from government and nonprofit organizations were compiled to offer a fuller view of the topic from practitioners' and partners' standpoints. While the majority of sources pertain to US contexts, select international sources are included to supplement US-based contributions.

Rural populations often also include Tribal communities. The project team recognizes, however, that VPI is not the same as Tribal consultation, the latter being a formal government-to-government process with sovereign Tribal nations and the former being a broader set of engagement tools. For the purposes of this study, the project team is focused on rural VPI barriers, opportunities, and tools generally that may be valuable to broad public engagement practices, including Tribal planning practitioners within their communities.

¹ U.S. Dept. of Transportation, "Rural Eligibility," Accessed March 20, 2023, <https://www.transportation.gov/rural/eligibility>.

² Andrew Broderick, *The Future of Rural Transportation and Mobility for Older Adults: Current Trends and Future Directions in Technology-Enabled Solutions*, CITRIS and the Banatao Institute, and Grantmakers in Aging, 2018, https://www.giaging.org/documents/180424_CITRIS_rural_mobility_paper_F.pdf.

Frameworks

There are several terms and concepts relevant to the challenges and barriers to VPI that transportation practitioners must navigate. Even when operating within state or federal mandates, practitioners are responsible to help shape engagement processes. The following concepts can serve as reminders of some of the first questions to ask when preparing to solicit public participation for a project.

Entitativity can be defined as the property of a collectivity that differentiates a coherent social group from an aggregate of individuals. Entitativity offers a framework for understanding what qualities of a place-based social group make it different from merely an aggregate of individuals.³ While it is common to think of social groups as communities, entitativity enables a deeper and more rigorous investigation into the substance and meaning-making practices of those who reside in a place. How do individuals group themselves within a community and generate coherence? What factors render a community homogeneous or heterogeneous? Whitham⁴ studied rural communities in Iowa to understand how boundaries, interactions, shared goals, proximity, and similarity influenced community cohesion in ways that affected individuals' local civic participation. Greater rurality (greater boundary discernibility), sociality, and shared goals were all positively correlated with civic participation among small-town residents. Practitioners can use these considerations in the planning stages as they evaluate how best to introduce VPI tools in a project. Each rural community contains a different set of factors that can influence its receptivity to particular tools and its motivation to engage with public projects.

Entitativity can also offer insights into what promotes rural community resilience. In the UK, Roberts et al. examined how digital inclusion can factor into community resilience frameworks.⁵ Access to funding opportunities, protection of local natural resources, and the maintenance of social/public memory depend on an entitative understanding of rural communities as both active and proactive, and can highlight some of the benefits of digital inclusion. In addition to considering what the community is like and how it might respond as a place-based social group, transportation practitioners may also find value in thinking about how best to encourage meaningful citizen participation that supports the community's existing goals. Arnstein's Ladder can be a helpful visualization for the various types of citizen participation.

³ Monica M. Whitham, "Community Entitativity and Civic Engagement," *City & Community* 18, no. 3 (2019): 896-914, <https://doi.org/10.1111/cico.12385>.

⁴ Monica M. Whitham, "Community Entitativity and Civic..."

⁵ Elisabeth Roberts et al., "A Review of the Rural-Digital Policy Agenda from a Community Resilience Perspective," *Journal of Rural Studies* 54(2017): 372-385, <http://dx.doi.org/10.1016/j.jrurstud.2016.03.001>.

Arnstein's Ladder of Citizen Participation⁶ (See Figure 1) offers a community-centered way of gauging program effectiveness, reinforcing the significance and quality of citizen participation as both essential to a program's success and also made better/worse by the entity implementing the program. It helps practitioners recognize that an agency's willingness to share power is key to effective community programming. Haugen and Chouinard⁷ assert that power is essential to understanding relationships between evaluators, practitioners, and participants—and that the questions that frame program setup and implementation should consider these undercurrents.

At the bottom of Arnstein's ladder are Nonparticipation tactics like therapy and manipulation, grouped together as ways that an organization might take full control of a process and disallow citizens to participate by strictly enforcing their vision of the project onto all stakeholders outside the organization. Organizations that use these strategies may convey intolerance of all feedback, focusing instead on how to prevent other stakeholders from offering input. The ladder's middle level, Tokenism, groups together behaviors that organizations use when they solicit community feedback but remain rigidly attached to their original plans. They may understand that stakeholder approval is necessary for the plan to move forward, thus engaging community stakeholders in limited ways that are designed to solicit such approval.

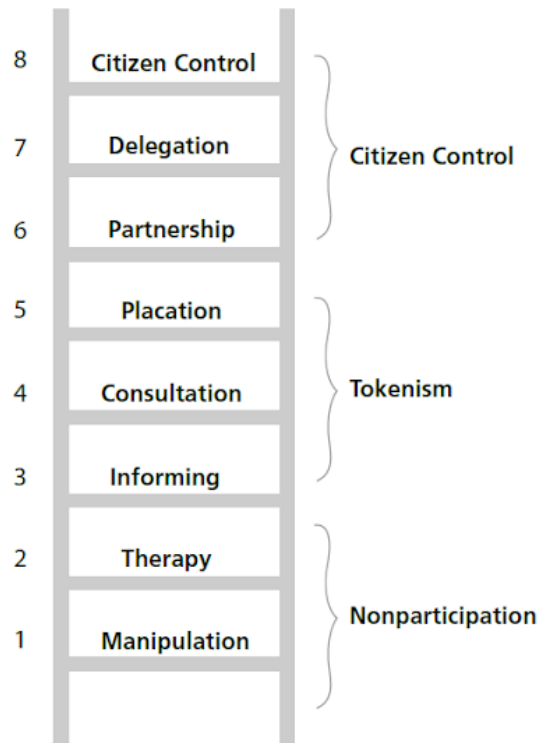
In the upper steps of the ladder, Citizen Control denotes practices that organizations use to offer community participants a meaningful role in shaping the program's direction and outcomes. These strategies require practitioners to be flexible with timelines, goals, and deliverables based on what community stakeholders declare is needed, and they allow community members to take various degrees of initiative in producing the desired outcomes. Because communities participate in shaping outcomes, those outcomes are more likely to be satisfactory and sustainable for citizen stakeholders. Blevins, Morton, and McGovern⁸ offer an example from the realm of community-based participatory research (CBPR) to emphasize careful consideration of not only practitioners' desired degree of collaboration with community partners, but also the readiness and resources of those partners to engage in collaboration.

⁶ Sherry R. Arnstein, "A Ladder of Citizen Participation," *Journal of the American Institute of Planners* 35, no. 4 (1969): 216-224, <https://doi.org/10.1080/01944366908977225>.

⁷ Jaimie Stickl Haugen & Jill Ann Chouinard, "Transparent, Translucent, Opaque: Exploring the Dimensions of Power in Culturally Responsive Evaluation Contexts," *American Journal of Evaluation* 40, no. 3(2019): 376-394, <https://doi.org/10.1177/1098214018796342>.

⁸ Dean Blevins, Bridget Morton, & Rene McGovern, "Evaluating a Community-Based Participatory Research Project for Elderly Mental Healthcare in Rural America," *Clinical Interventions in Aging* 3, no. 3(2008): 535-545, <https://doi.org/10.2147/cia.s1540>.

Figure 1: Arnstein's Ladder of Citizen Participation (1969)



Challenges and Barriers

The previous Background and Frameworks sections acknowledge the challenges that transportation practitioners face in appropriately shaping the public involvement process, and in building readiness and resources in their agencies for public involvement. There are also overarching challenges in generating virtual involvement from rural communities. Existing literature reviewed for this report suggest the following:

I. Gauging Existing Community Involvement

Practitioners from federal and state agencies can sometimes be viewed as outsiders to a local community. To the extent that they are treated as such, how can practitioners correctly assess who is already engaged within the community and who is not? Social inclusion is a community-centered dynamic that has implications for individuals' wellbeing; however, Shortall⁹ argues that it should not be equated with civic participation. Non-participation in certain civic projects can be a valid choice for some groups and is not always indicative of social exclusion. This means

⁹ Sally Shortall, "Are Rural Development Programmes Socially Inclusive? Social Inclusion, Civic Engagement, Participation, and Social Capital: Exploring the Differences," *Journal of Rural Studies* 24(2008): 450-457, <http://doi.org/10.1016/j.jrurstud.2008.01.001>.

that in addition to casting a wide net for potential participants, practitioners may also want to be attentive to feedback and other signals from community leaders when thoughtfully evaluating what inclusion looks like for a given project. Partnering with community leaders to address this challenge will be further explored in Tools and Practices.

Community entitativity can impact residents' goals and vision for the community, which transportation practitioners can learn more about within shared community spaces.¹⁰ Practitioners will want to devote time and staff resources to learning about their communities in order to better discern how to structure invitations to participate in their own project. For example, if most members of a community pay utility bills in person, there may be an opportunity to offer information and hand out flyers about an upcoming project webinar at the utilities office, in addition to including information in bills mailed to community members.

Public gathering spaces, events, and celebrations can offer glimpses into this community life. A challenge, however, is that the more cohesive a community is, the less welcome outsiders might be in these shared public gatherings. Both measuring and fostering community trust may be difficult. Modeling reciprocity is one way for practitioners to garner trust, as discussed further in Tools and Practices.

II. Integration of VPI with Traditional/Analog Tools

Engaging rural communities with virtual tools and practices does not negate the value of in-person and analog tools. Discerning the desired combination of tools across modalities can be a significant challenge. This challenge requires consideration of all populations that need to be engaged and how they might be most able or interested in participating, as well as what communication channels and efforts will be most effective and impactful.¹¹ Deliberation about all of these considerations can happen in coordination with local partners and target populations. Early community engagement could include asking people how they want to be engaged, thus empowering participation and "ownership," and ensuring that meeting timing and format are well-tailored. This topic is discussed in depth in the context of tools and practices that allow for the integration of VPI with analog tools.

¹⁰ Monica M. Whitham, "Community Entitativity and Civic..."

¹¹ Get There Oregon. *Core Principles for Limited English Proficiency (LEP) Engagement in Transportation Options Programs*. Accessed March 20, 2023. <https://getthereoregon.org/wp-content/uploads/2022/02/Core-Principles-for-LEP-Engagement-Appendix-FINAL.pdf>.

III. The Digital Divide and Broadband Availability

The digital divide refers to the separation between areas that have access to digital communication technologies and those that do not (or have significantly reduced access).¹² The effects of the digital divide and lack of comprehensive broadband Internet access in rural communities is a well-known issue both in the US and abroad. While rural business owners, in particular, can face threats to their prosperity in rural places that lack broadband access, it may also be true that communities without such access are dependent on particular business models in which the Internet does not play a heavy role.¹³ ¹⁴ Thus, when considering the long-term economic growth of rural communities and what community members consider to be useful towards that goal, broadband Internet does not automatically correlate with perceived progress—nor does the mere availability of broadband correlate with community members' desire to use it.¹⁵ ¹⁶ This can make it difficult to introduce digital or technology-based tools into communities that do not find Internet technologies relevant to either the present or the future.

