RESILIENT DANBURY

Public Workshop #2



WHAT IS "RESILIENT DANBURY"? DANBURY



STRATEGY

The Mayor is leading an initiative with the Departments of Emergency Management, Engineering, Public Works, health organizations, and the community to develop strategy and actions.

PILOT PROJECT

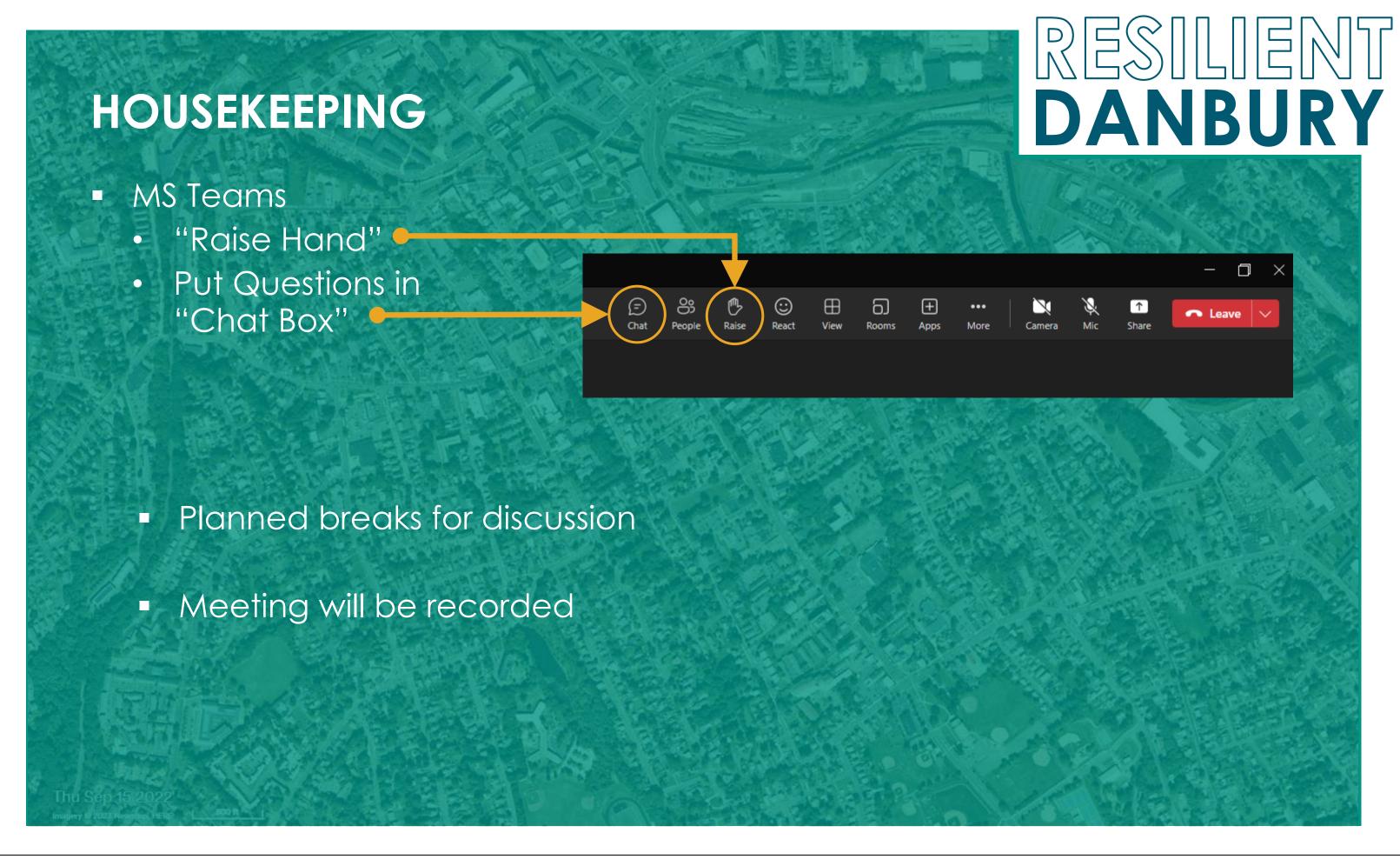
- Current project in the East Ditch Watershed to reduce flooding and heat risk.
- Implemented by the City, UCONN CIRCA, and the consultant team.

This pilot project is one of many projects being developed by the City as they prepare for future conditions.















MEETING AGENDA



Welcome and Introduction 10 mins

Background 20 mins

- How did we get here
- Path toward resilience

Path Toward Resilience 45 mins

Adaptation Options

Feedback and Next Steps 15 mins

- o Discussion
- Schedule and Next Steps









INTRODUCTIONS

DANBURY

Project Team



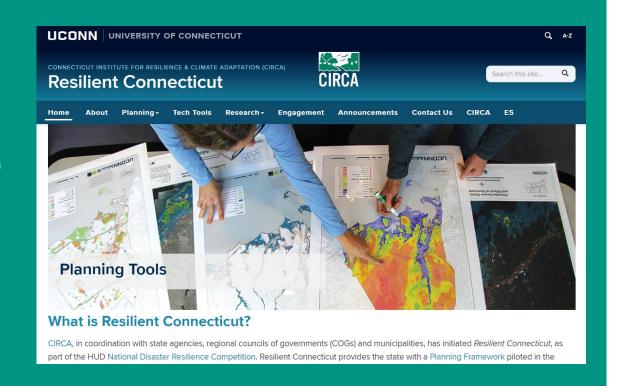
- CIRCA
 - David Murphy Director of Resilience Engineering
 - John Truscinski Director of Resilience Planning



- **City of Danbury**
 - Matt Cassavechia Director of Emergency Management and Emergency Medical Services
 - Antonio Iadarola Director of Public Works / City Engineer



- **Consultant Team**
 - Fuss & O'Neill
 - Dewberry
- Citizen and Technical Advisory Committee (CTAC)
- **The Community**











FUSS & O'NEILL AND DEWBERRY TEAM

RESILIENT DANBURY



Erik Mas, PE Project Director



Elsa Loehmann, PE, WEDG Project Manager



Ian Law, RLA
Community Engagement



Sara Morrison, MLA, WEDG Climate Adaptation Design



Akta Patel, PE Assistant Project Manager



Sage Hardesty
Project Engineer



Scott Choquette
Heat Analysis

Citizen and Technical Advisory Committee Members



Cpt Thomas Corbett Community Emergency Response Team, Team Coordinator

O Sharon B. Calitro, AICP City of Danbury Planning and Zoning, Director

Susan M. Tomanio
 City of Danbury Elderly Services, Director

Kara Prunty, MPA, MPH City of Danbury Health and Human Services, Director

Jeff Rieck
 City of Danbury Housing Authority, Executive Director

Tim Nolan
 City of Danbury Highway Services, Superintendent

Warren Levy
 City of Danbury City Council - At Large, Council Member

Joseph Cavo
 City of Danbury City Council - At Large, Council Member

Vinny DiGilio
 City of Danbury City Council - 2nd Ward, City Council President, Council Member

Duane E. Perkins City of Danbury City Council - 5th Ward, Council Member

Fred Visconti
 City of Danbury City Council - 5th Ward, Council Member

Paul T. Rotello
 City of Danbury City Council - 6th Ward, Council Member

O Dr. Derek DeLeon Nuvance Health , Chief Academic Officer

Joseph DaSilva
 Affordable Housing Development, Developer

Marlene Moranino
 CT Institute for Communities Greater Danbury Community Health Center, Board Chair

Bill Diamond
 Danbury Ice Arena

Jenny Guerra
 Danbury War Memorial

Mike Seelig Danbury School District, Superintendent









MEETING AGENDA



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10 mins

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45 mins

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RESILIENT CONNECTICUT PHASE II

RESILIENT DANBURY

Resilient Connecticut Phase II

Regional Adaptation/Resilience Opportunity Areas

Name: Downtown Danbury

Location: Danbury

Considerations	Characteristics of Area
Flood Vulnerability	
Heat Vulnerability	
Social Vulnerability	

The center of Danbury is characterized by zones of shared risk associated with the confluence of Padanarum Brook, Kohanza Brook, and the Still River. Despite many flood risk reduction projects undertaken over decades, TOD and planned development areas are located in close proximity to – or within – these zones of shared risk. Numerous critical facilities, historic resources, and the terminus of the MetroNorth Danbury line are also located in the area. Downtown Danbury is a regional center for northern WestCOG.

