

OXFORD POLLINATOR FORUM

Petroleum to Pollinators Project

April 5th, 2025

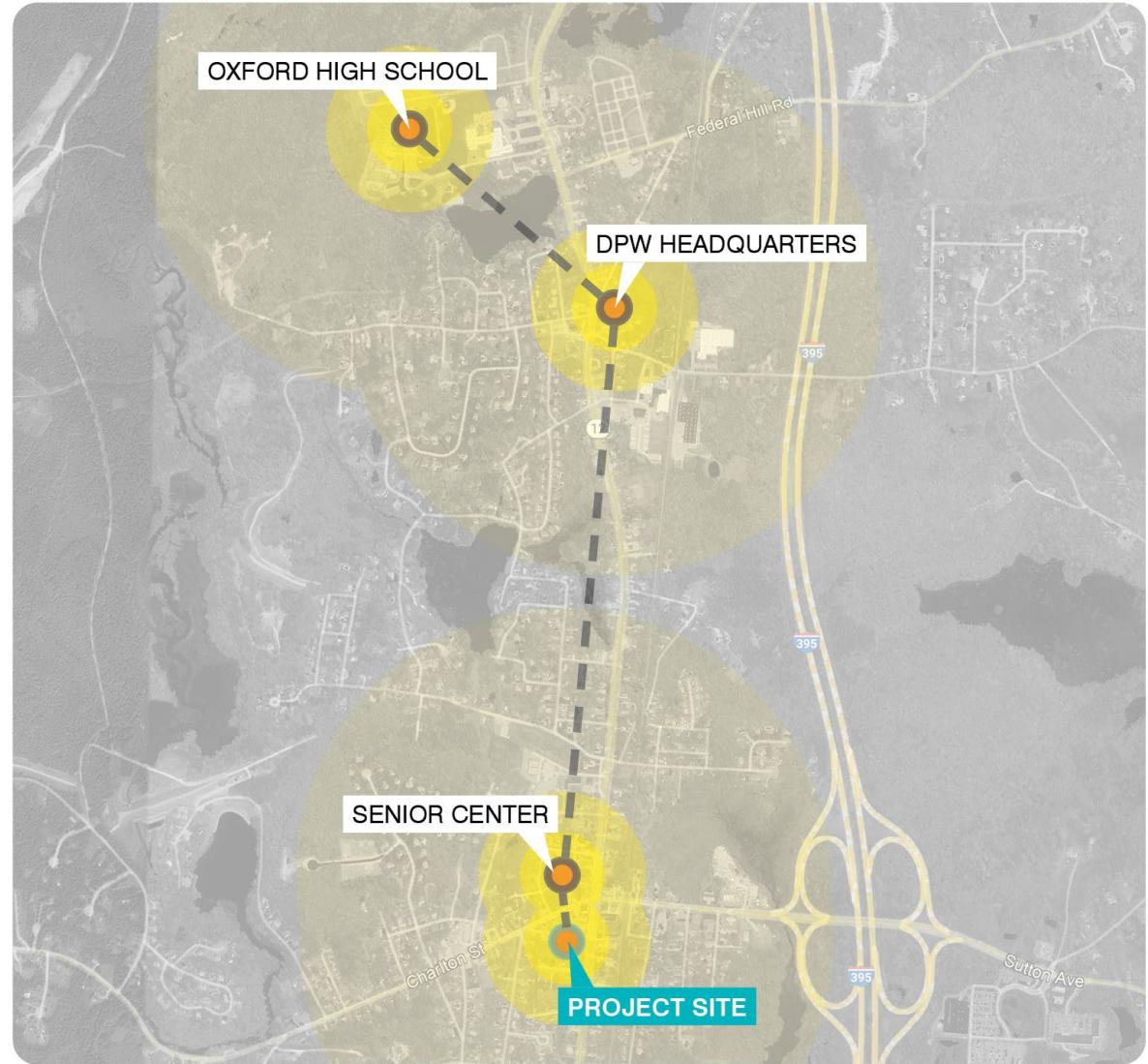


Weston & SampsonSM



Presentation Roadmap

- Project Introduction
- Existing Conditions & How It Informs Design
- Envisioning a Pollinator Park
- Questions & Discussion



Project Introduction

Overview, Goals, and Site

Project Overview

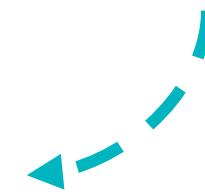
- Collaborative project with the Town of Oxford and Weston & Sampson to restore a former gas station into an inclusive, climate-resilient public space
- Funded through the Massachusetts Municipal Vulnerability Preparedness (MVP) Action Grant



Project Goals

Transform a former gas station at 3 Barton Street into a climate-resilient public park and native pollinator habitat.

- Reduce urban heat island effect
- Reduce stormwater impacts
- Improve habitat
- Support community well-being



Project Site



0.29 Acres (~12,000 square feet)

Project Site



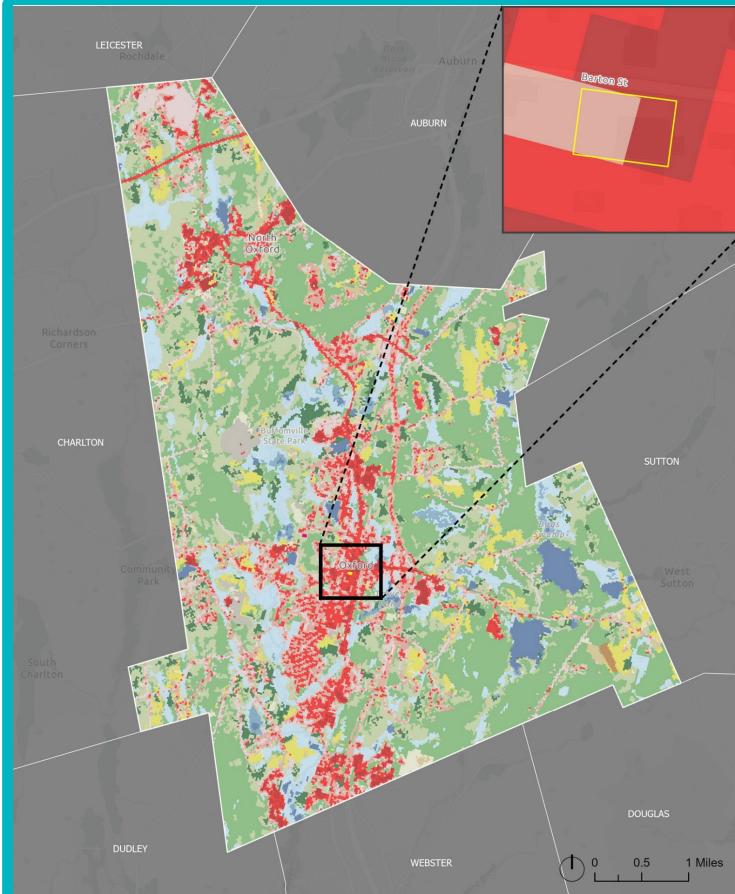
Building removed as of December, 2024

Existing Conditions

Stormwater & Heat Assessment, Park User Group Analysis
How Results Informed Concept Design

