

# **Designing the Future City for Human and Global Health**

**Mark Johnson, Civitas**  
**Healthy City Design Conference**  
**London**  
**October 14, 2019**

CIVI  
TAS





We engage people with nature in cities.





**We solve urban problems through design.**





Our projects make a difference to communities.





We strive to make cities  
healthy, sustainable and just.



**And we have a simple message**



A close-up, slightly blurred photograph of a lush green field. The field is filled with tall grasses, many of which have long, slender seed heads (panicles) that are a lighter shade of green. The perspective is from a low angle, looking down into the grass. The overall color palette is various shades of green, from deep forest green to bright, almost yellow-green highlights on the seed heads. In the center of the image, the words "GO GREEN" are written in a large, bold, white, sans-serif font. The text is slightly transparent, allowing the green of the grass to be visible through the letters.

**GO GREEN**



# GET MOVING



# Global Health is Under Stress

**NCD's**

**Climate**

**Inequitable Access to Resource**

**Political Turmoil**

**War**

**and more...**



**VAN  
ALEN**

**INSTITUTE**



**Van Alen Institute is a 125-year-old not-for-profit that uses design to catalyze positive change in cities.**



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New York, NY 10010

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Food + Water Security





STORY SEP 17, 2019

## Climate Council: Future of Food Systems

CLIMATE COUNCIL

2019



COUNCIL

## Climate Council 2019: Seattle

CLIMATE COUNCIL

2019



STORY MAR 21, 2019

## Climate Council: The Expanding Design Challenges of Climate Change

CLIMATE COUNCIL

CLIMATE ADAPTATION

2019

CLIMATE CHANGE



STORY MAR 13, 2019

## Climate Council: Designing the Future of Food, Part II

CLIMATE COUNCIL

CLIMATE ADAPTATION

2019

CLIMATE CHANGE



COUNCIL

## Climate Council 2019: Sacramento Part II

CLIMATE COUNCIL

2019



STORY OCT 05, 2018

## Climate Council: Designing for the Future of Food, Part I

CLIMATE COUNCIL

CLIMATE ADAPTATION

2018

CLIMATE CHANGE

# CLIMATE COUNCIL



# 18 Landscape Design

## Farm to City

To adapt to climate change, cities should learn from farms.

By David van der Leer and Chloe Stagaman with Sarah Haun, Van Alen Institute



Van Alen Institute Climate Council meeting attendees visiting the strawberry fields at Orscolli's Farm, Watsonville, California. What if water use in cities was managed as precisely as it is for these plants?

The last July sun hit the grooves of the farmland barreling past our bus windows as we approached Bowles Farming Company in Los Banos, California. Escalating sun-burns and muddy hikes through the furrows, we—the two dozen landscape design, engineering, and architecture professionals that make up the Van Alen Institute Climate Council—were about to visit the farm as part of a three-day expedition in Northern California to consider how design thinking could impact the way this farm and farms like it plan for climate change.

Van Alen launched the Climate Council in 2018 as a platform for practicing design professionals and climate change aficionados to convene for twice-annual, three-day expeditions in regions across the U.S. Through tours, discussions, social gatherings, and hands-on charrettes, our trips provide members with a congenial setting for learning and reflection away from the hectic pace of everyday business.

Right at the beginning of this inaugural trip, the Climate Council's expectations contrasted dramatically with the realities of modern agriculture. Instead of weathering watermarked fields, we found ourselves

in a comfortable boardroom. Farm executives welcomed us with cut melon samples and a PowerPoint presentation of the farm's history, challenges, and technology. Over the soft hum of air conditioning and with his adolescent son beside him, Cannon Michael, the farm's president and CEO, shared the impressive facts of his large-scale operation: 11,000 acres, 14 crops, and six generations.

Bowles has an advantage that it shares with a small group of farms in the area: Their history of utilizing water from the San Joaquin River provides senior rights to surface water. But with that seniority comes an increased responsibility and stewardship. Their on-staff agronomist schedules crop irrigation daily with care for every drop, logging and adapting to changes in climate on the spot.

Michael proudly told us of the precision and care that Bowles uses to manage its water supply amid California's mounting water crisis. "In times of drought, farmers are often blamed for overusing water," Michael said. "The reality is, it's not in a farmer's best interest to waste water, as we only want to use the exact amount that the

crop needs—in proper water management has a negative impact on crop production. California is an expensive place to do business, and we must carefully monitor all our inputs and costs, water being a primary one of them. It is also a fact that producing the food and fiber we all rely on every day takes water. Where these products are produced is of critical importance. Not all farms are held to high standards of environmental and ethical production—California leads the way in the world."

Bowles's commitment to precision and innovation unraveled the Climate Council's anticipated mission, and sent us on a new track of questioning in the days that followed. After visits with a strawberry farmer, a food distribution company, a tomato processing plant, and more, we started asking: What if cities had intricate systems dedicated to tracking inputs and outputs as accurately as these farms?

We had set out on our trip thinking we would consider how design could impact the future of food production and distribution, but instead, we realized that cities had at least as much to learn from modern agricultural practices. *continued on page 20*

# 20 Landscape Design



Meeting attendees overlooking Alameda Creek near Fremont, California. Council members' time away from everyday responsibilities allows for collaboration and reflection on larger challenges.

## Van Alen Climate Council

*continued from page 18* Twice a year, the Climate Council travels to the same region—the first visit for exploration, the second for strategizing and discussing prevailing climate issues using an interdisciplinary, systems-based approach. We offer professional advice to our partners and hosts, and aim to share lessons learned with other regions, both through further council travel and via members' professional practices. The council's purpose is rooted in Van Alen's mission as a design organization that seeks to understand and demonstrate how design can transform cities, landscapes, and regions to improve people's lives.

The council also provides support and funding for Van Alen's broader climate-related work. For more than a decade, we have created cross-disciplinary design and research projects that investigate issues of climate change across the country, from the sinking Lower Mississippi River Delta to the hurricane-battered eastern coasts. We are presently working in Greater Miami to help communities protect themselves from rising sea levels, using a design approach to make the region more socially equitable and economically resilient.

In selecting the inaugural topic for the Climate Council to explore, cochairs Claire Weiss and Mark Johnson commented, "We wanted to look at food as the first subject with this council. It's all-encompassing. It's something designers don't get to talk about very often but that ultimately impacts us."

Even designers who work in cities have a vested interest in learning more about the role of agriculture in our society. At a panel conversation during our program, Mary Kimball, the director for the University of California, Davis's Center for Land-based Learning (and a partner in developing the council's California program), reminded us that more than two-thirds of Sacramento's regional farmland specialty crop jobs are in urban environments. Even though we typically associate agricultural jobs with rural labor, food distribution and packaging centers require resources that are almost always located in urban environments. Be it the food or the packaging, we're all people in urban spaces every day, but we just don't see it. Similarly, many of the challenges that farmers face in today's economy are relevant to city dwellers.

## Time is of the essence

On our first day in California, council members met David John, the business strategist at General Produce Company, a distribution center located 10 minutes from the central business district of Sacramento. As we walked through dozens of key storage rooms, John told us that from the time of arrival to the time of departure, almost all of the fresh fruits and vegetables are processed in the facility for less than 48 hours. The center runs 24/7, with days off only on Christmas and New Year's. When asked about the built environment of the facility, John said that many of the workers adjust rooms or shelving as needed with changes in supply, but that it is difficult to allow for changes because they take time away from moving product. This distribution center, like a vital transit system in a big city, cannot take a day off. We surmised that systems thinking, like that used in transportation engineering, could be used to create more flexible environments in food distribution centers, along with more adaptable storage facilities.

## The berry farmer's dilemma

Following a brief meeting with the president of the Strawberry Commission of California near Salinas, our council climbed through coastal strawberry fields owned and operated by Tom AnRhein of Nativex, Inc. AnRhein presented us with a pressing issue that berry farmers are facing in the area: The median home value in Salinas is more than \$400,000. With minimum wage for farm laborers at \$11 an hour, an enormous gap exists between the incomes of berry pickers and the supply of affordable housing in the area.

As a result, AnRhein said that as many as five different families may share a home together in the valley, bringing housing density to the level of some of the nation's biggest cities. As we downloaded our findings from Tom, the council considered what kind of affordable housing solutions could designers, working with migrant communities, dream up for rural laborers and their families. Moreover, with climate change making weather patterns and farming yields more unpredictable than ever, what kind of housing solutions would provide stronger, more stable, and adaptable shelters in this harsh environment?









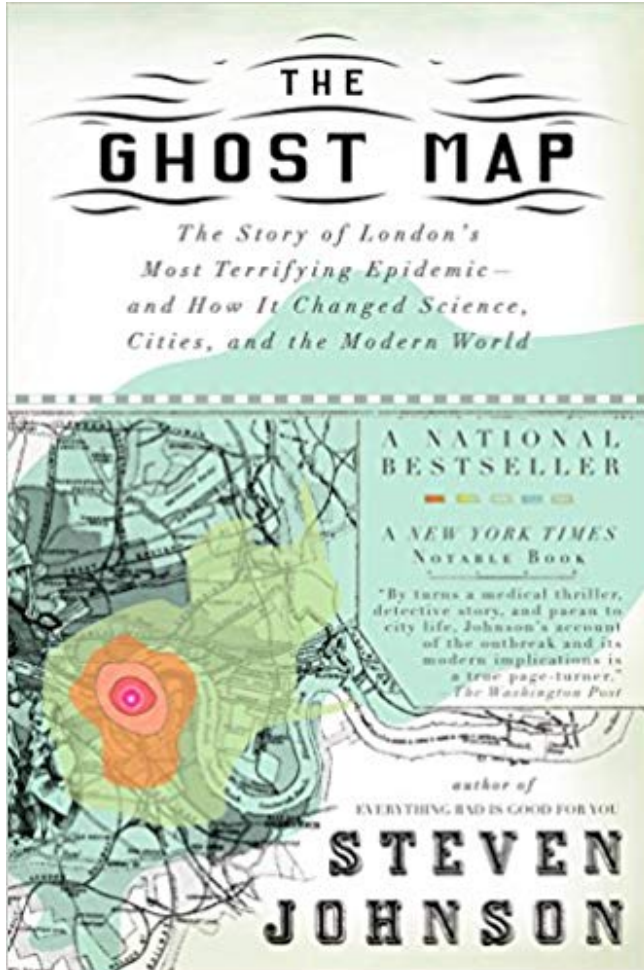




**150 years of planning theory  
focused on public health**

# Urban Planning & Public Health

## *1854 London Cholera Outbreak*





# Urban Planning & Public Health

*1860-1920: Industrial Revolution*



New York City Health Department







*Residence of Mr. A. J. Cross*



GENERAL PLAN  
OF  
**RIVERSIDE**

OLIVER YEN & CO. LANDSCAPE ARCHITECTS

1890

Scale: 1/4" = 100' (Not to Scale)







Train Station + Commercial Center





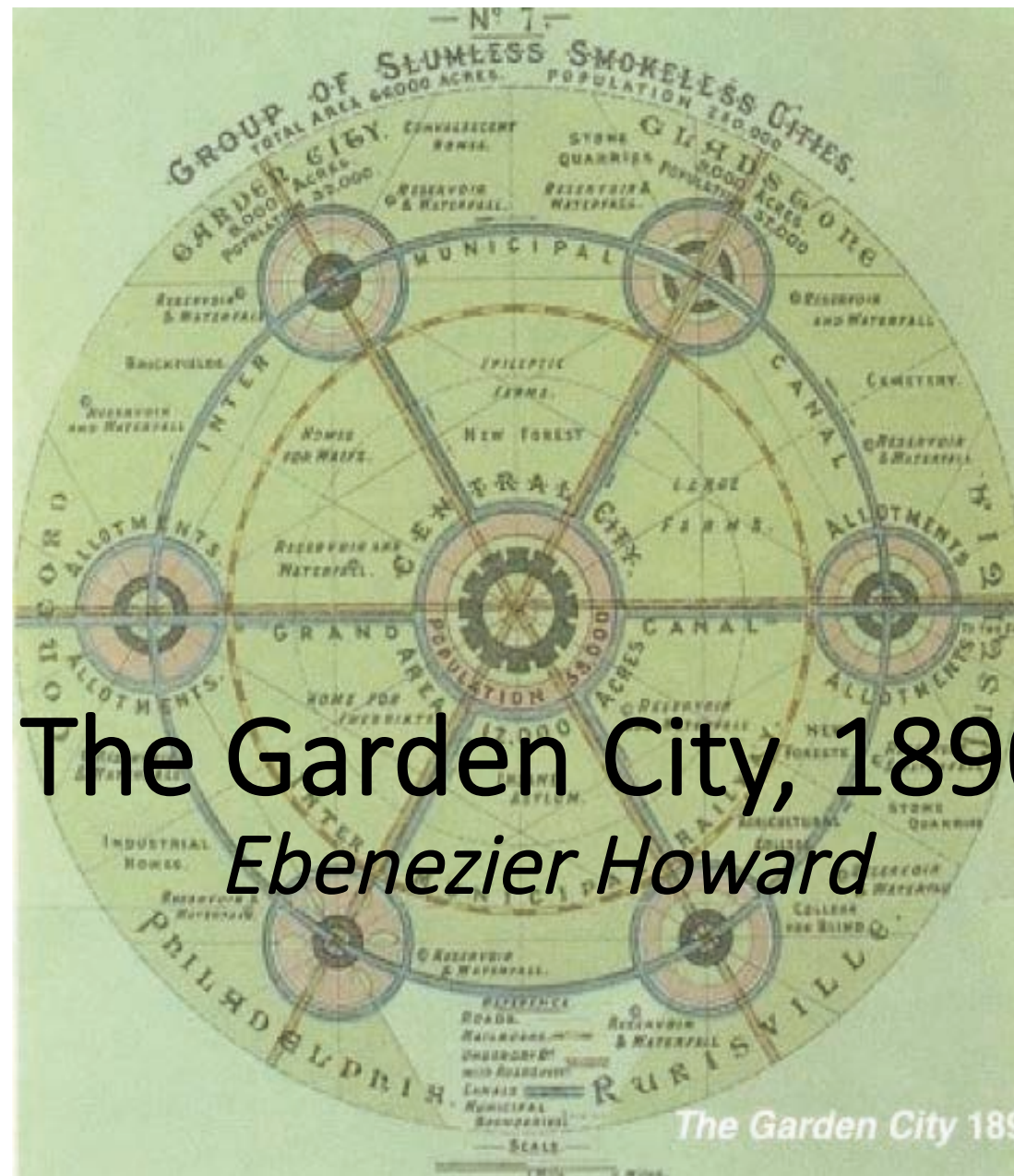
Train Station + Commercial Center  
Multi-Family Corridor



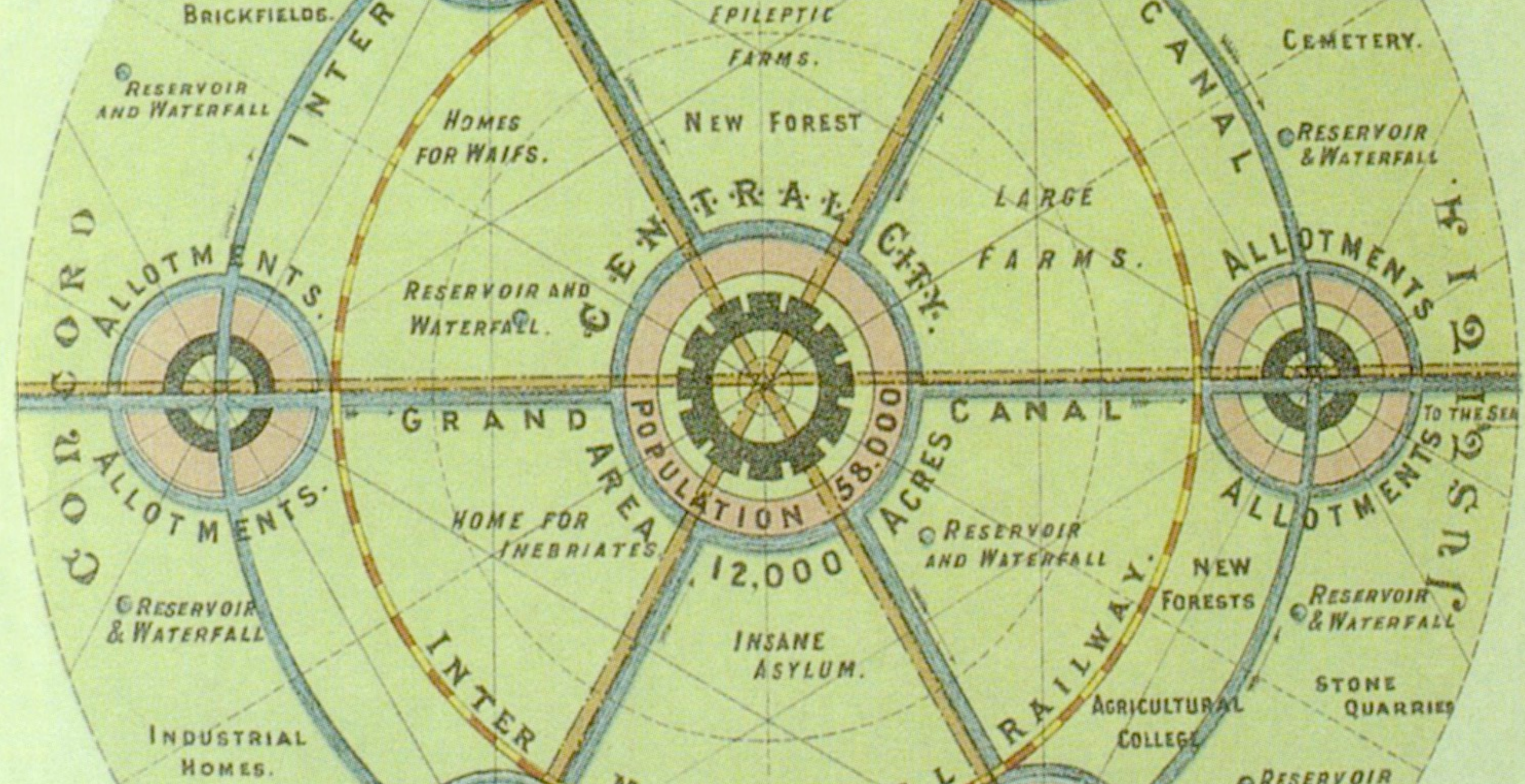


Train Station + Commercial Center  
Multi-Family Corridor  
Expensive Homes













Ville Radieuse  
*Le Corbusier*



Dream Realized  
*Dubai*



# Urban Planning & Public Health

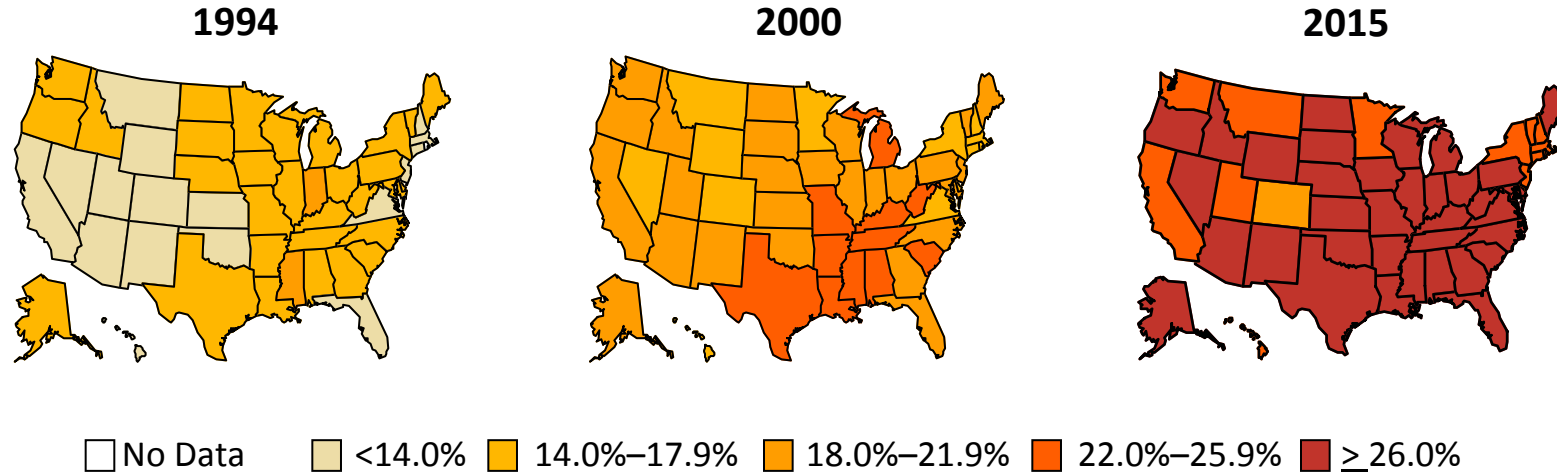
*1950-2000: Highway building era:  
access to green space and clean air supposed to **improve** health...*



