

# Next Generation Infrastructure:

Catalyzing Sustainable, Profitable,  
and Equitable Communities

Matthew Friesen ASLA AICP, Jacobs Global Principal

**Jacobs**

Challenging today.  
Reinventing tomorrow.

# A Call to Action

## Challenges Facing Our Cities Today

### Population growth and overcrowding

Cities and communities across the globe are dealing with unprecedented growth. It is anticipated that nearly 70% of the global population will live in cities by 2050



### Debilitating traffic congestion

An increased urban population will place even more demand on cities' already delicate transportation & infrastructure systems



### A world-wide housing crisis

Existing housing stock in cities around the world is not sufficient to keep up with demand, and with new housing both complicated and expensive to build, that gap will only continue to increase



### Poor air quality

An estimated 90% of people breathe unhealthy levels of air pollution, stemming from industrial facilities, motor vehicles, and forest fires



### Poor health and wellbeing

Globally, infectious diseases, respiratory and cardiovascular issues, food and water insecurity, and mental health crises are increasing



### Unequal distribution of resources

The benefits of economic growth are not distributed evenly among all members of society, with levels of income inequality and poverty remaining high in urban areas around the world



### Food insecurity

Residents in poor urban areas and food deserts have limited access to healthy and affordable diets



These are complex challenges that are all made worse by the impacts of climate change



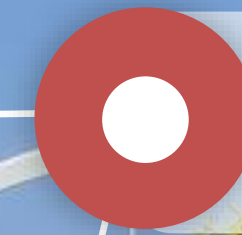
“The Future of the Earth will be  
Won or Lost in Cities”



# Creating Great Places to Live and Delivering Social Value that are...



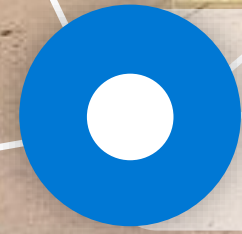
**Smart + Resilient**



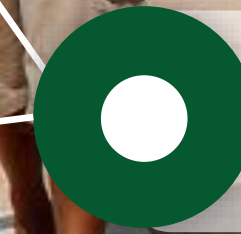
**Healthy + Stimulating**



**Diverse + Flexible**



**Safe + Secure**



**Integrated + Efficient**



**Shared + Connected**



# Infrastructure as Catalyst

**\$9** trillion

Worldwide, capital project and infrastructure spending is expected to total more than \$9 trillion by 2025, up from \$4 trillion in 2012