Stormwater & Heat Assessment

Land Cover

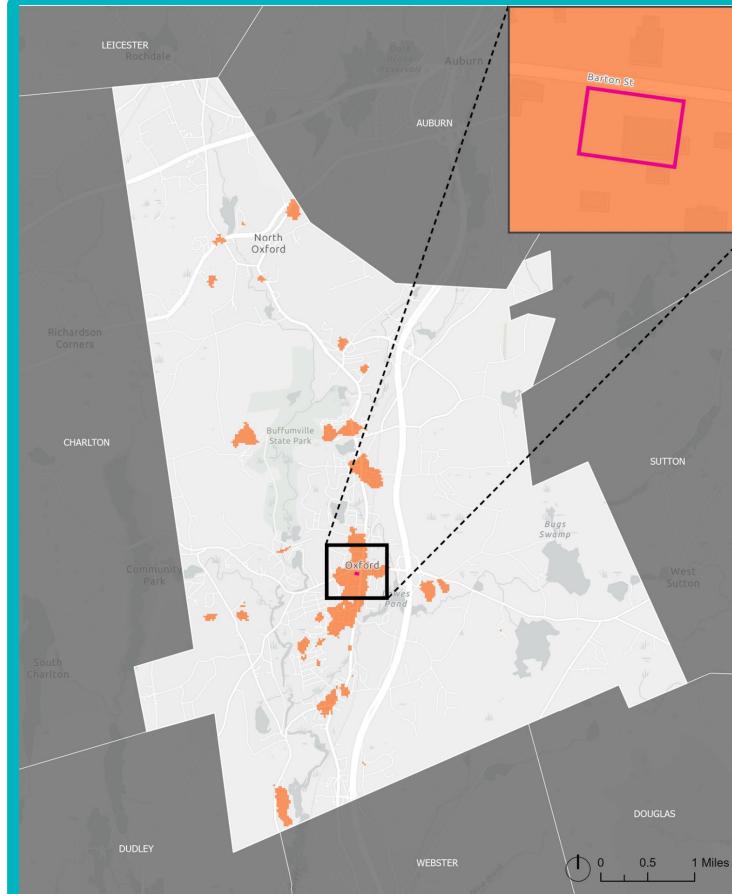


- Site located at center of Town
- High-Intensity developed land classification
- Limited vegetation = low biodiversity
- Project aims to reduce runoff & heat exposure, and increase biodiversity

Land Cover

Open Water	Developed, High Intensity	Evergreen Forest	Cultivated Crops
Developed, Open Space	Developed, Low Intensity	Mixed Forest	Woody Wetlands
Developed, Low Intensity	Developed, Medium Intensity	Shrub/Scrub	Emergent Herbaceous Wetlands
Developed, Medium Intensity		Deciduous Forest	Herbaceous
			Hay/Pasture

Hotspots – High Land Surface Temperature



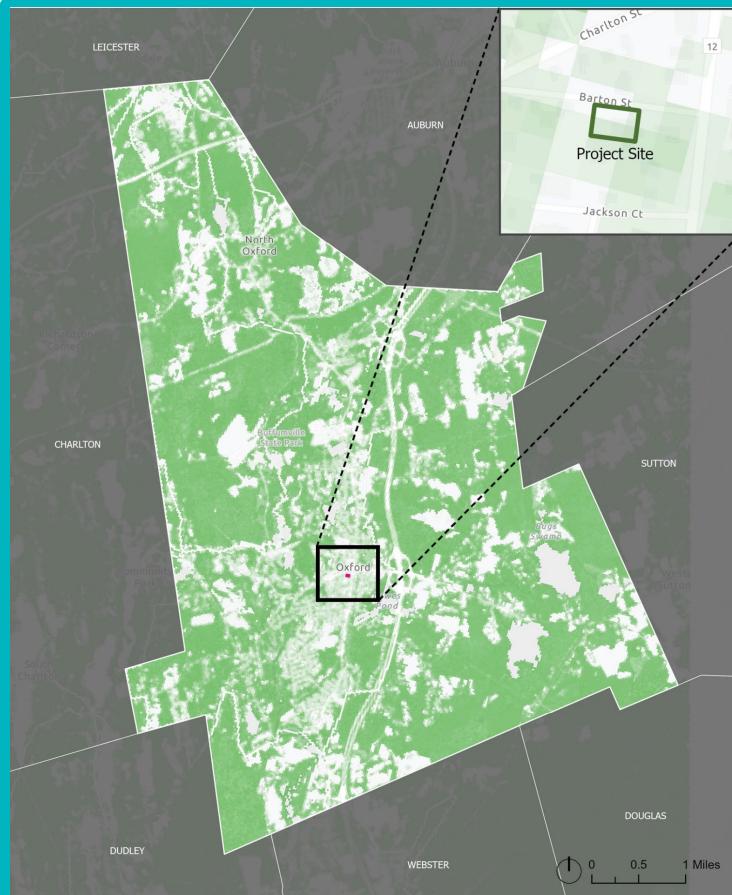
- Site is within regional heat hotspot
- Hotspots are the top 5% highest land surface temperature areas in the region
- Design for thermal comfort and heat island mitigation

High Land Surface Temperature

Hotspots

Stormwater & Heat Assessment

Tree Canopy Cover

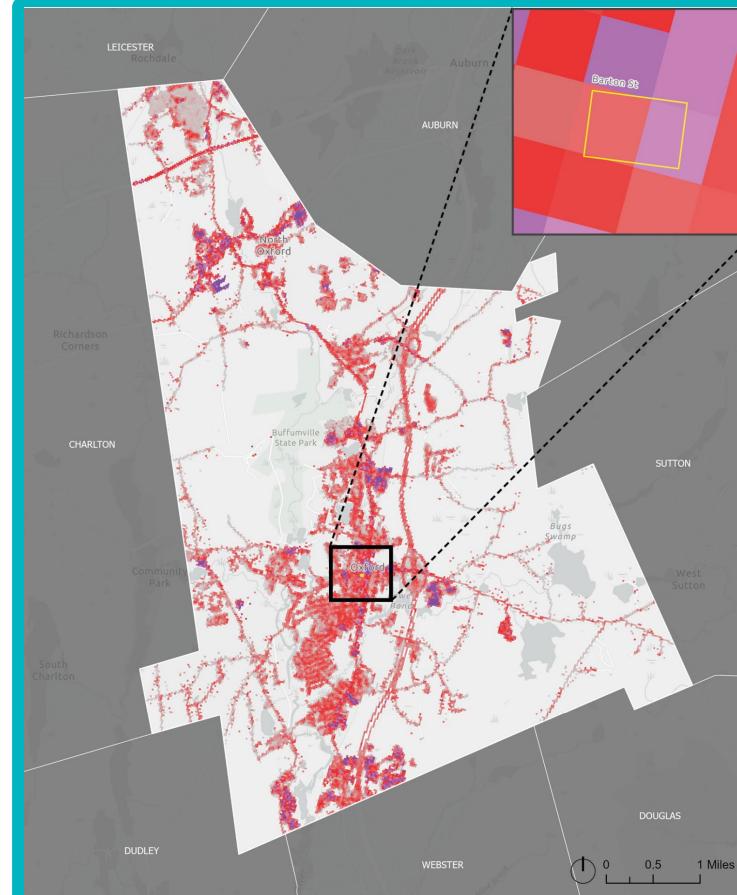


- Minimal tree canopy cover and vegetation
- Limited habitat for pollinators and wildlife
- Opportunity for tree planting and increased vegetation to provide cooling benefits and support wildlife

Tree Canopy Cover



Impervious Surfaces



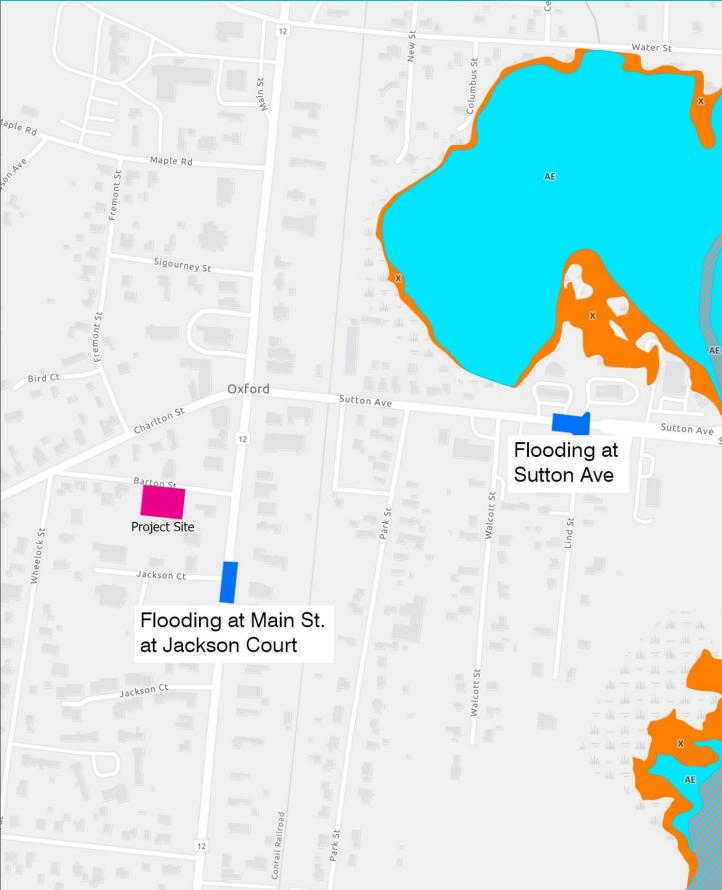
- Site currently has 100% impervious surface cover
- Impervious areas contribute to both heat and runoff
- Propose to replace hardscape with nature-based solutions and permeable paths