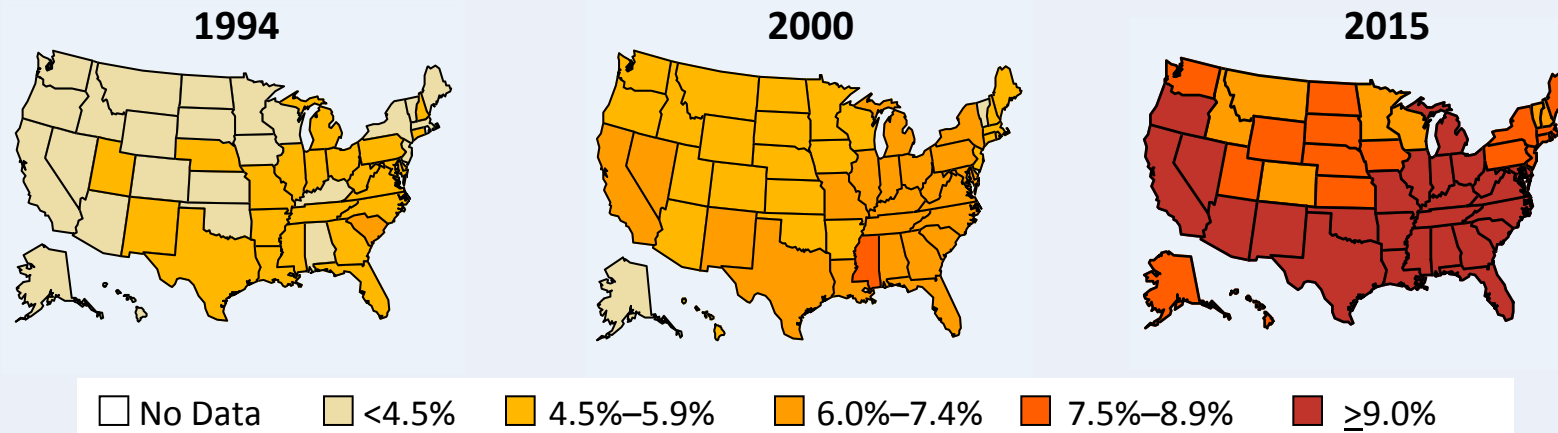


# Age-adjusted Prevalence of Obesity and Diabetes Among US Adults

## Obesity (BMI $\geq 30$ kg/m<sup>2</sup>)



## Diabetes (all types, excluding pregnancy related)





# Growing recognition that our environment is making us sick

## News

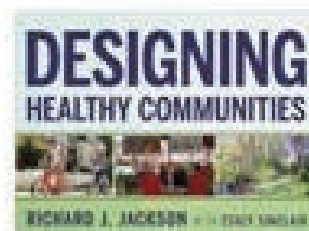
### Our environment is making us sick warns Richard Jackson, health expert

Krege-supported public TV series will show ways to create healthier communities.

October 22, 2008

08:11 PM

America's homes, businesses, transportation systems and public spaces are contributing to increases in obesity, chronic disease, loneliness and even depression, warns internationally recognized public health expert Richard Jackson.



"We tend to take our surroundings for granted," Jackson says. "However, our built environment profoundly influences our health and well-being. If current trends are not reversed, this could be the first generation of American children to have shorter life spans than their parents." Jackson, professor and chair of the department of environmental health sciences in the School of Public Health at the University of California, Los Angeles, has served in leadership positions with the California Department of Public Health and the Centers for Disease Control and Prevention.

As host of an upcoming five-part television "Designing Healthy Communities," Jackson focuses on our built environment. The hour-long programs are the centerpiece of a larger multimedia campaign, supported by a book, town hall meetings and





# Healthy Food Access

Provide places for affordable, nutritious foods

Low-income/underserved communities have less access to healthy foods and higher prevalence of unhealthy foods





# Urban Planning and Health Outcomes

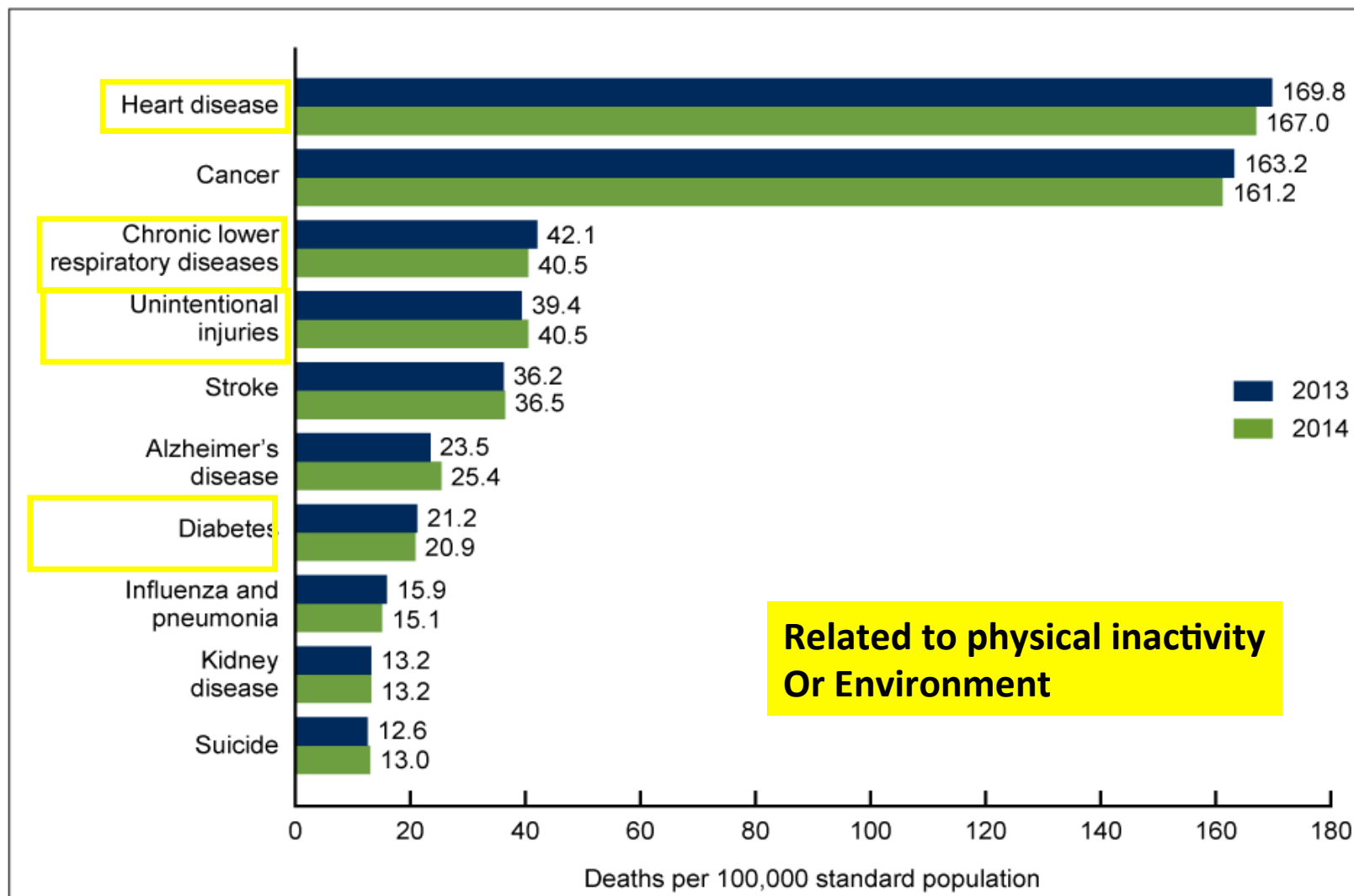
Relationship of Built Environment to Health		
Issues Related to Land Use	Related to Auto-dependency	Related to Social Processes
<ul style="list-style-type: none"><li>• Obesity</li><li>• Cardiovascular disease</li><li>• Asthma</li><li>• Water quality</li></ul>	<ul style="list-style-type: none"><li>• Air pollution</li><li>• Asthma</li><li>• Car crashes</li><li>• Pedestrian injuries</li></ul>	<ul style="list-style-type: none"><li>• Mental health issues</li><li>• Social capital</li></ul>





# Leading Causes of Death in the U.S.

Figure 3. Age-adjusted death rates for the 10 leading causes of death: United States, 2013 and 2014





## And costs to health care system and economy:

Heart disease and stroke:	\$190 billion
Diabetes:	\$245 billion
Obesity:	\$147 billion

# \$\$ Spent on health care in US

17.8 % of GDP

\$3.2 trillion / \$9,990 per person –CDC 2015

## Disease burden

12%

infectious  
disease

88%

non-communicable diseases  
(obesity, asthma, cardiovascular  
disease, diabetes, etc.)

-CDC



## What **Makes** Us Healthy



## What We **Spend** On Being Healthy



## Designing and Building Healthy Places



### HEALTHY COMMUNITY DESIGN

Fact Sheet Series

The Division of Emergency and Environmental Health Services of the National Center for Environmental Health provides national leadership in the development of environmental public health policy and prevention programs to improve public health practice nationwide. The interaction between people and their environments, natural as well as human-made, continues to emerge as a major issue concerning public health professionals.

#### Health and Healthy Places

According to the World Health Organization, health is a state of complete physical, mental, and social well-being and not merely the absence of disease or infirmity. A healthy community, as described by the U.S. Department of Health and Human Services' Healthy People 2010 report, is one that continuously creates and improves both its physical and social environments. Such communities help people to support one another in aspects of daily life and to develop to their fullest potential. Healthy places are those designed and built to improve the quality of life for all people who live, work, worship, learn, and play within their borders. They also provide easy access and connectivity to other communities—places where every person is free to make choices amid a variety of healthy, available, accessible, and affordable options.

#### Healthy Environments

Since 1900, life expectancy in the United States has increased by approximately 40 years. Only 7 of those years can be attributed to improvements in disease care; the rest are the result of improved prevention efforts and improved environmental conditions, including sanitation and water. The link between the nation's health and the environment is unmistakable.

A healthy community environment encompasses aspects of human health, disease, and injury that are determined or influenced by factors in the overall environment. Examining the interaction between health and the environment requires studying how health is directly affected by various chemical, physical, and biologic agents. We must also consider the effects of factors in the broad physical and social environments, which include housing, urban development, land use, transportation, industry, and agriculture.

#### Healthy Community Design

In April 2002, the American Planning Association identified six qualities that describe healthy community design. According to the association, healthy communities

- have a unique sense of community and place;
- preserve and enhance valuable natural and cultural resources;
- equitably distribute the costs and benefits of development;
- expand the range of transportation, employment, and housing choices in a fiscally responsible manner;
- value long-range, regionwide sustainability rather than short-term, incremental, or geographically isolated actions; and
- promote public health and healthy communities.

(Continued on next page)

National Center for Environmental Health  
Division of Emergency and Environmental Health Services



CS216341

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- promote public health and healthy communities.





## Principles for Healthy Community Design

1. Increase **Physical Activity**
2. Reduce Injury
3. Improve Access to **Healthy Food**
4. Improve Access to **Clean Air and Water**
5. **Decrease** Mental Health **Stress**
6. **Strengthen Social Fabric**
7. Provide **Fair Access** to Jobs
8. Minimize Impact of **Climate Change**

**Putting the Knowledge to Work**



**NEW YORK CITY**



New York Restoration Project  
The Haven Project  
Mott Haven/Port Morris

# The Haven Project



**NYRP**

New York Restoration Project







WILLIS AVENUE COMMUNITY GARDEN, MOTT HAVEN

WE OWN 52 COMMUNITY GARDENS  
TENEMOS 52 JARDINES COMUNITARIOS





WE ARE HELPING TO PLANT ONE MILLION TREES BY 2015  
ESTAMOS AYUDANDO A PLANTAR UN MILLÓN DE ÁRBOLES PARA 2015





**"NEW YORK RESTORATION PROJECT"**

*MEANS MORE THAN GREEN PLACES*

**IT MEANS RESTORATION OF COMMUNITY  
AND PUBLIC HEALTH**

# THE HAVEN PROJECT

MOTT HAVEN / PORT MORRIS  
THE BRONX





GOAL:

DESIGN A PROJECT BASED IN EVIDENCE  
AND COMMUNITY OBJECTIVES  
TO IMPLEMENT & MONITOR PERFORMANCE  
FOR MANY YEARS

A COLLABORATIVE PROJECT:

CLINICAL CARE PROVIDERS

PUBLIC HEALTH RESEARCHERS

GEOGRAPHERS

DESIGNERS

THE COMMUNITY



# DESIGN + RESEARCH TEAM

<b>Project leader . . . . .</b>	New York Restoration Project
<b><u>Hospital partner</u> . . . . .</b>	Montefiore Medical Center
<b><u>Designer</u> . . . . .</b>	Civitas
<b><u>Health researcher</u> . . . . .</b>	Columbia University Mailman School of Public Health
<b>Geospatial analyst . . . . .</b>	Columbia University Spatial Information Design Lab
<b><u>Evaluation expert</u> . . . . .</b>	Health x Design
<b><u>Community</u> engagement</b>	Barretto Bay Strategies + South Bronx Unite
<b><u>Environmental health</u> . . .</b>	New York University Environmental Health Clinic







Mott Haven  
Port Morris

100,000 People / 15,000 in Projects





# PROJECT GOAL

- Implement Physical Environment changes that improve Public Health, Well-being and Safety
- Monitor the effectiveness of the physical environment on Public Health, Well-being and Safety over a period of years.

# The Issues

- Mott Haven Ranks in the **Worst for Asthma** Rates in New York City (NYC Health)
- Ranks among the **highest mortality rate in the state** with the leading cause of death being Coronary Heart Disease (Montefiore Community Health)
- **Highest rates of vulnerable populations** in NYC; including people in poverty and those without health insurance (NYC Health)
- **Highest rates of Heart Attack and Pedestrian Injury** Emergency Room Visits. (NYC Health)



45% POVERTY / 71% OBESITY

50% HIGHER ASTHMA RATES

Twice the city average for:

CARDIOVASCULAR + ACCIDENT RELATED  
EMERGENCY ROOM VISITS



31% UNDER AGE 18





# EXCESSIVE CRIME



# A VOCAL COMMUNITY





# A SPIRITED COMMUNITY



AN ENVIRONMENT THAT IS  
UNHEALTHY  
UNFRIENDLY





# AN ENVIRONMENT THAT IS NOT READILY ACCESSIBLE



# AN ENVIRONMENT THAT IS NOT SAFE FOR WALKING





## AN ENVIRONMENT THAT IS DERELICT





**COMMUNITY MEETINGS**



# COMMUNITY FEEDBACK





# Columbia Mailman School of Public Health

## CASE STUDY RESEARCH



**NEW YORK  
RESTORATION  
PROJECT**  
THE HAVEN PROJECT  
MOTT HAVEN/PORT MORRIS


### Supporting evidence- based investment in public spaces: A literature review

This research synthesis has been tailored to support the efforts of New York Restoration Project and their partners in The Haven Project. A master plan is being developed to renovate a network of open spaces in Mott Haven and Port Morris in the South Bronx. The Haven Project aims to demonstrate measurable health and social outcomes resulting from an improved physical environment at the neighborhood scale. This literature review has developed in parallel to the design planning process and community engagement efforts. We would like to thank the New York Restoration Project for their leadership of this effort, the Haven Project planning team, and Richa Gupta of Columbia University for guidance on framing and refining this review. Special thanks to the John S. and James L. Knight Foundation and the Doris Duke Charitable Foundation for funding the planning phase of The Haven Project. More online: [www.nyrp.org/about/programs/the-haven-project](http://www.nyrp.org/about/programs/the-haven-project)

COLUMBIA MAILMAN SCHOOL OF PUBLIC HEALTH  
Lori Fingerhut & Gina Lovasi  
2/13/2015

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# SUPPORTING EVIDENCE-BASED INVESTMENT IN PUBLIC SPACES

## Key Health Concerns:

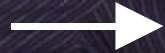
1. Insufficient Physical Activity
2. Traffic related air pollution exposure
3. Traffic patterns that put pedestrians at risk\*

\*Columbia University, Mailman School of Public Health



**YOU MAKE ALL THE DIFFERENCE**

**I.  
Project  
Success**



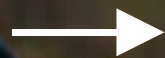
**Community Members in  
the design planning  
process increases the  
likelihood of project  
use.**



A photograph of several children running along a paved path in a park-like setting. The child in the foreground is wearing a grey and black hoodie and blue jeans, running towards the camera with a joyful expression. Behind them, another child in an orange jacket is also running. The background shows trees and a slightly overcast sky.