Tensions around technology and digital access can undermine rural partnerships, necessitating a responsive and localized approach to ensure that the introduction of virtual tools achieves its intended purpose of broadening the base of participation in community projects.¹⁷ Sanders and Scanlon¹⁸ argue that rural communities that overlap with disadvantaged populations, including people of color and older individuals, are systematically marginalized by lack of broadband access in four primary domains: access, skills, economic opportunity, and democracy. Increasingly, Internet technologies are necessary to interact with the government, which impacts both the accessibility of necessary services and the democratic potential inherent in whether community members have a voice in the processes that govern their lives. Not knowing, or

¹² Michael O. Erdiaw-Kwasie & Khorshed Alam, "Towards Understanding Digital Divide in Rural Partnerships and Development: A Framework and Evidence from Rural Australia," *Journal of Rural Studies* 43(2016): 214-224, <http://dx.doi.org/10.1016/j.jrurstud.2015.12.002>.

¹³ Teresa Correa & Isabel Pavez, "Digital Inclusion in Rural Areas: A Qualitative Exploration of Challenges Faced by People From Isolated Communities," *Journal of Computer-Mediated Communication* 21(2016): 247-263, <https://doi.org/10.1111/jcc4.12154>.

¹⁴ Leanne Townsend, Claire Wallace, & Gorry Fairhurst, "'Stuck Out Here': The Critical Role of Broadband for Remote Rural Places," *Scottish Geographical Journal* 131, nos. 3-4(2015): 171-180, <http://dx.doi.org/10.1080/14702541.2014.978807>.

¹⁵ Elizabeth A. Mack, "Broadband and knowledge intensive firm clusters: Essential link or auxiliary connection?" *Papers in Regional Science* 93, no. 1(2014): 3-29, <https://doi.org/10.1111/j.1435-5957.2012.00461.x>.

¹⁶ Brian Whitacre & Jacob Manlove, "Use of Broadband Linked to Greater Levels of Civic Engagement," *The Daily Yonder*, September 22, 2016, <https://dailyyonder.com/use-of-broadband-linked-to-greater-levels-of-civic-engagement/2016/09/22/>.

¹⁷ Michael O. Erdiaw-Kwasie & Khorshed Alam, "Towards Understanding Digital Divide..."

¹⁸ Cynthia K. Sanders & Edward Scanlon, "The Digital Divide Is a Human Rights Issue: Advancing Social Inclusion Through Social Work Advocacy," *Journal of Human Rights and Social Work* 6(2021): 130-143, <https://doi.org/10.1007/s41134-020-00147-9>.

being able to learn, the skills necessary to succeed in a digitized economy can foreshorten rural residents' economic opportunities, as well.

It is imperative that those who wish to introduce virtual tools must do more than simply offer them, but must partner with residents to help them see the value in Internet infrastructures and become digitally fluent. With regard to transportation and other public projects that may already have technological components built into user services, it is necessary to consider what digital inequality looks like and what its consequences are.¹⁹ Digital inequality can include differential access to phones and computers, and also disparate abilities to effectively use applications and interactive features. Having access to technology is not an automatic benefit for a community with low knowledge or motivation to engage online. Conducting any preparation, training, and support that may be offered for using virtual tools early in an engagement process can ensure that participants are more prepared to engage when core events are underway.

Underrepresented Populations

We expected to see research devoted to engaging populations that are more challenging to connect with in a virtual or hybrid format, namely, older populations, those experiencing poverty, and populations with English language barriers. While academic literature pertaining to these populations was limited, some nonprofit and government documents provide relevant insight. Recommendations associated with these populations will be further described in Tools and Practices.

I. Limited English Proficiency (LEP) Populations

A report produced by Get There Oregon²⁰ highlights challenges and best practices for better engagement with those who are not native English speakers. The report makes recommendations to address the specific challenges practitioners have encountered, including invitations to participate without a response, lack of trust, and not being able to reach target populations. Recommendations include building trust, establishing partnerships, identifying individual and cultural needs and barriers to using existing transportation options, identifying appropriate and viable solutions to these challenges, improving access to transportation options to community events where they can engage, and building confidence in existing options. These types of considerations are often prerequisites to choosing effective virtual tools. The Case

¹⁹ Anne Durand et al., "Access Denied? Digital Inequality in Transport Services," *Transport Reviews* 42, no. 1 (2022): 32-57, <https://doi.org/10.1080/01441647.2021.1923584>.

²⁰ Get There Oregon, *Core Principles for Limited English Proficiency (LEP) Engagement in Transportation Options Programs*. Accessed March 20, 2023, <https://getthereoregon.org/wp-content/uploads/2022/02/Core-Principles-for-LEP-Engagement-Appendix-FINAL.pdf>.

Examples section of Tools and Practices offers specific examples of how addressing these prerequisites can impact a LEP community.

Overall, few academic sources addressed this challenge specifically. The Greater Portland Council of Governments (GPCOG) describes some of the ways the City of Portland, Maine, reached out to local immigrant populations. Challenges included not just how to effectively communicate with these groups, but also how to gain access to them.²¹ They designed a leadership program called Natural Helpers, which trains and empowers local immigrants to distribute information on city initiatives and programs within community centers and via digital tools like WhatsApp. They also employ four interpretation providers to translate information as needed to immigrant community members.

II. Older Populations

The older demographic is important in rural places, where the average age is higher. A US Census Bureau report shows that 17.5% of the rural population was 65 years and older, compared to 13.8% in urban areas, and the share of this population is highest in the middle of the country.²² Some academic literature addresses engaging older populations in the context of potential access to resources and ability to navigate some systems. Blevins, Morton, and McGovern²³ assessed a community-based participatory research (CBPR) program in rural Missouri that pertained to mental healthcare for older adults—a vulnerable population that tended to be less willing to access services despite greater need. They found that, even though the program began with a top-down approach, community members eventually asserted greater responsibility over outcomes. This was due to the value of CBPR in enabling effective interventions that communities could sustain. This also required community members outside of the target group (elderly people) to invest in this focus.

The largest barriers to engaging older adults in rural transportation planning conversations in virtual formats are residents' virtual tool fluency (the ability to use virtual tools easily and accurately), communities' broadband access, and, ironically, practitioners' thinking about transportation as an isolated service rather than as a feature of a social determinant of health.²⁴ Many older adult populations encounter significant mobility restrictions, and may use transit more and in very specific ways. Greenfield and Buffel²⁵ reiterate that transportation access and engagement in planning processes is foundational to older adults' ability to engage in

²¹ Greater Portland Council of Governments [GPCOG], "Inclusive & Accessible Virtual Engagement: Lessons from the Field," October 2020, https://www.gpcog.org/DocumentCenter/View/1420/GPCOG_Virtual-Engagement-White-Paper_Final_102120-for-website-1?bidId=.

²² Amy Symens Smith & Edward Trevelyan, "The Older Population in Rural America: 2012-2016," US Census Bureau, September 23, 2019, <https://www.census.gov/library/publications/2019/acs/acs-41.html>.

²³ Dean Blevins, Bridget Morton, & Rene McGovern. "Evaluating a Community-Based..."

²⁴ Andrew Broderick, "The Future of Rural..."

²⁵ Emily A. Greenfield & Tine Buffel, "Age-Friendly Cities and Communities: Research to Strengthen Policy and Practice," *Journal of Aging & Social Policy* (2022), <https://doi.org/10.1080/08959420.2022.2049573>.

communal life, but they need to be welcomed in age-friendly ways. The authors discuss the importance of thoughtful engagement and cooperation with local partners, noting that engagement processes that center older and marginalized communities tend to increase when budgets are strong, and become deprioritized in lean times. This challenge of funding, more broadly, is a significant consideration for virtual public involvement going forward.

III. People Experiencing Poverty

We did not find academic literature on engagement processes for people experiencing poverty, at least not explicitly in research that relates to transportation planning. Healthcare policy research may lend more insight. Some literature discussed engaging “marginalized” populations, which obliquely included people experiencing poverty,²⁶ but such a broad term did not lend insight to the challenges and barriers for this population specifically. Again, a practitioner’s approach to communication, building trust, inviting participation, and chosen venues for information sharing and gatherings are important considerations when engaging this population.

Some government and nonprofit planning documents acknowledged that people with lower incomes are more likely to be excluded from digital and virtual forms of engagement. This observation emphasizes the significance of challenges pertaining to broadband internet access and literacy.^{27 28} From the TRID resources, GPCOG acknowledged the particular challenges of low-income populations and emphasized that people who cannot afford broadband Internet are more likely to rely on mobile phone plans for data access.²⁹ Greater societal shifts toward digital communication may render this population increasingly disadvantaged as time goes on.

Conclusion

Many of the challenges that impact rural VPI rest on issues of access—not just rural community members’ access to broadband Internet or efficient transportation, but also practitioners’ access to the frameworks of meaning that undergird rural community life. For transportation planning practitioners, access can also take the form of deploying the resources required to meet rural VPI needs; these resources may depend on approved agency practices as well as budgets. Further, there are fundamental challenges in developing commonality and shared goals across community-practitioner lines. In *Tools and Practices*, we explore not only the types of tools that can be useful for practicing VPI, but also the sets of considerations that go into making these tools effective.

²⁶ Cynthia K. Sanders & Edward Scanlon, “The Digital Divide Is...”

²⁷ Martha Fedorowicz, Olivia Arena, & Kimberly Burrowes, “Community Engagement During the...”

²⁸ Nicol Turner Lee et al., “Why the federal government needs to step up efforts to close the rural broadband divide,” Brookings, October 4, 2022, <https://www.brookings.edu/research/why-the-federal-government-needs-to-step-up-their-efforts-to-close-the-rural-broadband-divide/>.

²⁹ GPCOG. “Inclusive & Accessible Virtual Engagement...” pg. 12.

VPI Tools and Practices

Introduction

In this section, we outline the purposes, strengths, weaknesses, and other considerations for various virtual public involvement (VPI) tools. We first offer context around some of the challenges of implementing VPI tools in rural communities. Then we discuss the strengths, weaknesses, and uses of several distinct VPI approaches and offer case examples, followed by a discussion of how practitioners can make best use of this information. We conclude with recommendations for implementation. The materials in this section derive from published reports and websites, as well as four individual interviews with practitioners who discussed the ways their agencies address the overlap between rural community engagement and VPI strategies.

Context

VPI tools exist in abundance, but it is not always clear how they apply in professional practice with rural communities. As agencies have adapted to pandemic conditions since 2020, new findings have been released about the utility and challenges of virtual tools for rural-based public engagement. While virtual meetings, for example, became much more popular during Covid-19, practitioners with the Tennessee and Minnesota Departments of Transportation acknowledged that a lack of high-speed internet access can significantly undercut the effectiveness of this tool in rural settings.^{30 31} Virtual meetings and webinars that are mobile phone-compatible were better able to serve participants in public locations with wi-fi or by using mobile data plans. Similarly, other VPI tools that seem useful in theory, like online surveys and visualization models, may not successfully translate into rural settings if practitioners have not investigated a community's existing resources, goals, and needs.

