

environmental infrastructure primer

parks and recreation



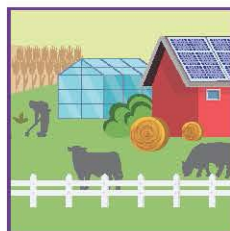
**Environmental
Markets**



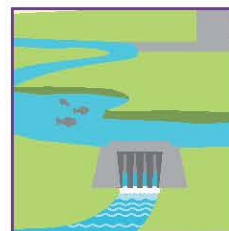
**Land
Conservation**



**Parks and
Recreation**



Agriculture



Water
(Coming soon in 2023)



**Waste and
Recycling**

(Coming in 2024)



Parks and Recreation

Primer

Contents

1. Introduction	4
2. Overview	4
3. Key Public Policies	6
4. Market Potential	8
5. Target	11
6. Funding and Financing Programs	11
7. Other Programs	13
8. Stakeholder Outreach	14
9. Findings	15
10. Opportunities	17
11. References	21
12. Definitions	22

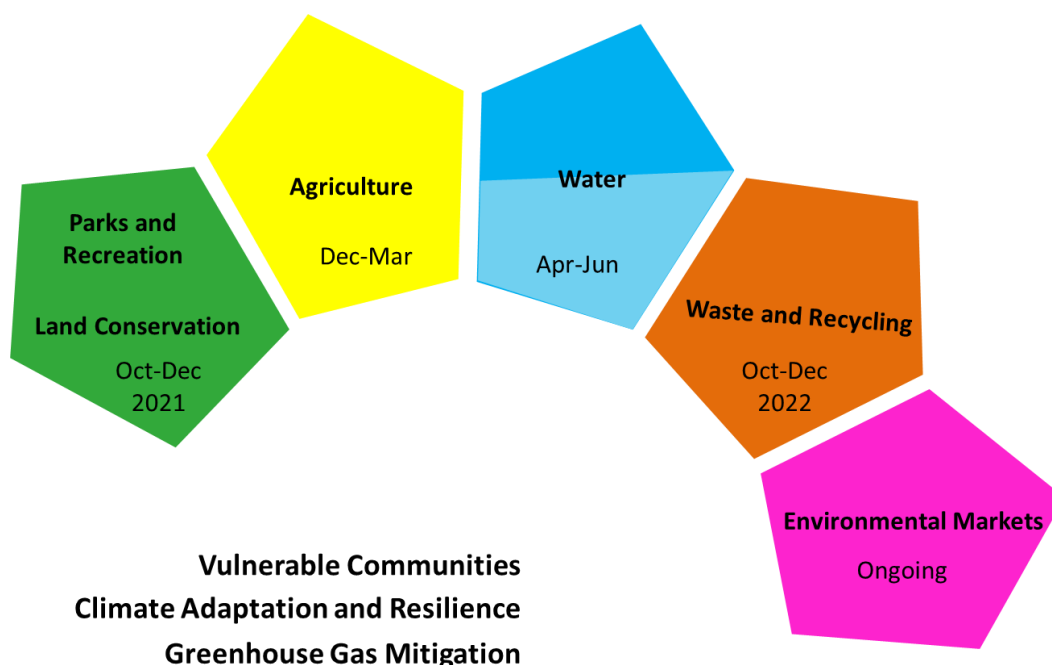
PARKS AND RECREATION

RESEARCH ON ENVIRONMENTAL INFRASTRUCTURE

1. Introduction

In October of 2021, the Connecticut Green Bank (“Green Bank”) developed a plan upon which it was going to engage stakeholders to understand the various components of “environmental infrastructure” – see Figure 1. With its mission to “confront climate change by increasing and accelerating investment into Connecticut’s green economy to create more resilient, healthier, and equitable communities,” within each component of “environmental infrastructure,” the cross-cutting issues of reducing greenhouse gas emissions (“GHG”), increasing climate adaptation and resilience, and enabling investment in vulnerable communities was explored.

Figure 1. Process to Understand Components of Environmental Infrastructure



This primer reflects the observations, findings, and initial recommendations from the conversations with stakeholders and research conducted on parks and recreation.

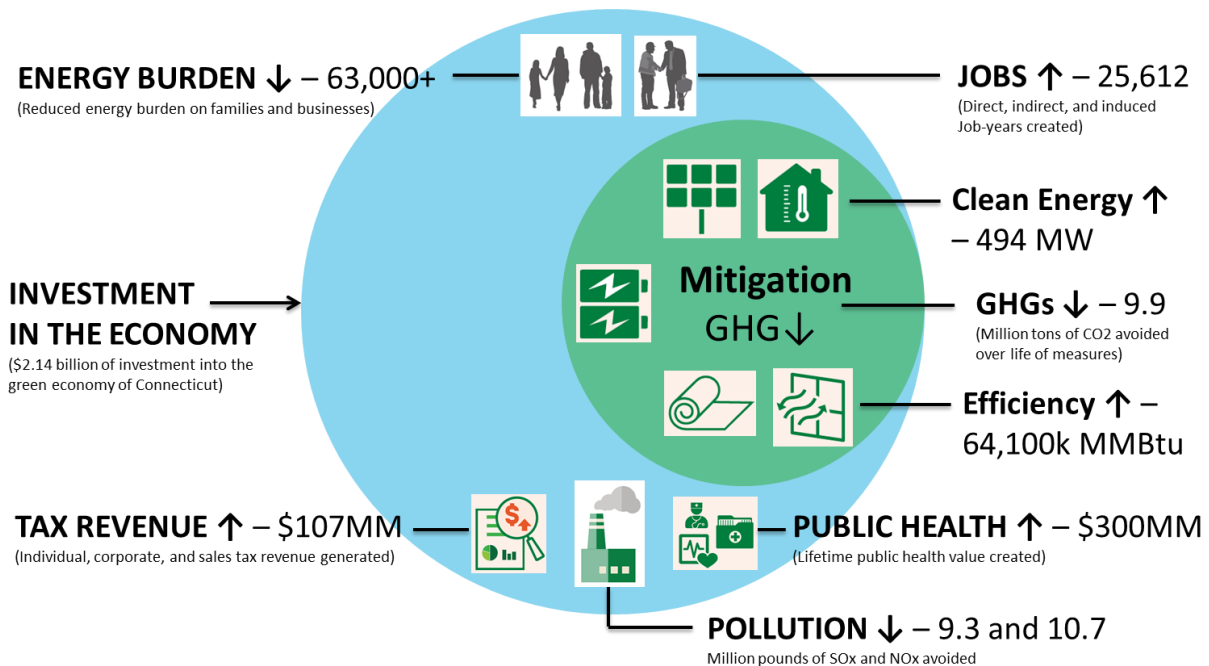
2. Overview

On July 6, 2021, Governor Ned Lamont signed Public Act 21-115 “An Act Concerning Climate Change Adaptation” (“the Act”) into law. The bipartisan-supported public policy was among the sixty-one (61) recommendations made by the Governor’s Council on Climate Change (“GC3”), including a recommendation to expand the scope of the Green Bank beyond “clean energy” to include “environmental infrastructure” (i.e., Recommendation #57).