# MOTIVATION TO MOVE

## II. Insufficient Physical Activity



Sidewalk improvements, walking paths and enhanced connectivity may increase likeliness of outdoor exercise.

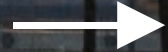
Assumption: A connected circuit of trails and parkspace v. a dead end will increase users and time spent outside.



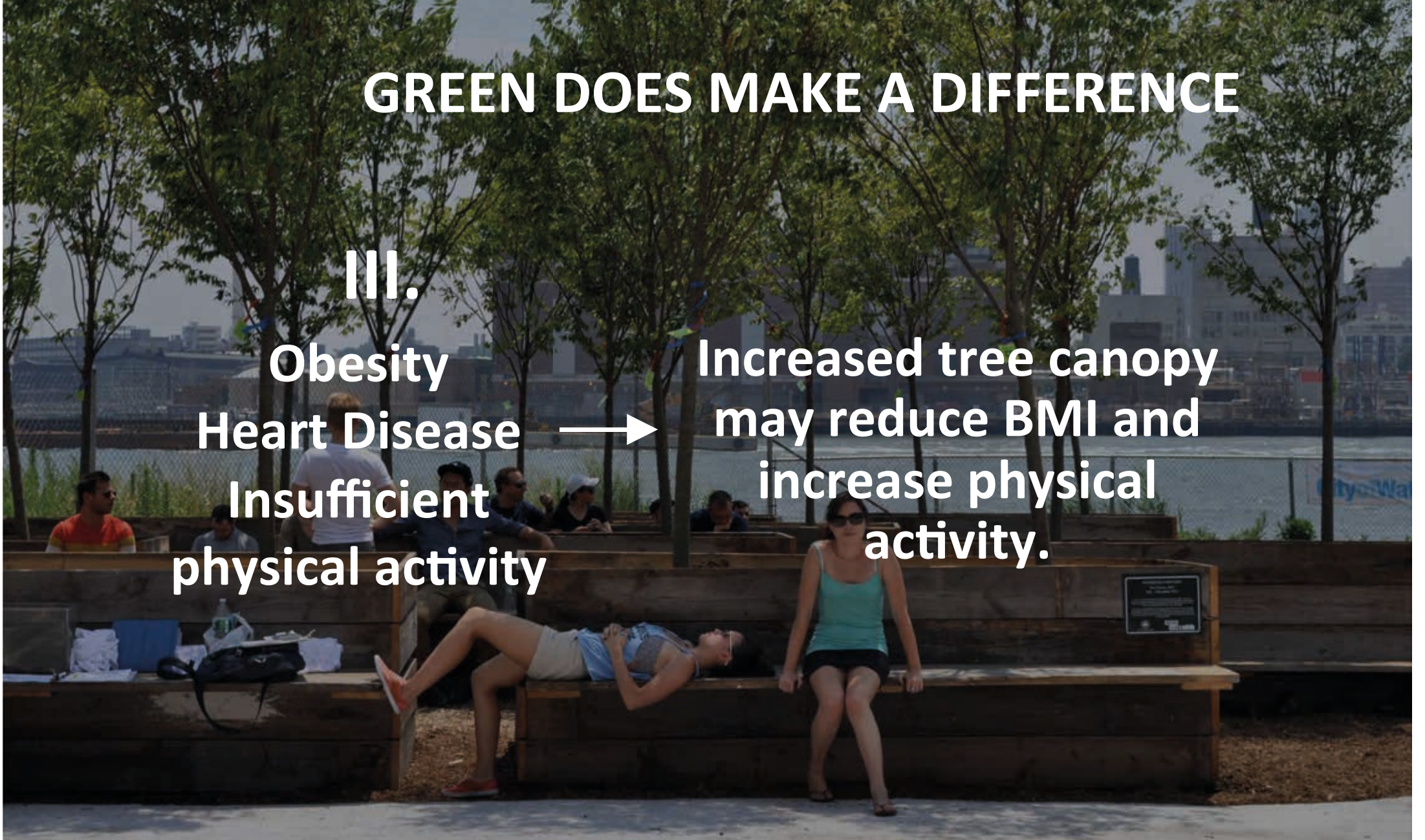
# GREEN DOES MAKE A DIFFERENCE

III.

Obesity  
Heart Disease  
Insufficient  
physical activity



Increased tree canopy  
may reduce BMI and  
increase physical  
activity.

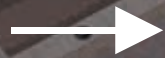




# SAFETY FIRST

IV.

Traffic Patterns  
that put  
pedestrians at  
risk



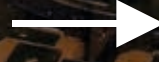
Signage, traffic signals and  
better lighting may reduce  
pedestrian/motor vehicle  
collisions





An aerial photograph of a city, likely New York City, showing a large park area with several baseball fields. A river flows through the city, and a bridge is visible in the background. The text is overlaid on the image.

**V.  
Traffic Related  
Air Pollution**



**Adding places for physical  
activity, particularly large  
parks, may also increase  
physical activity levels**

**Assumption: Air quality is  
better near the water.**



# SIZE MATTERS

VI.

PARKS > 6 Acres

Have Significant →

Benefit for

Asthma

Diabetes

BMI

Increased Length of Stay

Increased Activity

Motivation to Go to the Park







## THEORY OF CHANGE

MOTIVATION IS GREATEST  
TO GET TO WATERFRONT

AIR QUALITY IS BEST AT  
WATERFRONT

LINKED, LOOPED  
ACTIVITIES CAN EMULATE  
LENGTH OF STAY AND  
ACTIVITY



## The Many Opportunities for Implementation



## WHAT DO YOU THINK?

**RATE THIS OPTION 1-10**

1=lowest

10=highest

WALK SCORE (1-10):

BIKE SCORE (1-10):

SAFETY SCORE (1-10):

CONVENIENCE SCORE (1-10):

DESIRABILITY (1-10):





HELP US PROGRAM THIS SPACE: **UNDERPASS**

What would you like to see here?



132nd @ Randalls Island Connet for

- Lighting
- Trees
- Play-ground
- Seating
- Food
- Social
- Exercise
- Signage
- 



St Anns @ Deegan Expwy Underpass

HELP US PROGRAM THIS SPACE: **WATERFRONT**

What would you like to see here?



132nd @ East River

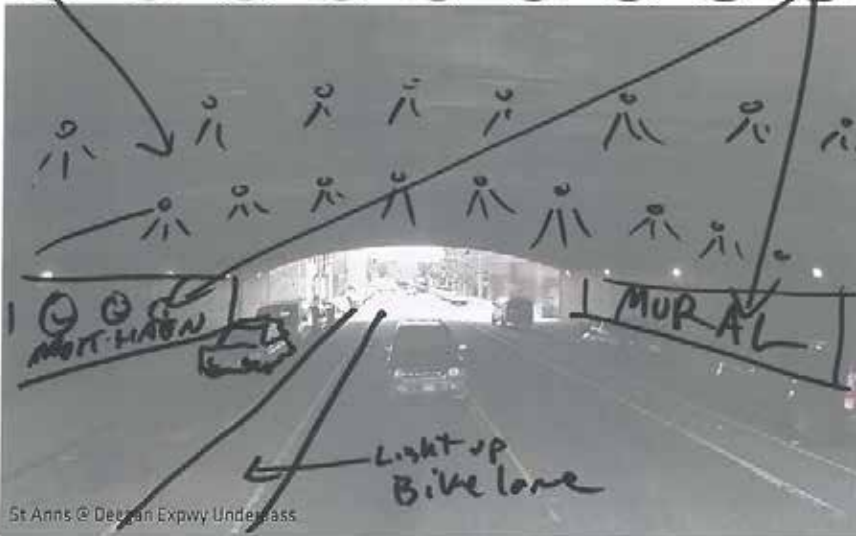
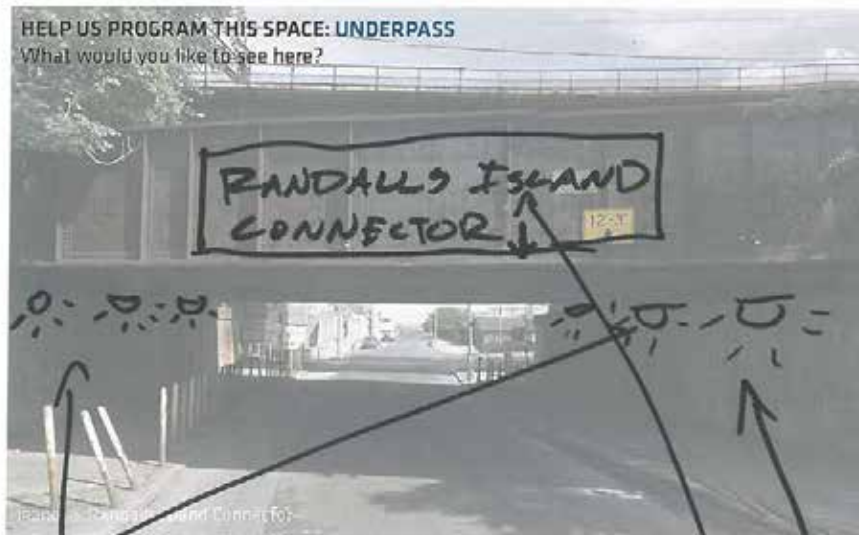
- Lighting
- Trees
- Play-ground
- Seating
- Food
- Social
- Exercise
- Signage
- 



Gantry Cranes @ Bath

# HELP US PROGRAM THIS SPACE: UNDERPASS

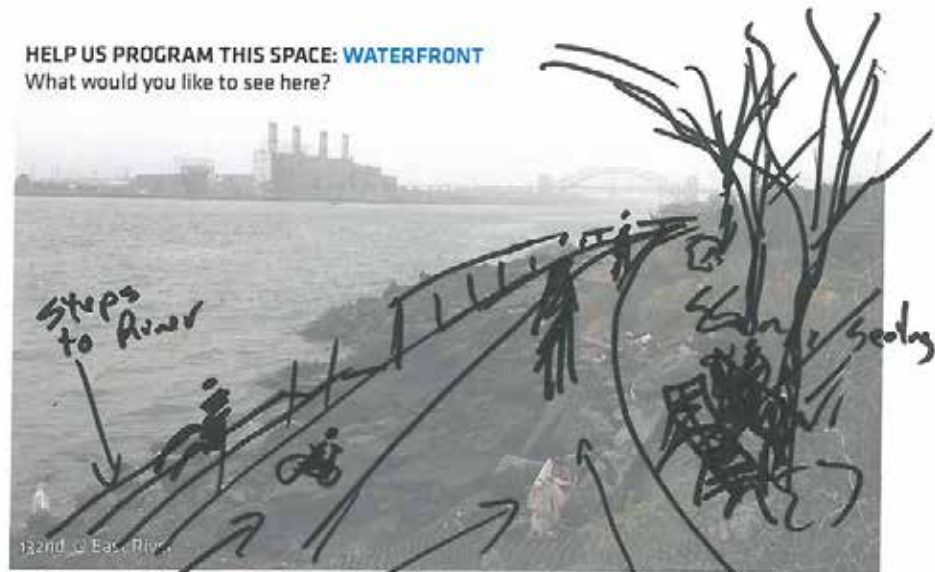
What would you like to see here?



St Ann's Expressway Underpass

# HELP US PROGRAM THIS SPACE: WATERFRONT

What would you like to see here?

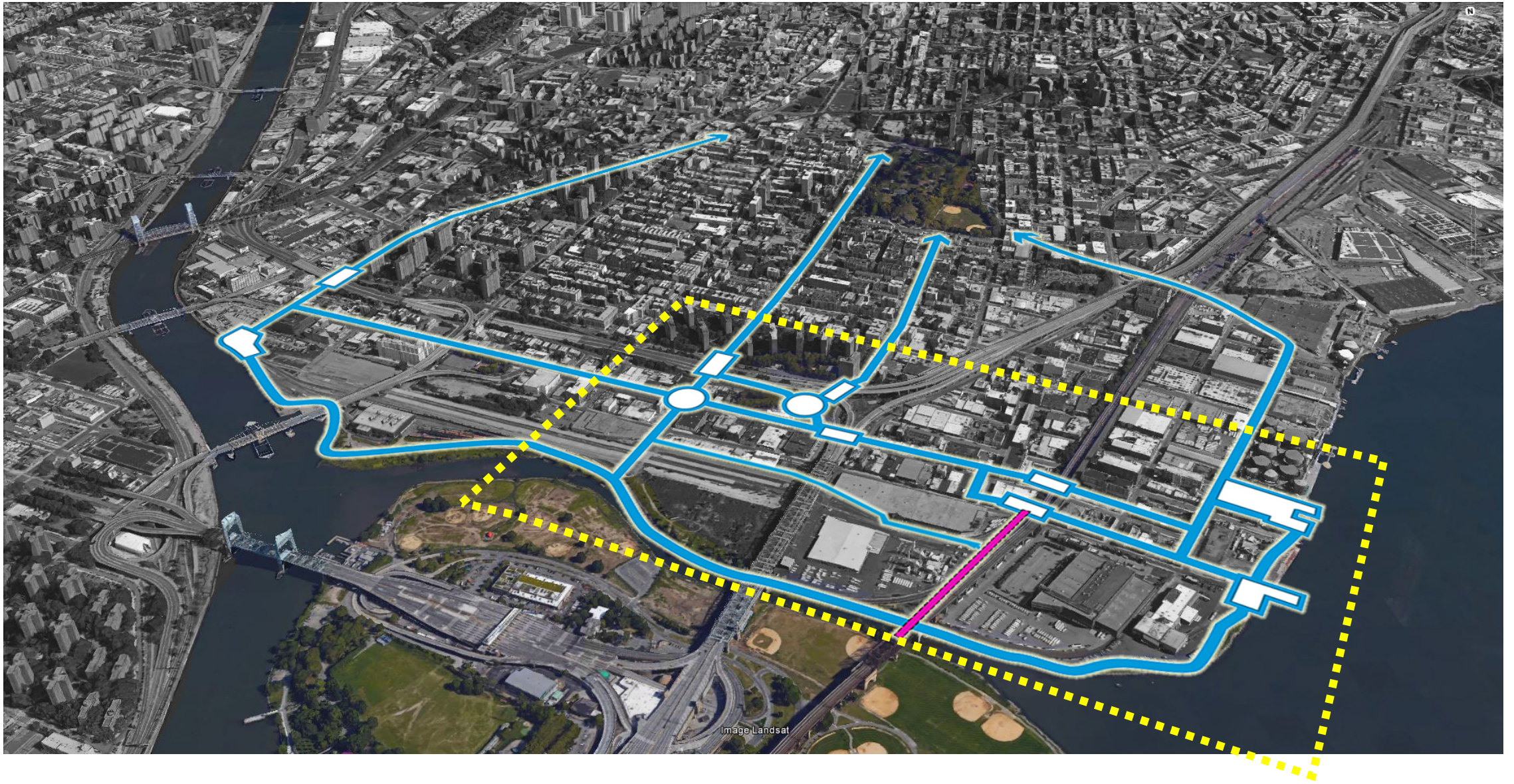


Waterfront



# Master Framework

# Area of Focus





# ACHIEVING BETTER HEALTH OUTCOMES IN THE DISTRICT

## PHYSICAL ACTIVITY



Tourism



Bike & Ped  
Safety



Trees



Social  
Interaction



Open Space



Recreation /  
Sustained physical  
activity



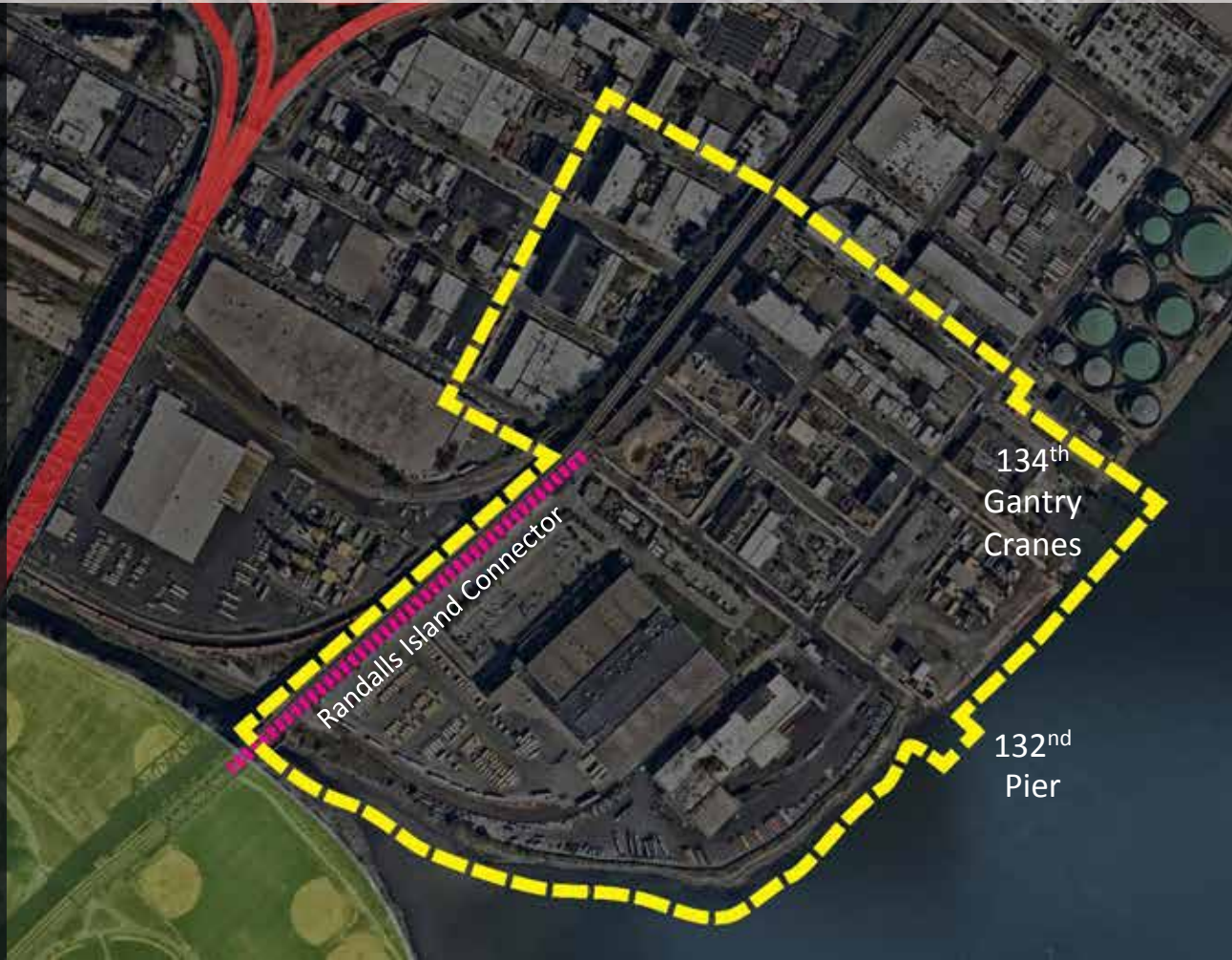
Civic  
Engagement



Youth  
Engagement

### DESIGN INTERVENTIONS:

- Create Large Parks or Links to Large Parks
- Steward Ownership
- Incorporate Destinations
- Connect Neighborhood Nodes
- Design Ped-Friendly Sidewalks
- Improve Perceived Safety
- Create Park Proximity
- Increase Street Tree Density
- Connect to Nature
- Promote Mixed-Use Development





