

Here: take
a moment.

This space is an
experiment.

It's a disruption in
the everyday stream,
a place for something
unexpected to happen.

So, step out of the rush.
Mess around a bit, follow
an impulse, get your hands
and body going.

See what you make of this space.

pause

on market street
A LIVING INNOVATION ZONE

San Francisco's Planning Department hired the Exploratorium's Studio for Public Spaces and Gehl Architects to install interactives like the paired "Whispering Dishes" to enliven public plazas. The dishes' parabolic shape amplifies voices, allowing a person to speak—or sing—to others at a second dish across the plaza.



DREAM BIG(GER)

From Building Exhibitions
to Building a Better City

Betsy Loring

The complex havoc wreaked by 2020 has challenged museums to find new ways to move from “nice” to “necessary.” Building on existing partnerships with other educational and cultural institutions, many responded to immediate community needs for learning; for healing; and even for food and personal protective equipment (PPE). Further, a growing number of museums are exploring additional community partnerships to address the systemic injustices spotlighted by 2020. Exhibition professionals can hold the key to such novel partnerships – ones that can literally shape more just, healthy, and resilient communities – by working with municipal planning agencies.

What is Planning?

Municipal master plans (also called comprehensive plans or general plans, among many other names) guide the future development and redevelopment of a community or region. Enforced through a combination of regulations, zoning ordinances, and targeted investment, master plans are meant to improve the lives of a community’s residents.¹ Unsurprisingly, planning was historically in the hands of wealthy white men intent on bringing colonial ideals of order and beauty to cities. Thus, the flawed – often blatantly racist – results of past municipal master plans are visible in the physical layout of our communities today: from wholesale destruction of Black, Brown, and immigrant neighborhoods for “improvement” projects to the maldistribution of community resources, such as green space, safe housing, transportation, education, and investment capital.²

As early as the dawn of the 20th century,³ advocates tried to push city planners and politicians to address the needs of their poorest residents with master plans, but truer community input into the master planning process grew out of the 1960s and 1970s civil rights movement with the emergence of what was called “community-based planning.” Today, some sort of community engagement is a standard part of any municipal planning process. However, planners interviewed for this piece concede that the depth of public engagement and its impact on municipal plans varies widely – from perfunctory events satisfying minimal public commentary requirements to extended public visioning and data-gathering processes – depending on the will of local leadership.

Planners have “little innate power” relative to elected officials and private developers, says Neil Hrushowy, Director of Community Planning in the Vancouver, British Columbia office of Planning, Design and Sustainability. Community engagement builds a “civic infrastructure” that includes all residents, “not just those who show up to yell at public hearings.” Inclusion is about granting power – to citizens *and* to planners, he explains. Gaining public support for master plans “grants us power through good direct democracy” and prevents elected officials from killing progress by saying, “I want to go back and study this.”⁴

Like all communities, municipal master plans are multifaceted. They focus on housing, health, transportation, environmental protection, and economic opportunity. This means that there are many ways museums can build meaningful partnerships to broaden and deepen

community engagement in planning, as the following examples illustrate. All involve science museums, but there are lessons for exhibition and other museum professionals from all disciplines. In each partnership, the museums brought their unique organizational strengths and expanded on existing community relationships to create learning experiences, even full exhibitions, to engage the public in community planning.

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Using Exhibitions to Foster Public Engagement in Planning Issues

For planners in the United States and Canada, community engagement is based “on the idea that planning is – should be – a community activity,” says Carolina Prieto, Community Engagement Manager of the Massachusetts-based Metropolitan Area Planning Council (MAPC). Known for robust public engagement work, MAPC’s public events include exhibits exploring trends in housing, land use, climate impacts, etc. (fig. 1) and hands-on activities (fig. 2). The goal is not only to solicit participant’s priorities but also, she explains, to “help people understand what planning is.”⁵



Fig. 1. The Boston-area Metropolitan Area Planning Council’s public engagement events feature hands-on interactives, such as this data map. Sliding transparent overlays add layers of data, including housing costs, walkability, flooding, and school growth.

