

OXFORD POLLINATOR FORUM

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# Petroleum to Pollinators Project

April 5<sup>th</sup>, 2025

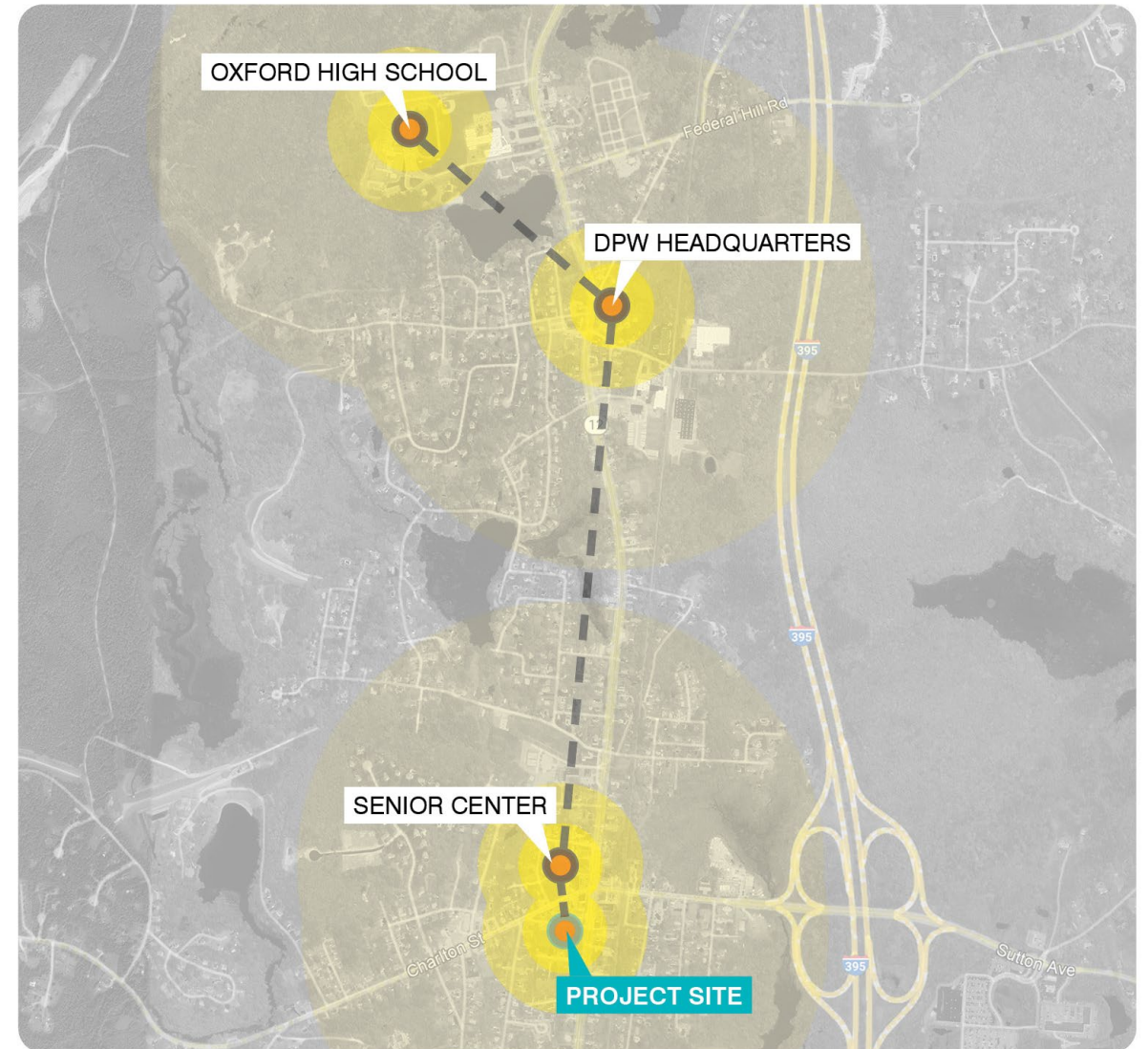


Weston & Sampson<sup>SM</sup>



# 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



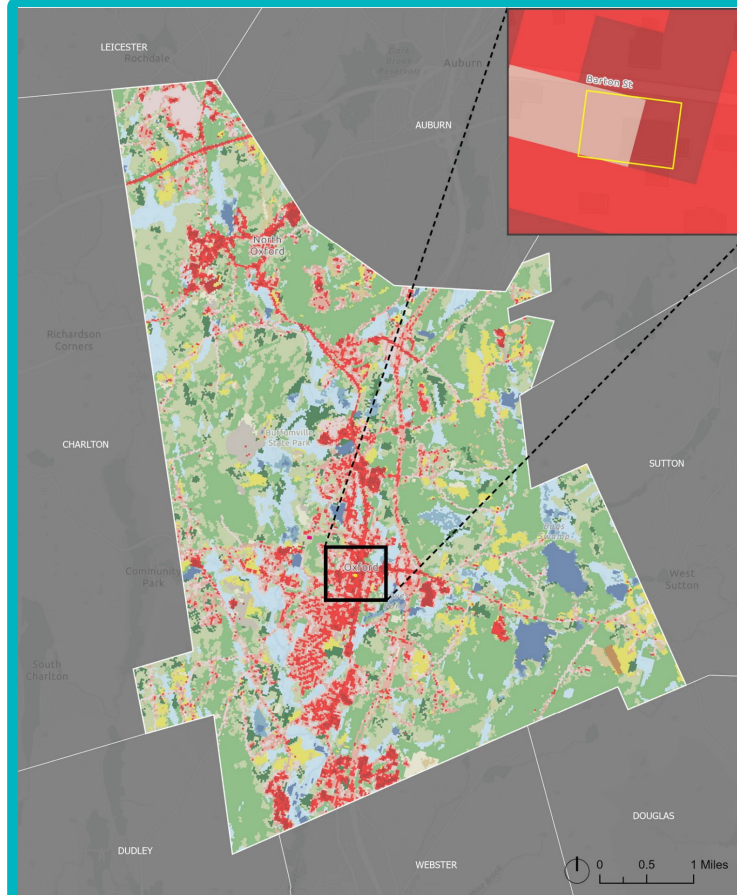
# Existing Conditions

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



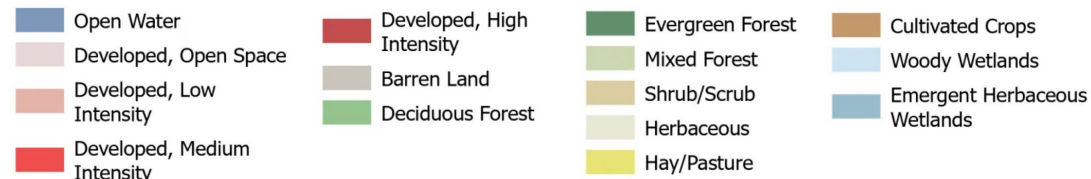
# Stormwater & Heat Assessment

## Land Cover

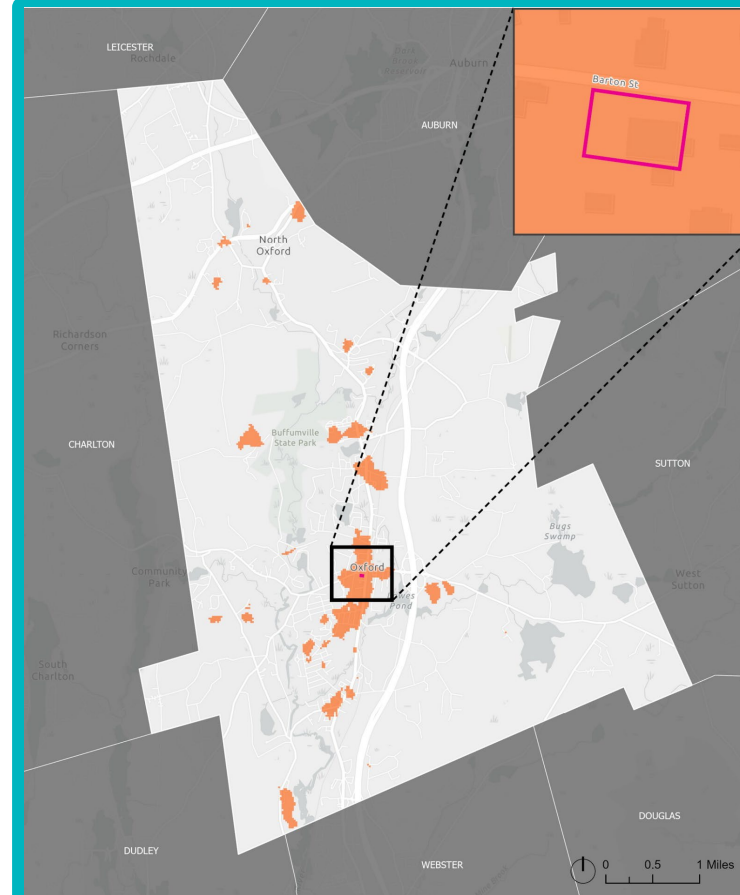


- Site located at center of Town
- High-Intensity developed land classification
- Limited vegetation = low biodiversity
- Project aims to reduce runoff & heat exposure, and increase biodiversity