# Existing Conditions



WILLOW AVE @ 133rd

# INSTALLATION



Civic  
Engagement



Tourism



Traffic  
Calming



Bike & Ped  
Safety



WILLOW AVE @ 133nd



# IMPROVEMENTS & PROGRAM



Civic  
Engagement



Tourism



Traffic  
Calming



Bike & Ped  
Safety



Social  
Interaction



Trees



Lighting



Youth  
Engagement



WILLOW AVE @ 133rd



# CAPITAL PROJECTS



Civic  
Engagement



Tourism



Traffic  
Calming



Bike & Ped  
Safety



Social  
Interaction



Trees



Lighting



Recreation / Open Space  
Sustained physical  
activity



Youth  
Engagement



WILLOW AVE @ 133rd





132<sup>nd</sup> @ Connector





132<sup>nd</sup> @ Connector





End of Connector





End of Connector





132<sup>nd</sup> @ Walnut





132<sup>nd</sup> @ Walnut





132<sup>nd</sup> PIER





132<sup>nd</sup> PIER





EAST RIVER EDGE @ 132nd





EAST RIVER EDGE @ 132nd





GANTRIES @ 134th



GANTRIES @ 134th



Impact Framework

Design Strategies

- Link Neighborhood Nodes
- Access To Large Park/ Open Space (Randall s Island Connector + Waterfront)
- Waterfront Green Trail
- Creative/Interactive Placemaking
- Resilient Shoreline

Factors

- Street Connectivity/ Pedestrian + Bicycle Friendly Paths
- Social Interaction
- Tree Canopy/Density
- Traffic Calming
- Visibility/Lighting
- Local Tourism
- Organized Spatial System
- Proximity To Large Park/ Open Space
- Connections To Nature/ Green Space
- Recreation/Play
- Habitat Restoration
- Deposition Surface
- Stormwater/Green Infrastructure
- Maintenance
- Community Engagement
- Interactivity
- Cultural Appropriateness/ Identity
- Storm Surge Protection

Short Term Outcomes

- Active Transport/Physical Activity
- People Presence
- Social Connectedness/ Socialization
- Biodiversity
- Microclimate
- Road Safety
- Increased Demand For Services
- Perception Of Self Efficacy
- Increased Neighborhood Retail
- Ecological Awareness
- Stress Recovery
- Stormwater Management
- Lower Crime
- Civic Engagement
- Cultural Preservation/ Expression
- Storm Surge/ Hazard Mitigation

Medium Term Outcomes

- Decreased Diabetes Rate (adults)
- Lower Bmi/Weight Loss (adults)
- Chronic Stress
- Mood
- Perceived Safety
- Lower Crime
- Increased Local Purchasing
- Social Cohesion
- Air Quality
- Traffic Related Accidents
- Increased Neighborhood Investment
- Heat Island Effect
- Reduction In Sewer Overflow
- Civic Engagement
- Political Mobilization
- Mitigate Job Loss
- Stewardship

Impacts

- Obesity Related Illness/ Premature Death
- Cardiovascular Health
- Mental Health
- Bone Health (children)
- Muscular Fitness
- Stress Related Illness
- Local Economic Investment
- Neighborhood Safety
- Social Capital
- Ecosystem Health
- Infectious Disease
- Heat Island Effect
- Reduced Vehicular Injury
- Energy Use
- Respiratory Health
- Stewardship
- Water Quality
- Landscape Resilience
- Employment

Short Term Outcomes

<b>Active Transport/Physical Activity</b>
% population with self efficacy/behavioral control and positive beliefs relate to physical activity (positive attitudes/social norms)
% of population reporting exercising* (10 consecutive minutes) in last 24 hours
<b>Perception Of Self Efficacy</b>
% community/individual reporting self efficacy (scale)
<b>Stress Recovery</b>
% reporting good or very good self rating of health
% population with high stress recovery level (psychological wellbeing, related to perceptions of safety)
<b>Road Safety</b>
# of Pedestrian injury/fatality in intervention area
#, % of traffic-related crashes, by type (pedetrian-bike, pedesrian-motor, bike-motor vehicle)
Perceptions of road safety
<b>Civic Engagement</b>
% population reporting volunteerism
#, % increase in project-related volunteers
Community participation with social justice organizations
community perspectives on civic engagement*
<b>Cultural Preservation/ Expression</b>
community perspectives on cultural preservation and expression
<b>Social Connectedness/ Socialization</b>
% of population reporting they trust neighbors (part of scale)

% of population reporting they socialize in project enhanced areas* (5 item scale)
% of populationr reporting perception of collective efficacy (related to trust and social cohesion)
<b>People Presence/Traffic</b>
Pedestrian counts
<b>Lower Crime</b>
Crime/Homicide
Crime Risk Variables (as available)
<b>Increased Demand For Services</b>
Reported demand for services (revenue)
<b>Increased Neighborhood Retail</b>
Retail and food presence, by type
<b>Microclimate</b>
Temperature, relative humidity, precipitation, radiation, wind speed, canopy cooling
<b>Biodiversity</b>
% of opportunity area with natural resource features (wetlands, streams, significant habitats etc..)
<b>Ecological Awareness</b>
% population knowledge and awareness of ecosystem health and benefits (scale/items TBD)
<b>Storm Water Management</b>
Inflow/outflow, infiltration, soil moisture, water and sediment quality
<b>Storm Surge/Hazard Mitigation</b>
Damage from subsequent storm (\$)

<b>Diabetes Rate (Adults)</b>
% of adults (18+) with diabetes
<b>Bmi/Weight Loss</b>
% of population with normal BMI
<b>Chronic Stress</b>
% of population with high* cortisol levels
<b>Mood</b>
% of population with diagnosed mood disorder
Average level of psychological distress (Kessler 6 scale/score)
<b>Political Mobilization</b>
voter turnout (% of eligible voters that cast a ballot in an election*), by project community district"
<b>Perceived Safety</b>
% of popoulation reporting they feel safe in their neighborhood (3 item scale)
<b>Social Cohesion</b>
% of population reporting social cohesion (4 item scale)
% of population reporting perception of collective efficacy
<b>Air Quality</b>
Level of Air Quality (_g/m3 for PM 2.5, ppb for ozone)"
<b>Stewardship</b>
% of new sites stewarded by local community groups, by group"
Key stakeholder veiws on the progress of stewardship
<b>Increased Neighborhood Investment</b>
# and value (\$) of new investments, by type of investment (eg capital project, service, public art, retail) and investor (public, private)

<b>Respiratory Health</b>
Asthma related hospitalization rate, by population group-including children under 15
Asthma related ER visits, by population-including children under 15
<b>Vihicular Related Fatality</b>
traffic-related fatality
<b>Obesity And Related Illness/ Premature Death</b>
% of obese adults (18+)
Avoidable hospitalization rate due to diabetes
Avoidable ER visits due to diabetes
<b>Cardiovascular Health</b>
% population with normal* cholesterol (HDL level)
% population with high blood preasure
Incidence of cardiovascular events (sudden death, symptomatic cardiovascular disease, hospitalization)
Age adjusted rate of cardiovascular disease
Age Adjusted Heart disease hospitalizations per 100,000 adults"
Fatality due to heart disease
<b>Mental Health</b>
Hospitalizations due to mental illness
% of adults (18+) suffering from serious psychological distress
<b>Accountability/Transparency</b>
Community and other key stakeholder perceptions on accountability* and transparency"
#, % of community groups represented in the community engagement process/stakeholder meetings
% of plan that is implemented
<b>Governance</b>
Governance structure is defined and communicated to key stakeholders (yes/no)
<b>Collective Impact/Knowledge Sharing</b>
# and type of knowledge sharing activities (community meetings,meetings with city agencies, conferences)
Legibility of project progress on physical scale (criteria and strategies TBD)





NEW YORK  
77° F (LIGHT RAIN)  
★ 57 → 19 MPH

# REAL ESTATE WEEKLY

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JULY 16, 2015

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CONSTRUCTION & DESIGN

DEALS & DEALMAKERS

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HOME > DEALS & DEALMAKERS > FEATURED > NEW YORK RESTORATION PROJECT UNVEILS "NEW VISION" FOR SOUTH BRONX



DEALS & DEALMAKERS

## New York Restoration Project unveils "new vision" for South Bronx

BY REW STAFF • JULY 8, 2015

Today, New York Restoration Project (NYRP) unveiled a master plan to design, build, and fund a new network of connected open spaces that will improve quality of life and deliver measurable health benefits for South Bronx residents with parks, tree-lined streets,



Partners seek those in pursuit of happiness

JUN 5, 2015

• 51



Drinking the Kool-Aid keeping Corcoran's Jeff Nolan at the top of his game

MAY 4, 2015

• 14



Elghanayan scion who grew up with the new Long Island City

MAY 8, 2015

• 9



Technology's role in real estate biz is growing with millennials

APR 24, 2015

• 6



Jamaica's rich pickings drawing builders on hunt for cheap land

APR 29, 2015

• 4







# DENVER COLORADO

5280

5280 LOOP

An Urban Design Initiative to Improve Public Health

**5280 LOOP**  
DOWNTOWN DENVER PARTNERSHIP



# Downtown Denver Partnership

## BOUNDARY LEGEND:

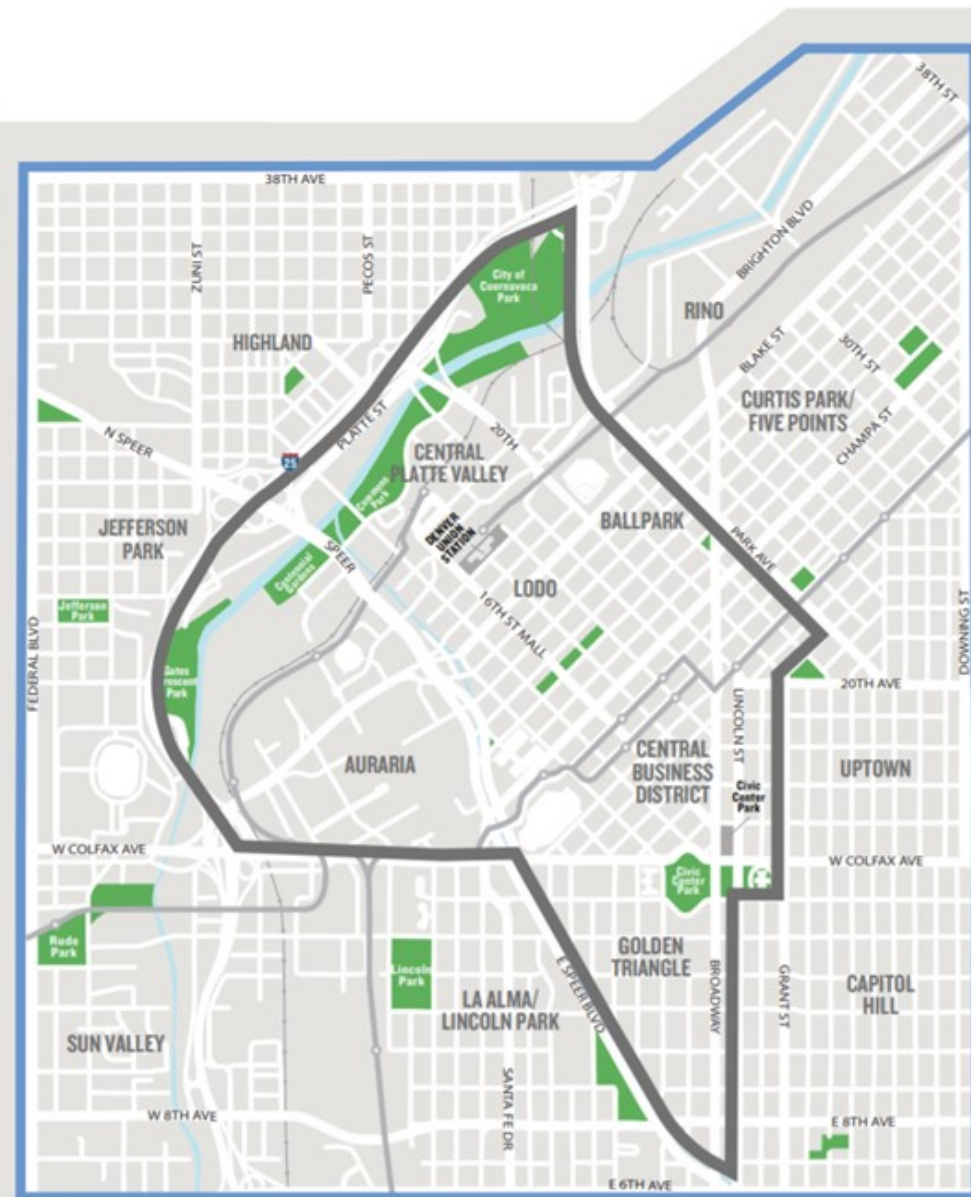


CENTER CITY  
NEIGHBORHOOD  
BOUNDARY



DOWNTOWN  
DENVER  
BOUNDARY

All data in this report uses  
the Downtown Denver  
boundary, unless  
otherwise noted.





