FINDING A COMMON LANGUAGE
Performance METRICS for Key Stakeholders
Session Structure

• Introduction

• Panelist Presentations
  • Barbara Deutsch
  • Erin Christensen Ishizaki
  • Anna Cawrse

• Panel Discussion/Question & Answer
FINDING A COMMON LANGUAGE
Performance Metrics for Key Stakeholders

Barbara Deutsch, Executive Director, Landscape Architecture Foundation
Erin Christensen Ishizaki, Partner, MITHUN
Anna Cawrse, Associate, Design Workshop
Barbara Deutsch, Executive Director
Make the **MOST**
of this **MOMENT IN TIME**
MEASURING SUSTAINABILITY

Can’t achieve SUSTAINABILITY without considering LANDSCAPE
A CASE STUDY COMPARISON

- Reduces water use by 30% compared to a building with standard code-compliant fixtures.
- Uses 51,300 kBtu/ft² of energy annually, a 39% reduction from base case.
- Reduces carbon emissions by 19 lbs CO₂/ft², or 50% by purchasing renewable energy.
- Provides daylight for 75% of regularly occupied spaces and views for 90% of occupied work areas.
A CASE STUDY COMPARISON

- Stormwater planters
- 20 new street trees
- Native and adapted plants
- 5 new outdoor dining areas
- Energy-efficient light blades
- Benches made from local stone
A CASE STUDY COMPARISON

- Captures and cleans stormwater runoff
- Reduces the urban heat island effect
- Sequesters carbon
- Reduces potable water use
- Reduced energy use
- Increases social value of space
Captures and infiltrates 50% of all rain falling on sidewalks.

Sequesters 3,000 lbs of carbon annually in tree biomass.

Reduced energy consumption for outdoor lighting by 55,000 kilowatts, saving $3,200 annually.

Increased restaurant patronage by 30% on weekdays and 50% on weekends.
LANDSCAPE PERFORMANCE SERIES
THE ONLINE RESOURCE

The LPS is…

- A collection of resources
- Designed to make “landscape performance” as well-known as “building performance”
- NOT a rating system
- Focused on built, performing projects
- A resource that will grow over time and with your participation
- Generating demand for sustainable landscape solutions

LandscapePerformance.org
Children with Attention Deficit Hyperactivity Disorder (ADHD) concentrate better after a walk in a city park than after walks in other urban settings.

An 8-year longitudinal study suggests that if all children had commensurate access to parkland and recreation programs, 9.5% of boys and 8.3% of girls would move from being overweight to normal weight.

Parks and open space increase nearby property values. A review of numerous studies indicates that a 20% increase is a reasonable estimate, though the impact varies with park size, use, and design.

A Modesto, California study found that asphalt on streets shaded by large canopy trees lasts longer than asphalt on unshaded streets, reducing maintenance costs by 60% over 30 years.

Empirical evidence indicates “livable” street treatments are safer than conventional roadway designs. In analyzing crash data, livable sections had fewer accidents and pedestrian crashes.

Consumers are willing to spend 9-12% more for goods and services in central business districts with high quality tree canopy.

GBRL Green Roof Energy Calculator (v 2.0)

Green Roofs for Healthy Cities, Portland State University, University of Toronto

This calculator compares the annual energy performance of a building with a green roof to the same building with either a conventional dark roof or a highly-reflective white roof. Inputs include nearest major city, total roof area, percent green roof cover, growing media depth, and leaf area index of plants. Results are the electrical, gas, and energy cost savings, heat exchange between the roof and the urban environment, and an estimate of the annual roof water balance, including net runoff.

http://greenbuilding.pdx.edu/GR_CALC_v2/grcalc_v2.php#retain
National Tree Benefit Calculator

Casey Trees, Davey Tree Expert Company

This online tool calculates stormwater, energy, carbon, air quality, and property value benefits for individual trees. The only inputs are tree species, size (diameter), adjacent land use, and zip code, which adjusts the model according to climate zone.

http://www.treebenefits.com/calculator
THE ONLINE RESOURCE

LANDSCAPE PERFORMANCE SERIES
presented by the
Landscape Architecture Foundation

www.LandscapePerformance.org

Case Study Briefs
Database of over 100 exemplary projects with quantified landscape benefits

Fast Fact Library
Nearly 200 facts on the benefits of landscape derived from published research

Benefits Toolkit
Dozens of online calculators and tools to estimate landscape performance

Collections
Themed LPS highlights curated by LAF and leading thinkers
Renaissance Park

Landscape Performance Benefits

ENVIRONMENTAL

- Removed 34,000 cu yd of contaminated soil from the 100-year floodplain and sealed it safely within the park's iconic landforms. This includes 12,000 cu yd of soil commingled with enamel frit, which was leaching contaminants into groundwater.
- Increased floodplain storage by 9.32 acre feet (15,047 cu yd) through excavation of contaminated soil and creation of a constructed wetland.
Landscape Performance Benefits

ENVIRONMENTAL
- Removed 34,000 cu yd of contaminated soil from the 100-year floodplain and sealed it safely within the park’s iconic landforms. This includes 12,000 cu yd of soil commingled with enamel frit, which was leaking contaminants into groundwater.
- Increased floodplain storage by 9.32 acre feet (15,047 cu yd) through excavation of contaminated soil and creation of a constructed wetland.