### Land Cover



## Hotspots – High Land Surface Temperature



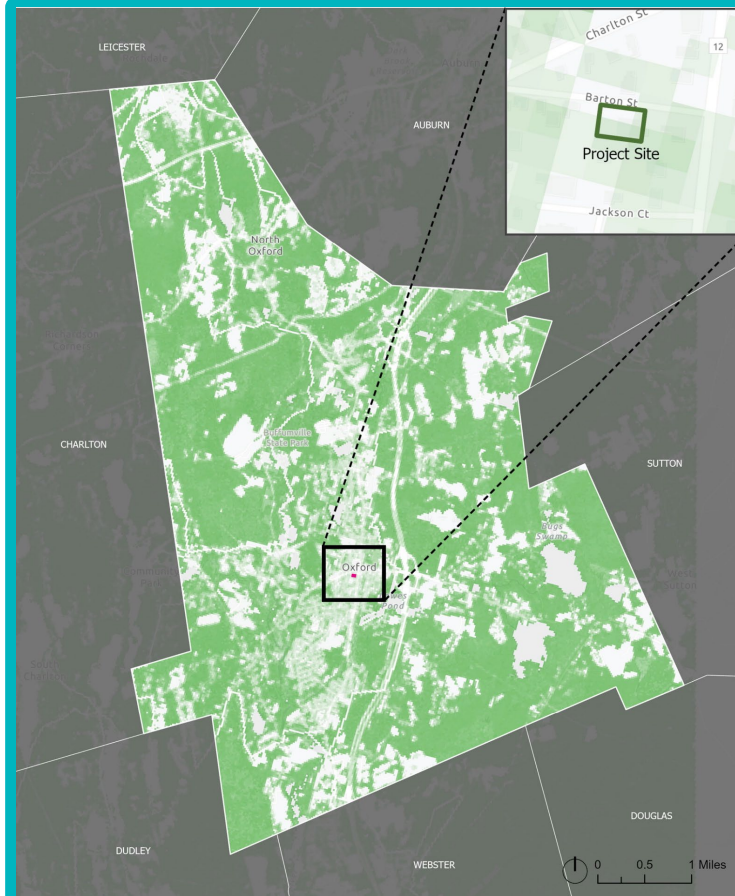
- Site is within regional heat hotspot
- Hotspots are the top 5% highest land surface temperature areas in the region
- Design for thermal comfort and heat island mitigation

### High Land Surface Temperature



# Stormwater & Heat Assessment

## Tree Canopy Cover

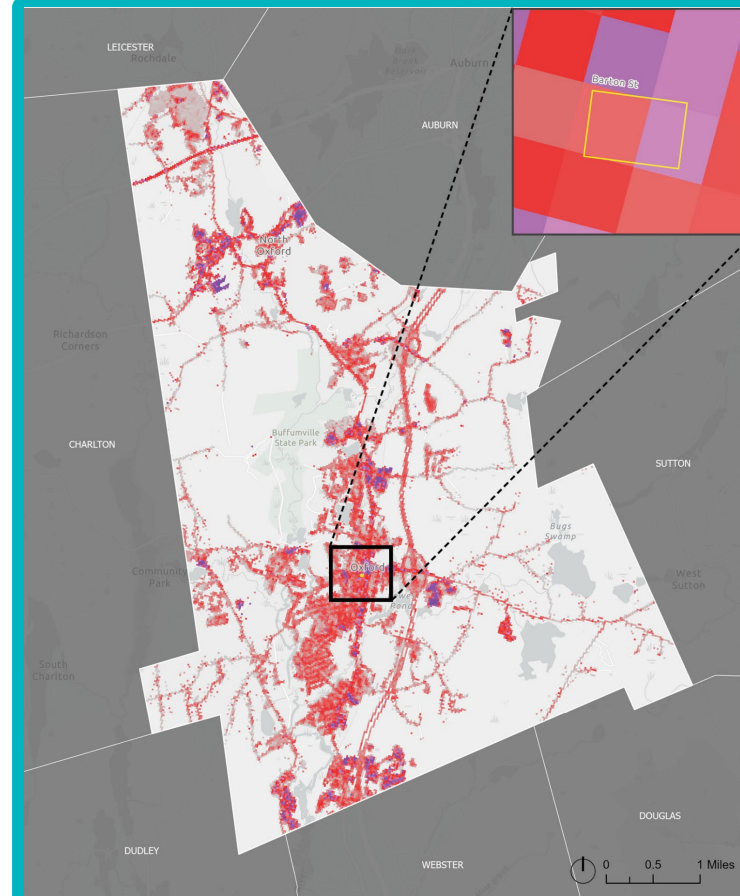


- Minimal tree canopy cover and vegetation
- Limited habitat for pollinators and wildlife
- Opportunity for tree planting and increased vegetation to provide cooling benefits and support wildlife

Tree Canopy Cover



## Impervious Surfaces



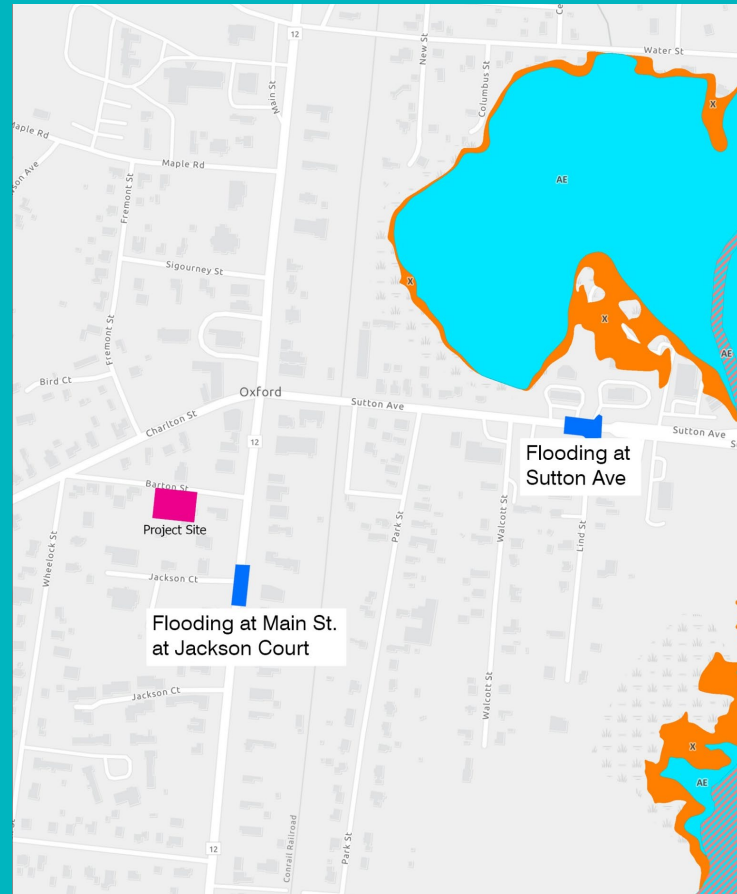
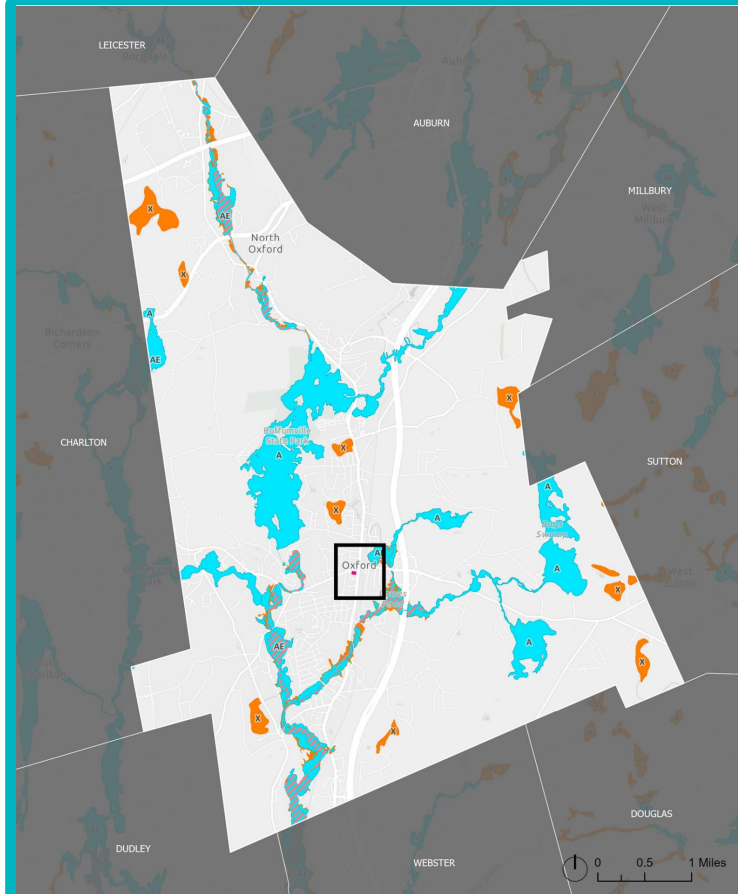
- Site currently has 100% impervious surface cover
- Impervious areas contribute to both heat and runoff
- Propose to replace hardscape with nature-based solutions and permeable paths