**5 - 25%**

Economic return generated for every dollar spent on a capital project



INDEPENDENT





INTERDEPENDENT

Before: Woodall Rogers Freeway Dallas, TX



After: Klyde Warren Park

ENVIRONNEMENT



SOCIAL



ECONOMIQUE



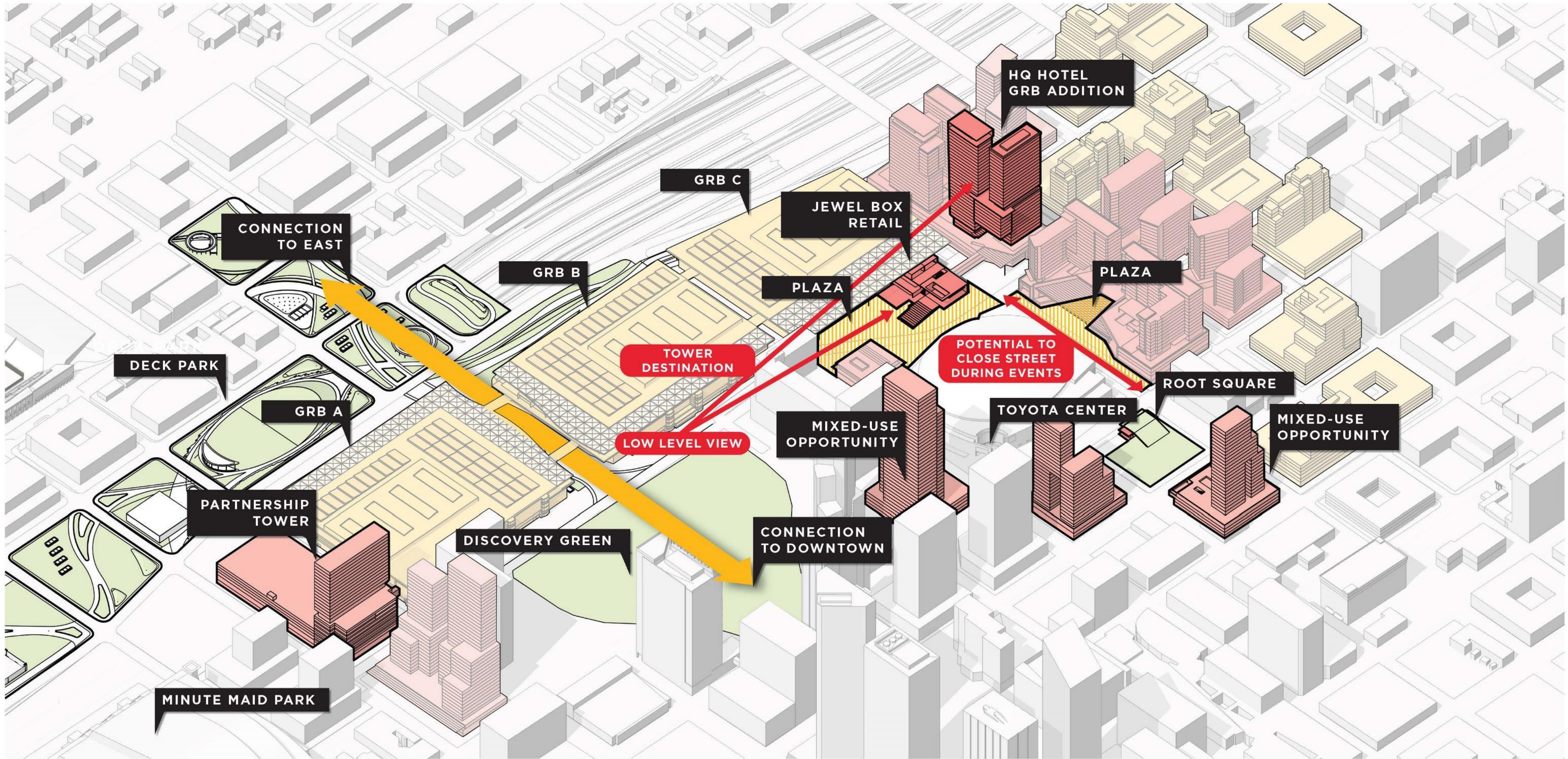
After: Klyde Warren Park



# George R Brown Entertainment District Redevelopment

Houston, TX

Urban Concept **360 Activation**



# George R Brown Entertainment District Redevelopment

Houston, TX

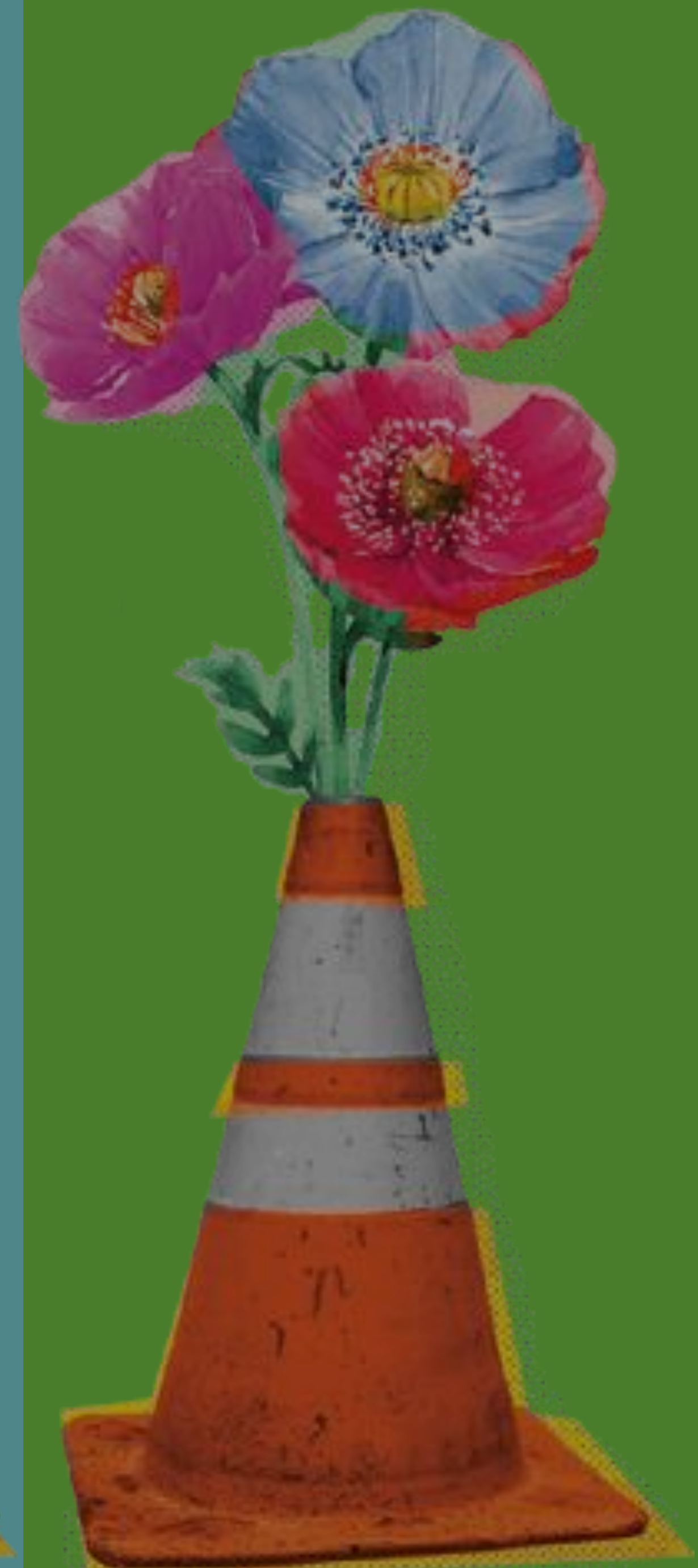