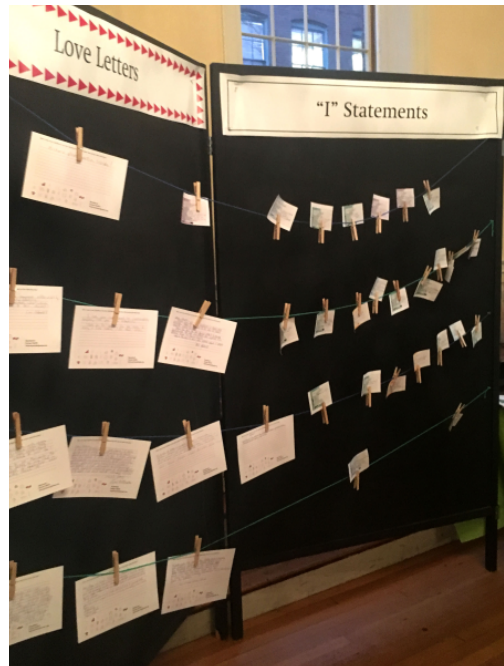


Fig. 2. Metropolitan Area Planning Council’s planners use postcards with prompts like “write a note to your city/town and share what you love about it” to capture qualitative data about residents’ values and visions for their community’s future.



An exhibition at the EcoTarium in Worcester, Massachusetts, *City Science: The Science You Live*, offers insights into the depth to which the public can be engaged with municipal planning and design.⁶ Through a National Science Foundation grant,⁷ the museum developed several *City Science* interactives in partnership with an urban planning research collaborative.⁸ Led by the University of Massachusetts Amherst (UMass), the goal was to engage visitors in STEM (science, technology, engineering, mathematics) issues in urban design and the societal values that must inform planning.⁹ For instance, the “Turtle’s Eye View” interactive (fig. 3) invites visitors to design a housing development. When a projection reveals how the neighborhood blocks a wood turtle’s access to critical habitat, visitors readily redesign, gathering the houses into a dense cluster to preserve open space.

Fig. 3. A projection onto the surface of the “Turtle’s Eye View” interactive in *City Science* shows how a housing development cuts off a turtle’s seasonal travels between feeding, nesting, and hibernation sites within its habitat. Visitors can redesign the neighborhood to protect the habitat.

The museum partnership allowed the UMass professors to extend their urban planning research to a new, multigenerational audience – museum visitors – during *City Science*’s prototyping stage. The exhibition project team asked visitors the same questions during formative evaluation that the professors had used when studying residents’ urban design preferences at community planning events. Further, in a subsequent study inspired by their work on the *City Science* exhibition, the UMass researchers found that adding green infrastructure, such as shade trees, increased urban residents’ acceptance of higher housing density.¹⁰ This public acceptance of increased housing density is politically potent. Vancouver’s Hrushowy points to Portland, Oregon, where planners had to overcome political leaders’ resistance to add multifamily dwellings within existing single-family neighborhoods by gathering “380,000 pieces of public input” from those neighborhoods. Notes MAPC’s Prieto, *City Science* interactives like “Turtle’s Eye View” foster meaningful community engagement in planning because they “impart a lot of information in a way that is accessible.”¹¹

Site Installations and Creative Placemaking

Creative placemaking uses “arts and cultural activities [in public spaces] to become the vehicle and fuel of comprehensive planning” notes Leonardo Vazquez, executive director of the National Consortium for Creative Placemaking.¹² A 2010 National Endowment for the Arts white paper explains the connection: “Creative placemaking animates public and private spaces, rejuvenates structures and streetscapes, improves local business viability and public safety, and brings diverse people together.”¹³

In San Francisco, the Exploratorium has a long history of creative placemaking, having installed hands-on science interactives – free and open to the public – in parks and other public spaces for nearly 20 years. In 2014, the museum formally established the Studio for Public Spaces (SPS) to, as its website explains, “[work] in the public realm to create exhibits and environments that encourage play, exploration, creativity, and social connection.”¹⁴ Shortly before that founding, San Francisco’s Planning Department and Mayor’s Office for Innovation tapped the SPS team, working with Gehl Architects, to build the first of the city’s 10 experimental “Living Innovation Zones” to enliven busy Market Street’s sidewalks and plazas.¹⁵

