

Integrating climate, economic, and racial justice through a Boston FutureCorps

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ABSTRACT

Amidst a rapidly evolving political landscape, with the 2021 Boston Mayoral Election, recently passed Massachusetts State climate policy, and President Biden’s Executive Order to create a Civilian Climate Corps, the City of Boston has the opportunity to integrate its response to climate change, economic inequity, and racial injustice through the creation of, what I have titled, the Boston FutureCorps. Following Councilor Michelle Wu’s call for an Urban Climate Corps and Councilor Kenzie Bok’s proposal for a Boston Conservation Corps, the Boston City Council is now in the process of developing a new corps program that will join the city’s existing network of green workforce development infrastructure. In order to strengthen, rather than duplicate, this existing infrastructure, this thesis examines the complex cross-section of current public, private and nonprofit efforts to prepare Boston residents for green jobs and address racial inequity in green sectors. This work contributes to the City of Boston’s collective response to the climate crisis through a city-level ecosystem analysis for the operationalization of the Green New Deal-based Boston FutureCorps.

I participated in two Boston City Council meetings, convened a focus group, and conducted 46 semi-structured interviews with stakeholders — including Boston workforce development programs, as well as environmental, community, and labor organizations — and visualized the current organizational landscape in Boston through a series of ecosystem maps. The ecosystem maps relay the existing relationships among stakeholders, potential green career pathways, and external factors necessary for the consolidation of an equitable and just corps.

Critically, this thesis also explores stakeholders’ perceptions of this current system, the concept of “green jobs”, and the potential design and impacts of the Boston FutureCorps. Stakeholders stressed the need for a participatory program design process and partnerships with community organizations, long-term and reliable funding sources, and the need for the corps to connect participants to meaningful jobs with living wages. In conclusion, I consider how such stakeholder perspectives can inform the institutionalization of this effort; I then recommend a series of values-based indicators that decision-makers can use to ensure that policy efforts to introduce a Boston FutureCorps are rooted in climate, economic, and racial justice, both in theory and practice.

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Table of Contents

Chapter 1. Introduction	5
Converging Crises	5
Introduction to the 2019 and 2021 Green New Deal	7
A Green New Deal for Labor	8
Methodology and Process	12
Overview of Remaining Chapters	20
Chapter 2. Green Labor: History, Theory, and Frameworks	21
The Current Moment	21
Historical Background	24
Guiding Theory	31
Green Workforce Development Theory and Practice	36
Chapter 3. Ecosystem Mapping Analysis	48
Natural Environment	49
Built Environment	64
Chapter 4. Creating an Enabling Environment for a Boston FutureCorps	85
Addressing Barriers to Employment	85
Educational Institutions as Enabling Partners	89
Advocacy Organizations as Enabling Partners	92
Methods Matter: Outreach, Engagement, and Participatory Design	96
Potential Funding Mechanisms	101
Chapter 5. “Raking or whatever”: Perceptions and Politics of a Boston FutureCorps	108
What is a Green Job?	108
What is the Purpose of the Boston FutureCorps?	112
Should We Say “Green New Deal”?	124
Chapter 6. Conclusion: Values-Based Program Design – Having the Courage to See	127
Values Rooted in Justice	127
Values-Based Indicators	132
Closing Comments and Future Research	133
Works Cited	137
Appendix A. Interview Questions Template.	149
Appendix B. Interview Analysis Codes.	150
Appendix C. Values-Based Indicators Guide.	152

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Chapter 1. Introduction

I. *Converging Crises*

In his book, *How Did We Get Into This Mess?*, George Monbiot references economist Thomas Piketty's notion of an 'apparatus of justification': "an infrastructure of persuasion...the justifying narratives that allow the rich to seize much of our common wealth, to trample the rights of workers and to treat the planet as their dustbin. Ideas, not armies or even banks, run the world. Ideas determine where human creativity works for society or against it," (Piketty, 2016, p. 1). In this thesis, I will examine how the idea of jobs and the nature of work interact with the converging crises of climate change and socioeconomic inequality. Where does labor sit in both the roots of and solutions to these crises, specifically in American cities? How can a city-level green job corps be a part of these solutions?

In a 2018 special report, the Intergovernmental Panel on Climate Change announced that, in order to limit the increase of global temperatures to 1.5°C, the world will need to cut greenhouse gas emissions to 45% of 2010 levels by 2030 through "rapid and far reaching transitions in land, energy, industry, buildings, transport and cities" (IPCC, 2018). Even if all countries meet their Nationally Determined Contributions to cutting GHG emissions under the Paris Agreement, which several countries including the United States are unlikely to do, temperatures are likely to increase more than 3°C (UN Environment Programme, 2019). This puts the world at several "existential tipping points": the irreversible destabilization of the massive ice sheets, destruction of rainforests and coral reefs, mass extinction, and permanently disappearing permafrost (Lenton et al., 2019).

This amorphous climate catastrophe looms over the stark and palpable catastrophe of socioeconomic inequality. This injustice is made clear through wealth and income gaps. In the United States in 2018, the highest-earning 5% of households owned 23% of the nation's wealth, up from 16% in 1968. While the country's GDP is growing, richer households are capturing a larger share of that wealth (Horowitz et al., 2020). Moreover, Black families' wealth in the United States dropped by over 50% between 1983 and 2016, while white households saw a 33% increase in wealth. At current rates of income change, by 2050, white families will have a median wealth of \$174,000, while Hispanic and Black families will have a median wealth of \$8,600 and \$600 respectively (Collins et al., 2019). The COVID-19 pandemic will only exacerbate these inequalities, with almost 22 million people filing for unemployment benefits

within four weeks early in the pandemic, and nearly 50% of low-income adults reporting that they have had more trouble paying their bills since the start of the pandemic (Schwartz, 2020, and Parker, Minkin, and Bennett, 2020). Americans of color are overrepresented among both those who lost jobs as well as among essential or frontline workers (Powell, 2020). Similarly, communities of color in the U.S. have historically experienced, and continue to experience, structural and disproportionate impacts of environmental destruction (Willis, 2018).

While these tandem crises are expansive and complex, they stem from the same economic and cultural origins. As Kate Arnoff et al. (2019) state in their book, *A Planet to Win: Why We Need a Green New Deal*,

...despite the erudite self-loathing of so much climate writing in the liberal press, the enemy isn't us. Humans aren't tainted by original sin — apples are nutritious and low-carbon, have another. Nor are we doomed to self-destruction. We're creative complex beings stuck in a capitalist economic system where a tiny number of people direct most major investments to maximize profits, and they shape the government's action accordingly. That system externalizes costs onto communities and ecosystems, and prioritizes the gilded retirement of CEOs over the long-term habitability of the planet, and the lives of those on it... The most effective way to slash emissions and cope with climate impacts is through egalitarian policies that prioritize public goals over corporate profits, and target investments in poor, working class, and racialized communities (p. 4-5).

To unite various movements, climate change must be addressed within a larger class struggle that will build the social power necessary to confront neoliberal governments and powerful private industries within a rapidly evolving political environment. In the last 40-50 years, during what Naomi Klein refers to as the “global neoliberal revolution,” the power of the United States' workforce has served to generate profit for the richest people and social and economic distress for the poorest (Klein, 2019). That profit also comes at the expense of the planet.

II. Introduction to the 2019 and 2021 Green New Deal

The Green New Deal (GND), codified and popularized by Representative Alexandria Ocasio-Cortez (D-NY) and Senator Edward J. Markey (D-MA) in House Resolution 109 and Senate Resolution 59 in 2019, and reintroduced as Senate Resolution 166 and House Resolution 332 in 2021, transforms the shared capitalist roots of climate change and socioeconomic inequality into a systematically concerted solution. Rather than proposing specific legislation, the GND legislation outlines the goals of a 10-year mobilization, spearheaded by the nonprofit organization, New Consensus, and the youth-led Sunrise Movement, for sweeping transformations and mass-mobilization to build a just environment and economy. Inspired by the large-scale, coordinated public action spurred by Franklin Roosevelt's New Deal, the GND calls for public investment in communities, public infrastructure, and private industry, "with the public receiving appropriate ownership stakes and returns on its investment," (Gunn-Wright and Hockett, 2019).

The GND has five core goals: (1) achieving net-zero GHG emissions through a just transition, (2) creating millions of high-wage, accessible jobs to ensure economic security for all, (3) investing in sustainable infrastructure and industry, (4) ensuring clean air and water, climate and community resilience, healthy food, access to nature, and a sustainable environment for all, and (5) promoting justice and equity by addressing current, future, and historic oppression of frontline and vulnerable communities. These goals can be met through projects such as repairing and upgrading infrastructure and buildings, ramping up production of clean energy and ending reliance on fossil fuels, overhauling transportation systems, restoring forests and coastal wetlands, remediating hazardous sites, and shifting agricultural and land-use practices (Gunn-Wright and Hockett, 2019). The reintroduction of the resolution of 2021 added a goal of specifically staying under 1.5 degrees Celsius of warming and was also accompanied by additional bills proposing a Civilian Climate Corps, which will be discussed later in this chapter, a Green New Deal for Public Housing, and funding for city and state-level Green New Deals (Adragna, 2021).

While the GND has been criticized as an unrealistic socialist "wish list," proponents argue that a plan of this scope and urgency is our only option to address the climate emergency. Rather than a rigid policy agenda, the GND is the foundation for and vision of a growing coalition of environmental and working-class movements aiming to build enough public support

to “break the stranglehold of the status quo,” (Arnoff et al., 2019, p. 7). More recently, in response to the COVID-19 pandemic, this movement called on elected officials to structure federal stimulus expenditures to use this crisis as an opportunity to advance the goals of equity and justice outlined in the GND (“A Green Stimulus to Rebuild Our Economy,” 2020).

III. A Green New Deal for Labor

One of the few specific policies mentioned in the GND is a call for a federal job guarantee, along with the goal of creating local, high-quality union jobs, and paths to jobs for formerly incarcerated people (Gunn-Wright and Hockett, 2019). A job guarantee policy would require the government to provide a job with a living-wage and fair benefits to anyone who wants one. Rather than having to invent new work, a GND jobs program would become the engine for transforming infrastructure and repairing the environment. Not only would this plan help unemployed and underemployed people, but it would also give workers in low-quality or socially and environmentally destructive jobs bargaining power by providing the option to procure better employment in the public sector (Arnoff et al., 2019). This guarantee would build on Franklin Delano Roosevelt’s 1944 proposal for an Economic Bill of Rights, which called for the right to “a useful and remunerative job in the industries or shops or farms or mines of the nation,” to “earn enough to provide adequate food and clothing and recreation,” for “protection from the economic fears of old age, sickness, accident, and unemployment,” and for “a good education,” (Roosevelt, 1944).

The idea of a job guarantee has emerged in both proposed policy and academia repeatedly in the 20th and 21st centuries. Harvey (1989), in response to the Full Employment and Balanced Growth Act of 1978, proposed an Employment Assurance Policy (EAP). The 1978 Act declared a national goal to fulfill the right to “useful paid employment...to all individuals able, willing, and seeking to work” (H.R. 50, 1977). Harvey’s EAP would restructure social welfare policy to distinguish between people who need public assistance because they are unable to work and people who need assistance because they are unemployed. His plan proposes that those unable to work would receive “gratuitous income transfers” while those unemployed would be “ineligible for those benefits but would instead be assured a statutory right to employment in a public sector job paying market wages.” (p. 5). Mitchell (1998) and Wray (2000) proposed Buffer Stock Employment and Employment of Last Resort, respectively; in both of these programs, workers displaced from the private sector would be paid a minimum

wage for government employment, and this wage would define a wage floor for the national economy. Most recently, Representative Ayanna Pressley (D-MA), introduced House Resolution 145, “Recognizing the duty of the Federal Government to create a Federal job guarantee,” which calls for the federal government “to establish and honor a legally enforceable right to fair, dignified, and decently remunerated employment for all eligible individuals living in the United States” (2021).

The 2019 GND focused on the job guarantee proposal outlined by economist Pavlina R. Tchnerva, which she describes as a “permanent, federally funded, and locally administered program that supplies voluntary employment opportunities on demand for all who are ready and willing to work at a living wage” (Tchnerva, 2018, p.2). Through local administration by municipal governments, nonprofits, and/or cooperatives, this program would create jobs in the same communities experiencing unemployment and be implemented through participatory governance. The program would function as a community job bank, holding a repository of available work such that people can (1) be paired with jobs that meet their experience and availability and (2) engage in work that meets the needs of their community and environment. She conceptualizes the program as occurring in tandem with unemployment insurance (UI) and as administered separately from other benefits like Medicare and food assistance. The nature of the work would be based in care for the environment, people, and communities through jobs involving environmental remediation, sustainable agriculture and urban forestry, weatherization and energy efficiency, restoring public spaces, community education programs, and child and elder care. While her plan would cost 0.8-2% of the GDP, the government would incur fewer costs in welfare programs and incarceration (Tchnerva, 2018).

Tchnerva (2018) defines full employment as a labor environment where any person of legal working age who wants to work is able to find employment with a living wage and fair working conditions. She defines unemployment as (1) a consequence of the business cycles of profit-seeking firms and inadequate government management, (2) unsolvable by the private sector alone, (3) as already being “paid for” through social and economic harm, (4) a product of austerity policies, and (5) a “moral failure” by government and institutions. A job guarantee, she argues, can counter these dilemmas through a number of economic benefits. First, a job guarantee “expands and contracts with recessions and expansions,” thereby using a “pool of unemployed individuals” to stabilize the economy and inflation. Moreover, a job guarantee

would address income disparities by raising the wage floor, which would increase overall income for people who are currently more likely to have short-term or part-time work (p. 7).

The program is also financially feasible, with a funding mechanism modelled after disaster relief in the United States. Tchnerva (2018) proposes that Congress would allocate money each year for management of the program based on estimated levels of unemployment. This amount could then be adjusted based on the Budget Control Act and supplemental bills could offer additional funding that is free from spending caps or budget restrictions during unexpected economic crises. The Department of Labor could therefore declare a state of employment emergency to acquire additional funds. An alternative proposal by Tomczak and Rofuth (2015) considers using the Temporary Assistance to Needy Families Emergency Fund (TAN EF) model, in which the federal government would provide funds to states and local workforce alliances for direct job creation. They also propose using funds from Unemployment Insurance (UI) because UI extensions would not be necessary if a job is guaranteed. TAN EF funds could also be used by states for services that minimize barriers to entering the workforce, such as childcare and transportation.

To translate the job guarantee framework of the GND into reality, it is clear that climate activists need to organize and harness the power of labor movements (Arnoff et al., 2019). This requires not only a vision for a long-term class struggle, but also tangible improvements in the short term that can gain the support of people fighting against debt, stagnant wages, and unemployment. The GND frames climate change solutions around the everyday lives of working-class people: housing, energy, food, transport, and jobs. As climate activist Naomi Klein stated, “The slogan of the Yellow Vests was, ‘You care about the end of the world, we care about the end of the month.’ I think the beauty of the Green New deal is that...it doesn’t make people choose” (Lohan, 2019).

The term “green jobs” has traditionally spanned a range of definitions, generally referring to either the output of a job that produces goods and services benefiting the environment or the use of environmentally beneficial processes to produce goods and services outside the environmental sector (ILO, 2019). In 2016, the International Labor Organization defined green jobs as, “decent jobs that contribute to preserve or restore the environment, be they in traditional sectors such as manufacturing and construction, or in new, emerging green sectors such as renewable energy and energy efficiency,” (ILO, 2016). The ILO emphasizes that green jobs must

meet “decent work criteria,” which they define as having (1) fair income, (2) security in the workplace and social protection for families, (3) prospects for personal development and social integration, (4) freedom to express concerns, organize, and participate in decisions affecting workers’ lives, and (5) equal opportunity and treatment for women and men (ILO, 2018). One of the aims of the GND, however, is to expand the meaning of green jobs.

Arnoff et al. (2019) call for the green job framework to center around “low carbon, socially valuable work” and the notion of care, for both people and the planet (p. 74). Rather than green jobs only involving new green sectors and policies, they should also include paying or increasing wages for work already being done. They note that teachers and childcare providers were some of the first workers hired by the Federal Emergency Relief Agency during the New Deal. Expanding public education would not only relieve student debt, but would also create low-carbon work for educators, janitorial and maintenance workers, food service workers, and administrators. Expansion of public medical care would create work in the health sector as well as increasing communities’ capacity to care for the health effects of a changing climate. Public funding for mental health and social work would also encourage more people to go into such care professions without fearing lack of pay and benefits. A GND would include living wages and benefits for both traditional green jobs and jobs in the care economy. As Arnoff et al. (2019) note, “better pay and social recognition are crucial for both building the no-carbon economy and addressing a division of labor that gives women and people of color the worst paid and lowest status jobs,” (p. 84). Publicly funded conservation work, inspired by the New Deal’s Civil Conservation Corps, would also include work based in social and ecological care, such as remediating brownfields, creating and maintaining hiking trails, transforming abandoned coal mines into nature preserves, remediating wetlands to serve as coastal storm protection, and restoring prairies to serve as carbon sinks (Arnoff et al., 2019). Work at the intersection of community and environmental care is already occurring as local-scale work, often planned and implemented by nonprofit organizations.

In my research, I began with a focus on green labor in the context of the Green New Deal. I was inspired by a video released by Alexandria Ocasio-Cortez about the Green New Deal (The Intercept, 2019). Ocasio-Cortez narrates a “message from the future,” describing the success of the Green New Deal as though it has already happened. I think it can be somewhat scary and vulnerable to verbalize a best-case scenario. It’s easy to convince ourselves that this

future is too ambitious and impractical. But as a future Ocasio-Cortez reflects back on where we are today, this ideal future “...was still ahead of us, and the first big step was just closing our eyes and imagining it. We can be whatever we have the courage to see.” My ideal future is one where we limit climate change to a 1.5-degree scenario. It is a future with universal access to health, education, living wages, and a flourishing natural environment. There is a true democracy, with equitably distributed wealth and power and policies rooted in anti-racism. The environment and ecosystem services are treated as having intrinsic value. Communities have the power of self-determination. We value individuals’ and communities’ well-being over infinite economic growth. My overall research objective was, broadly, to focus on helping to create this future in Boston through a Green New Deal.

IV. Methodology and Process

A. Using an Inductive Approach

According to Thomas (2006), an inductive research approach allows research findings to “emerge from frequent, dominant, or significant themes inherent in raw data, without restraints imposed by structured methodologies,” (p. 238). Thomas defines the purpose of a general inductive analysis approach to research as (1) condensing extensive raw data, (2) establishing defensible links between research objectives and condensed data, and (3) developing a theory about the underlying structures evident in the data. Gioia et al. (2012) also assert that constructs are based on the development of concepts, where concepts are general, less-specific notions that describe or explain a phenomenon of interest: “concepts are precursors to constructs in making sense of our organizational works – whether as practitioners living in those worlds, researchers trying to investigate them, or theorists working to model them” (p. 16).