# INCREASING POPULATION = DEMAND FOR MORE PARK SPACE

2014

CITY  
CENTER  
RESIDENTS

60,000+



ACRES OF OPEN  
SPACE / 1,000  
PEOPLE

4.4

10

2017

CITY  
CENTER  
RESIDENTS

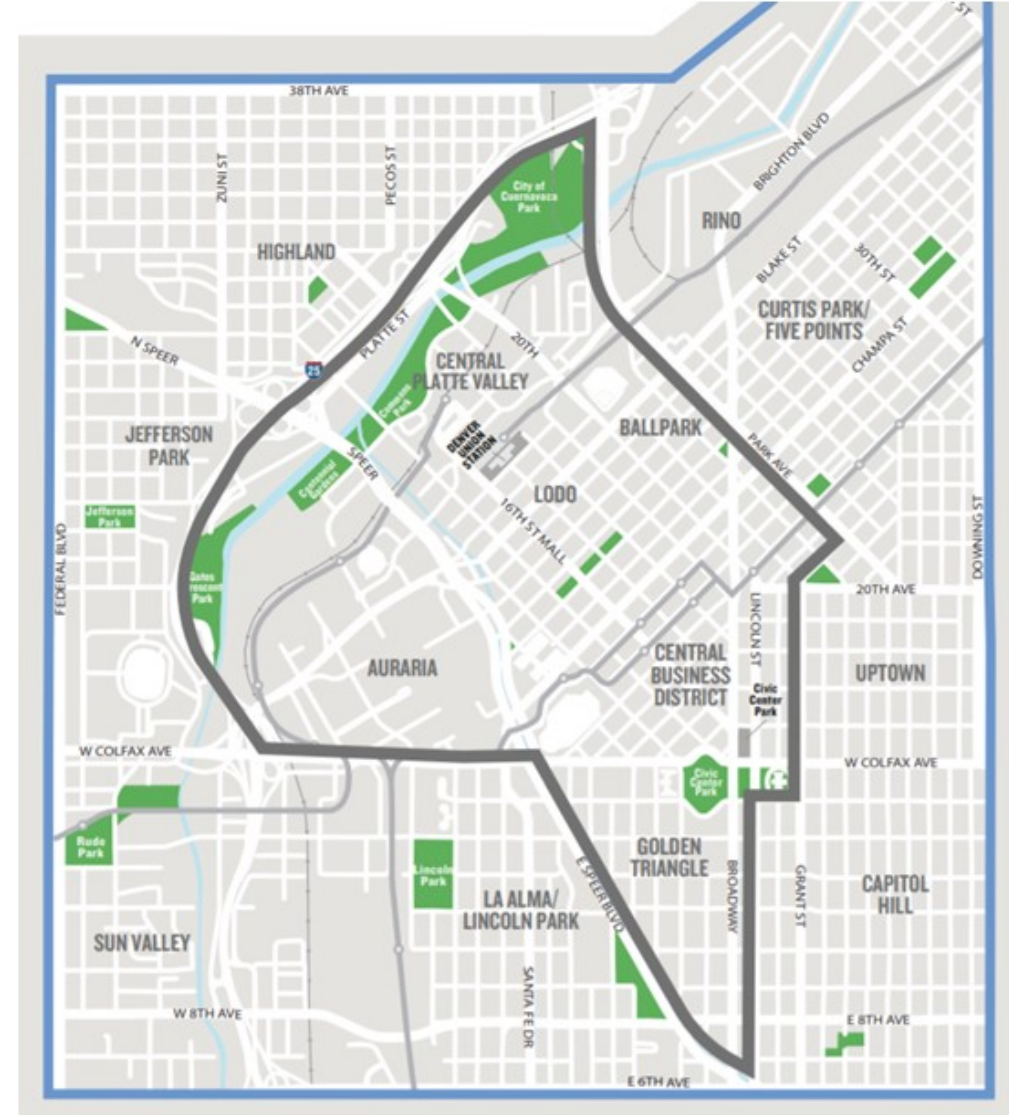
80,000+



ACRES OF OPEN  
SPACE / 1,000  
PEOPLE

3.5

10

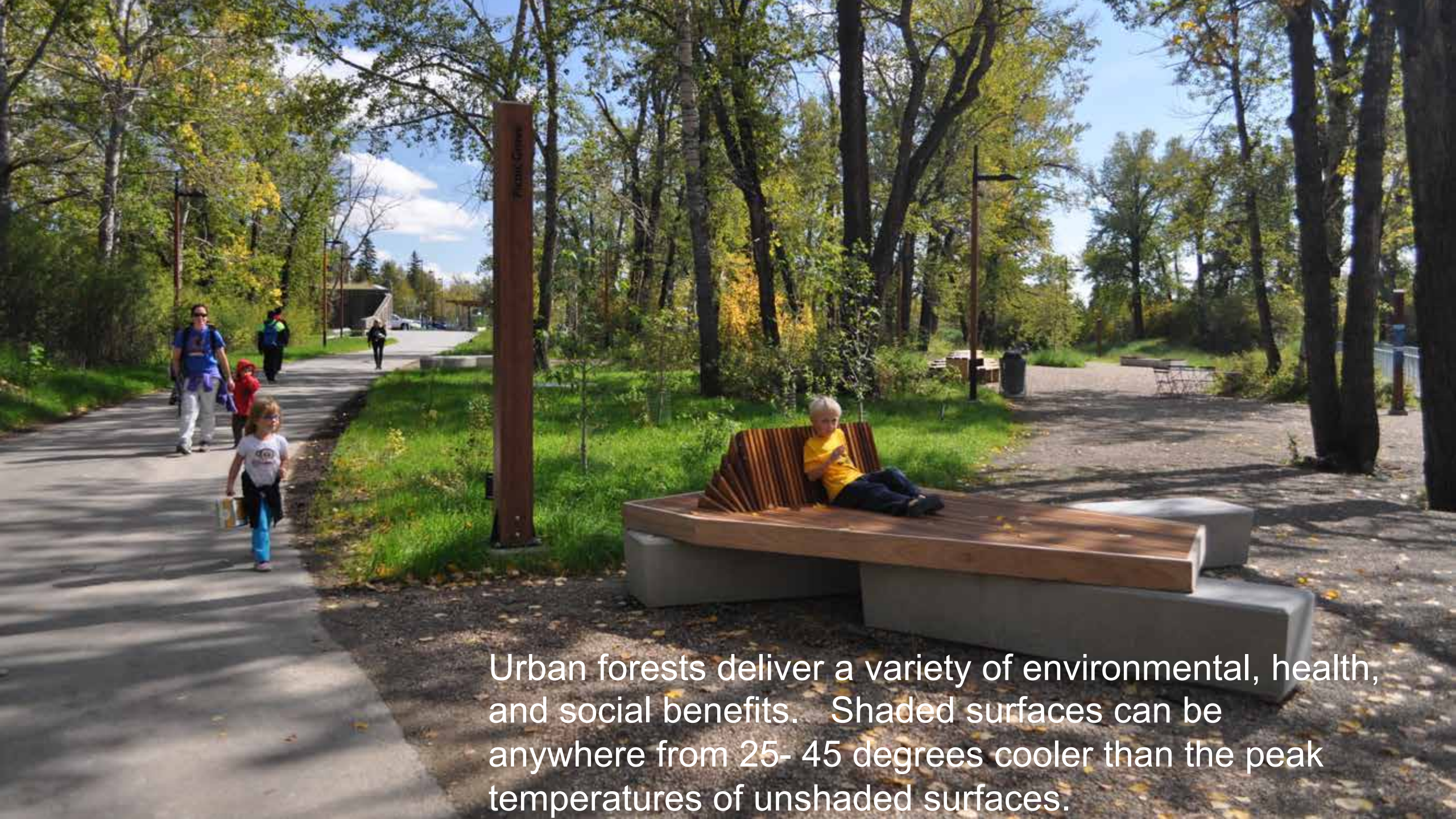







Public Realm Design can influence key predictors of health such as physical activity, air quality, social connection, neighborhood safety and traffic safety, which leads to measurable outcomes.





Urban forests deliver a variety of environmental, health, and social benefits. Shaded surfaces can be anywhere from 25- 45 degrees cooler than the peak temperatures of unshaded surfaces.



A photograph of a lush urban park. The scene is filled with tall, slender trees with vibrant green foliage, creating a dense canopy. Several people are seen sitting on metal chairs and benches, enjoying the shade. The ground is covered with a mix of grass and small plants. In the background, a city street with buildings and parked cars is visible, suggesting an urban setting. The overall atmosphere is peaceful and refreshing.

**10% Increase in vegetative cover decreases heat related mortality by 7% (in the context of heat island effect / climate change) .**





A 10% increase in tree canopy leads to a 12% decrease in crime



"For every dollar spend on trail building and maintenance, nearly \$3 is saved in health care expenses"



A 10% increase in greenspace leads a 7% decrease in stress – better mental health



**Improved lighting leads to significant reductions in crime (20% reduction across all studies).**







Changes to signal timing reduced the risk of vehicular and pedestrian / bicycle crashes at intersections by 37% compared to control.



# LINKING NEIGHBORHOODS, CONNECTING PEOPLE

Prioritizing PEOPLE, HEALTH, CULTURE and NATURE, the 5280 Loop is a new, distinctly Denver amenity, that connects many vibrant and diverse city center neighborhoods through the great urban outdoors, creating a powerful SENSE OF PLACE.



Halifax, Canada



Indianapolis,



Vester Voldgade, Copenhagen, DK





# THE SQUARE

▪ on 21<sup>st</sup> ▪

A POP-UP PARK BETWEEN LARIMER & LAWRENCE









The 5280 Loop is the urban manifestation of the Colorado Trail.



Bring nature into the City





Create  
Memorable  
Experiences



Imbue the public  
realm with art

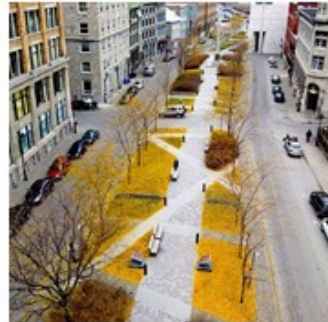




WE BELIEVE....

*IT'S ABOUT PEOPLE,  
IT'S ABOUT CONNECTIONS,  
IT'S ABOUT EXPERIENCE,  
IT'S ABOUT PLACE,  
IT'S ABOUT HEALTH,  
IT'S ABOUT CULTURE,  
IT'S ABOUT **DENVER!***

**5280 LOOP**  
DOWNTOWN DENVER PARTNERSHIP





# OUTCOMES – BASED DESIGN

## APPROACH

Identify key design strategies for addressing cross-cutting needs and opportunities throughout the Loop.

Needs + Opportunities

Overarching Design Considerations

Specific Design Strategies

Childhood Obesity

Link Nodes, Access to Green Space, Tree Canopy, Traffic Calming

Asthma

Increase vegetative cover by 50%, Increase tree canopy by 200%, increase exposure to green space and recreation.

Mental Health

Link Nodes, Access to Green Space, Tree Canopy, and Improve lighting, visibility and safety.

Traffic Safety

Link neighborhood nodes, traffic calming

Urban Heat Island

Increase vegetative cover by 50%

Stewardship

Increase daily access to nature, green space and views, improve lighting, visibility and perception of safety, celebrate culture and place.

Social Cohesion

Link neighborhoods, celebrate culture and place, improve lighting, visibility and safety

Body of evidence that demonstrates the relationship between specific design strategies and health-related outcomes.



## BALLPARK / ARAPAHOE SQUARE

# Health Impacts

The impact framework illustrates how the design of the LOOP along 21st Street will advance neighborhood-level health outcomes and impacts.

These design goals influence our design strategies which are based in scientific evidence and community input and will influence health, wellbeing, and social capital.

### DESIGN GOALS

BETTER CONNECT COORS FIELD TO THE NEIGHBORHOOD

CREATE AN URBAN FOREST/ PARK-LIKE ENVIRONMENT

CELEBRATE THE NEIGHBORHOOD HISTORY

## SPECIFIC

### DESIGN STRATEGIES

PEDESTRIAN / BIKE FRIENDLY PATHS

CONNECTING CIVIC INSTITUTIONS WITH THE PUBLIC REALM

PROMOTE SOCIAL INTERACTION

TRAFFIC CALMING

INCREASE TREE CANOPY

INTRODUCE NATIVE ECOLOGY

HISTORIC IDENTITY

### SHORT-TERM OUTCOMES

PEOPLE PRESENCE

SOCIAL CONNECTION

PERCEIVED SAFETY

CULTURAL MIXING

CIVIC IDENTITY

ROAD SAFETY

PHYSICAL ACTIVITY

STRESS RECOVERY

INCREASE VEGETATION

ECOLOGICAL AWARENESS

### MEDIUM-TERM OUTCOMES

PERCEIVED SAFETY

LOWERS CRIME

SOCIAL COHESION

PHYSICAL ACTIVITY

CIVIC ENGAGEMENT

TRAFFIC INJURIES

REDUCE BMI/DIABETES/STRESS

CHRONIC STRESS

AIR QUALITY

HEAT ISLAND EFFECT

### IMPACTS

PHYSICAL ACTIVITY

MENTAL HEALTH

NEIGHBORHOOD SAFETY

SOCIAL CAPITAL

OBESITY RELATED ILLNESS

STRESS RELATED ILLNESS

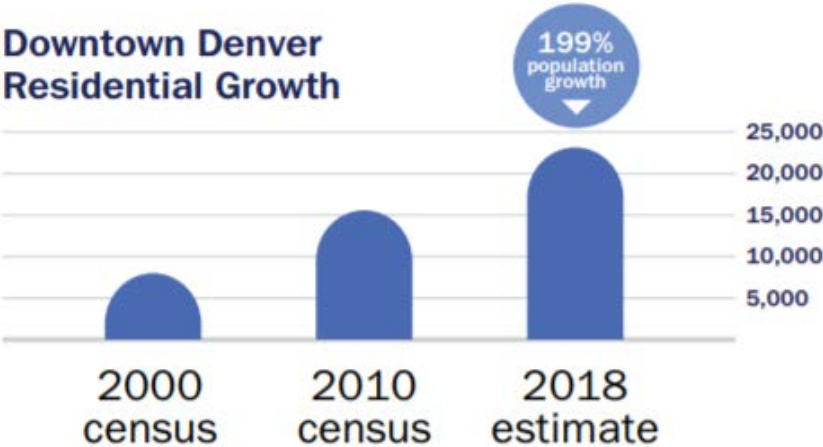
STEWARDSHIP

REDUCED VEHICLE RELATED MORBIDITY/MORTALITY

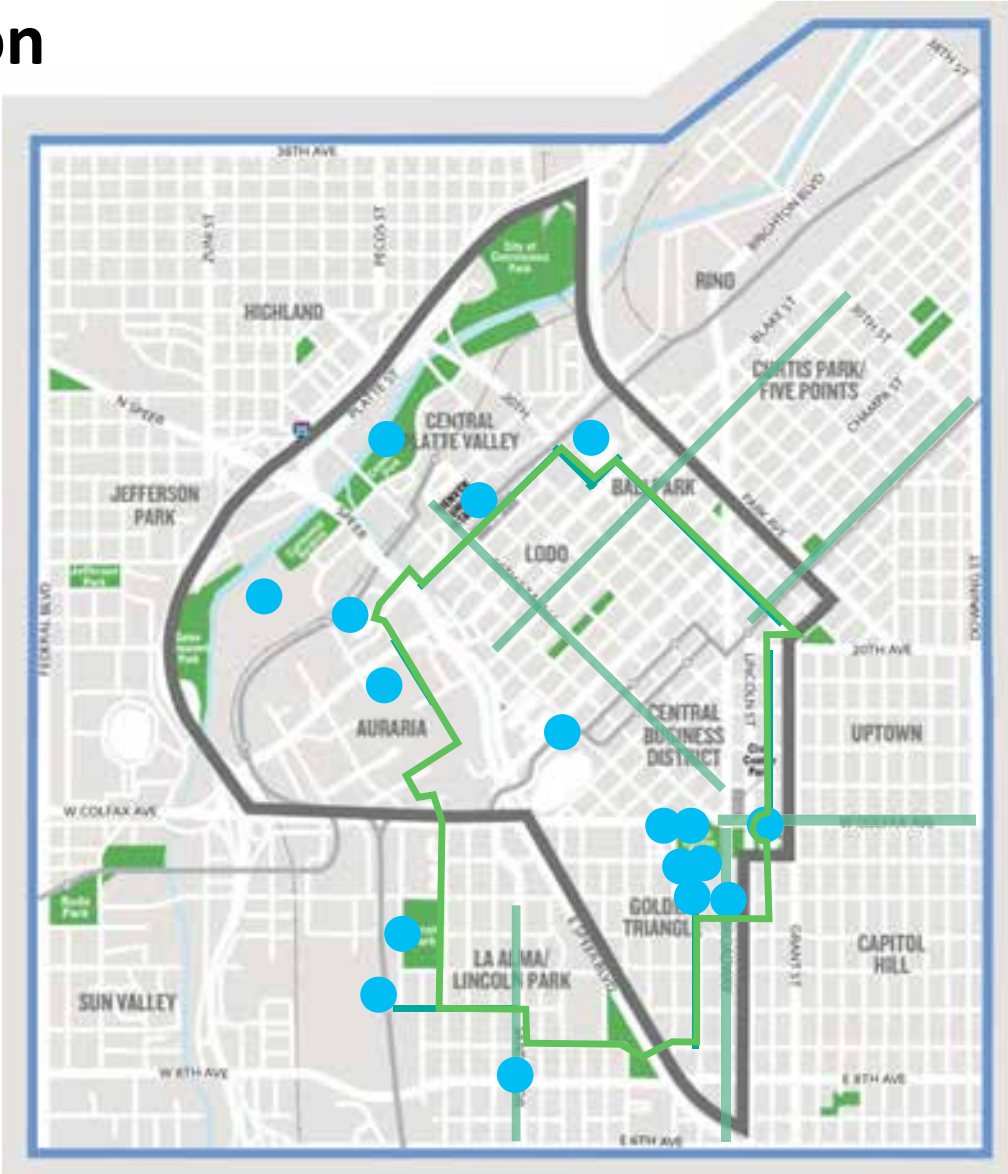
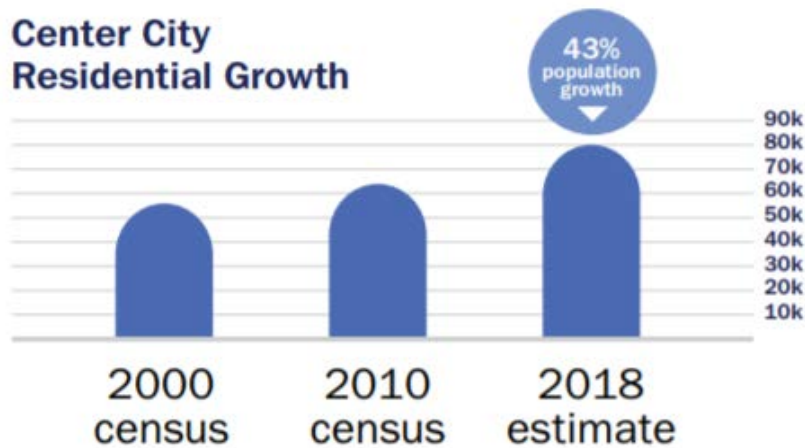
ASTHMA RESPIRATORY HEALTH



# 22,801 Downtown Denver population

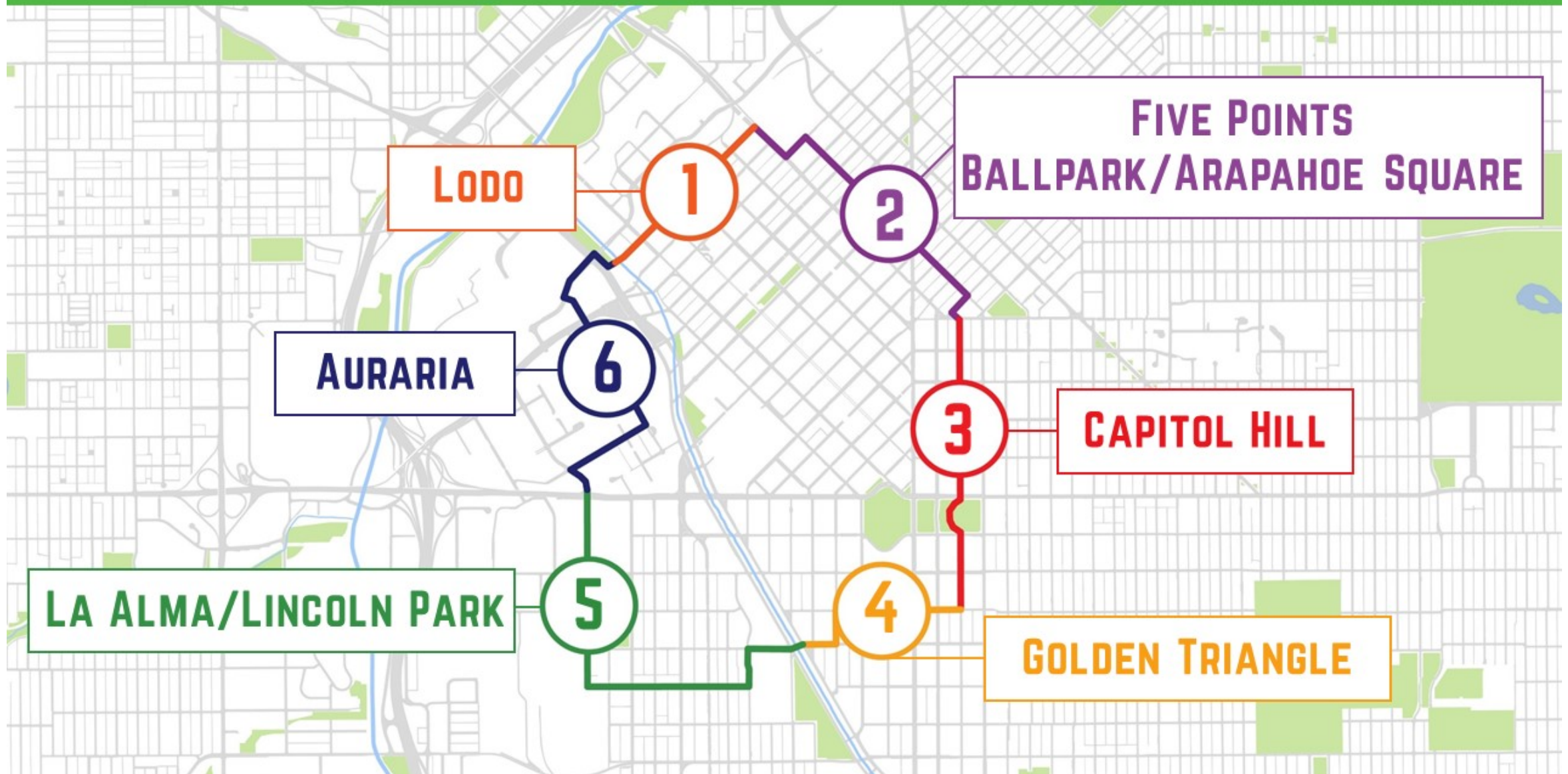


# 80,217 Center City pop





# LOOP PLANNING AREAS



## 5280 LOOP EXPERIENCE

### 5 MILE EXPERIENCE



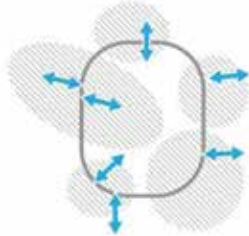
TOURISTS  
EXERCISE  
EVENTS

### DAY TO DAY



RESIDENTS / LOCALS  
DAILY ERRANDS  
WORK COMMUTE

### LOOP AS A CENTER



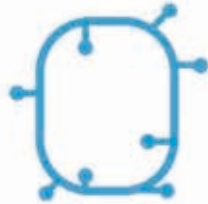
PULSE OF PEOPLE MOVING TO  
AND FROM THE LOOP

What is The User Experience?

