

PARK DESIGN FOR PHYSICAL ACTIVITY & HEALTH

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Parks and Health

The prevalence of obesity and related diseases has increased rapidly¹ since being declared a public health crisis by the U.S. Surgeon General in 2003.² While there are numerous factors that influence these trends, inactivity is a key contributor.³ Currently, a majority of Americans do not meet overall physical activity recommendations;⁴ this is particularly concerning as the impacts of physical activity extend beyond physical health⁵ and include positively influencing mental health and quality of life.⁶

Parks are a primary place of leisure-time physical activity, and empirical research shows that close-to-home access to parks and recreational amenities can encourage higher levels of physical activity.⁷ In addition to offering opportunities for active recreation, parks provide space for social connection, respite from everyday stresses, and pollution abatement.⁸ However, many Americans do not have parks close to home. For example, over 80% of Americans currently live in metropolitan areas, and for the largest 60 U.S. cities, 31.7% of residents (over 16 million people) do not have access to a park within a 10-minute walk of their home.⁹ “High-need” neighborhoods (those with low-income, high-minority, and dense populations of children) tend to be especially short of park space.¹⁰

While it is essential to consider the built environment as a whole in order to provide sufficient, safe, and health-promoting access to parks, the design of specific sites is arguably of equal and critical concern because it can concurrently influence individual behaviors (including activity levels), build social cohesion, and improve

environmental quality. Moreover, individual, social, and environmental health are interrelated; planners and designers should consider their projects’ potential impact on each. As public health leader Dr. Richard Jackson explains, “Buildings can be, should be, agents of health—physical, mental, and social health... [and] just as we design resilience into our buildings, we must design health into our buildings.”¹¹

In the same respect, parks, as a unique component of the built environment, can be designed with the same intentionality of promoting health. Different communities use parks differently depending upon the configuration and facilities present,¹² and creating spaces that facilitate healthy behaviors, encourage social interaction, and create connection-to-place can encourage higher levels of use and directly impact individuals’ health.¹³ Social offerings,^a openness, and aesthetics are most related to people’s attachment to place;¹⁴ these can be improved through the creation and design of parks. Additionally, incorporating local data from the community can help maximize the park’s contribution to local needs and identity. This brief report will present case studies that provide an introduction to the research concerning parks and health, as well as adaptable practices and strategies that can help advance the incorporation of health considerations into design.

^a Social offerings include “the availability of arts and cultural opportunities, availability of social community events, the community’s nightlife, whether the community is a good place to meet people, and whether people in the community care about each other.” Morales L. *Social Offerings, Openness Key to Community Attachment*. Gallup Well-Being; 2010.

Park Design and Strategies for Physical Activity and Health

While earlier health promotion research tended to focus on changing individual behavior changes rather than on changing the built environment, more recent research illustrates that there are significant benefits that can be achieved when “lifestyle modification, injury control, and environmental enhancement strategies” are integrated.¹⁵ The design of the built environment is important (both in terms of features and layout), and there is a difference between quality and access alone. However, while there is general consensus that the physical environment influences people’s behaviors,¹⁶ information about how specific physical features and environmental quality impact use, physical activity, and related health issues is still being developed.¹⁷ For site design of parks, one of the main topics of interest is how the physical design contributes to individual participation in physical activity. This includes assessing how various features are used, as well as exploring whether areas designed to support specific levels of physical activity actually affect those activity levels.

The Trust for Public Land is a national non-profit organization that creates parks and protects land for people, ensuring healthy, livable communities for generations to come. Through its Parks for People initiative, The Trust for Public Land is the nation’s leader in creating parks in cities, and works with communities to design, plan, fund, and build parks to ensure that everyone has parks, gardens, playgrounds, trails, and other natural places within a ten-minute walk from home. With the above goals in mind, and in order to maximize the impact of projects, various types of data and best practices are used when planning, developing and designing parks.

When weighing design options, it is important to consider the goals of the project, to incorporate community vision, and to recognize and collect the type of data needed (which can include contextual data, community input, or research findings) and use it appropriately. Collaborating with others and building partnerships is also invaluable.

Next, we present two case studies that illustrate how we incorporate health into park design and development.