My research objective began to narrow with the onset of the COVID-19 pandemic. With an onslaught of mass unemployment, illuminating and exacerbating existing social vulnerability, economic inequity, racial inequity, barriers to employment, job insecurity, low wages, and the absence of social safety nets, it seemed to me that it should be clear that the intersecting economic, health, and environmental crises also had intersecting solutions. As Ocasio-Cortez explains in her video “from the future”, the climate crisis demands that we “...change everything. How we got around, how we fed ourselves, how we made our stuff, how we lived and worked. Everything. The only way to do it was to transform our economy, which we already knew was

broken” (The Intercept, 2019). This transformation requires labor, so why not employ those in need of jobs, or better jobs, to do the work needed to protect, heal, and revolutionize their own communities? I began to craft my thesis around understanding the barriers to this integration of economic and climate justice, or the role of labor in the Green New Deal, finding examples of where this integration is already happening in existing green job programs, and understanding how this integration could be implemented or expanded in my own city. As it turned out, these same questions were already being considered in the Boston City Council.

In August 2020, Boston City Councilor Michelle Wu released a report titled “Planning for a Boston Green New Deal and Just Recovery,” which proposes a city-level Green New Deal and COVID recovery plan through 15 example climate justice policies (Office of Boston City Councilor Michelle Wu, 2020). These examples each present a policy vision, making a case for action and outlining potential routes of action. Implementation, however, will depend on building community support and coalitions, political will, and creating processes for community-led policy design. One example policy calls for the creation of an Urban Climate Corps, inspired by the New Deal’s Civilian Conservation Corps. The corps would focus on creating opportunities for people with barriers to employment, such as youth, previously incarcerated people, and adults without high school degrees. Through paid training and employment, corps members would contribute to city climate action initiatives through projects such as improving open space, weatherizing and retrofitting old buildings, creating zero waste infrastructure, expanding and maintaining the urban tree canopy, installing rooftop solar arrays, rain gardens, and permeable pavement, and restoring wetlands.

Three months after Councilor Wu released her proposal, City Councilor Kenzie Bok introduced an “Order for a Hearing Regarding a City-Level Conservation Corps for Boston” (Office of Councilor Kenzie Bok, 2020), which is separate from, but inspired by Councilor Wu’s proposal. The order emphasizes that, while Boston is experiencing the significant economic impacts of COVID-19, the City still has a favorable bond rating. Therefore, she calls for the City to use local budgeting to invest in capital projects through a Boston Conservation Corps to help counter a recession. She proposes that the Corps should partner with both city workers and trade unions to accelerate progress on the goals in Boston’s Climate Action Plan, such as improved stormwater management through green infrastructure, retrofitting buildings to net zero standards, increasing solar energy production, expanding and maintaining the urban tree canopy, expanding

curbside composting, and preparing the waterfront for sea level rise. The City Council Committee on Environment, Resiliency, and Parks met for this hearing on December 15, 2020 and included a panel of speakers representing the Boston Parks and Recreation, Boston Environment Department, Boston's Office of Workforce Development, American Forests, USDA Forest Service, Speak for the Trees Boston, Codman Square Neighborhood Development Corporation, Southwest Boston Community Development Corporation, CERO (a commercial composting company), The Emerald Necklace Conservancy, and the Muddy Water Initiative. While the hearing did not generate concrete outcomes, the City Council Committee generally seemed in favor of creating a Boston Conservation Corps. This hearing was followed by a working session, which I will discuss below. The specific budget proposal and policy design will take place throughout 2021.

This thesis aims to influence the policy design process for these proposals for what I will refer to as the Boston FutureCorps. Using the data from 46 semi-structured interviews with stakeholders, such as environmental organizations, community organizations, labor unions, current Boston job programs, and Boston city staff, I used an inductive approach to consider (1) how these actors think this Corps should be designed and implemented, (2) the strengths and gaps in Boston's current network of workforce development infrastructure, (3) Boston's current landscape of climate action and policy, (4) how this Corps can fully integrate the goals of workforce development and climate action, (5) the potential for this Corps to address economic, racial and environmental disparities in Boston, and (6) how to ensure this Corps is explicitly anti-racist. The results of these interviews informed my development of a series of ecosystem maps that lay out the existing network of organizations, programs, and policies related green workforce development infrastructure, existing and potential career pathways within this network, as well as maps of organizations that will help create an enabling environment for the success of the Boston FutureCorps. Following an exploration of the themes that emerged from these interviews related to the possible program design for this corps, my research culminates in a recommended scheme for a values-based program design and evaluation. This scheme can help create a Boston FutureCorps that is transformative for the City of Boston and aligned with the ideas put forth in the Green New Deal. These recommendations can serve as a foundation for other cities that are exploring the creation of programs similar to a Boston FutureCorps.

Finally, it is also important to note that this is a “living” thesis. The development of a Corps in Boston was actively ongoing through the development of this thesis, with the convergence of quickly moving local, state, and federal policy, and will continue to evolve over the coming months and years. The partnerships, policies, and organizations discussed in the remaining chapters, likewise, are dynamic. While this document reflects a snapshot of this process, it also aims to influence its future.

B. Naming the Corps

Throughout my research, I explored a number of options for what to call this corps. While I refer to it as a FutureCorps in this document, this name serves as a placeholder for whatever name emerges through a participatory process. I am, however, certain about what titles the corps should *not* use:

It should not be called the Boston Conservation Corps. While the corps is aligned with the Green New Deal, which takes inspiration from the New Deal and therefore the original Civilian Conservation Corps, that does not mean it needs to use the same title. In fact, this choice could be detrimental to the goals of the corps. First, a Conservation Corps evokes, perhaps obviously, the assumption the corps is focused on conservation. A different title can avoid the corps being branded as an initiative to only maintain trails, parks, and waterways. While these activities should be included, a Boston FutureCorps needs to be focused on much broader goals: not just conserving, but repairing, creating, reimagining, and transforming the natural, built, social, and economic fabric of Boston.

The corps name should also not include the word “urban”, which is redundant if the title is already situating the corps within the City of Boston. According to Capri St. Vil, the Director of Equity, Diversity, and Inclusion at The Corps Network, “urban corps” is often used as a coded term for “Black corps.” While a corps should have racial justice as a key component of its mission, using “urban” can connote white saviorism (C. St. Vil, pers. comm., December 8, 2020).

Finally, the corps would also benefit from not using “climate” in its title. If the corps is meant to integrate climate, economic, and racial justice goals, singling out one of these focus areas communicates that the other areas are secondary. While outreach and branding for the corps should educate people about the potential and expansive opportunity of green jobs, it should include an equal amount of information about how this opportunity intersects with the

City's overall goals for justice and equity. Also, given current federal legislation that will be discussed in the upcoming chapters, a "Climate Corps" may be confused with new federal programs.

I chose the term FutureCorps because I think it is broad enough to include climate, economic, and racial justice goals. It embodies the spirit of a corps that empowers participants to work together as a collective force creating and enacting a shared vision for Boston's future.

C. Interview Process

My research process began with initial outreach to Nina Schlegal, the lead author of Councilor Wu's "Planning for a Boston Green New Deal and Just Recovery" report, to Councilor Wu's office, and later to Councilor Bok's office as well. Both offices invited me to engage in their process of developing a corps. Through these conversations, I set the foundation for my interview process by getting an overview of the work that was already occurring in City Council and how my research could be most helpful to this work. To do so, I sought to include aspects of Participatory Action Research (PAR) in my research methodology. According to MIT Community Innovators Lab, "PAR is an approach to inquiry that values the knowledge and lived experience of the communities affected by the problem being researched, and seeks to place greater control over the processes of question definition, research design, knowledge-building, and problem-solving in the hands of community members. In this sense, PAR intends to transform existing unequal power relationships between marginalized groups and those traditionally considered the 'expert' researchers and decision-makers." By embedding the values of PAR in my policy design recommendations, I aimed to make my work applicable to the existing green workforce development ecosystem and climate action initiatives in Boston, using my interview process to hone in on research questions that are meaningful to both the City Council and relevant stakeholders.

My initial contacts came from an invitation list for a Green New Deal-focused event hosted by Councilor Wu in the Spring of 2020 and my list expanded through new connections made during my interview process. One key connection I made was with Lisbeth Shepherd, the Co-Founder and Strategic Advisor of Green City Force (GCF). GCF is a corps that trains young people in New York City public housing to "power a green and inclusive economy through service." While I initially reached out to Lisbeth for an interview, it became clear during our first

call that a more substantial and longer-term research partnership would benefit us both. Lisbeth became both my thesis reader and an invaluable mentor and advisor. She also connected me with Jen Tirado, previously the Chief Service Officer of GCF and now the Co-Founder of Impact Jedi, a consulting company that creates sustainability and social innovation programs in the Bronx and Puerto Rico. Jen is currently completing a feasibility study to create a new Climate Corps in Puerto Rico, and our research questions and methodologies are closely aligned. Jen and I met monthly from December 2020 through May 2021, providing mutual feedback and working together to puzzle through our respective research challenges.

My interview process also led to my invitation to participate in a Boston City Council Working Session, which was the Council's next step to implement a corps following the hearing in December 2020. The session was focused on learning from PowerCorpsPHL, a green service corps in Philadelphia that works with 150 young people each year, and also included testimony from the Boston Office of Workforce Development, Boston Water and Sewer Commission, the Emerald Necklace Conservancy, Southwest Boston Community Development Corporation, Codman Square Neighborhood Development Corporation, and X-Cel Conservation Corps. I gave a brief presentation of my research and received a number of requests to distribute my slides. Following the hearing, I facilitated a separate meeting with the nonprofit organizations that provide various green workforce development and training programs to follow up on the concerns and ideas they voiced during this session. The results of this meeting will be discussed in Chapter 4.

For my formal interview process, I created five categories of organizations: environmental organizations, existing Boston job programs or workforce development organizations, green job training programs or corps in other cities, community organizations, and organized labor (Table 1). The interview questions were based on a template, but were tailored to each stakeholder and involved individualized follow up questions (Appendix A). I developed the questions to gather information and experiences generally pertaining to the program design and operation of existing job programs and corps, stakeholder's organizational goals and challenges, and opinions on how to design and implement a successful FutureCorps in Boston.

Completed Interviews	
ABCD GATE (Boston)	GreenRoots (Chelsea)
Action for Equity (Boston)	Jewish Vocational Service (Boston)
Alternatives for Community and Environment (Boston)	Local Initiatives Support Corporation (LISC) (Boston)
American Forests	Los Angeles Conservation Corps
Austin Civilian Conservation Corps	Merck Family Foundation
Boston Carbon Neutrality Program	Madison Park Development Corporation (Boston)
Boston Climate and Buildings Program	Madison Park Vocational High School (Boston)
Boston Department of Parks and Recreation	MassCEC
Boston Department of Workforce Development	New Roots AME Church (Boston)
Boston Office of Environment, Energy, and Open Space	Office of Councilor Kenzie Bok
Boston Office of Youth Engagement and Employment	Office of Councilor Michelle Wu
Boston Student Advisory Council	Office of Senator Edward J. Markey
Boston Water and Sewer Commission	PowerCorpsPHL (Philadelphia)
Browning the Greenspace (Boston)	Roxbury Community College
Building Pathways (Boston)	Seattle Conservation Corps
Codman Square NDC (Boston)	SEIU 32BJ
Councilor Kenzie Bok	Southwest Boston CDC
Dudley Street Neighborhood Initiative (Boston)	Speak for the Trees (Boston)
Emerald Cities Boston	STRIVE Boston
Fairmount-Indigo CDC Collaborative (Boston)	The Corps Network (National)
Greater Boston Joint Apprenticeship Training Center	X-Cel Education Conservation Corps (Boston) (x2)
Green City Force (NYC)	Youth Options Unlimited (Boston)
Green for All (National)	

Table 1. Completed Interviews November 5, 2020 - March 10, 2020.

Attempted Interviews	
Boston Department of Economic Development	Greenovate Boston
Boston Department of New Urban Mechanics	Massachusetts Interfaith Committee for Worker Justice
Boston Housing Authority	Massachusetts Jobs with Justice
Boston Planning and Development Agency (BPDA)	Nuestra Comunidad CDC (Boston)
Chinese Progressive Association (Boston)	SEIU 509
Community Labor United (Boston)	Sunrise Movement Boston
Greater Boston Labor Council	

Table 2. Potential interviewees who declined or did not respond.

D. Interview Analysis and Ecosystem Mapping Process

I created a system of 35 codes (Appendix B) to deconstruct interview notes and transcripts into themes. These codes reflect interviewees' role within the green workforce development landscape of organizations and stakeholders, understanding of green jobs and the Green New Deal, descriptions of their organizations goals, challenges, and structure, reactions to and recommendations for a Boston FutureCorps, relevant values and principles, as well as sector-specific insight. I used the results of this coding analysis to create a series of interrelated ecosystem maps. Through mapping the current state of actors and relationships, these maps elucidate both existing ecosystems, including partnerships, redundancies, and gaps, as well as point toward a future ecosystem of potential partnerships, roles for different actors, and potential career pathways that would exist in a corps.

Through the coding process, I found that this the sector-specific portion of ecosystem is divided between two broader categories: natural environment sectors (urban forestry, green infrastructure, and wastewater), and built environment sectors (building automation, HVAC/R, facilities management and building operation, energy efficiency and retrofitting, and new construction). Within these categories there are four types of actors: specific stakeholders or organizations, general categories of stakeholders or organizations, programs, and policies and plans. I separated these larger, sector-specific ecosystems into smaller embedded ecosystems that show potential career pathways, policy ecosystems, and actor-specific ecosystems, such as those of educational institutions and unions. These sector-specific ecosystem maps will be discussed in detail in Chapter Three. Finally, the ecosystem also contains actors and policies that are relevant

to all sectors, and therefore to any formulation of a Boston FutureCorps. These actors and policies make up a series of surrounding ecosystems, which will be explored in Chapter Four.

V. Overview of Remaining Chapters

In the following chapters, I will explore both Boston's existing green workforce development ecosystem and the potential design and implementation of a transformational program that integrates climate, economic and racial justice – the Boston FutureCorps.

In Chapter Two, I discuss how the present political and economic environment, on both local and federal levels, present an opportunity, and a need, for the creation of a corps. I then outline the historical basis of this present moment, regarding both corps and climate action, as well as discuss the theory and existing frameworks that provide a foundation for my work.

In Chapter Three, I detail my inductive methodological process and present, in depth, the current network of organizations, programs, and policies that make up the natural environment and built environment sectors in the City of Boston.

In Chapter Four, I build on these sector-specific ecosystems to introduce a series of supporting ecosystems, including services to address barriers to employment, educational patterns, advocacy organizations, partners for a participatory program design process and funding mechanisms, all of which are necessary for the Boston FutureCorps to be just and equitable.

In Chapter Five, I explore themes that emerged during my research that bring to light stakeholders' conception of green jobs, the language of the GND, and the potential purpose(s) of the Boston FutureCorps.

In Chapter Six, I recommend a series of values, rooted in multiple conceptions of justice, and values-based indicators to guide the design and implementation of the Boston FutureCorps. Finally, I conclude with a discussion of how this thesis exemplifies the framework of Peter Marcuse's (2009) conception of Critical Planning.

Chapter 2. Green Labor: History, Theory, and Frameworks

I. The Current Moment

A. Proposals for a Federal Civilian Climate Corps

In January 2021, President Biden issued an “Executive Order on Tackling the Climate Crisis at Home and Abroad,” which includes a section calling for the Secretary of the Interior and Secretary of Agriculture, along with the heads of other relevant agencies, to submit a strategy for creating a Civilian Climate Corps Initiative “to mobilize the next generation of conservation and resilience workers and maximize the creation of accessible training opportunities and good jobs”; these jobs would involve conserving and restoring public lands and water, improving community resilience, supporting reforestation efforts, implementing agricultural carbon sequestration, protecting biodiversity, improving access to recreation, and other activities that address climate change (Exec. Order No. 14008, 2021). Also, Biden’s American Jobs Plan would invest \$10 billion into whatever Civilian Climate Corps is proposed by this group of agencies (FACT SHEET: The American Jobs Plan, 2021). A number of bills have been released that would provide further funding for the Corps.

First, in February 2021, Representative Joe Neguse (D-CO) and Senator Ron Wyden (D-OR) released the “21st Century Conservation Corps Act”, which was originally introduced in the summer of 2020. The bill would establish a \$9 billion fund for qualified land and conservation corps to increase hiring, particularly for jobs that restore public lands. It also provides an additional \$24.8 billion allocated toward programs and initiatives including water infrastructure repairs in Indigenous communities, the National Fire Capacity program, the FEMA Building Resilient Infrastructure and Communities program, job creation through the U.S. Forest Service, National Park Service and Bureau of Land Management, and reforestation projects with a goal of planting 100 million trees in urban areas by 2030 (Rep. Neguse and Senator Wyden Unveil Plan to Establish 21st Century Conservation Corps, Invest in Wildfire Resiliency, 2021). Second, in April 2021, Senator Chris Coons (D-DE), Senator Martin Heinrich (D-NM), Senator Ben Ray Lujan (D-NM), Representative Joe Neguse (D-CO) and Representative Abigail Spanberger (D-VA), introduced “The Civilian Climate Corps Act”. This act would establish a Civilian Climate Corps to be operated by the Secretaries of Agriculture and Interior in coordination with other federal agencies and nongovernmental organizations via existing national service programs. It

also directs the Secretaries of Agriculture and Interior to report to Congress on their proposals for the number of members to be included in the Corps and recommended appropriations for fiscal years 2022 through 2025 (New legislation for Civilian Climate Corps introduced 88 years after New Deal-era CCC, 2021).

In conjunction with their reintroduction of the Green New Deal, on April 21, 2021, Senator Markey (D-MA) and Representative Ocasio-Cortez (D-NY) released bills in the House and Senate “to amend the National and Community Service Act of 1990 to establish a Civilian Climate Corps to help communities respond to climate change and transition to a clean economy, and for other purposes”, which would create a National Climate Service (NCS) program, administered by the same agency that administers AmeriCorps. This bill is so far the most detailed with regard to the design of the corps. The NCS would establish the Civilian Climate Corps, which would include both a centrally administered, 1 to 2-year service and job training program with residential campuses where necessary. The program would include people ages 17 and older, with a requirement that 50% of participants represent “under-resourced communities of need”. The NCS would also administer a grant program, through partnership with The Corps Network, that would provide up to 100% of the cost for state and local “Partner Corps” that carry out climate service projects, with a preference for those that provide pre-apprenticeship programs. Partner Corps would be required to perform at least 50% of their projects in “under-resourced communities of need”, as and at least 50% of grant recipients would need to be for programs that have no upper age limit. Both national and Partner Corps members would receive a living allowance in line with the Davis-Bacon prevailing wages in their region, or at least \$15 per hour, and provided full healthcare and support services such as childcare, with grants providing \$40,000 per corps member. Corps members would also be provided with \$25,000 per year of service to be applied to further education or to pay down student loan debt (S.1244, 2021, H.R.2670, 2021)

Evergreen Action has also released proposals for a Civilian Climate Corps. Evergreen Action is an open-source climate policy platform created by a group of former staffers and supporters of Governor Jay Inslee’s 2020 presidential campaign. They released a report “Building The Civilian Climate Corps: How New Deal Ambition Can Mobilize Workers For America’s Clean Economy” in April 2021. They first emphasize that this CCC should be made more inclusive and justice-driven compared to the CCC of the New Deal, by proactively

advancing environmental and social justice, using local hiring practices, preferentially enrolling corps members from disadvantaged backgrounds, and valuing community input. In addition to a direct federal employment component, this CCC would also administer grants to local corps, both of which align with Markey’s proposal. One main goal of the grants to local partner corps would be to quickly scale these existing programs. The proposal also calls for reform of existing restrictions for national service corps that require matching funds, prohibit partnering with the private sector for fee-for-service contracts, and provide inadequate wages. This CCC would also establish a Green Careers Network and Climate Workforce Council. The former would work to establish and support career pathways to long-term, climate-focused jobs for corps graduates as well as unemployed and underemployed workers at any stage of their career, as well as strengthen labor standards. The latter would oversee the implementation of the CCC and Green Careers Network with a focus on justice and equity (Dolan et al. 2021).