What are we trying to connect?



STRING OF 'PEARLS'



'PEARL' MANIFOLD



NEIGHBORHOOD  
CONNECTOR

Fluidity of The Route?



PRIORITIZE 'PEARLS'  
REQUIRES A FLEXIBILITY IN  
FACILITY TYPE



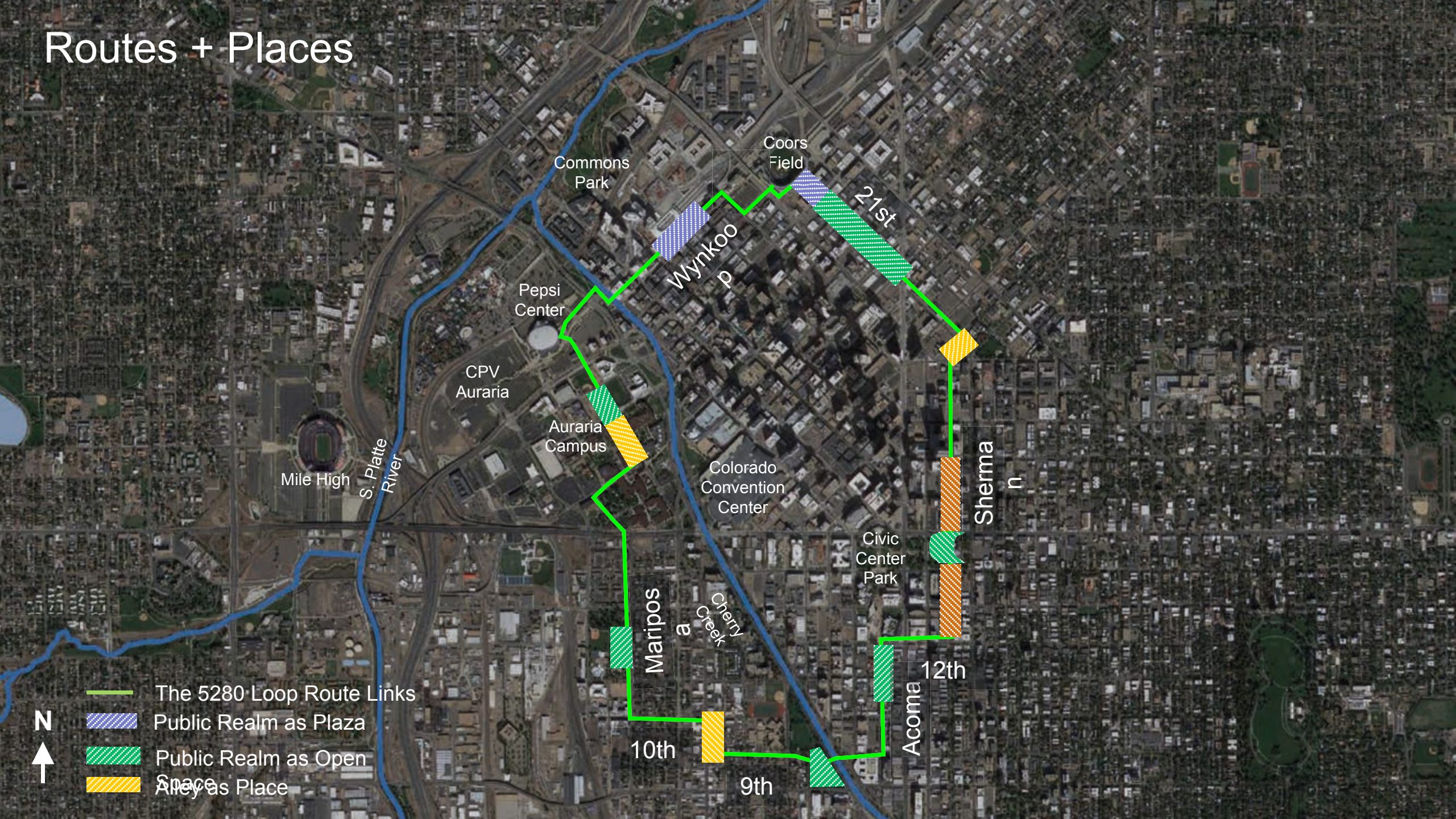
PRIORITIZE FACILITY  
REQUIRES FLEXIBILITY IN  
ROUTE AND FLEXIBILITY IN  
CONNECTIONS TO PEARLS



HYBRID  
HYBRID DESIGN APPROACH THAT  
PRIORITIZES LINKING NEIGHBORHOODS  
AND BALANCES THE DESIRE TO CONNECT  
PEARLS WITH THE FLUIDITY OF THE ROUTE.

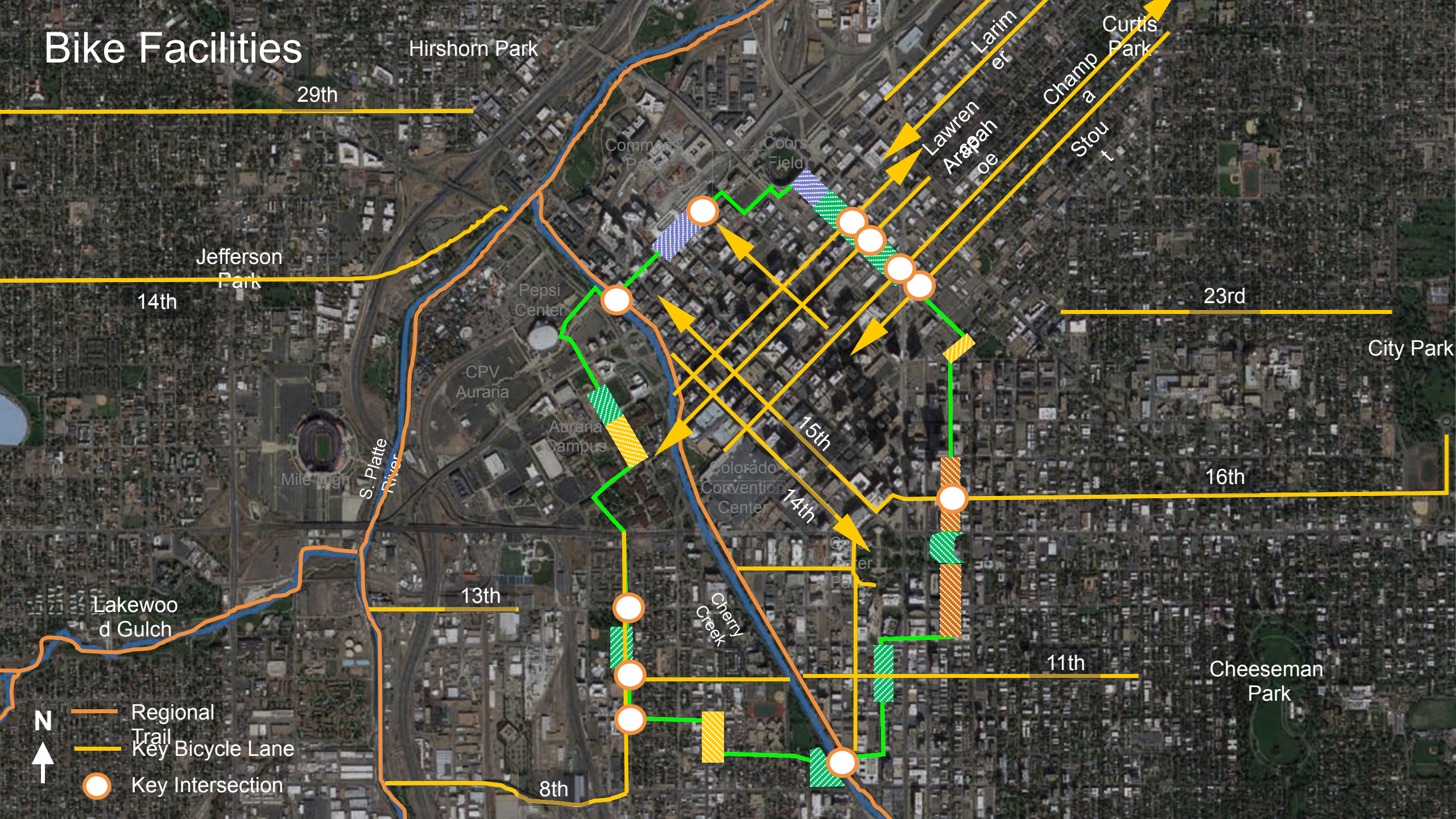


# Routes + Places



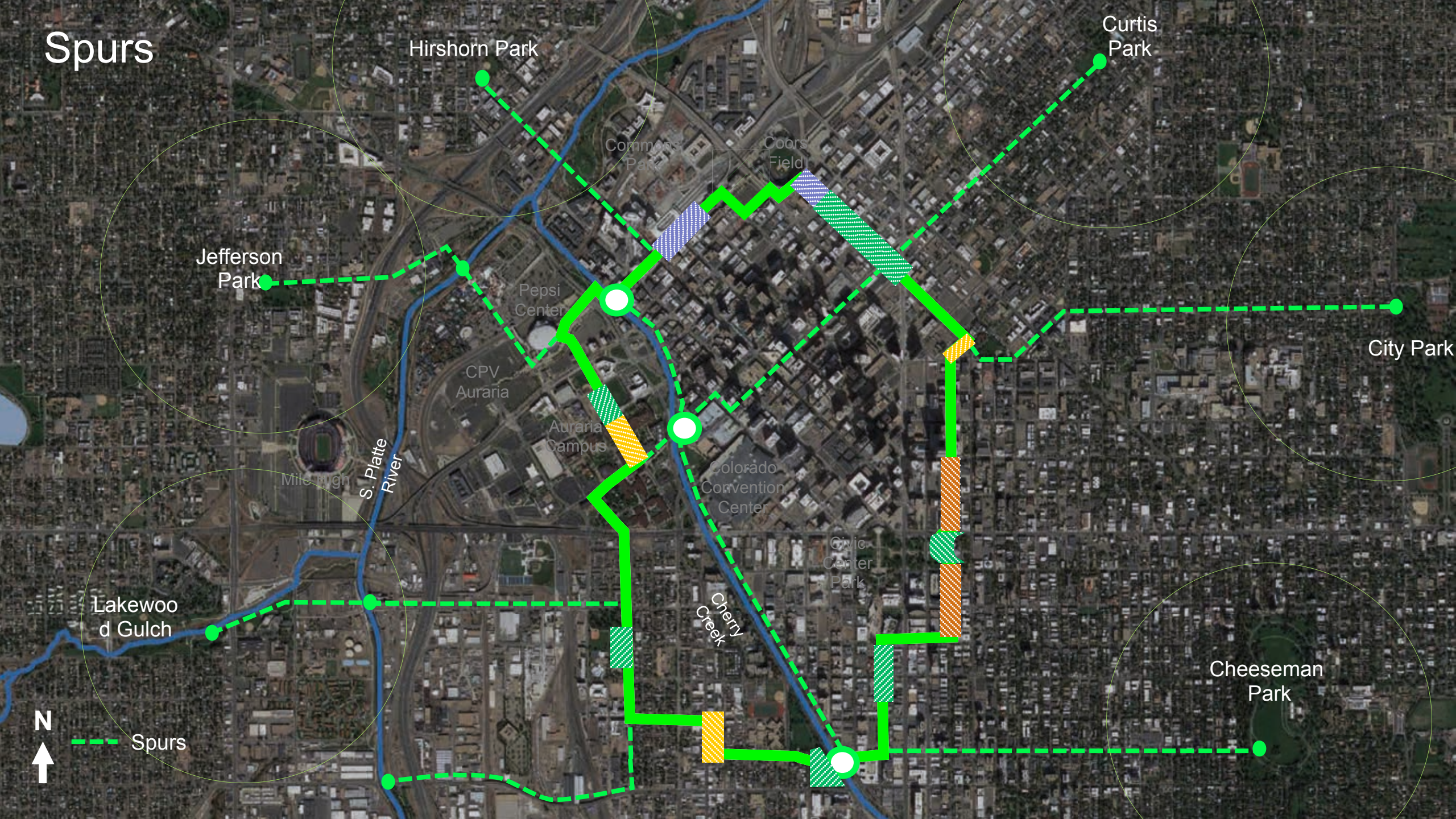


# Bike Facilities





# Spurs





# Area 1: LoDo



Create Shared Street / woonerf from 15th to 19<sup>th</sup>.

Extend plaza character across Wynkoop between 16th and 18<sup>th</sup>.

Create wider pedestrian / storefront zone at south side.

The Loop goes 'quiet' through this zone.

Requires more detailed transportation and parking study.