# George R Brown Entertainment District Redevelopment

Houston, TX





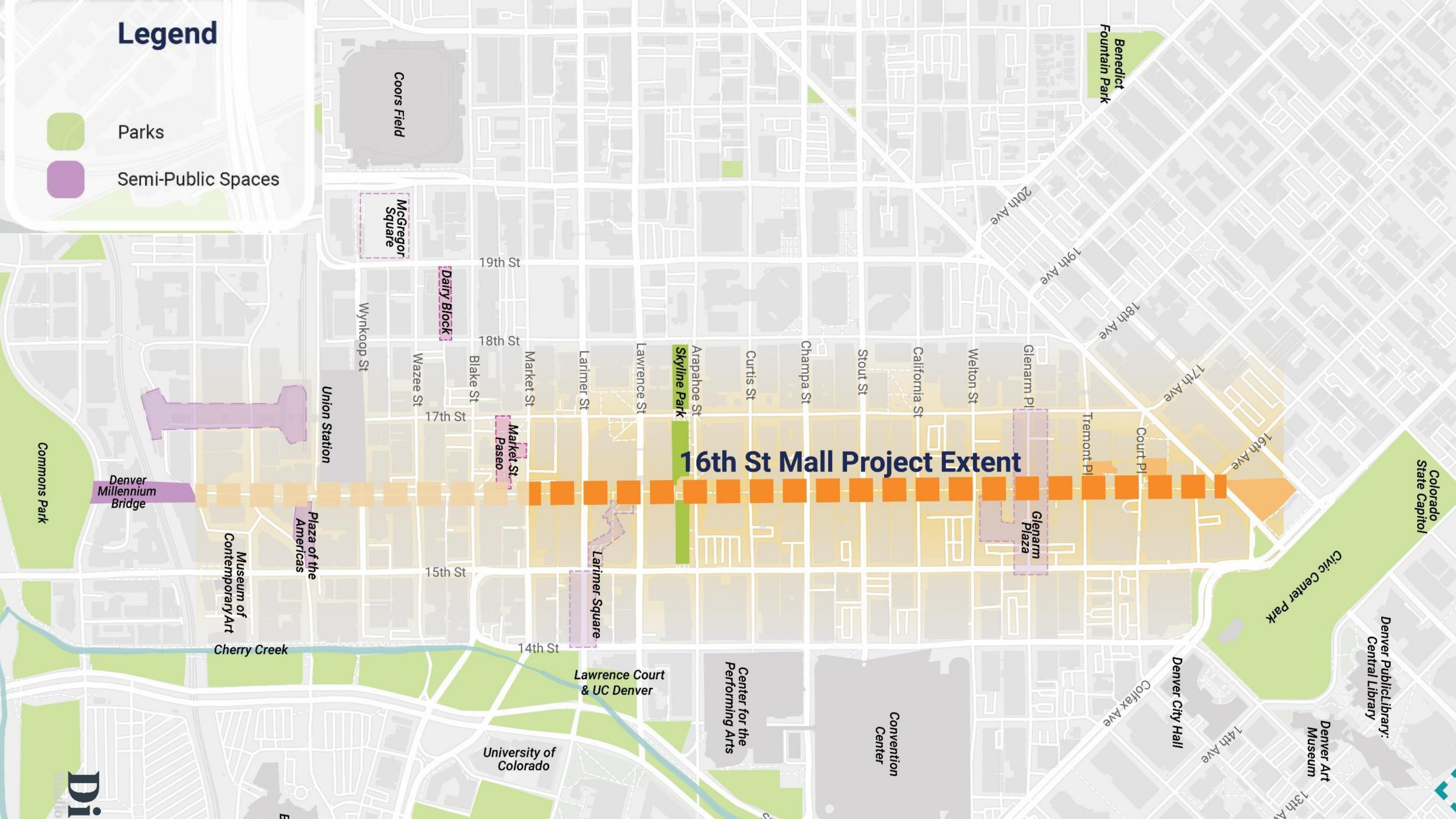
Toyota Center Plaza



# 10th Anniversary PROJECT

# Legend

-  Parks
-  Semi-Public Spaces



## 16th St Mall Project Extent



NIVVER

RAMMOUN

TUESDAY NITE  
FREE FORD V-8  
\$1500 OFFERED  
FOR THEATRES

GOALSTONE  
CLOTHES

MEHOFF BAND  
STAGE SHOW  
COWBOY FROM  
BROOKLYN

Carroll's  
CLOTHES  
NEXSON  
HATS



COOL

MA  
COR  
CREDIT





50,000 SQ. FT.