B. Green Jobs During COVID-19

A Civilian Climate Corps, as well as expanded definitions of green jobs and meaningful work, are also particularly salient given the economic effects of the COVID-19 pandemic. Potential job guarantees, green job programs, and corps will need to be developed in the context of exacerbated economic inequity and disproportionate impacts on low-income communities that were already struggling (Root and Simet, 2021). In the long-term, as proposed in an open letter by climate and social policy experts to Congress titled “A Green Stimulus to Rebuild Our Economy,” future federal stimulus packages could be an avenue to fuel equitable and sustainable economic recovery by training and employing people in projects such as retrofitting and weatherizing buildings, constructing public and affordable housing, upgrading and expanding public transportation infrastructure, and implementing climate resilience and green infrastructure projects (“A Green Stimulus to Rebuild Our Economy,” 2020).

In September 2020, Senator Chuck Schumer (D-NY), Senator Edward J. Markey (D-MA), and House Representative Deb Haaland (D-NM), introduced a resolution in line with this proposal of a Green Stimulus, presenting the values of the Green New Deal through the lens of post-COVID economic recovery (“Senators Schumer, Markey And Rep. Haaland Lead Congressional Democrats and Grassroots Coalition In Announcing Economic Renewal Agenda”, 2020). The bill is known as the THRIVE Agenda (Transform, Heal, and Renew by Investing in Vibrant Economy), and has been sponsored by 89 congressional representatives and eleven

senators, and endorsed by over 250 organizations. The agenda has eight pillars: (1) creating millions of good, safe jobs with access to unions, (2) building the power of workers to fight inequality, (3) investing in Black, brown, and Indigenous communities, (4) strengthening and healing the nation-to-nation relationship with sovereign Native Nations, (5) combating environmental injustice and ensuring healthy lives for all, (6) averting climate and environmental catastrophe, (7) ensuring fairness for workers and communities affected by economic transitions, (8) reinvesting in public institutions that enable workers and communities to thrive (“The THRIVE Agenda”, n.d.). With job creation as the first pillar, this agenda emphasizes that workforce development, worker protections, and family-sustaining jobs can serve as a nexus joining together policies for environmental and economic recovery.

This sentiment of focusing on job creation as a tool for addressing environmental and economic adversity, present in both calls for the creation of the Civilian Climate Corps and the THRIVE Agenda, also served as the basis for the Civilian Conservation Corps created as part of the New Deal.

II. Historical Background

A. The New Deal’s Civilian Conservation Corps

As a part of the New Deal, President Franklin D. Roosevelt signed the bill authorizing the creation of the Civilian Conservation Corps (CCC) in March of 1933, thus establishing an agency designed with the dual goals of relieving poverty through job training and preserving and repairing the nation’s forests, parks, and farms (Salmond, 1965). The CCC was one of multiple employment programs in the New Deal, joined by the Civil Works Administration, later the Work Progress Administration, which hired unemployed Americans to build hospitals, roads, housing, schools, playgrounds and airports, as well as employed artists and writers (Rauchway, 2008). The CCC was orchestrated through collaboration among federal, state, and local agencies: The Department of Labor coordinated state and local relief agencies to administer the application and selection process for participants, the Department of War managed the establishment and oversight of the residential work camps, and the Department of Agriculture and Interior was responsible for selected work projects, and the National Park Service, Forestry Service, and Bureau of Biological Survey and Soil Conservation supervised the work. The CCC employed 17-26 year-old unmarried men for a six- or twelve-month term, and offered \$30 per month with the

expectation that \$25 of that salary would be sent home to participants' families. Through education, job training, a focus on physical fitness, and a culture of military-based discipline, "the CCC treated the men as bodies to be molded, shaped, and transformed into the ideal American citizens," (Wilson, 2003, p. 77). More than 2.5 million young men participated in the program before it was abolished 11 years later (Salmond, 1965).

While the legislation enacting the CCC stated that "...in employing citizens for the purposes of this Act, no discrimination shall be made on account of race, color, or creed," this intention failed to translate into the operation of the program (Salmond, 1967). In a historical review of the CCC, John A. Salmond (1965) argued that the "official policy" of the Act systematically prevented the full participation of Black people, intentionally disregarding the fact that Black unemployment rates were double the national average as Black workers were laid off to allow white workers to take over traditionally Black labor (p. 76). This discrimination took form through both exclusion of Black men during the enrollment process and through the segregation and hostility toward Black work camps.

State and locally administered selection agents created purportedly race-neutral systems to reject Black workers. In Georgia, for example, applicants were classed as A, B, or C, with A class workers being the most in need of employment. All Black applicants were classed as either B or C. The Georgia State Director of Selection, John de la Pirriere, asserted that Black men were denied enrollment, not due to racism, but because "...it is vitally important that negroes remain in the counties for chopping cotton and for planting produce," and that "...there are few negro families who ... need an income as great as \$25 a month," (Salmond, 1965, p. 78). The Department of Labor's Director of CCC Selection, W. Frank Persons, often had to threaten to withhold funding to pressure southern states to enroll a meager number of Black workers. In Mississippi, for example, the Black population made up over 50% of the state but only 1.7% of enrollment in the CCC (Salmond, 1965).

The few Black men that were able to enroll in the CCC were mostly placed in segregated work camps, which often faced protest from local communities. White residents feared that Black camps would lead to "increases in drunkenness and other social vices," and threaten the "safety of white women and children," (Salmond, 1965, p. 80). Robert Fechner, the Director of the CCC, often responded to sustained protest from white communities by removing the camps. In 1934, Fechner also ordered full segregation of Corps camps and prohibited Black Corps

members from joining camps outside their home state. This further restricted Black enrollment, as Black men could only be admitted as new spots opened up in the limited number of Black camps in each state. The NAACP and other Black organizations appealed to President Roosevelt for reforms. In 1935, a woman who identified herself as “Just a Colored Mother,” asked the President: “if war was declared, would they pick all the white boys first and leave the negro boys as the last called for service? This is what they do in the CCC,” (Salmond, 1965, p. 81). In fact, in 1941, as World War II escalated, Black enrollment was able to substantially increase as white men went on to jobs in war industries. This improvement was short-lived however, as the CCC was disbanded in 1942 (Salmond, 1965).

Despite rampant structural racism, the CCC did benefit the 2.5 million Corps members, 200,000 of whom were Black men, and it remains an employment model for existing job training and conservation programs. The CCC aimed to have a long-term effect on poverty and unemployment through its education program. Oxley (1938) described the purposes of the Black camp’s education programing as increasing employability of Corps members and developing their “civic effectiveness” through literacy, elementary-level education, job training during work projects, counseling, recreation and arts, vocational instruction, character development, and assistance with securing employment (p. 375). Some Corps members were also able to pursue high school degrees and university extension courses through partnerships with local schools. Others participated in vocational programs focused on skills such as farming, table-waiting, shoe repair, barbering, tailoring, typing, bookkeeping, store management, auto mechanics, and cooking (Oxley, 1938). The CCC also delivered on its conservation goals: Throughout the existence of the program, the CCC planted over two billion trees, slowed soil erosion on forty million acres of farmland, created eight hundred new state parks, and constructed over ten thousand reservoirs, forty-six thousand bridges, thirteen thousand miles of hiking trails, and nearly one million miles of fencing. As Fechner stated in his 1939 annual report, the CCC, “constructively altered the landscape of the United States,” (Maher, 2002, p. 437).

B. Origins of the Green New Deal

Sixty-eight years after the end of The New Deal era, the term “Green New Deal” was first coined in 2007 by New York Times columnist Thomas Friedman, who describes himself as a “free-market guy” (Kaufman, 2018). In a column titled “A Warning from the Garden”, Friedman states “The right rallying call is for a ‘Green New Deal.’ The New Deal was not built

on a magic bullet, but on a broad range of programs and industrial projects to revitalize America. Ditto for an energy New Deal” (Friedman, 2007). Friedman’s GND, far from Ocasio-Cortez’s and Markey’s GND resolution, calls for only two policies: stringent government regulations on requirements for energy efficiency and some form of carbon pricing to make clean energy more competitive. Another alternative GND was proposed by the Green New Deal Group in 2007, brought together by a British tax scholar, Richard Murphy. Their plan for the United Kingdom called for large-scale deficit spending by the federal government to increase energy efficiency and renewable energy in buildings and infrastructure. They also call for “creating and training a ‘carbon army’ of workers to provide the human resources for a vast environmental reconstruction programme,” as “part of a wider shift from an economy narrowly focused on financial services and shopping to one that is an engine of environmental transformation,” (The Green New Deal Group, 2008). Although this plan picked up steam in the UK with the establishment of a green infrastructure bank in 2010, it was quickly dissolved by a new conservative government (Kaufman, 2018).

In 2008, Van Jones released his book *The Green Collar Economy: How One Solution Can Fix Our Two Biggest Problems*, Van Jones is an environmental activist, news commentator, and served as President Obama's Special Advisor for Green Jobs in 2009. In his book, he asserts that, while the term “green economy” might evoke images of complex technologies and “strange and wonderful machines,” the main tools for the green economy will be more akin to caulk guns and clipboards as workers perform energy audits and weatherize buildings (p. 9). Jones’ conception of a GND is rooted in what he calls “eco-populism,” rebuking any top-down, elitist environmental agendas that are not inherently owned by a broad and diverse coalition of people. In this GND, the government is situated as a partner and funder to this coalition, or “Green Growth Alliance” of business, labor, social justice activists, religious organizations, students and environmentalists (p.17). Jones was adamant about the necessity of the private sector’s role in a successful GND, as it is the only sector with the experience, skills, and capital necessary for the scale of innovation and implementation required for a successful green economy. However, he maintains that these entrepreneurs must employ a triple-bottom-line of profit, people, and the planet.

These iterations of a GND went on to inform both Barack Obama's 2008 presidential platform and the 2009 United Nations report calling for a “Global Green New Deal.” Following

the Great Recession, the 2009 American Recovery and Reinvestment Act (ARRA) gave \$90 billion to clean energy research and development, subsidizing wind and solar infrastructure development, and a proposed high-speed rail project (Arnoff et al., 2019). Rather than creating new public sector jobs to build this infrastructure, ARRA gave \$500 million of this clean energy money to the U.S. Department of Labor to prepare workers for careers in energy efficiency and renewable energy. This money was funneled into 25 local Energy Training Partnerships (ETPs) to develop workforce development programs. However, Scully-Russ's (2013) case studies of two of these ETPs that received grant money found that worker training programs were insufficient in providing necessary occupational knowledge and that there was a mismatch between the training provided and the skills necessary for emerging green jobs. Arnoff et al. (2019) criticized the Obama administration's "striving for elite compromise" with conservatives as leading to "convoluted and ineffectual programs" (p. 12-13). Following the ARRA, Representative Henry Waxman (D-CA) and then Representative, now Senator, Edward Markey (D-MA) proposed the American Clean Energy and Security Act, which aimed to complement the ARRA with a cap-and-trade program for GHG emissions, carbon capture research, a low-carbon fuel standard, and energy efficiency standards for buildings, manufacturing, and fuel (Pollin et al., 2009). This bill died in the Senate after attempts at concessions to fossil fuel executives and other carbon-intensive industries led to a plan that appealed neither to conservatives, who viewed it as increased taxation, nor to liberals, who viewed it as ineffective (Broder, 2010).

During his same time period, the GND was also inspiring global policy. The United Nations Environment Programme (UNEP) produced a plan for a "Global Green New Deal" (GGND) in 2009, which called for fiscal stimulus prioritizing energy efficiency and renewable energy, domestic policy reforms to both reduce subsidies to the fossil fuel industry and create positive incentives for a "green economy," and creation of global carbon markets (UN Environment Programme, 2009). The UNEP summarized the objectives of the GGND as (1) making a "major contribution to reviving the world economy" by saving and creating jobs while protecting vulnerable groups, (2) reducing carbon dependency and ecosystem degradation, and (3) furthering "sustainable and inclusive growth" and ending extreme poverty (UN Environment Programme, 2009, p. 1).

In a review of the various architectures of a GND, Aşici and Bünül (2012) explore the tension between supporters of the post-Great Recession version of the GND and criticism from

ecosocialists. They compare this debate to that between Marxist revolutionaries, who believed in self-emancipation by the working-class, versus revisionists or reformists, who argued that socialism could be achieved through reforming the current democracy. GND supporters, or the revisionists, claim that public support of the private sector can transform the current economy by making it “greener.” Ecosocialists, or revolutionaries, criticize market-based strategies, viewing the GND as a “green capitalism” that will not be sufficient to bring about needed radical change. Although supporters of 2007-10 versions of the GND recognize the traditional economic growth paradigm as unsustainable, they are not unequivocally opposed to growth, and rather are concerned with the extractive sectors in which growth is occurring. Ecosocialists, on the other hand, acknowledge the need to work through capitalist systems to provide immediate relief, but in the long-term view capitalism as incompatible with solving both climate and socioeconomic crises. Aşici and Bünül (2012) find that these GND proposals are heavily focused on domestic economic recovery rather than international economic system reforms. They acknowledge that “in the hands of a capitalist system, it is clear that the GND faces a huge risk of becoming mere “green washing” (p. 305). However, they assert that ecosocialists “lack a clearly defined set of actors and road-map that can radically replace the existing global system” (p. 305). The 2019 and 2021 GND is, essentially, a framework for the creation of that roadmap. The roadmap of the GND, while emerging from federal policy, will be implemented locally, and will build on past and ongoing state and municipal climate action initiatives.

C. Climate Action and Green Jobs in Boston

The City of Boston released its first Climate Action Plan in December of 2007, following an executive order from Mayor Thomas Menino earlier that year establishing a goal for Boston to reduce GHG emissions by 80% by 2050 (City of Boston, 2007). Although this plan did mention green jobs, the federal 2007 Green Jobs Act and the 2009 American Recovery and Reinvestment Act (ARRA) soon introduced “green jobs” and the “green economy” into Boston’s climate lexicon (Scully-Russ, 2013). In 2008, The Department of Energy Resources (DOER) and the Massachusetts Clean Energy Center (MassCEC) were created through the Green Communities Act and the Green Jobs Act, respectively, to advance job creation and reduction in fossil fuel use through the emerging clean energy sector (Hughes, 2018). MassCEC, which was formed to support clean energy entrepreneurship, workforce training, and research, is supported by the Massachusetts Renewable Trust Fund, a fund sustained by ratepayers of private utilities in

Massachusetts (MassCEC). As an organization, MassCEC served as a backbone for the state's clean energy-focused green jobs movement (Hughes, 2018). This movement was strengthened following the Great Recession and the ARRA. Through the ARRA, Massachusetts received funding for weatherization through the Weatherization Assistance Program and for energy efficiency through the Energy Efficiency and Conservation Block Grant Program (Hughes, 2018).

Using these funds, Boston launched a new energy efficiency initiative Renew Boston, with a goal to expand the "green collar workforce" through weatherization and retrofitting jobs. Renew Boston served as an outreach program for MassSave, a state program that requires private utilities to place energy conservation charges on every bill to fund energy audits and energy efficiency retrofits (Hughes, 2018). SkillWorks, which was formed in 2003 and was originally known as the Boston Workforce Development Initiative, also joined the local green jobs movement by launching the Green Collar Career Pathways Initiative, which aimed to connect post-secondary institutions and community colleges with workforce development programs within green sectors (Hughes, 2018).

According to Hughes (2018), who explored the growth and decline of the 2009-2011 green jobs movement in Boston in his Master's Thesis, "the initial hope that the green economy would create opportunities through new, emergent professions was crushed by the reality that outside energy efficiency and weatherization in the emergent clean energy sector, the economy was a retailing of existing professions to add a green component," (p. 56). He asserts that, "adequate policy or cultural drivers were not in place to guarantee public or private actors could create viable career pathways in the green economy, largely because it was unclear what exactly constituted green jobs in the green economy," (p. 57). He also argues that, due to the speed at which ARRA funding became available, there was inadequate coordination and planning among public and private organizations, leading to duplicative efforts (Hughes, 2018).

In 2017, Mayor Martin K. Walsh elevated Boston's climate goals to reach carbon neutrality by 2050 with an interim goal of reducing GHG emissions by 50% by 2030. Boston's most recent Climate Action Plan, released in 2019, increased this interim carbon reduction goal to 60% by 2030. This Climate Action Plan is complemented by other comprehensive plans and strategies focused on coastal climate adaptation, sustainable transportation, resilience and racial equity, increasing Boston's housing supply, and upgrading Boston's public school buildings,

public environmental education and participatory climate planning, and Boston’s Zero Waste initiative to divert at least 80% of the city’s waste from landfills and incinerators by 2035. Although previous iterations of Boston’s Climate Action Plan have continued to use the language of the previously discussed green job movement, with a focus on creating jobs through the clean energy economy, the 2019 plan is the first to have an explicit goal to “expand workforce development programs for building decarbonization,” (City of Boston, 2019, p. 47).

This goal builds off of the 2013 Building Energy Reporting and Disclosure Ordinance (BERDO), which requires that all commercial and residential buildings over 35,000 square feet, or having 35 or more units, report their energy and water use to the City and must take action to reduce their energy use by 15% every five years. The 2019 Carbon Free Boston report also found that to reach carbon neutrality by 2050, at least 80% of Boston’s existing buildings must be retrofitted and electrified. In response, the City is now developing a series of decarbonization performance standards for different building typologies. The Climate Action Plan workforce development goal will be attained by “supporting and enhancing existing training programs and programs to increase the diversity in the building trades through upskilling and incumbent worker training,” (p. 47). The City will work to grow career pipelines for facilities management, such as building operators and maintenance workers, as well as for construction trades involved in building renovations, in order to create local, well-paying, high-quality jobs. This is an example of the City of Boston working to align environmental and economic improvement, challenging a history of discourse that frames these two issues as incompatible. This thesis also fundamentally challenges this discourse, building on a body of theory that supports this endeavor.

III. Guiding Theory

A. Rethinking Jobs Versus Environment Discourse

High-carbon emitting and resource extractive industries, as well as conservative politicians, often position climate action and environmental regulation as antithetical to job creation and working-class interests, insisting that “jobs versus the environment” is an inevitable tradeoff (Hackett and Adams, 2018). It’s true that radical climate action necessitates radical economic transformation, which includes scaling-down or eliminating entire industries. However, a successful movement for a GND will require the support of the working-class, and

therefore requires climate action that centers the needs and self-determination of those workers. Norton (2003) rejects generative class theory as a basis for conflict between labor and environmental movements, or the idea that the interests of these movements are not inherently based in class structures. Labor unions and workers are not “predisposed to anti-environmental stances. Rather, these narratives are a combination of two forces. First, “jobs versus environment tensions...are a function of the use of corporate and state power to discursively construct employment and environmental goals in opposition of each other” (p. 100). Second, environmental policy often “others” workers and can become “something that is ‘done to’ workers...in the absence of an ecopolitical praxis which strongly articulates social justice and democratic agendas with those of ecology” (p.115). Rätzl and Uzzell (2011) also emphasize the need for environmental movements to acknowledge how people build their identities around their work and that “horizontal dialogue” must exist between environmentalists and workers to ensure that workers’ immediate interests can be reconciled with a focus on solidarity. GND-driven job creation strategies are based on this understanding of a unified environmental and labor movement.