Choosing the right tools is about learning how to use them and understanding how to make them effective. It has taken time for practitioners to learn virtual tools, as well as to find ways to teach the necessary skills to the public audiences they hope to engage.³² There is also a lingering concern about missing the benefits of in-person meetings and other forms of interpersonal interaction, which can be perceived to offer more meaningful opportunities for

³⁰ Mohammad Moin Uddin, Candace Bright, & Kelly Foster, "Delphi Study to Identify Best Practices for Rural Community Engagement in Transportation Planning," *Transportation Research Record* 2676, no. 8(2022): 292-311, <https://doi.org/10.1177/03611981221083611>.

³¹ Minnesota Department of Transportation, "Public Engagement Practices During the Covid-19 Pandemic and Other Disruptive Events," June 2021, <https://www.dot.state.mn.us/research/TRS/2021/TRS2103.pdf>.

³² Minnesota Department of Transportation, "Public Engagement Practices During..."

connection and networking.^{33 34} However, the addition of virtual tools can offer opportunities for connection and interaction if used thoughtfully. They can even be used as part of an agency's evaluation process, as we discuss in some of the following subsections of Existing VPI Tools and Practices.

In addition to these general challenges, reaching underserved populations such as older adults, those who speak languages other than English, and communities of color, necessitate a mix of various tools and techniques, and often require additional consideration and planning.^{35 36} Part of this effort requires practitioners to reach out beyond the limits of who they confidently know to be affected by an issue or project, or in ways that go beyond typical engagement efforts.³⁷ Thus, wide-reaching radio ads, flyers at various community gathering places, translation of materials, and connecting with local, trusted community leaders will help ensure that those who may not be immediately visible to practitioners are still being included.^{38 39}

Because planners of public development projects can be seen as outsiders to a community, it is essential to not only rely on community resources for outreach, but to clearly explain, from the agency's perspective, the expected community benefits of the project. Doing so will enable community members to make informed decisions about how (or whether) they want to be involved, and will motivate a sense of reciprocity that can galvanize community support.⁴⁰ The Greater Portland Council of Governments (GPCOG), for example, works with a large refugee and older adult population in Portland, Maine.⁴¹ GPCOG staff learned that traditional outreach tools (phone calls, printed materials) must continue to have a presence alongside social media and virtual tools. They have implemented specific techniques to reach underserved populations, such as creating custom "Welcome to Zoom" tutorials for older adults. For refugee and immigrant

³³ Courtney Cronley et al., "Utilizing an Inter-Professional Online Advisory Board: A Case Study to Inform Innovation in Community-Engaged, Transportation Equity Research and Planning," *Transportation Research Interdisciplinary Perspectives* 10(2021), <https://doi.org/10.1016/j.trip.2021.100365>.

³⁴ Minnesota Department of Transportation, "Public Engagement Practices During..."

³⁵ Greater Portland Council of Governments [GPCOG], "Inclusive & Accessible Virtual Engagement: Lessons from the Field," October 2020, https://www.gpcog.org/DocumentCenter/View/1420/GPCOG_Virtual-Engagement-White-Paper_Final_102120-for-website-1?bidId=.

³⁶ National Academies of Sciences, Engineering, and Medicine [NASEM], "Virtual Public Involvement: Lessons from the COVID-19 Pandemic," Washington, DC: The National Academies Press, 2022, <https://doi.org/10.17226/26827>.

³⁷ NASEM, "Virtual Public Involvement: Lessons..."

³⁸ Mohammad Moin Uddin, Candace Bright, & Kelly Foster, "Delphi Study to Identify..."

³⁹ Michigan Department of Transportation, "Virtual Public Involvement Benefits and Barriers: A Practical Guide to VPI Tools," Spring 2021, <https://www.michigan.gov/-/media/Project/Websites/MDOT/News-and-Outreach/Public-Involvement/Guide-Virtual-Public-Involvement.pdf?rev=825951f16632433589b73160f86a4a6f>.

⁴⁰ Andrew Broderick, *The Future of Rural Transportation and Mobility for Older Adults: Current Trends and Future Directions in Technology-Enabled Solutions*, CITRIS and the Banatao Institute, and Grantmakers in Aging, 2018, https://www.giaging.org/documents/180424_CITRIS_rural_mobility_paper_F.pdf.

⁴¹ GPCOG, "Inclusive & Accessible Virtual Engagement..."

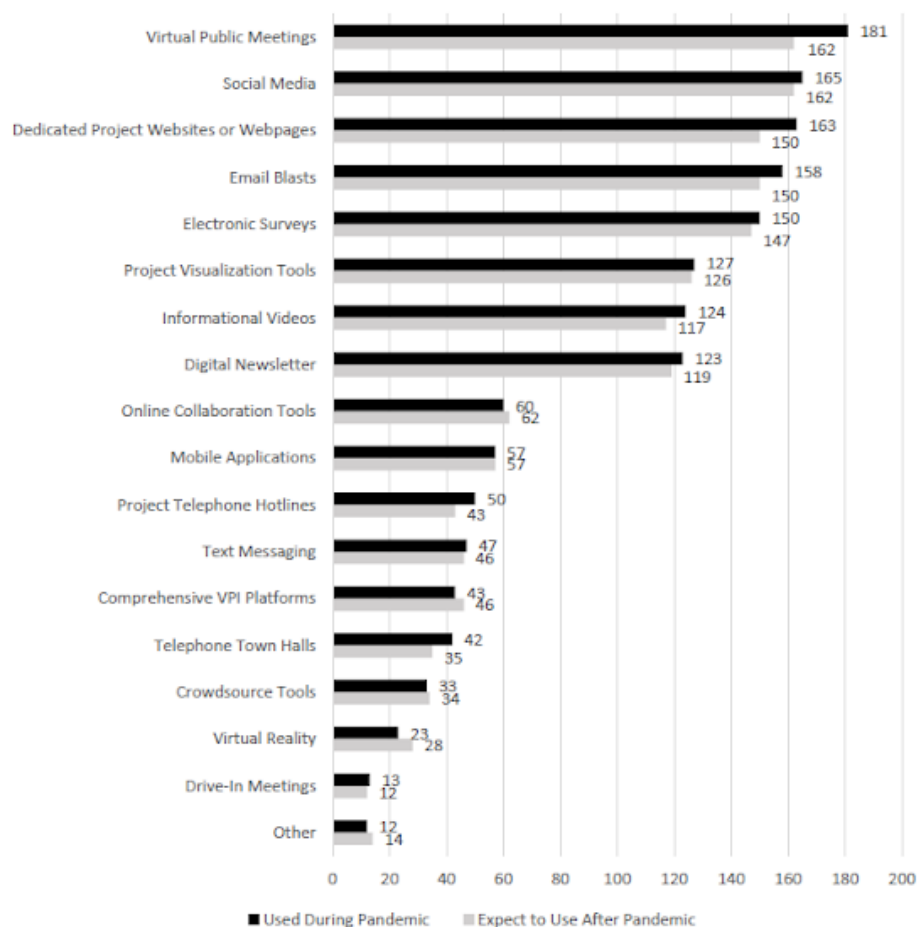
populations, they work with local community members to ensure their website and print materials are correctly translated into commonly used languages. Choosing virtual tools that work to reach underprivileged populations requires knowledge of the specific barriers these communities face.

Existing VPI Tools

The purpose of this section is to spotlight the most common approaches to VPI that appear in the literature and that are used by both government and nonprofit organizations to meet key challenges and barriers to participation. In addition to leveraging VPI tools and practices for expanded public involvement, interviewed practitioners emphasized additional efforts to encourage public involvement, namely the importance of ongoing capacity-building for practitioners for virtual facilitation, as well as building participants' technical knowledge so they are well-equipped for involvement. See Figure 2 for a summary of common VPI tools used by transportation practitioners in a 2022 survey of 196 agencies performed by the National Academies of Science, Engineering, and Medicine (NASEM).⁴² Each approach outlined in the following subsections includes a stated purpose, its primary strengths, weaknesses, or useful application, and relevant examples.

⁴² National Academies of Sciences, Engineering, and Medicine [NASEM], "Virtual Public Involvement: Lessons from the COVID-19 Pandemic," Washington, DC: The National Academies Press, 2022, <https://doi.org/10.17226/26827>.

Figure 2. VPI tools used during pandemic and expect to use post-pandemic. Adapted from NASEM (2022, p.16).



I. Social media: Advertising and Engagement

For practitioners aiming to address the challenges of gauging community involvement and integrating VPI with traditional tools, social media can be a useful VPI tool. The use of social media has increased for many practitioners since the pandemic, as a means of both advertising and limited, deeper engagement. Social media can be used not only to advertise upcoming public engagement events, but also to host or broadcast the events.⁴³ Additionally, it can be used as an online brainstorming tool with smaller populations. In both types of uses, it is important to establish a public protocol for handling comments on social media, since these do not usually count as part of the official public record.⁴⁴ ⁴⁵ Social media can offer unique

⁴³ Minnesota Department of Transportation, "Public Engagement Practices During..."

⁴⁴ Michigan Department of Transportation, "Virtual Public Involvement Benefits..."

⁴⁵ Michigan Department of Transportation, "Virtual Public Involvement Benefits..."

opportunities, such as the ability to identify key community stakeholders for project managers to follow up with and meet in person.⁴⁶ It can be useful for quick, real-time engagement, but it may not be sustainable for in-depth, long-term participation.⁴⁷

Example: Several respondents to a Minnesota DOT survey described how they used social media for publicity and to reach a wider range of stakeholders with pre-published project materials. Video content and other animated visualizations were especially suitable for social media distribution on sites like Facebook and Instagram⁴⁸. For brief updates that were easily shareable, Twitter was appropriate for some agencies.

II. Visualization Models

Visualization can refer to “a variety of photography, video, computer, and electronic technology used to create realistic pictures,” as well as “to the collection, manipulation, and management of all sources of spatially referenced data.”⁴⁹ Visualization and virtual reality (VR) models have been shown to support public interest and involvement in land use projects by offering a concrete basis for stakeholders to form opinions, and they can be readily adapted as virtual tools.⁵⁰ Visualization models can help practitioners aiming to integrate VPI with traditional tools, and in select cases, in addressing digital divide challenges.

Example: The FHWA VPI toolkit offers example mapping and project visualization tool resources from Massachusetts, Ohio, Utah, Washington, and North Carolina⁵¹. A VPI technical assistance workshop hosted by Caltrans⁵² described how agencies had used existing experts, such as landscape planners, to help increase the public’s understanding of sidewalk projects through use of visualizations. Tools like ArcGIS were notable for being low-cost and easy ways to translate visualizations onto multiple online platforms.