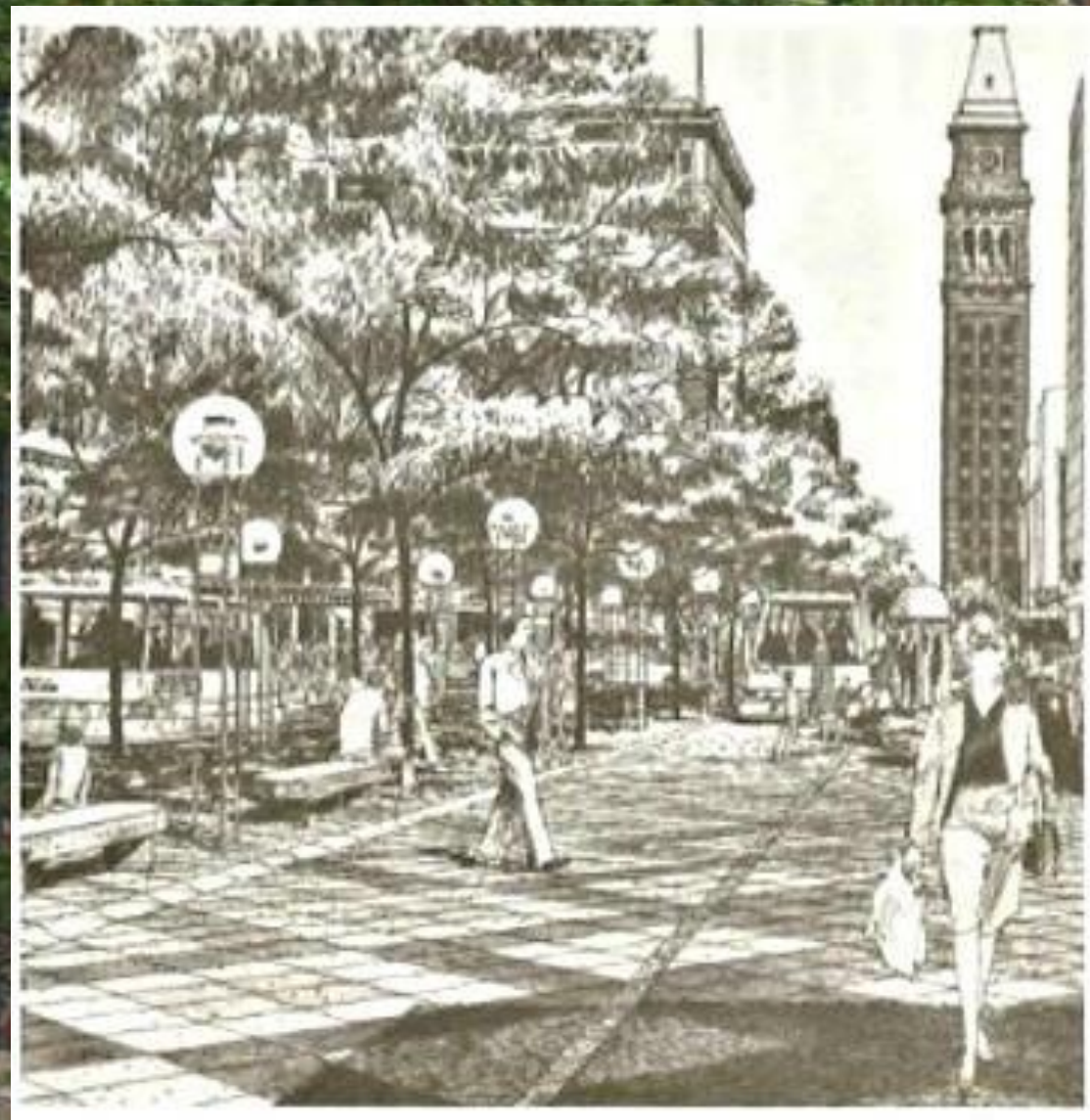
OFFERED BY

Fuller

3700

The Mall is Coming!  
The Mall is Coming!