Case Study: Hayes Valley Playground, San Francisco

BUILDING AND SUSTAINING BROAD PARTNERSHIPS AND EXPLORING THE ROLE OF DATA IN DESIGN

For its Parks for People – San Francisco program, The Trust for Public Land raised more than \$16 million for the renovation of three high-impact parks in San Francisco: Hayes Valley Playground, Balboa Park, and Father Alfred E. Boeddeker Park. In order to develop park renovation designs that encourage higher levels of use and support physical activity, as well as to formally evaluate the impacts of park renovations, The Trust for Public Land partnered with the RAND Corporation and the San Francisco Department of Public Health’s (SFDPH) Program on Health, Equity and Sustainability.^b This case study will focus on Hayes Valley Playground.

USING DATA IN DESIGN

For the design of Hayes Valley Playground, SFDPH gave input about physical activity goals, provided initial context data (from their Sustainable Communities Index and Pedestrian Environment Quality Index), and gave advice about specific pieces of equipment. In addition, The RAND Corporation provided research methods and tools for capturing a comprehensive view of park use and perceptions, and assessing how different design features impacted moderate and vigorous physical activity in the parks and within the local community (through direct observations and surveys of park users and neighborhood

^b For more results and findings from this study, see: Cohen D, et al. Impact of Park Renovations on Park Use and Park-based Physical Activity [Conference Presentation]. Active Living Research; 2013. Available at: http://activelivingresearch.org/sites/default/files/2013_ParksPA_Cohen.pdf.

residents).^c The Trust for Public Land also conducted an extensive participatory design process and held workshops to involve key stakeholders and community members.

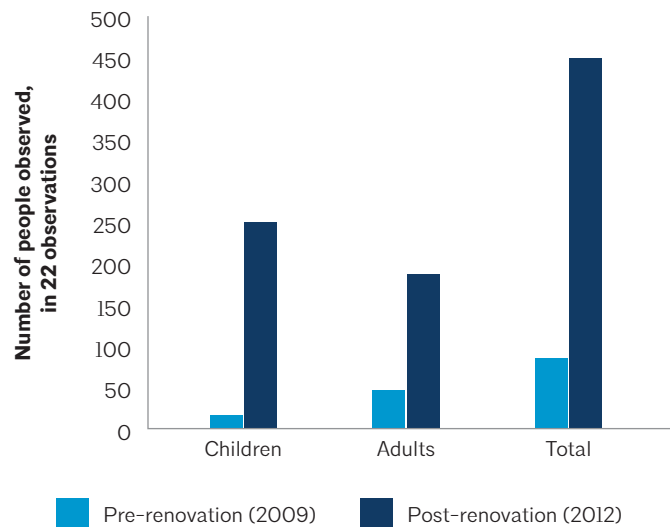
The Trust for Public Land then designed the park to reflect the community’s vision, promote use, and support higher levels of physical activity. Renovation designs for the park included larger play areas with equipment that supports active play; a Fitness Zone (a cluster of outdoor adult fitness equipment); a community garden; a plaza for dancing and Tai Chi; enhanced lighting, visibility and overall park layout; and a recreation clubhouse with green building features, which received a 2013 Citation Award from the American Institute of Architects, San Francisco Chapter.¹⁸

INCREASED USE AND PHYSICAL ACTIVITY

Importantly, the evaluation efforts were done pre-renovation (in 2009) and post-renovation (2012, approximately one year after the park was renovated), which helped The Trust for Public Land learn more about how designs impact use. The assessment of park usage revealed a dramatic increase in the number of users. As seen in Figure 1, the total number of observed park users increased from 88 to 451 people (a 415.5% increase). Seventeen children were observed in the park pre-renovation, and 251 children were observed using the park post-renovation (a 1,376% increase).

In addition, almost 45% of all people observed in the renovated areas of the park were involved in moderate or vigorous activity (as opposed to 10% pre-renovation). Different areas of the park were used at varying levels of frequency and with varying intensity. For instance, the playground was occupied during 31.4% of the

FIGURE 1. Total number of park users observed



observations, the most of any area. Different levels of physical activity were also observed for individual pieces of Fitness Zone equipment and the survey supplemented the observational data and helped to strengthen our understanding of which amenities should be included in the park.^d For instance, the top responses post-renovation for the question, “What specific things do you like about this park?” were the playground/play equipment (30.4% of responses), the design/aesthetics (16.3% of responses), and the fitness equipment (12.0% of responses).

