The Role of Public Art in Shaping Boulder's Sustainable, Equitable, and Resilient Future

for

## Master of Arts

Arts and Cultural Management: Advocacy and Outreach

## Bea Halstead

University of Denver University College

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Instructor: Charlotte D'Armond, Ph.D.

Director: Joseph Hutchison, MFA

Dean: Michael J. McGuire, MLS

## Abstract

The study examines the critical role of public art in urban planning, focusing on Boulder, Colorado. As the city transitions from its 2015 Community Cultural Plan to the 2022-2023 Sustainability, Equity, and Resiliency Framework, the research investigates how public art can contribute to achieving community goals through cultural and experiential evaluation and metrics. The research analyzes past strategies, explores funding methods for public art, and examines case studies from other U.S. cities. Findings suggest integrating public art into sustainability and resiliency planning can significantly enhance social capital and cultural welfare. The research aims to inform policy decisions and bridge potential gaps in Boulder's community planning approach.

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## Background

Public art shapes urban culture, fosters community identity, and addresses social inequalities. Public art is any creative expression that is free to the public and located in a place accessible to the public. Public art is often visual, like sculptures, street art (murals), and graffiti (word art). Public performances and cultural institutions such as museums also exist, but they are not the focus of this research.

Public art can influence perceptions, foster civic pride, and drive positive social change.

When barriers to access, such as cost, social stigmatization, and exclusion, are removed, public art becomes a powerful tool for community building and addressing social inequalities.

Throughout history, creatives have used their work to document social themes, often taking on the role of activists. Expression of ideals can represent historical events or future values and ideals to shape the viewers' perspectives and influence social change over time. As more exhibitions are added to a place, culture collections will capitalize on their potential to influence at a grander scale.

The concept of cultural capital, combined with the experiential value of public art, offers a structure for understanding and measuring the impact of creative works on communities.

Cultural valuation is the process of identifying, assessing, and attributing importance to various elements of culture, including the recognition of significant cultural practices, evaluation of their relevance and quality, determination of what should be preserved, decisions on what to promote, consideration of economic value, and assessment of social impact on identity and cohesion. The cultural valuation approach can increase opportunities for creating and

displaying art that shapes equitable cultural foundations for viewers and residents alike.

Municipalities can foster environments that cultivate positive cultural values by investing in public art and creative initiatives in places throughout the community. These investments can produce positive outcomes such as increased civic pride, improved public safety, and enhanced public health and environmental sustainability.

As cities strive for sustainability, equity, and resilience, the strategic integration of public art into municipal planning becomes increasingly crucial. As a compelling case study, the research explores the intersection of public art, cultural planning, and civic development, focusing on Boulder, Colorado. Despite Boulder's rich artistic heritage, with hundreds of public artworks and artists, as well as a commitment to equity and sustainability, the city's current 2022 - 2023 Sustainability, Equity, and Resiliency Framework (SERF), budget, and placement of public art show a notable gap between cultural aspirations and urban development strategies.

Initially, the analysis of public art seeks to determine what activist themes exist in the city, where placement gaps need to be addressed, and what evaluation methods can be established to measure the cultural impact on the community over time. For example, upon reviewing the various maps of public art against a map of the lower-income areas of Boulder, it becomes clear that higher-income and higher-traffic regions have the most exposure (Statistical Atlas 2018).

When reviewing how a mural is funded for the annual Street Wise Arts Mural Festival, the funding is primarily sourced from the wall's donor, and the organization is only marginally financed by the City of Boulder (Interview Leah Brenner Clack, Street Wise Arts Executive Director, July 22, 2024). The funding of public art in Boulder is a foundational data point in

assessing potential inequities in the placement of public arts distribution.

## Importance of the Topic

The study examines the critical role of public art in fostering cultural equity, sustainability, and resilience in urban communities, using Boulder, Colorado, as a case study to demonstrate how strategic integration of arts into municipal planning can address social inequities and enhance community well-being. The study identifies ways to incorporate creative expression into civic planning and development strategies using technology-driven valuation methods to measure social impact. The results will ensure that art and culture remain central to a municipality's vision for a thriving and inclusive future. Without addressing disparities, the City of Boulder risks undermining its goals for social cohesion, cultural representation and diversity, and long-term community sustainability and resilience. The City of Boulder is undergoing a cultural mapping exercise, but it is not intended to inform the 2022 – 2023 SERF or the current city budget that supports that framework.

## **Problem Statement**

The City of Boulder, Colorado, has a critical disconnect between its cultural aspirations and urban planning framework. Despite a rich history of supporting the arts and a stated commitment to equity and sustainability, Boulder's 2022 SERF fails to explicitly integrate public art and cultural development as key drivers of these goals (City of Boulder 2022). The omission of cultural valuation and community impact manifests in several interconnected challenges. The city's budget for 2022-2024 shows a significant reduction in funding for arts and culture, with only a tiny fraction of overall funding dedicated to creative initiatives (City of Boulder 2022-

2024). Financial constraints severely limit the city's ability to leverage public art for community development.

Furthermore, current public art initiatives, particularly murals and sculptures, are concentrated downtown, creating unequal access for low-income residents who do not reside in those areas and may not frequent them as often. This spatial disparity reinforces existing socioeconomic divides and limits the transformative potential of public art across the entire community. Compounding these issues, the cultural asset mapping project, crucial for understanding the city's creative landscape, is being conducted after implementing the 2022 – 2023 SERF (City of Boulder n.d.). This haphazard approach to evaluation activities will result in missed opportunities to integrate cultural assets into the city's broader sustainability and equity goals and projects. The issues collectively point to a fundamental inconsistency in Boulder's approach to urban planning: the failure to recognize and harness the power of public art and cultural development as essential tools for building a sustainable, equitable, and resilient community.