Impervious Surface



Stormwater & Heat Assessment

Flooding: FEMA Flood Zones and Localized Flooding



- Project is not within FEMA National Flood Hazard Zone
- However, site is near 2 localized flooding locations: Sutton Avenue and Main Street at Jackson Court
- Opportunity for on-site stormwater management through installing green infrastructure
- Intercept stormwater before runoff creates issues downstream & install flood educational signage

FEMA National Flood Hazard

- 1% Annual Chance Flood Hazard
- Regulatory Floodway

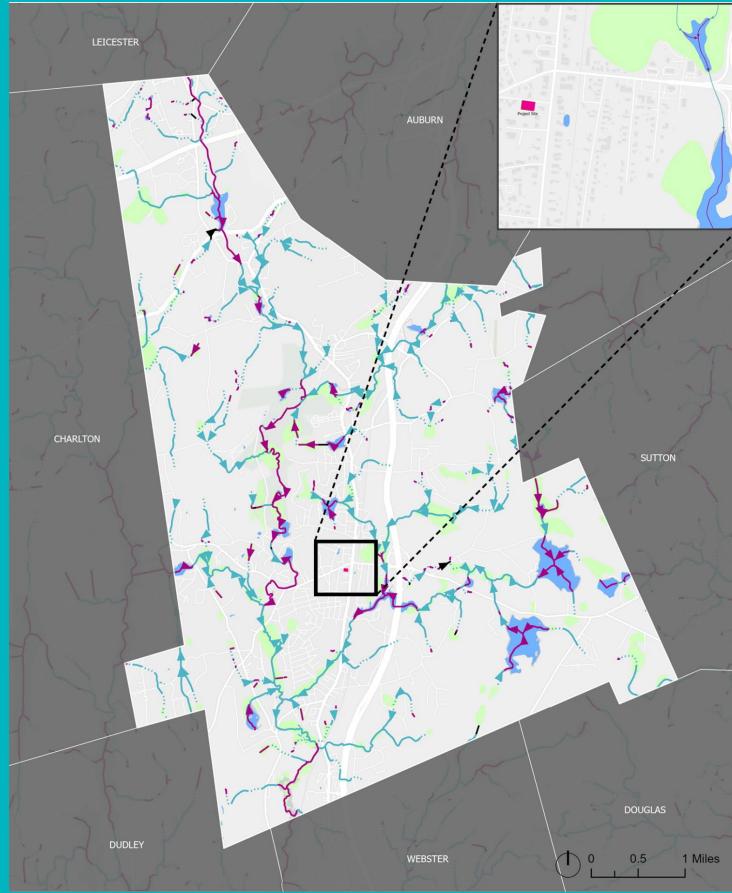
- Area of Undetermined Flood Hazard
- 0.2% Annual Chance Flood Hazard
- Area with Reduced Risk Due to Levee

Local Flooding

- Area of reported local flooding

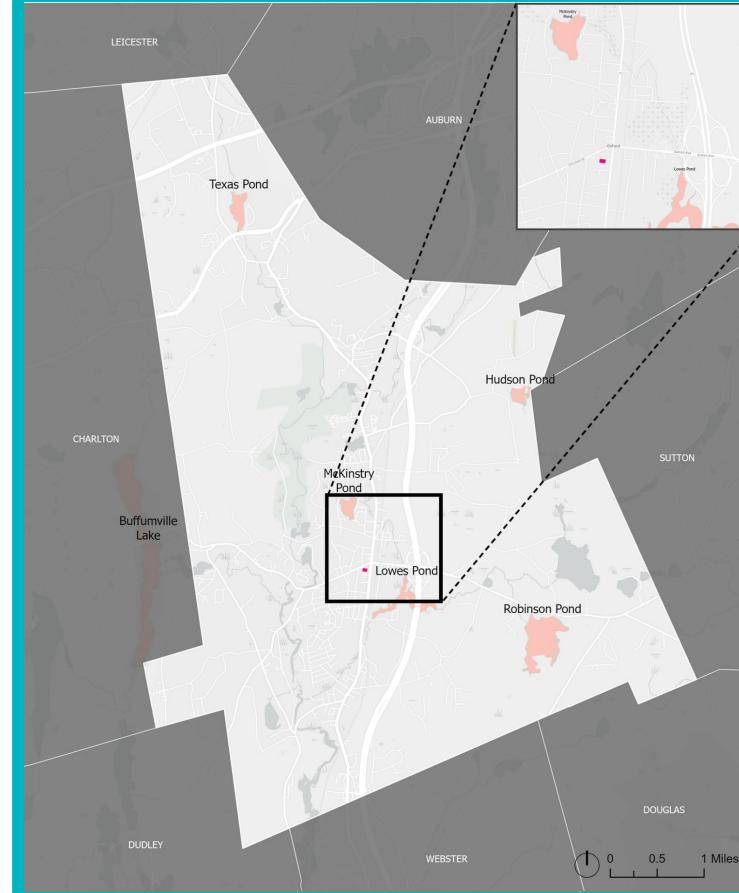
Stormwater & Heat Assessment

Hydrology



- Currently, urban runoff carries pollutants to watershed
- Lack of natural filtration in the area due to high impervious cover
- Propose vegetated buffers to prevent downstream pollution

Phosphorus-Impacted Lakes



- Nearby lakes impacted by nutrient pollution
- Urban runoff contributes to algae blooms
- Propose green infrastructure to filter pollutants and reduce runoff for water quality protection

