Fehr & Peers

The “One Infrastructure Approach”

Active Transportation for Flood Mitigation

Nicole Matteson | July 1, 2026

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Agenda

01 Introduction

02 Industry Needs

03 Case Study:
"One Infrastructure Plan"

04 Questions

SECTION 01

Introduction

More Frequent Severe Storms

Severe single-day storm events are becoming **more frequent** due to climate change.

From **2010–2019,** there were

130 major disaster events

and between **2019–2023,** there were **nearly the same number** of major disasters (102).[1]

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Streets Contribute to Urban Flooding

In many US cities, streets account for **1/3 or more** of all land area and roughly

50% of impervious surfaces.[2]

Streets accelerate run off, increase risk of flash flooding, and contribute to pollutant loading in waterways.

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Although streets are a major contributor to urban flooding, they also represent one of the greatest untapped opportunities to manage water and improve mobility at the same time.

When stormwater solutions are woven into active transportation networks, cities can **lower flood risk** while creating **safer, resilient,** and **more connected streets.**

SECTION 02

Industry Needs

01. Adapting Infrastructure & Governance

Aging Infrastructure

Stormwater systems were built decades ago using outdated rainfall assumptions that no longer reflect current climate conditions.

Siloed Planning

Transportation, stormwater, parks, and other departments often plan independently, making integrated solutions difficult.

02. Plan for Multi-Benefit Projects

Active Transportation (AT) projects offer numerous benefits to communities:

Safety

Separate road users in space can protect vulnerable road users from collision risk.

Evacuation

Flexible infrastructure can provide additional through-put or emergency vehicle access.

Community Vitality

AT projects support local economies by increasing foot traffic to businesses and fostering social connections.

03. Build Resiliency

Green Stormwater Infrastructure

Reduces runoff through permeable design and complements traditional gray infrastructure.

Blue-Green Infrastructure

Incorporates areas designed to flood, providing temporary storage during major storms. [5]

Best Practices

01 **Multidisciplinary Project Teams**

02 **New Data & Holistic Planning**

03 **Interdisciplinary Funding**

SECTION 03

Case Study: “One Infrastructure Plan”

About This Project

Overview

- Los Angeles, CA
- Fehr & Peers and Los Angeles Bureau of Street Services (StreetsLA)
- Funded by the Caltrans Sustainable Planning Grant Program

Goals

- Maximize **grant eligibility** and **competitiveness** of City of Los Angeles projects
- Identify **multi-benefit projects** that increase AT options and build climate resiliency

Desired Project Outcomes

01

Needs & Opportunities

Daylight infrastructure needs and opportunities across departments

02

Collaboration

Introduce opportunities for collaboration before the grant application or project definition phase