SOCIAL
- Promotes a healthy lifestyle, according to 85% of 85 park users surveyed, 81% agree that the park increases their outdoor activity.
- Attracts an estimated 145,220 visitors annually, many of whom also patronize local businesses. 89% of 85 surveyed park users shop or dine within 1/2 mile of the park before or after visiting the park.

ECONOMIC
- Stimulates economic development and neighborhood reinvestment. Since 2005, $55 million has been invested in two redevelopment projects adjacent to Renaissance Park. Five additional properties within 1/4 mile of the park were redeveloped between 2005 and 2013.
2. Increases floodplain storage by 9.33 acre feet (15,047 cu yd.) due to excavation of contaminated soil below 100 year floodplain elevation and creation of a constructed wetland.

Methodology:
This performance indicator is based on the thorough review of information provided and cut/fill calculations performed by the project’s consulting team as well as calculations performed by the research team.

The portion of the site where contaminated soils were excavated from capped waste cells of enamel flint was excavated as much as 10' below finished grade. This +/- one acre area is creatively redesigned as a one-acre constructed wetland that receives, retains, and treats runoff from the site while increasing the storage capacity of the 100-year flood by 9.33 acre feet.
Test wells indicated a bloom of contaminated groundwater down-gradient from the known location of previously capped industrial waste settling ponds within the 100-year flood plain. 34,000 cu yd of contaminated soils were excavated and placed in upland containment cells, safely sealed within the park’s iconic landforms. A drainage system beneath the cells diverts any lingering leachate to the sanitary sewer.

The portion of the site from which contaminated soils were excavated was creatively redesigned as a one-acre constructed wetland. This feature receives, holds and treats runoff from the site while increasing floodplain storage capacity by 9.32 acre feet. The wetland is lined with bentonite geosynthetic clay liner to prevent further groundwater contamination. Two feet of freeboard is provided between the wetland’s normal pool level and outfall orifices which discharge into the stream. Gabions, buffered with wetland plantings, artfully establish the water’s meandering path through the wetland.
CASE STUDY BRIEFS

Additional Images

References and Resources

Hargreaves Associates: Renaissance Park
Hefferle+Kronenberg Architects: Renaissance Park Outdoor Pavilion
East Tennessee River Valley Geotourism MapGuide
The Chattanooga "Renaissance Park Wins Governor's Award," 2007
Tennessee Valley Authority, "Wetland thrives in downtown Chattanooga," 2006

Share Your Photos

No photos have been tagged yet.

Have you visited this project site? Share your experience by tagging your photos on Flickr with this machine tag: "lafcasestudy738"
PROJECTS AND BENEFITS
Filters 4.5 million gallons of runoff from 12.5 acres.

Provides habitat for 62 confirmed species birds.

Expected to catalyze $152.3 million in development.
Increases the flood storage capacity of this section of the Buffalo Bayou by 18.65 acre-feet.

Attracts 22,500 annual visitors for programmed activities and events.

Improves the quality of life for 99% of 108 park users surveyed.
Attracts 3,000 trail users each weekday and over 10,000 users each weekend day.

Promotes physical activity with 70% of 100 trail users saying they exercise more since the trail opened.

Catalyzed economic development with more than $638 million in new real estate investment planned.
Increased channel capacity by **40%** to accommodate the 100-year flood.

Restored **75%** of historic wetlands, resulting in **71** species of migratory and resident birds observed on-site.

Created **1,373** temporary and **1,248** permanent jobs on properties developed in anticipation of protection.
CASE STUDY INVESTIGATION (CSI)
CASE STUDY INVESTIGATION (CSI)

- Unique research collaboration
  - Faculty Research Fellow
  - Student Research Assistant
  - Practitioner

- Document high-performing landscapes
  - New LPS Case Study Briefs
Collaboration is a critical success factor.

It is hard to show performance without performance objectives and baseline data.

Including landscape performance in design education is fundamental.

Need to consider performance during the design process

- What are performance objectives?
- How will performance be measured?
- What baseline data is needed?

“We will NEVER approach DESIGN THE SAME way again.”

-- CSI Participants

CSI KEY LESSONS
WHERE DO I BEGIN?

- On every project, think about how you will define success. (And write it down!)

- How will you measure success once the project is built?
  - What to measure?
  - Who will measure? -- partners

- What baseline data do you need to collect?
METRICS

- To inform a design
- To meet “sustainable” criteria
- To show “substantial completion”
- To evaluate the performance of a project
TO EVALUATE PERFORMANCE

- Project Goals
- Performance Objectives
- Design Intent
- Expected Outcomes

What to Measure

Metric

Method
WHAT TO MEASURE

Need to know:
- Project goals
- Design intent
- Performance objectives

*If you don’t evaluate against these, any assessment of performance will miss the mark*

Also consider:
- Other expected outcomes
- Unexpected outcomes
EXAMPLE: AVALON PARK & PRESERVE

Memorial & Nature Preserve
Long Island, New York

Goals/Design Intent:

- Restore and protect the ecological communities
- Provide a safe, peaceful, and harmonious place for visitors
Increased the biodiversity of the site as evidenced by a 35% increase in identified bird species, including 11 species on the Audubon High Priority Watch List, and 7 species with populations of regional significance.