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

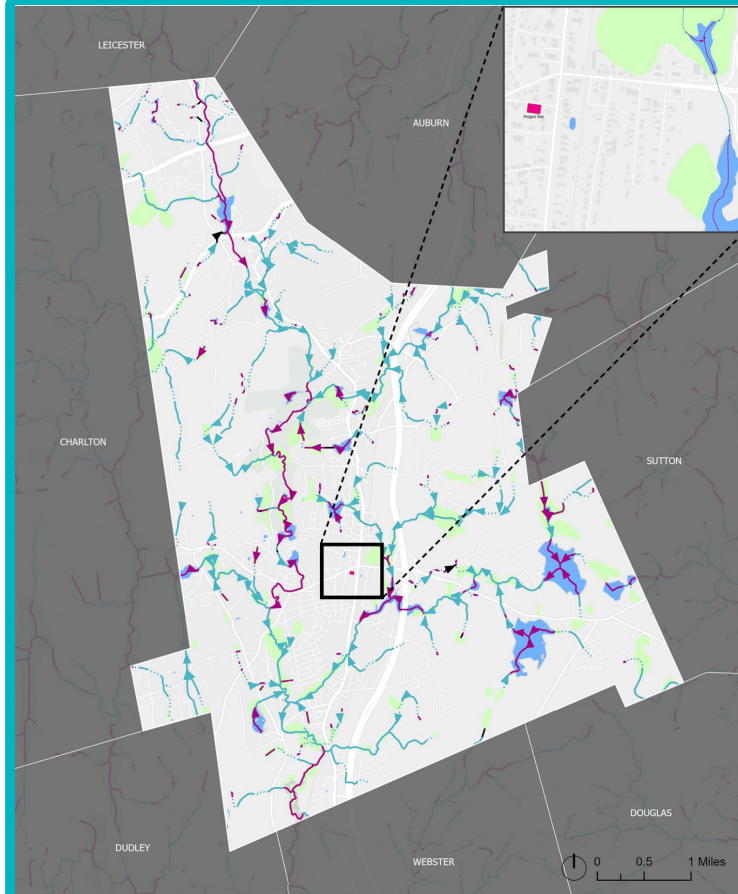
### Local Flooding

-  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

### Flow line and Direction

—▶ Perennial Stream

...▶ Intermittent Stream

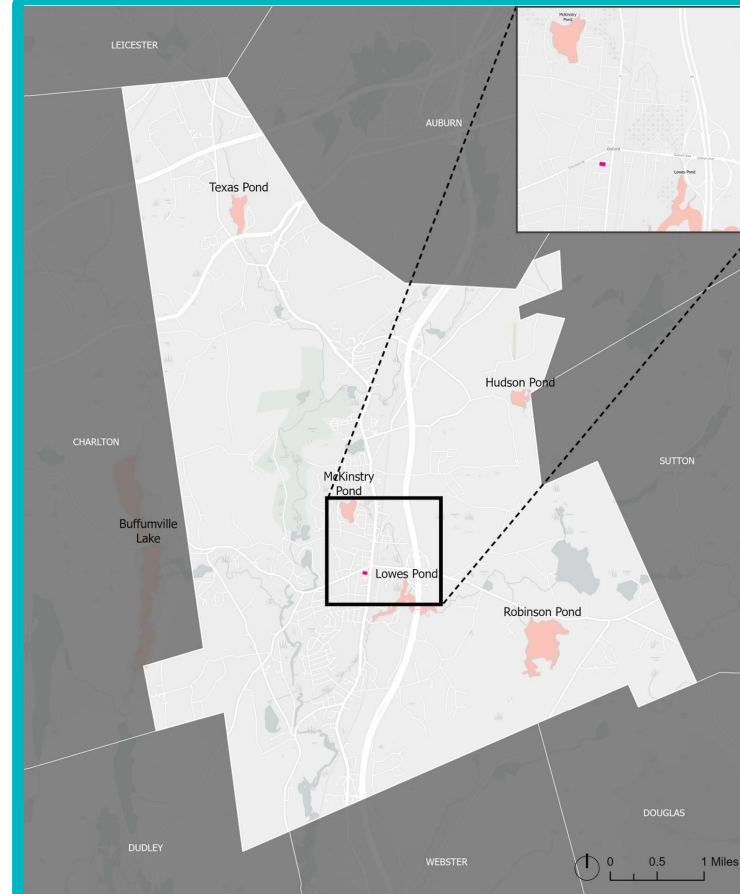
—▶ Artificial Path

### Water bodies

■ Lake/Pond

■ Swamp/Marsh

## Phosphorus-Impacted Lakes



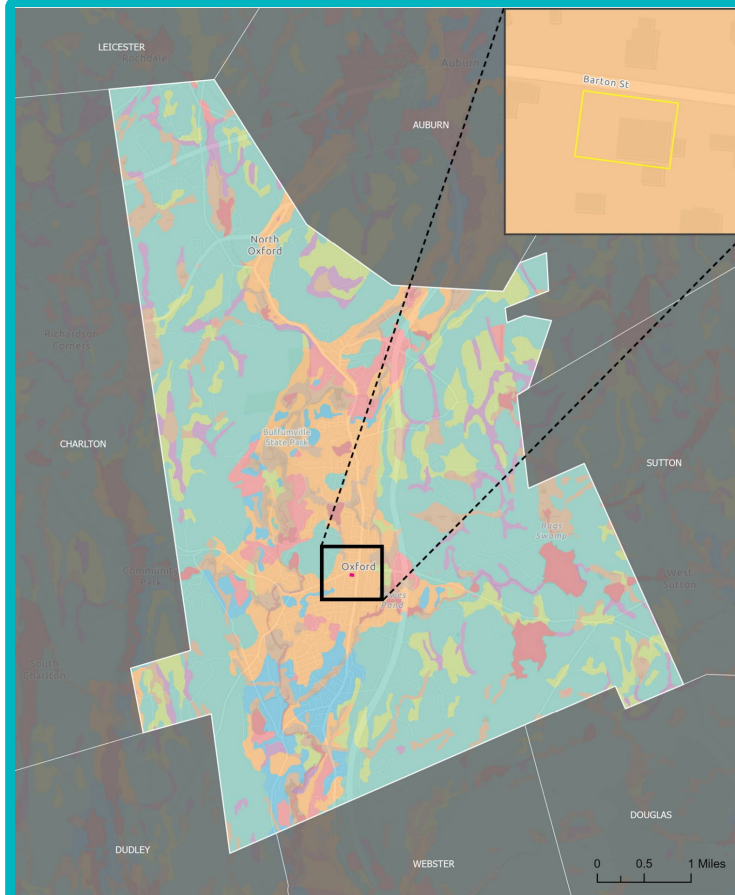
- Nearby lakes impacted by nutrient pollution
- Urban runoff contributes to algae blooms
- Propose green infrastructure to filter pollutants and reduce runoff for water quality protection