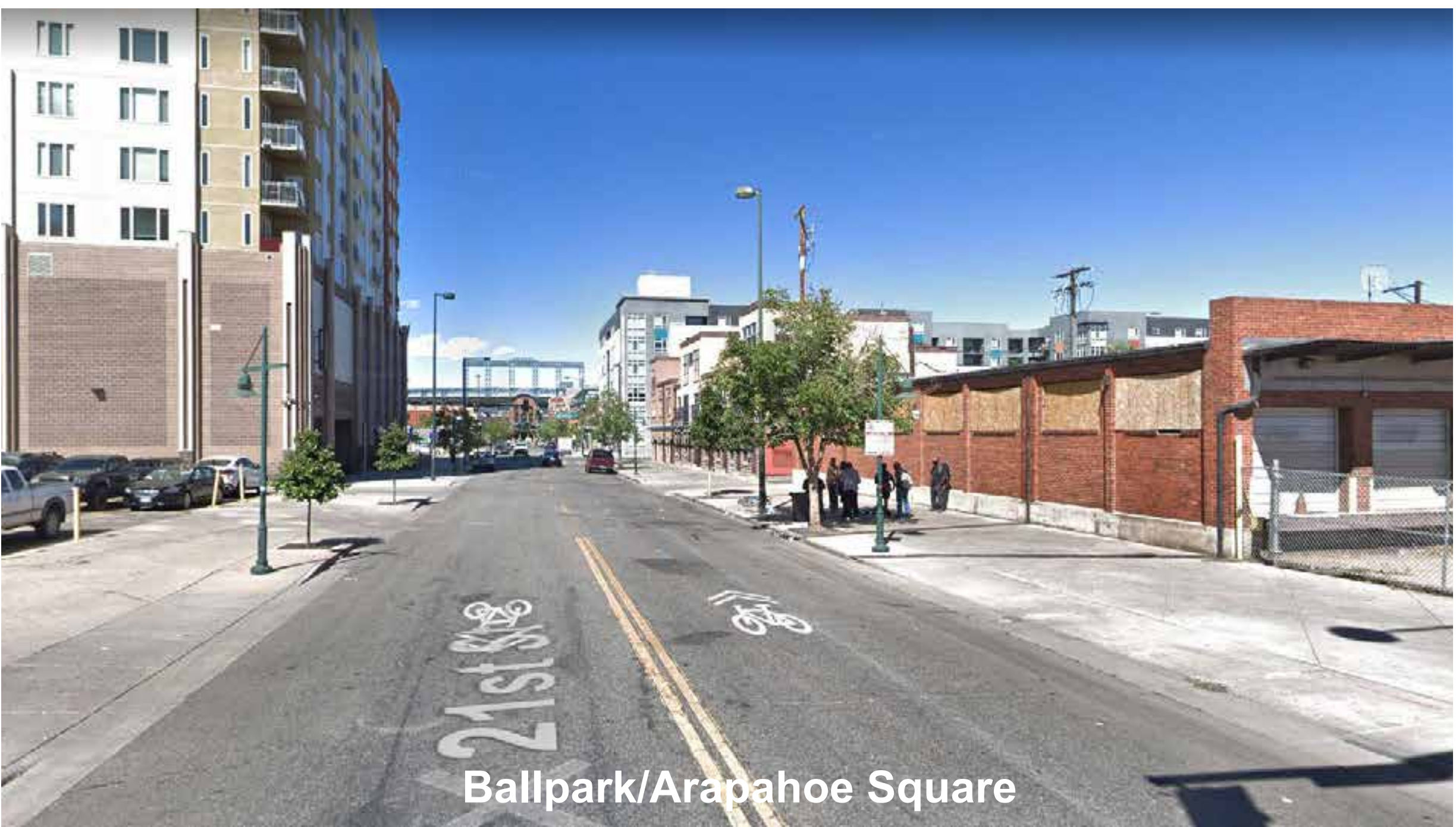
Lower Downtown





Lower Downtown





Ballpark/Arapahoe Square





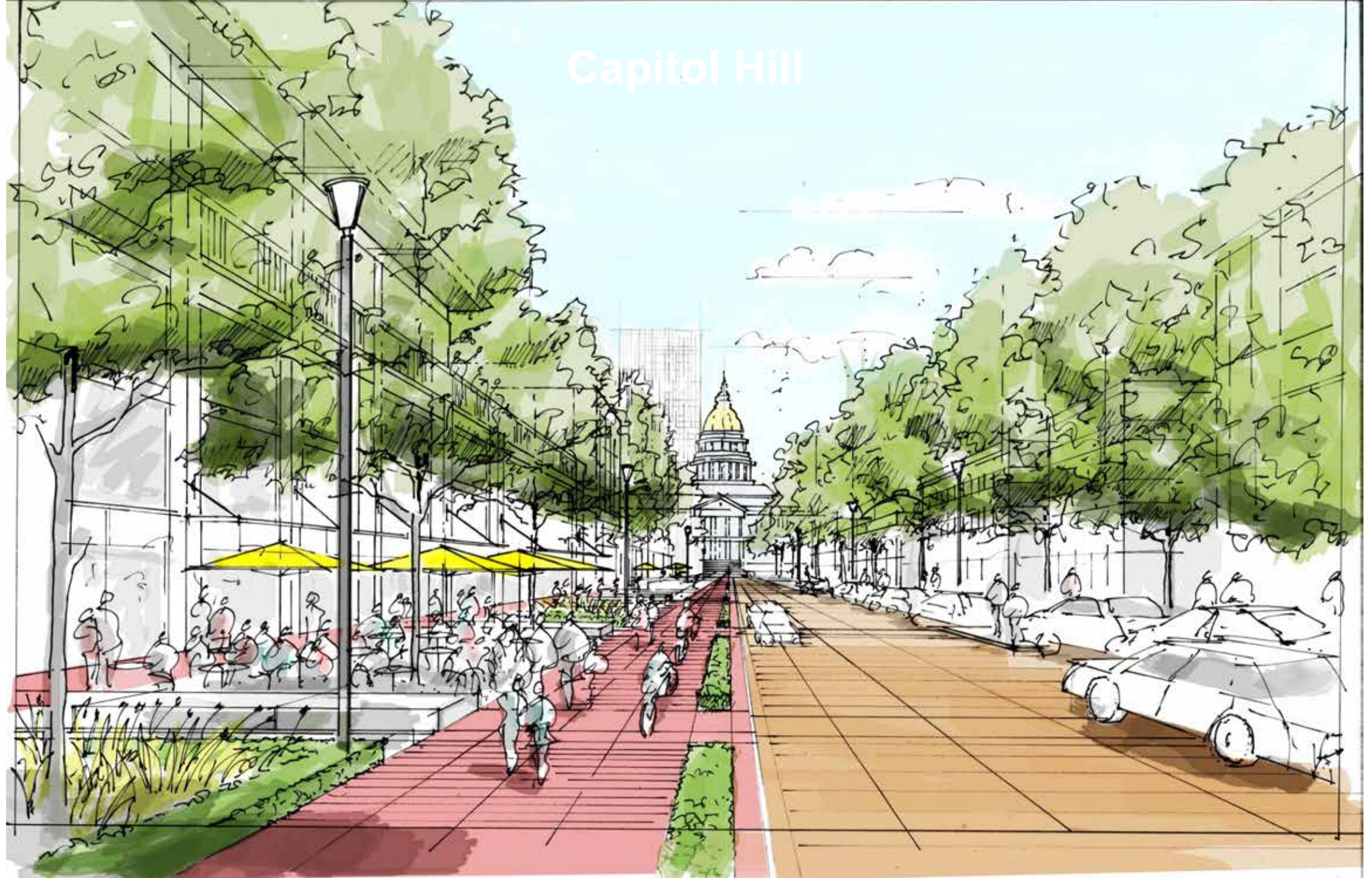




Capitol Hill



# Capitol Hill







Golden Triangle



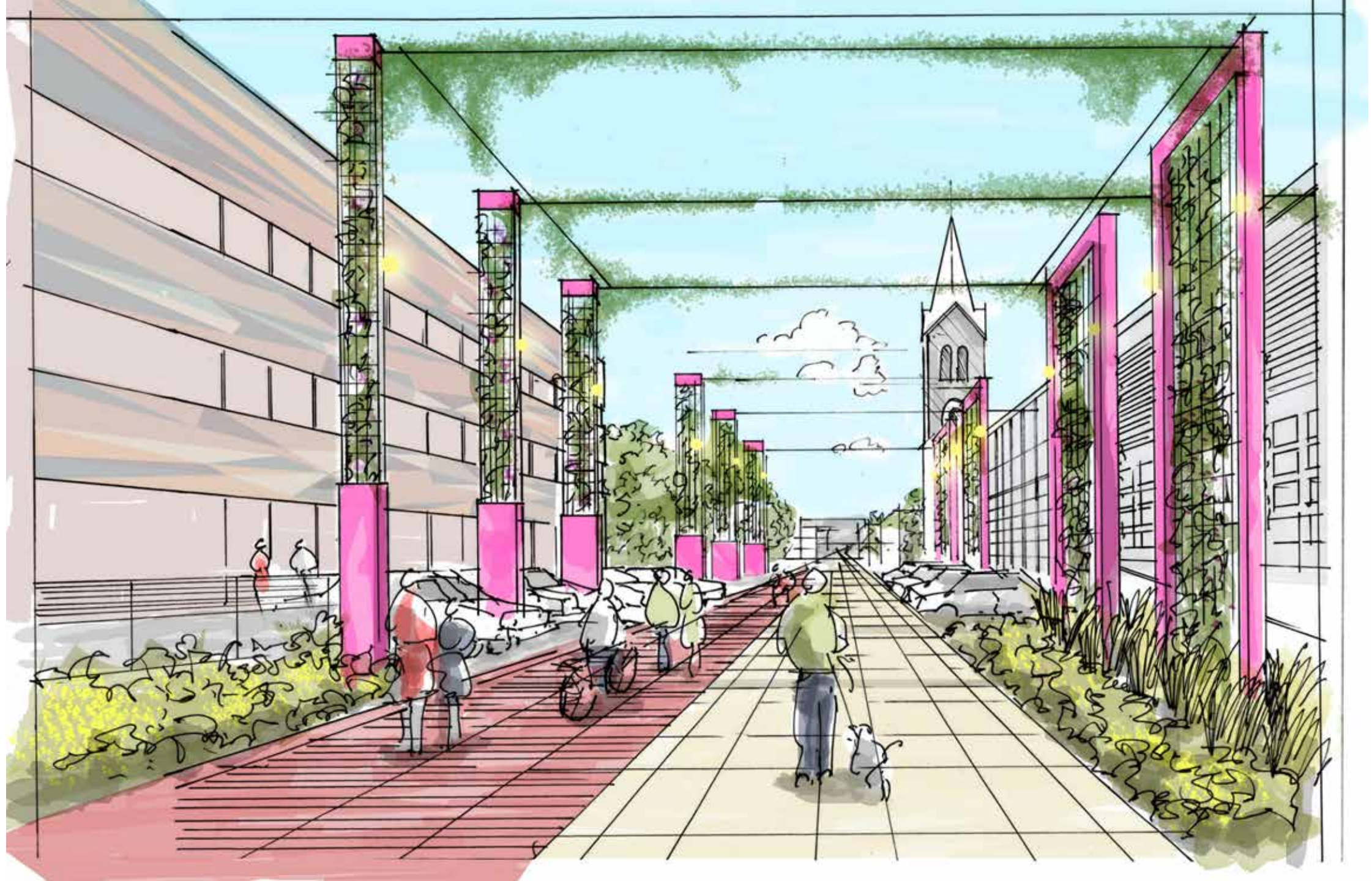




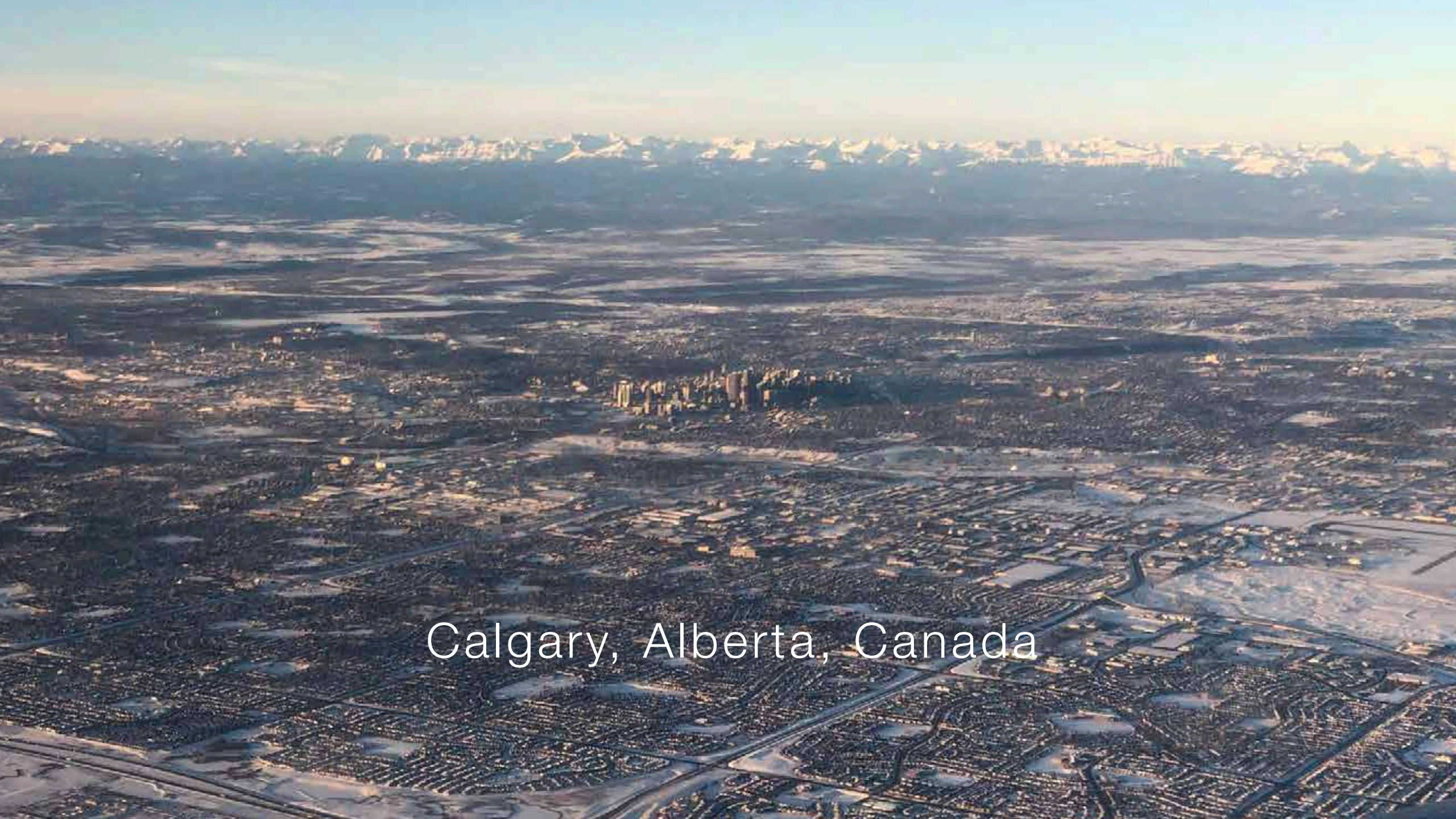


Auraria Campus









Calgary, Alberta, Canada



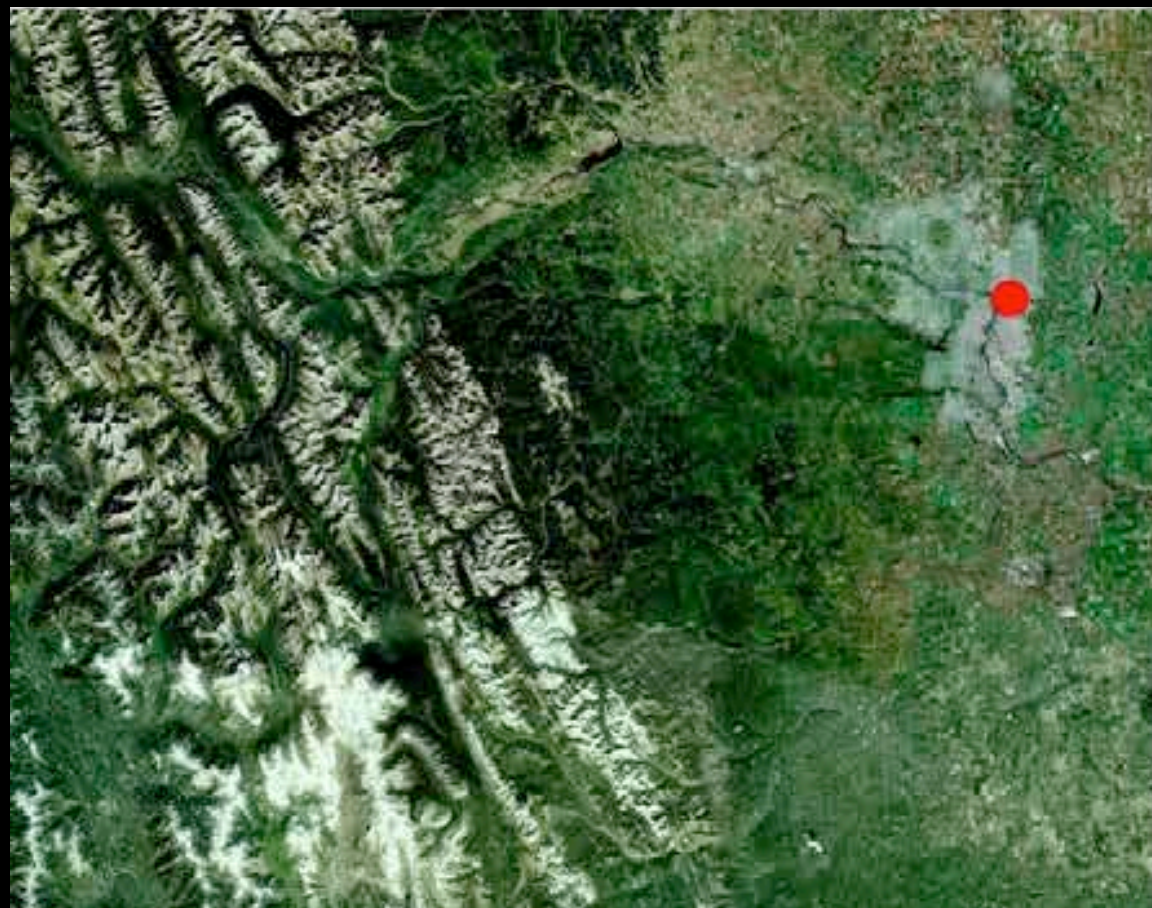


St. Patrick's Island

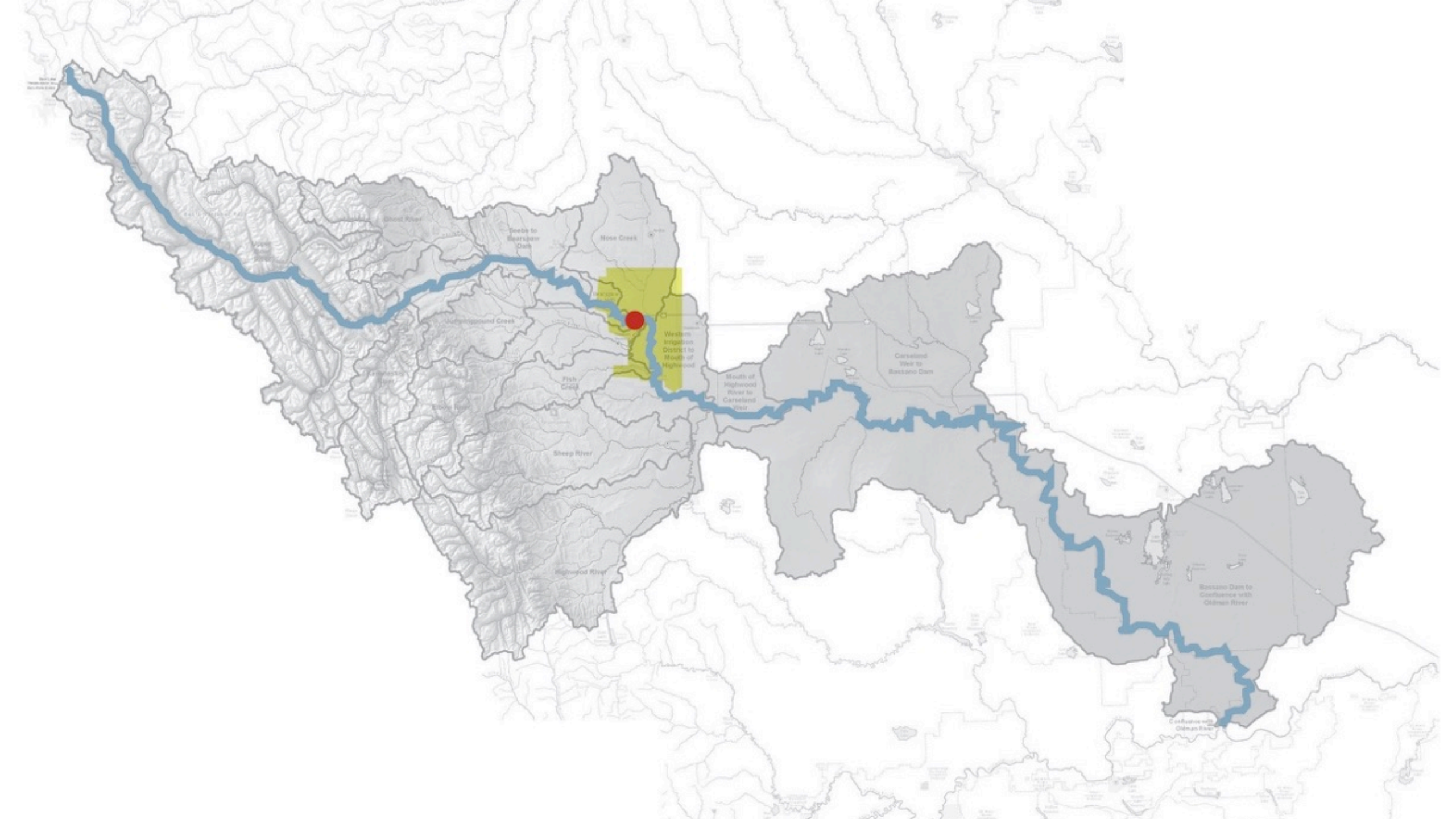




















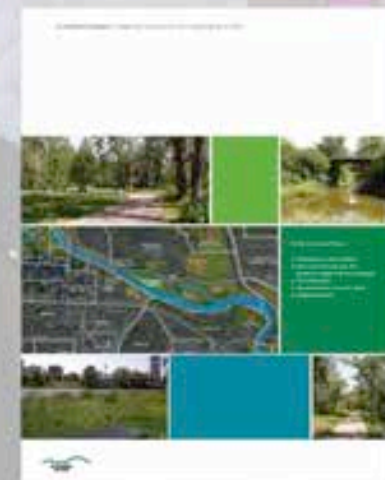








## COMMUNITY ENGAGEMENT





# BioBlitz



## ORGANIZATIONAL GUIDE

Connecticut State Museum of Natural History @ UConn • 1









**Birds**

Canada Goose	Lichen
Mallard	Lichen
Common Goldeneye	Lichen
Common Merganser	Lichen
Osprey	Lichen
Downy Woodpecker	Unidentified - to be determined
Rock Pidgeon	Unidentified
Black-Billed Magpie	Unidentified
American Crow	Unidentified
Tree Swallow	Unidentified
Thrush	Unidentified
House Wren	Unidentified
Robin	Unidentified
Starling	Unidentified
Yellow Wwarbler	Unidentified

**Rose-Breasted Grosbeak**

Chipping Sparrow	Grey Squirrel
Red-Winged Black Bird	Human Being
Cowbird	Deer Mouse
Baltimore Oriole	Meadow vole
Great Horned Owl	Beaver

**Hairy Woodpecker**

Tennessee Warbler	<b>Plants</b>
House Sparrow	Common Horsetail
Spotted Sandpiper	White Spruce
Northern Flicker	Blue Spruce
Red-tailed Hawk	American Elm
Rough-legged Hawk	Spring/River Birch
Gull	White Goosefoot/Lab's Quarters
Least Flycatcher	Balsam Poplar
Song Sparrow	Hybrid Poplar
	Western Sandbar Willow