Since its founding over a decade ago, the Green Bank has focused its efforts on using a limited amount of public resources to mobilize multiples of private investment in Connecticut to

increase and accelerate the deployment of “clean energy” to deliver social and environmental impact – see Figure 2.

Figure 2. Decennial Impact of the Green Bank with focus on “Clean Energy” Deployment and Mitigation of GHG Emissions



Given its mission, the Green Bank helps the State of Connecticut achieve its ambitious public policy objectives (e.g., GHG emission reductions targets, renewable portfolio standards). In so doing, by 2025, no less than 40 percent of investment and benefits from its programs are to be directed to vulnerable communities.¹

The Act, expands the scope of the Green Bank beyond “clean energy” to include “environmental infrastructure,” and includes the following key provisions:

- **Definition** – “environmental infrastructure” means structures, facilities, systems, services and improvement projects related to (A) water, (B) waste and recycling, (C) climate adaptation and resiliency, (D) agriculture, (E) land conservation, (F) parks and recreation, and (G) environmental markets, including, but not limited to, carbon offsets and ecosystem services;
- **Comprehensive Plan** – requirement for the Green Bank to develop a Comprehensive Plan² prior to implementing any programs or initiatives related to “environmental infrastructure”;

¹ “Vulnerable communities” means populations that may be disproportionately impacted by the effects of climate change, including, but not limited to, low and moderate income communities, environmental justice communities pursuant to section 22a-20a, communities eligible for community reinvestment pursuant to section 36a-30 and the Community Reinvestment Act of 1977, 12 USC 2901 et seq., as amended from time to time, populations with increased risk and limited means to adapt to the effects of climate change, or as further defined by DEEP in consultation with community representatives.

² https://www.ctgreenbank.com/wp-content/uploads/2022/07/Comprehensive-Plan_FY-2020-and-Beyond_Revisions-for-FY22_012522.pdf

- **Reporting** – inclusion of the Banks Committee and the Environment Committee, alongside the Energy and Technology Committee and Commerce Committee in terms of reporting; and
- **Bonding** – the ability to issue 25-year bonds for “clean energy” and 50-year bonds for “environmental infrastructure” (i.e., no more than the useful life of the projects), supported by the Special Capital Reserve Fund (“SCRF”), for up to 25 years to improve the rating of the bonds issued.

This document attempts to summarize the findings from the research and outreach efforts conducted by the Green Bank³ on “parks and recreation” from October 2021 through January of 2022 and includes the following sections: (A) overview, (B) key public policies, (C) market potential, (D) target, (E) funding and financing programs, (F) other programs, (G) stakeholder outreach, (H) findings, (I) opportunities, (J) history of leadership and innovation, (K) references, and (L) definitions.

Infrastructure investments in “parks and recreation” can support the Green Bank’s mission by both mitigating the GHG emissions that cause climate change (e.g., carbon sinks from urban tree canopy cover) and increasing resilience against the impacts of climate change (e.g., stormwater management through urban parks).

3. Key Public Policies

The following are key public policies that advance “parks and recreation” in Connecticut, including, but not limited to:

1. **State Plan of Conservation and Development** (CGS 16a-24) – is an overarching statement of state policy in matters pertaining to land and water resource conservation and development. The Office of Policy and Management (“OPM”) prepares revisions to the State Conservation and Development Plan (“State C&D Plan”) on a recurring 5-year cycle and submits it for adoption by the Connecticut General Assembly (“CGA”). Once adopted, the State C&D Plan is then implemented by state agencies whenever they undertake certain actions.⁴ The current State C&D Plan (i.e., for 2018-2023), includes the relevant “clean energy” and “environmental infrastructure” items, including, but not limited to:
 - A. **Greenhouse Gas Mitigation** – reducing carbon dioxide emissions in the state consistent with the recommendations of the Connecticut Climate Change Preparedness Plan (i.e., 5.10);
 - B. **Climate Adaptation and Resilience** – including developing and deploying innovative energy technologies, and promoting distributed generation and microgrids to provide reliable electrical power or energy-dependent community services during outages and peak demand periods (i.e., 1.12) and minimizing the potential risks and impacts from natural hazards by considering potential impacts of climate change on existing and future development (i.e., 1.13); and

³ Led by Bryan Garcia (President and CEO) and Ashley Stewart (Consultant)

⁴ Quasi-publics are not subject to this requirement

- C. **Parks and Recreation** – encouraging and promoting access to parks and recreational opportunities, including trails, greenways, community gardens, and mixed-income housing (i.e., 2.8) and protecting the ecological, scenic, and recreational value of lakes, rivers, and streams by promoting compatible land uses and management practices in accordance with adopted plans.
2. **Open Space Target** (CGS 23-8)⁵ – establishes a mandate to conserve 21% (i.e., 673,210 acres) of state land area as held by open space land, with 10% from the state (e.g., forests, parks) and not less than 11% from partners (e.g., municipalities, water companies, or non-profit land conservation organizations). The Comprehensive Open Space Acquisition Strategy (or “Green Plan”)⁶ is the comprehensive strategy for achieving the state goal by 2023, which includes priorities for strategic acquisitions of open space for climate change resiliency and preserving open space in perpetuity for state lands with high conservation value.
 3. **Community Investment Act** (Public Act 05-228)⁷ – “An Act Concerning Farm Land Preservation, Land Protection, Affordable Housing and Historic Preservation,” also known as the Community Investment Act (“CIA”), CIA provides a dedicated and consistent source of funding for state preservation of open space (Department of Energy and Environmental Protection or “DEEP”), farmland (Department of Agriculture or “DoAg”), historic sites (Department of Economic and Community Development or “DECD”), and affordable housing (Connecticut Housing Finance Authority or “CHFA”). Through a \$40 surcharge on local land recordings (i.e., \$1 to Town Clerk, \$3 to local government, \$10 supplemental income to dairy farmers, and \$26 to State Treasurer), about \$22 MM is raised each year, which is equally distributed in four (4) parts to the priority funding areas.
 4. **Passport to the Parks** – beginning in 2018, Connecticut offered all residents with Connecticut license plates on their vehicles free entry and parking at all state parks and beaches. Connecticut wants to make state parks, forests, trails, historic sites and beaches more available to residents so they can enjoy the many attractions and beauty they offer. Passports to the Parks raises \$20 MM per year for park operations and maintenance through a \$5/year/vehicle motor vehicle registration fee. This policy supports parks and removes historic cost barriers to enter them.
 5. **Great American Outdoors Act** (“GAOA”) – permanently funds the Land and Water Conservation Fund (“LWCF”) at \$900 MM a year, a significant source of resources from the United States Government (“USG”) for open space and parks. GAOA also provides \$9.5 billion over five years to address longstanding maintenance backlogs in our national parks, forests, and other public lands.