■ Phosphorous Impacted Ponds and Lakes



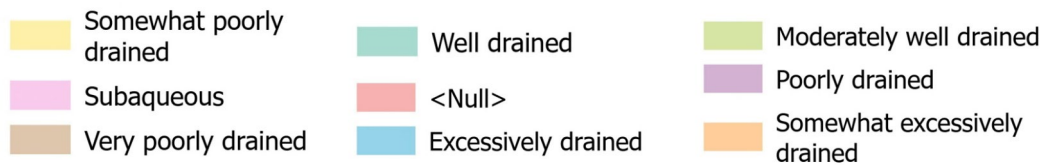
# Stormwater & Heat Assessment

## Soil Drainage Ability

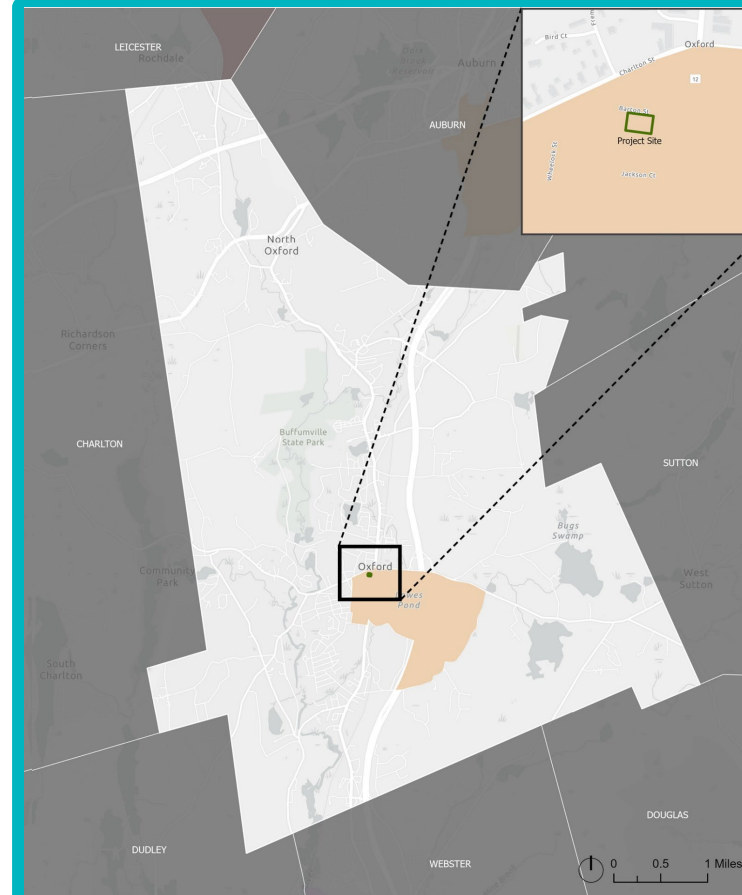


- Soils drain quickly, low water retention
- Project will select native and drought – tolerant plants
- Consider soil amendments to improve moisture holding

### Soil Drainage Class



## Environmental Justice (EJ) Community



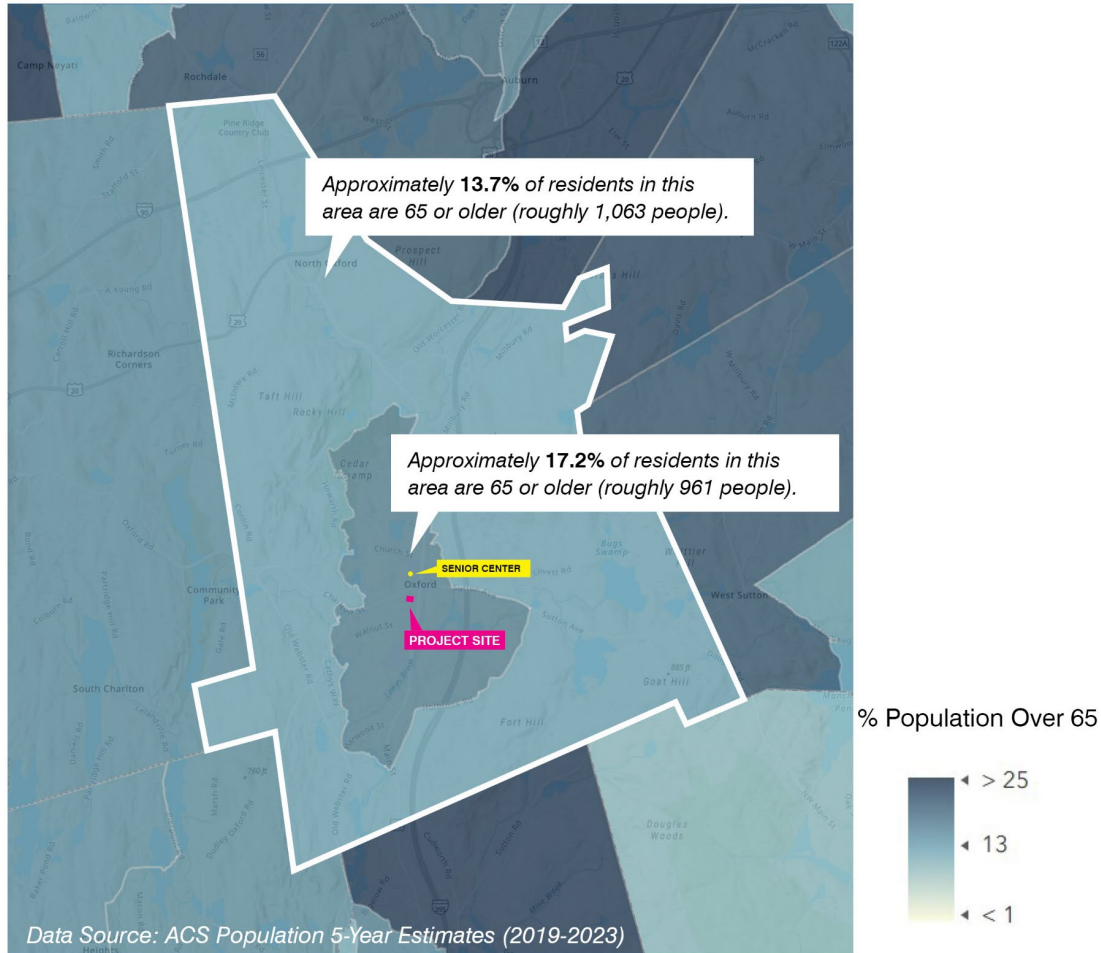
- EJ-designated area with low-income households
- Community lacks nearby quality green space
- Design supports social and climate resilience
- Provides equitable access to nature