**Mosses and Lichens**

Moss	Crack Willow
Moss	Yellow Willow
Moss	Field Pennycress/Stickweed
Moss	Saskatoon Serviceberry
Moss	Peking Cotoneaster
Moss	Chokecherry
Moss	European Chokecherry
Moss	Prickly Rose
Moss	Eur. Mountain-Ash, Rowanberry
Moss	Siberian Pea shrub
Moss	Pygmy Caragana
Moss	Black Medick
Moss	Alfalfa
Moss	Yellow Sweetclover
Moss	Bird/Cow/Tufted Vetch
Lichen	American Vetch

**American Silverberry/Wolf-willow**

Canada Buffaloberry/Soapberry	American Silverberry/Wolf-willow
Red-osier Dogwood	Canada Buffaloberry/Soapberry
Ash-leaved/Manitoba Maple	Red-osier Dogwood
Wild Bergamot	Ash-leaved/Manitoba Maple
Butter-and-eggs	Wild Bergamot
Common Plantain	Butter-and-eggs
Green Ash	Common Plantain
Creeping Bellflower/garden Bluebell	Green Ash
Northern Bedstraw	Creeping Bellflower/garden Bluebell
Mountain/Twining honeysuckle	Northern Bedstraw
Tatarian honeysuckle	Mountain/Twining honeysuckle
Western Snowberry/Buckbrush	Tatarian honeysuckle
Common Yarrow	Western Snowberry/Buckbrush
Lesser/Common Burdock	Common Yarrow
Common Wormwood/Absinthe	Lesser/Common Burdock
Creeping/Canada Thistle	Common Wormwood/Absinthe
Bull Thistle	Creeping/Canada Thistle
Giant/Tall Goldenrod	Bull Thistle
Smooth Blue Aster	Giant/Tall Goldenrod
Common Dandelion	Smooth Blue Aster
Baltic/Wire Rush	Common Dandelion
Unknown black-top Sedge	Baltic/Wire Rush
Awnless/smooth Brome	Unknown black-top Sedge
Reed Canary Grass	Awnless/smooth Brome
Canada Bluegrass	Reed Canary Grass
Star-flowered Solomon's Seal	Canada Bluegrass
Rough-Fruited Mandarin	Star-flowered Solomon's Seal
Early Blue Violet	Rough-Fruited Mandarin
Northern Bog Violet	Early Blue Violet
Strawberry	Northern Bog Violet
Apple	Strawberry
Sweet grass	Apple
Common lilac	Sweet grass
Cinquefoil	Common lilac
Western Dock	Cinquefoil

**Arthropods/Insects**

Aerial Yellowjacket	Arthropods/Insects
Wasp	Aerial Yellowjacket
Wasp	Wasp
Tricolored bumblebee	Wasp
Perplexing bumblebee	Tricolored bumblebee
Sweat Bee	Perplexing bumblebee
Water beetle 1	Sweat Bee
Water beetle 2	Water beetle 1
Water beetle 3	Water beetle 2
Water beetle 4	Water beetle 3
Water beetle 5	Water beetle 4

**Water beetle 6**

Corixidae	Water beetle 6
Corixidae	Corixidae
Corixidae	Corixidae
Lygaeidae	Corixidae
Lygaeidae	Lygaeidae
Lygus	Lygaeidae
Gerridae	Lygus
Gerridae	Gerridae
Cicadellidae	Gerridae
Cicadellidae	Cicadellidae
Cicadellidae	Cicadellidae
Cicadellidae	Cicadellidae
Aphididae	Cicadellidae
Miridae	Aphididae
Miridae	Miridae
Miridae	Miridae
Miridae	Miridae
Nabidae	Miridae
Pentatomidae	Nabidae
Notonectidae	Pentatomidae
Lepidoptera/Butterfly	Notonectidae
Lepidoptera	Lepidoptera/Butterfly
Lepidoptera	Lepidoptera
Lepidoptera	Lepidoptera
Baetidae	Lepidoptera
Baetidae	Baetidae
Baetidae	Baetidae
Psyllidae	Baetidae
Stratiomyidae	Psyllidae
Drosophilidae	Stratiomyidae
Chloropidae	Drosophilidae
Chloropidae	Chloropidae
Chironomidae	Chloropidae
Chironomidae	Chironomidae
Chironomidae	Chironomidae
Chironomidae	Chironomidae
Chironomidae	Chironomidae
Empididae	Chironomidae
Empididae	Empididae
Syrphidae	Empididae
Syrphidae	Syrphidae
Agromyzidae	Syrphidae
Agromyzidae	Agromyzidae
Muscidae	Agromyzidae
Muscidae	Muscidae
Muscidae	Muscidae

**Tipulidae**

Tipulidae	Tipulidae
Lauxaniidae	Tipulidae
Lauxaniidae	Lauxaniidae
Calliphoridae	Lauxaniidae
Ceratopogonidae	Calliphoridae
Lonchopteridae	Ceratopogonidae
Sepsidae	Lonchopteridae
Scathophagidae	Sepsidae
Phoridae	Scathophagidae
Tenthredinidae	Phoridae
Tenthredinidae	Tenthredinidae
Ichneumonidae	Tenthredinidae
Ichneumonidae	Ichneumonidae
Formicidae	Ichneumonidae
Formicidae	Formicidae
Formicidae	Formicidae
Formicidae	Formicidae
Braconidae	Formicidae
Braconidae	Braconidae
Chalcididae	Braconidae
Chrysomelidae	Chalcididae
Chrysomelidae	Chrysomelidae
Coccinellidae	Chrysomelidae
Coccinellidae	Coccinellidae
Coccinellidae	Coccinellidae
Staphylinidae	Coccinellidae
Staphylinidae	Staphylinidae
Elmidae	Staphylinidae
Carabidae	Elmidae
Carabidae	Carabidae
Carabidae	Carabidae
Carabidae	Carabidae
Carabidae	Carabidae
Dytiscidae	Carabidae
Dytiscidae	Dytiscidae
Dytiscidae	Dytiscidae
Dytiscidae	Dytiscidae
Dytiscidae	Dytiscidae
Dytiscidae	Dytiscidae
Gyrinidae	Dytiscidae
Curculionidae	Gyrinidae
Curculionidae	Curculionidae
Curculionidae	Curculionidae
Curculionidae	Curculionidae
Halplidae	Curculionidae











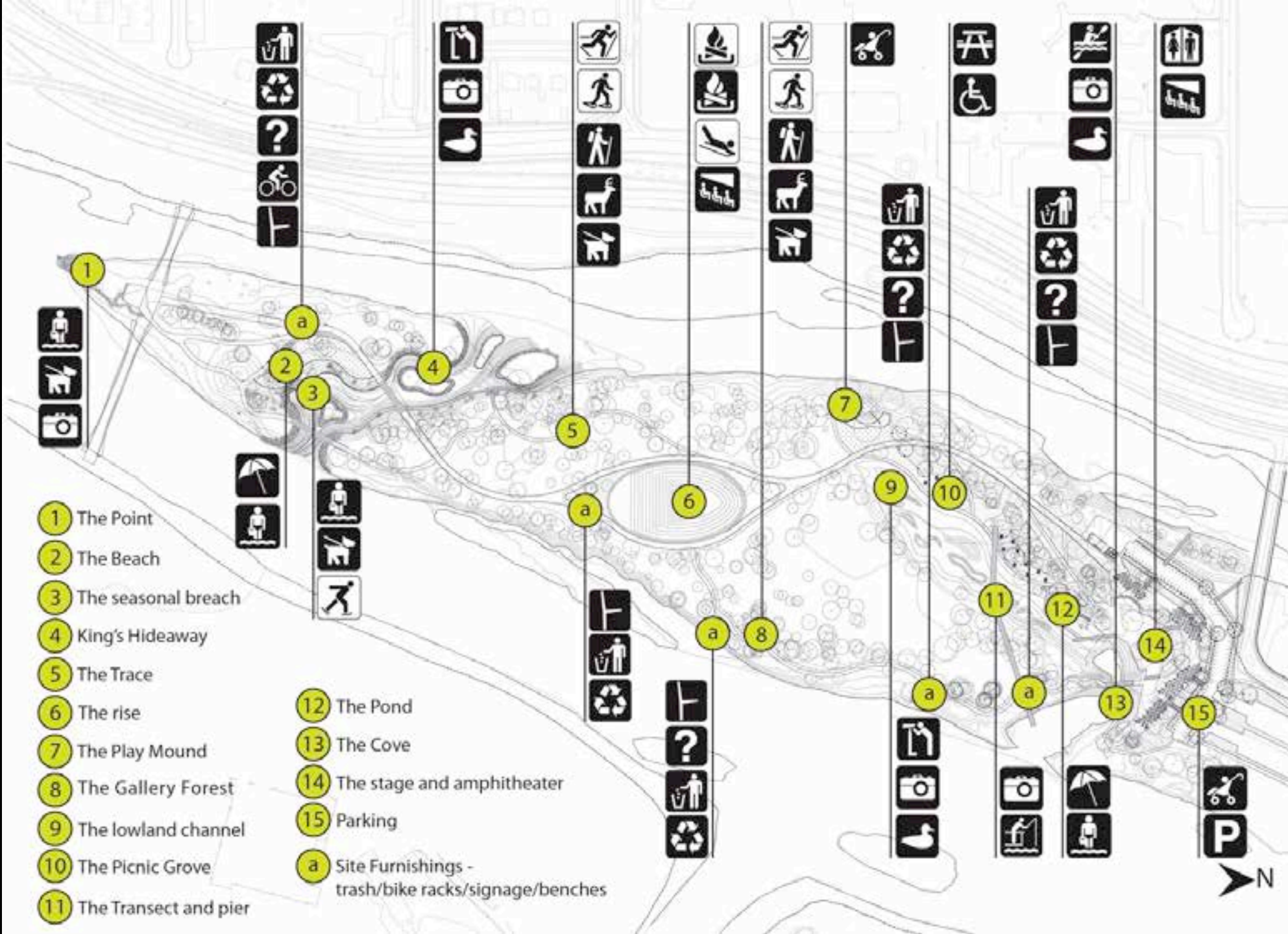
































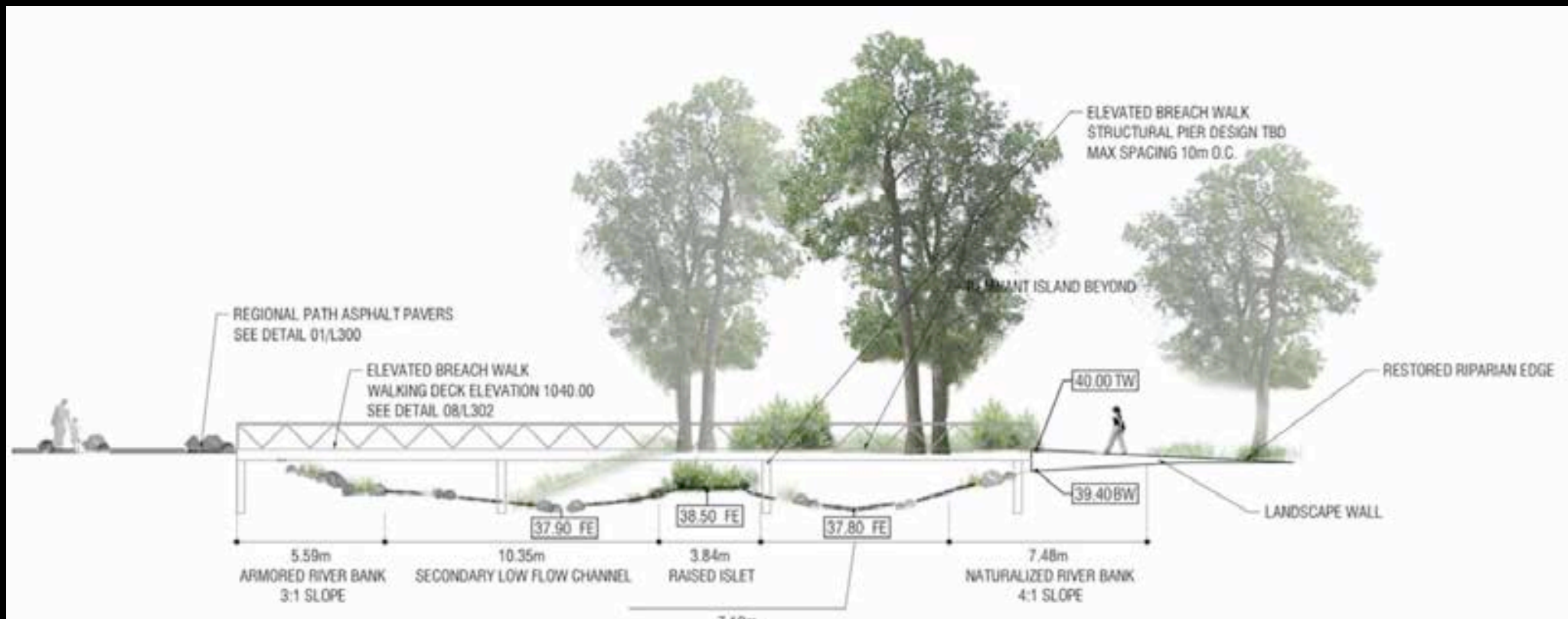
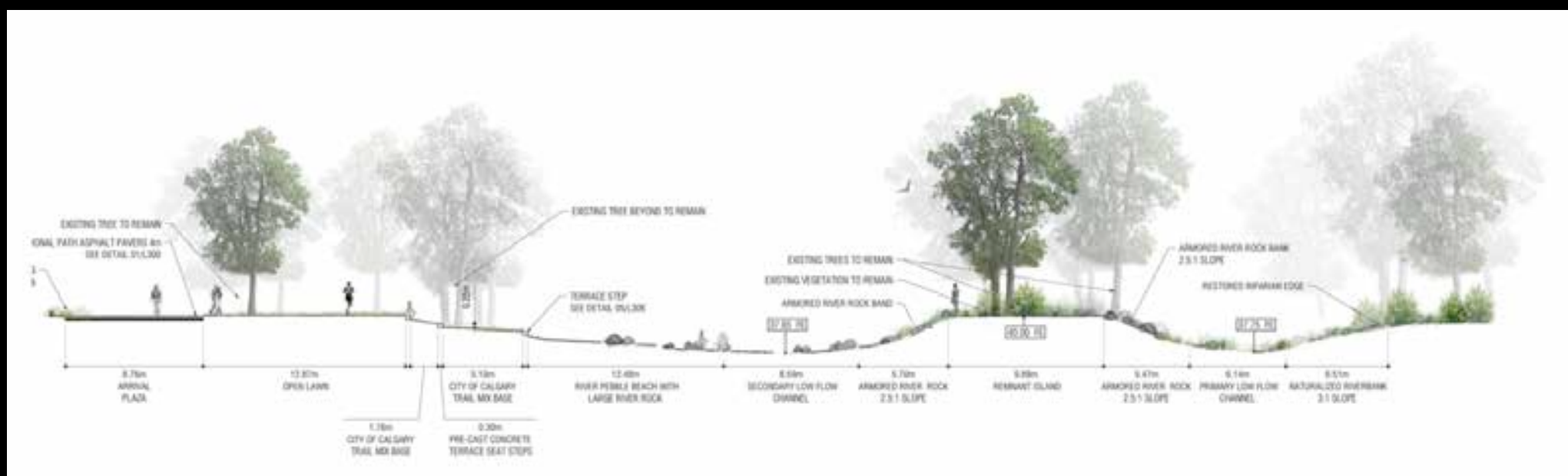




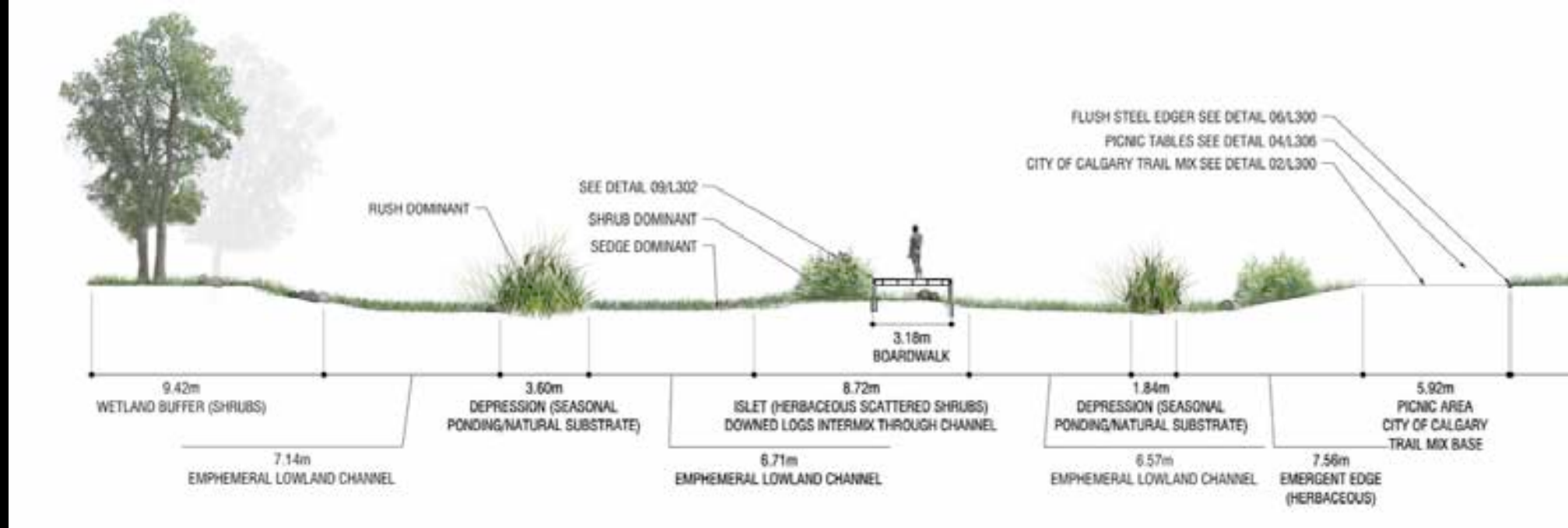






















































































CIVI  
TAS

**Mark Johnson**

**[mjohnson@civitasinc.com](mailto:mjohnson@civitasinc.com)**



**> 90% of Global Health Expenditure:**

**Pathogenic Research and Care**



**> 90% of Global Health Expenditure:**

**Pathogenic Research and Care**

**11% of World Mortality results from  
Pathogens**



**< 5 % of Global Health Expenditure:**

**Well-Being Research and Care**



**< 5 % of Global Health Expenditure:**

**Well-Being Research and Care**

**>70 % of World Mortality results from  
well-being factors**