These models benefit from contextualization and should not be used as a substitute for more in-depth information sharing, but having strong visuals is often key when sharing lengthy

⁴⁶ Martha Fedorowicz, Olivia Arena, & Kimberly Burrowes, “Community Engagement During the COVID-19 Pandemic and Beyond: A Guide for Community-Based Organizations,” Urban Institute, September 2020, <https://www.urban.org/research/publication/community-engagement-during-covid-19-pandemic-and-beyond>.

⁴⁷ Martha Fedorowicz, Olivia Arena, & Kimberly Burrowes, “Community Engagement During the...”

⁴⁸ Minnesota Department of Transportation, “Public Engagement Practices During...”

⁴⁹ Keiron Bailey, Joel Brumm, & Ted Grossardt, “Integrating Visualization Into Structured Public Involvement: Case Study of Highway Improvement in Central Kentucky,” *Transportation Research Record* 1817, no. 02-3113(2002): 50-57, pg. 51, <https://doi.org/10.3141/1817-07>.

⁵⁰ Keiron Bailey, Joel Brumm, & Ted Grossardt, “Integrating Visualization Into Structured...”

⁵¹ US Federal Highway Administration [FHWA], “VPI Toolkit,” US Dept. of Transportation, updated December 8, 2022, https://www.fhwa.dot.gov/planning/public_involvement/vpi/virtual_toolkit/.

⁵² California Dept. of Transportation [Caltrans], “Virtual Public Involvement Technical Assistance Summary Report,” April 21, 2019, https://www.fhwa.dot.gov/planning/public_involvement/vpi/.

information.⁵³ Table 1 offers some considerations for practitioners wanting to implement visualization tools. The more sophisticated the tool, generally the more expensive it will be and the more specialized training will be required of practitioners who use it. This table was used by the authors to summarize findings from an investigation into how visualization tools could be used as enabling technologies. In this sense, the premise of the research was that visualization could help increase community satisfaction with the progress and results of a project; at the same time, the three different visualization modes shown below come with capacity considerations for practitioners.⁵⁴ Another challenge with more advanced visualization techniques is whether rural communities have the Internet infrastructure and knowledge to participate in them. When practitioners do choose to invest resources into these advanced tools, it is essential to budget for community infrastructure adaptations and training, in addition to practitioner training.

Table 1. Advantages and disadvantages of three visualization modes. Adapted from Bailey et al. (2002, p. 53)

Visualization Mode	Advantages	Disadvantages
2-D	<ul style="list-style-type: none"> • Readily available • Moderate expense • Easy on hardware • Existing pool of users • High level of realism 	<ul style="list-style-type: none"> • Poor replication and transferability • Hard to create new images • Low return on labor • Contour changes hard to show • Artistic product (not the scale)
3-D	<ul style="list-style-type: none"> • Moderate price • Easy on hardware • Very close to photorealism • "Movies" provide multiple views • Only build it once • Good at modeling new features 	<ul style="list-style-type: none"> • Difficult to learn • Demands processor time off-line • Demands sophisticated data handling • Views must be pre-scripted • Software less reliable
Virtual Reality (VR)	<ul style="list-style-type: none"> • Total real-time user • Control of views • Limited detail • Only build it once • Potential for simulator-type behavior 	<ul style="list-style-type: none"> • Expensive • Demanding of hardware • Difficult to learn • Lacks detail • Sophisticated data handling

⁵³ Martha Fedorowicz, Olivia Arena, & Kimberly Burrowes, "Community Engagement During the..."

⁵⁴ Keiron Bailey, Joel Brumm, & Ted Grossardt, "Integrating Visualization Into Structured Public Involvement: Case Study of Highway Improvement in Central Kentucky," *Transportation Research Record* 1817, no. 02-3113(2002): 50-57, pg. 51, <https://doi.org/10.3141/1817-07>.

III. Digital Surveys

Digital surveys can be a way to gain understanding of opinion patterns within the communities that practitioners want to reach. They might not, however, offer in-depth feedback on areas of support or concern. Digital surveys can also be used in meetings to get real-time feedback (live polls), or as a follow-up to webinars and virtual meetings to get feedback and demographic information from participants. When surveys are used as a tool for gauging project interest or support, it is often necessary to broaden the format beyond digital. Practitioners should consider allowing their surveys to be administered in alternative formats, such as over the phone or on paper, and making sure the community knows about these alternatives.⁵⁵ Surveys can also be very useful in evaluating the effectiveness of agency engagement efforts. They can reveal deficiencies and improve relationships with affected communities by offering a “means of providing feedback, not only on projects, but also on the public involvement processes.”⁵⁶

The Transit Cooperative Research Program (TCRP)⁵⁷ describes how the Pittsburgh Regional Transit agency used online surveys extensively to gather broad input on projects during the pandemic. Surveys were advertised on social media and offered via the project website. Hard copies were also distributed to senior centers, at pop-up events, and at heavily trafficked bus stops. Advertisements for the survey included both a toll-free number and an SMS text number for those who did not have smartphones or Internet access. While the online form of the survey was the most popular, 68% of paper surveys returned to the agency were from non-white households, and 37% were from low-income areas, demonstrating the efficacy of using multiple survey strategies in addition to a primary online format.

Example: Surveying Limited English Proficiency (LEP) populations: Findings emphasize collaborating with trusted and connected partners to develop and deliver a survey is highly effective. Authors also emphasize the importance of using plain language to write and communicate about a survey, and they provide a plain language guide.⁵⁸ The document emphasizes using simple vocabulary, short sentences, and first-person pronouns like “we” to promote accessibility. [Get There Oregon](#), [US Department of Transportation](#) and the [Plain Language Action and Information Network \(PLAIN\)](#) all offer plain language guides that may be helpful to transportation practitioners.

⁵⁵ Martha Fedorowicz, Olivia Arena, & Kimberly Burrowes, “Community Engagement During the...”

⁵⁶ Kate Gunby, “Practice Makes Perfect: Five State DOTs Implement a Public Involvement Effectiveness Measurement Toolkit,” TR News, November-December 2022, <https://doi.org/10.17226/25447>.

⁵⁷ Transit Cooperative Research Program [TCRP], *Inclusive Public Participation in Transit Decision-Making: A Synthesis of Transit Practice*, Washington, DC: The National Academies Press, 2023, <https://doi.org/10.17226/26940>.

⁵⁸ Get There Oregon, *Core Principles for Limited English Proficiency (LEP) Engagement in Transportation Options Programs*, accessed March 20, 2023, <https://getthereoregon.org/wp-content/uploads/2022/02/Core-Principles-for-LEP-Engagement-Appendix-FINAL.pdf>. (Plain language guide begins p. 13.)

IV. Advertising

Multifaceted advertising strategies can account for generational differences in how community members receive news and updates, gauge existing community involvement, and help integrate VPI and traditional tools. Newspaper ads may reach older populations, while social media might better reach those who are of middle age or younger. It is also important, however, not to rely on stereotypes to guess what type of advertising may be best.⁵⁹ Radio ads can encourage word-of-mouth communication, as can flyers at community centers, the post office, or local coffee shops.⁶⁰ Even if events are virtual, advertising does not need to be. Thought should be given to the visual presentation of information, whether it is virtual or physical, and it is likely that both forms are necessary to reach a range of target audiences. Especially for print ads, like flyers, the size of the text, and the clarity and use of plain language is key.

Example: In a Minnesota DOT survey⁶¹, almost all practitioners used multiple digital methods to notify the public of upcoming meetings: posting on the project website, using social media, and including information in email newsletters. This multi-method approach was based on an understanding that potential participants included groups with different preferences for how they received information about the projects. It is worth considering whether digital venues are sufficient for a given project, or what types of in-person promotion might be useful supplements. Another survey conducted by the Virginia Transportation Research Council⁶² revealed that the Nevada DOT uses US Census data and other demographic resources to determine whether to use advertising in languages other than English for particular areas. It is common practice for them to provide a Spanish-language version of project websites based on this information. Other agencies that responded to the survey have mentioned combining this demographic data with location-specific advertising (like food banks and community centers) to reach non English-speaking or LEP populations in person, demonstrating the utility of mixed methods for reaching some underserved populations.

V. Live Stream Events

Local media outlets, as well as social media, can host or broadcast live project meetings.⁶³ Tools like telephone town halls can also enable the public to tune into live meetings without being present or even needing a special app or program.⁶⁴ These VPI tools can help practitioners

⁵⁹ GPCOG, "Inclusive & Accessible Virtual Engagement..."

⁶⁰ Mohammad Moin Uddin, Candace Bright, & Kelly Foster, "Delphi Study to Identify..."

⁶¹ Minnesota Department of Transportation, "Public Engagement Practices During the Covid-19 Pandemic and Other Disruptive Events," June 2021, <https://www.dot.state.mn.us/research/TRS/2021/TRS2103.pdf>.

⁶² Lance E. Dougald & Eric S. Williams, *An Analysis of Virtual Public Engagement in the Transportation Planning Process*, Virginia Transportation Research Council [VTRC], October 2022.

⁶³ Mohammad Moin Uddin, Candace Bright, & Kelly Foster, "Delphi Study to Identify..."

⁶⁴ Michigan Department of Transportation, "Virtual Public Involvement Benefits..."

gauge community interest, integrate VPI and traditional tools, and in some cases, address digital divide challenges. As the imminent threat of Covid recedes, many practitioners may return to live, in-person events. Some members of rural populations, however, may have ongoing health challenges or transportation-related disadvantages that make it difficult to attend in-person events. Live streaming through the above mentioned sources can be a relatively inexpensive way to increase the reach of in-person events. At the same time, if practitioners do choose to live stream events that are primarily in-person, care should be taken to directly address remote viewers, help them understand that their virtual presence is appreciated, and ensure that there are appropriate avenues for remote viewers to contribute feedback and have their concerns, questions, and feedback addressed.

Example: The Great Lakes ADA Center⁶⁵ described how it used live streaming to simultaneously broadcast virtual meetings on Facebook or YouTube. While participants could join the Zoom meeting directly, the simultaneous live broadcasts ensured a wider reach for those who were not comfortable using Zoom or did not have sufficient connectivity. Configuring the live stream directly through Zoom enabled accessibility features, such as captions, to remain intact across platforms. It is important to plan for how live streaming audiences can provide feedback and get questions answered in addition to accessing the content.

VI. Virtual Meetings and Participatory Design

Virtual meetings (including virtual town halls) are the most commonly cited tool used by transportation practitioners. Virtual meetings can help practitioners gauge community interest, be venues for integrated use of VPI and traditional tools, and, in their design, help address digital divide challenges. The pandemic highlighted how well virtual meetings can work to mitigate logistical difficulties, such as ensuring that participants maintain safe practices for wellness while interacting with others. Virtual meetings can also be seen as more convenient for those who cannot easily travel to a physical meeting space, and as a tool to ensure greater geographic equity.

Examples from across the country, fact sheets, and case study videos are available in the cited FHWA VPI Toolkit⁶⁶.