### Environmental Justice Criteria



# Demographics: Park User Group Analysis

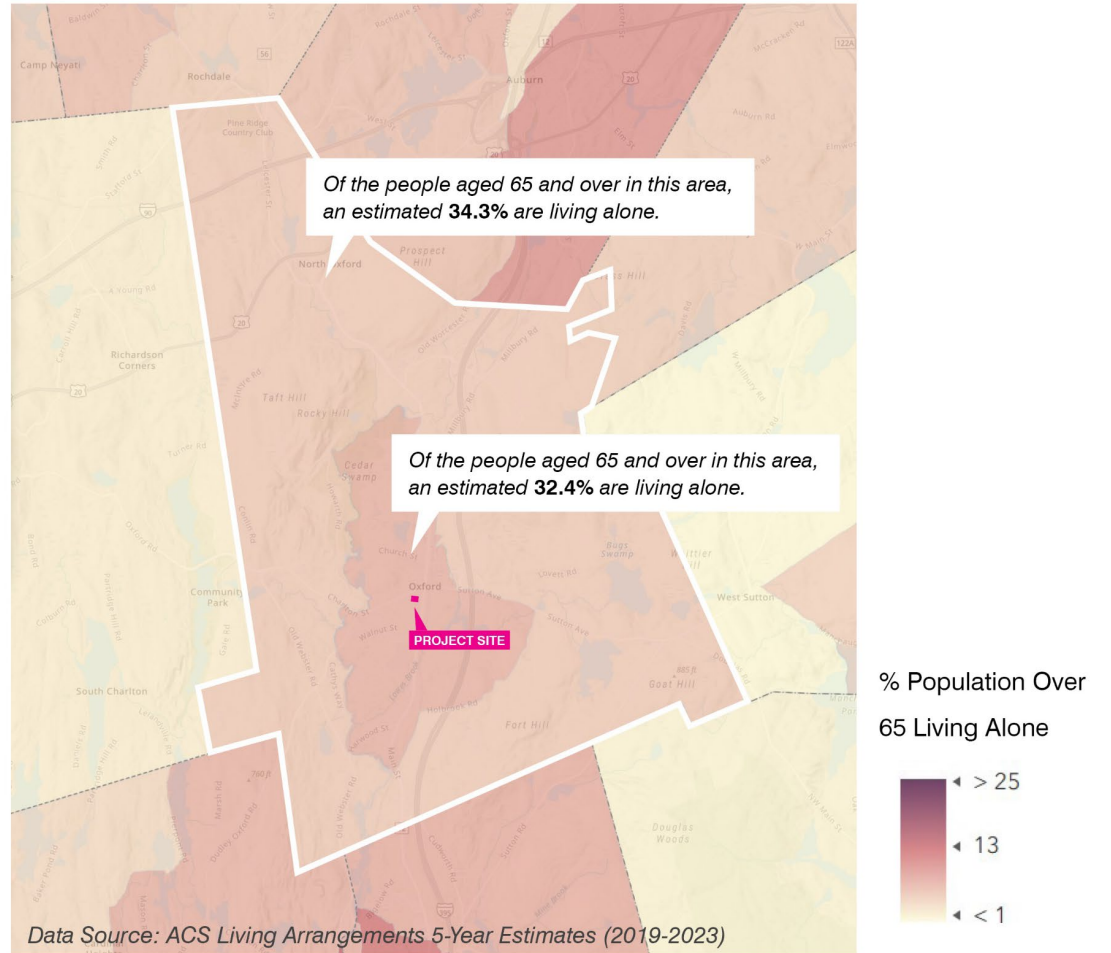
## Population Over 65 Years Old



### 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 shading.

## Population Over 65 Years Old Living Alone

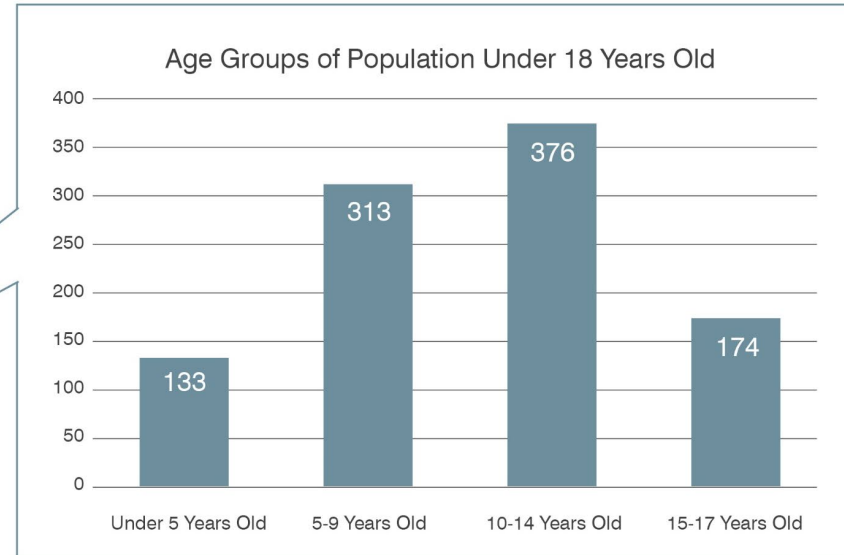
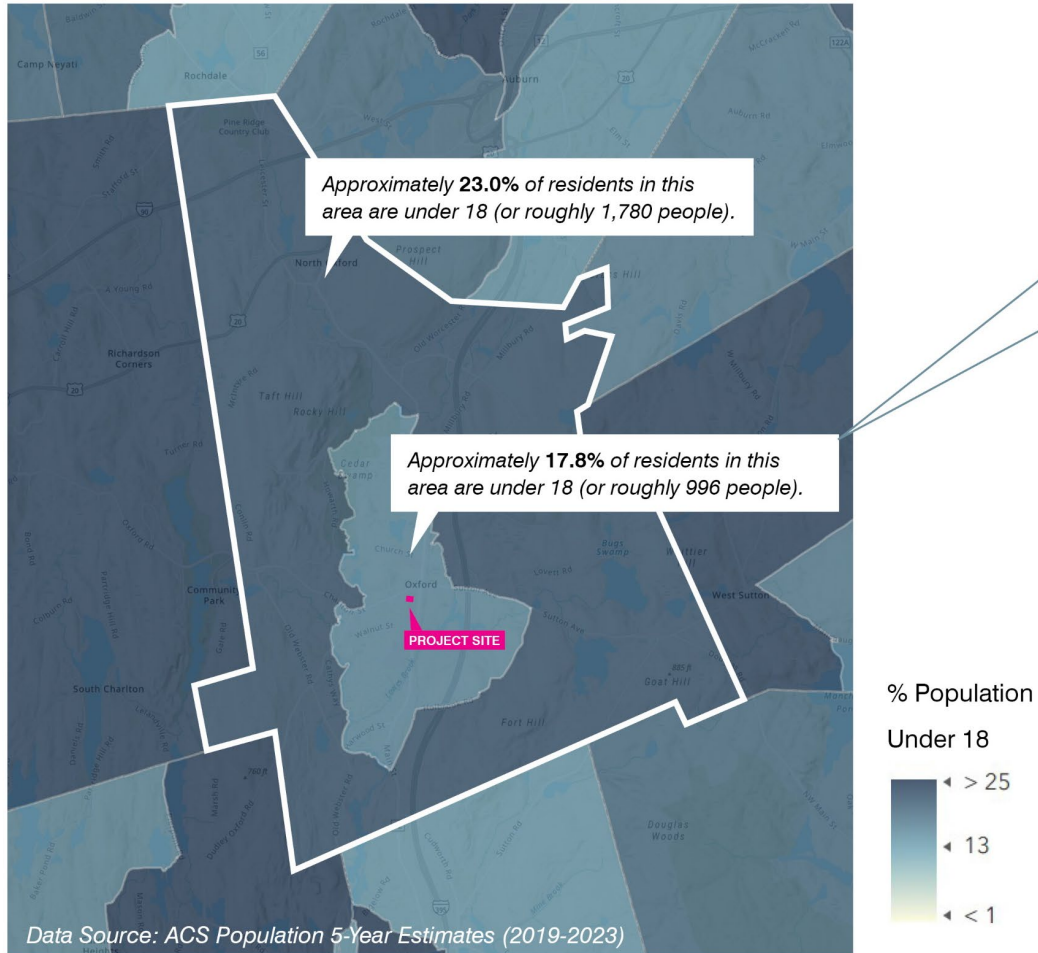