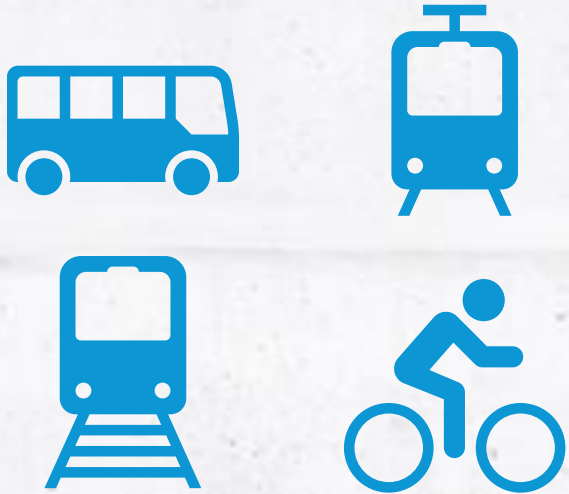




# 16<sup>th</sup> Street Mall

*The Heart of Downtown*

## Downtown Mobility



**39,000 RTD Mall  
Riders daily**

14M Annual Riders

## Downtown Workforce



**145,000  
workers**

## Downtown Neighborhood



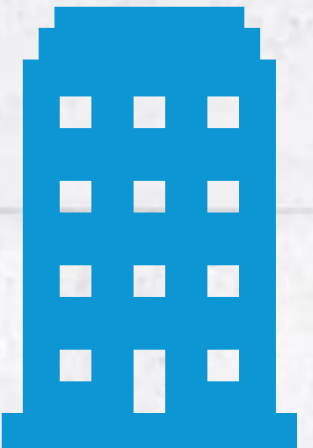
**27,000  
residents**

## Downtown Retail



**198 businesses**  
50% locally owned

## Downtown Tourism



**8,759  
hotel  
rooms**

*Pre-Covid conditions*

ORANGE BARREL MEDIA

#1 GREEN COLLEGE IN COLORADO  
COLORADO STATE UNIVERSITY

CHARGING  
PRINCETON REVIEW

16

CHARGING

Diegos

ONE WAY

INDEPENDENCE PLAZA

Curly's

free MallRide

1666

RTD

UMA-347

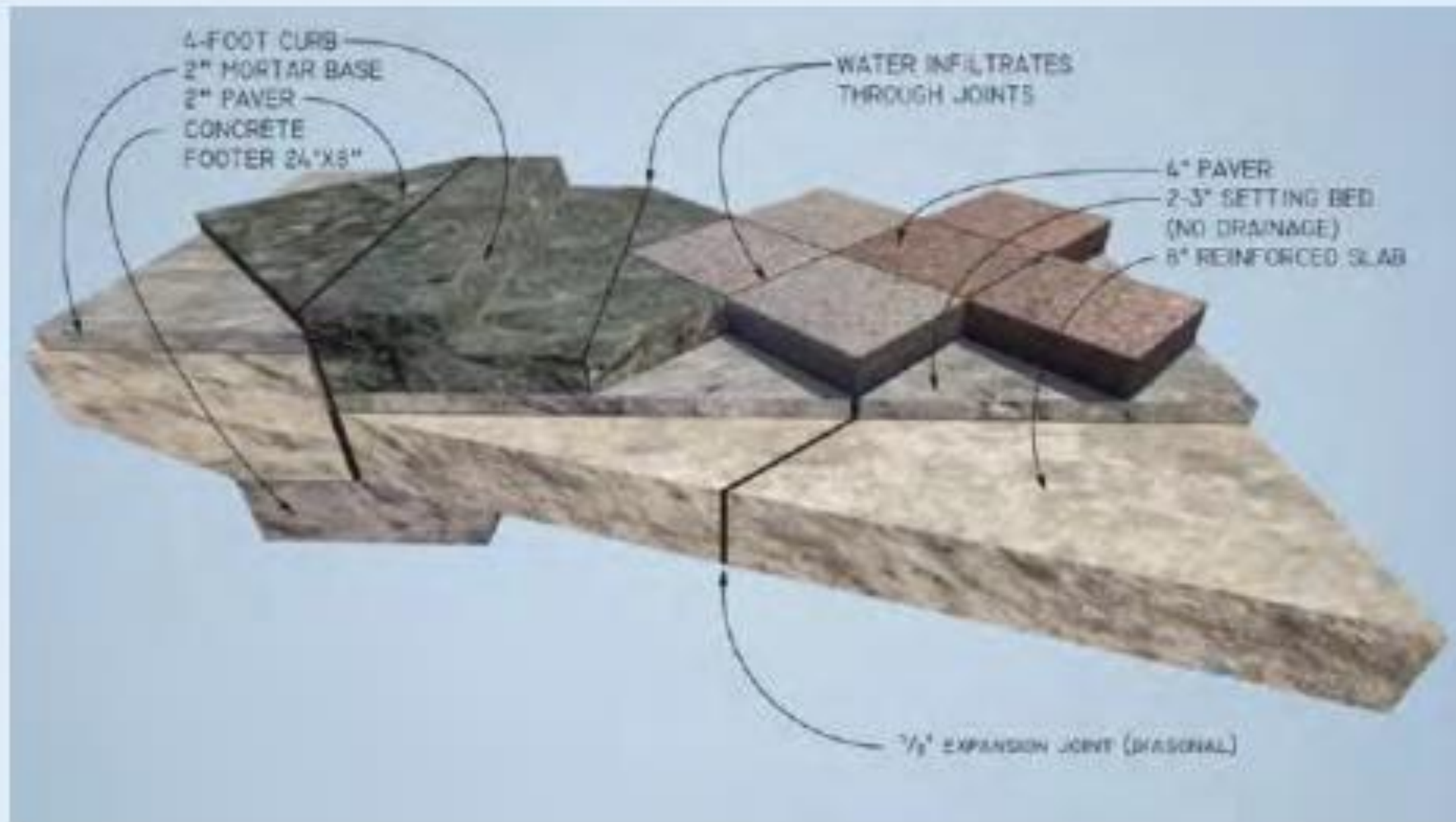
25

ONE WAY

YOU!

# Why Now?

## Failing and outdated infrastructure causes frequent, disruptive maintenance



***A poorly constructed and failing pavement system*** is unable to handle the wheel loads (weight of buses) and lacks drainage under the pavers.

*Pavement system traps water, causing paver failure.*

# Why Now?



# Project Goals



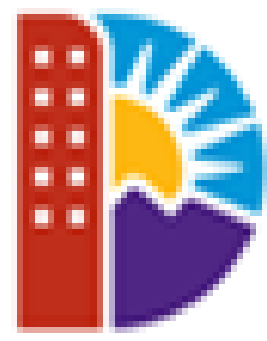
Improve safety and mobility



Address deteriorating infrastructure



Create more opportunities for the people who live, work and visit the Mile High City to enjoy 16th Street



# DENVER

## TRANSPORTATION & INFRASTRUCTURE

**AtkinsRéalis**  
Role: Project Management, Controls, Design Oversight

**TRIUNITY**  
A LOCHNER COMPANY  
Role: Construction Oversight, Utilities, Quality

**PCL**  
Role: Responsible for all Work components within the Contract / PM / Utilities / Construction / MOT

**MARTIN/MARTIN**  
CONSULTING ENGINEERS  
Role: Design Manager / Utilities / Mall & Transit Way / Survey / Drainage & WQ / Traffic

**BBH**  
MANAGEMENT SOLUTIONS, LLC  
Role: Project Management

**Jacobs**  
Role: NEPA, Basis of Design, Public Life

**Atkinson-Noland & Associates, Inc.**  
Role: Granite Pavement System

**shrewsberry**  
Role: Quality Management

**MIG**  
Role: Public Life

**PEAK**  
CONSULTING GROUP  
Role: Environmental Oversight

**SEH**  
Role: Design QA / Cross Streets / Traffic Support / MOT

**Pinyon Environmental, Inc.**  
Role: Environmental  
**CLANTON & ASSOCIATES**  
LIGHTING DESIGN AND ENGINEERING  
Role: Lighting Designer

**GBSM**  
INSIGHT | STRATEGY | RESULTS  
Role: Communications Strategy

**Mark Smallridge and Associates**  
Role: Pavers

**Kimley»Horn** Role: Tree Installation Oversight  
**RockSol** Consulting Group, Inc. Role: Inspection  
**Hg Consult Inc** Role: ADA

**Dig Studio**  
Role: Lighting / Public Life / Landscaping

**C|I|G**  
Role: Public Information

**PCL**  
Role: Responsible for all Work components within the Contract / PM / Utilities / Construction / MOT

**LUMIN8** TRANSPORTATION TECHNOLOGIES Role: Traffic Signals  
**SELECT COMMERCIAL** Role: Mall Lights/Banner Poles

**BTC** GENERAL CONTRACTORS HENDERSON, COLORADO Role: Utilities  
**Insituform** an AEGION company Role: Pipe Lining

**Custom Concrete Corporation** Role: Flatwork/Concrete  
**CRI** CUSTOM RESTORATION INC. Waterproofing Colorado Role: Joint Sealant