ENCOURAGING EXERCISE

More people (post-renovation) report that the park is their primary place of exercise. This is particularly interesting when contextualized with the survey responses to the question, “What would encourage you to exercise in Hayes Valley Playground?” In 2009, 57.1% of park users suggested adding adult fitness zone equipment, and in

^c Direct observations using SOPARC (to assess the levels of park use, levels of physical activity, and park user characteristics) and surveys (to gather information about user perceptions, preferences, and self-reported use) were both used. For more about this process and partnership, see: Shulaker BD, Isacoff JW, Cohen DA, Marsh T, Wier M, Bhatia R. Partnerships for parks and physical activity. *Am J Health Promot.* 2014; 28(3 Suppl): S97-9.

^d Pre-renovation, 145 surveys (park users and local residents) were collected about Hayes Valley Playground. Post-renovation, 165 surveys were collected.

2012, the top responses included “Other people doing it with me” and individual instruction. One of the most frequent responses to another one of the open-ended survey questions, “Are there improvements or changes you would like to see in this park?” was to add programming and events. It is possible that with the addition of programming post-renovation the level of exercise and vigorous activity in the park would continue to increase.¹⁹

Case Study: El Sereno Arroyo Playground, Los Angeles

COMMUNITY PARTICIPATION TO HELP CREATE CUSTOM AND ACTIVE PARKS

The Trust for Public Land’s Parks for People—Los Angeles team opened the El Sereno Arroyo Playground in Northeast Los Angeles in 2012. The community where this park is located had no parks within a half-mile radius (a 10-minute walk), is very densely populated, and has one of the highest percentages of children in the city. This park was built on a lot that had been vacant for 30 years, and The Trust for Public Land worked with the community, city, and other partners to design and build the park. In May of 2014, The City Parks Alliance selected El Sereno Arroyo Playground as one of 12 “Frontline Parks” in the nation for its innovative practices in partnerships and community engagement.

As a result of partnership with city officials, public agencies, and the community, this formerly-vacant, one-acre empty lot is now a vibrant park containing a playground, a Fitness Zone, walking path, benches, picnic tables, art, and a natural play area. With the goal of gathering information about park use, perceptions, and community impact, surveys and community outreach at meetings and workshops were utilized pre-construction (in 2012). After construction (in 2013) surveys and a few

observations were conducted.^e 15% of those surveyed post-construction reported that they had participated in the community engagement and design process that The Trust for Public Land led for this park.

INCREASE USE AND PHYSICAL ACTIVITY

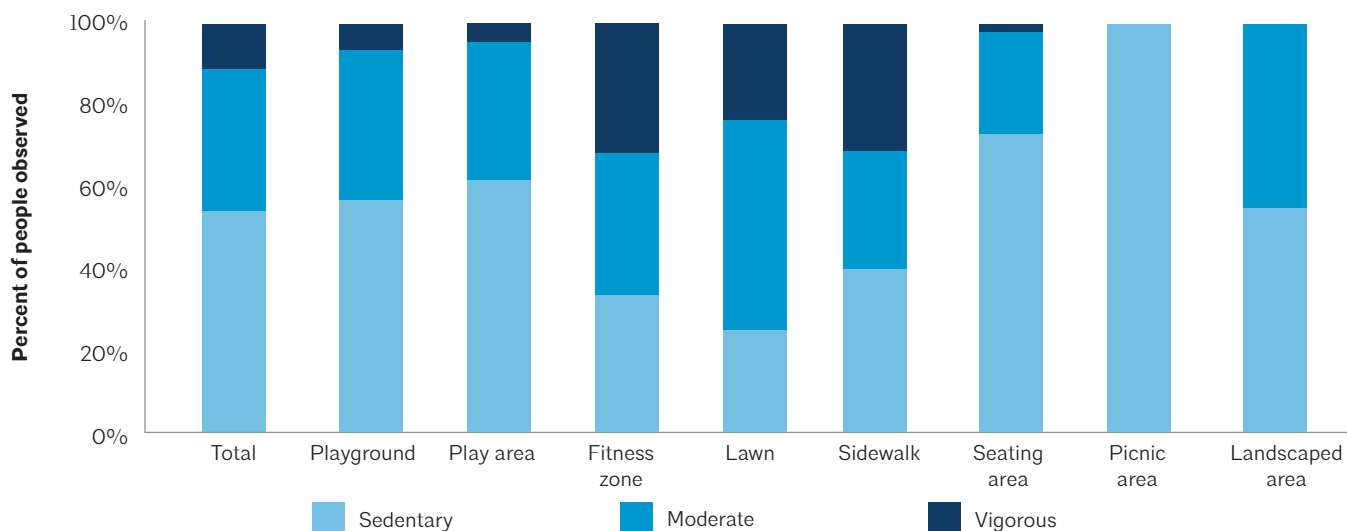
The post-construction observations showed that on average 87 people use the park every day, and most people (almost 80% of respondents) reported visiting the new El Sereno Arroyo Playground at least once per week, with 24% visiting daily and 37% visiting multiple times per week. In addition, compared to 11% of people pre-park construction who reported that they never visit a park, only 3% gave that response post-construction.