Labor activists, likewise, have repeatedly called for unions to spearhead their own climate change plans in order to ensure protection of workers’ rights and well-being. Brecher et al. (2014) argue that “labor needs to propose a climate protection strategy of its own -- one that realistically protects the livelihood and well-being of working people and helps reverse America’s trend toward greater inequality while reducing GHG emissions” (p. 2). Their ideal labor-led plan includes a reversal of austerity policies, establishes full employment, raises wages, and involves mass public investment and government intervention in economic decisions. Specifically, they propose that those who lose jobs due to the transition away from fossil fuels should receive full wages and benefits for four years and up to four years of education, as well as pensions and healthcare for those who retire.

The basis for such proposals, the notion that the economic and environmental transition should be rooted in justice, also extends beyond the energy and manufacturing sectors. Arnoff et al. (2019) envision movements in which healthcare workers organize with day laborers around the dangers of heatwaves, where transit and construction workers fight for free transit, or where sanitation workers and communities next to landfills call for sustainable waste management. In fact, the Amalgamated Transit Union, National Nurses United, Service Employees International

Union 32BJ, and the Association of Flight Attendants have all endorsed the GND (Arnoff et al., 2019). The interests and needs of workers and the planet can be aligned. The GND includes a job guarantee to ensure that this alignment also serves to address broader socioeconomic disparities. Tomczak and Rofuth (2015) also emphasize how policies for full employment can spur environment and labor coalitions by emphasizing both worker protections and the labor necessary for infrastructure and energy transformations.

The GND's focus on such transformations is based on theories of industrial policy. The GND, writes Robinson Meyer (2019), "is a leftist's resurrection of federal industrial policy," and an attempt to collaborate with the private sector. Rather than using targeted market mechanisms, the GND aims to use the power of both government and industry to make low-carbon living affordable and just. The New Consensus contends that countries first become wealthy by investing in strategic industries and go on to design trade, infrastructure, and education around those industries. Meyer (2019) quotes Cohen and DeLong (2016): "Yes there was an 'invisible hand' ...But the invisible hand was repeatedly lifted at the elbow by the government, and replaced in a new position from where it could go on to perform its magic." This method was not only utilized during the New Deal era. To move away from an agrarian-based economy, Alexander Hamilton used high tariffs to spur manufacturing. Large swaths of land were given away for free after the Civil War — after being stolen from Indigenous communities — to create the transcontinental railroad (Vong, 2019). President Eisenhower used the defense budget to research and develop groundbreaking technology during the Space Race.

Meyer (2019) also references "mainstream" economist Mariana Mazzucato, a vital correspondent in the development of the GND, who asserts that private sector innovation depends on the public sector providing purpose and direction. In addressing climate, it is the responsibility of the government, therefore, to set a target and support firms of any size that are willing to engage. Implemented at the municipal level, a GND could use a combination of direct hiring by the government and public-private partnerships to spur and support low-carbon industry development. However, those advocating for the GND are purposely not expressing their plan in terms of industrial policy: "Say the word *manufacturing*, and people hear a paean to the white working class" (Meyer, 2019). As with most of United States policy, industrial policy has historically excluded people of color, particularly Black Americans.

Understandably, common critiques of the GND assert the immense harm experienced by Black Americans during the New Deal in the 1930s. The New Consensus makes clear that the New Deal failed deliberately in terms of racial equity by excluding agricultural and domestic workers, the sectors in which most Black Americans were employed, from the Fair Labor Standards Act of 1938 and excluding non-white workers from the right to unionize provided by the 1935 Wagner Act. The New Deal also created the Home Owners Loan Corporation in 1933, which created the system of redlining Black neighborhoods to prevent Black families from accessing home financing, adding to already existing segregation and race-based housing barriers (Flynn and Holmberg, 2019). The GND, while drawing inspiration from the scale, urgency, and government leadership of the New Deal, is also inherently focused on reparations and addressing historical oppression. Coleman (2019) explains measures such as full employment, universal healthcare, and free education create a “social safety net not as a left-wing wish list but for practical reasons: Such measures help ensure that poor and working-class Americans of all colors do not lose out during the transition to a zero-carbon future.”

B. Critical Race Theory and Labor

Critical Race Theory (CRT) can serve as a powerful tool in reckoning with the bridge between an explicitly racist New Deal and an explicitly anti-racist Green New Deal. CRT grew from, “a collection of activists and scholars engaged in studying and transforming the relationship among race, racism, and power,” considering racial, ethnic, and civil rights issues, “...in a broader perspective that includes economics, history, setting, group and self-interest, and emotions and the unconsciousness,” (Delgado and Stefancic, 2017, p. 3). CRT holds that (1) racism is ordinary, deeply embedded in every facet of society such that it is usually left unacknowledged, (2) racism serves a psychological and material purpose for both white elites and the white working class, (3) race and racism are socially constructed, and (4) people of color have an understanding and experience of oppression that white people cannot fully realize (Delgado and Stefancic, 2017).

Delgado and Stefancic (2017) provide an introduction to the key themes of CRT, three of which will be particularly important to this thesis: interest convergence, color blindness, and whiteness. Interest convergence, a term coined by CRT scholar and lawyer Derrick Bell, asserts that civil rights victories and anti-racist progress are not products of altruism, but rather occur when it is in white people’s material interest to do so. Color blindness, in this case, refers to the

popularity and prevalence of race-neutral policies that stress general equality rather than acknowledging and addressing specific racial harms. Delgado and Stefancic (2017) advocate that only “aggressive, color-conscious efforts to change the way things are will do much to ameliorate misery,” (p. 27). Finally, whiteness is the construction, implications, consciousness, and privilege of the white race. Delgado and Stefancic (2017) offer a striking explanation of the relationship between racism and white privilege:

“...our system of race is like a two-headed hydra. One head consists of outright racism – the oppression of some people on grounds of who they are. The other consists of white privilege – a system by which whites help and buoy each other up. If one lops off a single head, say, outright racism, but leaves the other intact, our system of white over Black/brown will remain virtually unchanged. The predicament of social reform, as one writer pointed out, is that “everything must change all at once.” Otherwise, change is swallowed up by the remaining elements, so that we remain roughly as we were before. Culture replicates itself forever and ineluctably” (p.90-91).

These themes, and CRT’s central demand to acknowledge the existence and role of race in the construction of policy, will serve as a foundation for both my analysis of the existing green jobs landscape in Boston and my recommendations for future program development.

For example, these CRT themes provide a lens to examine the history of the role of race in the development of the working class and labor markets in the United States. Edna Bonacich (1976) provides an enlightening and rigorous analysis of the evolution of the racially split labor market between World War I and the New Deal and its effects on the continued oppression of Black people in America. Bonacich defines the split labor market in terms of wages and unions in the 1920s. Black workers were either (1) paid lower wages than white workers doing the same job, (2) given different, often arbitrary, job titles that had lower wages, or (3) hired by different, lower-paying employers than white workers. Black workers were also less likely to unionize due to both racist exclusion by white unions and exploitation by employers. These conditions led to the cyclical, mutually reinforcing dynamic between white workers, Black workers, and employers.

As white unionism increased the price of white labor, employers strategically took advantage of Black workers with weaker bargaining power, using Black people as both short-term strike-breakers and long-term replacements for unionized white workers as well as

encouraging a sense of loyalty by Black workers through donations to the Black community organizations and development of company unions. This led to the white antagonization of and further hostility toward Black workers, which only served to strengthen employers' exploitation of Black labor and Black workers' distrust of unions. New Deal legislation served to increase worker power by protecting the right to unionize and outlawing using Black people as strike-breakers and the use of company unions. While employers were still able to discriminate against Black workers through other avenues, these policies did lead to a significant increase in the participation of Black workers in organized labor movements. However, Bonacich (1976) argues that this merely led employers to find cheap labor in other ways, such as moving production to other countries, exploiting immigrants and non-union Black southerners, and replacing low-skill, usually Black, workers through automation.

Bonacich's analysis utilizes the three CRT themes mentioned above. Black workers gaining worker protections in the New Deal is an example of interest convergence, as this legislation also benefited white working class by targeting the use of Black workers as a cheap source of labor. However, it is also an example of how these race-neutral policies were unable to protect Black workers and other workers of color in the long run. Finally, white privilege is evident in white workers' access to money and education that allows them to attain higher-skilled jobs that are less vulnerable to automation and displacement. This illustrates that racism in the context of labor and the working class is rooted in intentional systemic and institutional processes that continue to replicate the oppression and exploitation of Black workers as well as the presence of entrenched distrust of Black workers among the white working class.

IV. Green Workforce Development Theory and Practice

A. Frameworks for Equity in Workforce Development

A Green New Deal-based job program must directly acknowledge and subvert existing and historic racist labor dynamics in its program design and implementation, as well as prioritize racial equity and social justice. A number of frameworks and best practice recommendations have been published regarding equitable workforce development practices in general, as well as specifically green equitable workforce development. Nationally, public workforce development practices are mainly funded through the 2014 Workforce Innovation and Opportunity Act (WIOA), which supports authorized employment-related programs such as on-the-job training,

career development, and job search assistance. Under WIOA state and local workforce development boards, which include representatives from organized labor, business, community organizations, education, and government, are responsible for American Job Centers and contract with community college, high schools, nonprofits, and private companies that provide job training services (Lam, 2019).

When WIOA was signed into law, the U.S. Departments of Labor, Commerce, Education, and Health and Human Services (2014) also released a report synthesizing existing evidence supporting effective methods for both adult and youth job training. For adults, the report found that post-secondary education, including both degrees and industry-recognized credentials, had the most influence on workers' incomes. Innovative training curricula were also highlighted as effective strategies for improving program's accessibility and effectiveness; such curricula include flexible class schedules, multiple entry and exit points for students to leave and return to training according to external circumstances, sequential training tied to career ladders, including remedial education concurrent with job-specific training, and cohort models aimed at developing social support networks. Finally, the report found that coordination between the various providers of employment services, job training, and supportive services is critical.

Lam (2019) offers a critique of WIOA and proposed a new funding framework for workforce equity through a Workforce Equity Trust Fund (WETF) aimed at ensuring that "every individual looking for a new job, pathways to promotions, or a career change, as well as individuals in between jobs or juggling multiple jobs, will be entitled to high-quality skill training and employment services that guarantee equality of treatment in the workforce," (p. 3). First, employers over a certain size would be required to pay into the WETF. Lam argues that the WIOA uses a free-market approach, encouraging job training providers to compete for customers based on the cost-effectiveness of their education services. The WETF would instead use a trust as a funding source for job training programs that meet a set of equity standards. Second, the WIOA includes funding for supportive services such as transportation, childcare, and housing assistance, but these services have been shown to be inadequate. For example, in a survey of 70 workforce development centers nation-wide, including WIOA One-Stop Career Centers, fewer than 50% provided services such as language assistance for non-English speakers, housing support, and mental health support (Race Forward, 2017). Lam (2019) proposes a "portable suite of wraparound services and basic employment benefits" through formal partnerships between

training programs and supportive service providers. Third, the WIOA uses six performance measures: employment rates 3 and 12 months after exiting a program, median earnings after three months of leaving a program, credential attainment, measurable skills gains, and effectiveness in serving employers. Lam argues that other indicators can better measure job quality, such as income distribution rather than just median income, cost-of-living measurements, job health and safety, and job security. Finally, Lam asserts that workers need to have a prominent voice on workforce development boards in order to create tripartite governance between workers, employers and government. These suggested improvements to WIOA provide valuable input to the formulation of workforce development programs on national, state and local scales.

In addition to overall workforce development equity, a focus on green workforce development necessitates additional considerations of equity. According to the Applied Research Center's report, "Green Equity Toolkit: Standards and Strategies for Advancing Race, Gender, and Economic Equity in the Green Economy," a focus on equity can help ensure that green policies and programs are actually furthering environmental and social justice goals rather than perpetuating a "gray economy" with a "green tint," (Liu and Keleher, 2009, p.5). They define the gray economy as "characterized by a post-Industrial Revolution model where profits are routinely permitted to be derived from the pollution of air, water, and land; the exploitation and under-compensation of workers; the creation of environmental-related illnesses; the disproportionate dumping of toxins in low-income communities of color; and the creation of wealth stratification and deep poverty," (Liu and Keleher, 2009, p. 6).

They posit a number of key areas where attempted green policies fall into the trap of the gray economy: (1) creating green jobs that are low-skill, entry level positions, but failing to provide opportunities for continued education and career advancement pathways, (2) a "green job training charade," in which funding for job training is not integrated with job creation such that new trainees continued to be unemployed, (3) creating "bad green jobs," that do not provide safe, healthy conditions with access to labor unions and a living-wage, (4) perpetuating race and gender employment disparities in green job sectors, and (5) perpetuating race and gender disparities in executive and management positions in green job sectors. The report outlines a series of equity outcomes and indicators that can help policies and programs avoid such failures. These outcomes include a transparent and participatory planning and evaluation process,

equitable distribution of high-quality “good green jobs,” expansion of employer-sponsored benefits, intentional elimination of barriers to employment, expansion and enforcement of minority contracting goals, expansion of green entrepreneurship opportunities for disadvantaged populations, health and safe working environments, maximization of local hiring, and expanded educational and workforce development opportunities for disadvantaged communities (Liu and Keleher, 2009).

Program design, as well as government policies, can achieve these outcomes through both supply-side strategies, i.e., those focused on job training and reducing barriers to employment, and demand-side strategies, i.e., those addressing job creation and employer incentives and regulations. The Ella Baker Center for Human Rights, a social justice organization in Oakland which helped create the Oakland Green Jobs Corps, released a supply-side focused report of best practices for “green-collar job training,” (Ella Baker Center Green-Collar Jobs Campaign, 2010). This report includes recommendations for training programs for people facing barriers to employment, who they define as people who are low-income and/or receive public assistance, people of color, women, people who were previously homeless or are in transitional housing, those with prior criminal convictions, those suffering from chronic unemployment and/or underemployment, single parents, limited English speakers, those without a GED or high school diploma, and/or emancipated foster youth (Ella Baker Center Green-Collar Jobs Campaign, 2010).

First, they emphasize the necessity of a network of cross-sector partnerships. These can include partnerships with community colleges to assist with curriculum development and education, local government to access funding and technical assistance, community-based organizations with existing relationships to community members, employers and industry representatives to inform training curricula, labor unions to form connections to union jobs and apprenticeships, and existing job training programs to build off of and improve the existing job training landscape.

Second, they outline the key components of a comprehensive training curriculum. Employers and unions can inform “hard-skill” training, which might include general certifications, such as OSHA, and industry job-specific technical training and certifications. Community colleges and community-based organizations can provide “soft-skill” education such as GED courses, English instruction, digital literacy skills, conflict resolution, workplace

etiquette, job-search skills, and financial literacy. Financial literacy training might include learning about credit, linking participants to banks that do not charge for small accounts, and access to debt counselors. They also emphasize the benefits of including environmental literacy training such that participants understand the value of their work, continue to pursue green employment, and engage in environmental justice issues in their communities.

Third, eligibility requirements can directly address or exacerbate common barriers to employment. Traditional requirements include a minimum age of 18, a driver's license, reliable transportation, specific physical abilities, a high school diploma or GED, and a clean drug test. The most equitable programs will require as few as possible of these criteria for participation in the program and instead provide access to resources and education to meet these requirements that will likely be required for future employment.

Finally, in addition to these resources, comprehensive support services and case management for participants is vital to ensuring they can enter and stay in the labor market. These services should include access to, or assistance in accessing through other organizations, childcare, transportation, housing, mental health counseling, healthcare, financial stability, and education (Ella Baker Center Green-Collar Jobs Campaign, 2010).

In addition to this focus on addressing barriers to employment and supporting program participants, the California Workforce Development Board and the CA Governor's Office of Planning and Research, in a recent report on "A Jobs and Climate Action Plan for 2030," state that a fundamental principle for supply-side workforce development policy is that training programs must meet the needs of both workers and employers: "Training programs should be designed to address the particular skill needs of an industry sector; in tune with hiring and promotion practices of employers in the industry; and calibrated to the number of actual jobs," (Zabin, 2020, p. 98). Certifications and skills standards are signals from employers to training programs, but training programs must include explicit policies and resources to ensure those standards do not serve as a financial or logistical barrier to entering the industry. They also stress that municipal climate policies and green job programs should not be independent programs siloed from the existing workforce development infrastructure, which can lead to confusion for people seeking training and duplicative or competing programs (Zabin, 2020). Climate policy can also be a tool for demand-side workforce development. This report defines demand-side policies as those that, "affect the demand for labor, including what kinds of jobs are generated,

what skills are needed, what wages employers pay, and who employers hire,” (Zabin and MacGillvary, 2020, p. 67). Climate policies can support workers and help alleviate economic and racial disparities. Likewise, policies that support workers can serve a city’s climate goals.

California’s Jobs and Climate Action Plan for 2030 outlines four types of demand-side policy levers: labor standards, skill standards, access and inclusion policies, and comprehensive strategies. Labor standards include safety standards, benefit requirements, minimum wage laws, requirements for a “living wage,” and prevailing wage laws, which can require contractors for public works projects to pay their workers and provide benefits that at least match the “prevailing” wages and benefits for that type of work in the local region. Skill standards control the qualifications required of workers, such as industry-specific certifications or licenses. These standards provide signals to job training institutions as to the value of different types of skills in the labor market. However, to be effective, these standards must be combined with pipelines to ensure that people with barriers to employment are able to access the resources necessary to achieve these qualifications. Access and inclusion policies are concerned with ensuring local community benefits and hiring requirements to increase opportunities for disadvantaged populations and those historically excluded from specific sectors of the labor market. Public procurement policies can also address issues of access and inclusion and can provide incentives for developers to enter Community Benefit Agreements (CBAs), which are agreements between community stakeholders (community organizations, environmental groups, religious communities, labor unions, etc.) and businesses bidding for a public contract, requiring a business to provide community benefits in exchange for community support for the project (Zabin and MacGillvary, 2020). According to the Institute for Public Procurement (2013), public procurement policies can provide these incentives and benefits through Best Value Procurement rather than simple lowest-bid policies. They define the value of procured labor through a cost benefit analysis, which includes consideration of inclusive and local hiring, as well as environmental impacts or benefits, in addition to more traditional considerations such as legal and financial risks, reliability and performance of the supplier, and bid price.

Comprehensive strategies are bundles of individual policy levers and include policies such as Project Labor Agreements (PLAs) and Community Workforce Agreements (CWAs). PLAs are pre-hire collective bargaining agreements among labor unions and project owners concerning training and certification requirements and wage and benefit requirements for

individual projects. CWAs expand on PLAs to include local hiring provisions, requirements for hiring people from disadvantaged and minority populations, and priority hiring of graduates of pre-apprenticeship programs that target these populations. CWAs are focused on benefiting both workers and employers by building a pipeline between qualified workers from underrepresented populations to good jobs (Zabin and MacGillvary, 2020). Green for All (2012), a national anti-poverty organization focused on creating an inclusive green economy through increasing the number and quality of green job opportunities, works with communities, labor organizations, government, and businesses to institute High Road Agreements (HRAs). An HRA is created through a participatory multi-stakeholder process and includes strategies for achieving “High Road Standards” related to the quality and accessibility of economic opportunities, mechanisms for implementing the agreement, and a process to evaluate progress toward these standards. Green for All recommends the use of HRAs for situations where CBAs, PLAs, and CWAs are unfeasible, such as for projects with no single end use, developer, or site. High Road Standards can include goals such as (1) living wages and benefits, achieved through strategies such as wage standards, creating pools of contractors that agree to certain wage and benefit standards, and Best Value Procurement, (2) a trained workforce achieved through subsidized job training programs, (3) accessible job opportunities achieved through local hiring standards and hiring preferences for disadvantaged populations, (4) career advancement pathways for workers, and (5) contractor diversity. HRAs also include mechanisms for evaluating indicators related to these goals and procedures for adjusting the agreement’s strategies based on this evaluation.