Flow line and Direction

- Perennial Stream
- Intermittent Stream
- Artificial Path

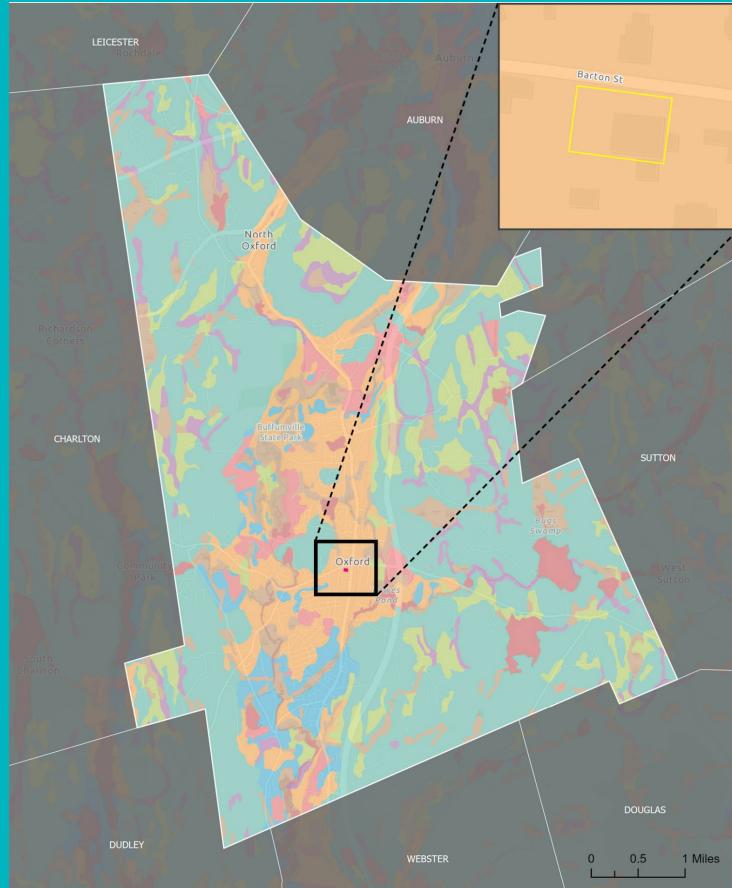
Water bodies

- Lake/Pond
- Swamp/Marsh

Phosphorous Impacted Ponds and Lakes

Stormwater & Heat Assessment

Soil Drainage Ability



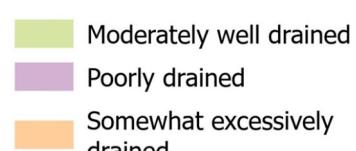
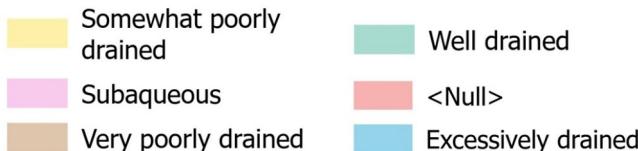
- Soils drain quickly, low water retention
- Project will select native and drought-tolerant plants
- Consider soil amendments to improve moisture holding

Environmental Justice (EJ) Community



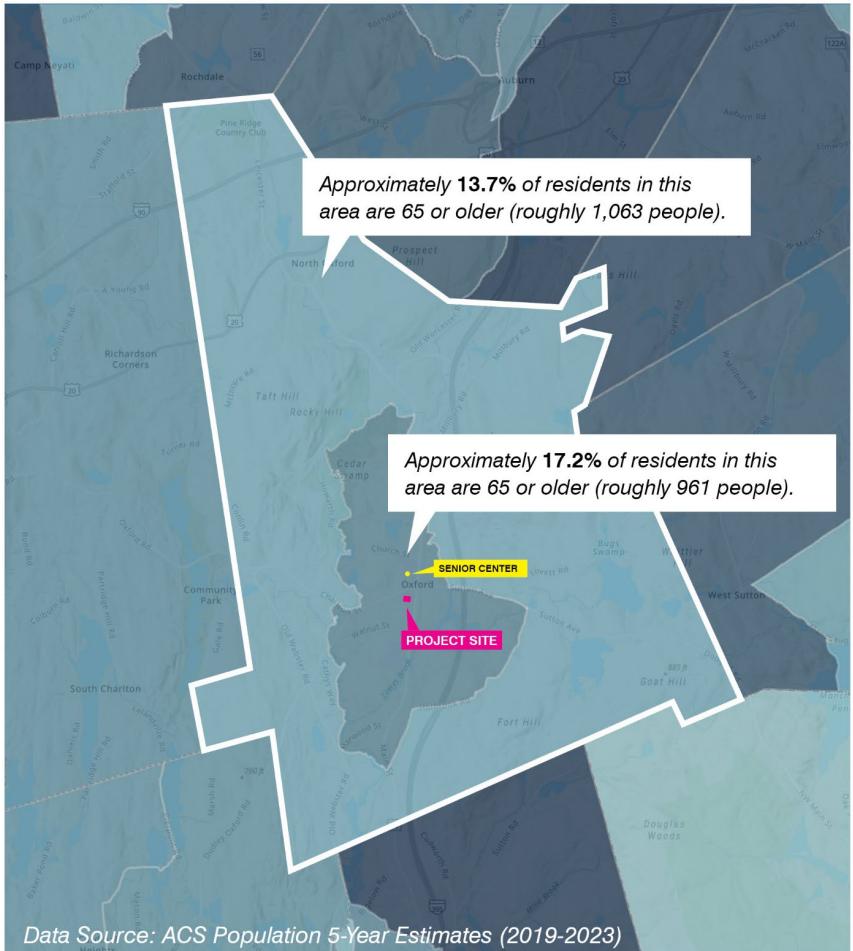
- EJ-designated area with low-income households
- Community lacks nearby quality green space
- Design supports social and climate resilience
- Provides equitable access to nature

Soil Drainage Class

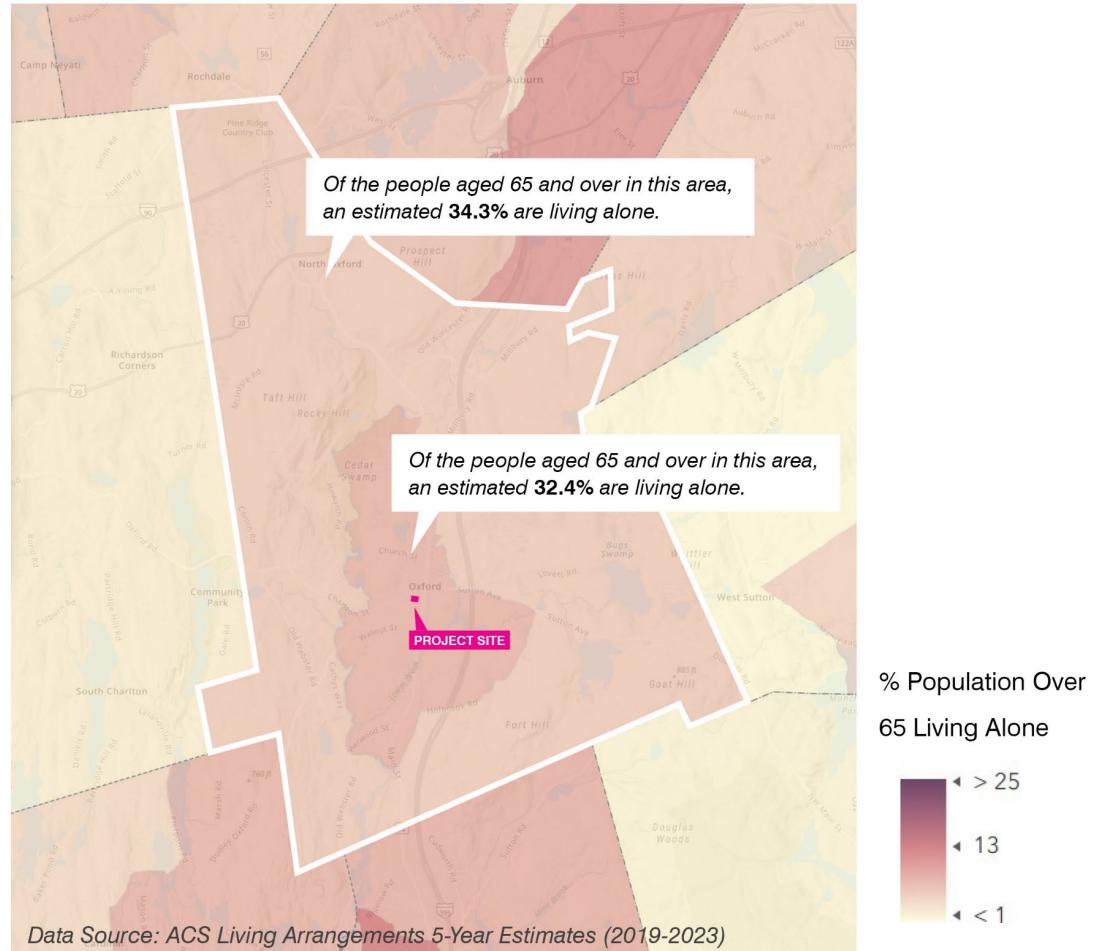


Demographics: Park User Group Analysis

Population Over 65 Years Old



Population Over 65 Years Old Living Alone



Design Implications Based on User Group:

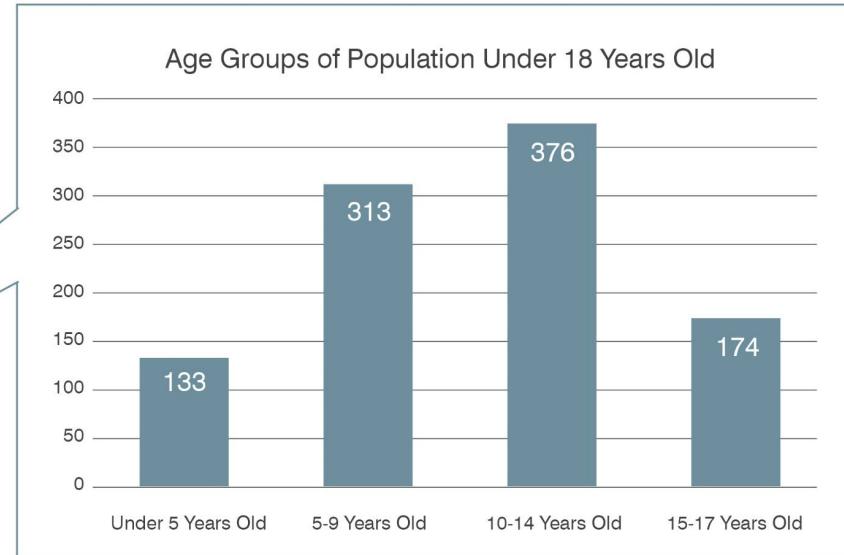
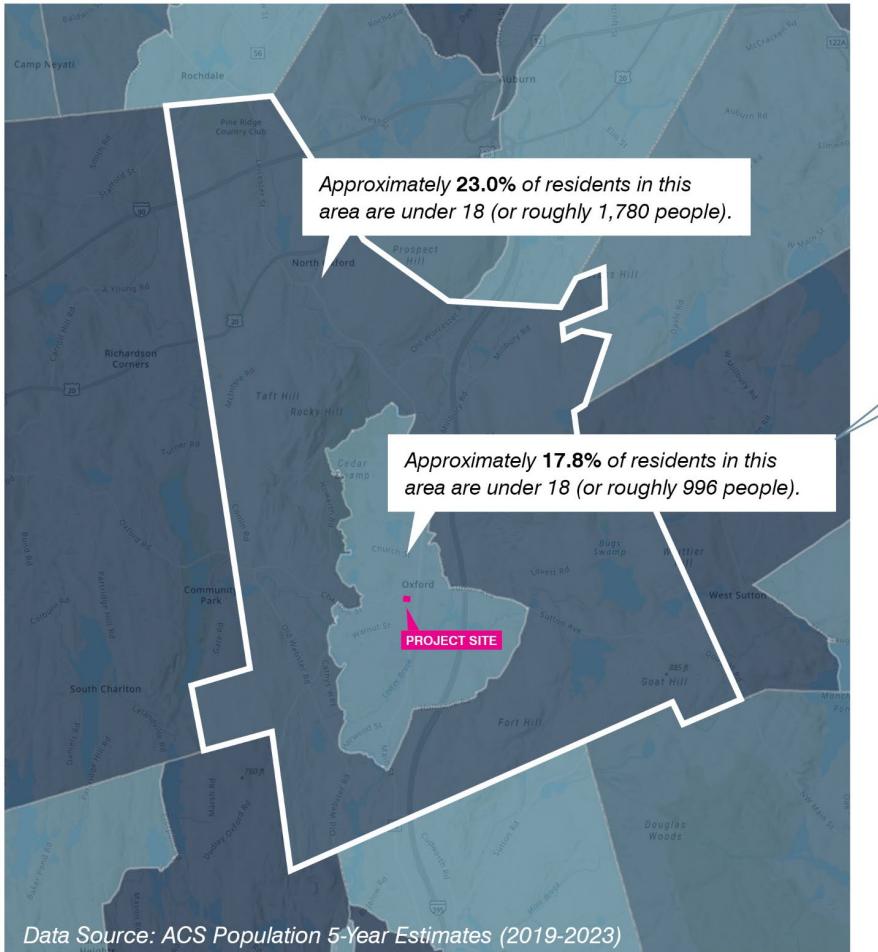
- Park design should consider that there is a high percentage of senior residents in the census tract, in addition to the nearby senior center residents that will be visiting the site. Provide rest areas, accessible pathways, and shade.

Design Implications Based on User Group:

- A significant percentage of seniors in the area are living alone. Consider creating places for gathering and building a sense of community for residents.

Demographics: Park User Group Analysis

Population Under 18 Years Old

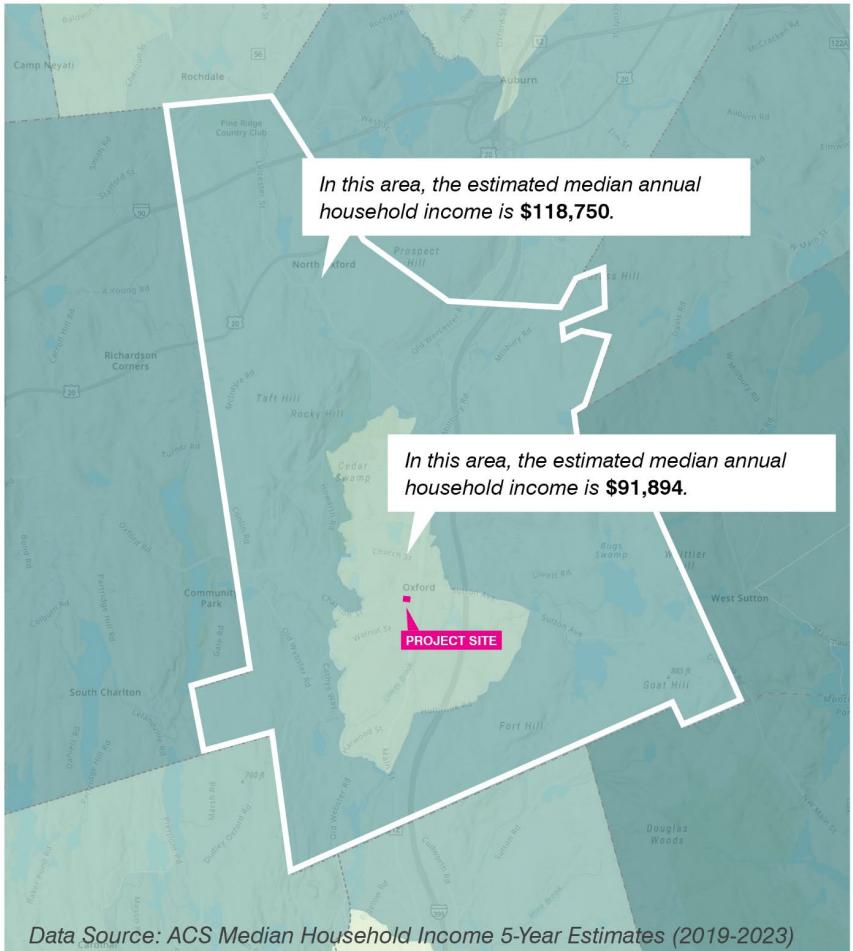


Design Implications Based on User Group:

- Of the 17.8% of population under 18 years old in the census tract that the project site is within, the majority of youth is between the age of 5 and 14. Informal play structure and exploration spaces can be tailored to this age group, welcoming youth to use this park.