In order to identify opportunities to mobilize private investment, it is important to understand the public policy context in which “parks and recreation” operates. With the focus on the Green

⁵ <https://law.justia.com/codes/connecticut/2012/title-23/chapter-447/section-23-8/>

⁶ <https://portal.ct.gov/DEEP/Open-Space/The-Green-Plan>

⁷ <https://www.cga.ct.gov/2005/ACT/Pa/pdf/2005PA-00228-R00SB-00410-PA.pdf>

Bank's mission (i.e., confront climate change), public policy provides a mechanism to catalyze private investment.

4. Market Potential

The following is a breakdown of the market potential for "parks and recreation" from the perspective of active⁸ and passive⁹ outdoor recreation facilities, and on "land" or "water" based activities from the Statewide Comprehensive Outdoor Recreation Plan ("SCORP") – see Table 1.

Table 1. Outdoor Recreation Facilities in Connecticut (2005)

Outdoor Recreation Type	# of Facilities	DIRPS ¹⁰ per 10,000 Residents	Ownership		
			Statewide Average	Municipal Average	Other Average
Active – Land	4,788	1.4	4%	77%	20%
Active – Water	137	0.4	2%	69%	30%
Passive – Land	1,957	1.0	27%	46%	27%
Passive – Water	1,130	1.1	22%	45%	33%
Total	8,012	1.2	14%	62%	24%

Despite the age of the data, several general observations can be made with respect to active and passive outdoor recreation, including:

- **Active Recreation** – in a state with the headquarters of the Entertainment Sports Programming Network ("ESPN"), municipalities are the dominant stakeholder when it comes to active outdoor recreation facilities, with the highest use frequency index for swimming;
- **Passive Recreation** – when it comes to passive outdoor recreation facilities, the ownership between stakeholders is dominated by:
 - **Statewide** – hunting;
 - **Municipalities** – beach, boating, fishing, gardens, historic, picnic areas, and trails with the highest use frequency index for hiking on both public and private lands;¹¹
 - **Other** – camping.

⁸ Active outdoor recreation facilities based on 2005 data (X – #) and 2017 use frequency index data, if available (# – Y), include fields, courts, and courses for baseball and softball (984 – 16.0), basketball (645 – 23.0), football (154 – 10.0), golf (125 – 13.6), multi-use (624), soccer (495 – 14.6), tennis (384 – 11.2), and volleyball (74 – 23.0), as well as playgrounds (1,065), swimming pools (137 – 60.9), and winter sports (238 – 9.3)

⁹ Passive outdoor recreation facilities based on 2005 data (X – #) and 2017 use frequency index data, if available (# – Y) include access to sites for beaches (176 – 60.1), boating (285 – 10.9), camping (88 – 13.5), fishing (669 – 19.0), gardens (109), historic landmarks (99 – 35.9), hunting (88 – 3.5), picnics (677), and trails (896 – 102.8)

¹⁰ Discrete Identifiable Recreation Places

¹¹ Managed by the Connecticut Forest and Parks Association, the Blue-Blazed Hiking System includes more than 825 miles of hiking to explore the woodlands, remote ridges, and wild places of Connecticut.

- **Access Prevention** – in terms of what is preventing access to recreation, surveys indicate that 88% and 56% of citizens get to facilities by automobile or walking, respectively, and 20% to 23% of survey respondents indicate that fees are too high and facilities are too far.

The “No Child Left Inside” and “Passport to the Parks” programs, promote Connecticut citizens enjoying active and passive outdoor recreation facilities on land or water-based activities.

The Trust for Public Land’s (“TPL”) ParkScore Index is a comprehensive rating system to measure how cities are meeting the needs for parks.¹² In an effort to assess ParkScore, the following data are for Connecticut’s “Top 10” most populated municipalities – see Table 2.

Table 2. “Top 10” Most Populated Municipalities in Connecticut and ParkScore

City	Population	Acres	% Land as Parks	Acres of Land as Parks	Acres of Parks per 10,000 Residents	# of Parks	Parks per 10,000 Residents	10-Minute Walk
Hartford	121,203	11,136	9%	1,002	83	218	18.0	99%
New Haven	130,764	11,968	12%	1,436	110	128	9.8	96%
West Hartford	63,063	13,952	20%	2,790	442	48	7.6	82%
Stamford	129,302	24,064	5%	1,203	93	54	4.2	74%
New Britain	72,303	8,576	7%	600	83	23	3.2	73%
Bridgeport	143,653	10,304	7%	721	50	35	2.4	73%
Waterbury	106,458	18,240	6%	1,094	103	30	2.8	60%
Norwalk	88,326	14,656	3%	440	50	45	5.1	55%
Bristol	59,639	16,896	4%	676	113	20	3.4	51%
Danbury	84,732	26,880	5%	1,344	159	17	2.0	37%

ParkScore provides excellent quantitative data in which to make general observations about the state of parks within a municipality in comparison to the national average. For example, the national average for the percentage of residents with a 10-minute walk to parks and the median percentage of municipal lands as parks is 55% and 15%, respectively. For example, 99% of citizens residing in Hartford have a 10-minute walk to a park, which is high compared to the national average, yet only 9% of land in Hartford is parks, which is low compared to the national average.

The quality of parks is difficult to discern. To better understand the quality of parks, TPL partnered with the Urban Resources Institute (“URI”) to compare New Haven against the

¹² The “% of Land as Parks,” “# of Parks,” and “10-Minute Walk” data were used from TPL’s ParkScore data set.

nation's most populous cities on five (5) categories reflective of an excellent city park system: Acreage,¹³ Access,¹⁴ Investment,¹⁵ Amenities,¹⁶ and Equity¹⁷ – see Table 3.¹⁸

Table 3. TPL and URI Analysis of New Haven Compared to Other Cities

City	Overall	Acreage	Access	Investment	Amenities	Equity
New Haven, CT	60	36	95	35	71	65
Boston, MA	-	47	100	79	65	79
Baltimore, MD	-	25	81	68	40	83
Buffalo, NY	-	25	85	47	61	64

The TPL-URI research also delves deeper into the twenty (20) neighborhoods of New Haven to collect data with respect to population, acres of parks, and acres per 1,000 population, as well as demographic data including income and people of color. Based on data from TPL from 14,000 cities, parks that serve low-income households are four (4) times as crowded as parks that serve high-income households, and parks that serve people of color are five (5) times as crowded as parks that serve majority-white populations.¹⁹ Such analyses in municipalities across Connecticut could elucidate opportunities for areas of improvement, including improving the public health of residents with access to parks and the economic development impact of property values within proximity to parks.