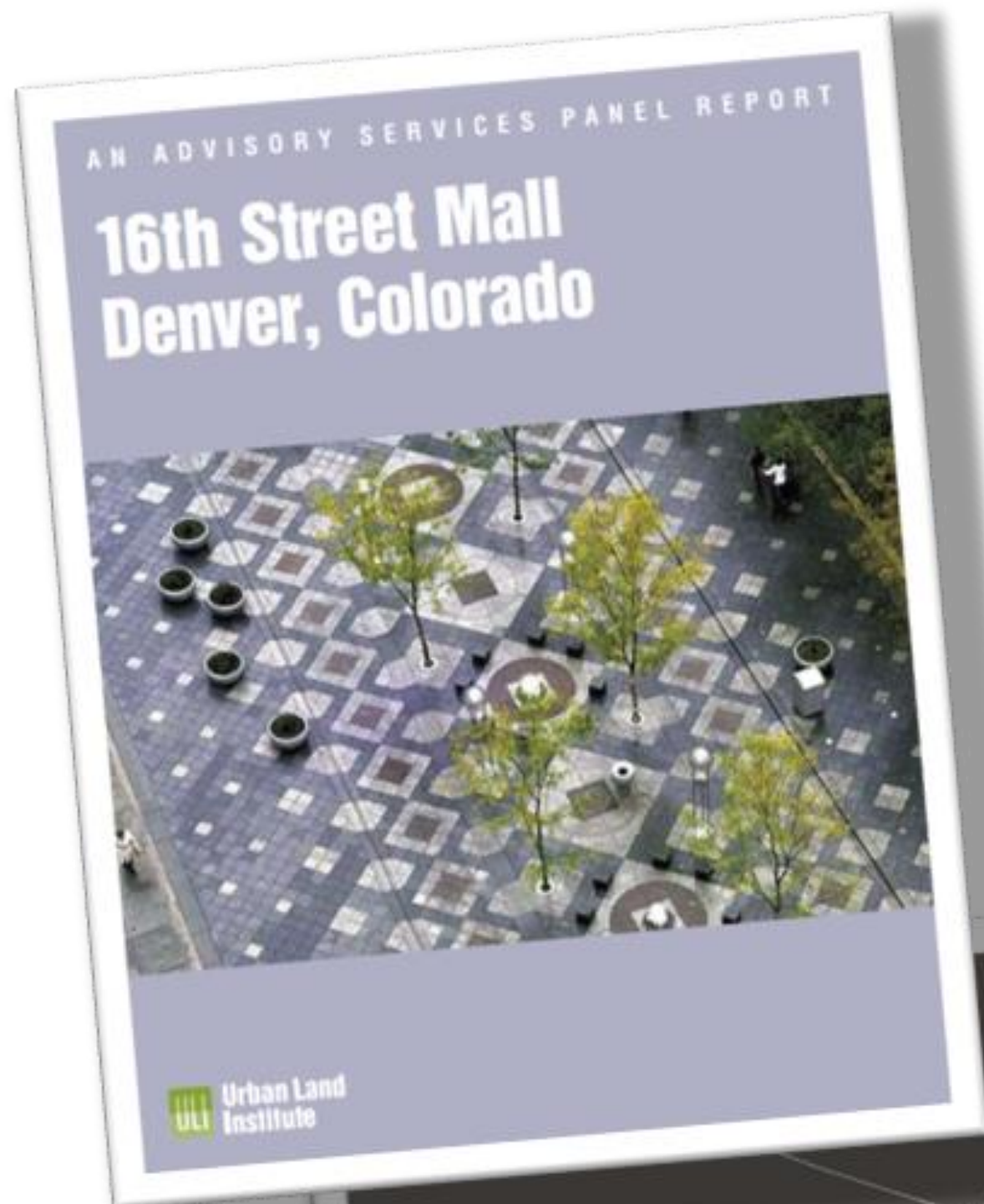
**GALLEGOS** Role: Granite Pavers  
**AMMEX MASONRY, INC.** Role: Sand Set Pavers

**DIAMOND EXCAVATING, INC.** ARAPAHO, COLORADO Role: Demolition  
**PENHALL COMPANY** Role: Sawcut  
**COLORADO BARRICADE CO.** Role: Striping

