Measuring Landscape Performance: Case Study Investigation

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Evaluating sustainable benefits of urban renewal landscape projects in Lincoln - Council Bluffs

Participating in the Landscape Architecture Foundation’s 2018 Case Study Investigation has been an incredibly informative experience for our research team at the University of Nebraska-Lincoln. We are eager to share a spotlight on the landscape performance of two Great Plains projects: P Street Corridor in Council Bluffs, Nebraska, and Tom Hanafan River’s Edge Park in Council Bluffs, Iowa. Working on the post-occupancy study of both projects has been extremely beneficial in understanding how reclaiming underutilized sites can create high-performing landscapes. Both are public projects in urban settings with primary goals of transforming formerly unattractive, underused spaces to highly active public spaces that implement stormwater management strategies. P Street focuses on runoff capture while Tom Hanafan focuses on opportunities to preserve and restore riparian forest in a floodplain to withstand a 500-year storm event.

This project presents the methods and results from our landscape performance evaluation of these two projects, highlighting their environmental, social, and economic benefits. Learning from various data collection techniques, communicating with our firm partners and municipal clients, and synthesizing our research in documents for peer review has given us an incredible opportunity to grow as landscape architecture students and experience the growing necessity of using landscape performance to quantify the sustainable benefits of landscape architecture.

P Street Corridor in Lincoln, NE

**Before**

**Original Goals**

**Environmental Goals**
1. Capture 100% of stormwater runoff on site
2. Increase street tree health (tree canopy from 7.4% to 30% canopy coverage).
3. Planting 100% native and non-invasive species.

**Social Goals**
1. Increase cultural identity of the corridor through engagement of local artists and cultural entities
2. Increase outdoor gathering space.
3. Increase the number of bike riders per square foot.
4. Increase public perception of P Street to over 75% of users rating it as “Very Good”.

**Economic Goals**
1. Lower vacancy rates.
2. Increase the total assessed value of the corridor’s properties.

**Results**

**Environmental Benefits**
- Carbon Sequestration and Avoidance
  - Sequesters 22,378 lbs. of atmospheric carbon, equivalent to driving 26,000 miles in a single average vehicle or intercepts 36,574 gallons of stormwater runoff annually investing in newly-planted trees.

**Social Benefits**
- Social Value
  - Improved user perception of P Street by 40%, with 80% noting the street’s appearance as “good” or “very good” as compared to 25% before the redesign.

**Economic Benefits**
- Vacancy Rate
  - Reduced ground floor vacancy rates for streetfront properties from 5.50% to 2.33%

Tom Hanafan River’s Edge Park in Council Bluffs, IA

**Before**

**Original Goals**

**Environmental Goals**
1. Ensure that parkland and amenities in the floodplain will be resilient to a 500-year flood event.
2. Protect the existing flood protection levee while minimizing its impact as a barrier to waterfront access.
3. Revitalize the riparian forest in the northern and southern portions of the site.

**Social Goals**
- Provide accessibility to a ¾ mile of waterfront open space for people from the city and region to have a point of connection – visually, physically, and emotionally – to the Missouri River, where none had previously existed.
- Provide new outdoor space for events and recreational purposes.
- Provide an appropriately grand and inviting destination at the landing to the Bob Kerry Bridge.
- Capitalize on the viewsheds towards the Missouri River and Omaha’s skyline.

**Economic Goals**
- Original Goals
  - Captured approximately $440 million in public and private development within a ½ mile radius since 2011.
  - Yielded a total of $365,217 in revenue for the City of Council Bluffs between June 2015 and May 2017.

**Results**

**Environmental Benefits**
- Land Preservation
  - Manages 80% of runoff or approximately 8,346,307 gallons of stormwater annually equivalent to 13 Olympic-sized swimming pools.

**Social Benefits**
- Social Value + Safety
  - Increase levels of outdoor activity for 68% of 67 surveyed users.

**Economic Benefits**
- Economic Development
  - Captured approximately $440 million in public and private development within a ½ mile radius since 2011.