#### Approach

Through a comprehensive analysis of literature, local data, and case studies, the research investigates methods to support further funding for public art assets that address Boulder's City and County goals for social capital. The report utilized research sources with local data to analyze the activities occurring in Boulder and uncover incongruity in the methodology employed to invest in arts and culture. Reviewing the City of Boulder's 2022-2023 Sustainability, Equity, Resiliency Framework (SERF) provided a reference point for the research into investments, projects, and programs. The Boulder Office of Art and Culture's (BOAC)

cultural mapping project is the seminal source that launched the problem statement and analysis to uncover if the initiative's approach and activities would potentially address community goals with current investments in art and culture (City of Boulder n.d.).

This study will provide insights to:

- Analyze the current state of public art distribution and accessibility in Boulder
- Evaluate the city's approach to cultural planning and its alignment with broader sustainability and equity goals
- Propose methods for measuring the social impact of public art investments
- Recommend strategies for integrating public art more effectively into Boulder's
   urban planning and community development initiatives

The research examined Boulder's strengths and challenges to understand better how cities can leverage public art to build more inclusive, sustainable, and resilient communities.

The findings and recommendations from this study have implications for Boulder and urban planners, policymakers, and arts advocates in cities worldwide.

2015-2024 Boulder Community Plan Summary and Culture Mapping

The BOAC released a detailed plan to implement art and culture from 2015 to 2024, reflecting the desire to shape Boulder's culture and solve problems that intersect with resiliency, sustainability, and economic prosperity by crafting Boulder's social, physical, and cultural environment (BOAC 2015). Centering activities on creativity and a commitment to arts to solve the city-wide priorities with public art, creative economy, funding, and sustainable cultural tourism by including the community's voice and trust. Events were hosted to garner insights from public input in several creative circles and formats over a year. The community

priorities, vision, strategies, guiding principles, and goals and measures outlined in the document came from qualitative research. The findings supported vital areas of strength and weakness that are still relevant. As the initiative concludes, BOAC is conducting a Cultural Mapping assessment and evaluating the efforts of the last ten years to understand the impacts and potential miscalculation of their efforts (City of Boulder 2024). This resource helps support the activities already conducted in the area and promotes creativity at the center of culture building.

2022 Boulder Sustainability, Equity, Resiliency Framework (SERF or Framework) Summary

The City of Boulder's Framework for strategic planning includes goals like safety, health, social thriving, accessibility, and environmental sustainability (City of Boulder 2022). The underlying inequities present in Boulder's current culture concerning diversity, income disparity, and accessibility to programs are addressed in various statements. Despite this, building a culture by utilizing public art is not mentioned as a tactic for providing residents with change. Some city-run systems mentioned include infrastructure maintenance, environmental stewardship, racial equity in policies and processes, basic public health systems, affordable housing, and inclusive social activities (City of Boulder 2022). Reviewing the 2023 City of Boulder Budget, those priorities are funded through different programs than the existing Art and Culture sector (City of Boulder 2023). It is unknown how those programs incorporate creative expression to achieve community goals, so evaluating the area's existing public art and culture is required to ensure further investment in the approach.

City of Boulder: Public Art Assessment

To understand the social themes of public art in the Boulder community, a review of one hundred murals from 2016 – 2023 and a dozen public art installations was conducted via three public tours and an online analysis of images and locations via the *Street Wise Mural Map* (Street Wise Art n.d., Appendix A). The following research analysis reviews a deeper understanding of the various methods for evaluating public art to provide a clear guide for assessing future policies and projects' outcomes and social impacts. The dimensions for evaluating social change overlayed with the placement of public art installments can be analyzed to measure influence and cultural impact over time.

#### **Literature Review**

#### Introduction

Culture can be created and measured, and it can produce both positive and negative impacts on individuals and groups. A community can actively invest in a culture that cultivates inclusivity, diversity, and belonging; the operating systems serve the whole community to produce these positive outcomes (Van Der Vaart 2022). In reality, bias, prejudice, segregation, and negative behaviors against minority groups can become integrated into a culture, or one culture dominates and is perceived as better than others; the operating systems and processes that govern become inequitable and unable to serve all humans constructively (Bille 2024). If not addressed, the outcomes result in unjust experiences that further exasperate distance and connection and can perpetuate the majority opinion and social climate, weakening the community's sustainability, equity, and resiliency.

## Cultural Capital and Social Change

Public art can inspire and develop perspectives and culture that enact social change and promote connection. Many cities and schools that invest in public art do so with the understanding that the benefits of community resilience, public health and safety, and the positive impacts on the individual and community are available via the effects of cultural aesthetics (American Academy of Arts and Sciences (AAAS) 2021). David Throsby was the first to define cultural value in *The Journal of Cultural Economics*, "Cultural capital, in an economic sense, can provide a means of representing culture, which enables both tangible and intangible manifestation of culture to be articulated as long-lasting stores of value and providers of benefits for individuals and groups" (Throsby 2003, 5) Culture capital then can be measured by the number of cultural influences in a place, with the understanding that the more culture is consumed, the more impact it will have on the viewer (Bille 2024). For example, the majority of the city murals exist only in the downtown area, which results in a location that has a concentration of cultural capital. Once these artworks or cultural institutions are in place, these assets' experiential valuation and depreciation require ongoing funding and public support to ensure the meaning stays relevant and impactful to cultural values (Hao 2024). Staying relevant while showcasing local history, encouraging a positive culture that promotes altruistic themes, and developing programs to engage people and reduce apathy are common challenges many cultural districts face (Americans for the Arts 2018). Municipalities must consider both the positive and negative social impacts created by investing in public art and majority perspectives and values.