Increased the ecological integrity of plant communities by more than doubling Avalon’s Plant Stewardship Index to achieve a score of 54, reflecting a high diversity of native plants and sustained removal of invasive species.

Provides garden therapy and attention restoration to an estimated 129,600 annual visitors. 93% of those surveyed described Avalon’s effect on their mood in positive terms, with 51% of all responses identifying some form of stress reduction.
EXAMPLE: SEATTLE PLAYGARDEN

Fully Accessible Park
Seattle, Washington

Goals/Design Intent:

- Create a space where children of all abilities can play outdoors together
- Create a sensory-rich environment for educational and therapeutic benefits
- Use ecological design solutions
EXAMPLE: SEATTLE PLAYGARDEN

- Captures and infiltrates 150,040 gallons of stormwater runoff annually from 7,500 sf of impervious surfaces, saving an estimated $300 in city stormwater management fees each year.

- Yields an estimated 940 lbs (0.4 tons) of fruits and vegetables each year, which has an estimated value of $1,100.

- Provided therapeutic conditioning and outdoor education to nearly 400 children since opening in the Fall of 2010. Due to increasing demand, more capacity in the curriculum and programming is being incorporated for 2011/2012.
DETERMINING HOW TO MEASURE
TO EVALUATE PERFORMANCE

- Project Goals
- Performance Objectives
- Design Intent
- Expected Outcomes

What to Measure

Metric

Method
CHOOSING THE RIGHT METRIC

What to Measure: Flood Control Benefit

Possible Metrics:
- Increase in flood storage capacity
- Decrease in flood events
- Decrease in time an area is submerged
- Decrease in cleanup costs
- Increase in usability of space
There is **MORE THAN ONE WAY** to measure

**METRICS: CONSIDERATIONS**

- Availability of information
- Credibility
- Appropriate for timeframe
- Appropriate for audience
- Understandable and relevant
METRICS: CREDIBILITY

Best Available Science
Hierarchy of presumed reliability of published research
- Peer-reviewed journal or book
- Government publication
- Professional journal
- Trade magazine

Defensible Metrics
Ranked according to their practical usefulness as well as their validity
- Can the metric be used with readily-available data?
- Can the data needed be collected with minimal labor?
- Are there weaknesses with the assumptions or known problems with the validity of the metric?
- If so, can these problems be avoided by using the metric in limited circumstances (i.e., only applying certain situations)
APPROACHES TO QUANTIFYING BENEFITS

- Determine from design parameters
  - Stormwater modeling, area calculations, etc.
  - Rating system submittals (LEED, SITES)
- Gather additional information
  - Use public information (property tax, GIS data)
  - Contact other project stakeholders
- Estimate using rules of thumb
- Use online calculators and tools
- Apply previous research
- Obtain actual measurements/monitoring data
METRICS: UNDERSTANDABLE AND RELEVANT

- Some metrics stand on their own
- If they don’t, you could try to...
  - Report absolute and relative values (e.g. %)
  - Use equivalencies
  - Monetize
  - Project out over time
  - Compare to similar/traditional

**Tripled** total assessed value of the Riverfront District from **$242 million** to **$722 million**.
Cheonggyecheon Stream Restoration Project

- Reduced small-particle air pollution by 35% from 74 to 48 micrograms per cubic meter. Before the restoration, residents of the area were more than twice as likely to suffer from respiratory disease as those in other parts of the city.
- Contributed to 15.1% increase in bus ridership and 3.3% in subway ridership in Seoul between 2003 and the end of 2009.
Portage Lakefront and Riverwalk

Landscape Performance Benefits

- Increased the total size of Portage City Parks by 14% through the addition of 57 acres of dunes, trails, and lakefront and provides the city's first free public lake access.

- Provides habitat for at least 683 species of plants, birds, mammals, amphibians, reptiles and insects, including 8 federally threatened or state rare species.

Designer
AIR, LLC

Land Use
Brownfield
Park/Open space
Port of Los Angeles Wilmington Waterfront Park

Landscape Performance Benefits
- Reduces noise levels for C Street residents by approximately 10 decibels, which cuts the experienced sound level in half and improves outdoor environment conditions.

Designer
Sasaki Associates, Inc.
Los Angeles
<table>
<thead>
<tr>
<th>Type of Benefit</th>
<th>What to Measure</th>
<th>Method/Tool</th>
<th>Data Source</th>
<th>Relevance</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Environmental:</strong></td>
<td>Water consumption reduction</td>
<td>Determined volume of reclaimed water used for landscape irrigation and re-charging</td>
<td>Construction Docs</td>
<td>Equivalencies – number of Olympic pools</td>
</tr>
<tr>
<td>Water conservation</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Social:</td>
<td>Improvement in workplace satisfaction</td>
<td>Survey determining % employees reporting improved mood and/or decreased stress</td>
<td>Survey data</td>
<td>% change from before the project</td>
</tr>
<tr>
<td>Health &amp; well-being</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Economic:</td>
<td>Spending in park cafe</td>
<td>Obtained tourism data, including % of Chicago tourists visiting park &amp; their spending at park cafe</td>
<td>BID, Millennium Park Authority, Chicago Tourist Office</td>
<td>% increase over 6-year period</td>
</tr>
<tr>
<td>Visitor spending</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
THE GUIDEBOOK TO EVALUATE PERFORMANCE
GUIDEBOOK FOR METRIC SELECTION