At the same time, for virtual meetings to be logistically easier for *participants*, practitioners must take many factors into consideration. These factors can include meeting timing, platform used, chat/Q&A availability and staffing, use of captions and other built-in features, interpretation and translation, and recording availability. For example, when and where should virtual meetings be

⁶⁵ NASEM, "Virtual Public Involvement: Lessons..." p.22.

⁶⁶ US Federal Highway Administration [FHWA], "Virtual Town Halls," US Dept. of Transportation, updated December 8, 2022, https://www.fhwa.dot.gov/planning/public_involvement/vpi/virtual_toolkit/virtual_town_halls.cfm.

held? Some practitioners suggest that virtual meetings should occur around lunchtime or after typical work hours (5pm or later) to support broad attendance.⁶⁷ Hybrid meetings can also support this goal, especially if the in-person part is held at a community center or another easily accessible location.

A challenge of hybrid meetings, however, is ensuring that both participant groups (online and in-person) are engaged and attended to. Another key consideration for virtual meetings is facilitation technique and capacity. This may require additional staffing and facilitation expertise. Meeting times, just like the other factors mentioned, are often not straightforward decisions, but should be areas for transportation practitioners to consider and apply what they know about the communities they are trying to reach.

Zoom and Microsoft Teams were practitioners' most preferred meeting platforms in a multi-state survey conducted by the Minnesota DOT.⁶⁸ Zoom was cited as having the best camera and chat functionalities, while Microsoft Teams was easiest for practitioners because it was integrated with other Office tools and used the least computer memory. Considering how to balance the needs of practitioners and participants may also require practitioners to decide whether virtual meetings or webinars are most preferred. Virtual meetings enable participants to unmute themselves to provide feedback, while webinars typically do not allow for feedback except in individual instances where the moderator unmutes someone temporarily or enables the Q&A feature.

Practitioners should determine how much community input can and will shape the project outcomes, and therefore, whether more or less participation in the event is needed or desired.⁶⁹ If virtual events are less participation-focused, community members may lose interest over time and show less commitment to long-term involvement in the project.⁷⁰ Practitioners may also want to think about a community's capacity for virtual meetings if other local organizations and events utilize similar technologies. "Virtual meeting fatigue" can set in when participants must stare at screens for long periods of time, which was a particular challenge of the pandemic.⁷¹

While the event is in progress, attendees should be immediately, and periodically, informed if the event is being recorded—especially if it will be made publicly available afterwards.⁷² It can also be useful to send a follow-up email to registered participants after the event, so that

⁶⁷ Mohammad Moin Uddin, Candace Bright, & Kelly Foster, "Delphi Study to Identify..."

⁶⁸ Minnesota Department of Transportation, "Public Engagement Practices During..."

⁶⁹ Michigan Department of Transportation, "Virtual Public Involvement Benefits..."

⁷⁰ Courtney Cronley et al., "Utilizing an Inter-Professional..."

⁷¹ NASEM, "Virtual Public Involvement: Lessons..."

⁷² Martha Fedorowicz, Olivia Arena, & Kimberly Burrowes, "Community Engagement During the..."

feedback can be incorporated into future events. Beyond the logistics of virtual or hybrid meeting formats, a strong facilitation skillset is imperative for transportation practitioners.⁷³ These measures can help support the capacity of participants to interact in the ways they feel most comfortable.

VII. Information Sharing and Communication

The category of information sharing and communication is a component of most VPI tools in some ways, but it also denotes specific sets of strategies. Information sharing VPI tools can help gauge community interest and existing involvement, as well as integrate virtual and analog approaches. Virtual information sharing can take the form of virtual office hours, in which practitioners make themselves available for community members on a drop-in basis.^{74 75} Virtual office hours can be a way for community members to obtain VPI tool support or ask questions directly. These can occur in brief, 15-minute time slots to ensure the practitioner's greatest availability. Do-it-yourself (DIY) videos (short recordings taken with a smartphone or digital camera) can also be an effective means of training participants and communicating about plans, projects, and events, and can be embedded in streaming sites, social media, and project websites. Examples from Alaska DOT, Utah DOT, and the Strafford Regional Planning Commission in New England, are available in the cited FHWA VPI Toolkit.⁷⁶

Project websites, available with translation, are often a logical and effective way to convey updates and information about a project. If using a project website, it is important to communicate project goals in a clear and visible manner.⁷⁷ The same goes for digital newsletters or other email updates that are sent to participants.

Example: Get There Oregon⁷⁸ offers a comprehensive guide for inclusive communication practices, which entail emphasizing important information/dates, using plain language (no jargon), and using the first-person, active voice. Multi-language community workshops, both to determine barriers and needs for participation, and to facilitate core engagement opportunities, and community informed messaging and marketing materials are also emphasized in community case studies. Group WhatsApp text messaging was

⁷³ Michigan Department of Transportation, "Virtual Public Involvement Benefits..."

⁷⁴ Michigan Department of Transportation, "Virtual Public Involvement Benefits..."

⁷⁵ NASEM, "Virtual Public Involvement: Lessons..."

⁷⁶ US Federal Highway Administration [FHWA], "Do-It-Yourself Videos," US Dept. of Transportation, updated December 8, 2022, https://www.fhwa.dot.gov/planning/public_involvement/vpi/vpi_toolkit/diy_videos.cfm.

⁷⁷ Michigan Department of Transportation, "Virtual Public Involvement Benefits..."

⁷⁸ Get There Oregon, *Core Principles for Limited English Proficiency (LEP) Engagement in Transportation Options Programs*, accessed March 20, 2023, <https://getthereoregon.org/wp-content/uploads/2022/02/Core-Principles-for-LEP-Engagement-Appendix-FINAL.pdf>.

also emphasized as a communication tool that is already widely used by LEP populations and young community members.

Various information sharing and communication tools can be used to transparently and regularly communicate how community feedback is shaping the process and outcomes, which is especially important if the planning organization has decided to emphasize higher rungs in Arnstein's⁷⁹ Ladder of Citizen Participation in order to gauge project effectiveness by the standards of the community. Whether a planning organization is interested in emphasizing an approach at higher or lower rungs of Arnstein's Ladder, Michigan DOT also offers a simple guide for practices to start with when communicating with the public.⁸⁰

⁷⁹ Sherry R. Arnstein, "A Ladder of Citizen Participation," *Journal of the American Institute of Planners* 35, no. 4 (1969): 216-224, <https://doi.org/10.1080/01944366908977225>.

⁸⁰ Michigan Department of Transportation, "Virtual Public Involvement Benefits..." pg. 10

Case Examples

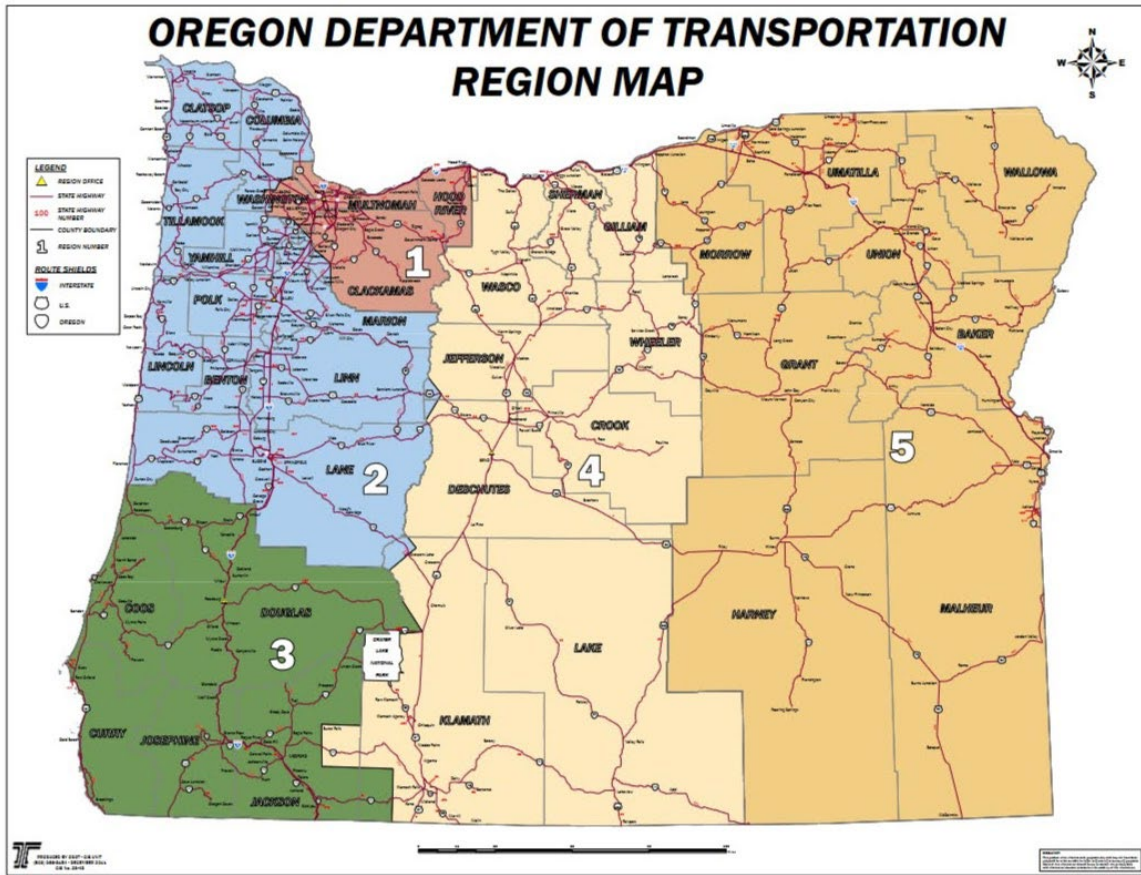
The following case examples stem from semi-structured interviews conducted with a representative from each agency listed below. Representatives discussed their agencies' experiences with VPI tools and some of the ways implementation has been shaped in response to the populations being served. Each case example includes a description of how the agency contends with rural VPI topics. When relevant, harder-to-reach populations are highlighted to illuminate how the interviewees think through strategies to reach these groups. Finally, each example includes recommendations intended to help practitioners meet their goals of improving rural VPI strategies. Additional information about the interviews is included in Appendix A.

Case Example 1:

Oregon Department of Transportation (ODOT) – Region 2, Active Transportation

Within ODOT's Region 2 (pictured as the blue area in Figure 3) are clusters of small towns intersected by federal highways. Especially when these highways constitute main streets, small towns sometimes wish to make changes to enhance walkability or bikeability (active transportation) on these roads. Small town governments, however, may not have existing resources or frameworks to facilitate easy access to ODOT contacts or approval procedures. Conversely, in situations where ODOT seeks public input on active transportation add-ons to existing projects in a community, the agency sometimes does not know how to connect to local stakeholder groups who are not already involved in public planning. Facilitating connections between ODOT and small, local communities was identified as a disconnect in the process of approving active transportation projects.