B. Green Jobs Programs Literature

Scully-Russ (2013) views green jobs policy as an opportunity to consider how workforce development programs can best prepare workers for emerging industries as well as how workforce development can affect the fundamental nature of work within a transformation of the economy. She presents three frameworks of green jobs. A “normative framework” places green jobs as career-track work that enhances environmental quality and pays a living wage. An “industrial framework” defines green jobs as those comprising work essential to products or services that improve and implement energy efficiency, renewable energy, or support environmental sustainability. A “process” or “occupational framework” considers the “greening” of existing occupations’ processes and requirements. She concludes that, if green jobs are to be collectively understood as career-track labor for low-skill or unemployed workers, then job

creation must include robust education and training programs. However, this raises challenges in creating training programs for job markets that may not yet exist, and it may be difficult for the federal government to establish broad standards for green jobs given their equivocal definition.

This difficulty is reflected in both public discourse and official policies on green jobs. Kouri and Clarke (2014) examined the discourse around green jobs in print media and policies from 1999 to 2009. They defined five predominant, and fractured, frames, which they posit have hindered green jobs from becoming a more meaningful development strategy. (1) “Environment-economy bridge” discourse shallowly and nonspecifically frames green jobs as a link between economic recession and climate change, encompassing “the rhetoric of calamity (oncoming environmental crises), a rhetoric of justice (workers deserve jobs), and a rhetoric of opportunity” (Taylor, 2000 as cited in Kouri and Clarke, 2014, p. 223). This discourse, the second most frequent in their analysis, was employed most often in their analysis, by reporters and public figures, as a persuasion tactic. (2) “Green entrepreneurship” discourse considers governments as responsible for creating price signals and market incentives that encourage private investment in the environmental sector, which will then lead to green job creation. (3) A “nascent industry creation” perspective, usually used by supporters of Murphy’s Green New Deal Group, calls on government-led job creation through public investment in new environmental industries, such as renewable energy infrastructure and energy efficiency products. (4) “Internal industry transformation” framing posits that every job can be a green job because every industry sector can change their activities to reduce GHG emissions and environmental impact. This discourse emphasizes the importance of stakeholder and labor union activism. Finally, (5) “structural adjustment” discourse, the least commonly observed in this study, was expressed by union leaders calling for job security for those whose jobs would be threatened by the shift to a low-carbon economy. Overall, Kouri and Clarke (2018) call for policy-makers to be less ambiguous in their use of green job creation discourse and consider specific strategies for government intervention in addressing unemployment and climate change.

While the GND calls for large-scale job creation, with an expansive understanding of green, low-carbon work, currently green job and workforce development programs tend to be implemented at the city or municipal level, with funding support from government agencies, foundations, and employers. However, thorough research on the effectiveness and long-term outcomes of these individual programs is scarce. In one study, Falxa-Raymond et al. (2013)

conducted a case study of MillionTreesNYC, a public-private initiative in New York City that aimed to plant one million trees in the city by 2017. This study elucidates the inherent complexity of the design of these programs with regard to funding, compensation, project identification, supervision, and training decisions. Moreover, it shows that research on the effectiveness of these decisions is dependent on capturing the perspectives and experiences of a multitude of stakeholders. The initiative included a job training program for low-income NYC residents ages 18-24 who had completed high school or a GED program but had been “disconnected from the workforce.” Recruited through programs run by various NYC departments, trainees completed a seven-month program, where they were paid about double the New York State minimum wage, and were then placed in a full-time job. The US Forest Service awarded \$2 million to fund graduates’ salaries for two years after completing the program.

In the first class of trainees, 25 out of 30 participants graduated, 22 were placed in jobs, and 16 were still employed 2-3 months after their initial hire. Researchers were only able to interview these 16 individuals. Falxa-Raymond et al. (2013) examined trainees' motivations, acquired skills, attitudes, and the program’s challenges. Most trainees found and completed the program through support from their social networks, reported an interest in pursuing an environmental career, and reported that they gained physical skill, environmental knowledge, interpersonal skills, and office skills. While trainees all expressed positive attitudes toward their current employment, most supervisors reported that the trainees were not adequately trained in the technical or office skills needed for full-time employment after the program and perceived a lack of motivation and professional behavior. This work demonstrates the importance of more extensive analysis of this dissonance between participants’ and supervisors’ perceptions, as well as how these perceptions translate to long-term career outcomes.

The success of green jobs programs, in terms of minimizing barriers to entry, addressing racial and socioeconomic disparities in who benefits from the programs, and ensuring long-term employment, also depends heavily on a city or municipality’s organizational capacity and the strength of partnerships between local government, community organizations, and employers. Torres-Vélez (2011), in examining the barriers the Puerto Rican community in New York City faces in accessing green jobs, argues that “community-based workforce intermediaries” are essential in connecting minority communities to labor demand. He analyzes the impact of Puerto Rican community-based organizations (CBOs), historically involved in NYC environmental

justice movements, showing how these organizations act as mediators between workforce development programs and those in need of employment. Low-income and minority communities face barriers in green job training due to lack of access to education in math and science, childcare, disposable income for living expenses and transportation, and previous incarceration. Torres-Vélez (2011) emphasizes, however, that effective legislation and partnership with CBOs can ensure that workforce development includes remediation courses and provides social services to overcome such barriers.

One such CBO, Sustainable South Bronx (SSBx), runs the Bronx Environmental Stewardship (BEST) program, which is open to any resident of NYC with a high school diploma or GED, and provides 10-weeks of training and certification in areas such as bioremediation and ecological restoration, green roof installation and maintenance, water and soil quality, OSHA, and job readiness. From 2003 to 2008, 85% of the 150 graduates were employed four years after graduation and 10% were enrolled in college. Most participants are low-income residents of the South Bronx, and the program's model aims to find graduates local green employment as a method of local wealth creation and maintenance. Given this program's success, rather than funding stand-alone training programs, Torres-Vélez (2011) calls for governments to function through empowering and supporting local organizations that are best situated to create career ladders for their constituencies.

SSBx's focus on marrying employment with local environmental benefits reflects one of the challenges most central to green job programs: ensuring that programs not only meet the standards for success for any workforce development program, such as living-wage, long-term employment with opportunity for upward movement, but also that the work done within the program and careers that participants go on to pursue both directly contribute to GHG emission reduction and climate action. In her Master's Thesis, Louise H. Yeung (2013), explored this challenge through case studies of two green workforce development programs, the Oakland Green Jobs Corps and the Baltimore Center for Green Careers (BCBG). She analyzes these programs' balance of supply-side strategies, which focus on increasing the size and training of the green labor force, and demand-side strategies, which affect the quantity and accessibility of green jobs.

The Oakland Green Jobs Corps focused mainly on providing training for a wide variety of construction-based occupations through partnerships between a local nonprofit workforce

development organization, a community college, and local industry. Training consisted of both basic education and life skills, as well as 480 hours of bootcamp-style, job-specific classroom training and paid internships with local unions doing sustainability focused projects. Although the program was able to graduate 125 participants per year with a 70% job placement rate, most graduates did not enter specifically green jobs, but rather entered general construction and building trades that may or may not include “green practices.” BCGC, on the other hand, focused on both supply- and demand-side strategies for a single industry and occupation through three interconnected programs. B’More Green, a Baltimore AmeriCorps program, has a weatherization job training track which feeds graduates into work at EnergyReady, a social enterprise that provides weatherization services. Demand for these services is generated through Retrofit Baltimore, which provides outreach, education, and resources to help Baltimore residents understand the benefits of weatherization. BCBG also has a contract with the City to perform services related to its weatherization and energy consumption goals. However, the key downside of this model is that the program is only able to accommodate 25 participants per year and therefore has an extremely selective application process. Together, these case studies illustrate how public policy, organizational and private sector partnerships, and program design inform both the employment and environmental outcomes of green job programs. However, it is important to note that literature on green job programs is outdated, centered on the ARRA era following the Great Recession, which was characterized by short-sighted federal funding and over-reliance on the ability of indirect public funding to spur private investment. While the lessons learned from these programs still apply, there is a need to continue to expand this field of scholarship, particularly in the context of the Green New Deal.

A GND-based job program is an attempt to bridge existing green job and workforce development programs with a long-term vision of reconceptualizing the relationships between climate change, labor, and economic security. An expansive definition of green jobs includes not only those in a green sector or in a sector becoming green, but instead as any job that contributes to life both during and after a larger economic and societal transformation. This thesis will explore the roles and visions of various actors — existing job programs, community and environmental organizations, organized labor, local government and policy-makers — in situating one green job program within this larger radical movement to transform the nature of work and well-being in a community. Arnoff et al. (2019) notes “...we don’t need to build solar

panels forever... We do need to go out all out for a decade or two to build a world that will last – a world of things that are functional and beautiful, a world of restored nature and communal luxury. And then we need to live in it” (p. 80).

Chapter 3. Ecosystem Mapping Analysis

The first product that emerged from my research was a series of eight ecosystem maps, four within natural environment sectors and four within built environment sectors, which will be the focus of this chapter. These maps serve four purposes: (1) to name relevant stakeholders, policies, and programs, as well as existing career pathways, (2) to begin to pull apart these actors' complex relationships to each other, (3) to create a visual tool for considering new potential partnerships and career pathways, and (4) to show the organizational and political infrastructure that already exists in Boston in an effort to ensure that the Boston FutureCorps strengthens, rather than duplicates, these ecosystems. It is also important to keep in mind that the arrows within these maps represent people: People who are communicating, collaborating, learning, training, and working.

Figure 1 is the legend for these ecosystem maps. Sectors are indicated using color coded frames, where certain actors contain multiple frames to show that they are relevant to multiple sectors. The shapes of items on the map differentiate between organizational stakeholders, programs, and policies. I also distinguished between existing relationships and partnerships, potential relationships and partnerships, and potential career pathways within these sectors.

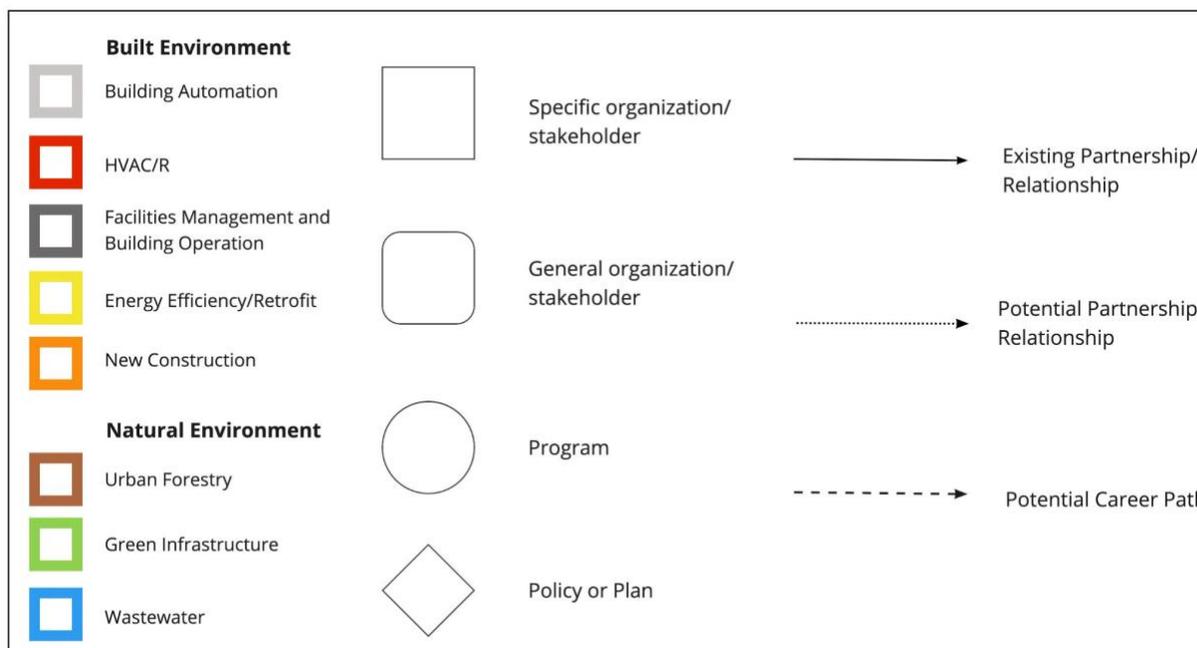


Figure 1. Legend for sector-specific ecosystem maps.

I. Natural Environment

The three sectors within the natural environment section of this broader ecosystem – urban forest, green infrastructure, and wastewater – have distinct but interrelated career pathways and credentialing systems. Unlike the built environment sectors, these career pathways are newer and less developed. However, multiple stakeholders have expertise in these sectors and are working toward building and strengthening these pathways.

A. Urban Forestry:

American Forests, a nonprofit conservation organization focused on reforestation, describes urban forestry as the “planting, care and protection of trees in the urban and suburban environment. Urban forestry involves both planning and management of urban forests because the right tree, planted in the right place, in the right way, promotes the many benefits trees provide for people, wildlife, and climate”. Urban forests improve air quality, lower temperatures by counteracting urban heat islands, absorb rainfall and filter stormwater, reduce energy costs by providing shade, and create new jobs (American Forests, 2021a). Boston has a particular motive to improve its urban forest, as it has the lowest canopy cover of New England cities and has failed in previous efforts to expand its canopy due to high tree mortality and maintenance challenges (Werbin et al., 2020).

Boston recently released a report analyzing the City’s 2014-2019 tree canopy based on the USDA Forest Service Urban Tree Canopy assessment protocol (Boston Parks and Recreation, 2020). This report will inform the City’s upcoming Urban Forest Plan (Figure 3), which has a \$500,000 budget. This 20-year plan, led by Boston landscape architecture firm Stoss Landscape Urbanism and Cincinnati-based forestry consultant Urban Canopy Works, will create goals and enforcement policies for canopy protection and expansion. The plan will also include a community advisory group, an interdepartmental working group within City government, and a community engagement outreach process. The City asserts that the plan will “prioritize populations that have been disproportionately exposed to environmental stressors; be sensitive to differences in cultures, economic realities, and built environments across Boston; incorporate City of Boston Language and Communication Access guidelines; and consider equity and accessibility in both in-person and online engagement strategies.” American Forests’ Tree Equity and Career Pathways experts will also contribute to the plan (Boston Parks and Recreation, 2021,

S. Anderson, pers. comm., March 4, 2021). This plan is the primary demand-side policy that will create new urban forest jobs in Boston.

The key players in Boston's urban forestry ecosystem include nonprofit organizations, government departments and agencies, academic institutions, and private companies. These stakeholders make up the urban forestry career pathway ecosystem (Figure 2). Below, I describe the goals of and relationships between these actors. Figure 2 illustrates how these actors can, or already do, partner with each other to create and strengthen urban forestry career pathways.

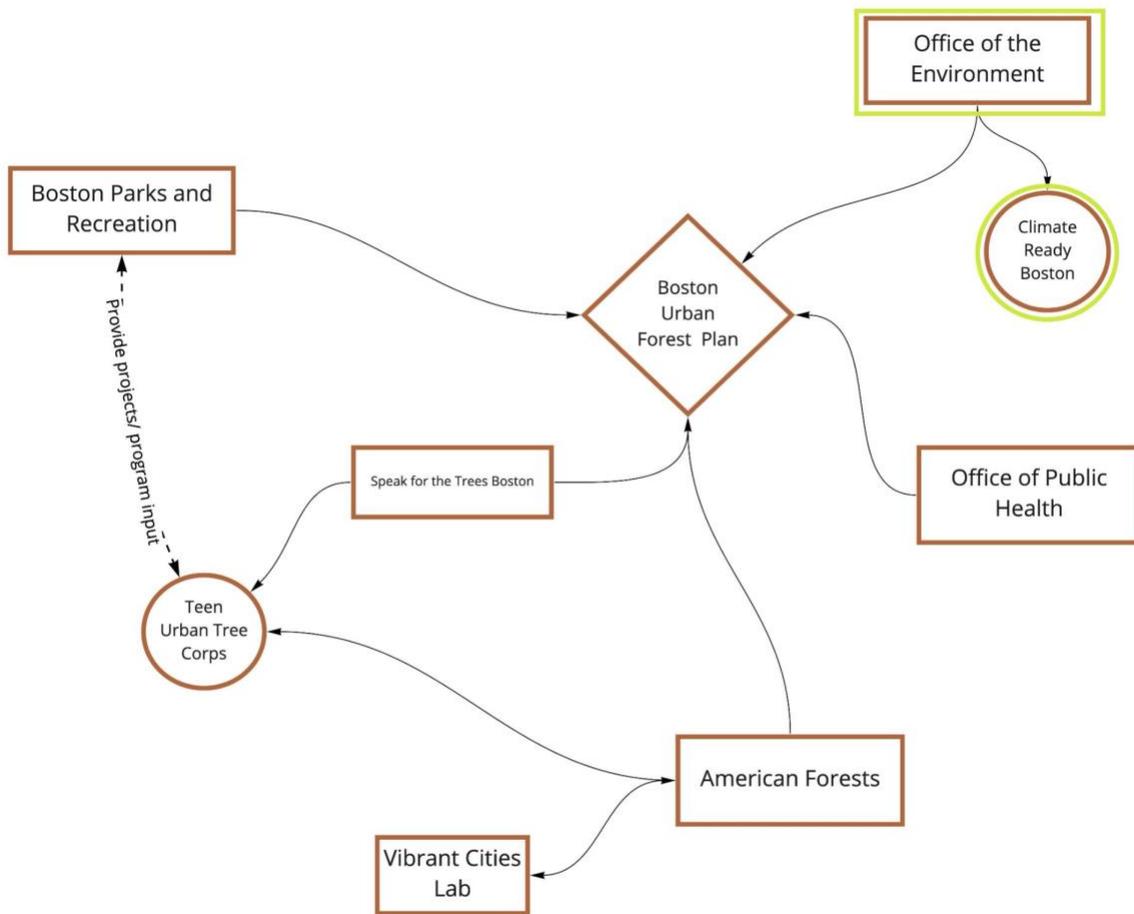


Figure 3. Boston Urban Forest Plan ecosystem and its connection to urban forestry career pathways through SFTT’s advocacy and tree inventory program.

First, I interviewed three nonprofit organizations, Speak for the Trees Boston, American Forests, and Southwest Boston CDC. Through these interviews, I also identified Emerald Necklace Conservancy, Fairmount Park Coalition and the Boston Parks Advocates network as important to this ecosystem.