Almost all of the downtown area is moderately vulnerable to heat, with the highest vulnerable area concentrate along route 53 commercial properties. Presenting few opportunities for shade or street trees, the area has high heat emittance. In addition, there is high social sensitivity throughout the area.

City Hall
Fire headquarters
Hose Co. 5, 6, 7, and 9
Danbury Hospital
Danbury Health and Housing Dept.
Western CT State College Police

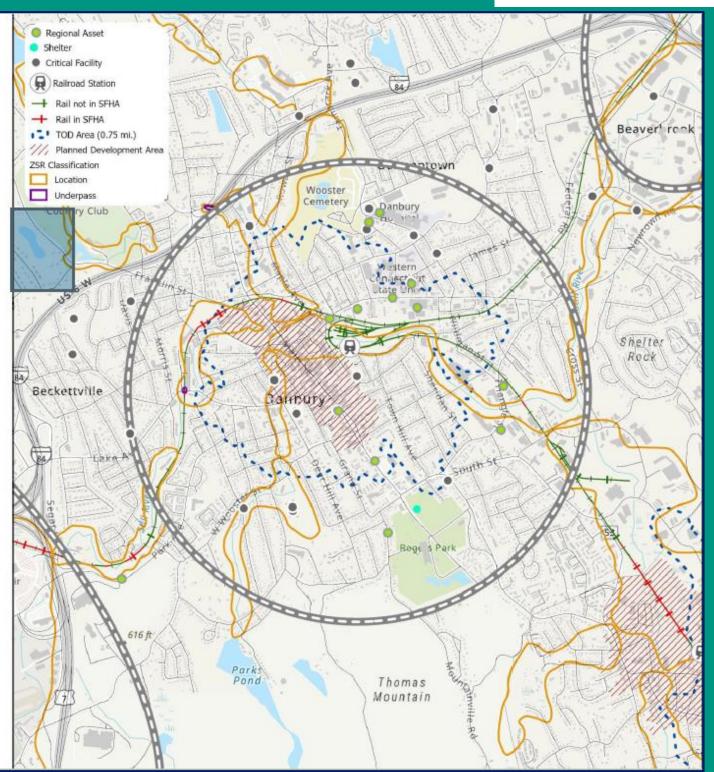
Assisted living facilities War Memorial Substation Power plant Museums













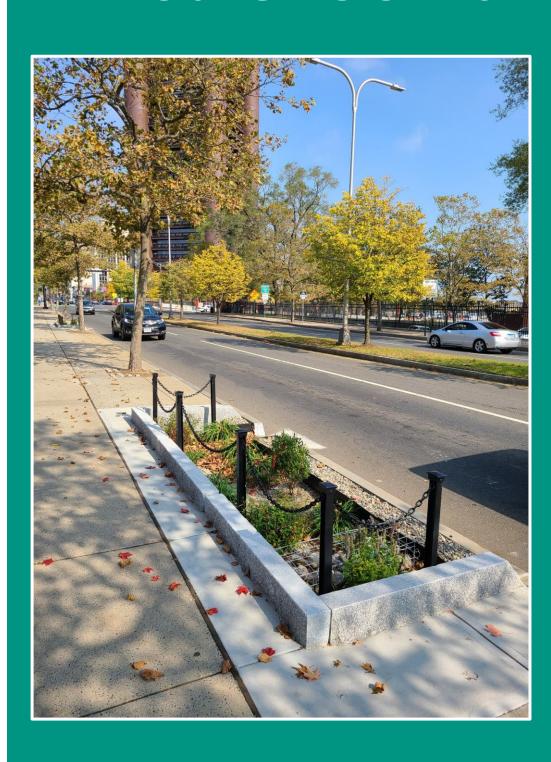






RESILIENT CONNECTICUT PHASE III PROJECT GOALS





IDENTIFY RESILIENCY MEASURES

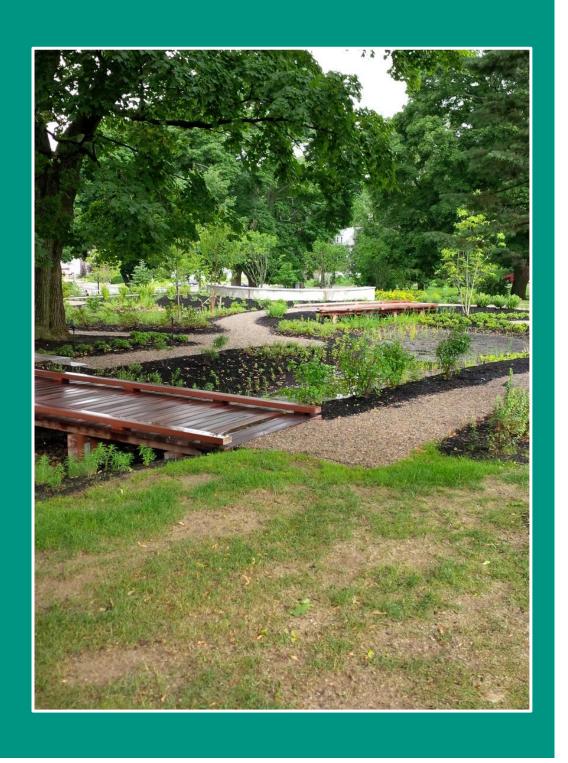
- Improve flood and heat resilience
- Leverage Nature-Based Solutions

COMMUNITY CO-BENEFITS

Collaborate with stakeholders in downtown Danbury to select strategies and projects

Develop conceptual Designs

Position projects for funding







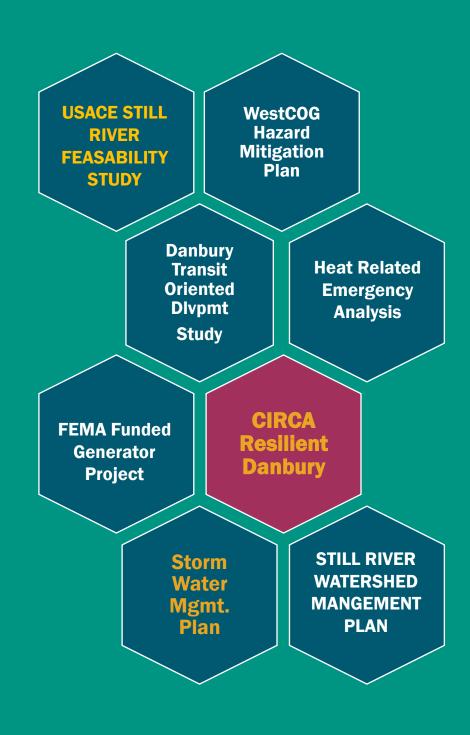
RESILIENT DANBURY—IN CONTEXT WITH THE BIGGER PICTURE



o **City-wide focus** on flood reduction and heat mitigation.

Strategy:

- Analysis of flood-prone areas
- Analysis of heat related injuries
- Securing grants and funding for solutions
- Departments working together:
 Emergency Management, Engineering,
 Public Works, and others
- o **Coordinated** efforts across sectors







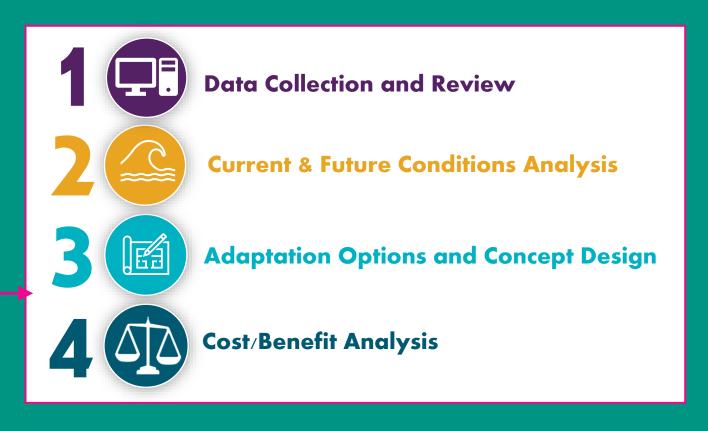


RESILIENT DANBURY PHASE III

RESILIENT DANBURY

- Understand and Communicate Relative Risks
- Engage the City and Community to Create the Vision
- Develop Alternatives Based on Risk and Cost
- Create a Plan that Prioritizes Implementable Actions & Positions Projects for State/Federal Funding

