Impact of Park Renovations on Park Use and Park-based Physical Activity

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Background

• Many CBOs want to contribute to communities, especially to improve places where people can be active.

• This study measured the impact of renovations to several urban parks in low-income neighborhoods in San Francisco.
Objective
To determine the impact of park renovations on park use and physical activity among park users, especially youth by studying 6 parks.
• Two parks underwent extensive renovations
  – (West Sunset, Hayes Valley)
  – installation of completely new play equipment,
  – new landscaping and ground surfaces,
  – One had new recreation center and installed outdoor fitness equipment.
Comparison Parks

• Two parks in the process of renovation
  – (Mission, Balboa)

• Two parks that were not physically changed from baseline
  – (Hayward, Boeddeker)
<table>
<thead>
<tr>
<th></th>
<th>Renovated Parks</th>
<th>Parks Under Renovation</th>
<th>Comparison Parks</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>Hayes Valley</td>
<td>West Sunset</td>
<td>Balboa</td>
</tr>
<tr>
<td>Park Acres</td>
<td>0.6</td>
<td>17</td>
<td>25</td>
</tr>
<tr>
<td># of sports fields</td>
<td>0</td>
<td>7</td>
<td>5</td>
</tr>
<tr>
<td># of facilities</td>
<td>4</td>
<td>6</td>
<td>4</td>
</tr>
<tr>
<td>% households in poverty (½ mile)</td>
<td>17.3%</td>
<td>7.6%</td>
<td>9.4%</td>
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<tr>
<td>Estimated population in a ½ mile radius</td>
<td>25,129</td>
<td>9,735</td>
<td>12,553</td>
</tr>
</tbody>
</table>
Methods

• We systematically assessed park use before and after the park renovations using SOPARC,
  – observing activity areas in 6 parks 4 times each day
  – 7 days of the week during May 2009 and May 2012.
  – Counted park users by gender, age group, activity level

• Interviewed approximately 75 park users and 75 residents within ½ mile of each park.
Methods

• Total park use was estimated by a mixed-effects model,
  – fixed effect controlled for park-level confounders
  – two random effects accounted for observation times
    (i.e., hours of the day and days of the week)
  – Changes in use were estimated by a linear contrast
    between the two measurement periods.

• Logit models used for survey outcomes,
  controlling respondent-level characteristics (e.g.,
  age, gender, race, etc.) and park fixed-effects
Characteristics of Park Users

Gender and Age Group

- Male
- Female
- Children
- Teens
- Adults
- Seniors

Activity Level

- Sedentary
- Moderate
- Vigorous

Hayes Valley
West Sunset

- Hayes Valley
- West Sunset
Survey Respondent Characteristics

• 56% male
• Average age=43
  – 9% Hispanic,
  – 17% African American,
  – 40% White,
  – 15% Asian
Park Use and Perceptions of Safety (Baseline)

- Visits parks >1x/week last 7 days
- Walks to the park
- Park is safe/very safe
- Exercise in park

Local residents n=419
Park Users n=503
Results

• In parks where there were no physical renovations or changes, general use declined.
• In one of these parks, the decline could partly be explained by reductions in accessibility, since the park’s hours of operation were restricted.
• No significant change in use was noted at the parks undergoing construction, in spite of several areas being inaccessible.
Changes In the Number of Park Users and MET-hours Gained

- Renovated Parks: % change in users (250), % change in MET-hours (250)
- Undergoing Construction: % change in users (0), % change in MET-hours (30)
- Unchanged Parks: % change in users (0), % change in MET-hours (0)

Legend:
- % change in users
- % change in MET-hours
Results

• Use of the two renovated parks increased substantially compared to baseline.
• Use of the smallest park increased more than 5-fold, from an estimated 156 users to over 1,000 users per week.
• Use of the second renovated park increased from an estimated 5,500 users to more than 9,300 users per week.
• Use by children and adults increased substantially, while there was no change in use by seniors and 51% decline in use by teens.
Survey Results

• Although park users and residents both reported using the renovated parks more frequently, residents living near parks that were not renovated also reported using them more often.

• Even though at baseline, most residents and park users considered their parks safe, park renovations were associated with an increased perception of park safety.
Cost Analysis

• Benchmark is $0.50-$1.00 for Cost-effectiveness
• Assumes 45 weeks of clement weather
• Assumes results would be the same for each week of the year
• Using $/MET gained:
  – For West Sunset : $.27/MET gained
  – For Hayes valley total: $2.66/MET gained
  – For Hayes Valley, assuming only outdoor improvements: $1.25/MET gained
Summary

• Park renovations can have dramatic effects on increasing park use and physical activity levels among park users and improve perceptions of park safety.
Challenges

• Unanticipated delays
• Reaching all age groups
• Code/construction requirements increase costs
Conclusion

• In future projects, increasing park use by all age groups could be addressed by
  – offering outreach and programming that target specific age groups (such as teens or seniors),
  – by building park features that appeal to different age groups in ways that will not adversely affect other park users.