For the 3,000-square-foot installation, the museum mined its inventory of successful multiuser interactives, such as “Whispering Dishes.” Passersby discovered that thanks to the dishes’ parabolic shape, they could easily speak – or sing ([intro image](#)) – to a person seated at a second dish clear across the plaza. Nearby, people seated on the “Musical Bench” could play musical tones by holding hands, thereby completing the bench’s electric circuit ([fig. 4](#)). Exhibition goals in this environment weren’t science-learning goals, but “civic goals to help rewrite the script” for public spaces, transforming them from unsociable “defensive places” by fostering “human-to-human interfaces,” says SPS founder Shawn Lani.¹⁶

Fig. 4. On San Francisco’s busy Market Street, the Exploratorium’s “Musical Bench” plays musical tones when passersby complete an electrical circuit by holding hands.

EXPLORATORIUM/SHAWN LANI



The SPS installations have limited physical footprints, but as placemaking endeavors they are integral to the citywide master planning process, according to Neil Hrushowy, who worked at the San Francisco Planning Department until 2019. The Studio's 2019–2020 exhibition *Middle Ground: Reconsidering Ourselves and Others*,¹⁷ mounted in front of San Francisco's Main Library, "touched a half million people each time it was up," explains Hrushowy. The public location and empathy-building interactives, he says, "allowed us to ask questions like 'What should our streets be like?' that we can only ask of people during the course of their everyday lives." The installations engaged thousands of times more people – and more diversity – than would a planning hearing. Says Hrushowy, "No one knew so many kids were passing through Market Street" before the exhibition was installed.¹⁸

Contributing to the projects' success, according to Hrushowy, was the SPS exhibition staff's ability to create "gorgeous...sculptural" interactives, its knowledge of how to design for people in a space, and Shawn Lani's "unbelievable ability to tell a narrative."¹⁹

Building Climate Change Literacy and Action

No contemporary municipal plan is complete without plans to slow the community's contribution to climate change and to mitigate local climate impacts, such as worsening flooding and urban heat. As more and more museums work to address climate change literacy, it is inevitable that their staff members will cross paths with planning professionals.

At the Science Museum of Virginia (SMV) in Richmond, Chief Scientist Jeremy Hoffman works to promote public climate literacy through museum programs and exhibitions. "We know from best practices in climate education that information has to appeal to what people care about in their day-to-day lives: their health, finances, their values."²⁰ In Richmond, Virginia, urban heat islands are the most notable local impact of climate change. However, existing temperature data – measured at airports by satellite – wasn't personally meaningful to the public. With funds from the National Oceanic and Atmospheric Administration (NOAA), Hoffman and his colleagues launched a community-based participatory research project to gather neighborhood-by-neighborhood heat data that would ultimately be used to inform future museum exhibitions and programs.²¹ Taking "the city's temperature" by car or bike in their neighborhoods, youth volunteers created the city's first heat vulnerability map, documenting a 16-degree Fahrenheit difference in afternoon temperature between Richmond's hottest and coolest neighborhoods. (Indicative of the long reach of master plans, Hoffman notes that the heat map mirrors the 1946 Richmond design by urban planner Harland Bartholomew, who explicitly based his designs on Federal redline maps. The hotter a neighborhood in the 21st century, the more likely it was to have been redlined in the 20th.)²²

For the mapping project participants, the "hyper-localization produced...learning and behavioral outcomes that bridged the gap from literacy to action."²³ The museum now incorporates its heat maps in climate-related public programs (fig. 5) and in plans for upcoming exhibitions.



Fig. 5. In its “Ready Row Homes” program, the Science Museum of Virginia brings the phenomenon of urban heat islands to life with museum-generated surface temperature maps (behind facilitators) and with hands-on interactives. Using infrared thermometer guns, young learners test ways to keep model row houses cool under summer sun.