One Infrastructure: Gray, Green, & Blue

Gray Infrastructure

- Roadways
- Sidewalks
- Street lighting
- Transit

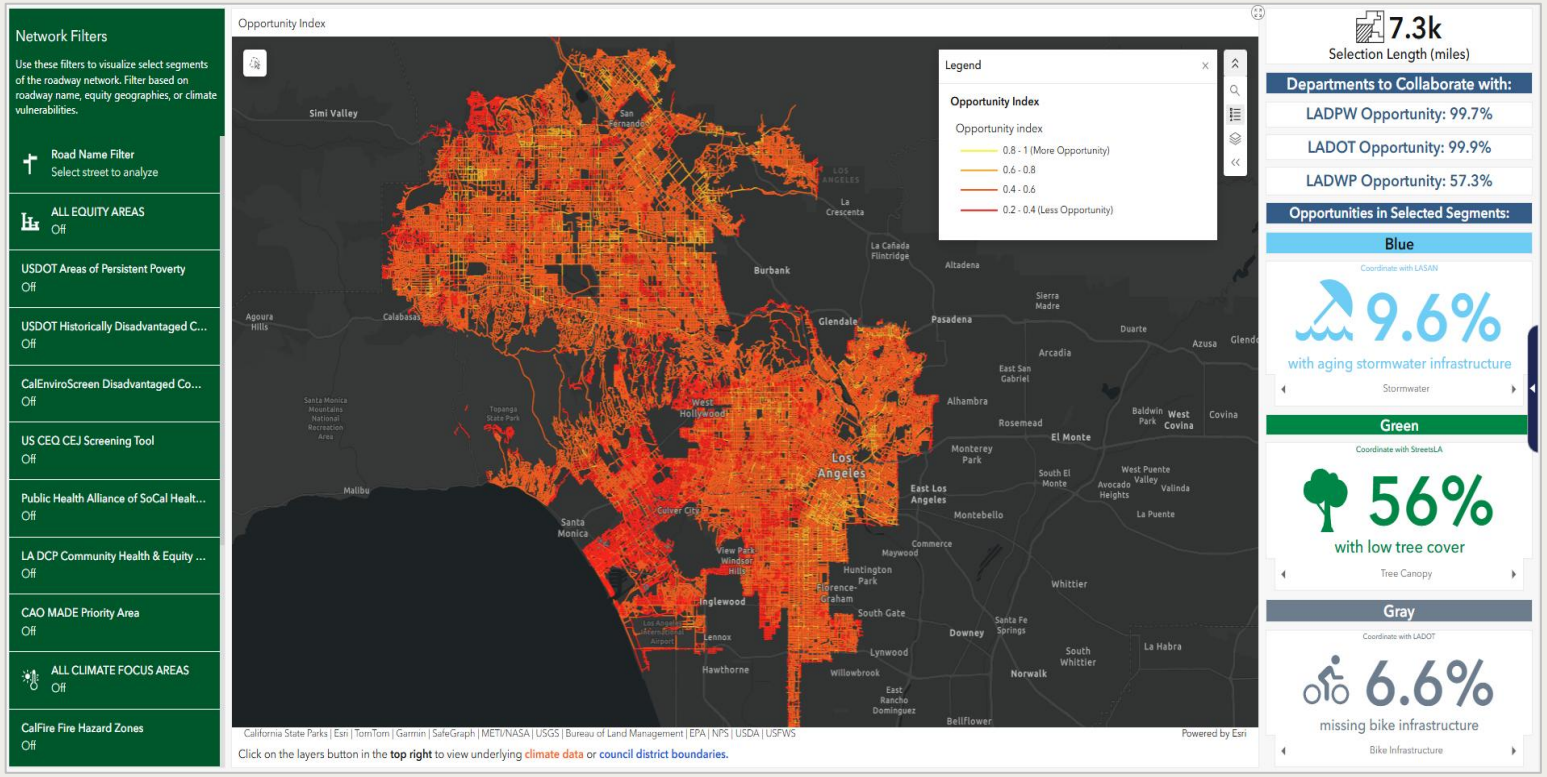
Green Infrastructure

- Urban forestry
- Parks
- Soils
- Green stormwater infrastructure

Blue Infrastructure

- Waterbodies
- Groundwater basin
- Wastewater infrastructure
- Stormwater infrastructure

Multi-Benefit Project Planner



- 50+ datasets featured
- Identify gray, green, and blue infrastructure needs
- **Entire roadway network** is scored according to level of opportunity for infrastructure investment

Saticoy Street

Use Case Example

Fehr & Peers

StreetsLA One Infrastructure Plan

Putting the Multi-Benefit Project Planner to Practice

We used StreetLA's Multi-Benefit Project Planner to identify a high-opportunity corridor located in an equity and climate focus area. Saticoy Street rose to the top of the list.

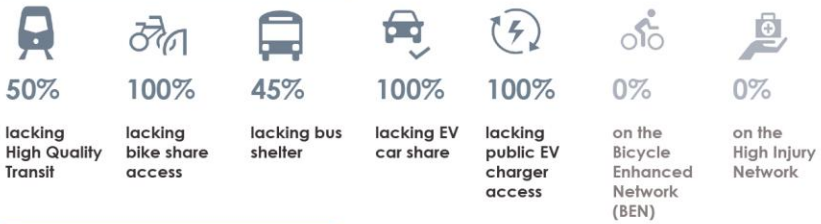
What are the Needs of Saticoy?