### Design Implications Based on User Group:

- 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



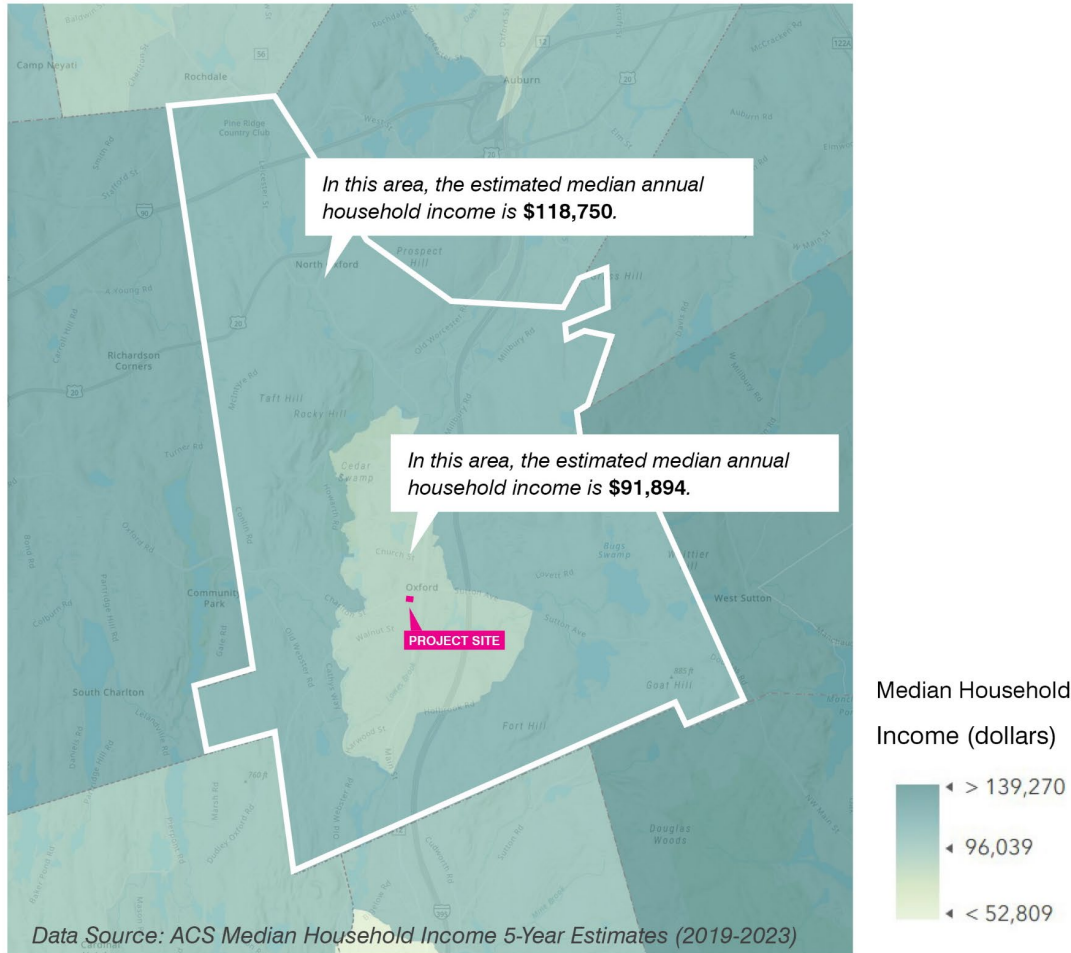
### Design Implications Based on User Group:

- 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

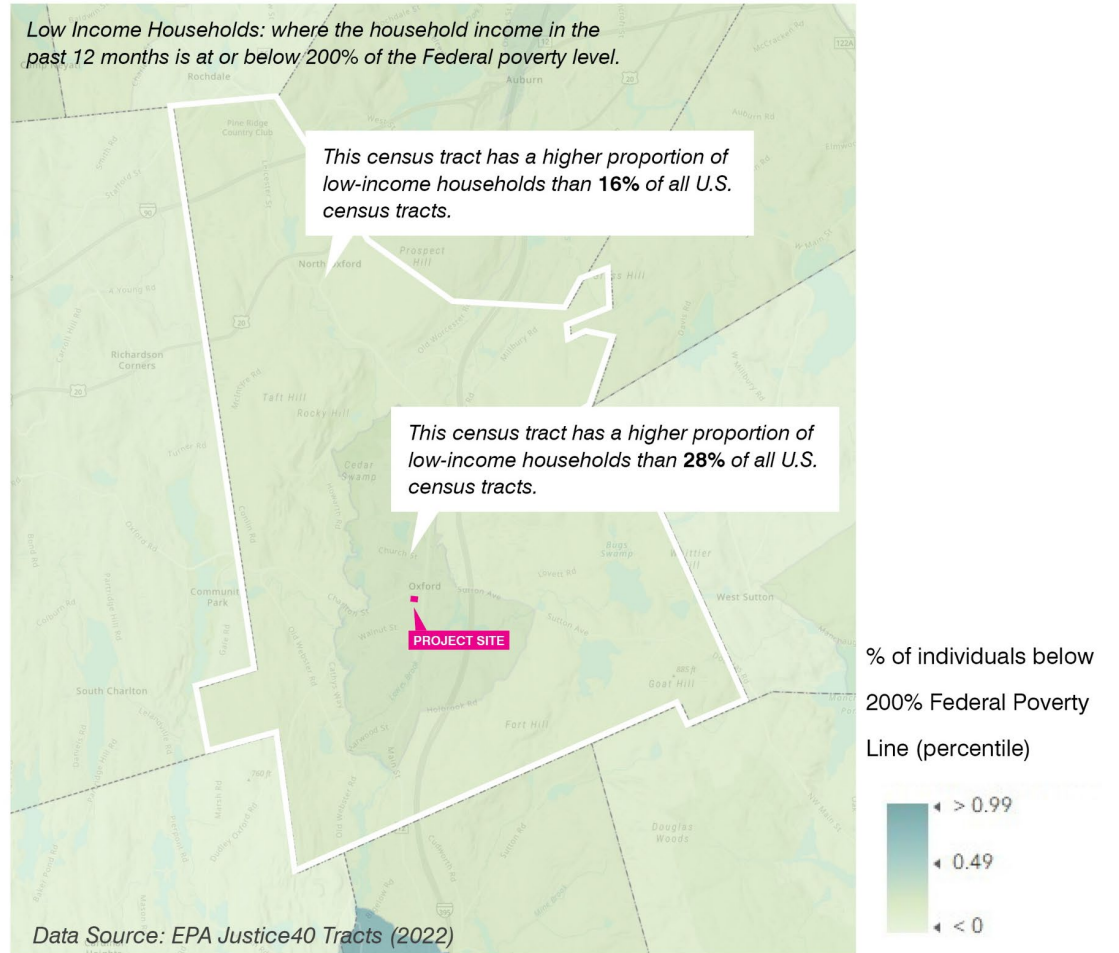
## Median Household Income



### 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



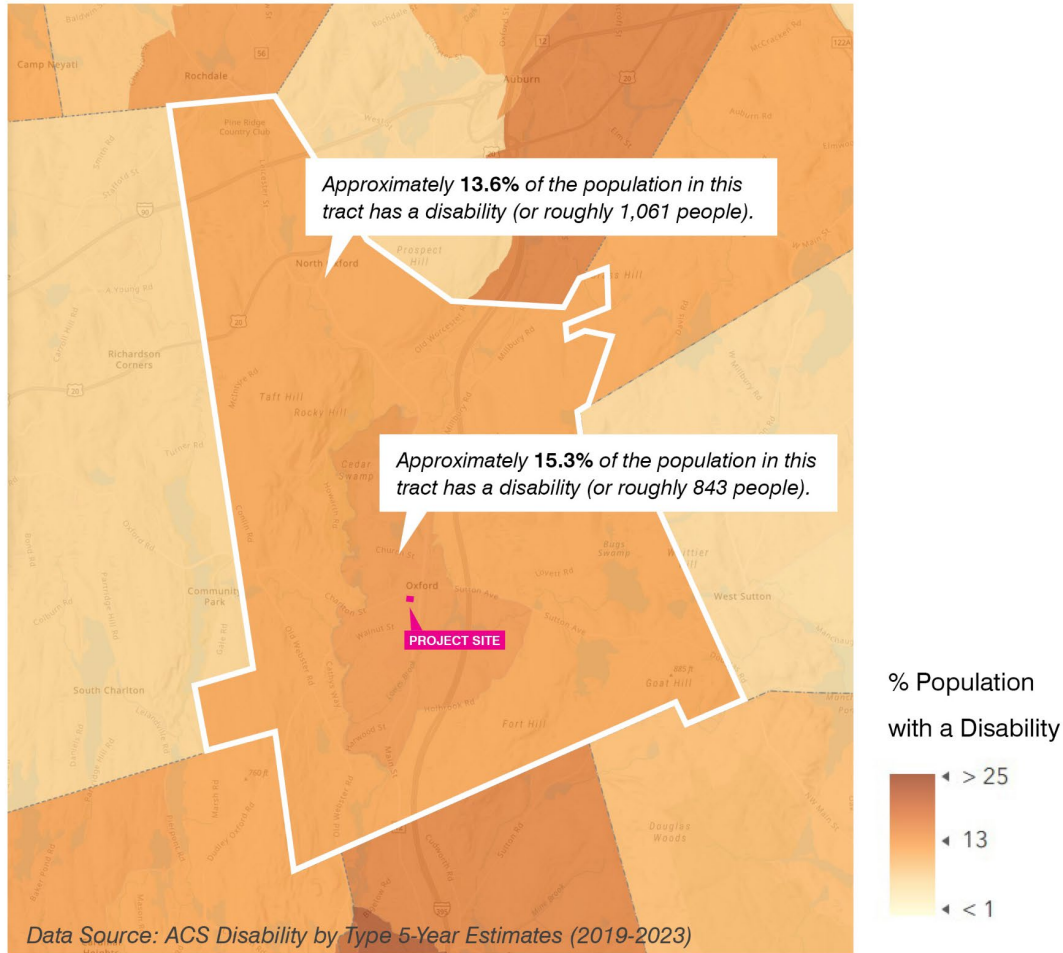
### Design Implications Based on User Group:

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



# Demographics: Park User Group Analysis

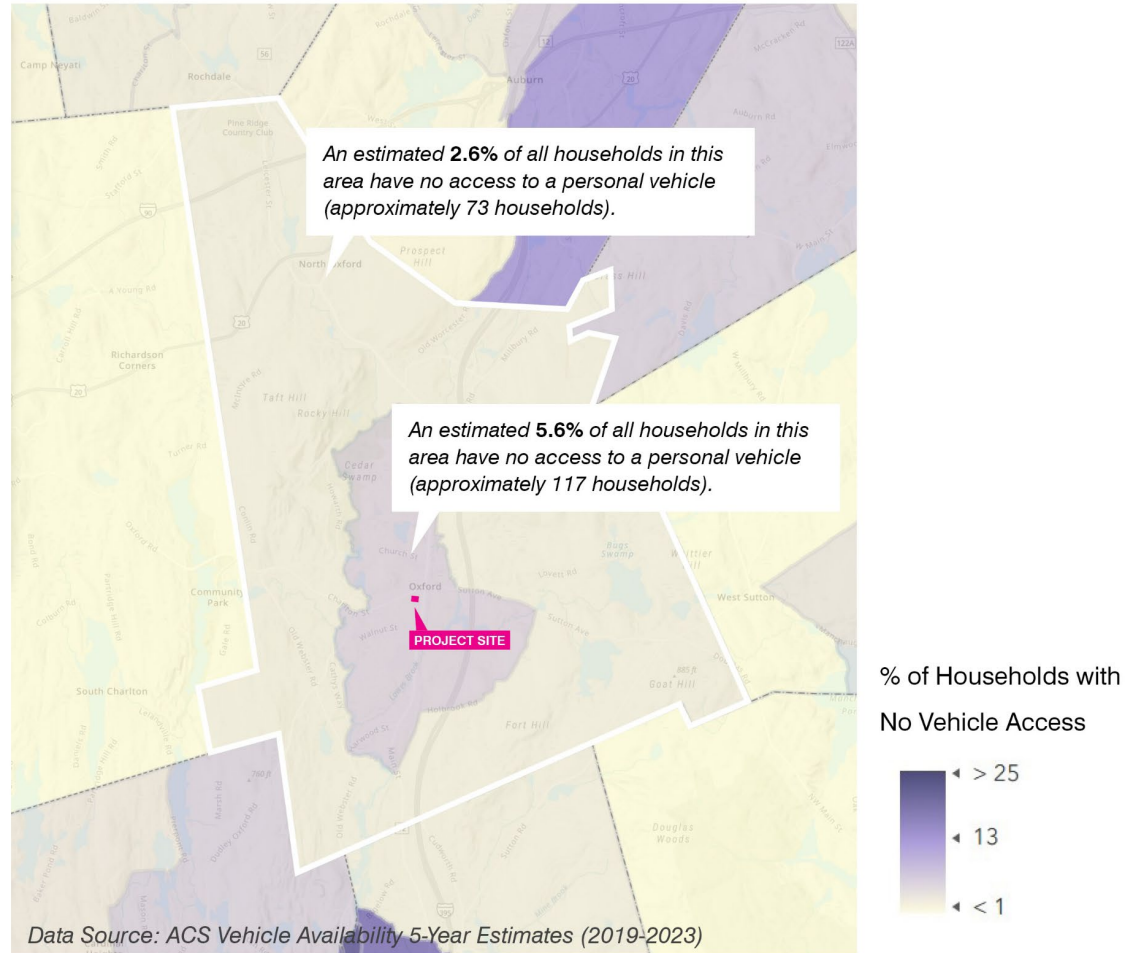
## Population Living with a Disability



### 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 has 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

A circular image showing a lush, green rain garden with various plants and grasses.

**Rain  
Gardens**

A circular image showing people sitting on a modern, angular, white outdoor bench.

**Flexible  
Furniture**

A circular image showing a garden filled with tall, white-flowered plants, likely pollinator-friendly.

**Pollinator  
Gardens**

A circular image showing a group of people walking on a paved path in a park with trees in the background.

**Open  
Space**

A circular image showing two people sitting on a bench in a garden, surrounded by tall grass and flowers.

**Social  
Nooks**

A circular image showing a person's legs and feet on a paved path, with a bicycle wheel visible in the foreground.

**Equitable  
Access**

A circular image showing a dense canopy of green leaves and branches, with sunlight filtering through.

**Tree  
Canopy**

A circular image showing an informational sign titled "MEADOW WILDLIFE" and "BOBBIE'S MEADOW" with text and photos.

**Educational  
Signage**

A circular image showing a modern, white outdoor water fountain or amenity structure.

**Welcoming  
Amenities**

A circular image showing a piece of community art, possibly a sculpture or installation, in a garden setting.