Speak for the Trees Boston (SFTT): SFTT is a nonprofit organization focused on improving the size and health of Boston’s urban forest, specifically in “under-served and under-canopied” neighborhoods through community-led tree inventories, tree plantings and giveaways, and their Teen Urban Tree Corps. The Corps, which has existed as a summer program for two years, run through Boston’s SuccessLink summer youth employment program, aims to “empower Boston youth to become advocates and stewards for their communities and environments, to better understand the state of Boston’s urban forest, and to develop a platform for future advocacy and stewardship work related to urban trees,” (Speak for the Trees Boston, 2020). While the program thus far has focused on environmental education and cultivating a stewardship ethic, David

Meshoulam, SFTT's Co-Founder and Executive Director, is looking to extend the program's impact to serve as an urban forestry workforce development program for young adults. SFTT is working with many of the other key players in this ecosystem as they work to develop this program, including American Forests, Vibrant Cities Lab, and University of Massachusetts Amherst (D. Meshoulam, pers. comm., November 4, 2020).

American Forests and Vibrant Cities Lab: The American Forest Career Pathways Initiative, led by Sarah Anderson, aims to meet the growing need for tree care workers, such as urban foresters, arborists, tree trimmers, pruners, and pesticide applicators. According to American Forests, tree care companies have a massive labor shortage. They estimate that the US needs over 14,000 people to enter these careers annually as well as an additional 173,000 people to enter the landscaping industry in general. This initiative is focused on filling this gap by connecting unemployed people in the neighborhoods with the lowest tree canopy cover, which are usually communities of color, into career-track arboriculture jobs (American Forests, 2021b). American Forests also contributes to the Vibrant Cities Lab, which is a research partnership along with the US Forest Service and the National Association of Regional Councils, that work to help city managers, policymakers, and advocates build equitable urban forest programs through research, case studies, and resource toolkits.

Green Teams and advocacy: Boston also has multiple nonprofits that have "Green Team" programs that employ young people to work with the Parks and Recreation Department to do tree planting and landscaping projects. Southwest Boston Community Development Corporation has been running the Hyde Park Green Team job readiness and environmental stewardship program since 2009, which employs Boston youth, through Boston SuccessLink, to build and maintain walking trails, prune and plant native plant and tree species, identify and remove invasive plants in the urban wilds around the Hyde Park neighborhood. The youth also receive financial education, training in conflict resolution, and job-readiness skills. Their primary goal is environmental education and providing a positive and informative first job experience for Boston youth (P. Alvarez, pers. comm., November 24, 2021).

Similarly, the Emerald Necklace Conservancy, which stewards 1,100 acres of parks throughout Boston, which are on both city and state-owned land. They employ Boston youth through their Green Team Summer Program, and also through Boston SuccessLink, which focuses on environmental education and landscaping and park maintenance skills. These Green Team programs, as well as SFTT's Teen Urban Tree Corps, are key examples of the existing urban forestry, youth-focused training infrastructure in Boston. As they currently stand, these programs are not significantly embedded within an intentionally structured urban forestry career path. However, this list of key players fills the necessary roles to create such a path and can potentially funnel youth into a career pathway (Figure 2).

Park and neighborhood-specific advocates can also provide valuable input and influence in the urban forestry ecosystem. The Boston Park Advocates is a network of Boston activists who organize to increase public funds for public parks, facilitate participatory public planning, and raise awareness for issues surrounding Boston's public parks. The Franklin Park Coalition, which is a member of Boston Park Advocates, is a

nonprofit organization focused on community engagement with Franklin Park, which is Boston's largest green space, through conservation and stewardship, events, and advocacy. These organizations can serve to connect their constituents to an urban forestry career pathway and will be engaged in Boston's Urban Forest Plan process.

Within the public sector, both city and state-level actors affect the urban forestry career pathway ecosystem. I interviewed Chris Cook, the Chief of Environment, Energy and Open Space for the City of Boston, who oversees the Department of Parks and Recreation. Through this conversation and my interviews with the above nonprofit organizations, I identified the following relevant public sector actors and strategies:

Boston Parks and Recreation: Boston Parks and Recreation is leading the Urban Forest Plan process and is charged with creating and maintaining public parks and open space. While the urban canopy exists on both public and private land, in creating a city corps that contains an urban forestry component, the Parks and Recreation Department would need to play an important role in developing a work plan for the corps and potentially providing training and equipment.

Massachusetts Department of Conservation and Recreation (DCR): DCR's Urban and Community Forestry program works with municipalities and nonprofits in growing and managing urban and suburban trees and forests through grants, technical assistance, and training. For example, DCR administers the Massachusetts Urban and Community Forestry Challenge Grant program, which funds projects that strengthen relevant advocacy organizations, develop tree ordinances and policies, training and hiring professional staff, developing and implementing urban forestry management plans, and complete strategic tree planting (Mass.gov, n.d.). Similarly, the US Forest Service administers a National Urban and Community Forestry Challenge Cost Share Grant program that has a specific funding category for expanding workforce development opportunities and green jobs in urban forestry (USDA Forest Service, 2021).

City property: The City of Boston can award contracts to landscaping and tree care companies to plant and maintain the city's tree canopy. Boston can use its contracting requirements to ensure that they contract with Boston resident-owned companies or companies that hire Boston residents, as well as minority and women-owned companies. This could help create an urban forestry ecosystem where improving the canopy in marginalized neighborhoods with low tree canopy helps to employ people and build wealth in those same communities.

University of Massachusetts Amherst: UMass Amherst has an Associate's Degree program in Arboriculture and Community Forest Management, which has an 100% job placement rate in positions such as commercial arborist, municipal arborist/urban forester, arboricultural consultant, environmental educator, utility arborist, and arboriculture safety trainer (University of Massachusetts Amherst, n.d.). Students can also go on to earn a Bachelor's Degree in Natural Resource Conservation with an Urban

Forestry and Arboriculture concentration (University of Massachusetts Amherst, 2020). Both degrees help prepare students to take an exam to be an International Society of Arboriculture (ISA) Certified Arborist, with less (or no) experience required compared to the three years experience needed for those without a formal post-secondary degree. ISA Certified Arborists can go on to get specialized certifications in municipal or utility arboriculture (International Society of Arboriculture, n.d.). One gap in the Boston urban forestry ecosystem is the lack of two and four-year post-secondary degree granting institutions within the city.

Finally, the urban forestry career pathway ecosystem also includes private sector, and private-sector adjacent actors, who primarily serve as employers and groups that can provide input on creating training programs that provide the training required to be employed in urban forestry.

Landscaping and tree care companies: Most workers in the tree care sector work are employed by a private company or are self-employed (S. Anderson, pers. comm., January 7, 2021). Therefore, private landscaping and tree care companies in and around Boston play a vital role in the urban forestry ecosystem. Specific companies include Bartlett Tree Experts and Arborway Tree Care, as well as privately owned parks and green spaces, such as Arnold Arboretum and Mt. Auburn Cemetery.

Utilities: Utility companies need arborists for vegetation management, pruning, and storm response. Both utilities and landscaping and tree care companies are the primary urban forestry employers, and therefore have expertise in terms of what arboriculture training should be included in an urban forestry component of a corps.

Trade Associations: The Massachusetts Nursery and Landscape Association (MNLA) works to advance the interests of “green industry professionals.” MLNA helps support companies with professional development, technical assistance, training, and industry certification. More broadly, the Tree Care Industry Association (TCIA) provides business management resources, supports a tree care professional network, and provides coordinated advocacy. These associations include potential employers for a Boston urban forestry career pathway and can provide input in the program design of a Boston FutureCorps.

Entrepreneurship Support: One potential outcome of a career pathway in urban forestry is for someone to start their own landscaping or tree care company. Therefore, an important part of the ecosystem is entrepreneur and small business support, particularly for minority-owned and women-owned businesses. In Boston, two organizations that specifically support Black-owned small businesses are the Boston Ujima Project and the Black Economic Council of MA.

Both David Meshoulam and Sarah Anderson noted the massive labor shortage in the arboriculture field. As Anderson put it, for “a lot of employers, if the person has a warm body,

great. We'll hire [them].” However, she stressed that, while this indicates that the field has a low barrier to entry, this method of hiring leads to high rates of turnover, and that people entering the field need more support and training in order to both retain work and have opportunities for advancement (S. Anderson, pers. comm., January 7, 2021). Figure 2 illustrates the Boston urban forestry ecosystem in terms of potential career pathways, showing that there are both multiple entry points and multiple long-term employers, as well as organizations that can provide the support that Anderson emphasized. It is also helpful to view this ecosystem in terms of Vibrant City Lab’s Arboriculture Career Pathway diagram (Figure 4). The items with a green frame indicate that they are also relevant to Boston’s green infrastructure ecosystem.

The Teen Urban Tree Corps can serve as an entry point into the field, both in terms of sector-specific training and job readiness skills. Participants would be prepared to excel as a member of a landscaping or tree care company’s ground crew, where they can receive on the job training, or even a more formal apprenticeship, as they prepare to get ISA certifications. These certifications open up opportunities to work as an arborist for an existing landscaping or tree care company, for a utility, for the City Parks and Recreation Department, or even to start their own company. A career pathway toward arboriculture in the private sector is also often CORI-friendly. Landscaping and tree care companies can be hired to work on private and commercial property, as well as contract with the City to work on public property. Alternatively, participants in the Teen Urban Tree Corps could choose to get an associates or bachelor’s degree in arboriculture, potentially at UMass Amherst, and require less on the job training before receiving their ISA certifications. According to Anderson, the yearly salary for a ground crew position is between \$32,000 and \$40,000. Certified arborist crew leaders or foreman can earn about \$55,000 per year and more experienced urban foresters can earn close to \$70,000 yearly. The owner of a landscaping or tree care company can go on to earn about \$100,000 yearly (S. Anderson, pers. comm., January 7, 2021).

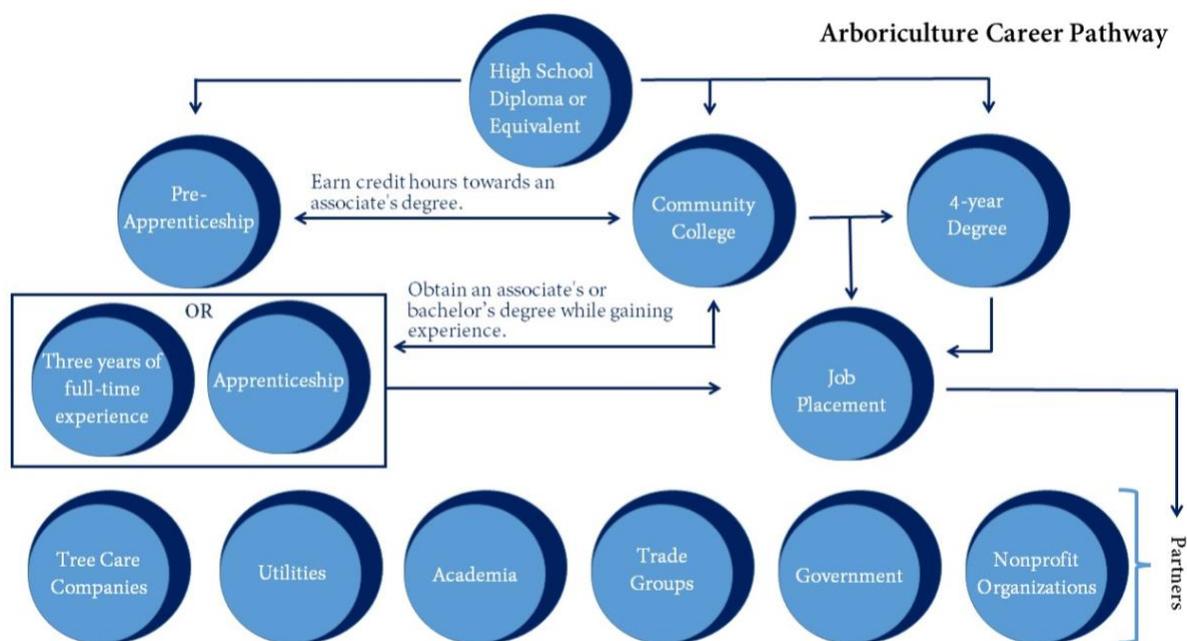


Figure 4. Vibrant Cities Lab Arboriculture Career Pathway (Vibrant Cities Lab, 2021).

B. Green Infrastructure

Green infrastructure, according to the Clean Water Act, includes plant or soil systems, as well as other permeable surfaces, to store, filter, and/or evapotranspire stormwater and reduce the flow of stormwater into sewer systems and surface waters. Grey stormwater infrastructure, such as conventional piped drainage systems, moves urban stormwater away from the built environment. Green infrastructure, however, manages stormwater at its source and prevents polluted runoff from entering nearby bodies of water. Urban green infrastructure can take both surface-level forms, such as rain gardens, permeable pavement, bioswales, rainwater harvesting, green streets and alleys, green roofs, and urban trees, as well as subsurface infiltration systems (United States Environmental Protection Agency, 2020).

Boston is under consent decree by the United States Environmental Protection Agency (EPA) to enhance its control of stormwater runoff and to eliminate sewer connections that can lead to sewage discharges into rivers and harbor beaches to comply with the Clean Water Act. In 2012, Boston Water and Sewer Commission reached a settlement in a joint federal lawsuit with the EPA and the Conservation Law Foundation, which included a mandate to use green infrastructure where possible in its plan to control stormwater runoff (Carmichael, 2012). According to Charlie Jewell, the Director of Planning and Sustainability at Boston Water and Sewer Commission (BWSC), Boston currently has over 2,500 active green infrastructure

features, on both public and private property (C. Jewell, pers. comm., January 11, 2021). However, BWSC does not have the capacity to maintain and evaluate the continued performance of these features, and has expressed a need for a National Green Infrastructure Certification Program (NGICP)-certified workforce to fill this gap (Pond, Queeley, and Lutz, 2020).

Codman Square Neighborhood Development Corporation (CSNDC) is currently working with The Nature Conservancy to develop a green infrastructure-focused workforce development program for underserved communities in the Codman Square area. In a 2020 report, CSNDC explored the potential opportunities and barriers for the design and implementation of this program based on a survey of Boston-specific needs and assets as well as other successful green infrastructure workforce development programs across the country (Pond, Queeley, and Lutz, 2020). They show that CSNDC is well positioned to lead this program due to their strong ties to the surrounding community and the target participant population, relationships to partner organizations, and training capabilities. This program will aim to provide green infrastructure workforce development that can “support equitable economic opportunity and environmental sustainability in the Codman Square neighborhood, and in particular lead to the creation of sustainable jobs for people of color, with a focus on young people and men of color.” (p. 6). The report also details key components of the program, which will provide NGICP certification, such as necessary training staff and resources, application processes, and technical modules. Dave Queeley, the Director of Eco-Innovation at CSNDC, is certified by NGICP in green infrastructure construction, inspection, and maintenance. Queeley and Danilo Morales, an Eco-Innovation Associate at CSNDC are also certified to conduct NGICP training. NGICP was launched in 2016 by DC Water and the Water Environment Federation to support community-based job creation and establish national standards for green infrastructure professionals. BWSC is also a founding partner of NGICP.

CSNDC notes in their report that more research is needed to determine how an NGICP certification will impact wages and hiring as well as whether vocational high schools and community colleges can play a role in creating a green infrastructure workforce. CSNDC is also planning to work with a series of anchor institutions that either own or have influence over land that has or can have green infrastructure features, including BWSC, Boston Public Schools, Boston Medical Center, Boston Parks and Recreation, Boston Transportation Department, Boston Public Works, and existing landscape companies that do green infrastructure work.

Together these groups can consider challenges such as selecting equitable sites for new green infrastructure features, classifying green infrastructure features based on necessary monitoring and maintenance, terms for contracting, creating projections for necessary green infrastructure installations, and the potential role of unions in this ecosystem. In addition to these stakeholders, other key players include the MassCEC, which hosts a vocational internship program that can provide funding for CSNDC's program, as well as organizations previously discussed within the urban forestry landscape, including the Arnold Arboretum, Boston Parks Advocates, Franklin Park Coalition, Green Teams, landscape and tree care companies, and entrepreneurship support organizations.

The potential green infrastructure career pathway ecosystem (Figure 5) is less developed than that of urban forestry. Green infrastructure is a newer field that exists across multiple sectors, including landscaping, construction, water quality, and tree care, and has only recently created a formal credential. This pathway begins with CSNDC's green infrastructure workforce development program, from which participants can participate in the MassCEC Clean Energy Internship program and/or go on to be employed by a landscaping, construction, water quality, or tree care company that performs installation, maintenance, and inspection (IMI) of green infrastructure projects. According to a report by Jobs for the Future, green infrastructure IMI work is currently performed across 30 different occupations, but as green infrastructure initiatives grow there will be opportunities for contractors to specialize specifically in green infrastructure IMI (Jobs for the Future, 2017). However, because this work is also primarily seasonal, green infrastructure professionals may also need a broader set of skills in order to provide off-season services, such as snow-removal, home weatherization, utility maintenance and inspection, and composting (Pond, Queeley, and Lutz, 2020). CSNDC is also exploring how to support long-term green infrastructure employment through developing a worker-owned cooperative and examining roles for existing or new unions, both of which could also be relevant to urban forestry career pathways in Boston.

C. Wastewater Treatment and Conservation

The last sector within the natural environment section of the ecosystem is wastewater treatment and conservation. X-Cel Conservation Corps (XCC), a program within an adult education and career readiness nonprofit in Boston, has already established a wastewater corps program with a well-defined career pathway (Figure 6).

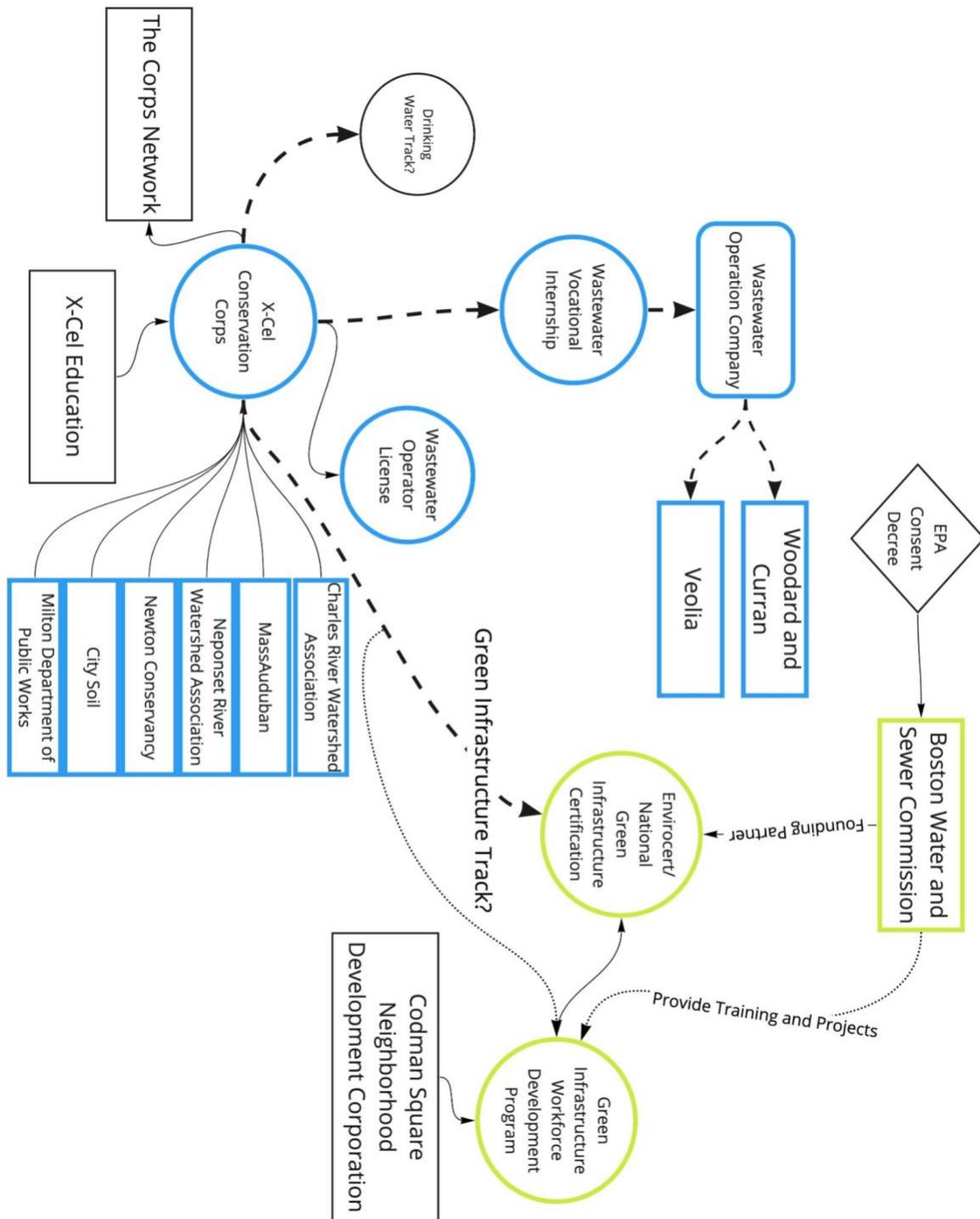


Figure 6. Wastewater career pathway ecosystem.