**ENGINEERED ARTWORKS** Role: Aspen Forest  
**POETIC KINETICS** Role: Public Art Tree

**LOBATO CONSTRUCTION** Role: Precast Transit Walls  
**BrightView** Role: Landscaping  
**si** Role: Survey





# Denver's 16th Street Playbook

A Guide for Activating Public Life

April 2024

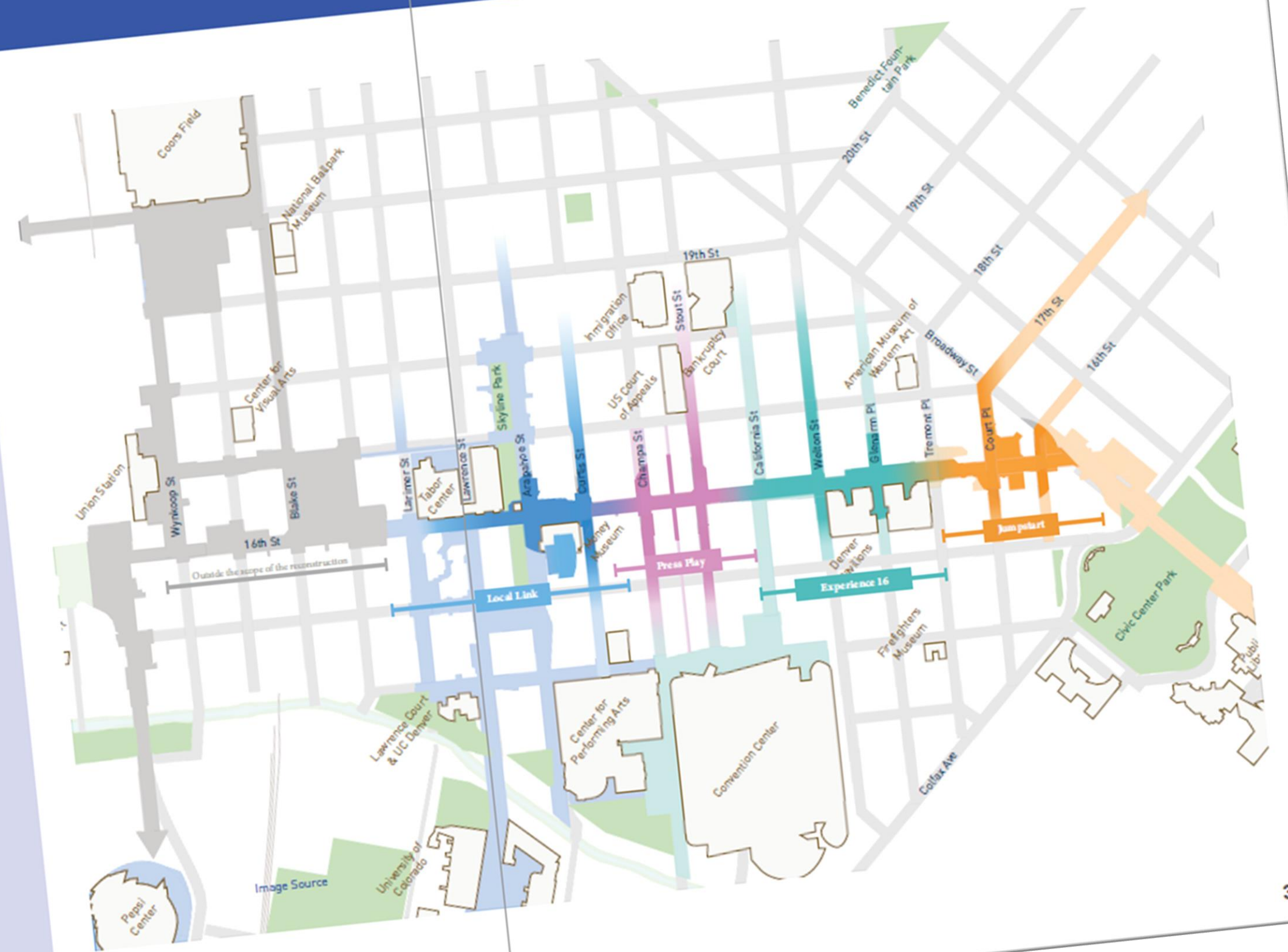


Gehl | Jacobs

## Four Character Areas

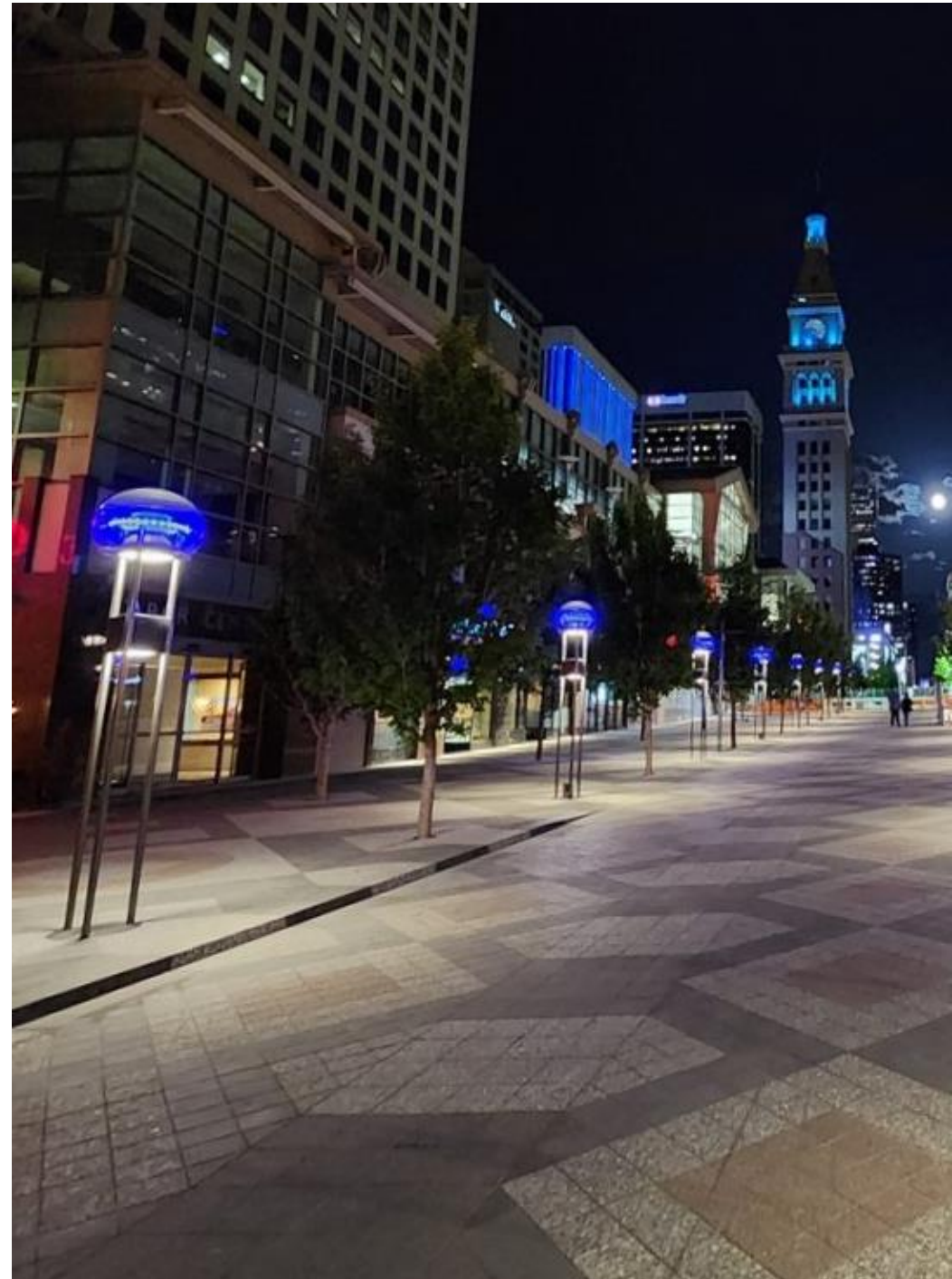
Four key Character Areas, each defined by a magnetic node, create a dynamic street rhythm: as one travels along the street moments of respite are energized by major hubs of activity every few blocks.

- Local Link** takes inspiration from nearby neighborhoods of LoDo, RiNO, and anchors like Union Station and Coors Field. This is a high energy node, focused on highlighting the young and entrepreneurial spirit of Denver.
- Press Play** draws energy from the neighboring Center for Performing Arts Center and families that live close-by. It encourages social interaction through a series of playful installations.
- Experience 16**, situated next to the Denver Pavilions, serves as an ever-evolving festival grounds for events and immersive installations that showcase creative retail, local arts and talent, and Denver's broad diversity.
- Jumpstart**, with its adjacency to Civic Center and major transit hubs, is a major gateway to the neighborhood. This area serves as a casual landing pad for residents, visitors, and workers alike.