The research study, *The Integration of Public Art and Social and Cultural Values*, reported that public art should reflect the ideal social and cultural values and include

community participation to ensure alignment with values to evoke change (Hao 2024). Through the application of public art, cultural exchanges enhance the cohesion and identity of the community to evoke cultural inclusivity. Research, education, and sociocultural awareness must continue to develop equitable access to cultural capital in cities and counties (Bille 2024). All public art should be accessible to promote equity.

City of Boulder: Culture Capital and Social Change Barriers

Boulder is limiting opportunities to utilize cultural capital practically by not including artists in construction project planning, reducing access through the placement of public art, and not performing an ongoing evaluation of public arts' influence on social impact. National research sources provide evidence that arts should be a collaborative community effort and be incorporated into early plans. A 2018 survey of Americans highlighted the importance of the arts, with seventy percent agreeing that "arts improve the image and identity of their community" (Americans for the Arts 2018). If public art is not incorporated early into the Framework planning process, it is often not made available till much later, leaving the area void of cultural expression and representation.

For example, it has been published that the City of Boulder has purchased the Ponderosa Mobile Home Park for affordable housing planning and construction projects, and the plans to replace the outdated infrastructure will begin in the latter half of 2024 (City of Boulder n.d.). Incorporating artists, creative planning, or creative placemaking must be included in redesigning this lower-income residential area. Today, this area of Boulder remains void of social infrastructure such as community centers, cultural organizations, public art, and luxuries that higher-income area residents enjoy (Google Maps 2024, Appendix A). The misalignment in

incorporating social infrastructure into community planning for affordable housing supports the need for a more advanced understanding of the creative impacts on equity, sustainability, and resiliency within the Boulder community framework design.

#### Measuring Experiential Value and Public Art's Influence

Experiential value is the level of engagement with cultural capital that contributes to the viewer's emotions and perspectives and influences value changes to enhance lived experiences (Gallarza et al. 2023). Public art metrics share themes with experiential value because the viewer determines the impact. Consumer and market research has measured experiential value to understand buying behaviors and generate strategies for improving product design and marketing delivery mechanisms (Gallarza et al. 2023). Measuring public art through an experiential value lens with the individual at the helm provides a method of data capture and reporting that can prove social change is occurring. Public art promotes access and equity and raises voices and perspectives not typically understood by much of the populace (Bacharach 2023). That result is an influence metric often hard to quantify in standard quantitative and qualitative methods and measures due to various opinions on how to approach data capture of artistic endeavors.

The journal article, *Reviewing Experiential Value in the Arts*, found from researching multiple literary texts concerning art and cultural experiences that exposure can positively influence the lives and well-being of individuals and generate change for greater well-being and inclusion in communities (Gallarza et al. 2023). Applying experiential measurements to ensure social impacts is determining which dimensions support cultural generation and cohesion. For example, measuring cultural experiences through technology is already common practice, with

social media platforms using dimensions including "likes" and comments to gauge public sentiment.

Combining experiential value, or how someone feels about a purchase or experience, lends connectivity to cultural capital, where someone views public art to create a layered approach to evaluating social impacts. For example, in municipalities that collect and assess cultural capital, there is an intersection called externalities, where the value and location of the experiences result in social returns (Bille 2024). Bille describes, "Cultural capital externalities define how private consumption of art and culture can add to individual cultural capital that can impact others" (Bille 2024). Relating that back to public art is as simple as deducing that the more public art exists in a place and is relevant to cultural goals by evoking productive feelings, the more social effects can be influenced and measured using various overlayed impact dimensions.

The dimensions that signal a populace's social influence have valuable impacts on public health, diversity, and positive behavioral change (Americans for the Arts 2018, 7). Nonetheless, measuring the social effects of artistic activism is hindered by several barriers. Evaluation requires alignment to standard dimensions, but often, time is the most significant deterrent. Social change does not happen immediately and benchmarking multiple data points and then having continuous evaluation is not common practice. A single evaluation project will often occur, documenting only changes during a shorter timeframe for outcomes and not extending to capture the long-term effects and social impacts. For example, the BOCA Cultural Mapping project is not described as an ongoing assessment, eliminating the ability to track social change over time.

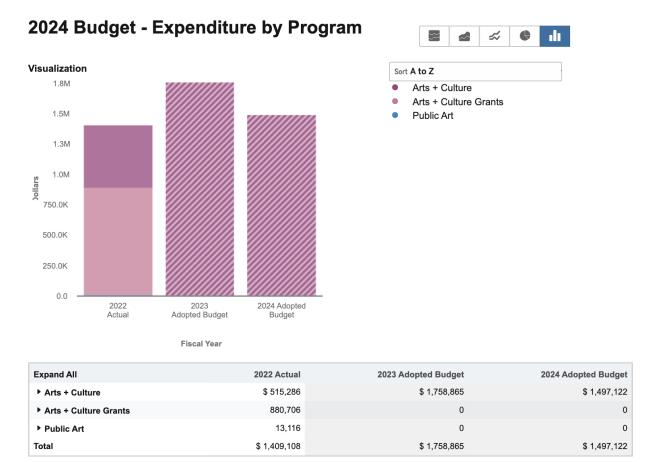
Public art initiatives must bridge the awareness between the current values and the development of public policies that foster creative expression and activism in ways that enrich, reflect, and influence the culture they seek to develop through social change and inclusion.