- **Metrics**
  - Understandable and meaningful to land development decision-makers
  - Over 100 metrics in 34 benefit categories

- **Methods**
  - Relatively easy to use
  - Generally applicable
  - Useful in a short (≥6 months) timeframe
  - Defensible

- **Positioning information**

- **Examples**
GUIDE TO EVALUATE PERFORMANCE

01 Environmental Benefits

- Land
  1. Land Efficiency & Preservation
  2. Soil Creation, Preservation & Restoration

- Water
  3. Stormwater Management
  4. Water Conservation
  5. Water Quality
  6. Flood Protection
  7. Water Body/Groundwater Recharge

- Habitat
  8. Habitat Creation, Preservation & Restoration
  9. Habitat Quality
  10. Populations & Species Richness

02 Social Benefits

- Carbon, Energy, & Air Quality
  11. Energy Use & Emissions
  12. Air Quality
  13. Temperature & Urban Heat Island
  14. Carbon Sequestration

- Materials & Waste
  15. Reused/Recycled Materials
  16. Local Materials
  17. Waste Reduction

- 1. Recreational & Social Value
- 2. Cultural Preservation
- 3. Health & Well-Being
- 4. Safety
- 5. Educational Value
- 6. Noise Mitigation
- 7. Food Production
- 8. Scenic Quality & Views
- 9. Transportation
- 10. Access & Equity

03 Economics Benefits

- 1. Property Value
- 2. Operations & Maintenance Savings
- 3. Construction Cost Savings
- 4. Job Creation
- 5. Visitor Spending
- 6. Increased Tax Base/Revenue
- 7. Economic Development
METRICS: SCENIC QUALITY & VIEWS

- Change in score on a visual quality scale
  - U.S. Forest Service Visual Quality Assessment
  - Regional index

- Percent of unwanted views screened or desirable views retained
  - Photography
  - Computer simulations

- Perception of improved aesthetic
  - Surveys
HOW TO USE THE GUIDEBOOK

For built projects…

- Initially assess what could be measured based on project goals (and data availability)
- Discover metrics and methods for a particular type of benefit

For projects in concept or design phase…

- Think through measurement protocols and what baseline information to collect
- Set specific performance objectives

As much an IDEA GENERATOR as a HOW-TO
LPS RESULTS

- Transforming design practice, education, and industry
- Making advocates more effective
- Building the body of knowledge
- Operationalizing and energizing aspirations for change

AILA/Yamagami/Hope Fellowship
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www.LandscapePerformance.org
Metrics: A Common Language—

Compelling Change and Stories from the Field

Erin Christensen Ishizaki, Mithun

New Partners for Smart Growth / St Louis MO

February 3, 2017

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Where Design is Needed Most—
Taylor 28——
Seattle, Washington

Baseline
PEQI SCORE

49-60 POOR PEDESTRIAN QUALITY
61-66 LOW PEDESTRIAN QUALITY
67-72 AVERAGE PEDESTRIAN QUALITY
73-83 HIGH PEDESTRIAN QUALITY
84-100 HIGHEST PEDESTRIAN QUALITY
Baseline PEQI SCORE

49-60 POOR PEDESTRIAN QUALITY

61-66 LOW PEDESTRIAN QUALITY

67-72 AVERAGE PEDESTRIAN QUALITY

73-83 HIGH PEDESTRIAN QUALITY

84-100 HIGHEST PEDESTRIAN QUALITY

Taylor 28—Seattle, Washington
Taylor 28
Seattle, Washington
Proposed Design
PEQI SCORE

49-60 POOR PEDESTRIAN QUALITY
61-66 LOW PEDESTRIAN QUALITY
67-72 AVERAGE PEDESTRIAN QUALITY
73-83 HIGH PEDESTRIAN QUALITY
84-100 HIGHEST PEDESTRIAN QUALITY

Taylor 28—
Seattle, Washington
Sun Valley—Denver CO

"I like the idea of a big park with smaller ones inside."

Anseca Mahamed, Sun Valley Youth Resident

Youth Meeting

Engagement with Individual Property Owners

Engagement with Youth at Community Meetings
Grow Priority Areas & Goals

The Master Plan is divided into chapters based on these six Grow Priority Areas. Each area contributes to the overall purpose of the Master Plan and builds upon the natural assets of Sun Valley. Each Grow Priority Area has an associated set of Goals which will provide development direction as the master plan is realized.