**Community  
Art**



# Envisioning a Park Sense of Scale

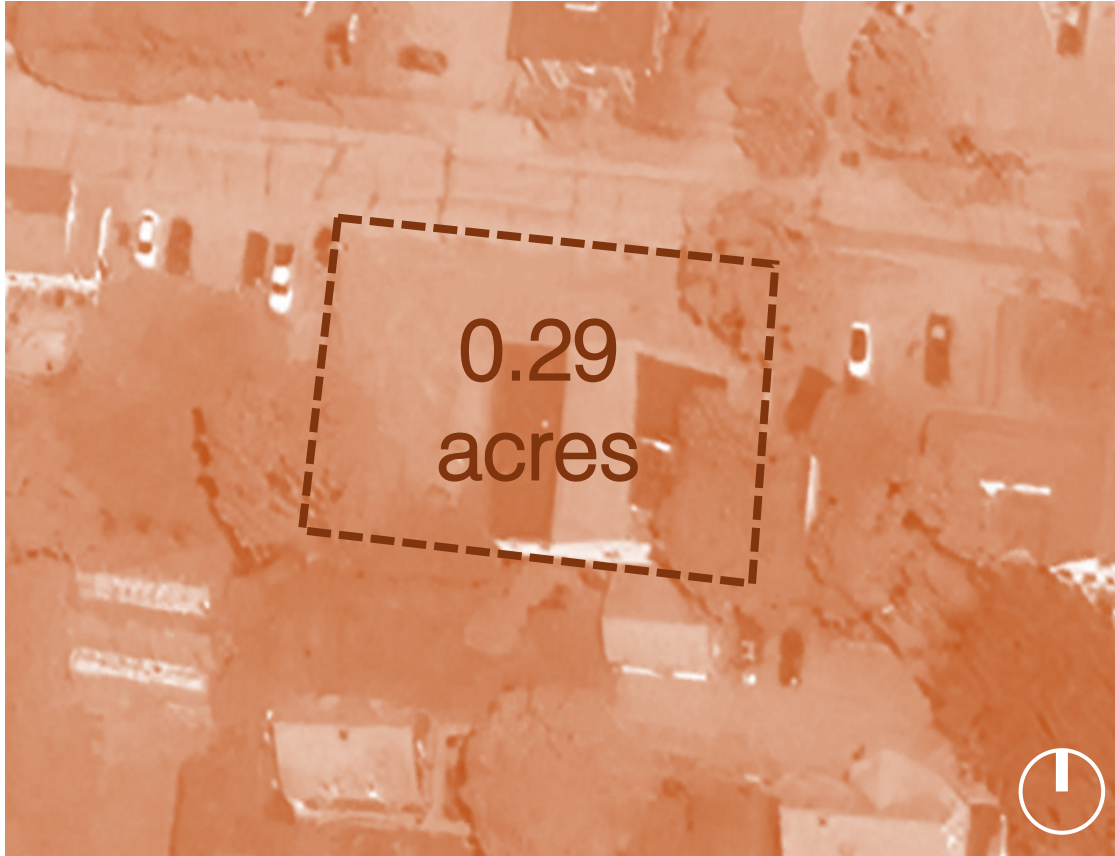


3 Barton Street  
Project Site

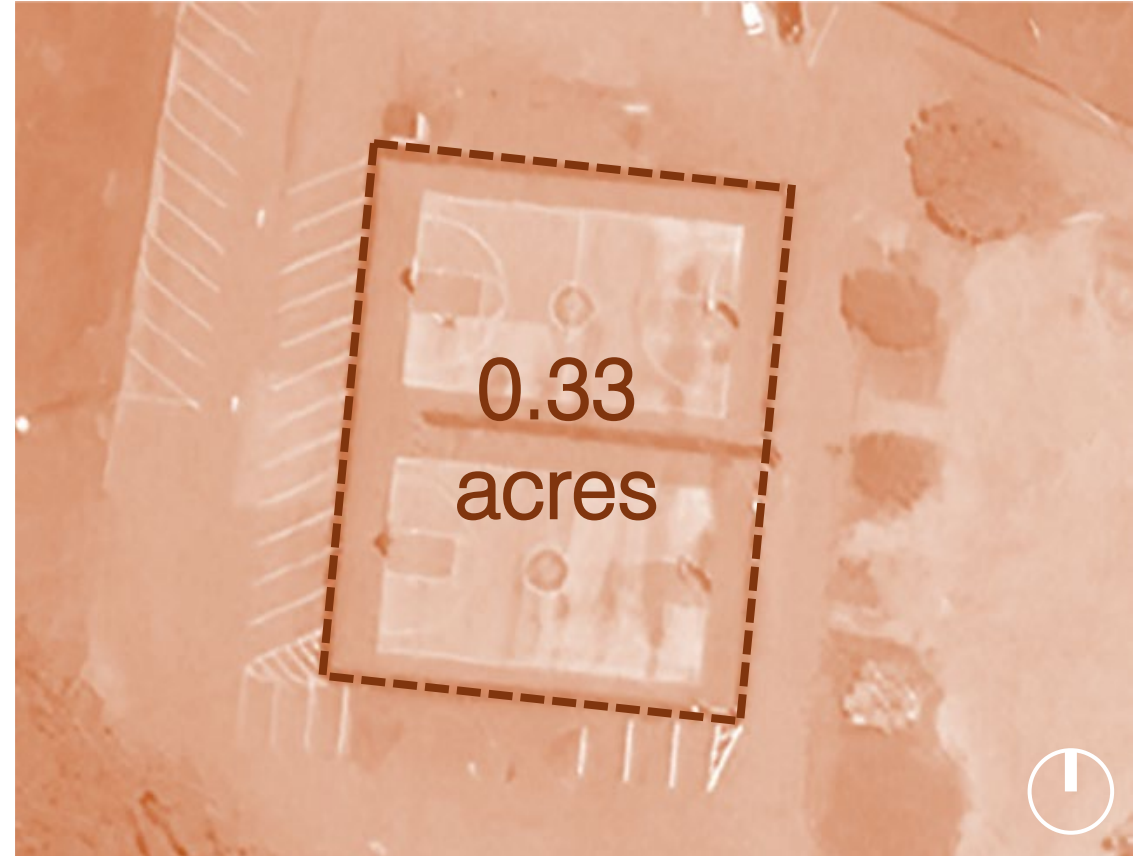


Oxford Community Center  
Basketball Courts

# Envisioning a Park Sense of Scale



2 Barton Street  
Project Site



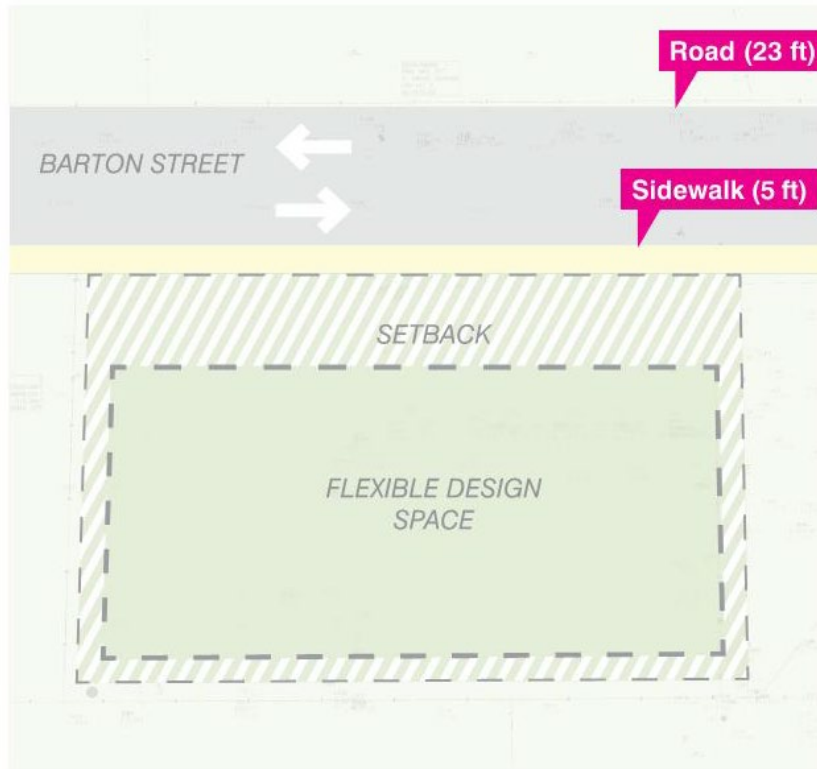
Oxford Community Center  
Basketball Courts



# Sidewalk Studies

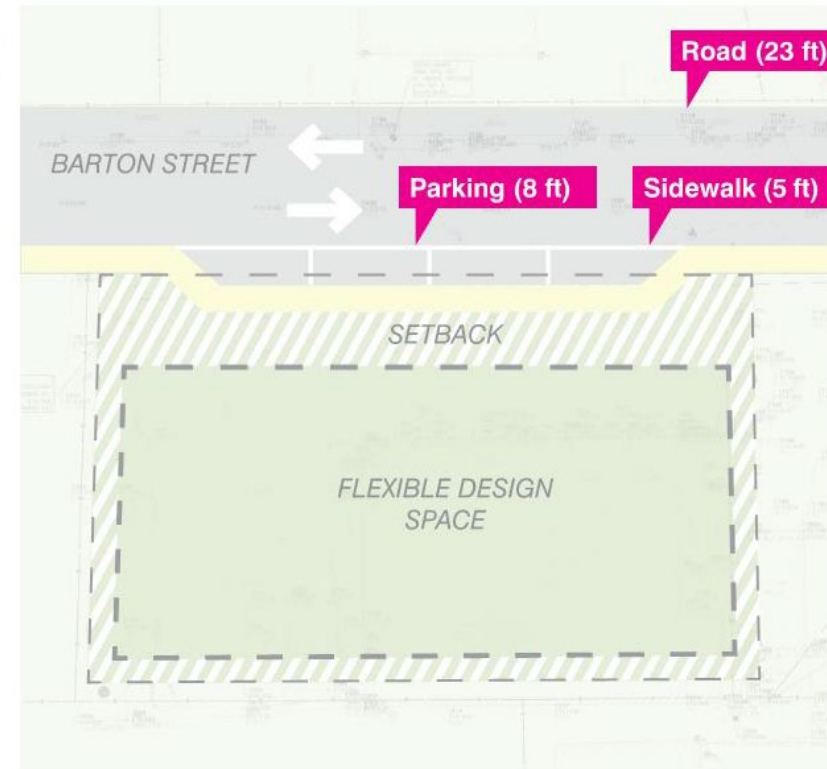


# Sidewalk Studies



Sketch A

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



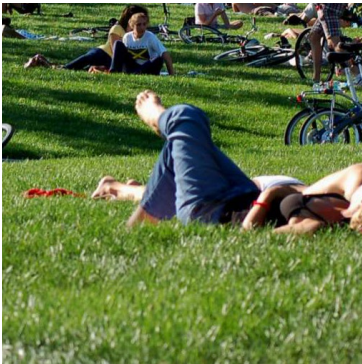
Sketch B

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

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





# Concept 2 Patch Park