Beyond viewing public art, volunteering in the arts enormously impacts social cohesion (AEP6 2023). Continuous public art funding enables multiple opportunities for social frameworks when municipalities and nonprofits invest in them in partnership.

City of Boulder: Experiential Value and Public Art

The methods that measure social change are less developed, reducing arts advocates' ability to measure and communicate all the benefits and potential needs while positioning for municipality funding. Typically, data points are combined to support intrinsic value, including economic impact and national and local survey data, to produce methods for evaluating arts and community impact (Coemans and Hannes 2017, Walsh et al. 2020). The parameters described often need to be revised to ensure ongoing funding will not be sacrificed to bolster other departments. Solidifying that art and the expression of culture is a privilege that not all groups in society have equitable access to.

To support the argument that the City of Boulder is actively reducing access to arts and culture funding, a review of the City of Boulder's budget revealed goals and a decline in arts and cultural spending, supporting the need to influence the City's financial priorities. The budget trends from 2022 – 2024 show a 14% reduction in funding for Arts and Culture (Figure 1).



Data filtered by Arts + Culture, Expenses and exported on July 10, 2024. Created with OpenGov

Figure 1. City of Boulder 2024 Budget for Arts and Culture from 2022 – 2024 (City of Boulder 2023)

The City of Boulder also compared budget spending supporting the *Sustainability,*Equity, and Resilience Framework in 2023 (City of Boulder 2023). The chart breaks down the goal area by investments, placing arts and culture as one of the lowest priority areas. Only 3.2% of overall funding supports creative initiatives like artist grants and public art (City of Boulder 2023, Figure 2).

The new and improved budgeting process better aligns our investments with our community goals, reflected in our Sustainability, Equity, and Resilience Framework. Below is the 2023 Budget represented by goal area and highlights of significant investments in several key areas.

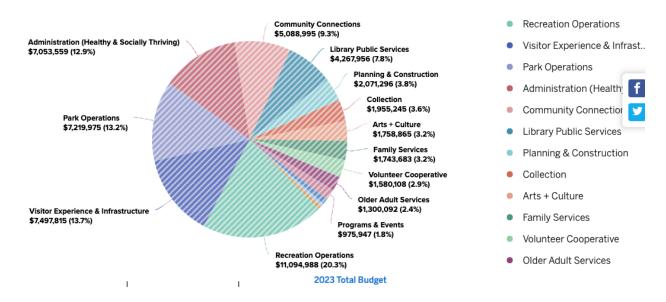


Figure 2. The City of Boulder 2023 Budget for Goal Areas of the Sustainability, Equity, and Resilience Framework (City of Boulder 2023)

A community can invest in inequitable cultural capital and enrich places with expression, equity, and access to these investments. Public art incorporated into community planning reduces intolerance and expands civic pride and public safety (Americans for the Arts 2018, Bacharach 2023, Bille 2024). In the absence of municipal funding, nonprofit art and cultural institutions are encountering growing financial challenges, resulting in the implementation of admission fees and exclusive fundraising events. These actions exacerbate disparities in the arts community by restricting access for lower-income individuals. Moreover, the lower-income demographic confront additional socio-economic obstacles that limit their ability to share experiences of injustice when public art spaces depend on reduced municipal funding. The outcome can increase the majority of the population's experiences being reflected, becoming

the basis of perspective and promoting bias and stereotypes that need to be unwoven (Bacharach 2023). In summary, funding public art and equitable placement at a municipal level can ensure access issues are addressed, making cultural growth a more viable goal.

During the City of Boulder public walking tour, it was stated that the State of Colorado had passed a law establishing one percent of all the new or renovated state building construction budgets to go towards public artworks in 2018 (OEDIT n.d.). The reported catalyst for Boulder's Art Program was headed up by Mandy Vink, who has left the City of Boulder to further her efforts in the City and County of Denver since November 2022 (Grant Wood Art Colony n.d., LinkedIn). Perhaps the funding launched the program that enabled the available public works but also reduced the City of Boulder's arts and culture funding. With the loss of the public art's champion, Mandy Vink, the trend towards using public art for community building is at risk of losing momentum in its efforts to advance community goals.

## Cultural Mapping Methodology and Analysis

Public art connections occur in places, and the connection and benefit to those places are realized through cultural planning. Redaelli (2019) analyzed eighteen cities to review the cultural plans that put arts at the center of policy and planning. Research showed that each town engaged in a cultural mapping project to evaluate and benchmark the locations, themes, and social impacts before establishing planning frameworks. Each area chose different definitions focused on the spatial alignment of the arts to the community and informed cultural policy by relating a dynamic connection between art and place (Redaelli 2019). In a case study of art activism focused on environmental activism in Oakland, California, it was discovered that art activism was able to remove demographic, racial, and socioeconomic barriers among activist

groups to align contributors from various backgrounds towards the anti-coal movement by increasing engagement, awareness, and outreach (Sanz and Rodriguez-Labajos 2021). Results support the public art's influence of values beyond demographic barriers to intersect residents in alignment with activist causes that support city sustainability and resiliency goals.