**Priority Area: Youth + Education**
- 1. Prioritize family and youth
- 2. Learning Campus for all ages
- 3. Expand youth programming and youth amenities
- 4. Neighborhood Learning Lab
- 5. Shared Use Future Development Opportunities

**Priority Area: Food**
- 1. Celebrate culture
- 2. Economic Opportunity through Food
- 3. Cultivate community amongst neighbors
- 4. Placemaking through Food
- 5. Healthy Lifestyles
- 6. Neighborhood Identity

**Priority Area: Opportunity**
- 1. Create a nexus of culture and food
- 2. Invest in local and new businesses
- 3. Develop strong community partnerships
- 4. Attract and leverage investments
- 5. Increase jobs in the neighborhood
- 6. Increase commercial space in neighborhood
- 7. Attract entrepreneurs by providing maker spaces
- 8. Include an integrated job training facility

**Priority Area: Intentional Housing**
- 1. Replace all DNA public housing one-for-one
- 2. Provide public, workforce affordable, and market rate housing to create a mixed-income community
- 3. Improve livability through access to desired amenities/services
- 4. Provide housing choices to satisfy current residents and attract new residents
- 5. Incorporate opportunities for Ownership

**Priority Area: Connections + Open Space**
- 1. Provide social and outdoor spaces and encourage outdoor activities for all ages
- 2. Create safe streets that invite walking
- 3. Improve connections to Sun Valley from the surrounding city
- 4. Provide connections to transit

**Priority Area: Sustainable Infrastructure**
- 1. Invest in district energy and water infrastructure and become a model for the City
- 2. Implement solutions to reduce water consumption and to capture solar and geothermal power and to build innovative stormwater solutions
- 3. Create an interactive briefing center to educate the community about sustainability, infrastructure and district systems
- 4. Pursue becoming an "EcDistrict" and allow for a holistic approach to resource management
Measuring Success: Metrics
State Capitol Campus — Olympia, WAC
State Capitol Campus — Olympia WA
State Capitol Campus — Olympia WA
Which Changes are Most Effective—
Mariposa Healthy Living District —
Denver, CO
<table>
<thead>
<tr>
<th>Mariposa Healthy Living District</th>
<th>Denver, CO</th>
</tr>
</thead>
<tbody>
<tr>
<td>PERCENT OF POPULATION LIVING BELOW POVERTY LEVEL</td>
<td>37.05%</td>
</tr>
<tr>
<td>PERCENT OF HOUSEHOLD INCOME SPENT ON HOUSING</td>
<td>12.75%</td>
</tr>
<tr>
<td>HOUSING INDOOR ENVIRONMENT (AIR QUALITY, TEMPERATURE, HUMIDITY)</td>
<td>n/a</td>
</tr>
<tr>
<td>AVERAGE TRANSIT COMMUTE TIME IN MINUTES</td>
<td>24.60</td>
</tr>
<tr>
<td>COST OF TRANSPORTATION AND HOUSING AS % OF AVERAGE INCOME</td>
<td>26.18%</td>
</tr>
<tr>
<td>NUMBER OF TRAFFIC INJURIES / COLLISIONS / FATALITIES</td>
<td>n/a</td>
</tr>
<tr>
<td>PERCENT OF RESIDENTS WITH ACCESS TO OPEN SPACE / NATURE WITHIN 1/2 MILE</td>
<td>26%</td>
</tr>
<tr>
<td>AIR QUALITY - PARTICULATE MATTER</td>
<td>n/a</td>
</tr>
<tr>
<td>VMT PER CAPITAL PER DAY</td>
<td>24.4</td>
</tr>
<tr>
<td>PROPORTION OF POPULATION WITHIN 1/2 MILE TO COMMUNITY GATHERING SPACES</td>
<td>100%</td>
</tr>
<tr>
<td>TOTAL CRIME RATE PER 1,000 PEOPLE</td>
<td>247.9</td>
</tr>
<tr>
<td>PERCENTAGE OF POPULATION WHO FEEL SAFE ALONE AT NIGHT IN NEIGHBORHOOD</td>
<td>49%</td>
</tr>
<tr>
<td>PROPORTION OF POPULATION WITHIN 1/2 MILE KEY RETAIL</td>
<td>100%</td>
</tr>
<tr>
<td>NEIGHBORHOOD SCHOOL PERFORMANCE</td>
<td>n/a</td>
</tr>
<tr>
<td>% PERSONS AGE 25+ WITH LESS THAN 12TH GRADE EDUCATION</td>
<td>38.57%</td>
</tr>
<tr>
<td>% OF HEALTHY FOOD OUTLETS WITHIN 1/2 MILE OF NEIGHBORHOOD</td>
<td>0</td>
</tr>
<tr>
<td>UNEMPLOYMENT RATE</td>
<td>10.63%</td>
</tr>
<tr>
<td>FAMILY MILEAGE AND NUMBER OF JOBS/IEL IN NEIGHBORHOOD</td>
<td>1.04 / 1.0</td>
</tr>
</tbody>
</table>

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GET CONNECTED
FOOD, HEALTH CARE, EDUCATION,
GATHERING PLACES, ART

Mariposa Healthy Living District —
Denver, CO
Real User Behavior
Mithun Design Analytics: Pre / Post Occupancy Initiative
98% feel connected to the outdoor environment when using the Barazzone Center.