Figure 3. Oregon Department of Transportation Region Map.⁸¹



In one small community, ODOT solicited input on a proposed road reallocation—replacing one highway lane with a dedicated bicycle lane. Analysis of traffic conditions concluded that car volumes were low enough to support this reallocation, which would improve bikeability across town. At public meetings, a contingent of vocal residents strongly opposed the plan. With these residents’ assertiveness unmatched by other public groups, ODOT removed the road reallocation from the highway plan. A lingering concern, however, was to what extent this small group represented the views of the town’s population more generally. Given ODOT’s current funding structure, which prioritizes add-ons to existing projects over standalone proposals, it is unlikely that the possibility for road reallocation will resurface again in this remote community for some time. Such considerations raise the stakes for facilitating inclusive public involvement in rural communities.

⁸¹ <https://www.oregon.gov/odot/Engineering/TRSDocs/regionmap.pdf>.

Harder-to-Reach Populations

Spanish-speaking populations: ODOT uses project websites to update the public on local highway projects, and they offer a version of the website in Spanish in areas with Spanish-speaking populations. The availability of information in Spanish, however, has not always led to involvement from Spanish-speaking communities. Culturally, there may be differences in attitude toward government initiatives more generally, as well as different frameworks around the prerogative to voice opinions to the government. Logistically, Spanish-speakers who do visit ODOT's project websites may not easily locate Spanish-language translations, which tend to be indicated by a small button in a far corner of an otherwise English-language page.

Visually impaired populations: Among ADA-related comments fielded in ODOT Region 2 projects, visual impairment is one of the most common considerations mentioned. ODOT has worked to address visual impairment by ensuring that all online documents contain alt tags for any images used—a distinct accessibility advantage for online and virtual materials. Even so, the agency continues to field many visual impairment-related concerns from public participants that arise within specific projects and are not easily generalizable across communities.

Recommendations:

Consider trust-building as a precursor to broader engagement. Virtual tools for public involvement were acknowledged to sometimes help cast a wider net in ODOT communities, but these tools did not, in themselves, instill trust in community members. Especially for Spanish-speaking communities, ODOT teams have found greater success with interpersonal interactions rather than with exclusively online distribution of information. Conducting such activities as group walkabouts may be a necessary precursor to the success of online informational tools. Even when these tools, such as Spanish-language QR codes, are implemented, it may be necessary to use a hybrid approach: employing a community liaison and native speaker to distribute the codes on flyers may represent an effective interpersonal and virtual blending of methods.

Plan to offer something in return for participants' engagement. Despite restrictions on federal funds, reciprocal engagement was seen as a logical component of building trust with ODOT communities who were not primed to engage. For in-person events, ODOT plans for childcare needs and will offer snacks in some settings. While the virtual environment presents a challenge to the already narrow range of approved reciprocal techniques available to a state agency, some offerings—such as modest grocery gift cards—have the potential to be distributed to virtual

participants. Additionally, when ODOT collaborates with community organizations for grant funding, these grants offer an enhanced capacity for line-item inclusion of funds for public participation incentives.

Invest in personnel dedicated to community relationship-building. While ODOT does employ a community liaison for Region 2, this single role does not contain all of the capacity required to foster deep, long-term relationships with various community organizations throughout the geographic area. Though many of the towns in this region are very small, they cannot be treated as interchangeable. Some statewide organizations, such as Oregon Commission for the Blind, exist in multiple communities and can offer pathways for connecting to harder-to-reach populations in many places. Other organizations, such as the Mano a Mano Family Center in the Salem-Keizer region, possess decades of experience working within specific regions. In all cases, these trusted community partners could benefit from the dedication of ODOT personnel who take time to invest in partnerships beyond their relevance to specific transportation projects.

Case Example 2:

National Association of Development Organizations (NADO) – NADO Research Foundation

NADO works closely with member development organizations across the US. An agency interviewee offered insight into common challenges and approaches for transportation planning efforts across these development organizations, and also reflected on unique experiences within NADO's membership. A number of regional transportation planning efforts, including in North Carolina, California, Maine, Pennsylvania, Washington and Oregon, have recently leveraged VPI tools like online mapping, virtual meetings and outreach, recorded presentations that reflect "views" that indicate reach, and other virtual public engagement tools to address rural engagement challenges.

To gain more geographic equity and communicate with hard-to-reach populations through public engagement processes, virtual meetings, mapping tools, and surveys with QR code links have been used widely, but the interviewee emphasized efforts beyond choosing the right VPI tool. Understanding "demand," or why community members need transportation systems—to get to work, access medical care and food—helps practitioners design a process and engage partners appropriately. In addition to virtual or hybrid meetings, strong facilitation skills, as well as ensuring equitable access to technology and training that builds technical knowledge, are critical. Getting the word out when broadband access is not ubiquitous requires partnering with trusted voices, spreading the word through several methods, and going to where people are, perhaps multiple times. Choosing the right VPI tool to fit the particular engagement challenge a

practitioner might face in a given community is just as important as using the tool(s) well and engaging humans on a human level.

NADO and member regional planning organizations have all had luck engaging older rural populations with higher mobility; however, the level of engagement by this population varies by income level. Higher-income older people congregate in predictable places like senior centers and tend to have time to engage in planning processes. Other populations have not been so easy to reach, and some of the solutions that member organizations have applied are as follows. The agency representative emphasized the importance of using interdisciplinary approaches and partners for harder-to-reach populations.

Harder-to-Reach Populations

Low-income populations and those with low/no access to Internet and technical tools: Improving equitable technology access is a key consideration, as is timing of a meeting according to work schedules. Practitioners should consider how accessible tools are on smartphones, for those using data plans in rural places rather than consistent Internet connection.

Youth: Virtual tools can be especially useful in engaging this population, but engagement often focuses on the future rather than their present opinions and current needs. Practitioners should feel encouraged to also orient outreach to capture the present. Group WhatsApp text messaging was also emphasized as a communication tool that is already widely used by young community members, and LEP populations.

LEP populations: Working with a wide range of partner organizations that have existing relationships with these groups, including volunteer interpreters in medical or educational settings, is helpful. Engaging refugees is particularly challenging in many communities and requires a strong network of interdisciplinary efforts and research, including many contacts that are not immediately considered.

Indigenous and People of Color: Ensuring adequate time, budget, and attention is devoted to building trust and meaningful engagement early in the process is critical. Tribal leadership and community member engagement should be approached very thoughtfully due to sovereignty and cultural considerations. Again, meaningful and timely engagement is essential.

In addition to cultivating interdisciplinary partnerships, considering “value chain development”—a rural wealth creation framework⁸²— was also emphasized as a useful tool to prompt creative, systems-level thinking. Facilitation support and training for practitioners was also recommended, whether meetings take place in-person, virtually, or in a hybrid format. The TRB public involvement committee, among others, has resources and expertise in this area.

Case Example 3:

Regional Tourism Coordination Organization – Oregon Coast Visitors Association (OCVA)

OCVA leadership is a frequent partner in regional planning efforts, including state transportation agency planning efforts. The organization also leads regional engagement efforts with key stakeholder populations, with which the organization has worked hard over many years to build trusting relationships. OCVA is well aware of regional engagement challenges and VPI tools that have been used successfully. The interview emphasized key strategies to address persistent planning challenges, the perennial importance of building and utilizing political and social capital, and working closely with trusted local and regional organizations.

Social and political capital, in this context, pertain to networks of relationships between interconnected groups and the bonds of trust that enable them to interact.⁸³ These were acknowledged to be required resources, and building these forms of capital was promoted as an important goal of community engagement work, whether virtual, in-person, or hybrid. The “high context culture” of rural communities, in which context, cultural meaning, communal benefits and personal relationships are important, is something that OCVA has seen neglected by many practitioners. In a high context culture, rural community members require a higher degree of trust and communication and a deeper relationship in order to actively participate in efforts to bring about a shared goal. Essential steps include public education, as well as a long planning horizon adequate for providing key information and allowing adequate time for the public to consider the challenges and opportunities. Social identity is highly important, as is connecting with organizations, trusted partners, and community leaders on a local level.

Recommendations:

Double timelines: Essential “pre-work” at an agency, organization, and individual level requires time and attention. Engaging community and regional partners early and often builds important

⁸² See: Wealthworks at <https://www.wealthworks.org/> for an example.

⁸³ Margarita Poteyeva, “Social Capital,” *Encyclopedia Britannica*, accessed May 7, 2023, <https://www.britannica.com/topic/social-capital>.

buy-in and brings their knowledge about what works, and what has not, to the table. Adding a social component to meetings will help foster relationships, and perhaps encourage people who might not have spoken up to participate. Extending timelines can help bring up issues from stakeholders for the current or future projects that are invaluable to their success and to ensuring satisfaction from the communities these projects are meant to serve.

Double financial resources: Practitioners might ask, what latitude is there to be responsive to public engagement feedback and fund a critical tool or approach that will help overcome a significant engagement challenge? Regional partners like OCVA can (and have) provided conferencing technology to trusted local organizations or gathering places, to support greater participation in virtual meetings. Extending timelines, being responsive to organizations and the public, responding to public engagement feedback, and investing more deeply in VPI tools and processes takes resources, both for “infrastructure” and for staff time. Additionally, engaging harder-to-reach populations often requires having equitably fostered partnerships, additional events, duplicate communication and information sharing strategies, and more costly VPI engagement tools. Efforts to engage these populations require deeper investment of resources.

Case Example 4:

Upper Great Plains Transportation Institute – North Dakota State University

The activities of the Upper Great Plains Transportation Institute include working on projects with the Transportation Research Board and coordinating with Tribal governments on transportation projects. One of the central questions in working with Tribes is to understand how to support and assist them in implementing self-determination goals. Much of the existing transportation infrastructure was put in place long ago by non-Tribal entities; Tribes may have thus inherited transportation systems over which they have no authority. Public involvement figures centrally into projects that impact Tribes as a way of leveling the playing field between those who design and implement projects and those who use these goods. Furthermore, the degree to which private interests leverage the use of public goods—such as in the construction of oil pipelines—is of particular concern to Tribal nations that have historically lacked authority over public goods.

Centering Tribal self-determination means that when the Institute works with Tribal communities on transportation projects, it is important to connect the project to the social determinants of health that such infrastructure can impact—including access to healthcare, education, and fresh food options. In addition, the safety of roads is of central importance, as vehicle crashes are a major killer of Native people in the Dakotas region.

Empowering Tribal communities to understand the implications of transportation projects enables frameworks for asking key questions that impact their support for the direction of a project. The Covid-19 pandemic proved highly disruptive, as neither individuals nor Tribal agencies had pervasive, easy access to broadband Internet to continue in-depth conversations. While agencies gradually adjusted to the reality of virtual meetings, conveying the context around projects remained challenging, and public participation was often low. Community members did not always know what questions to ask when there was an open-ended call for questions in a virtual space. Instead, the Institute found success with more targeted virtual engagement tools, such as polls that provided a limited number of response options about a specific project-related decision.