Performing cultural mapping to layer cultural capital and experiential value involves overlaying public health metrics and economic metrics to understand where to develop new projects and how to invest in a cultural district. Solidifying the statement that cultural mapping activities performed after a cultural plan cannot inform policymakers and planners and are not available to address future disparities in placement and social themes.

Boulder Office of Arts and Culture: Cultural Mapping Project

"...understanding for the existing cultural and creative value of specific community resources: theatres, museums and galleries, public art, artist studios, music venues, historic sites, education and maker spaces, murals and more" (City of Boulder n.d.). Even so, the project comes after the 2022 - 2023 Sustainability, Equity, and Resiliency Framework. It is noted within the project description, "This concept is a component of "social infrastructure": the potential of arts and culture to improve the stable foundations of our community and advance important initiatives such as climate change, public safety, and resilience" (City of Boulder n.d.). The research report's misunderstanding of how creatives create cultural foundations is fundamental. Yet, it is unknown if the mapping project will offer long-term insights into experiential and social impacts to advance equity. The 2022-2023 AEP6 Survey asked the participating art and culture nonprofit organizations if their locations were in culturally rich

areas of Boulder, of which 44% agreed, in contrast to only 5% of respondents found to exist in economically distressed communities (AEP6 2023). Proof that art and cultural institution representation in lower-income areas of Boulder is still needed. The BOAC cultural mapping project is disconnected from informing current plans, and it risks losing effectiveness in incorporating creativity into near-future community projects and programs.

## Summary

To recap the main findings in the Literature Review, integrating public art on an ongoing basis into urban planning is the best approach to cultivating community cohesion and equitable social frameworks. Community resilience is achieved when public art addresses social issues and fosters community identity and pride. Public art is uniquely tied to advancing cultural equity through access, education, and influence within community planning, incorporating public art and culture into city planning frameworks (Bille 2024). In the review, the City of Boulder, Colorado, was selected as a case study to review the existing art and culture policies, funding, city projects, public art installations, and programs in the area to uncover potential inconsistency in promoting equity and access to art and culture at a municipal level. The City of Boulder has published several community development plans, budgets, and projects to provide a basis for understanding the current goals and evaluating existing problems with the approach.

#### Solution

Integrating arts and culture into Boulder's 2022-2023 SERF requires evaluation methods to ensure social impacts and funding are prioritized and incorporated into all programs and projects in the future. Implementation of equitable financing and distribution of public art will

ensure community goals for diversity and inclusion are achieved. To advocate for this change, cultural mapping can produce a resource to measure social impacts that can be valuable for informing policies.

Arts and culture are the genesis of values in a society, and policies are only adhered to if the public is aligned with the framework's purpose. Measuring that purpose begins with creating a value matrix that promotes community goals. Public art representation can shift perspectives on social issues like racism, income inequality, gender and sexuality, ableism, and environmental sustainability, driving community change. Considering the ephemeral nature of street art and the long arc of social change, evaluating the effect a work has on a community comes with challenges of time versus impact. In business, it is often measured as a return on investment (ROI); however, another performance measurement exists for the impact rate of return (IRR) that can be utilized. iRR is a system that compares the societal impact of each investment tracked over time to view trends and impact outcomes (Impact Rate of Return n.d.). Real social change is not obtained through frameworks alone; perspectives and cultural values must be raised and made publicly accessible to unite residents to create a more equitable existence and build a new culture towards environmental sustainability. An *Art Activist's Guide* describes how culture drives policy:

Creating and sustaining lasting change demands a change in values, beliefs, and behavior patterns that culture changes. While changing laws and policies are essential, laws will not be followed nor policies enacted unless people have internalized the values that lie behind them. (Duncombe and Lambert 2018)

Using iRR measurement systems with the *Art Activist's Guide* theory of influencing change combines quantitative impact assessment with art activism theory to support public art creation. Measuring experiential influence aims to incorporate diverse perspectives, promote

equitable resource allocation, and enable ongoing evaluation of artistic experiences' value in communities.

Extending the scope of public art funding beyond mere measurement and allocation is imperative. All construction projects led by the state or private developers should integrate sustained public arts funding to facilitate the establishment of authorized green spaces, public art embellishments, and cultural districts in economically disadvantaged areas. Incorporating the arts in planning community projects is an opportunity to advance positive cultural values via experiences in the residents' daily lives, which should be embraced and done early in the project development (Checker and Fishman 2004, 51). Therefore, Boulder should strongly consider rewriting its current *2022-2023 SERF* to ensure the social impacts it outlines are met through incorporating arts and culture and funding is appropriately relegated.

The BOAC cultural mapping must be conducted continuously to measure cultural change and social impacts. Cultural mapping includes all art and culture institutions in the area, but public art is the most accessible because it removes pay barriers and elevates activist themes.

Due to public art's ephemeral nature, documenting art and social sentiments over a short and extended period while the art exists will be an exercise of alignment with technology and experiential data.

## Outcomes and Indicators for Cultural Maps

Outcomes for a social or civic impact require defining what responses are expected to look for patterns among residents. Specific outcomes outlined by *Animating Democracy* include "awareness and knowledge, dialogue and discourse, attitudes and motivation, capacity, behavior and action, conditions, systems, and policies," which result in the impact continuum

(Americans for the Arts 2017, 19). Utilizing social parameters that align the individual user experience indicators in technology applications can capture reactions from those who participate and interact with the cultural map and describe the social impacts and experiential valuation for each public art installation (Appendix B). The method of capturing the data and then generating reports that combine the data into a scoring rubric will show trends and opportunities.