85% have become more aware of the source of their food.
# Priority 5: Living Infrastructure

Enable flourishing ecosystems and restore natural capital

<table>
<thead>
<tr>
<th>Objective Categories</th>
<th>Objectives</th>
<th>Indicators</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Natural Features</strong></td>
<td>The quality and functions of habitat are enhanced.</td>
<td>- Area of functional habitat.</td>
</tr>
<tr>
<td></td>
<td>Tree cover in the district is enhanced.</td>
<td>- Percentage of nonfunctional habitat restored annually.</td>
</tr>
<tr>
<td><strong>Ecosystem Health</strong></td>
<td>Rainwater is managed in the district.</td>
<td>- Area of tree canopy in the district.</td>
</tr>
<tr>
<td></td>
<td>The supply of healthy soil is increased.</td>
<td>- Number of trees planted annually.</td>
</tr>
<tr>
<td></td>
<td>Water quality is enhanced.</td>
<td>- Percentage of rain events retained, infiltrated, and reused in the district.</td>
</tr>
<tr>
<td></td>
<td>Access to nature is improved.</td>
<td>- Ratio of pervious to impervious surfaces.</td>
</tr>
<tr>
<td><strong>Connection with Nature</strong></td>
<td>Natural processes are integrated into the built environment.</td>
<td>- Area of contaminated land remediated for reuse annually.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Annual water quality index scores for surface water and groundwater.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Percentage of residents within a 1 mile (1.6 km) walk to natural open space.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Percentile 50-year rainfall event managed within the district.</td>
</tr>
</tbody>
</table>
95th and 100th percentile
Green and Gray Stormwater Performance—
Mithun Puget Sound projects
Questions?

Erin Christensen Ishizaki—
Partner
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206-623-3344
Design Workshop is a firm born in the pursuit of ideas.
Rethinking Environment

Building resilient Communities

Innovating Economic Landscapes

Through Artful Integrity
“Practical Tools and Innovative Strategies for Creating Great Communities”
SUN VALLEY
Connecting to Opportunity
“What do people say? We’re the land of the forgotten,”
Toni Cisneros, Sun Valley resident
History of Sun Valley

Late 1800's
Settlements in the Sun Valley area were at the center of the Idaho. The development of the town began in 1860.

1917
Old Mill Market is connected to cars and trains - connecting downtown Burnes and North Idaho neighborhoods.

1920's
City of Burnes becomes a town.

1939
First public housing development, Sun Valley, opened; included 44 units. First cost $2,344 per unit.

1948
Burnes High School is completed. The students used the old school building later became Sun Valley High School.

1949
First public housing development, Sun Valley, opened; included 44 units. First cost $2,344 per unit.

1950's
Sun Valley High School is constructed. It was later renamed Sun Valley High School.

1952
The Benmore Housing Authority constructs Sun Valley

1960's
Businesses include shops in the community, including a shop in the Sun Valley High School at the time.

1979
Burnes High School was closed.

2001
Sports Authority field at the high school.

2003
The new state-of-the-art state-of-the-art Recreation Centre opened.

2012
Latimer Hall undergoes extensive renovation to improve the safety of the area.

2013
The Regional Transportation District (RTD) operates Federal bus service on the Sun Valley shuttle.
THE VISION FOR SUN VALLEY

A. A CELEBRATED SUN VALLEY
A.1 Build upon Sun Valley’s History and Assets
A.2 Encourage Diversity
A.3 Celebrate Culture

B. A CONNECTED SUN VALLEY
B.1 Reknitting Neighborhoods
B.2 Integrated System of Parks and Public Spaces
B.3 Enhance Walkability and Bikeability
B.4 Make Transit Convenient

TRANSFORMATIVE PROJECTS

1. 13TH AVENUE
2. RIVERFRONT PARK
3. STADIUM, ENTERTAINMENT & CULTURE

4. HIGH QUALITY RESIDENTIAL COMMUNITIES
5. CONNECT PEOPLE WITH JOBS AND EDUCATION
6. 10TH AVE
7. FEDERAL/COLFAK INTERCHANGE

C. AN INNOVATIVE SUN VALLEY
C.1 Transit Oriented Development
C.2 Stadium Entertainment Destination
C.3 Open For Business
C.4 A Vibrant Corridor

D. A HEALTHY SUN VALLEY
D.1 Healthy For People
D.2 Healthy for the Environment
D.3. Healthy for the Economy
Public Engagement

3 DESIGN WORKSHOPS

367 COMMUNITY MEMBERS

60 CHILDREN AT WORKSHOPS

4 PUBLIC MEETINGS

4 LANGUAGES
SOMALI
SPANISH
VIETNAMESE
ENGLISH
Sun Valley Team
Focus Group Feedback
1. Education
2. Jobs
3. River and Open Space
4. Food and Health
5. Energy
6. Housing
7. Lower Cofax
8. Commercial

Community Master Plan Goals
1. Youth & Education focus
2. Intentional Housing with many housing choices
3. Family friendly housing, amenities, services, affordable businesses + opportunities
4. Multicultural, intergenerational and affordable are qualities to maintain
5. Better access to and within Sun Valley
6. Improved safety & pedestrian safety
7. Access to open space and active outdoor uses
8. Food as an expanded opportunity, draw and focus on plan solutions + outcomes
9. Resident based solutions, phasing & implementation
10. 'Hubs' for jobs & job access, art, education, entrepreneurial success
THE FUTURE OF SUN VALLEY:
GROWING AND CONNECTING TO OPPORTUNITY

- OPEN SPACE
- YOUTH + JOBS
- FOOD
- HOUSING
- INFRASTRUCTURE

[Image of a group of children and adults in karate uniforms]
CHILDREN & OPPORTUNITY

5% drop in unemployment through new commercial, industrial, and maker spaces in the community.