Although Connecticut has the highest urban tree cover in the United States at 62%,²⁰ there are opportunities to improve urban tree canopy cover to reduce heat island effects in urban neighborhoods across the state that lack the shading benefits that tree canopies provide to reduce heat and improve air quality while supporting better public health.²¹ For example, Bridgeport, Hartford, and New Haven's tree canopy cover is 27%,²² 25%,²³ and 38%²⁴ respectively.

¹³ Acreage score indicates the relative abundance of large 'destination' parks, which include large natural areas that provide critical mental health as well as climate and conservation benefits.

¹⁴ Access score indicates the percentage of the city's residents that live within a walkable half-mile of a park – the average distance that most people are willing to walk to reach a destination.

¹⁵ Investment score indicates the relative financial health of a city's park system, which is essential to ensuring parks are maintained at a high level for all to enjoy.

¹⁶ Amenities score indicates the relative abundance of six park activities popular among a multi-generational cross-section of user groups (i.e., playgrounds, basketball courts, dog parks, senior and recreation center, splashpads, and permanent restrooms).

¹⁷ Equity score indicates how fairly parks and park space are distributed within a city, including percentage of people of color and low-income households within a 10-minute walk of a park, and comparison of the amount of park space between neighborhoods by race and income.

¹⁸ For example, a score of 90 means that the municipality is within the top 90 percent across the country.

¹⁹ "The Heat is On" by The Trust for Public Lands

²⁰ Connecticut's 2020 Forest Action Plan (p. 7)

²¹ "Tree Canopy Assessment – Southern Connecticut Region" by the Southern Connecticut Regional Council of Governments and the University of Vermont Spatial Analysis Laboratory.

²² A Report on the City of Bridgeport's Existing and Possible Urban Tree Canopy

²³ Hartford Connecticut's Tree Canopy Action Plan 2020

²⁴ A Report on the City of New Haven's Existing and Possible Urban Tree Canopy

5. Target

There is no public policy target for “parks and recreation” in Connecticut beyond the open space land target outlined in CGS 23-8 and Green Plan, respectively (i.e., 21% by 2023) – see the “land conservation” document for quantitative details. It is the expectation that the open space land policy and goal would provide public recreation opportunities on state, municipal, private, and water utility lands.

Beyond a target the U.S. Bureau of Economic Analysis conducts research on special topics, including the outdoor recreation economy. The Outdoor Recreation Satellite Account measures the economic activity as well as the sales or receipts generated by outdoor recreational activities. These statistics measure each industry’s production of outdoor goods and services – see Table 4.

Table 4. Connecticut GSP and Employment for 2020 – Comparison for Outdoor Recreation²⁵ vs. Clean Energy²⁶

Economic Activity	GSP (\$MM’s)	Percent of GSP	Employment	% of Employment
Outdoor Recreation	\$3,298	1.2	41,721	2.6
Clean Energy	\$6,640	2.4	41,488	2.6

Expenditures in the outdoor recreation economy in Connecticut includes – see Table 5.

Table 5. Expenditures in the Outdoor Recreation Economy in Connecticut

Conventional Outdoor Recreation Activities²⁷ (\$MM’s)	Other Outdoor Recreation Activities²⁸ (\$MM’s)	All Other Supporting Outdoor Recreation (\$MM’s)	Government Expenditures (\$MM’s)	Total Outdoor Recreation Activities (\$MM’s)
\$1,411	\$572	\$1,158	\$156	\$3,298

6. Funding and Financing Programs

The following is an alphabetical breakdown of the current funding (i.e., grants) programs in support of “parks and recreation” in Connecticut, including, but not limited to:

- **Brownfield Remediation Program** – the Infrastructure Investment and Jobs Act (“IIJA” or Bipartisan Infrastructure Law – “BIL”) provides \$1.5 billion in supplemental funding to the EPA for brownfield remediation programs – \$1.2 billion of funds are set aside for competitive grants for site assessment and remediation projects. Funding can be accessed by quasi-public entities.
- **Charter Oak Open Space Trust Account** – a defunct program for several years now, which included two accounts to fund new open space purchase programs, including 40% to the Charter Oak State Parks and Forest Account for state acquisition of open

²⁵ “Outdoor Recreation Satellite Account, US and States, 2020” by the Bureau of Economic Analysis (November 9, 2021)

²⁶ “Connecticut Clean Energy Industry Report” (September 2021)

²⁷ Boating, fishing, RV’ing, and snow activities

²⁸ Amusement parks, water parks, festivals, sporting events, concerts, game areas (e.g., golf, tennis)

space and watershed land, and 60% to the Charter Oak Open Space Grant Program to provide grants to municipalities and nonprofit land conservation organizations to acquire open space or watershed protection land.

- **Connecticut Open Space and Watershed Land Acquisition Grant Program** ("OSWA") (CGS 7-131d) – a matching grants program to provide financial assistance to municipalities, land trusts, and water companies to acquire open space and watershed lands. Initiated in 1998, is funded by state bonding and the CIA, provides financial assistance to municipalities and nonprofit land conservation organizations to acquire land for open space, and to water companies to acquire land to be classified as Class I or Class II water supply property, and is administered by DEEP to leverage state, local, and private funds to create a cooperative open space acquisition program.

Since 1998, DEEP has awarded over \$150 MM in open space grant funds to protect over 41,000 acres (or \$3,659/acre).

- **Hazardous Substance Superfund Remediation** – the IIJA provides \$3.5 billion in supplemental funding to the EPA Superfund Program to support cleanup of large sites contaminated by commercial or industrial pollution that poses risks to people's health and the environment. This program is administered in partnership with states.
- **Land and Water Conservation Fund** ("LWCF") – LWCF is a federal program that was established by an Act of Congress in 1965 to provide funds and matching grants to federal, state and local governments for the acquisition of land and water, and easements on land and water, for the benefit of all Americans. The main emphases of the fund are recreation and the protection of national natural treasures in the forms of parks and protected forest and wildlife areas. In August 2020, the President Trump signed the Great American Outdoors Act into law, which requires that the LWCF be funded at \$900 million yearly, a significant increase from previous funding levels.
- **National Park Service – Rivers, Trails and Conservation Assistance Program** ("NPS-RTCA") – NPS-RTCA's technical assistance program supports locally-led conservation and outdoor recreation projects. The program assists communities and land managers in evolving climate resiliency strategies, developing or restoring parks, conservation areas, rivers, and wildlife habitats, as well as creating outdoor recreation opportunities and programs that engage future generations in the outdoors.
- **Recreation and Natural Heritage Trust Program** ("RNHT") – administered by DEEP, is the main program to purchase or conserve lands for conservation and public use or benefit.