The X-Cel Conservation Corps (XCC) launched in 2018 as a member of The Corps Network, the National Association of Service and Conservation Corps that supports corps through advocacy, technical assistance, funding, and corps member healthcare plans (The Corps

Network, 2020). Don Sands, the Executive Director and Co-Founder of X-Cel Education, explained that they chose to focus on wastewater because the industry “checked all the boxes”: wastewater operators do not need a college education, the industry has an aging workforce with a large portion of workers expected to retire within the next 5-10 years, and the industry is primarily comprised of white men, so it presents an opportunity for improving racial and gender diversity, all of the wastewater operator courses in Massachusetts were only offered outside the City of Boston, and the industry provides opportunities for continued career advancement (Don Sands, pers. comm., November 17, 2020).

Sands started by earning a Wastewater Operators Certification and formed a partnership with Woodard & Curran, a Boston engineering firm with expertise in municipal wastewater treatment, both as a potential employer for corps members and as advisor for curriculum development. The curriculum is divided into three phases: First, for 20 hours per week for 10 weeks, XCC members receive paid classroom and online preparation for the Grade Two Municipal Wastewater Operator’s License Exam as well as paid water conservation training with local environmental organizations. Members learn skills such as habitat assessment, trail and brook clearing, construction of stormwater filtration socks, building and installation of rain barrels and other green infrastructure, invasive species identification and removal, and water quality testing. Members can also simultaneously participate in X-Cel’s HiSET preparation classes and receive their driver’s license. After completing their Operator’s License Exam, XCC members are placed in paid internships with water utility industry employers, such as Woodard & Curran or Veolia, or another related industry of their choosing, for 20 hours per week for 10-14 weeks. Finally, members receive job placement assistance into full-time wastewater management positions. This cycle is offered three times per year (X-Cel Education, n.d.a).

XCC is looking to expand its program in order to increase the potential number of yearly participants. However, due to the limited number of wastewater treatment job openings each year, scaling up will require adding additional career pathways into other related sectors. They are considering a drinking water operation and/or green infrastructure. Sands noted that they could develop green infrastructure-focused fee-for-service work for the first two phases of their program. Although XCC and CSNDC were not exploring a partnership in a green infrastructure program at the time of my interviews, this overlap presents an opportunity for collaboration, with

X-Cel’s expertise in adult education and designing a corps program and CSNDC’s new expertise in green infrastructure certification.

II. Built Environment

A. Sectors

The built environment ecosystem encompasses multiple sectors that are inextricably linked due to shared stakeholders, educators, employers, policies, and required training that are relevant across all or multiple of these sectors. These sectors are all also necessarily within the realm of “green jobs”, as the emissions from the building sector, including construction, accounted for 38% of all energy-related CO₂ emissions in 2019 globally. Direct building CO₂ emissions need to be halved by 2030 to have a net zero carbon stock by 2050 (UN Environment Programme, 2020). In Boston, GHG emissions from the use of electricity, heating oil, natural gas, and steam in buildings account for more than two-thirds of the city’s total emissions. While I initially attempted to separate potential career pathways and embedded ecosystems in terms of retrofitting and management of existing buildings versus new construction, it became clear that, although specific projects can be distinguished this way, whole sectors cannot be. These sectors include: building operation and facilities management; building automation systems; heating, ventilation, air conditioning and refrigeration (HVAC-R), energy efficiency and retrofits, and new (green) construction.

Building Operation and Facilities Management: Facilities managers plan and oversee the maintenance and operation of buildings, which involves managing HVAC/R systems, plumbing, electrical and mechanical systems, and, potentially, building automation systems. Facilities management positions require post-secondary training in HVAC/R and/or engineering and can make \$50,000 to \$150,000 per year. Facilities management technicians, who generally have post-secondary training or HVAC/R work experience, work under a facilities manager to maintain various building systems and can make \$37,000 to \$50,000 per year (HVAC Career Map, n.d.). These types of positions are vital in ensuring that buildings meet energy efficiency and emission standards.

Building Automation: Building automation systems (BAS) refer to the centralized control of a building’s HVAC/R, lighting, and other systems, which can serve as a tool for buildings to maximize their energy efficiency and overcome the “performance gap,” which is the gap “between the predicted (design phase) and the measured (operation phase) performance of a building (Careers in Climate Control Technology, 2021, Aste et al., 2017, p. 1). Entry-level positions include controls installers or BAS trainees, which have yearly salaries of \$40,000 - \$55,000. At the top of the BAS career pathway, BAS managers and engineers can earn \$75,000 - \$130,000 and need a 4-year degree in a

relevant field or a 2-year BAS or HVAC/R degree along with substantial work experience (HVAC Career Map, n.d.).

HVAC/R: The HVAC/R field intersects substantially with facilities management and BAS, and can be considered a green job in terms of maximizing energy efficiency and responding to a changing climate. However, professionals in this field can also specialize in residential HVAC/R systems. Entry level positions include both commercial and residential trainees and installers, with starting salaries from \$40,000 to \$80,000, in which people can advance to commercial or residential technicians through additional training and experience. Another option is to complete a union or non-union HVAC/R apprenticeship, with a typical starting salary of \$35,000 that increases to about \$75,000, which culminates in certification as a journey-level HVAC/R technician. HVAC/R professionals can go on to start their own residential or commercial contracting business (HVAC Career Map, n.d.).

New (Green) Construction and Renewable Energy: This field can refer to construction work that builds (or retrofits) to standards such as LEED, Passive House, and Net Zero. The green construction sector is not separate from the construction sector in general, which is true for the sectors above as well, but instead can refer to specific companies or projects (M. Vogel, pers. comm., January 5, 2021). This sector also includes new construction of renewable energy projects, such as wind farms.

Energy Efficiency, Renewable Energy, and Retrofits: Energy efficiency jobs can include any position that involves the production, installation, or maintenance of products that save energy, which includes projects related to both building retrofits and new construction. One distinct energy efficiency-focused profession, which is often the basis of energy-efficiency focused green job programs, is energy efficiency auditing or assessment and weatherization. However, facilities management, BAS, HVAC/R, and construction professionals can all work within this sector. This field also includes the installation of new renewable energy systems, such as solar panels on buildings.

The type of work and job availability in these sectors is heavily influenced by a complex city and state-level policy and advocacy landscape (Figure 7). I will describe the policy and advocacy ecosystem actors separately, but they interact to form the larger ecosystem below.

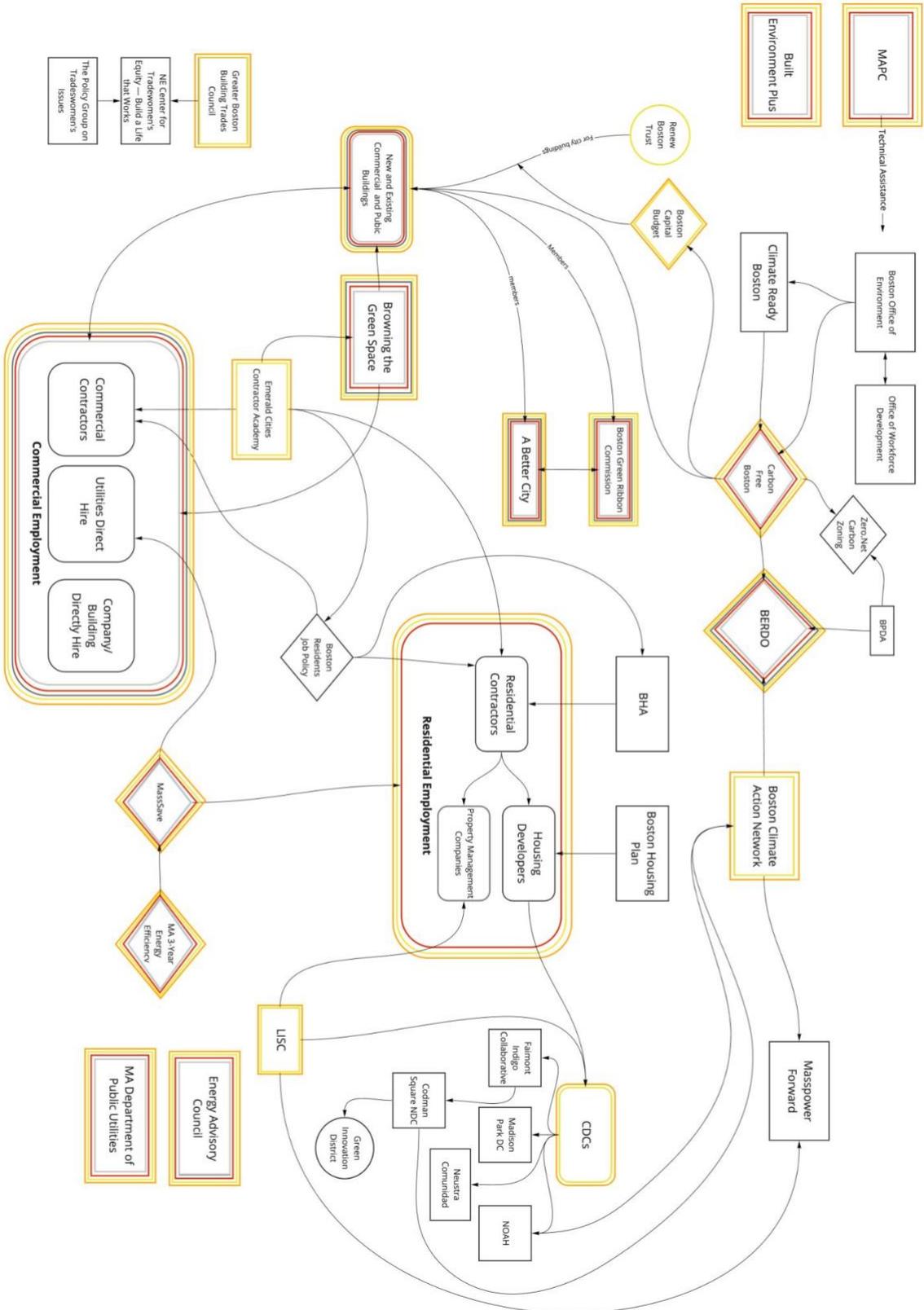


Figure 7. Built environment policy and advocacy ecosystem.

B. Built Environment Policy Ecosystem

Carbon Free Boston is the collective name for the City of Boston's initiatives and programs to become carbon neutral by 2050, which includes the City's 2019 Climate Action Plan update. The 2019 Carbon Free Boston Report, which was created through a collaboration between the Institute for Sustainable Energy at Boston University, the Boston Green Ribbon Commission, and the BPDA, as well as city and state government, quantified the effectiveness of various strategies and policies in reaching the City's carbon neutrality goals. Within the built environment sectors, these strategies focus on deep retrofits, building electrification, and zero net carbon (ZNC) construction (Boston University et al., 2019).

First, the Building Energy Reporting and Disclosure Ordinance (BERDO), as mentioned in Chapter 1, which was enacted by the City of Boston in 2013, affects 35,000+ square foot residential and commercial buildings, residential buildings with 35+ units, and parcels with multiple buildings that sum to 100,000+ square feet or 100+ units. These categories account for 34% of Boston's floor space and include over 2.2 thousand buildings. BERDO requires that these buildings both report their annual energy and water use. Buildings are also required, in five-year increments, achieve a 15% reduction in energy use, energy use intensity, annual GHG emissions, and GHG intensity or a 15-point improvement in a building's Energy Star Rating, with all buildings reaching carbon neutrality by 2050 (City of Boston, 2016a). According to Carbon Free Boston (2019), their analysis found that "energy and emissions-based performance standards for all buildings are the most effective measures for achieving the scale of change required" (p. 46). These "deep retrofits" involve upgrading mechanical and electrical systems, adding or replacing insulation, upgrading HVAC/R and plumbing, air sealing, replacing windows, and installing renewable energy systems (City of Boston, 2019).

The City is now in the process of developing "BERDO 2.0". This will set carbon emission targets for large buildings to reach carbon neutrality by 2050 based on both technical analysis and a community engagement process. The City has received feedback from building owners, who say that they need more assistance to meet BERDO requirements. The City is engaging with institutional building owners, residential building owners, labor unions, low-income housing owners, and building managers to develop both the standards and programs for technical assistance (B. Silverman, pers. comm., January 5, 2021). The process to develop these new standards is also being led by both a technical advisory group (including stakeholders such

as engineers, architects, construction companies, medical and educational institutions, and utilities), as well as a Residential Advisory Group for residents that live in these large buildings, which is led by Alternatives for Community and Environment and One Square World (City of Boston, 2020). Deep retrofits and electrification of over 2,000 buildings will require a “large and experienced workforce trained in expanded vocational and technical programs” (Carbon Free Boston, 2019, p. 47). The City intends for the Residential Advisory Group to influence how BERDO 2.0 ensures that the workforce development and employment opportunities created by the standards are equitably distributed (B. Silverman, pers. comm., January 5, 2021). For example, the group is discussing how fines from buildings not in compliance with the standards could be used for workforce development for low-income residents in large buildings (S. Owen, January 13, 2021). As Boston City Councilor Kenzie Bok notes in reference to BERDO creating the demand for labor, “...it’s really incumbent on us to think about [the effects of BERDO]. If we are going to create that demand – simultaneously create the workforce for it” (K. Bok, pers. comm., January 14, 2021).

A second, complimentary policy tool is the BPDA’s Zero Net Carbon Zoning Initiative, which aims to strengthen green building requirements to a ZNC standard within Boston’s zoning code, with a ZNC standard required for all new construction by 2030 (Boston Planning and Development Agency, n.d.). A ZNC building is low-energy, fossil-fuel free, and meets its energy needs from a mix of on-site and off-site renewable energy. From 2014 to 2019, Boston added 4 to 6 million square feet per year of new building space and is expected to add 122 million square feet by 2050, so a ZNC standard for new construction has the potential to have a significant effect on Boston’s GHG emissions and create demand for a workforce trained in green building. The City of Boston will set its own tiered ZNC standard for new and existing municipal buildings, with each building meeting the most stringent tier possible. The tiers range from “ZNC-convertible” for buildings that use electricity supplemented by on-site fossil fuel, but can change to 100% renewable energy when available, up to “ZNC-onsite” for buildings that are optimally efficient, have no onsite fossil fuel combustion, and generate enough onsite renewable energy per year to equal or exceed the energy it consumes (Boston Climate Action Plan, 2019). The City has the ability to ensure that the workforce required to meet these municipal standards prioritizes marginalized Boston residents.

In fact, Councilor Bok's initial plan to create a Boston Conservation Corps stemmed from the opportunity to use excess funds from the City's capital budget to employ Boston residents to complete projects on municipal buildings: the excess in the capital budget "in recent years has been north of... \$100 million... It's a lot of money that if you thought about how to spend it on this, you could really make a big difference on climate goals and on unemployment" (K. Bok, pers. comm., January 14, 2021). Currently, the City uses the Renew Boston Trust to finance municipal energy efficiency projects; the trust is funded through the money subsequently saved on energy bills. The Trust invested \$10 million in phase one, completing energy conservation projects in 14 municipal buildings and installing solar energy at three municipal sites. In phases two and three, the City plans to invest an additional \$35 million, primarily in Boston Public School buildings (Boston Climate Action Plan, 2019). However, using the capital budget can potentially support energy efficiency projects on a larger scale.

Another central feature of this policy landscape is the Boston Residents Jobs Policy, which was first created in 1983 and amended in 2017 to increase diversity in building trade labor. The policy requires that, for private development projects over 50,000 square feet and for all public development projects, of the work hours for both journey people and apprentices calculated separately, at least 51% must go to Boston residents, at least 40% must go to people of color, and at least 12% must go to women. The BPDA and the Boston Residents Jobs Policy Office monitor compliance with this policy and are overseen by the Boston Employment Commission. During 2020, public projects exceeded the standards for hours of work performed by people of color (56%). However, public projects did not meet the standards for hours worked by Boston residents or women and private projects did not meet any of the standards (City of Boston, 2016b). However, in October 2020, research by the GBH News Center for Investigative Reporting found no evidence of the City ever issuing a formal sanction for non-compliance under the ordinance. According to John Barros, the Boston Economic Development Director, if the City uses sanctions, they must be able to provide evidence that there is a pool of workers who are available but not being hired, and could then risk losing the entire ordinance in court. In order to improve compliance, the City could collect racial and gender data from unions about their members, but unions are not required to collect or report this information. Mayor Marty Walsh's 2017 amendment to the policy requires detailed reporting of payroll records from contractors and records on their efforts to locate and hire qualified women and people of color. However, an

analysis by the Black Economic Justice Institute in Dorchester found that minority employment on major city construction projects has not increased since that amendment (Nierman, 2020).

During my interview process, a number of people expressed frustration with the enforcement of the Boston Residents Jobs Policy. Daryl Wright, the Chief Strategy Officer of the Boston Emerald Cities Collective, emphasized that the policy “has no teeth” and has “a lot of holes” that make it unenforceable. He noted that there seems to be a disconnect between the policy laid out in the 1980s and the disparity happening in Boston today (D. Wright, pers. comm., December 2, 2020). In fact, Katrina Conrad’s position at Madison Park Community Development Corporation was established specifically to address the fact that contractors often do not comply with the policy: “Over the years, I think we kind of learned our lesson in understanding how some contractors just do not, more or less, respect the ordinance and will try to find ways around it... My role is to kind of help work with the contractors in meeting those obligations or to identify a creative best faith effort” rather than avoid the ordinance all together (K. Conrad, pers. comm., January 14, 2021). This non-compliance for both public and private projects indicates that there is an opportunity for Boston to consider either new methods of enforcement or new policy mechanisms and strategies to ensure that marginalized communities in Boston equitably benefit from the labor demand and wealth created through the City’s climate action progress.