The observed park users were roughly evenly divided between females and males. Notably, 54% of park users were children, though there was a mix of age groups using the park. It might be that the mix of amenities helps attract a mix of park users. The Trust for Public Land sought to create ample opportunities for physical activity by incorporating perimeter walking paths; fitness equipment; plaza and multi-use spaces for exercise and events; grouped benches for socializing and meditation; and signage. In addition, art and tactile elements such as stone seat walls, mosaics, and small custom touches like fencing and topography changes were prioritized in the design of the park.

Providing opportunities for physical activity was a goal for the design of the park, so in addition to the Fitness Zone and open, green spaces, the active playgrounds contain elements that encourage running, jumping, and moving. Over 50% of park users were observed in the playground and play areas and another 9% of park users were observed using the Fitness Zone. Different areas of the park support different levels of activity, as illustrated

^e In addition to community input at workshops and meetings, 20 surveys (park users and local residents) were collected for El Sereno Arroyo Playground pre-renovation. Post-renovation, 131 surveys were collected.

FIGURE 2. Level of physical activity observed, by area in park



in Figure 2.^f 76% of the park users observed on the lawn, 68% in the Fitness Zone, 43% in the playground, and 39% in the play area were participating in moderate or vigorous levels of activity. Overall, out of the 675 people observed, 46% were observed participating in vigorous or moderate levels of physical activity. In addition, 54% of people reported that they usually get to El Sereno Arroyo Playground by walking, and a majority of all respondents felt it is easy to get to this park (there are no significant barriers to access).

PARK PERCEPTIONS AND PREFERENCES

Most park users (survey respondents) have lived in the community for over 10 years, and were asked the question, “Generally, how satisfied are you with your neighborhood?” The percentage of people who said they were “very satisfied” increased from 16% to 57%, and a lower percentage reported being “unsatisfied.” A much higher percentage of survey respondents reported that they felt the area around the park is “very safe” post-construction of the park, with 98% of respondents reporting it to be very safe or safe. 51% of survey respondents (compared to 6% pre-construction) reported that they feel the area around the park is “very safe.”

Pre-construction, when asked what features they like in parks in general, people reported green spaces, the

atmosphere (that the park is pleasant, nice, and relaxing), and play areas. Post-construction, half of the respondents to the question, “Are there specific things you like about El Sereno Arroyo Playground?”⁹ reported liking the child and family friendly nature of the design and equipment, the variety of equipment and activities made available by the design of the park, and the specific playground equipment. Other survey respondents answered “fitness zone equipment” (or some related variation of this answer), as well as the atmosphere, design, and aesthetics of El Sereno Arroyo Playground.

Conclusion

Ensuring people have close-to-home access to quality recreational amenities is essential to health, well-being, and quality of life. It is especially important to provide opportunities for recreation and physical activity in high-need areas. As a national non-profit, The Trust for Public Land has four decades of experience creating parks in communities across America. With this legacy come ample opportunities to evaluate park impacts on both targeted and broader scales and to develop best practices around park design. In addition to providing close-to-home access, the role of parks as a preventive health measure could be maximized by encouraging their use – by making sure they serve local community needs, provide space for social connection, and encourage exercise and active recreation.

^f The information in Figure 2 is meant to illustrate the type of data that can be collected at parks with regards to activity and features; due to a small sample size, this information, as is, would not be used in design guidelines.

⁹ 87 people, 66% of those surveyed, responded to this question.

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