WE ARE HERE

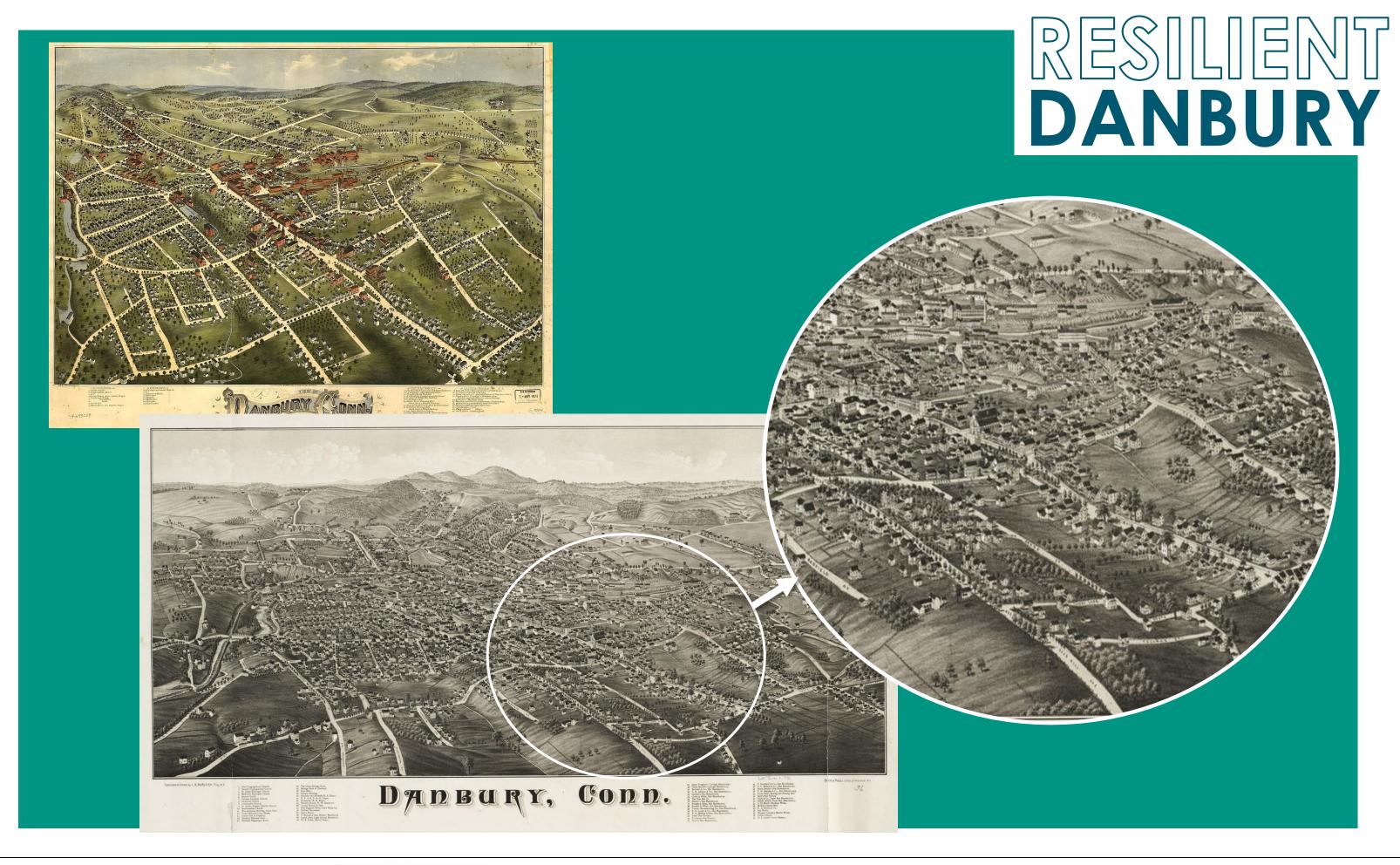




















WE WILL NEVER ELIMINATE FLOODING!

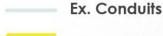
We can reduce depth, duration, and extent.

PRIORITIES

- 1. Address Critical Transportation and Resilience Corridors
- 2. Reduce Flood Risk and Coordinate with **Redevelopment Efforts**
- 3. Reduce the Impacts of **Extreme Heat**
- 4. Integrate Nature-Based Solutions + Green Infrastructure with City Green and Resilience Initiatives.

LEGEND

Ex. Outfalls



City of Danbury Parcels





Watershed Boundary



Roadways

Library/ Post Office/City Hall UNITED STATES POST OFFICE

- 2) PUBLIC LIBRARY
- (3) CITY HALL

Religious Center

- 1 UNIVERSAL CHURCH
- 2) ALL NATION BAPTIST CHURCH
- 3) ST. JAMES EPISCOPAL CHURCH

- (3) EMANUEL ASSEMBLY-GOD CHURCH
- GREATER MERCY TEMPLE CHURCH
- SACRED HEART CHURCH
- (9) SEVENTH DAY ADVENTIST CHURCH

Community Center

- 1 LEBANON-AMERICAN CLUB
- 2) ECUADORIAN CIVIC CENTER
- 3) DANBURY COMMUNITY CENTER
- OUR LADY OF APARECIDA PARISH

Affordable Housing

- AFFORDABLE HOUSING
- 2) PROPOSED AFFORDABLE HOUSING

Healthcare Facility & Senior Center

- (1) COMMUNITY HEALTH CENTER OF DANBURY
- 2) PALACE VIEW SENIOR HOUSING
- (3) GREATER DANBURY COMMUNITY HEALTH CENTER
- PHARMACY (WALGREENS)
- (3) PLANNED PARENTHOOD
- (3) GREATER DANBURY COMMUNITY HEALTH CENTER
- (1) ELMWOOD HALL SENIOR CENTER
- (3) DANBURY REGIONAL WIC NUTRITION PROGRAM / OLD JAIL

School/ Educational Centers

- 2) ST. PETER'S SCHOOL
- 3) SOUTH STREET SCHOOLS
- SACRED HEART SCHOOL
- (3) HEAD START CENTER

Public Open Space

- 1 DANBURY CITY CENTER GREEN
- 2) DANBURY SKATE PARK
- 3 ELMWOOD PLACE

State of Connecticut

- 1 FAIRFIELD COUNTY COURTHOUSE
- 2) TRAIN STATION

Other

- 2) MUSEUM AND HISTORICAL SOCIETY
- (4) CONNECTICUT LIGHT & POWER CO
- BECKERIE & CO. FIRE ENGINE 9





EXISTING DRAINAGE SYSTEM:

DANBURY

FLOOD EXTENTS FOR CURRENT 100% (1-yr), 10% (10-yr)

& 1% (100-yr) ANNUAL CHANCE FLOOD EVENTS

The maximum flooding extents for each recurrence interval were determined through PCSWMM modeling. The flood extents for the 100% (1-year), 10% (10-year), and 1% (100year) annual chance of exceedance storms under current climate conditions are shown to the right.