Demographics: Park User Group Analysis

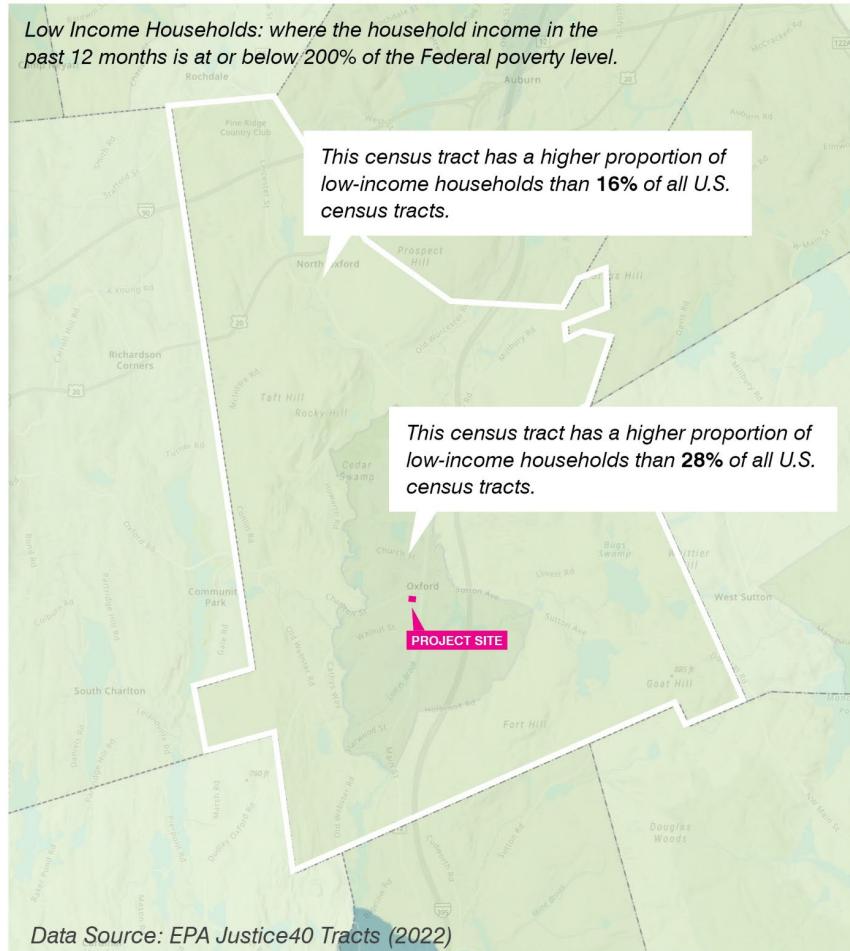
Median Household Income



Design Implications Based on User Group:

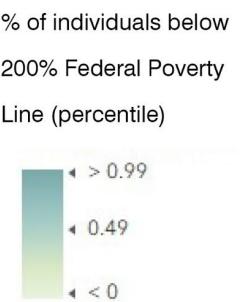
- The census tract that the project site is in has lower median household income compared to surrounding areas.

Low Income Households



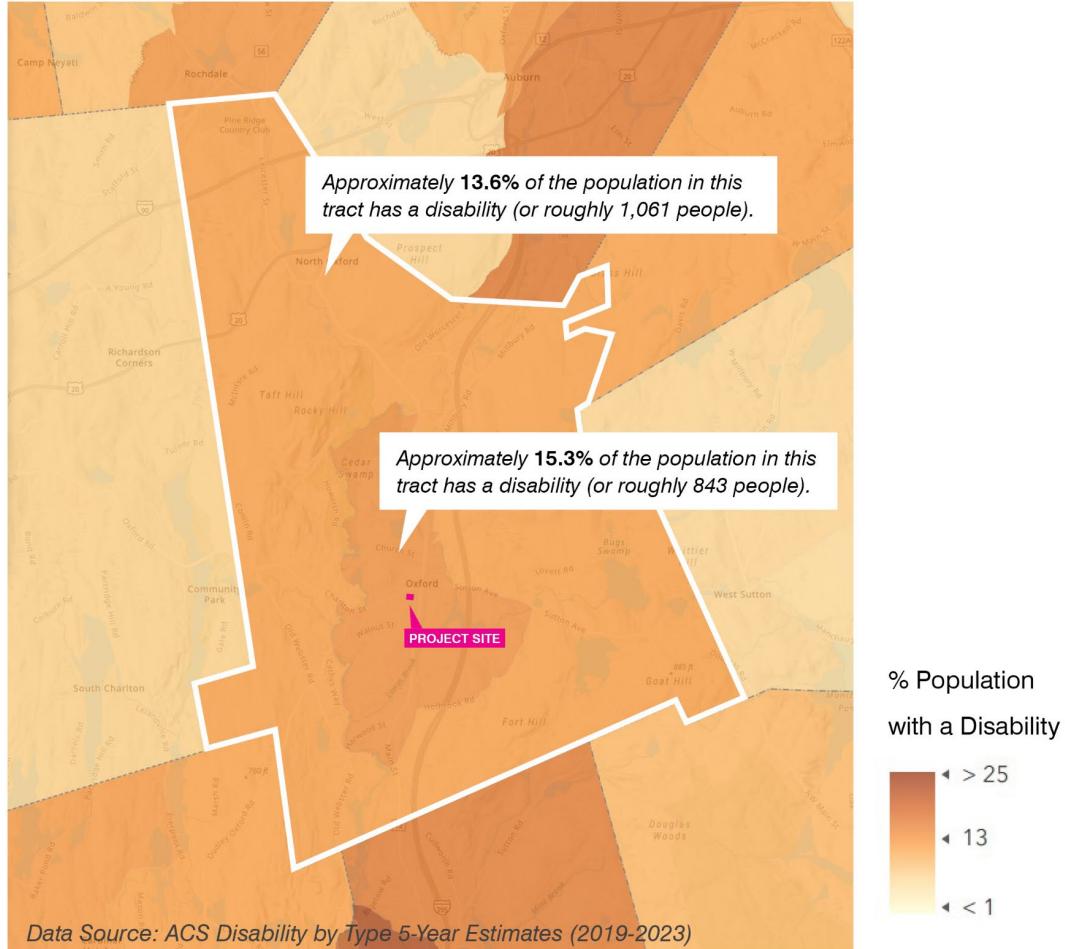
Design Implications Based on User Group:

- Public spaces in lower-income areas provide affordable recreation, improve health, and foster sense of community.