The heat-mapping project has also grabbed the interest of municipal officials. Seeing the heat map displays, a member of the Richmond Ambulance Authority noted that the city's hottest neighborhoods also had the highest incidence of heat-related ambulance calls. The city's Planning Department soon reached out and has incorporated the museum's heat vulnerability maps into Richmond's climate action plan, *TRVAgreen 2050*.²⁴

Start small but be prepared for this work to grow.

Getting Started

The issues confronting our communities as they plan their future are deeply intertwined: climate issues are health issues are justice issues are economic issues. Which means for museums and museum professionals, there are infinite ways to contribute to solutions. Clearly, new full-scale exhibitions require resources that only come with top-level institutional support. However, bringing a planning lens to our work is something most exhibitions and education professionals can do. Start by researching your community master plan. Talk to your planners – what issues are on their horizon? Within the scope of your museum's mission, how could you tweak upcoming exhibitions to foster community discussion about those issues? Document neighborhoods and communities eradicated by 1960's urban renewal. Highlight justice issues in a climate exhibition or climate issues in an art exhibition.

Start small but be prepared for this work to grow. In Fort Lauderdale, Florida, former EcoTarium President Joe Cox has brought the lessons of *City Science* to the Museum of Discovery and Science (MODS). He is offering MODS to serve as a hub for engaging the public in local climate resiliency plans, “instead of the limited exposure [those plans would receive] at public meetings.”²⁵ Central to MODS' hub will be a new permanent exhibition, *Pathways to Resilience*, which will showcase ways visitors can contribute to climate research and resiliency plans. The exhibition will extend downtown with outdoor exhibits that interpret visible evidence of climate impacts like increased flooding during king tides.

Science Museum of Virginia's Jeremy Hoffman was recently awarded a six-figure NOAA grant to co-create heat-mitigating pocket parks in vulnerable Richmond neighborhoods. Says Hoffman, “It's amazing to trace the line all the way back to making a cold call asking [a community youth organization] ‘Hey, do your kids wanna do some science?’”²⁶ In San Francisco, the City of San Francisco's Port Authority has commissioned the Exploratorium to create public spaces that both engage and educate the general public about the Embarcadero's multibillion-dollar seawall renovation. According to Shawn Lani, the planners recognize the museum's methodology of engagement as critical to creating a design that will meet the Port Authority's environmental, social justice, and sustainability goals. “What's so amazing,” he explains, “is that city planning and design is the closest thing – when done right – to community-led change on a grand scale.”²⁷ ■