Since 1998, the State Bond Commission has approved \$177 MM to go towards the RNHTP to protect over 49,000 acres (or \$3,611/acre).

- **Sustainability and Equity (Raise) Grant Program** – the IIJA provides \$7.5 billion in supplemental funding to the DOT for bikeway, trail, and pedestrian projects.

The following is a breakdown of the current financing (i.e., loans) programs that could support parks and recreation in Connecticut:

- **State Revolving Fund** ("SRF") – since 1988, Connecticut has received over \$650 MM from the federal government through the Clean Water SRF, while providing cumulative assistance (i.e., including state investment) of \$2.8 billion of investment primarily in centralized wastewater treatment infrastructure (in comparison to stormwater, energy conservation, and water conservation infrastructure).²⁹ With the passage of the bipartisan supported "Investing in Infrastructure and Jobs Act" ("IIJA" or Bipartisan Infrastructure Law "BIL") in November of 2021, there were additional resources allocated to the SRF for water quality and drinking water (i.e., \$445 million).³⁰ SRF could be used to invest in green infrastructure projects (e.g., land conservation, nature-based solutions) for both mitigation and adaptation.

Accessing funding or financing resources for "parks and recreation" in Connecticut can be difficult. Identifying new mechanisms to access additional funding and financing resources, especially those that seek to unlock more private capital investment, could provide a catalyst to increase and accelerate investment in parks and recreation in Connecticut. The IIJA presents an opportunity to access funding and financing resources through formula or competitive grants for "parks and recreation".

7. Other Programs

The following are other items of note with respect to "parks and recreation":

- **Greenways** – it should be emphasized, that greenways are an integral part of the parks and recreation system as "linear parks" and provide active economic development (i.e., tourism), public health, and transportation opportunities. There is and/or will be 195 miles of greenway in Connecticut, that is frequently visited by millions of users a year, especially during COVID, who use the greenways for walking, jogging, and cycling on the trails for exercise, recreation, and relaxation.
- **No Child Left Inside** – launched in 2006, *No Child Left Inside*[®] is a promise to introduce children to the wonder of nature – for their own health and well-being, for the future of environmental conservation, and for the preservation of the beauty, character and communities of the state.
- **State Natural Heritage, Open Space & Land Aquisition Review Board** – is an independent advisory group of volunteers appointed by the Governor and leadership within the CGA under CGS 7-131(e) to oversee OWSA and RNHT programs.

²⁹ Including Title II and VI funds – <https://www.epa.gov/sites/default/files/2021-02/documents/ct.pdf>

³⁰ https://www.whitehouse.gov/wp-content/uploads/2021/08/CONNECTICUT_The-Infrastructure-Investment-and-Jobs-Act-State-Fact-Sheet.pdf

8. Stakeholder Outreach

In an effort to understand the public policy and marketplace context for “parks and recreation” in Connecticut, the Green Bank met with many organizations.³¹

These 24 organizations primarily represent non-profit organizations but include public and for-profit organizations as well.

The objectives of these one-hour conversations included:

- **Introductions** – to get a better understanding of the mission and initiatives of the various public, nonprofit, and for-profit stakeholders operating within the “parks and recreation” space, and to introduce the Green Bank;
- **Environmental Infrastructure** – inform the various stakeholders about the “environmental infrastructure” policy,³² process the Green Bank is pursuing to develop a Comprehensive Plan, and to elicit discussion on the following areas:
 - **Relevance** – how relevant “environmental infrastructure” and its components (e.g., parks and recreation) are to the stakeholder’s mission and initiatives;
 - **Policies and Targets** – what local, state, and federal policies (e.g., Community Investment Act), including plans (e.g., Green Plan) are important from the stakeholder’s perspective, and what targets (e.g., 21% open space land by 2023) are they seeking to achieve;
 - **Metrics** – what are the key metrics stakeholders believe are important in terms of monitoring and evaluating success from investments in “environmental infrastructure” improvements and “parks and recreation”;
 - **Vulnerable Communities** – how does the stakeholder’s organization think about the impacts that must be addressed from climate change to build the resilience of vulnerable communities; and
 - **Stakeholder Identification** – who else should the Green Bank meet with on the topic.

From these conversations, the Green Bank was able to develop a better understanding as to the role it might play in terms of financing “parks and recreation” from the perspective of its mission – to confront climate change.

³¹ Land Conservation – American Forest Foundation, Audubon Connecticut, Connecticut Audubon, Connecticut Land Conservation Council, Conservation Finance Network, DEEP, Ecosystem Investment Partners, Goldman Sachs, Highstead, New England Forestry Foundation, New England Society of American Foresters, Quantified Ventures, Save the Sound, The Nature Conservancy, TNC’s Nature Vest Program, and Yale Forest School
Parks and Recreation – Connecticut Forest and Parks Association, Connecticut Greenways Council, Connecticut Recreation and Parks Association, DEEP, Green Eco Warriors, Keney Park Sustainability Project, Sierra Club, Trust for Public Lands, and Urban Resources Initiative.

³² Public Act 21-115 – An Act Concerning Climate Change Adaptation”

9. Findings

Based on the various meetings with public, nonprofit, and private stakeholders, the following are key findings with respect to parks and recreation (it should be noted that additional findings have been generalized in the footnote):³³

- **Consistent with Mission to Confront Climate Change** – “parks and recreation” reduces GHG emissions (e.g., carbon sequestration) and increases resilience (e.g., stormwater management, heat stress), and therefore is consistent with the Green Bank’s mission to “confront climate change”. Parks provide an excellent ability to address stormwater, bioswales, and mitigate flooding, and also sequester carbon through urban tree canopy cover.
- **Public Health Improvement** – although no research was provided nor cited, stakeholders continuously spoke to the ability of urban and rural parks to provide public health benefits,³⁴ including, but not limited to outdoor places as respite from being inside (e.g., managing through COVID), and reducing heat stress (e.g., shade from trees, cooling from splashpads and pavilions). In subsequent analyses by the Green Bank in reading the literature, there were various relevant references noted, including:
 - “A wealth of research indicates that escaping to a neighborhood park, hiking through the woods, or spending a weekend by the lake can lower a person’s stress levels, decrease blood pressure and reduce the risk of asthma, allergies, diabetes, and cardiovascular disease, while boosting mental health and increasing life expectancy.”³⁵
 - “Spending time and living near green spaces have been associated with various improved mental health outcomes, including less depression, anxiety, and stress. Several studies have demonstrated a dose-response relationship between more time spent in green spaces and lower depression rates. Therefore, green space may be a potential buffer between inequitable neighborhood conditions and poor medical health outcomes.”³⁶
 - “Neighborhoods with more socioeconomically disadvantaged residents and families of color tend to have fewer nearby residential parks, and financial and transportation limitations that prevent access to parks and wilderness outside of city limits...For these reasons, promoting nature contact and ensuring equitable access to green spaces could play a role in improving health outcomes and behaviors, and reducing health disparities.”³⁷

³³ Additional findings – opportunity to connect land trusts to hiking trails, BIPOC communities prioritize basic needs, municipalities shy away from open space investment because no staff to maintain, municipalities are giving up on federal grant programs because they are too onerous (e.g., reporting requirements), nonprofit membership groups have access to practitioners and contractors.