LEGEND Current 1% Annual Chance Flood Current 10% Annual Chance Flood Current 100% Annual Chance Flood **Watershed Boundary** Roadways

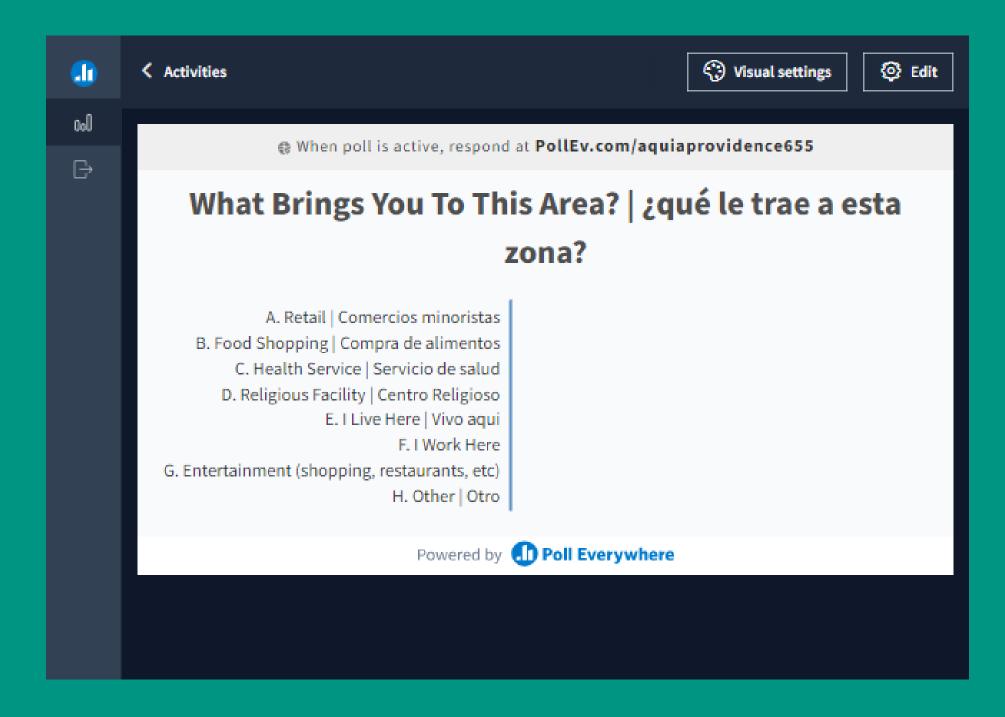




RESILIENT DANBURY

https://tinyurl.com/water0726















https://tinyurl.com/water0726



Respond at PollEv.com/aquiaprovidence655

What Is The The Biggest Threat To Your Usage Of This Area? | ¿cuál es la mayor amenaza para su uso de esta zona?

A. Too Hot | Demasiado calor

B. Flooding | b. Inundación

C. Lack of Pedestrian Access | Falta de acceso para peatones

D. Lack of Car Access/Parking | Falta de acceso para coches/ aparcamiento

E. Other | Otro

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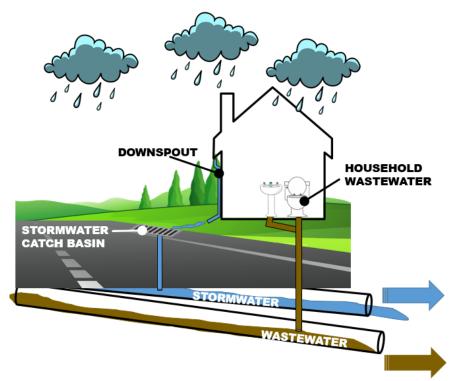






WHAT IS GREEN INFRASTRUCTURE?





STORMWATER DRAINS to STREAMS, PONDS, or WETLANDS

WASTEWATER FLOWS to CITY TREATMENT PLANT for PROCESSING

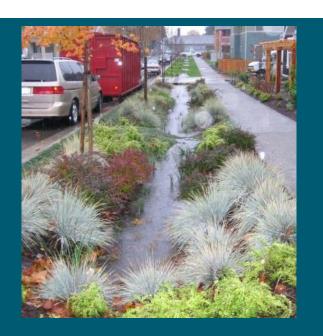
Green infrastructure refers to systems and practices that **reduce** stormwater **runoff** through use of vegetation, soils, and natural processes to manage water and create healthier urban and suburban environments. These practices **capture**, **manage**, **and/or reuse rainfall** close to where it falls, reducing stormwater runoff and keeping it out of drainage systems and receiving waters.



Rain Gardens: Small, shallow sunken areas of planting that collect stormwater runoff from routes, streets, and sidewalks. Rain gardens are designed to mimic the natural flow and infiltration of stormwater.



Treebox Filters: Treebox filters are often found along sidewalks, street curbs, and car parks. The features accommodate a low volume of water.



Roadside Bioswales:
Bioswales are often found along road curbs and parking lots and use vegetation or mulch to slow and filter stormwater flow.



Underground Storage and Detention Systems:
Underground systems are an efficient way to store, detain, and infiltrate stormwater runoff. The land above can be used for parking, parks, or other

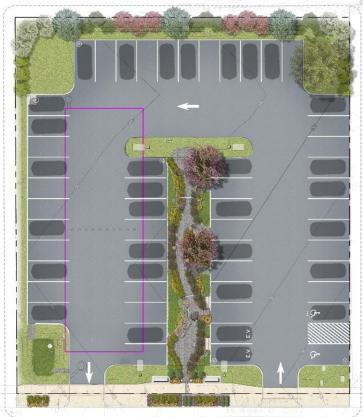
BENEFITS OF GREEN INFRASTRUCTURE



- Increases flood resiliency
- Improves water quality
- Improves air quality
- Reduces streambank erosion
- Sequester carbon

- Adds aesthetic interest
- Contributes to overall economic vitality
- Helps reduce energy consumption
- Improves property values
- Promotes adaptation to climate change











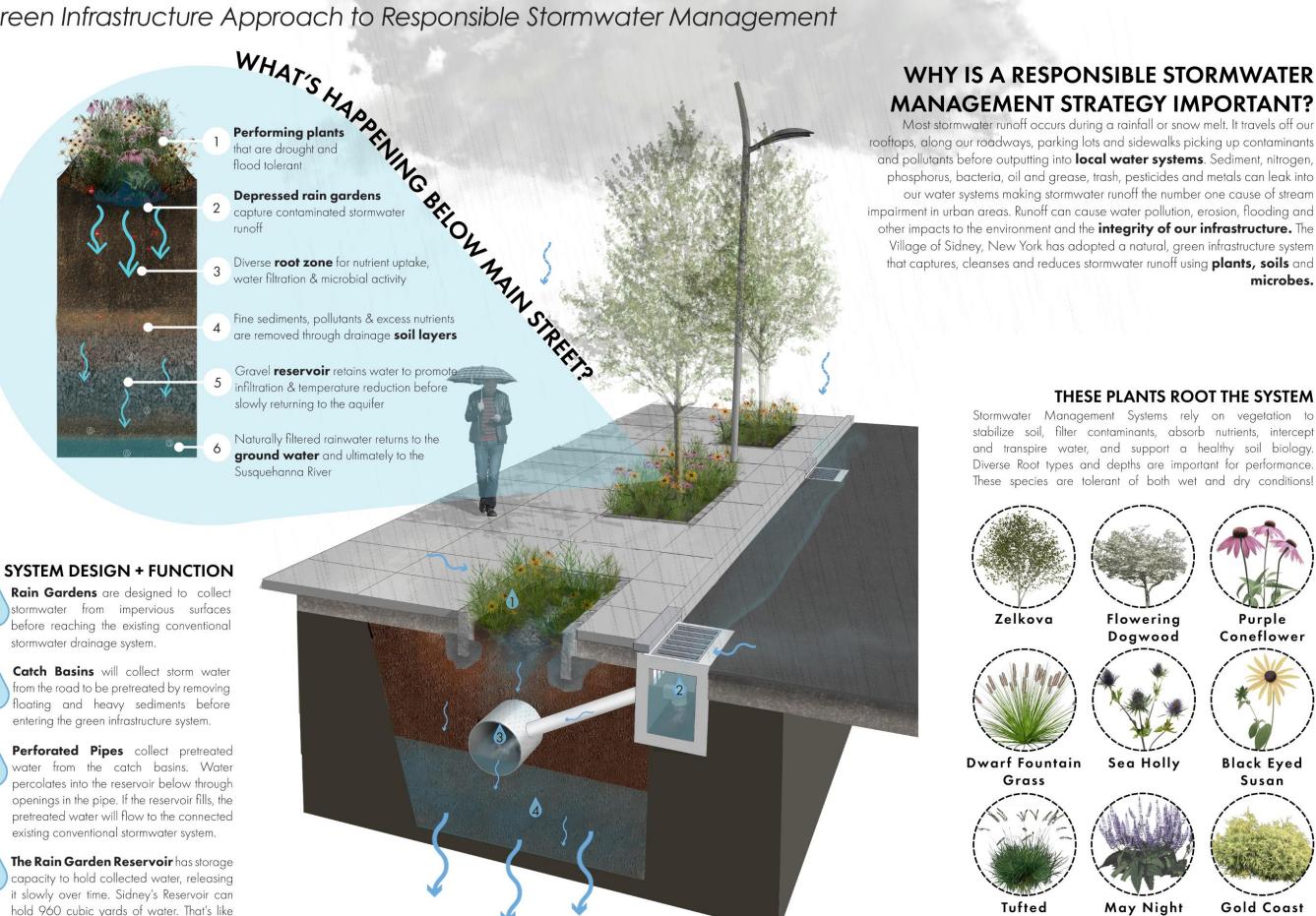




STORMWATER ON MAIN ST.