- 1 For more explanation of planning and a link to an interactive timeline of U.S. planning history, see “What is Planning?” on the website of the American Planning Association at www.planning.org/aboutplanning/.
- 2 For discussion of the federally funded razing of neighborhoods see Scott Beyer, “How the U.S. Government Destroyed Black Neighborhoods: Post-World War II Urban Renewal Replaced Thriving Black Hubs with Highways and Public Housing,” *Catalyst*, April 2, 2020, <https://catalyst.independent.org/2020/04/02/how-the-u-s-government-destroyed-black-neighborhoods/>.
- 3 In one museum-related example, social reformers created a touring exhibition titled *Exhibit of Congestion* – which opened in 1908 at New York City’s American Museum of Natural History – to highlight the dire living conditions in the city’s densest and poorest neighborhoods. See “The Congestion Exhibits,” *The New York Times*, March 29, 1908, <https://timesmachine.nytimes.com/timesmachine/1908/03/29/104799919.html?pageNumber=8>.
- 4 Neil Hrushowy, conversation with author, September 1, 2020.
- 5 Carolina Prieto, conversation with author, August 14, 2020.
- 6 For more detail on *City Science*, see Betsy Loring, “City Science: The Science You Live” in *New England Museums Now* 4, no. 1 (Summer, 2017), <https://nemanet.org/nemn/summer-2017/city-science/>
- 7 National Science Foundation, Division of Research on Learning, award # 1323168, “Pathways: From The Lab To The Neighborhood: An Interactive Living Exhibit For Advancing STEM Engagement With Urban Systems In Science Museums,” www.nsf.gov/awardsearch/showAward?AWD_ID=1323168&HistoricalAwards=false
- 8 Boston Metro Ecological Research, February 2, 2021, www.umass.edu/urbaneco/index.html.
- 9 For more information, see Robert L. Ryan, Eric Strauss, Colin Polsky, Alexander Goldowsky, Paige Warren, and Betsy Loring, “From The Lab To The Neighborhood: An Interactive Living Exhibit For Advancing STEM Engagement With Urban Systems In Science Museums,” *Informal Science*, The Center for Advancement of Informal Science Education, www.informalscience.org/pathways-lab-neighborhood-interactive-living-exhibit-advancing-stem-engagement-urban-systems-science.
- 10 Jane A. Buxton and Robert L. Ryan, “Exploring Preferences for Urban Greening in Association with Learning About Sustainability in a Museum-based Urban Ecology Exhibit,” *Proceedings of the Fabos Conference on Landscape and Greenway Planning* 5, no. 2, article 49 (2016): 233, <https://scholarworks.umass.edu/fabos/vol5/iss2/49>.
- 11 Prieto, August 14, 2020.
- 12 Leonardo Vazquez, “Creative Placemaking,” *PAS Memo*, November/December 2016, American Planning Association, www.planning.org/publications/document/9115238/
- 13 Ann Markusen and Anne Gadwa, “Creative Placemaking” (White paper by Markusen Economic Research Services and Metris Arts Consulting for The Mayors’ Institute on City Design, a leadership initiative of the National Endowment for the Arts in partnership with the United States Conference of Mayors and American Architectural Foundation, 2010), 3, www.arts.gov/sites/default/files/CreativePlacemaking-Paper.pdf.
- 14 “Exploratorium Studio for Public Spaces Home Page,” Exploratorium, accessed January 6, 2021, www.exploratorium.edu/publicspaces.
- 15 “Pause: a Living Innovation Zone on Market Street,” Exploratorium, www.exploratorium.edu/publicspaces/projects/liz.
- 16 Shawn Lani, conversation with author, September 1, 2020.
- 17 “Middle Ground: Reconsidering Ourselves and Others,” Exploratorium, www.exploratorium.edu/middleground. See also “Creating Middle Ground: Transforming Urban Outdoor Spaces with Social Science Exhibits and Facilitation about Biases,” *Informal Science*, The Center for Advancement of Informal Science Education, www.informalscience.org/creating-middle-ground-transforming-urban-outdoor-spaces-social-science-exhibits-and-facilitation.
- 18 Hrushowy, September 1, 2020.
- 19 Ibid.
- 20 Jeremy Hoffman, conversation with author, September 10, 2020.
- 21 National Oceanic and Atmospheric Administration, Environmental Literacy Program, Grant # NA15SEC0080009, “Learn, Prepare, Act – Resilient Citizens Make Resilient Communities,” www.noaa.gov/office-education/elp/grants/awards?search_api_views_fulltext=NA15SEC0080009.
- 22 “Redlining” is the shorthand term for the rating system developed by the U.S. Federal Home Owners’ Loan Corporation (HOLC). The HOLC, created in 1933 as part of the New Deal, used the rating system to identify the supposed credit riskiness of different neighborhoods, thereby controlling whether residents could qualify for mortgage loans. Overwhelmingly white neighborhoods received the highest “desirable” rating and were colored green on maps. Black and Brown neighborhoods were colored red, indicating the HOLC designation of “hazardous.” This correlation between the worst heat islands and formerly redlined neighborhoods is being recognized as a national phenomenon, no surprise given that HOLC redlined 239 communities in the United States.
- 23 Jeremy S. Hoffman, “Learn, Prepare, Act: ‘Throwing Shade’ on Climate Change,” *Journal of Museum Education* 45, no. 1 (2020): 1, <https://doi.org/10.1080/10598650.2020.1711496>.
- 24 “Extreme Heat & Public Health,” RVAgreen 2050, www.rvagreen2050.com/extremeheat.
- 25 Joseph Cox, conversation with the author, August 27, 2020.
- 26 Hoffman, September 10, 2020.
- 27 Lani, September 1, 2020.