StreetsLA Multi-Benefit Project Planning Tool Findings

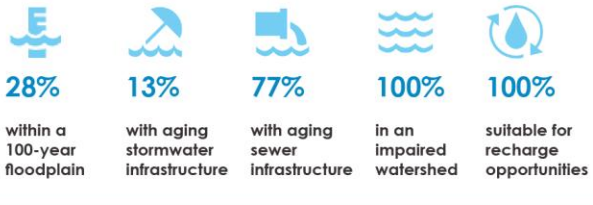
The City has limited right-of-way to implement improvements and is often in need of help identifying what the greatest needs are on a given street. The Multi-Benefit Project Planner helps to quickly identify the greatest need on any corridor to narrow in on project design features. We identify these as **Saticoy Opportunity Areas**.

Green Infrastructure Needs

Gray Infrastructure Needs



Blue Infrastructure Needs



Saticoy Key Facts

Mobility Plan 2035

Neighborhood Enhanced Network

Average Daily Traffic (ADT)

<15,000

☑ **Lane Reduction Candidate**

Right-of-Way (ROW)

82' to 88'

Equity Focus Areas

- USDOT Area of Persistent Poverty
- USDOT Historically Disadvantaged Community
- CA Disadvantaged Community
- Considered Disadvantaged by the US Council of Environmental Quality (CEJ Screening Tool)
- Low Healthy Places Index
- Top Quintile of LA DCP
- Community Health & Equity Index

Saticoy Street

Use Case Example

Fehr & Peers

StreetsLA One Infrastructure Plan

Saticoy Street Model Corridor Design Iteration

Example of How to Pair Infrastructure Needs with Project Elements to Create a Multi-Benefit Project

1 Paseo

The meandering layout paired with landscaping elevates the experience beyond your typical sidewalk to create a recreational destination for local residents.

Opportunities Addressed ✅

Park access Neighborhood

Enhanced Network

2 Street Trees

Street trees provide shade from the sun and alleviation from high levels of pollution. Dense tree canopies also provide additional beautification of the corridor.

Opportunities Addressed ✅

Limited Tree canopy

High Pollution

3 Mobility Hubs

Mobility hubs at bus shelters provide space for amenities such as bike and scooter parking to address needs in first- and last-mile travel. Bus bulbs provide speed and reliability improvements for transit users.

Opportunities Addressed ✅

Transit Connections

Bus Shelters

Bike Share

4 Electric Vehicle Charging

EV carshare/EV charging stations can be installed curbside where there are existing parking stalls to provide supporting infrastructure for zero-emission travel.

Opportunities Addressed ✅

On-Street Parking Maintained

EV Readiness

5 Subsurface Pipes

Aging subsurface infrastructure can be rehabilitated and/or replaced in this street redesign. New storm drains can be installed under ROW where not already present.