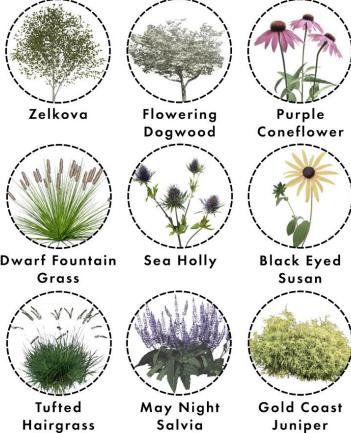
Green Infrastructure Approach to Responsible Stormwater Management

filling 193,895 one gallon jugs of water!



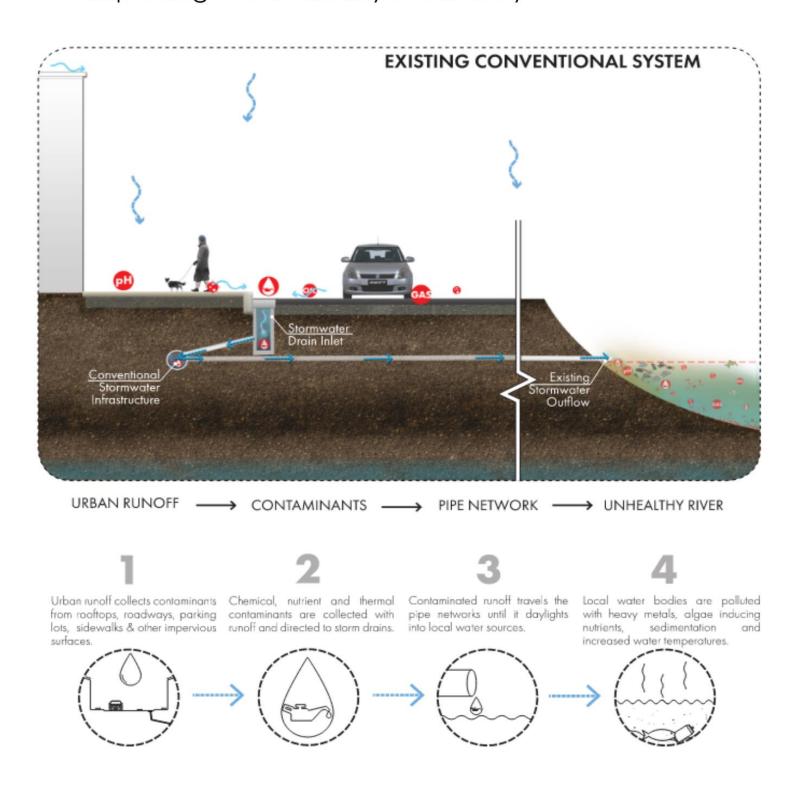
microbes.

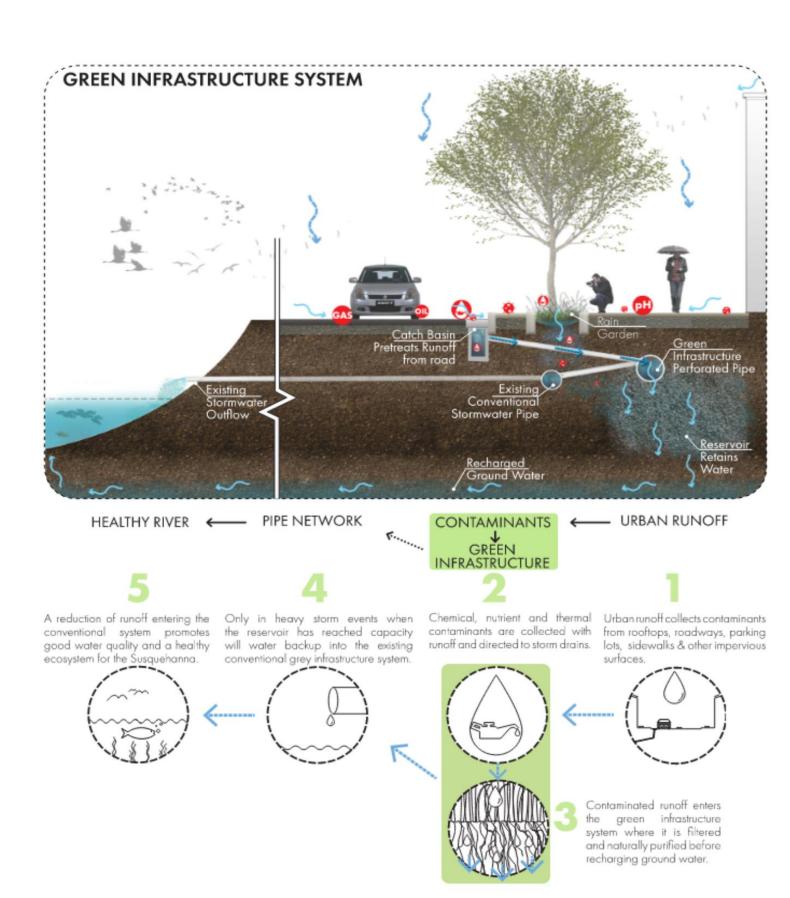
Stormwater Management Systems rely on vegetation to stabilize soil, filter contaminants, absorb nutrients, intercept and transpire water, and support a healthy soil biology. Diverse Root types and depths are important for performance. These species are tolerant of both wet and dry conditions!



INFILTRATING INFRASTRUCTURE

Improving Water Quality In Danbury







https://tinyurl.com/water0726



When poll is active, respond at PollEv.com/aquiaprovidence655

Would You Be Willing To Weed And Maintain A Green-Infrastructure Area? | ¿estaría dispuesto/a a desmalezar y mantener una zona de infraestructura verde?

A. Count me in! | ¡cuenten conmigo!

B. I might be persuaded, depends on who's going. Puede que me persuadan, depende de quién vaya.

C. Never, not my thing. | Nunca, no es lo mio.

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https://tinyurl.com/water0726



When poll is active, respond at PollEv.com/aquiaprovidence655

Do You Think That Green Infrastructure Has A Place In Your Community? | ¿cree que la infraestructura verde tiene un lugar en su comunidad?

> A. Absolutely ¡absolutamente!