³⁴ “Reconnecting people to the healing value of nature,” as noted by Herb Virgo from the Keney Park Sustainability Project, a 693-acre park located in Bloomfield, Hartford, and Windsor

³⁵ *How Much Nature is Enough? 120 Minutes a Week, Doctors Say* as reported by Knvul Sheikh of the New York Times (June 13, 2019)

³⁶ *Effect of Greening Vacant Land on Mental Health of Community-Dwelling Adults* by Eugenia C. South, et al. *Jama Network Open* (July 20, 2018)

³⁷ *Nature and Children’s Health: A Systematic Review* by Amber L. Fyfe-Johnson, et al. *Pediatrics* (October 2021)

- "...a one-hundred dollar increase, in 2010 dollars, in per capita parks and recreation operational expenditures was associated with a decrease in mortality of 3.9 to 3.4 deaths per 100,000,...While a conceptual linkage between parks funding, use, availability, programming and health could be made, our analysis provides robust empirical evidence linking funding and health. When considering the topic of healthcare spending, we view parks and recreation as an indirect form of healthcare spending. Evidence suggests that many individuals view parks and recreation as an essential component of the healthcare system."³⁸
- **Inadequate Investment in Economic Development** – parks serve as public places to support the economic development of a community. Municipal budgets often cut financial and human resources to parks first because they are not a public works priority. Park programs have to be self-sufficient (e.g., fees for services) like small businesses to survive. The availability of funding resources to support parks and recreation is inadequate. Investment in parks is an investment in the infrastructure supporting economic development, housing, public health, and transportation – which goes beyond DEEP, and is inclusive of other state agencies, including DECD, DOH, DPH, and DOT, respectively.
- **Money is Not Always the Problem** – as important as local, state, federal, and private funding and financing resources are, sometimes not having enough people (including lack of diversity), having onerous or inappropriate processes (e.g., urban tree removal for powerline protection), an inability to speak to co-benefits (e.g., job creation, resilience, wellness), or lack of engagement of local communities can substantially inhibit progress towards increasing investment in parks and recreation.
- **Impact Metrics** – the following is a “high level” breakdown of the types of metrics appropriate for parks and recreation – see Table 6.

Table 6. Relevant Metrics Identified by Stakeholders on Parks and Recreation

Inputs	Outputs	Outcomes
○ Investment in parks ○ Investment in projects ○ Sources of public (e.g., local, state, federal) and private funds ○ Leverage (i.e., public vs. private funds) ○ Individual investment (e.g., Community Match Fund, Green Liberty Bonds and Notes) ○ Funding (i.e., grants) vs. financing (i.e., loans)	○ # and types of amenities ○ Location of projects ○ Acres conserved (including donations vs. purchases) ○ # of users or visitors ○ Annual accessibility ○ Park revenues ○ # of closures ○ Tree density/linear street mile ○ Distance to a park ○ Acres/population ○ Acres/income	○ GHG emissions reduced or sequestered ○ Resilience improvement (e.g., # people at reduced risk of flooding, heat exposure) ○ Water quality improvement (e.g., stormwater management, bioswales) ○ Jobs created ○ Address and quantify social determinants of health (i.e., wellness)

³⁸ “The relationship between parks and recreation per capita spending and mortality from 1980 to 2010: A fixed effects model” in Preventative Medicine Reports by J. Tom Mueller, et al (January 2019)

	○ Increased engagement of BIPOC community to parks and recreation	○ Leadership of BIPOC communities in building resilience for their own communities ○ Local property value ○ Tax revenue to state and local government from park tourism ○ Advancements in public policy to recognize the value of parks and recreation (e.g., municipal budgets)
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- **Vulnerable Communities** – are being disproportionately impacted by the impacts of climate change (i.e., those who have contributed the least are being impacted the most). Structural racism is evidenced in vulnerable communities by applications for assistance (e.g., government grants) not being conducive to funding BIPOC communities and leaders (e.g., lack of trust), lack of inclusion of and inability for vulnerable populations to participate in regulatory processes (e.g., compensation for time), lack of workforce development opportunities, including accessible locations for training, and more.

These are the key findings from the stakeholders on parks and recreation.

10. Opportunities

The following is a list of opportunities for consideration by the Green Bank given the broad categories of information and data, environmental markets and conservation finance, funding and financing sources, and other potential opportunities:

1. **Information and Data** – as a foundation, access to high quality information is important from which to base decisions. The following is a breakdown of opportunities for consideration with respect to information and data:
 - A. **ParkScore** – support the expansion of the TPL-URI ParkScore tool assessing the five (5) areas of quality parks beyond New Haven, and apply to the “Top 5” most populated cities in Connecticut. Explore the possibility of Sustainable CT including within its points-based system, as well as raising funds through the Community Match Fund.
 - B. **Pipeline Assessment** – work with CIRCA and DEEP to continuously build and assess the pipeline of potential GHG emission mitigation and climate change adaptation and resilience projects (e.g., type, size, scope, and estimated impact) related to parks and recreation (e.g., Meriden Green).³⁹
 - C. **Data Collection and Research** – support data collection and research that attempts to quantify the carbon offset, ecosystem services, public health, and

³⁹ <https://www.meridenct.gov/city-services/parks-and-recreation/meriden-green/>

economic development values of urban and rural parks. The research should seek to answer the question of “how does investment in parks result in co-benefits to climate change” with a focus on resilience and public health.