10% increase in neighborhood school performance ratings.
New and Existing Catalysts
INNOVATIVE STREETS
INCREASING CONNECTIVITY

MIXED USE COLLECTOR

RIVERFRONT COLLECTOR

2 WAY LOCAL WITH SHARROW

2 WAY LOCAL WITH ALTERNATING BIOSWALE

2 WAY LOCAL WITH BIOSWALE
STORMWATER CYCLING
AXONOMETRIC DIAGRAM

20% DECREASE IN OVERALL WIDTH OF RIGHT OF WAY COMPARED TO DENVER STANDARD.

52% DECREASE IN IMPERVIOUS SURFACES COMPARED TO DENVER STANDARD.

6'-6" SIDEWALK
8'-0" BIOSWALE
11'-0" DRIVING LANE
11'-0" DRIVING LANE
8'-0" PARKING
8'-0" SIDEWALK

DENVER STANDARD
District Infrastructure
Just the Beginning

13th Avenue: A Transformative Project

The realignment of 13th Avenue was identified in the Decatur Federal Station Area Plan as a transformative project to improve connectivity in Sun Valley.

Overview

13th Avenue will be a major east-west connection linking Sun Valley to Downtown Denver across the South Platte River.

The realignment will provide greater access and connectivity to a number of key assets, including Aurora Campus, Metro State Recreation Fields, Rude Recreation Center, and the La Alma/Lincoln Park neighborhood.

As a major connectivity across downtown, 13th Avenue will include a robust multi-modal facility for pedestrians and bikers, as well as higher density development and connectivity to new riverfront parks.

Recommendations

- Realign 13th Avenue west of river to connect federal Boulevard directly to downtown
- Enhance bike and pedestrian connections along 13th Avenue
- Celebrates the South Platte River Crossing by creating a gateway
- Encourage riverviews along the street and higher density mixed use to spur reinvestment
- Connect 13th Avenue to new riverfront drive, park and trails
- Evaluate impacts of realignment on BNSF freight line
FEDERAL BOULEVARD
The New Urban Parkway
No Park in the PARKWAY
Project Outreach

- What area do you use most frequently?
  - Zone A: 12%
  - Zone B: 33%
  - Zone C: 12%
  - Zone D: 9%
  - Other: 4%

- How do you travel in the area?
  - Drive: 47%
  - Bus: 4%
  - Bicycle: 19%
  - Walk: 17%
  - Other: 3%

- Word cloud:
  - Dangerous
  - Dirty
  - Traffic
  - Busy
  - Congested
  - Diverse
  - Businesses
  - Multi-cultural
  - Historic
  - Eclectic
  - Local
  - Good
  - Fun
  - Fast
  - Great
  - Mexican
  - Treeless
  - Neglected
  - Accessible
Analysis
ZONE A (SOUTH)
Floyd Ave - I-225
- Gateway into Denver
- Large example of Colorado Heights
- Long block form dimensions, utilizes parcel depth
- Gateway into I-225
- Large vehicle of Colorado Heights
- Long block form dimensions, utilizes parcel depth

ZONE B
I-225 - Louisiana Ave
- Pedestrian scale and feel with a mix of commercial, office and residential uses
- Mix and match connection at Sahnmann South
- Pavement large form block dimensions
- Parking Rights of Way included for Louisiana Ave
- Sidewalk block and the re-use of commercial, office and residential parcels
- Mix and match connection at Sahnmann South
- Pedestrian path and form block dimensions

ZONE C
Louisiana Ave - W Cedar Ave
- Redevelopment of Federal Center
- Unique shopping destination and restaurant opportunities
- Commercial signage dominates retail area
- Blocks and parcels are necessary for the center

ZONE D
W Cedar Ave - W Zuni Ave
- The Federal Center is a mixed-use area
- Mixed-use retail center with unique restaurants and parking
- Commercial signage dominates retail area
- Blocks and parcels are necessary for the center

ZONE E
W Zuni Ave - E 7th
- Gateway into Denver
- Major mixed-use area
- Unique shopping destination and restaurants
- Commercial signage dominates retail area
- Blocks and parcels are necessary for the center

ZONE A (NORTH)
I-70 - Columbine St
- Gateway into Denver
- Major mixed-use area
- Unique shopping destination and restaurants
- Commercial signage dominates retail area
- Blocks and parcels are necessary for the center
Project Outreach

- 60 participants, 130 comments
- 408 participants and comments
- 1114 participants and comments
- 66 participants, 100 comments
- 64 participants, 24 comments
- 42 participants
- 35 participants
#FederalForward
I see a future that includes:
Harmony for Pedestrians, Bikes, & Cars
SAFETY!