Street Wise Arts Activists Mural Festival can combine quantitative metrics from technology interactions and qualitative data from surveys at the event to measure program outcomes. For example, implementing a survey strategy that can correlate online traffic to how many attendees visited the art during the event days and times can be combined with attendee survey responses to understand the experiences evoked and perspectives influenced (Appendix C). The organization can also measure aspects of the mission, like enabling diversity, through an artist demographic survey. The survey questions will target specific prompts that are analyzed later to help describe the common themes and advocate how culture is built through public art (Appendix B and C).

The long-term sustainability benefits are available through shaping new conservation-minded cultural values and behaviors with public art. The placement of the artwork needs to be mindful of accessibility and overcome known inclusion limitations to ensure diverse values are depicted and distributed equally. Throughout measuring cultural impacts, metrics that capture community goals will support arts and culture as a primary solution in urban and community planning. Technology applications have a unique use case in advancing insights into individual perspectives and exposure to public art. These data sources can provide economic arguments

for ongoing investment in public art.

#### Discussion

The role of public art in fostering community resilience and equity needs to be a community-wide dialogue and not siloed in only art and culture groups. To analyze the potential impact of equitable distribution of public art to produce social cohesion and build shared values, municipal systems leaders will need an understanding and agreement on how impacts are measured. The information will provide an opportunity to address the balance between measurable outcomes and creative innovation and the potential long-term benefits of integrating arts into city planning. At the apex of the dialogue will be developing strategies for increasing arts access to lower-income areas and themes that elevate sustainability.

Americans for the Arts has been conducting research to assess the economic effects of expenditures by non-profit arts and culture organizations. This is achieved through the deployment of Arts and Economic Prosperity (AEP) impact surveys, which are distributed to organizations in specific cities across the United States. (Americans for the Arts n.d.) National surveys, like the AEP6, need to expand upon efforts to highlight the impact of arts and culture on BIPOC and underserved groups. For example, for the first time in 2023, a focus on BIPOC respondents provided social impacts including, "88.7% of attendees at BIPOC and ALAANA organizations agreed, "This activity or venue is inspiring a sense of pride in this neighborhood or community" (AEP6 2023). The results support the need for BIPOC representation and access to arts and culture. The survey lacks demographic data by city or representation of underserved populations, which could offer valuable insights at the city level.

Currently, current methods for measuring social impact have limitations, particularly in

capturing long-term effects. This highlights the need for interdisciplinary collaboration in urban planning, bringing together artists, city planners, sociologists, and data scientists to develop more comprehensive evaluation frameworks.

City of Boulder: Strengths and Challenges in Art and Culture

According to the City of Boulder and the National Endowment for the Arts, the city has the third-largest concentration of professional artists in the U.S. (BOAC 2015). Cultivating access to local creatives that can be utilized to innovate city-sponsored projects. Americans for the Arts included Boulder in the Arts and Economic Prosperity 5 and 6 (AEP5, AEP6) surveys and reported that in 2015, the arts and culture industry generated \$69.8 million in annual economic activity supporting 1,832 full-time jobs, resulting in \$4.6 million in local and state government revenues (AEP5 2015). In comparison, the AEP6 reported that arts and culture in Boulder increased its economic contribution by generating \$115.1 million in activity supported by 2,451 jobs, resulting in \$21.9 million in revenue to local and federal governments (AEP6 2023, 4). The provided data corroborates the significance of art and cultural organizations as key contributors to the city's economic impact. Economic impact combined with the fact that over 60% of the residents attend cultural events, supports the need for deepening creative inclusion (BOAC 2015). The economic resilience of Boulder hinges on the thriving arts and culture sector, which provides essential support for flexible solutions to various disruptions, such as natural disasters.

The community also understands the social value of arts and culture in the area. Boulder residents surveyed in 2023 agree that arts and culture contribute to community pride, "87.1% of arts and culture attendees agree that the activity or venue where they were surveyed "is inspiring a sense of pride in this neighborhood or community" (AEP6 2023, 4). The involvement

of artists in city planning is essential for fostering economic resilience and a sense of civic pride by integrating diverse values and perspectives into the cultural fabric. Boulder must reorient its initiatives to incorporate arts and culture into ongoing projects and programs.

## Technology and Data Limitations

Implementing technology solutions for cultural mapping and experiential valuation requires market saturation. Defined as the amount of public art, where it is accessed, and the number of app user interactions will provide social impact results. A campaign to expose the app's existence in the area, ongoing funding to improve the user experience in the interface, and ongoing work to implement valuable functionality are only part of the solution. If a few residents are willing to utilize the app and its full functionality, then the data and insights may not be viable. Similar to a survey, a saturation point or percentage of residents would need to include a margin of error and sample size appropriate for validating the findings.

Adding and continuously auditing ephemeral art in any place will require constant data hygiene practices for removing or archiving artworks that are no longer available for user consumption beyond digital means. Today, APIs or feeds of data from other sources like websites and public registries can populate the artwork's location, images, artist name, social links, and descriptions. Engagement elements like hashtags and themes would be automated or organically created through use and time.