Harder-to-Reach Populations

The urban Tribal diaspora: While rural populations are often perceived as harder to reach due to the Digital Divide, the Institute has found that Native people who live off-reservation—typically in larger cities—can be the most difficult to involve in transportation projects. There is wide variation in how closely these individuals maintain ties with family and friends still living on the reservation, which impacts not only whether they choose to be involved with a project, but also whether successful contact can be made in the first place. It is important for Native sovereignty that as many Tribe members have a voice in these projects as possible, regardless of whether they currently reside within the bounds of a reservation. The Institute acknowledged that a significant amount of “cyber-sleuthing” is often required to discern where Native urban people go to be informed and connect with one another. Despite the unique challenges of reaching this population, virtual tools can be beneficial in facilitating access for those who do not live in the region.

Recommendations:

Consider what may be required to make a project relevant to communities when in-person conversations are not possible. The Institute found that investing in sophisticated graphics, as well as video content, helped to orient Tribal communities to the tangible impacts that were at stake in a project’s design. These graphics then formed the basis for asking specific, choice-based questions of community participants. Not only might participants be more likely to form an opinion on such questions after interacting with detailed visual content, but the questions themselves can offer participants a frame for understanding how their input will be of value to project planners. As echoed in other case examples, it is imperative to curate virtual content to

mobile phone users so that data plans can be used to access content that may otherwise eat up Internet bandwidth.

Plan for “bookends” of engagement around key project events. During the time period prior to a planned event, practitioners should budget time for observing/participating in community happenings without a project-focused agenda. Trust-building is essential for agencies that aim to incorporate input from Tribal governments and communities, and oftentimes, merely showing up to a community space may not be acceptable when doing so with an explicit project to advertise. Tribal citizens may need evidence that practitioners are interested in learning about the community on its own terms. Similarly, even when compelling visuals and pointed questions work to elicit public input during a virtual event, the public involvement portion of a project should not be considered complete after a successful virtual event. To the extent possible, following up on an individualized basis with virtual participants—whether by phone, one-on-one virtual calls, or in-person—communicates that the practitioner is there to serve the community and not just clear a hurdle. Because of the perceived capacity for private interests to structure the distribution of public goods, individualized connection and follow-up is necessary for building trust in Tribal spaces.

Show (and budget) respect for participants’ time. Whether it is a bowl of candy at a booth, an online drawing for a gift card, or something else, participants must be welcomed into giving up their time for project input. Any form of data collection from federal agencies—whether surveys, demographic details, or ISP data from website visits—may be seen as threatening and unnecessary to communities who do not trust these agencies to serve their interests. Even small tokens of respect for participants’ input can be pivotal in gaining access to valuable data.

Discussion

In the Challenges and Barriers section at the beginning of this report, we identified three challenges of implementing VPI tools in rural settings: gauging existing community involvement, integrating VPI tools with traditional methods of public engagement, and contending with the digital divide. Understanding some of the ways in which transportation practitioners already think about and use various VPI tools post-pandemic, we have identified two central questions for consideration that alternately speak to the challenges identified, as well as highlight existing gaps between discourse and practice. These questions can help practitioners focus on the most salient, and complex, aspects of the pre-work that precedes choosing a set of VPI tools.

What do communities need to be engaged?

While VPI tools can increase the pool of potential participants in rural transportation projects, the efficacy of virtual tools must be supported with a foundation of trust-building and training from agencies. Communities deserve to understand why the issue or project is relevant and important to them—why it is worth their attention and energy.^{84 85} Building awareness of a project, in itself, does not build community investment. The extent to which various populations within a community are already engaged with public projects cannot be assumed.

Virtual tools may offer more methods of communicating, but a wider choice of tools may not inherently encourage wider community participation. Practitioners can encourage investment by committing to reciprocal practices, such as those suggested by ODOT's Active Transportation Region 2: decrease barriers to both virtual and traditional forms of participation, and offer incentives when feasible. Additionally, when people take the time to offer input on a stage of a project, it is recommended to keep them updated on how that feedback has been incorporated.⁸⁶ If practitioners expect to consult with local community leaders extensively, consider adding compensation for this partnership into the project budget.⁸⁷

Local community leaders and organizations are the experts on their community's needs and interests, as OCVA emphasizes. Therefore, practitioners should understand them as experts who have valuable insights into reaching populations that are underrepresented in public

⁸⁴ Mohammad Moin Uddin, Candace Bright, & Kelly Foster, "Delphi Study to Identify..."

⁸⁵ Michigan Department of Transportation, "Virtual Public Involvement Benefits..."

⁸⁶ Courtney Cronley et al., "Utilizing an Inter-Professional Online..."

⁸⁷ Get There Oregon. *Core Principles for Limited...*, pg. 9.

participation.^{88 89 90 91} They can be partnered with as co-leaders, which may be especially beneficial for supporting a community's long-term resilience. Greater transportation diversity, which is premised on more effective attention to diverse voices in the planning process, can help more community members to meet their daily and evolving needs.⁹²

Practitioners should be clear about how much public engagement will shape the ultimate outcome; they must also understand why they need public involvement in the first place. Practitioners can strive to make clear what the project goals and impacts are, and emphasize the importance of community input in shaping a workable solution; but they must also be cognizant of the level of demand they are placing on participants. The Urban Institute adds:

Do we have mechanisms in place to avoid overburdening our community members with requests for input? (Answering this question will require an awareness of what other outreach community groups are doing and of what resources and budget are available).⁹³

Finally, communities may need additional training and support to fully participate. They may also need access to digital tools for participation if they do not already have access locally (computers/tablets, hot spots, survey response tools, etc.). In addition to partnering with trusted leaders and organizations, ensuring that materials are accessible and legible to all target populations, and that they have a place to go to ask questions, may be needed.

What else is needed to support practitioners in fostering diverse inclusion?

Practitioners will want to take time to be comprehensively trained in facilitation techniques and any virtual tools they are considering implementing. There may be times during the early planning stages when it is difficult to fully assess how well a given tool might work for a community without greater technical knowledge of its possibilities and functionality, which can also inform how best to introduce and facilitate its use. Planning and reflective monitoring will help practitioners both *anticipate* diverse needs and also *respond* to how well they achieve inclusion goals during the stages of implementation.⁹⁴

⁸⁸ Minnesota Department of Transportation, "Public Engagement Practices During..."

⁸⁹ Mohammad Moin Uddin, Candace Bright, & Kelly Foster, "Delphi Study to Identify..."

⁹⁰ GPCOG, "Inclusive & Accessible Virtual Engagement..."

⁹¹ Michigan Department of Transportation, "Virtual Public Involvement Benefits..."

⁹² Andrew Broderick, *The Future of Rural Transportation...*

⁹³ Martha Fedorowicz, Olivia Arena, & Kimberly Burrowes, "Community Engagement During the..." pg. 4.

⁹⁴ Devendra Potnis & Bhakti Gala, "Best Practices for Conducting Fieldwork with Marginalized Communities," *Information Processing and Management* 57(2020), <https://doi.org/10.1016/j.ipm.2019.102144>.

These can both be supported by rubrics and other measures that encourage practitioners to identify specific inclusivity criteria and then think about the characteristics of various tools that will address those criteria. GPCOG,⁹⁵ for example, developed a matrix to rank different tools used for live polling based on community needs (see Figure 4). Developing the matrix required them to identify community needs, such as device compatibility and language access, and then research various polling tools to determine which ones met their criteria. Using this method could result in none of the available tools being a full match for all of the inclusion criteria. What may be more important than finding the “perfect” tool is knowing in advance where a chosen tool falls short and addressing those deficiencies through other means.

Figure 4. Live Polling Tools Rating Matrix. Adapted from GPCOG (2020, p. 13).

Live Polling Tools Rating Matrix		Tool #1	Tool #2	Tool #3
Criteria	Includes accommodations for disabilities and language access			
	Deployment on different devices			
	Compatible with other software programs; ZOOM, PowerPoint			
	Ease of use; easy set up and easy for the end user			
	Audience interaction: how does the audience complete the poll, ex. Smartphone, text, etc.			
	Cost			
	Features per package; Ex. crowdsourcing question tools, types of survey questions			

Training can also help ensure that practitioners are responsive and flexible when unexpected issues arise with a virtual tool in practice, and that they can offer tool training and guidance to community participants. It is useful to identify subject matter experts (technical support) within the organization to support tool training and be on hand during implementation.^{96 97 98 99} When formal training is not available, practitioners may wish to take advantage of (or create) peer exchanges and internal VPI working groups to help advance training needs across divisions of an organization.¹⁰⁰

Questions surrounding a rural community’s existing forms of engagement, its receptivity to using specific virtual tools to supplement or replace traditional ones, and its capacity for Internet-based involvement cannot be generalized; the answers must be discovered. Practitioners will want to take opportunities to get to know the communities they are trying to

⁹⁵ GPCOG, “Inclusive & Accessible Virtual Engagement...”

⁹⁶ Minnesota Department of Transportation, “Public Engagement Practices During...”

⁹⁷ GPCOG, “Inclusive & Accessible Virtual Engagement...”

⁹⁸ Michigan Department of Transportation, “Virtual Public Involvement Benefits...”

⁹⁹ NASEM, “Virtual Public Involvement: Lessons...”

¹⁰⁰ NASEM, “Virtual Public Involvement: Lessons...”

reach. One way to do this is to be present at community events that are not about the project.¹⁰¹ Since practitioners may not have the opportunity to get to know all of the underserved populations in the project area prior to soliciting public feedback, it is important to always describe and model inclusive interaction practices at any public-facing event. Ask participants to speak slowly and clearly, and to state their names, optional pronouns, or other measures to support comprehension and foster a welcoming environment.¹⁰² Such practices, while seemingly small, can signal who is included in the practitioner's intended audience.

When pondering these individual-level decisions, in addition to the frameworks of public participation and trust-building more broadly, practitioners will recognize that these responsibilities require large amounts of dedicated time and energy. Agencies may need to consider how to feasibly build capacity to fully support the work of practitioners in fostering sustainable, long-term community relationships.

¹⁰¹ Martha Fedorowicz, Olivia Arena, & Kimberly Burrowes, "Community Engagement During the..."

¹⁰² GPCOG, "Inclusive & Accessible Virtual Engagement..."

Conclusion and Recommendations

This section summarizes the findings from this report and details possible steps for transportation practitioners to take when considering specific VPI tools for rural projects.