Demographics: Park User Group Analysis

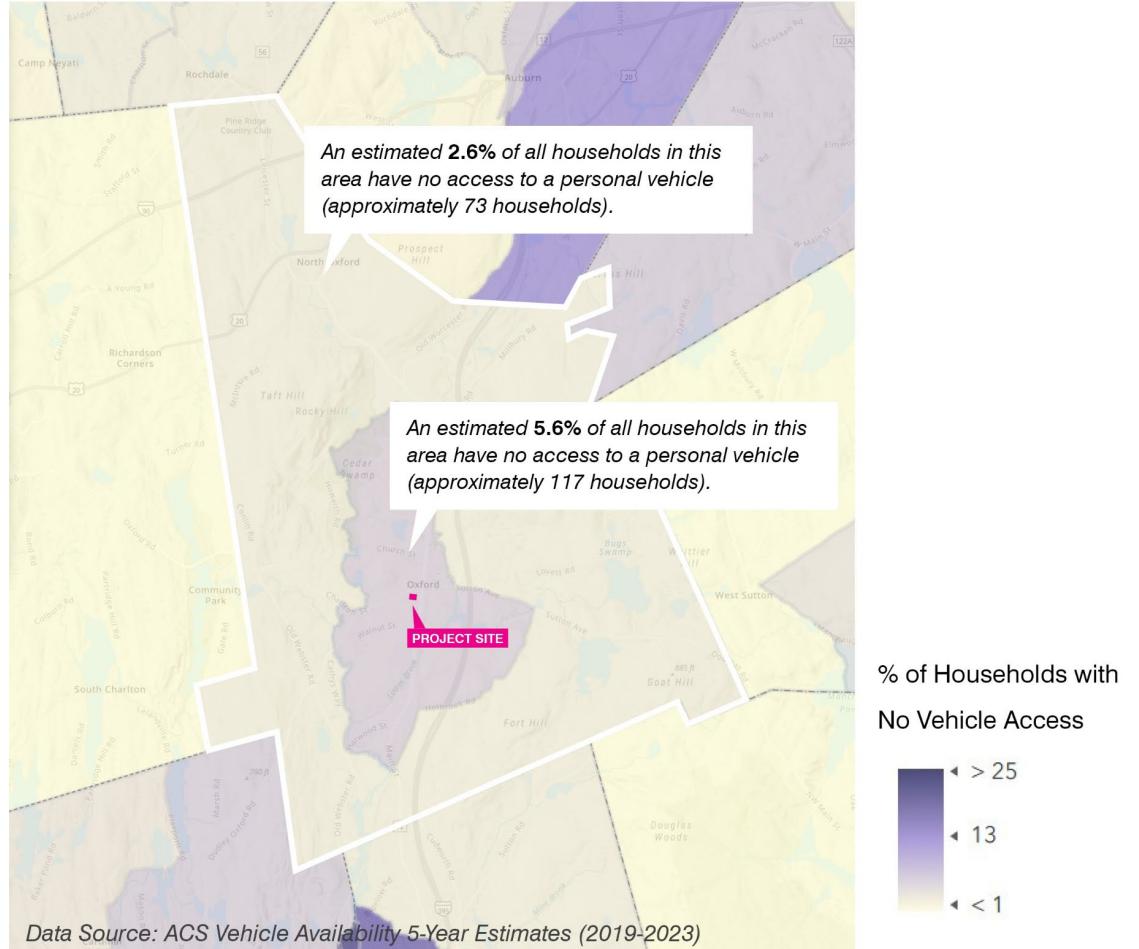
Population Living with a Disability



Design Implications Based on User Group:

- Alongside ADA-accessible pathways, the park strives to incorporate additional features that create an inclusive environment for individuals with diverse needs.

Household without Vehicle Access



Design Implications Based on User Group:

- The majority of households in Oxford have vehicle access, indicating that residents can be traveling from a further distance to visit the site or nearby amenities.

Envisioning a Pollinator Park

Design Concepts

Envisioning a Park Project Goals

Transform a former gas station at 3 Barton Street into a climate-resilient public park and native pollinator habitat.

- Reduce urban heat island effect
- Reduce stormwater impacts
- Improve habitat
- Support community well-being