When developing the app, it is essential to prioritize meeting the users' needs and ensuring beneficial outcomes for artists rather than focusing solely on the financial interests of the municipality or construction company seeking to exploit the data. Therefore, the user experience design should aim to deliver value and fulfill user expectations. Some technology

solutions have taught users what is valuable; others find a niche and solve the problem to provide value. Increasing awareness of the app usage and its value to the user should be aligned with the overall goal. How the interactions and engagement data will result in more public art and access will be a crucial motivator. In the past, users get individual insights into data sets, propelling more activity and engagement. A limitation for app usage will include generations accustomed to these features, who will likely have higher interest and utilization. Demographic discontinuities in the dataset must be measured, cultivated, and augmented with survey data from non-app users in the area (Appendix C).

#### Recommendations

A percentage of the city budget must be dedicated exclusively to public art in low-income areas. A proposal must include what it costs to produce public art from the local nonprofits. The research needed will align with what other U.S. cities invest to recommend appropriate support. The activities can be conducted by a cross-departmental arts integration team that includes nonprofit and municipal leadership. Developing a comprehensive public art master plan can consist of equitable distribution and community engagement. Investigating the cultural mapping, planning, funding, and execution strategies employed by different U.S. cities can provide valuable insights for establishing a similar framework in Boulder.

Implementing ongoing evaluation of public art's social impact will be a combination of suggested metrics and assessment methods to value art's influence on community goals. In a European research study, the focus was on comprehending the dynamics of social relationships and their interaction with the environment and drawing conclusions regarding the impact and influence of these interactions when combined with community arts (Leitheiser et al. 2022).

Further exploration of the ways in which artists can contribute to environmental sustainability through promoting community conservation values represents a promising area for advancing Boulder's framework objectives.

Expanding community engagement in public art initiatives will ensure cultural value alignment, increase participation and outcomes, and advance education for the activist themes in the works. With municipal funding, programs like walking and biking tours, augmented reality, and self-guided interactive maps can become more widely known and accessible to ensure residents participate in multiple ways. Piloting these partnerships between the city, local artists, and community organizations can produce strategies for collaboration to maximize resources and impacts.

The case study of Boulder reveals specific challenges in aligning cultural planning with broader sustainability goals, suggesting that other cities may face similar issues. Future research should focus on longitudinal studies of public art's impact and explore innovative funding models to sustain these initiatives. Policy implications extend beyond local contexts, calling for reimagining how cities integrate arts and culture into their core development strategies. This approach enhances the visual appeal of urban spaces and contributes to building more resilient, equitable, and sustainable communities.

#### **CANVS**

In researching a tool for regular reporting and data capture for public art, a technology platform via a mobile app revealed a potential solution. The interactive art map CANVS has been tracking urban art (graffiti, text art, and murals) in some major U.S. cities for the last eight years (CANVS n.d.). The concept was initially created by a photographer, Ralph Andre, who

enjoyed capturing street art in New Jersey and wanted to document the locations and support local artists for interested viewers and visitors (CANVS n.d.). The unique tool has grown to include worldwide contributors who photograph and add descriptions of urban art, artists, social links, and community organizations enabling art. The technology also has an underlying data set that can capture user demographics from account profiles, incorporates geotargeting for visitors, social sharing data, and the ability to increase experiential features that track how individuals feel after viewing public artworks. Becoming a potential solution to have ongoing cultural mapping and evaluation for social impact in the cities where the artwork is added, and the app is marketed.

## Artificial Intelligence and Advocacy

Artificial intelligence (AI) can also determine user recommendations based on individual preferences, which should be considered to advance the advocacy and outreach of public art and artists. The opportunity to advance experiential data with predictive AI to offer suggestions for continued education, artists, works by theme, and mood will increase visitor engagement with public art and reduce apathy. So, producing and sharing graphs of a user's experiential data, like the most common activist themes, favorite artists, and favorite locations visited by an individual user, can lead to predictive AI experience recommendations. For example,

Storygraph is specific to literature and community sharing and will summarize the "moods" of what an individual enjoys reading based on reading patterns and what the community shares about other literary works to recommend similar stories, going beyond just genres into experiential recommendations (Storygraph n.d.). Today, other applications that capture experiential data use your known preferences to suggest what should be next in one's cultural

consumption list. These technology solutions and data layers build up user and predictive AI competency the more they are utilized. So, while the technology is an early trend in user application, it is a powerful element that public art in Boulder can adopt and benefit from.

#### Conclusion

Boulder seeks to improve the foundations of social infrastructure but needs to incorporate the budget, planning projects, and critical areas to ensure creative alignment.

There is a lack of research and understanding of how culture is developed in a community.

Without the culture mapping exercise occurring earlier to inform the 2022 – 2023 SERF, many projects will fail to impact and improve accessibility and cultural impact goals

Public art can uniquely represent activist themes, expose creative expression modalities to underserved residents, and change a community's culture through representation and values. The placement of public art needs to be aware of where it exists and the influence it can have. Public art should be equitably distributed and funded by municipalities to ensure that lower-income areas are provided the same access to expression, or inequities will continue to harm the community's social fabric.

In a city that prioritizes public art funding in areas frequented by tourists and higher-income residents, it's clear that more than just representation is necessary to improve public safety and health in the areas that need it the most. Culture can only be impacted if the perspectives of marginalized groups are witnessed, honored, and valued through participation and funding at a local level. Accessible creative expression and cultural representation, a foundational element in community planning, will ensure innovative and flexible solutions that build a more sustainable, equitable, and resilient community. Creative solutions are overlooked

and underfunded if cultural evaluation methods are not tied to foundational planning frameworks on an ongoing basis. Surveys combined with technology data sets can provide a base argument for advanced investment in cultural evaluation and the inclusion of public art as a means of cultural capital in terms of its experiential benefits in a community. As the nation's future continues to incorporate and utilize the power of public art into the culture-creating process of community building, more refined data sets will encourage advancing equity and placement into underserved communities.