B. I'd Like To Know | Me gustaría saber más

C. Meh | No me interesa

Powered by Poll Everywhere





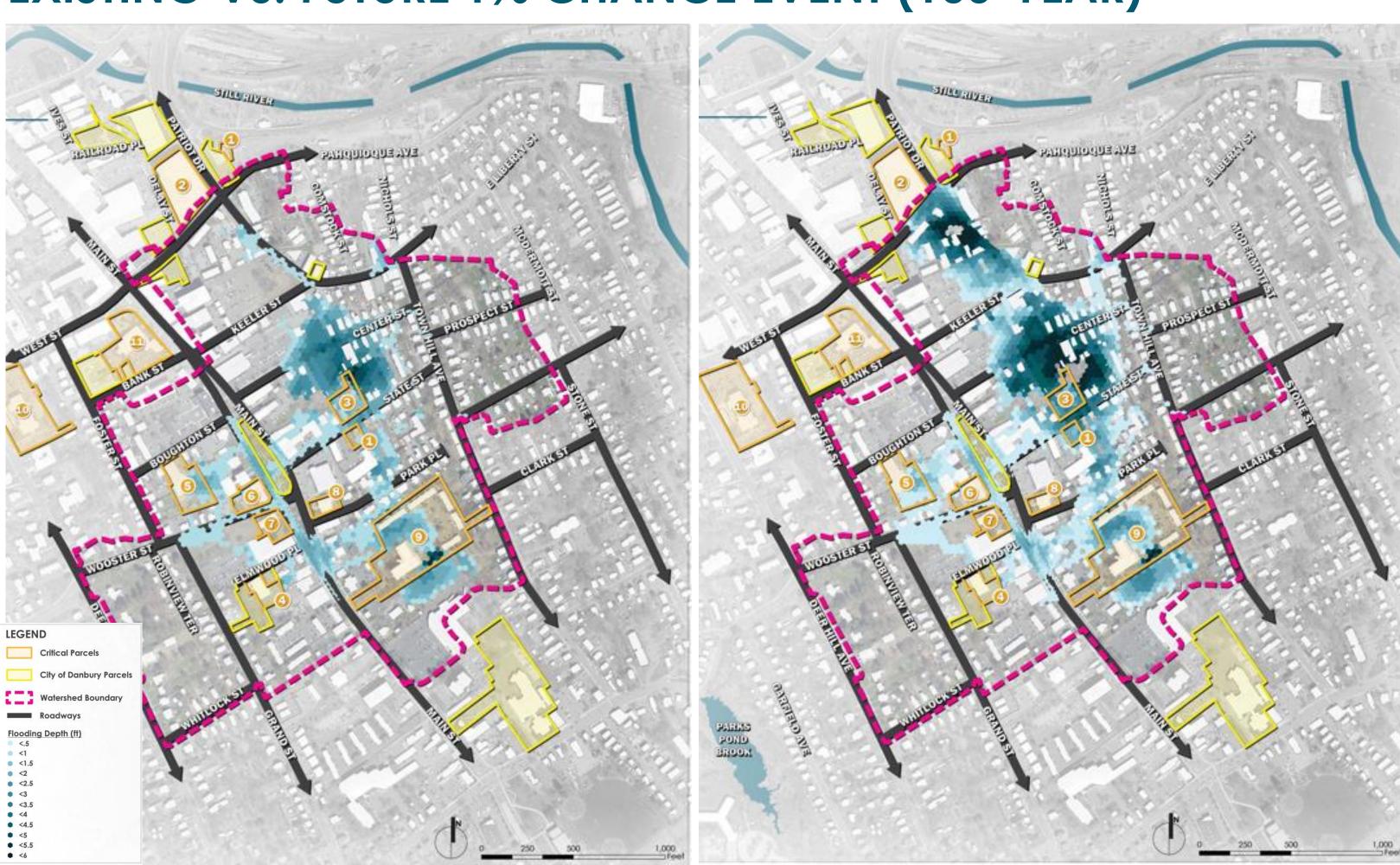




EXISTING VS. FUTURE 10% CHANCE EVENT (10-YEAR)



EXISTING VS. FUTURE 1% CHANCE EVENT (100-YEAR)





2002 **Initial drainage system**

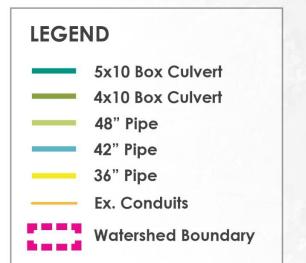
upgrade design

Upgrade at Still River 2011

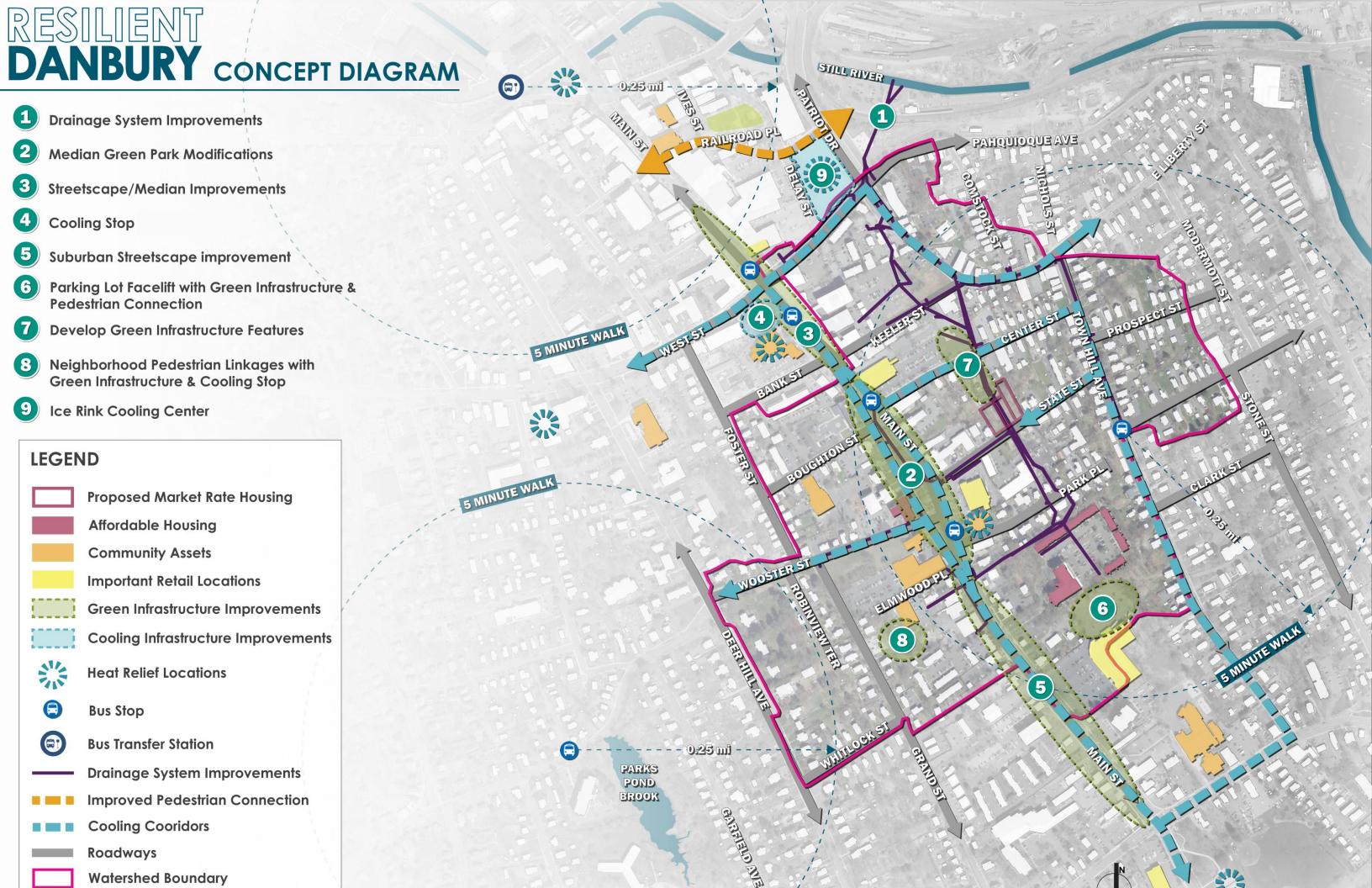
Proposed upgrades included 2012-2021

in Hazard Mitigation Plans

F&O advancing design 2023









Rest and Shade

Resiliency at the Library:

- Increase rest areas with seating
- Increase shade around library
- Incorporate stormwater management throughout