#FederalForward
I see a future that includes:
Medians w/ Flowers & Outdoor Seating for Restaurants
Critical Success Factors

- Improve Mobility + Safety for all Modes of Travel
- Create a Seamless Network Linking All Modes of Transportation
- Improve the Pedestrian Experience
- Provide an Environmentally Sustainable Future
- Provide an Economically and Socially Sustainable Future
- Create and Support Synergy with Local Investments
- Celebrate Local Businesses, Residents and Culture
Cross-Section
Primary Intersection
Mid-Block Crossing
Community Input

PUBLIC COMMENTS (OVER 1,500)

STF COMMENTS

PMT COMMENTS

HDR TEAM PROJECTS

244 PROJECTS

CSFs Filter

SAFETY
- 1 POINT: Improved safety awareness and policy integration

INTEGRITY
- 1 POINT: Improved integrity and policy integration

NETWORK CONNECTIVITY
- 1 POINT: Improved network connectivity and policy integration

PEDESTRIAN EXPERIENCE
- 1 POINT: Improved pedestrian experience and policy integration

ENVIRONMENTAL SUSTAINABILITY
- 1 POINT: Improved environmental sustainability and policy integration

ECONOMIC AND SOCIAL SUSTAINABILITY
- 1 POINT: Improved economic and social sustainability and policy integration

COLLABORATION
- 1 POINT: Improved collaboration and policy integration

SUPPORT
- 1 POINT: Improved support and policy integration
Feasibility Filter

Projects

70 MAJOR RECOMMENDATIONS
24 Quick-Wins
28 Short-term
18 Long-term
Metrics that Matter
FEDERAL BOULEVARD CROSSES 4 REGIONAL TRAILS!

YOU CAN WALK TO 10 PARKS IN 5 MINUTES FROM FEDERAL BOULEVARD!

WEST HAMPDEN GULCH TRAIL

SANDELS GULCH TRAIL

WEIR GULCH TRAIL

LAKEWOOD GULCH TRAIL

BARNUM PARK

SANCHEZ PARK

RUDE PARK

JEFFERSON PARK

HAMPDEN GULCH WEST PARK

MCDONOUGH PARK

BARNUM EAST PARK

ROCKY MOUNTAIN LAKE PARK

IVINS PARK

HIGHLAND PARK

FEDERAL BOULEVARD IS A DESIGNATED PARKWAY!

Federal Boulevard has served as a pathway/boulevard since the 1870s when it was a dirt road lined with trees. Federal Boulevard has served as a pathway/boulevard since the 1870s when it was a dirt road lined with trees.

Legend:
- Park/Open Space
- Water Body
- Bicycle Facility
- Trail

1907

1930

1965

Today
Park Access
### Character Zone A: Floyd Avenue to Jewell Avenue

#### Character Area Projects

Character Zone A includes major recommendations from the scoring process of over 1,600 community responses. 24 quick wins, 28 short-term and 18 long-term projects were dispersed along the six character areas for the 9-mile boulevard.

<table>
<thead>
<tr>
<th>Project ID</th>
<th>Project Description</th>
<th>Project Type</th>
<th>Cost Range</th>
<th>Key Implementation Strategies</th>
<th>Potential Funding Source</th>
</tr>
</thead>
<tbody>
<tr>
<td>6</td>
<td>Consolidate southbound transit stops at Cornell and Grant and northbound at Bales,</td>
<td>BIKE/PED/TRANSIT</td>
<td>$0 - $100,000</td>
<td>Coordinate with RTD Service Planning to make announcements about closure at an upcoming schedule update cycle.</td>
<td>RTD Annual Budget</td>
</tr>
<tr>
<td>7</td>
<td>Install a bench for transit customers southbound at Dermont</td>
<td>BIKE/PED/TRANSIT</td>
<td>$0 - $10,000</td>
<td>Prioritize request through Denver's Transit Amenity Program before January 1st.</td>
<td>Private advertisers</td>
</tr>
<tr>
<td>8</td>
<td>Install a High-Intensity Activated Crosswalk (HAWK) beacon at Cornell to improve</td>
<td>BIKE/PED/TRANSIT</td>
<td>$100,000 - $200,000</td>
<td>Coordinate with Denver Public Works, then CDOT to determine appropriate “warranty” and design considerations.</td>
<td>Public Works CIP or CDOT Safety Funding</td>
</tr>
<tr>
<td>9</td>
<td>Upgrade northbound accessibility lane between 9th and Waverly south of the transit</td>
<td>BIKE/PED/TRANSIT</td>
<td>$100,000 - $200,000</td>
<td>Coordinate with Denver Public Works, then CDOT to develop pilot test design considerations and duration.</td>
<td>DRCOG TP grant, Public Works CIP</td>
</tr>
<tr>
<td>10</td>
<td>Install a transit shelter at northbound Cornell (over 100 boardings per day)</td>
<td>BIKE/PED/TRANSIT</td>
<td>$0 - $100,000</td>
<td>Prioritize request through Denver’s Transit Amenity Program before January 1st.</td>
<td>Private advertisers</td>
</tr>
<tr>
<td>11</td>
<td>Identify pedestrian safety and access improvements at Yale</td>
<td>BIKE/PED/TRANSIT</td>
<td>$100,000 - $500,000</td>
<td>Coordinate with Denver Public Works and CDOT to study safety needs and develop design plans. Could be done by Denver staff or through a task order contract.</td>
<td>Public Works CIP or CDOT Safety Funding</td>
</tr>
</tbody>
</table>

#### Map Key

- **Quick Win Project**
- **Near-Term Project**
- **Long-Term Project**
- **Catalytic Parcel**
- **Existing Park**
Vision Sheets

The Chinatown District in San Francisco is a nationwide tourist attraction that stimulates local tourism businesses and supports day-to-day needs of its local community.

The Art District in Santa Fe is a historic and cultural oasis.

Little Italy in New York City defines a unique aesthetic through traditional immigrant architect preservation and self-existing that identifies the district.
DISCUSSION