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## **Appendix A: Street Wise Mural Evaluation**

An evaluation and analysis of the existing murals in Boulder support common social themes conveyed by local artists, location data, and visibility scoring. The spreadsheet includes filtering that allows the data set to be viewed via the following criteria: year, artist, title, clarity of theme score, theme, address, location visibility score, precise location, mural description link, and mural image (Street Wise Arts n.d., Report Author). The analysis augmented the existing *Street Wise Arts Mural Map* data with an assessment of the theme, clarity of theme score, location, and location visibility score. The analysis uncovered activist themes for womxn and LGBTQ+ human rights awareness, BIPOC culture and human rights awareness, nature and sustainability awareness, and community resiliency themes that often overlapped (Appendix A-StreetWise-Arts-Mural-Analysis.xlsx and Figure 3).



Figure 3: Pie Chart of the 2024 Mural Activist Theme Analysis in Boulder County by Bea Halstead. Mural map data for location, artist, and images sourced from Street Wise Arts.

# Appendix B: Table 1

 Table 1. Continuum of Impact measured with Technology Interactions

Outcome	Indicator	User Interactions in app	
Awareness & Knowledge (25-30)	Awareness of a social issue	<ul><li>Likes / Rating</li><li># Impressions (views)</li><li>Filtering by theme: #tags (like</li></ul>	<ul> <li>Visits to physical location (Geotargeting)</li> </ul>
	*Behavioral Metrics	<ul><li>blog or post organization)</li><li>Shares to social profiles with theme in comments</li></ul>	<ul> <li>Interactions with augmented reality (AR) overlays</li> </ul>
	*Qualitative Metrics		
Changes in Discourse	Dialogue	<ul><li>Commenting in app</li><li>Sharing to external sources</li></ul>	<ul> <li>Media outlet reposts</li> </ul>
(31-36)	*Attitudinal Metrics	<ul><li> #hashtags</li><li> Diversity score (user</li></ul>	- # Impressions (views)
	*Engagement Metrics	demographics / artist demographics)	
Changes in Attitudes	Values	<ul> <li>Likes / Preference indicators (Saves to a list)</li> </ul>	<ul> <li>Visits to physical location</li> </ul>
(37-40)	*Success Metrics	<ul><li>Shares to external sources</li><li>Comments</li></ul>	(Geotargeting) - Interactions with
	*Qualitative Metrics		<ul><li>augmented reality</li><li>(AR) overlays</li><li>Preference trend</li><li>map (# of visits to</li><li>a theme or artist)</li></ul>
Capacity (40 - 45)	Social capital	<ul> <li># of New Accounts / % increase month over month</li> </ul>	<ul> <li>Most popular artists on app (app</li> </ul>
	*Success Metrics	<ul><li> # of App Shares</li><li> App Reviews</li></ul>	engagement and search data)
	*Engagement Metrics	<ul> <li># of cultural site visits in a session (geotargeting)</li> <li># of repeat cultural site visits (geotargeting)</li> <li>Most popular sites on app (app engagement data)</li> </ul>	<ul> <li>Financial support         (in app fundraising,         # of municipal         partners)</li> <li># of cities, works,         artistis, and users         in app</li> <li># Use metrics         (logins, likes,         shares, and</li> </ul>
Action (46 – 50)	Activism and Advocacy	<ul><li># of Activist themes</li><li>% of increase by theme</li></ul>	comments) - Demographic metrics with usage
	*Real User Monitoring	<ul> <li>% of overall shares by theme</li> <li>% of overall likes by theme</li> <li>% of overall visits by theme</li> </ul>	metrics - Effectiveness of promotional

	Metrics		activities
	*Performance Metrics		
Changes in	Availability of	<ul><li>Adoption</li><li># of users by location</li></ul>	<ul> <li># of cities</li> <li>participating</li> </ul>
Conditions (51-55)	Resources	<ul> <li>demographics</li> <li>Funding of projects in areas with coverage</li> <li>Implementation</li> </ul>	<ul> <li>to monitor data #     of artist</li> </ul>
	*Performance Metrics		opportunities created - # of organizations supporting public art - \$ amount of funds secured

Source: Continuum Impact from Animating Democracy, Americans for the
Arts 2017. Aligned to the researcher's knowledge of technology user
interface and experience signals and common UX metrics found in research
(User Pilot 2024)

## Appendix C: PowerPoint with Audio Narration

Street Wise Arts Survey Report .pptx is a separate document with a seventeen-minute audio guide. The PowerPoint presentation walks the stakeholders of Street Wise Arts through implementing quantitative and qualitative metrics to measure their programs and upcoming activist mural festivals. The outline of the presentation includes the following content:

- Goals: Alignment of Metrics to the Mission of Street Wise
- Audiences: Who should you collect insights from and why.
- Questions: Artist Demographic Questionnaire, Art Activism Attendee Survey
   Questionnaire
- Methodology: How to organize qualitative data capture.
- Analysis: Four methods for capturing insights from surveys and quantitative metrics
- Street Wise Art's specific recommendations and implementation schedule
- Resources and References
- Thank You Slide

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