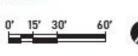




LEGEND

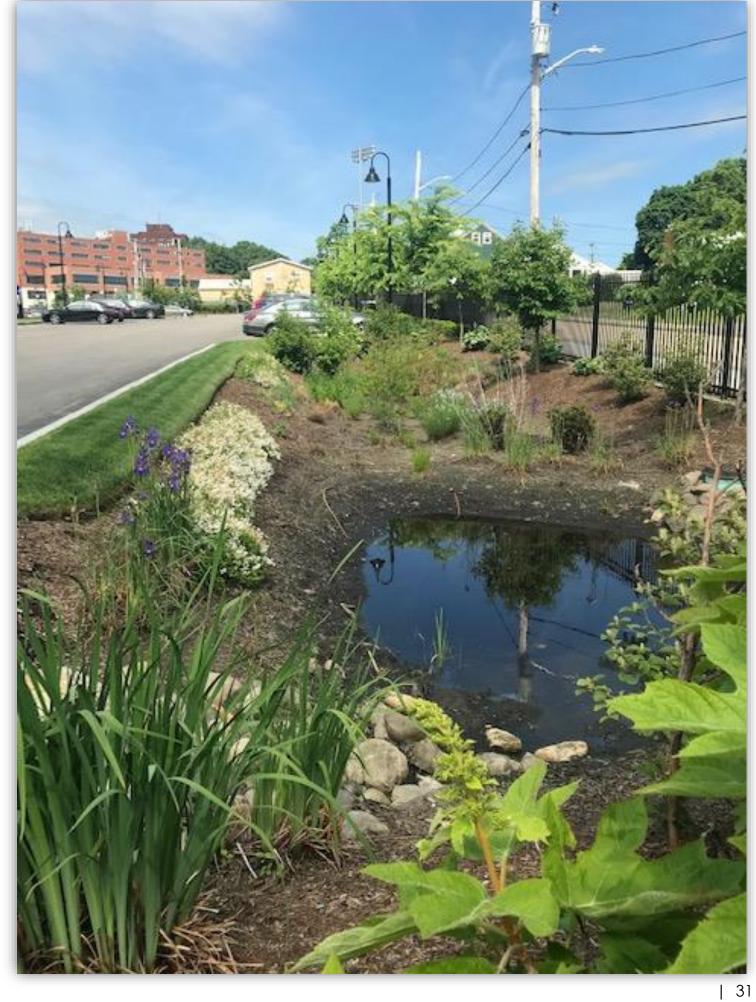
- 1. LIBRARY
- 2. INNOVATION CENTER
- 3. PARKING
- 4. BIOSWALE WITH SHADE TREES
- 5. RAIN GARDEN
- 6. SHADED PLAZA WITH SEATING
- 7. SMALL RAIN GARDENS
- 8. BUMP OUT
- 9. BIOSWALE WITH TREES IN BOULEVARD











Collect and Treat

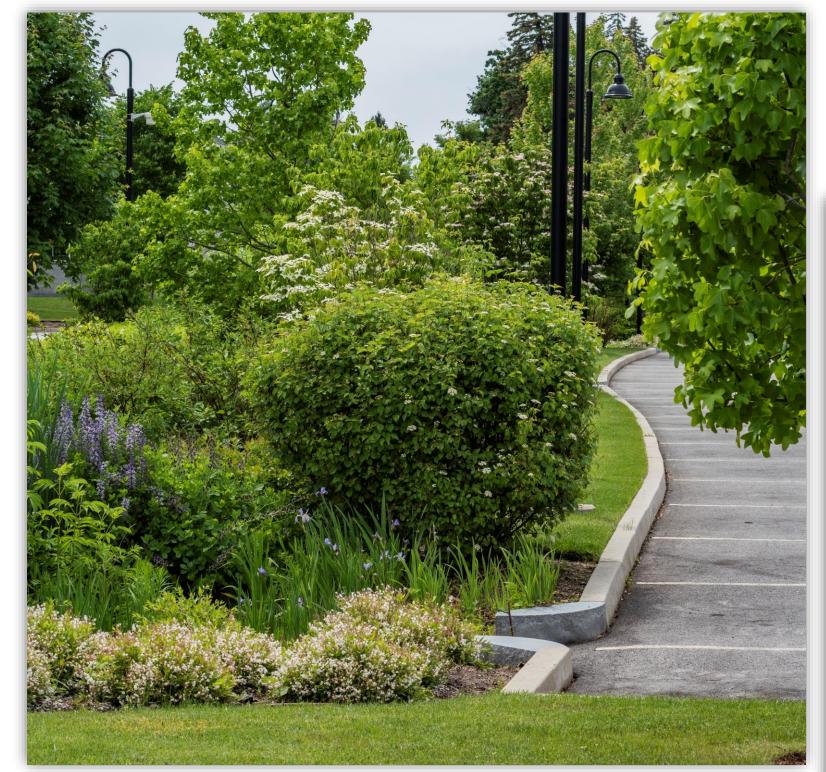
- Consolidate and reduce parking
- Reduce impervious area
- Increase shade
- Stormwater management throughout



LEGEND

- 1. BIORETENTION AREA
- 2. RECONFIGURED TO STANDARD PARKING DIMENSIONS TO REDUCE EXCESS PAVING
- 3. STREET TREES
- 4. PARKING ISLAND RAIN GARDENS
- 5. RELOCATED PARKING LOT ENTRANCE
- 6. TREES ADDED TO EXISTING PARKING ISLANDS
- 7. BIOSWALE WITH TREES





RESILIENT DANBURY











Cooling and Connecting

- Opportunity for neighborhood outdoor activity
- Features
 - Picnic pavilion
 - Open lawn
 - Splash pad
 - Provides pedestrian connection between Grand Street and Main Street

LEGEND

- 1. SENIOR CENTER
- 2. OPEN LAWN
- 3. PUMP SHED
- 4. POP JET FOUNTAIN
- 5. SHADED BENCH SEATING
- 6. PICNIC PAVILION
- 7. PICNIC AREA
- 8. SHADED PEDESTRIAN CONNECTION TO GRAND ST
- 9. RAIN GARDENS









RESILIENT DANBURY











https://tinyurl.com/water0726



When poll is active, respond at PollEv.com/aquiaprovidence655

Would You Be Inspired To Walk Here? | ¿Le inspiraría caminar por aquí?

A. Often | A menudo

B. Sometimes | A veces

C. Never | Nunca

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⊕ When poll is active, respond at PollEv.com/aquiaprovidence655

What Could This Area Use More Of? | ¿Qué le vendría bien a esta zona?

A. Green Space | Espacio verde

B. Shaded Seating | Asientos a a sombra

C. Scenic Areas | Zonas paisajísticas

D. Play Space/Water Feature Espacio de juegos/fuente de agua

E. 2 Or More Of The Above | 2 o más de los anteriores

> F. All Of The Above | Todos los anteriores

> > Powered by Poll Everywhere









Reduce Impervious

- Consolidate parking lots
- Reduce impervious surface area
- Increase shaded pedestrian connections
- Incorporate stormwater management at location of underutilized back parking lot and within parking islands



LEGEND

- 1. PRICE RITE MARKETPLACE
- 2. PARKING
- 3. OFF SITE WET DETENTION BASIN
- 4. BIORETENTION AREA
- 5. SHADED PEDESTRIAN CONNECTION TO GROCERY STORE
- 6. BIOSWALE
- 7. PARKING ISLAND RAIN GARDENS
- 8. EXISTING LOADING DOCK





RESILIENT DANBURY















When poll is active, respond at PollEv.com/aquiaprovidence655

Is Price Rite The Grocery Store You Frequently Visit? | ¿Es Price Rite la tienda de comestibles que visita con más frecuencia?

A.. Yes, I regularly shop at Price Rite. | Si, compro habitualmente en Price Rite

> B. I shop there sometimes | A veces compro allí

C. No, I never shop at Price Rite | No, nunca compro en Price Rite















When poll is active, respond at PollEv.com/aquiaprovidence655

How Would Fewer Parking Spaces At Price Rite Impact You? | ¿Cómo le afectaría un menor número de plazas de aparcamiento en price rite?

A. It wouldn't. I don't drive there! | No me afectaría. ¡no conduzco hasta allí!

B. It would be terrible. I can't find a spot already! Sería terrible. ¡ya no puedo encontrar lugar!

C. I wouldn't notice. There is always plenty of parking! No lo notaría ya hay aparcamiento de sobra.

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MEDIAN GREEN PARK MODIFICATIONS