Envisioning a Park Design Elements



Envisioning a Park Design Elements



Rain
Gardens



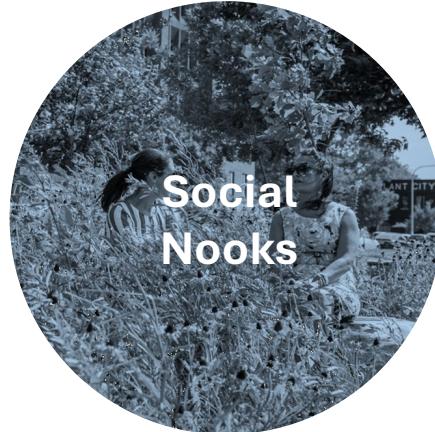
Flexible
Furniture



Pollinator
Gardens



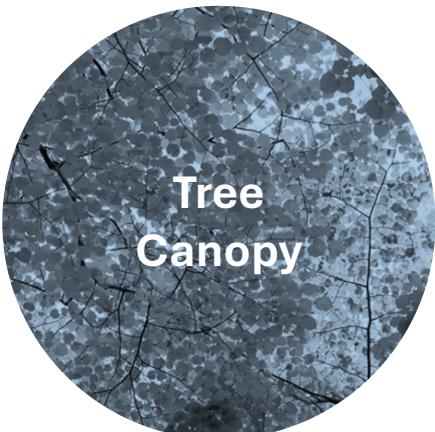
Open
Space



Social
Nooks



Equitable
Access



Tree
Canopy



Educational
Signage



Welcoming
Amenities



Community
Art

Envisioning a Park Sense of Scale



3 Barton Street
Project Site

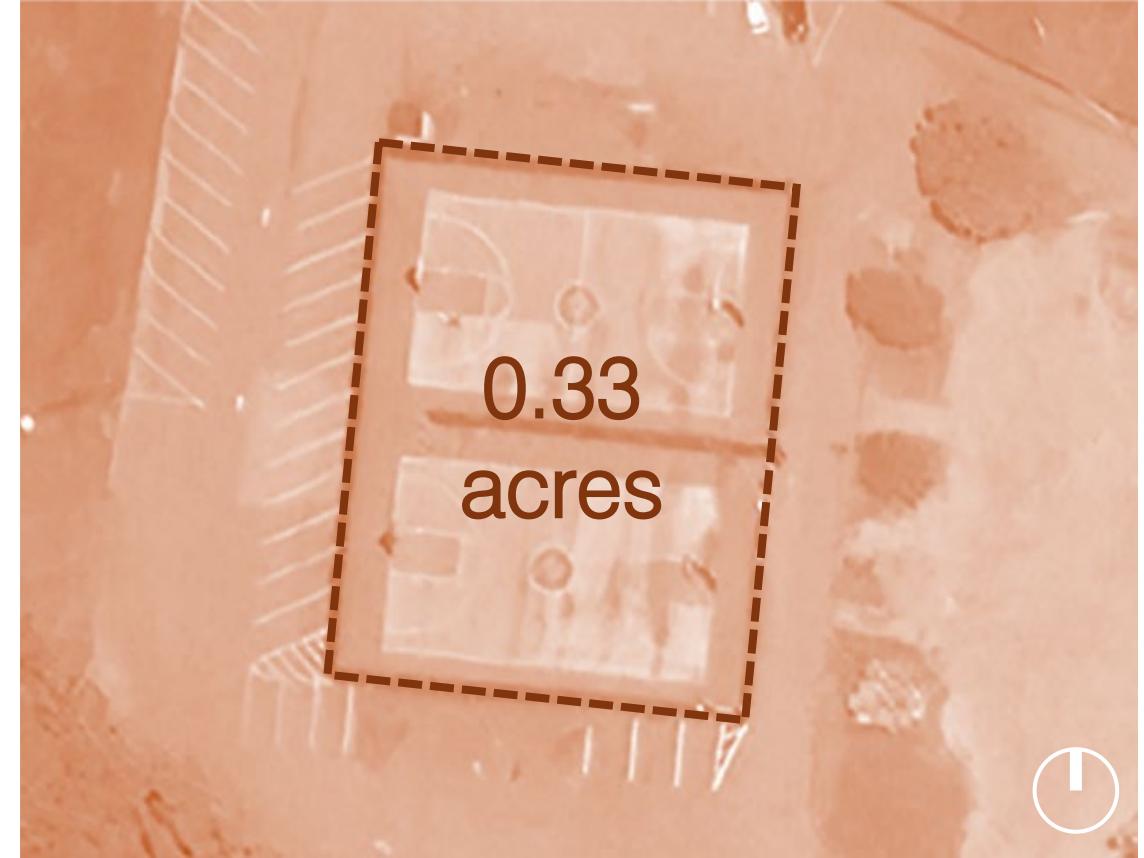


Oxford Community Center
Basketball Courts

Envisioning a Park Sense of Scale



2 Barton Street
Project Site

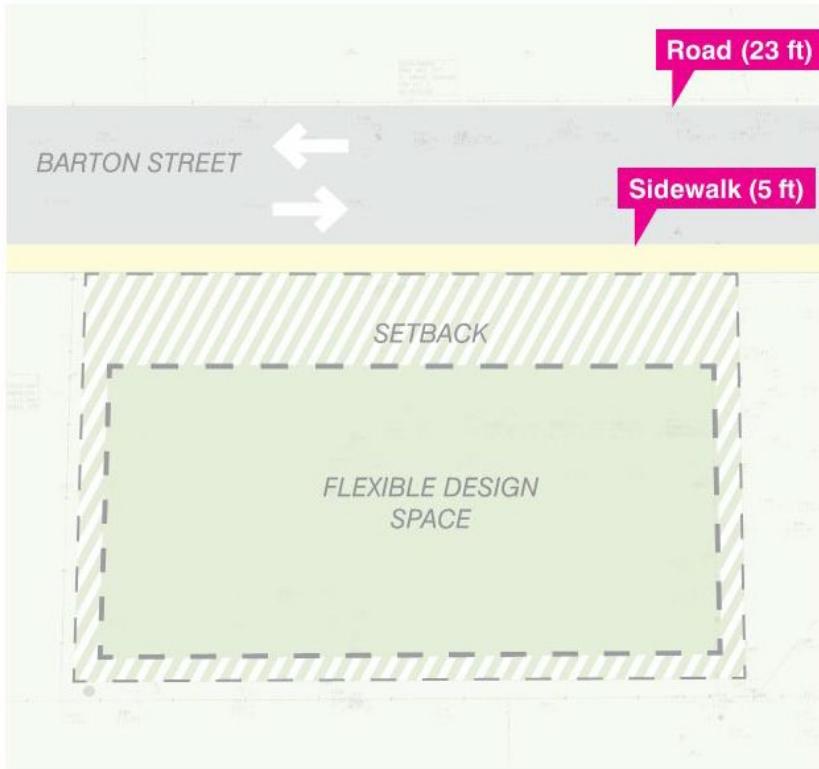


Oxford Community Center
Basketball Courts

Sidewalk Studies

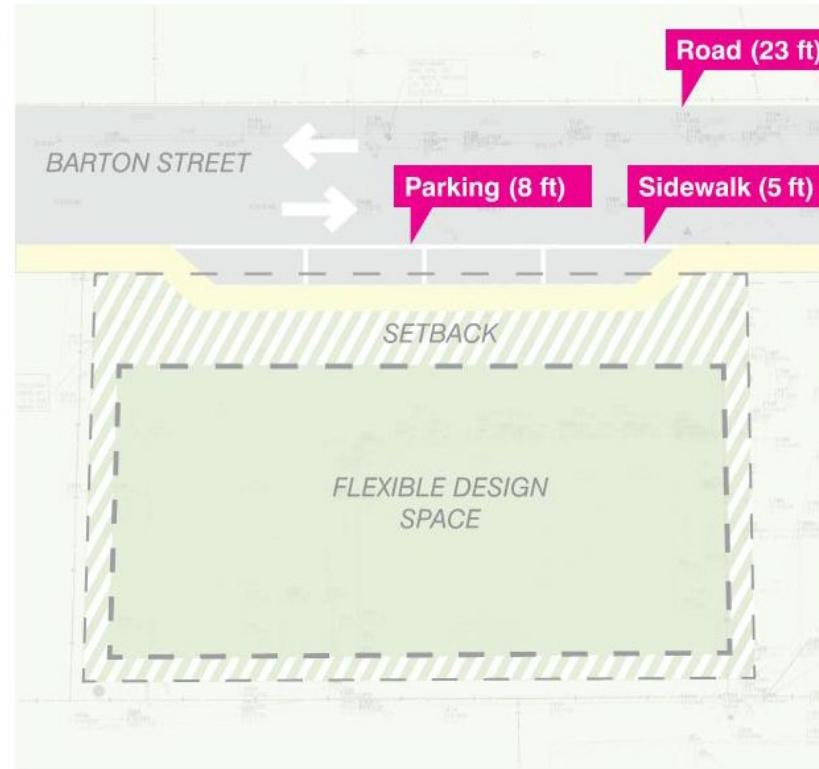


Sidewalk Studies



Sketch A

Road	23 ft wide
Sidewalk	5 ft wide
Traffic Flow	two-way



Sketch B

Road	23 ft wide
Parking	8 ft wide
Walkway	5 ft wide
Traffic Flow	two-way

Radiant Grove Park

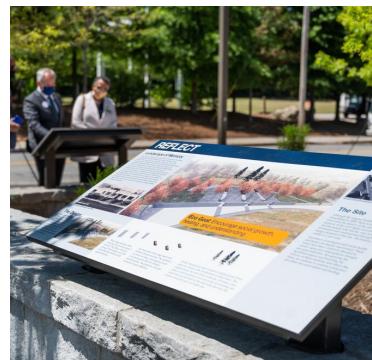
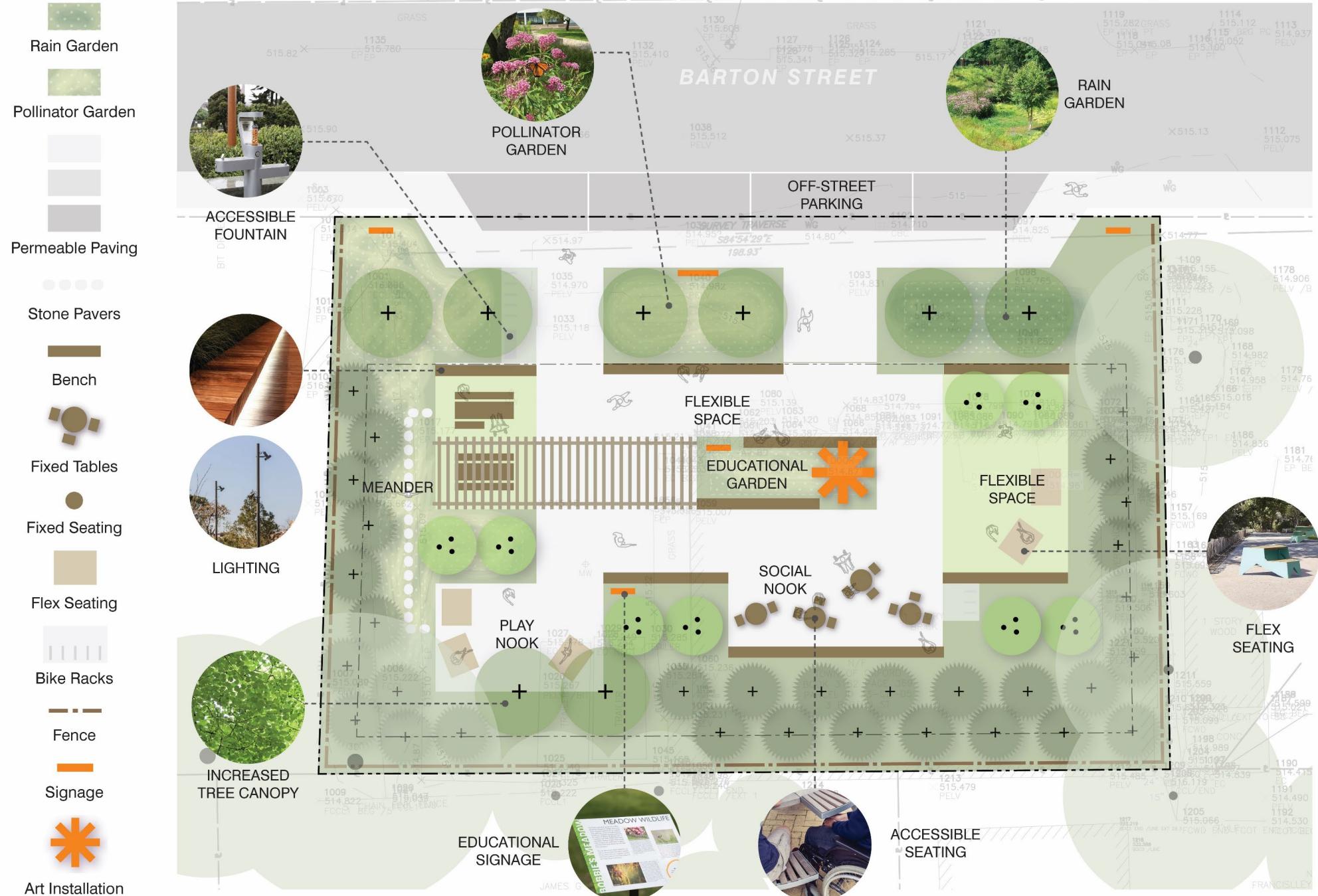
- Rain Garden
- Pollinator Garden
- Permeable Paving
- Stone Pavers
- Bench
- Fixed Tables
- Fixed Seating
- Flex Seating
- Bike Racks
- Fence
- Signage
- Art Installation



Concept 1 Radiant Grove Park



Patch Park



Concept 2 Patch Park