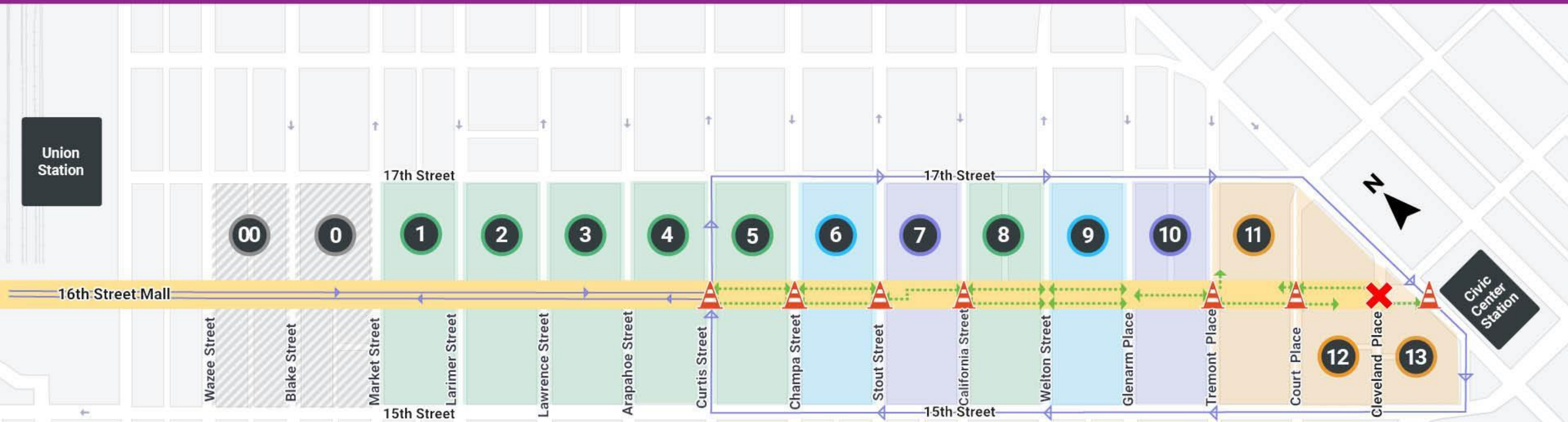




*Renderings Courtesy of: Dig Studio Inc.*



# 16TH STREET MALL CONSTRUCTION | April 2025



## Mall Block Construction Status

- No Current Activity
  - Phase 1 of Construction
  - Phase 2 of Construction
  - Phase 3 of Construction
  - Complete
  - Lane Closures
  - Road Closure
  - Intersection Closure
  - Sidewalk Access
  - RTD Free MallRide Detour Route  
Wazee Street to Civic Center Station
- \*Glenarm Place is not a through street*





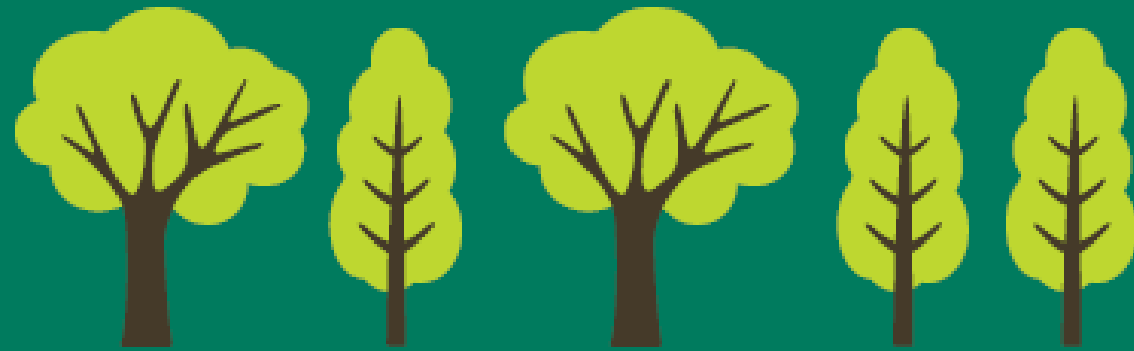
# 16TH STREET MALL PROJECT

## Year in Review 2024

### Construction

133

Trees planted



651,000

Hours worked  
(PCL and subcontractors)



26

Utility conflicts resolved



30,000

Cubic yards of dirt excavated

(This is the equivalent to 9 Olympic swimming pools.)



7,306

Cubic yards of concrete placed

(This is the equivalent to 34,791 bathtubs.)

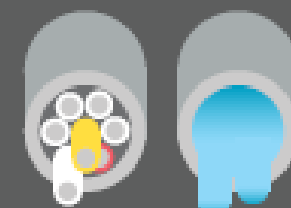


427,244

Number of pavers installed

2 Intersections completed

4 Blocks completed



2 Blocks started Phase 1

7 Blocks started Phase 2

### Community Outreach

44 Tours and presentations

59 Public comments/questions received

156 Number of stakeholder meetings

119 Construction notifications sent



28 E-blasts sent

1,621 Email, phone calls and text conversations

3 Block opening celebrations, more than 5,000 attendees

278 Stakeholders added to mailing list

37,391 Website unique page views



### Business Support

Metrics are since the project began.

\$1,667,000 Total amount of grants awarded

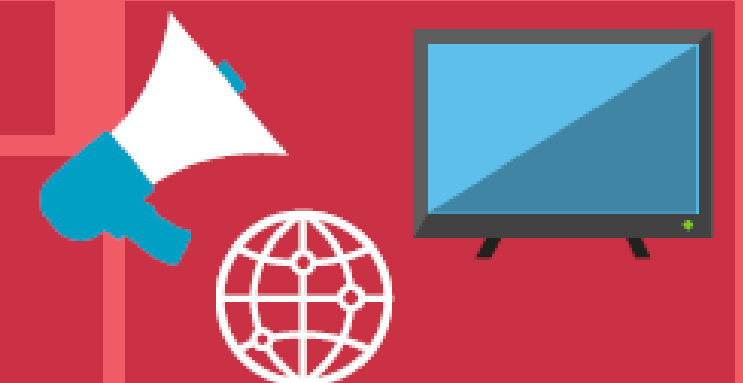
253 Total grants awarded

155 Total businesses who received grants



### Media

275 16th Street Mall construction mentions in the media - TV, online, print and radio



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