Walk and Shop

- Streetscape improvements
- Improve pedestrian experience
- Collect runoff

LEGEND

- BIOSWALES
- 2. STREET TREES
- 3. RAIN GARDENS
- 4. REMOVED PARKING & ADDED LINEAR RAIN GARDEN



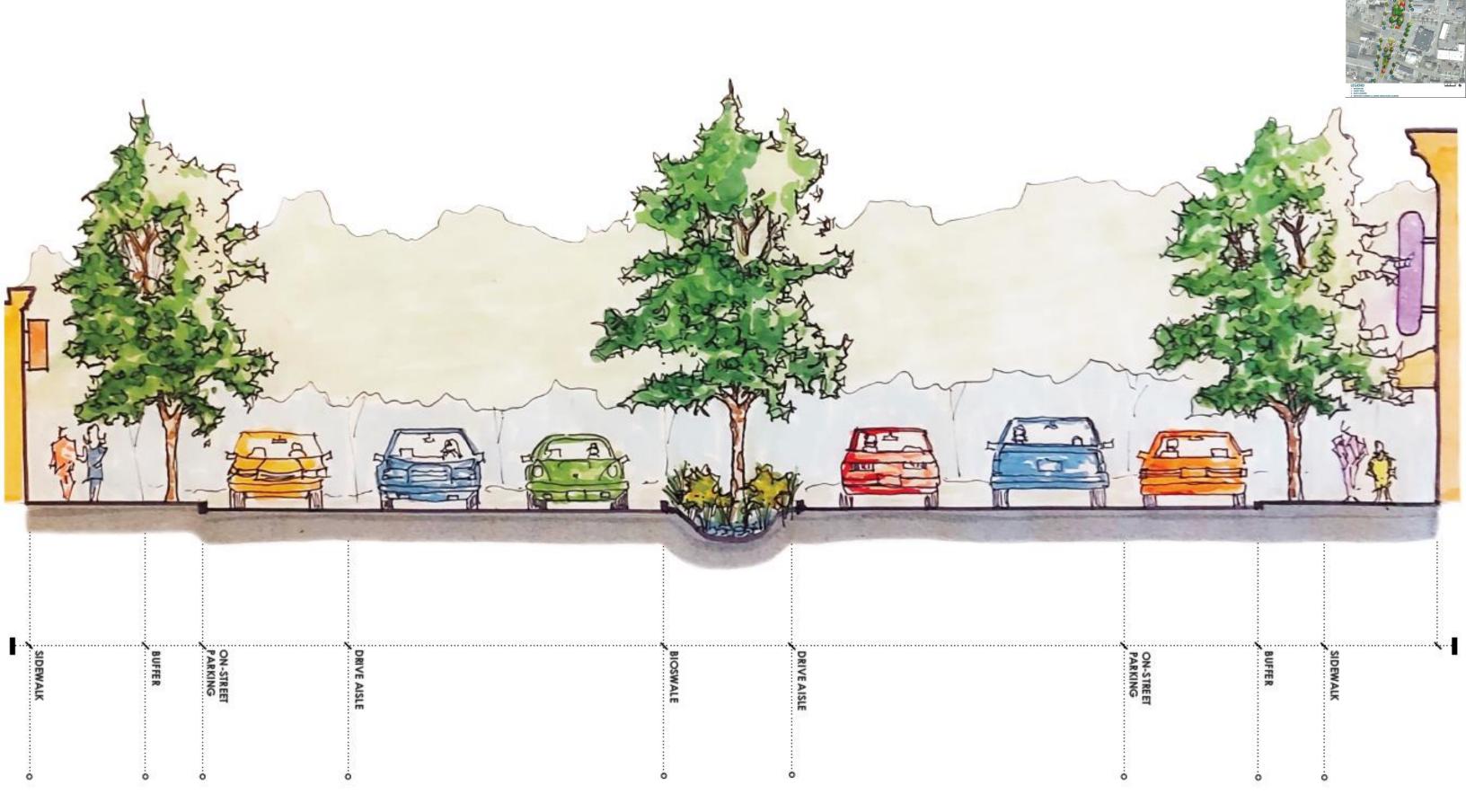




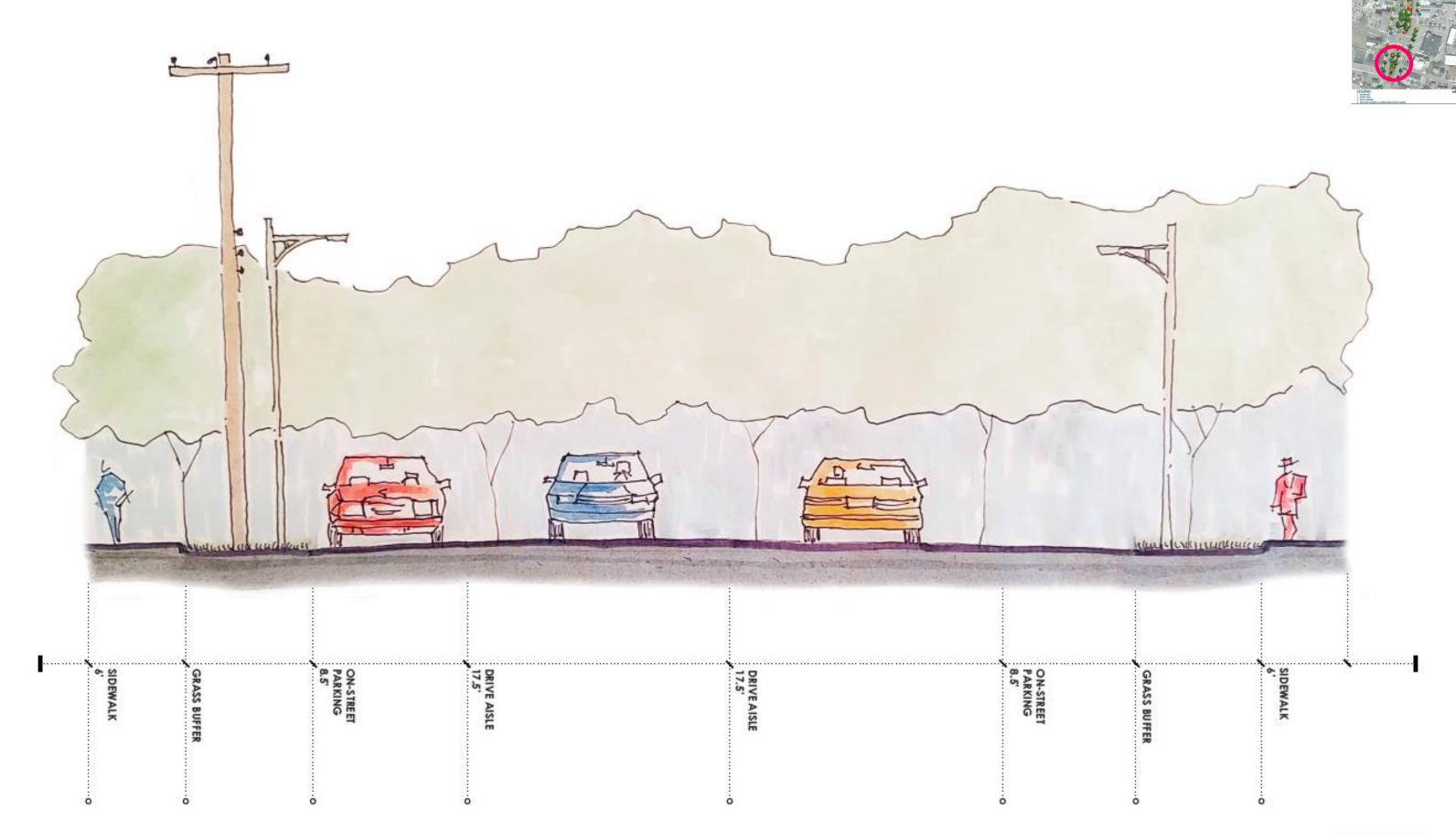




















Respond at PollEv.com/aquiaprovidence655

Do You Think That The Ideas Presented Tonight
Will Benefit The Danbury Community? | ¿Cree que
las ideas presentadas esta noche beneficiarán a la
comunidad de Danbury?

A. Yes, I do. | Si, lo creo
B. No, I do not. | No, no lo

C. I need more information. Necesito más información.

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OVERALL PROJECT SCHEDULE



Task	Sept '22	Oct '22	Nov '22	Dec '22	Jan '23	Feb '23	Mar '23	Apr '23	May '23	Jun ′23	Jul '23	Aug '23	Sept '23	Oct '23
Task 1: Project Management														
Task 2: Stakeholder Engagement														
Task 3: Current and Future Conditions Analysis														
Task 4: Adaptation Options and Concept Design														
Task 5: Benefit/Cost Analysis														
Task 6: Final Report														









STAKEHOLDER ENGAGEMENT SCHEDULE



Public Workshops	Tentative Meeting Schedule
Public Workshop #1	April 2023
Public Workshop #2	July 2023
Public Workshop #3	September 2023

PUBLIC Workshop #1 – Existing and Future Conditions **April 2023**

PUBLIC Workshop #2 – Visioning July 2023

PUBLIC Workshop #3 - Analysis September 2023

