2. **Environmental Markets and Conservation Finance** – in terms of identifying potential carbon offset and/or ecosystem services revenue streams within compliance and voluntary markets that can support financing of parks and recreation, the following is a breakdown of opportunities for consideration with respect to environmental markets and conservation finance:

- A. **Conserve Urban Lands as Parks** – improving access to parks and recreation in vulnerable communities, can restore brownfields and abandoned lots, reduce GHG emissions, increase resilience against the impacts of climate change (e.g., flooding, stormwater management), and improve health wellness. Finding ways to support the growth and development of urban parks (e.g., Remington Woods in Bridgeport,⁴⁰ Olin Power Farm in Hamden, Keney Park in Hartford, CT) and greening abandoned lots through public-private partnerships that can improve the local economy, improve public health, and confront climate change. Identifying mechanisms, including stormwater management, to raise funds for capital improvements and/or investments in new assets (e.g., urban ecology wellness and/or sustainability centers) to modernize parks in vulnerable and BIPOC communities and make them more accessible will improve opportunities for economic development and public health.
- B. **Urban Tree Canopy** – support municipal efforts to increase urban tree canopy cover. When planted properly, a tree can save homeowners up to 20 percent on their energy costs, while simultaneously reducing stormwater runoff, improving air quality, reducing urban heat island effects, absorbing carbon, and increasing property value through curb appeal. Hartford has an aggressive tree planting program to grow from 25% (i.e., approximately 568,000 trees) to 35% (i.e., an additional 150,000 trees) tree canopy cover by 2070.⁴¹ Headquartered within the Hartford community, the Green Bank should support neighborhood tree planting, with a focus on the priority area of the Sheldon-Charter Oak neighborhood. Consideration could be given to exploring city forest credits for tree planting, with the Green Bank purchasing carbon offsets.⁴²
- C. **Park Prescriptions (ParkRx)**– as the birthplace of renown park designer and landscape architect Frederick Law Olmstead, and the self-proclaimed “Insurance Capital of the World,” Hartford is the epicenter to where “park prescriptions” (or “ParkRx”) should be developed, researched, practiced, and disseminated. ParkRx advantages include low-cost relative to conventional medical interventions, safety, practicality, not requiring dispensing by highly trained

⁴⁰ 420 acres (i.e., 350 acres in Bridgeport and 70 acres in Stratford), including a 40 acre lake sitting on an old Remington arms testing site and now brownfield owned by Corteva. Corteva currently undergoing site remediation which will require 3-4 years to complete and approximately \$80 million of remediation costs.

⁴¹ Hartford Connecticut’s Tree Canopy Action Plan 2020.

⁴² <https://www.cityforestcredits.org/>

professionals, and multiple co-benefits⁴³ – including a number of benefits that nature provides, including psychological, cognitive, physiological, social, spiritual, and tangible well-being.⁴⁴ The Green Bank could initiate public-private partnerships (e.g., collaboration with Aetna, a subsidiary of CVS Health and managed health care company) that results in ParkRx being used to prevent and treat chronic disease and promote health wellness, while investing in and continuously maintaining urban and rural parks and recreation infrastructure, especially by increasing access to such infrastructure by vulnerable communities. Work with the Department of Insurance, AccessHealthCT, Aetna, and the City of Hartford to develop ParkRx to enable increased investment in parks and recreation that will not only confront climate change but improve public health.

3. Funding and Financing Sources – in terms of identifying additional funding (i.e., grants) and financing (e.g., loans) that can increase and accelerate investment, the following is a breakdown of opportunities for consideration with respect to funding and financing of parks and recreation:

A. Green Liberty Bonds – leverage the strength of the Green Bank balance sheet, with the award-winning climate bond structure of the Green Liberty Bonds modelled after the War Bonds of the 1940's, to support investments in parks and recreation:

- i. **Pilot Revolving Loan Fund for Buy-Protect-Sell** – modelling the Conservation Fund's successful \$150 MM green bond issuance in 2019 (i.e., 10-year rated A3 by Moody's), which created the Working Forest Fund,⁴⁵ and the Farmland Protection and Affordability Investment ("Farmland PAI") program of Washington State,⁴⁶ purchase land, including urban lots and potential linear greenways (e.g., abandoned railway lines), and work with appropriate stakeholder partners (e.g., community based organizations) to develop them into parks, community gardens, urban farms, and greenways and connect to ParkRx.
- ii. **Passport to Parks Bonds** – work with DEEP to issue Green Liberty Bonds to raise capital from individual and institutional investors today for capital improvements and additional recreational assets needed at state parks backed by the expected revenues from Passport to Parks (i.e., generates approximately \$20 MM a year). Focus the use of proceeds from such bonds on parks located within proximity to vulnerable communities to increase access to the co-benefits of such investments (e.g., resilience, public health).

⁴³ "Nature Contact and Human Health: A Research Agenda" in Environmental Health Perspectives by Frumkin, Howard et al (July 2017)

⁴⁴ "What are the Benefits of Interacting with Nature?" in the International Journal of Environmental Reserahc and Public Health by Keniger, Lucy, et al (2013)

⁴⁵ The Working Forest Fund invests green bond proceeds to buy the most at-risk private forests. Once it owns the forest, it protects the land (i.e., easement), develops sustainable harvesting, wildlife, and habitat restoration plans, and then resells the land to private or public buyers to repay the loan. This fund has permanently conserved 500,000 acres, permanently storing over 210 MMTCO2e.

⁴⁶ <http://www.wshfc.org/farmranch/FarmPAISlides.pdf>

iii. **Municipal Resilience or Stormwater Bonds** – work with local governments to develop a program to regularly issue Green Liberty Bonds and/or Green Liberty Notes to raise capital from individual and institutional investors today for capital improvements (e.g., bioswales) and additional recreational assets (e.g., trailways) at municipal places that improve resilience (e.g., coastal wetlands) backed by conveyance fees or reserve funds.⁴⁷

B. **Community Match Fund** (“CMF”) – a program of Sustainable CT, the Community Match Fund provides fast, flexible funding, and support for community engagement on a wide-range of sustainability projects. It uses an innovative, online tool to connect grant contributions from the “crowd,” which are matched by various donor interests. As of January 1, 2022, the Fund has raised \$1.3 MM from nearly 10,000 individual contributors, which was matched by \$1.1 MM from various sponsors, and supported 195 projects. Work with Sustainable CT to enable the CMF to work for parks and recreation (e.g., ParkScore), as well as expand opportunities for points within the sustainability certification program.

C. **State Revolving Funds** – although not a Green Bank resource, existing and additional SRF resources could be used by the state to provide low-cost and long-term capital to finance green infrastructure projects (e.g., parks and recreation) in Connecticut. The Green Bank could recommend to its state colleagues that a portion of the SRF be used for green infrastructure projects in Connecticut as is being done by other states. Under the new guidelines for SRF resources, 49% of federal funds can be used as grants or forgivable loans for vulnerable communities. Consideration could be given to protecting parks, especially urban parks, where such loan forgiveness or grants in vulnerable communities could support such opportunities for improving green spaces and access to parks.

D. **Infrastructure Investment and Jobs Act** – there are a number of competitive grant programs that can be accessed to provide resources to cleanup brownfields. Exploring whether or not these funds can be accessed to cleanup former industrial property and convert them to urban parks (e.g., Bridgeport, Hamden) should be considered. In addition to clean-up programs, there are other programs for park planning, mobility, and other programs relevant to increasing and improving parks and recreation. The Green Bank could consider leveraging the strength of its financial position as a source of resources to hire grant writer(s), and/or serve as matching funds to improve success in competing for and winning federal resources through the IIJA.