Summary Points

I. Gauging Community Involvement

It can be useful to consider solicitations for public involvement as opportunities to support the resilience of rural communities. Transportation practitioners, as public servants, can help community members engage in public projects in ways that support long-term satisfaction with the outcomes. Achieving this ideal requires that practitioners invest in getting to know the project community and allowing its members to demonstrate how they would like to accomplish their own goals. As in ODOT's Region 2, some communities, like the Spanish-speaking population, may not engage with any VPI tools unless rapport and trust have been established through in-person interactions. This does not mean that VPI tools should not be used; rather, practitioners must be sensitive to their status as community outsiders and recognize that preestablished rhythms of engagement must be discovered before they can be leveraged in support of practitioners' goals. Practitioners may need to reflect on what degree of engagement is possible given their agency's capacity,

II. Integrating VPI Tools with Traditional Methods

After identifying appropriate VPI tools, ideally in coordination with local contacts, practitioners working in rural communities might consider how integrating VPI and traditional engagement methods can help reach a range of target populations. Practitioners will want to consider balancing the use of technology with a human center. Digital tools (like email newsletters) do not always require virtual capacity-building, and virtual options are not inherently best. Many communities consider a range of virtual meeting options from telephone town halls (easiest participation, especially for those without Internet access) and online meetings (most common) to hybrid in-person and online meetings (most complex).¹⁰³

Digital and analog tools can be used to both enhance the effectiveness of virtual tools and substitute for the deficiencies of them. Digital tools, such as email, may be more broadly accessible than virtual tools like webinars, and can be used to notify of upcoming events as well as provide information. Analog tools, like phone calls, telephone town halls, or even tabling at local community fairs or meetings, can reach populations who are not online—or encourage

¹⁰³ Michigan Department of Transportation, "Virtual Public Involvement Benefits..." pg. 8.

individuals to participate in future virtual engagement.^{104 105} Table 2 exemplifies how different modalities of tools may interact within different points on the spectrum of community members' participation. Notice that, as public participation gets elevated along the spectrum, the type of tool becomes less important than the degree of involvement it facilitates.

Table 2. IAP2 Public Participation Spectrum. Adopted from GPCOG (2020, p. 4)

	Inform	Consult	Involve	Collaborate	Empower
Public participation goal	To provide the public with balanced and objective information to assist them in understanding the problems, alternatives, and/or solutions.	To obtain public feedback on analysis, alternatives, and/or decision	To work directly with the public throughout the process to ensure that public issues and concerns are consistently understood and considered.	To partner with the public in each aspect of the decision including the development of alternatives and the identification of the preferred solution.	To place final decision-making in the hands of the public.
Promise to the public	We will keep you informed.	We will keep you informed, listen to and acknowledge concerns and provide feedback on how public input influenced the decision.	We will work with you to ensure that your concerns and issues are directly reflected in the alternatives developed and provide feedback on how public input influenced the decision	We will look to you for direct advice and innovation in formulating solutions and incorporate your advise and recommendations into the decisions to the maximum extent possible.	We will implement what you decide.
Example tools	<ul style="list-style-type: none"> •Fact sheets •Websites •Open houses 	<ul style="list-style-type: none"> •Public comment •Focus groups •Surveys •Public meetings 	<ul style="list-style-type: none"> •Workshops •Deliberate polling 	<ul style="list-style-type: none"> •Citizen advisory committees •Consensus building •Participatory decision-making 	<ul style="list-style-type: none"> •Citizen juries •Ballots •Delegated decisions

Steps for Practitioners to Consider

Prior to beginning the public involvement phase of a project, take time to engage in active reflection about the communities you are aiming to reach. This reflection can even be done with local partners. Some questions for ultimately choosing a virtual tool might include:

- Who are you trying to connect with?

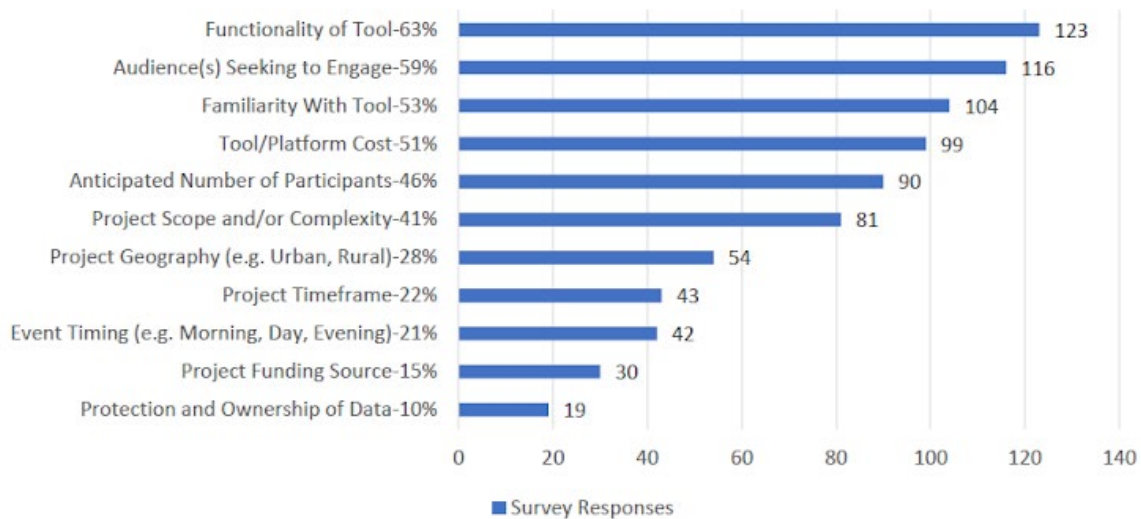
¹⁰⁴ Andrew Broderick, *The Future of Rural Transportation...*

¹⁰⁵ Martha Fedorowicz, Olivia Arena, & Kimberly Burrows, "Community Engagement During the..."

- Who are the necessary partners?
- What are the outreach goals?
- When is the best time to reach out?
- Who is impacted?
- What are the unique stakeholder needs?
- Why should people be interested?
- What is your budget?
- What is your department’s capacity for outreach, engagement, and follow-up?
- What strategies have been used in the past and how were they evaluated?^{106 107}

These questions can be, at times, difficult for transportation practitioners to answer on their own. Figure 5 depicts additional practical considerations that agency planners said they have used for choosing VPI tools during the pandemic.¹⁰⁸ While project geography is not a very common consideration, it is clear that rural communities have particular characteristics related to Internet access and entitative dynamics that should be investigated prior to determining which VPI tools will garner the public feedback you require. With some discussion and, potentially, outreach to community leaders, the answers to the above questions can be paired with specific features of various VPI tools to provide the solution that best fits the community in question.

Figure 5. Factors influencing VPI usage. Adapted from NASEM (2022, p.23).



¹⁰⁶ GPCOG, “Inclusive & Accessible Virtual Engagement...”

¹⁰⁷ Michigan Department of Transportation, “Virtual Public Involvement Benefits...”

¹⁰⁸ NASEM, “Virtual Public Involvement: Lessons...”

I. Addressing the Digital Divide

Effectively addressing limits to broadband access in rural communities is, in many ways, another component of meeting communities where they are and becoming familiar with their own goals and capacity. Trusted community leaders can act as valuable sources of feedback on the types of VPI tools being considered for a project, and the level of access community members might have to the technological tools needed to consistently engage. It may be that VPI tools indeed widen the base of public participation, but only when specific accessibility steps are taken, such as using (and advertising) sign language translation during live webinars. In instances where many community members go without broadband Internet and primarily connect to services through mobile data plans, practitioners will need to focus their energy on adapting their tools and ideas to what works. Arriving with a firm preconceived idea of the type of VPI tool one wishes to implement may be less feasible in rural communities—and ultimately less useful in obtaining needed public input.

II. Investing in Practitioner and Community Capacity-Building

Practitioners may need additional technical and facilitation skills training to successfully launch and conduct meaningful engagement with VPI tools. Community members may also need different types of training and technical assistance along the way. Investments take resources. The literature highlighting successful community virtual public involvement, as well as the case study interviews, offer a strong recommendation for increased investment of time and financial resources in community engagement processes that are appropriately calibrated to the ultimate needs and anticipated outcomes of the project.

This summary of recommendations is intended to encourage collaboration and thoughtful consideration of challenges and barriers to rural participation, and to provide an overview of VPI tools at our collective disposal to surmount these challenges and support the role of public involvement in shaping project outcomes. Decisions about tools and processes are necessarily place-specific, but there are many communities discerning how to bring ambitious goals to fruition with the help of VPI tools. Many of these communities have shared insights in reports, resources, toolkits, videos, and webinars that can serve as a reference and example, and many are highlighted in this report. There is a research community through the Transportation Research Board, US Department of Transportation FHWA, and other organizations asking critical questions about how to best leverage virtual tools for more robust public involvement, and this work will surely continue to evolve.

Implementation Actions

The Table 3 below describes the six tasks identified in this study as implementation actions, with an accompanying task description and identified agency to lead the task.

Table 3. Implementation actions identified in this study

Task	Description	Lead
<i>Develop single page information brief for each section</i>	<i>Visual summary of content of each piece of the report for simple navigation</i>	<i>FHWA</i>
<i>Develop slide deck of content and findings</i>	<i>Summary of project, approach, and findings for dissemination</i>	<i>FHWA</i>
<i>Develop, Deliver Recorded Webinar</i>	<i>Summary of project, approach, and findings for dissemination</i>	<i>FHWA</i>
<i>Create Navigable PDF</i>	<i>PDF based on webinar presentation</i>	<i>FHWA</i>
<i>TRB Poster Session</i>	<i>TRB Annual Meeting held in January. Joint presentation with FHWA</i>	<i>FHWA</i>
<i>Collect Research Need Statements</i>	<i>Develop new research statements based on Final Report and dissemination efforts</i>	<i>FHWA; TRB Committees on Parks and Parks and Public Lands (AEP20) and Native American Transportation Issues (AME30); TRB Rural Transportation Issues Coordinating Council</i>

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Appendix A: Interview Protocol

To obtain a set of interviewees for the case examples included in this report, we first solicited contacts and suggestions from the members of the project management team (PMT). The PMT members are based in Oregon and the contact list reflected predominantly Pacific Northwest regions, so we also searched relevant TRB literature pertaining to VPI topics and considered several contacts of our own to broaden the options across geographic location. We then identified individuals who would offer representation across geographic area, type of organization, and scope of responsibility.

We conducted interviews via Zoom during the months of March and April 2023. Interviews lasted 60-90 minutes and were based on a set of semi-structured questions, as follows:

1. Would you tell me about your current role?
 - What types of experience and interests led you to this position?
 - Generally, what types of questions or problems do you address in your role?
 - [position-specific follow-up questions...]
2. Why, or in what ways, is public participation and input important to the work that you do?
3. How would you characterize the public(s) you serve? (Demographically, ideologically...)
4. How has the pandemic informed public involvement for your organization? What changed and what worked well?
5. What are some challenges or barriers you've encountered with getting virtual public input on projects from rural stakeholders?
6. Would you give me an example of a project you've worked on and how you strategized around the virtual or hybrid public involvement piece?
7. Who are the populations/groups/communities you've discovered are harder to reach? Who have you had more success reaching and why?
8. How do you try to ensure that you are reaching everyone you want to reach, including the hard-to-reach folks?

9. What virtual tools have you used successfully, and what did success look like in each case?

10. Is there a virtual public involvement tool or approach you'd like to have more information about or more support to use it in your context?

11. Is there anything I haven't asked you that would be important to know?