Opportunities Addressed ✅

Aging storm and sewer infrastructure

Floodplain

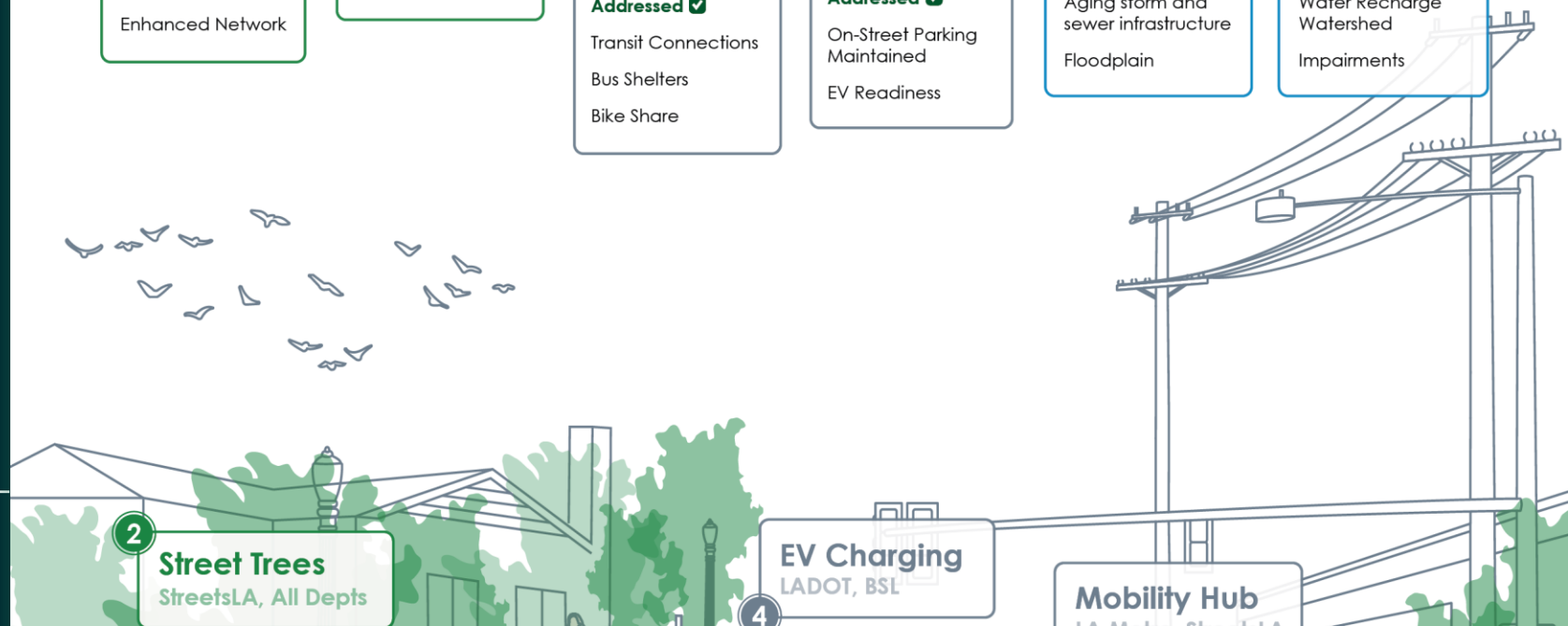
6 Stormwater Bioretention

Stormwater bioretention can manage runoff from rain. Paseos can be permeable in areas with suitable soils for infiltration to replenish groundwater.

Opportunities Addressed ✅

Water Recharge Watershed

Impairments



Takeaways

01

Departments often lack visibility into each other's priorities, processes, and data

02

Many departments are working toward the same citywide goals

03

Collaborative projects benefit from a clear champion and administrator

04

Better data organization can improve project delivery and grant competitiveness

Best Practices In Action

01	**Multidisciplinary Project Teams**	• Department of Public Works • Department of Transportation • Department of Water and Power
02	**New Data & Holistic Planning**	• 50+ Datasets • Gray, green, and blue Infrastructure • Scoring roadway network based on investment opportunity
03	**Interdisciplinary Funding**	• 22 federal, state, and local grants

Questions?

The “One Infrastructure Approach”

Nicole Matteson
n.matteson@fehrandpeers.com

Sources

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2. NACTO Urban Street Stormwater Guide
3. National Centers for Environmental Information (NOAA) Billion-Dollar Weather and Climate Disasters – California Summary
4. Davenport, F. V., Burke, M., & Diffenbaugh, N. S. (2021). Contribution of historical precipitation change to US flood damages. Proceedings of the National Academy of Sciences, 118(4), e2017524118.
5. https://www.stormwater.com/green-infrastructure/article/13023918/cloudburst-mitigation-in-copenhagen