4. **Other Potential Opportunities** – there are a number of other potential opportunities that can support financing of parks and recreation, including:

⁴⁷ Public Act 19-77 “An Act Authorizing Municipal Climate Change and Coastal Resiliency Reserve Funds”

- A. **Clean Energy and Sustainability Accelerator** – within the climate change programs proposed as part of the Build Back Better Act (“BBBA”) is the Clean Energy and Sustainability Accelerator (“CESA”). Modelled after the Green Bank, the \$29 billion allocated under CESA would provide state and local government with access to capital to finance projects that reduce GHG emissions, including nature-based solutions (e.g., parks and recreation).
- B. **Climate Conservation Corps** – within the climate change programs proposed as part of the BBBA is the Climate Conservation Corps. Modelled after the Civilian Conservation Corps under President Franklin Roosevelt, the climate program centered around equity and environmental justice, could hire hundreds of thousands of young people to help restore and support parks. The Green Bank could include within its investment activity, the requirement for developers to include Climate Conservation Corps members. If Climate Conservation Corps is passed through the BBBA, then Connecticut should prioritize the involvement of BIPOC⁴⁸ populations and hire a leader from the BIPOC community to run it.
- C. **Olmstead 200** – The acclaimed landscape architect Frederick Law Olmstead was born in Hartford, CT. In honor of the 200th anniversary of his birth in 1822, consideration could be given to initiating an urban parks design contest.⁴⁹ For example, the Green Bank could put up a prize money to the best design of an urban park in Connecticut with a focus on Keney Park (Bloomfield, Hartford, and Windsor), Olin Power Farm (Hamden), and Remington Woods (Bridgeport and Stratford). Connecting Olmstead’s birthplace with the “Insurance Capital of the World” as noted above, is an opportunity for ParkRx to support public health wellness.
- D. **Host Federal Official** – through the Intergovernmental Personnel Act (“IPA”),⁵⁰ the Green Bank could temporarily host a professionally skilled federal official from the Environmental Protection Agency, National Park Service, Health and Human Services, or other relevant agency to facilitate cooperation between the federal government and the Green Bank. Such an assignment would need to ensure that it is for sound public purposes and furthers the goals and objectives of the participating organizations.

These are a few of the opportunities identified by the Green Bank to support its mission and advance parks and recreation in Connecticut. Developing a method for prioritizing what opportunities under consideration are ultimately pursued, given the limited human and financial resources, and organizational structure of the Green Bank, is an activity for a later date.

11. References

In addition to the conversations with stakeholders, the Green Bank reviewed the following documents to support its findings and opportunities:

⁴⁸ Black, Indigenous, or People of Color

⁴⁹ <https://olmsted200.org/>

⁵⁰ [https://www.usgs.gov/human-capital/intergovernmental-personnel-act-ipa-mobility-program-guidance#:~:text=The%20Intergovernmental%20Personnel%20Act%20\(IPA,and%20the%20non%2DFederal%20entity](https://www.usgs.gov/human-capital/intergovernmental-personnel-act-ipa-mobility-program-guidance#:~:text=The%20Intergovernmental%20Personnel%20Act%20(IPA,and%20the%20non%2DFederal%20entity)

- **Green Plan** – Comprehensive Open Space Acquisition Strategy (2016-2020 Green Plan)
- **Going Outside in Connecticut** – Statewide Comprehensive Outdoor and Recreation Plan (SCORP) for 2017-2022

12. Definitions

The following are important definitions when it comes to “parks and recreation” in Connecticut:

- **Ecosystem Services** – there are four types of ecosystem services, including:
 - **Provisioning Services** – provide goods to people including food, water, and materials;
 - **Regulating Services** – refer to benefits gained by natural control of ecosystem processes (e.g., clean air, filter water, bacteria decompose waste, flood control);
 - **Cultural Services** – provide humans meaningful interaction with nature; and
 - **Supporting Services** – provide indirect benefits through provision of habitat, biodiversity, and support for all other ecosystem services.
- **Environmental Infrastructure** – means structures, facilities, systems, services and improvement projects related to (A) water, (B) waste and recycling, (C) climate adaptation and resiliency, (D) agriculture, (E) land conservation, (F) parks and recreation, and (G) environmental markets, including, but not limited to, carbon offsets and ecosystem services.
- **Greenway** (CGS 23-100) – means a corridor of open space that (1) may protect natural resources, preserve scenic landscapes and historical resources or offer opportunities for recreation or nonmotorized transportation, (2) may connect existing protected areas and provide access to the outdoors, (3) may be located along a defining natural feature, such as a waterway, along a man-made corridor, including an unused right-of-way, traditional trail routes or historic barge canals or (4) may be a greenspace along a highway or around a village.
- **Open Space Land** (CGS 12-107(b)(3))⁵¹ – open space land means any area of land, including forest land, land designated as wetland under section 22a-30 and not excluding farm land, the preservation or restriction of the use of which would (A) maintain and enhance the conservation of natural or scenic resources, (B) protect natural streams or water supply, (C) promote conservation of soils, wetlands, beaches or tidal marshes, (D) enhance the value to the public of abutting or neighboring parks, forests, wildlife preserves, nature reservations or sanctuaries or other open spaces, (E) enhance public recreation opportunities, (F) preserve historic sites, or (G) promote orderly urban or suburban development.

⁵¹ https://www.cga.ct.gov/current/pub/chap_203.htm#sec_12-107b

- **Parks and Recreation** – parks and recreation are resources and services provided for the purposes of leisure, entertainment, and recreational pursuits. Resources may be public spaces and facilities like parks, nature preserves, open space areas, greenways, trails, and built structures for sport, recreation, or arts programs. Examples of services include recreation activity programs, athletic leagues, special events, arts programs, and environmental education programs. The field of parks and recreation also encompasses resources and services offered by sector, though they are only delivered to members or paying visitors. Examples include YMCAs, health and fitness centers, resorts, and guide services. There are also quasi-public providers like power companies, land trusts, and other authorities that manage resources that may be used for recreation purposes. An example in Connecticut is the MDC reservoir trail.⁵²

- **Resilience** – means the ability to prepare for and adapt to changing conditions and withstand and recover rapidly from deliberate attacks, accidents or naturally occurring threats or incidents, including, but not limited to, threats or incidents associated with the impacts of climate change.

- **Vulnerable Communities** – means populations that may be disproportionately impacted by the effects of climate change, including, but not limited to, (1) low and moderate income communities, (2) environmental justice communities pursuant to section 22a-20a, (3) communities eligible for community reinvestment pursuant to section 36a-30 and the Community Reinvestment Act of 1977, 12 USC 2901 et seq., as amended from time to time, (4) populations with increased risk and limited means to adapt to the effects of climate change, or (5) as further defined by the Department of Energy and Environmental Protection in consultation with community representatives.

⁵² As defined by the Connecticut Recreation and Parks Association



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