In response to the lack of enforcement of the Boston Residents Jobs Policy, disproportionate unemployment and underemployment for Boston residents of color, and a lack of employment access policies for sectors outside of building trades, Action for Equity, a coalition of community organizations in the Boston region focused on racial and class equity in housing, transit and jobs, has drafted a Community Stabilization Act, or the Chuck Turner Jobs Act. This act, which targets employers rather than project sites, would apply to employers (including contractors, subcontractors, tenants and temporary agencies over a certain size) that receive public assistance (including grants, loans, tax incentives, conveyance of land or lease below market value, or other public funding or approvals for development). These employers would be required to (1) pay employees a minimum of \$22/hour with 75% of people working full time and provide credible health insurance, stable shifts, and wages that increase over time, (2) hire at least 50% Boston residents, 50% people of color, 25% residents of color, and 50% women, (3) provide healthy working conditions, and (4) hire first from a new workforce program

in each neighborhood that connects residents to jobs and service programs. The act would also create community stabilization committees and use civil action for enforcement (Action for Equity, 2020).

Finally, the policy landscape is also dependent on state-level plans and regulations. The built environment ecosystem, specifically, is heavily influenced by Massachusetts' Three-year Electric and Gas Energy Efficiency Plans, which was developed in a collaboration between the Massachusetts Energy Efficiency Advisory Council and the Massachusetts Department of Public Utilities. The plan regulates Mass Save, which is an initiative sponsored by gas and electric utilities to provide services, incentives, training, and information to promote energy efficiency for homes and businesses. The plan also includes a New Buildings and Major Renovations initiative, in which utilities work with developers and owners of medium and large buildings to offer energy efficiency services, technical and design assistance, and financial incentives, as well as an Existing Buildings Retrofit initiative that is available to all non-residential customers. Workforce development is addressed in the plan through workforce retention, recruitment and training strategies for residential weatherization positions as well as increased energy efficiency and new technology training opportunities for HVAC/R and facilities management professionals (Berkshire Gas et al., 2018).

C. Advocacy and Support Ecosystem

Both the policy landscape and the workforce development infrastructure for the built environment in Boston are shaped by an ecosystem of nonprofit organizations and advocacy groups (Figure 7). The following groups emerged in my interviews as key players in the built environment ecosystem:

Browning the Green Space (BTGS): BTGS is a coalition of organizations and private sector stakeholders in New England focused on “enhancing diversity, equity, and inclusion in the clean energy industry and beyond.” Through their Contracts initiative, BTGS is working to enhance opportunities for underrepresented groups as clean energy and energy efficiency contractors through access to capital, bonding, and insurance. Within the next year, they plan to help minority and women-owned firms win 10 or more contracts of at least \$500,000 each (Browning the Greenspace, n.d.). While explicitly not a policy-focused organization, Kerry Bow, Board President, explained that BTGS hopes to bring the private sector, market-based perspective to conversations about giving minority communities access to pathways to employment and access to capital and contracts in the clean energy sector, as well as increasing adoption of energy efficiency and renewable energy solutions within the communities (K. Bow, pers. comm., February 8, 2021).

Emerald Cities Collaborative (ECC): ECC is a national nonprofit organization focused on creating sustainable, just and inclusive local economies with chapters in six US cities. EC Boston is led by Daryl Wright, who is a community, youth, and workforce development expert and has developed multiple programs with community organizations, unions, business associations, and employers. Their primary initiative, launched in 2018, is an “e-contractor academy” which works with small minority-, women-, and veteran-owned contractors to compete for contracts to perform energy efficiency retrofits in public, commercial and residential buildings, renewable energy projects, and green infrastructure projects (Emerald Cities Collaborative, n.d.). Wright works with contractors in an 8–9-week training program that connects them directly to larger scale or aggregate projects through the City of Boston capital asset management and maintenance as well as through National Grid and Eversource. The program includes back-office support to increase business capacity, assistance in creating energy efficiency and renewable energy sector growth strategies, and creates partnerships between larger and smaller contractors.

Wright explained, “...minority contractors don’t hear about projects in time to really prepare bids for them...so there is a gap in terms of the level of information that [they] have access to... we’re presenting an opportunity for people to get some market insights,” (D. Wright, pers. comm., December 2, 2020). Through his relationships with the City of Boston and utilities, Wright can share project pipelines with contractors up to 18 months in advance and directly connect employers with minority contractors. Wright is currently working to expand the academy to serve as an accelerator for new minority contractors as well.

Boston Climate Action Networks (BCAN): A chapter of the Massachusetts Climate Action network, BCAN works with city government, community organizations, and other stakeholders to reduce Boston’s GHG emissions. One of their current campaigns is focused on reducing emissions from Boston’s existing large buildings. They argue that BERDO is “not strong enough to ensure that retrofits happen” and is pushing the City to put stricter emission standards in place through BERDO 2.0 (Thole, 2020).

Policy Group on Tradeswomen’s Issues (PGTI): This is a Massachusetts-based regional collaborative of construction industry stakeholders aimed at addressing barriers to construction jobs for women. They offer technical assistance to contractors, apprenticeship programs, diversity enforcement agencies, and employers. Their goal is to have at least 20% of union building trades labor performed by women in Massachusetts using their “Integrated Supply and Demand Model,” which works with pre-apprenticeship programs training programs, vocational schools and community organizations on the supply side and contracts, private and public institutions in the demand side (Policy Group on Tradeswomen’s Issues, 2020).

Built Environment Plus: Formerly known as the Massachusetts chapter of the US Green Building Council, Built Environment Plus is a membership-based nonprofit organization that advocates for a green built environment at both the state and local level through education, networking, policy advocacy, and leadership building for green building

practitioners. Their Workforce Training Fund Program provides up to \$250,000 to Massachusetts businesses to train current and new employees in green building practices. They also provide free training for green building certifications to Massachusetts businesses that employ fewer than 100 people and pay into unemployment. Finally, Built Environment Plus has an ongoing research initiative focused on net zero construction and retrofits (Built Environment Plus, 2021).

Metropolitan Area Planning Council (MAPC): MAPC is the regional planning agency for the Greater Boston area. They can provide technical assistance and funding opportunities to municipalities for initiatives related to energy efficiency and renewable energy through their Green Communities Designation and Grant Program with the Massachusetts Department of Energy Resources; they can also assist with local energy action plans and net zero action plans, and support projects to expand municipalities' solar energy stock (MAPC, n.d.)

D. Education in the Built Environment Ecosystem

For most built environment sectors, entry level positions only require a high school degree or high school equivalency test (HiSET) and little to no experience. However, many secondary and post-secondary educational institutions in Boston are committed to providing sector-specific training, certifications, and degrees that help ensure students can find good, green jobs in the built environment industries. Figure 8 shows the institutions, the degrees or tracks they offer, partnerships between institutions, and how students might move between them.

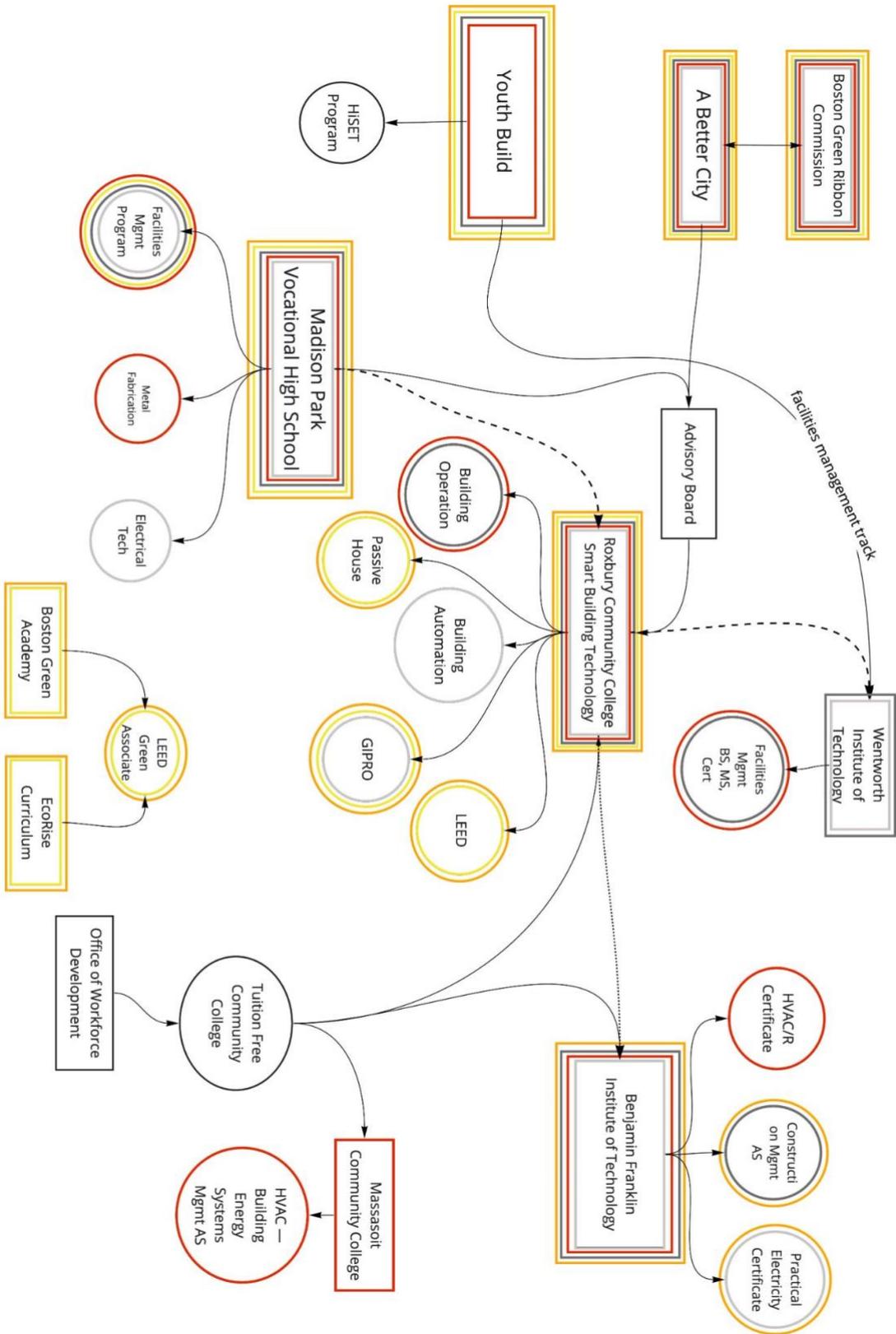


Figure 8. Built environment educational ecosystem.

Through my interviews with Madison Park Technical Vocational High School and Roxbury Community College's Smart Building Technology program, the following secondary and post-secondary educational institutions were highlighted as key players within the larger built environment ecosystem.

Madison Park Technical Vocational High School (MPVHS): Madison Park is Boston's only remaining vocational public high school, which provides students with both a high school diploma and specialized vocational training. Some students can also simultaneously earn college credits from local community colleges. Related to the building sector, students can major in carpentry, electrical technology, plumbing, metal fabrication, and facilities management (Madison Park Technical Vocational High School, 2015). Their facilities management program will partner closely with Roxbury Community College's Smart Building Technology program, which is discussed below. This program's focus on smart building technology and BAS began two years ago through a partnership with Built Environment Plus. MPVHS also uses the EcoRISE curriculum, which prepares students to become certified as a LEED Green Associate (K. McCaskill, pers. comm., January 18, 2021). Kevin McCaskill, the school's Executive Director, was very enthusiastic about being involved in the development of a Boston FutureCorps and providing more opportunities for green jobs for his students.

Boston Green Academy (BGA): BGA is an "in-district" charter school within Boston's public school system, serving students in 6th-12th grade. They offer an Environmental Science & Technology career pathway program that prepares students for either college or employment in various environmental fields. Students earn certifications in First Aid and CPR, OSHA-10, OSHA-40 Hazardous Waste Operations, and are prepared to take the Class II Municipal Wastewater Treatment Plant Operator and Massachusetts Grade I Drinking Water Treatment license exams. Students can also earn a LEED Green Associate credential (Boston Green Academy, n.d.).

Roxbury Community College (RCC) Smart Building Technology Program (SBTP): This program was recently launched by RCC to help Boston meet its 2050 carbon neutrality goals by training a workforce of technicians who can operate energy efficient buildings. The SBTP began with almost \$1 million in grant funding to build a state-of-the-art laboratory. Frank Mruk, the SBTP's Executive Director, explained that there is a high demand for facilities management professionals who have both IT and HVAC/R experience, as well as BAS credentials, which has historically been a proprietary field (F. Mruk, pers. comm., January 25, 2021). Currently, they offer professional certification preparation courses for Building Operator Training, Building Science Principles, GPRO, Passive House training, LEED Green Associates, and ACP Building Controls. They are working towards also offering courses for Home Energy Rating (HERS) certifications, Building Performance Institute's Building Analyst and Energy Auditor certifications, LEED BD+C certification, and advanced GPRO certifications. The Smart Building Technology Program will eventually offer Associate's degrees in Building Automation as well as Building Automation Technician certifications, leading toward a paid BAS internship and the opportunity to transfer to a 4-year degree (Mruk, 2020).

RCC requires Associate's degree programs to be transferable to a 4-year degree, but there are no smart building-specific 4-year degree programs in Massachusetts public universities (F. Mruk, pers. comm., January 25, 2021). However, they may be able to work with Mass Maritime or Benjamin Franklin Institute of Technology (Y. Torrie, pers. comm. January 20, 2021). The SBTP is guided by a robust 40-person advisory board with representatives from universities, medical institutions, engineering firms, city government, and utilities. Kevin McCaskill of MPVHS is also on the board, also with Yve Torrie of A Better City, which is described later in this chapter (K. McCaskill, pers. comm., January 18, 2021 and Y. Torrie, pers. comm., January 20, 2021).

Benjamin Franklin Institute of Technology (BFIT): BFIT students can earn HVAC/R certificates, Construction Management Associate's degrees, Practical Electricity certificates, and Electrical Engineering Bachelor's degrees (Benjamin Franklin Institute of Technology, n.d.). Their Electrical Engineering program recently received a grant that includes funding for automation technology education (Benjamin Franklin Institute of Technology, 2020). BFIT and RCC are also both part of Boston's Tuition Free Community College program, which allows income eligible Boston residents who have received their high school degree or HiSET within the last 18 months to attend one of six community colleges for free.

Wentworth Institute of Technology (WIT): Finally, WIT offers certifications, Associate's, and Bachelor's degrees in Facilities Management (Wentworth Institute of Technology, n.d.). WIT also partners with YouthBuild Boston for their Facilities Management apprenticeship program as well as with International Brotherhood of Electrical Workers' (IBEW) and the National Electrical Contractor Association's (NECA) Boston Joint Apprenticeship Training Center (JATC), where apprentices can simultaneously enroll in college courses (YouthBuild Boston, n.d., and Boston JATC, n.d.).

E. Union and Training Ecosystem

Greg Maxwell, a superintendent of a subcontractor on a major private construction project found to be in violation of the Boston Residents Jobs Policy, told GBH news that unions are unable to provide enough trained workers to meet the policy's requirements: "To meet the BRJP goals we will need more Boston residents, people of color, and women in the union pipelines" (Nieman, 2020). While the building trades in Boston include both union and non-union firms, getting more women and people of color into unions would ensure they receive the higher wages, benefits, and protections that unions provide. This, in turn, will be an important strategy to ensure that women and people of color benefit economically from Boston's green building initiatives. One tool Boston is currently using to create these pipelines is pre-apprenticeship programs:

Building Pathways: In 2011, the Building and Construction Trades Council of the Metropolitan District created the Building Pathways Building Trades Pre-Apprenticeship Program, which became a separate nonprofit organization in 2015 dedicated to addressing disparate union apprenticeship opportunities for “under-represented, disadvantaged or low-income Boston metro area residents.” The free six-week program, which runs three times each year, provides general job readiness skills, an introduction to multiple building trades and basic construction skills training, and case management services (Building Pathways, n.d.). The program has a 91% graduation rate, but graduation does not guarantee entry into an apprenticeship, which are already overwhelmed with applicants and only accept new apprentices at certain times each year (M. Vogel, pers. comm., January 5, 2021).

When I asked about green building-specific training, Mary Vogel, the Executive Director, stressed that all of Boston’s building trades are already engaged in this work, including wind and solar, and that Building Pathways was involved in developing Boston’s Climate Action Plan: “We don’t need a new workforce.” Building Pathways participants do learn about green technology in their curriculum, but there is no separate green building career path. Mary explained, “...whatever work is in their jurisdiction they will do.”

YouthBuild Boston (YBB): Founded in 1990, YBB’s mission is to empower youth, diversify the building trades, and strengthen neighborhoods through service projects and affordable housing development. YBB provides vocational training, individual counseling, and job readiness skills. Their building trades exploration program is a paid 6-9-month program for young people ages 17-24 who do not have a high school diploma. Participants learn construction and landscaping skills, earning OSHA and National Center for Construction Education and Research (NCCER) certifications, while taking HiSET classes. YBB’s pre-apprentice program is a paid 15-week program for young people ages 18-25 who have a high school diploma or HiSET, which prepares students to enter union and non-union apprenticeships (YouthBuild Boston, n.d.). Greg Mumford, YBB’s Executive Director, noted that 60-70% of YBB graduates go on to full time employment and others go onto post-secondary school (G. Mumford, pers. comm., January 22, 2021).

Finally, YBB also has a facilities maintenance program, which is the only registered Facilities Maintenance Apprenticeship in Massachusetts. This 18-month program provides on-the-job training in plumbing, electrical, and mechanical skills, as well as preventative maintenance, pest management, and landscaping training while apprentices are employed full time with an employer sponsor, such as WinnManagement. Participants can also earn 8 college credits toward a Bachelor’s degree in Facilities Management (YouthBuild Boston, n.d.). YBB also has a focus on green building. According to Mumford, they have always included “green work” in their training and build energy efficient housing in all of their projects, as well as install green infrastructure.

While not a mandatory prerequisite, pre-apprenticeships prepare participants to enter union or non-union apprenticeships. Building Pathways, for example, has an agreement with

IBEW such that graduates who do not meet the minimum required score on the application aptitude test can still qualify for an interview to enroll in IBEW's and NECA's apprenticeship program at their Boston JATC, which offers two five-year apprenticeships in Electrical Construction and Telecommunications. Each year, the JATC receives about 2500 applications, 900 of those applicants qualify for an interview, and 200-300 people enter the apprenticeship program, 20-30% of whom come from a pre-apprenticeship program. Within the electrical apprenticeship, the curriculum includes training in solar and wind energy, electric vehicles, and energy efficiency. The telecommunications curriculum involves training related to internet protocol and infrastructure, fiber optics, telephone infrastructure, data networks, and more recently, BAS. However, Chris Sherlock, the training director at IBEW and NECA's Boston JATC, explained that there is a big gap in telecommunications education within vocational high schools and the JATC can struggle to find people interested in going into the field. Sherlock also discussed barriers to increasing racial and gender diversity within the program, primarily that young people of color either do not know the apprenticeship exists or do not trust "middle aged white guys" who do outreach for the programs, as well as lack of childcare programs that can accommodate the early morning hours required by parents in the building trades (C. Sherlock, pers. comm., December 11, 2020). Sherlock was the only building trade union-affiliated person who agreed to participate in an interview with me, and, therefore, I was unable to get direct insight into other unions' apprenticeship programs.

My other union-related interviews revealed conflicting opinions about the accessibility of career pathways in Boston's building trade union ecosystem. Katy Gall, Deputy Director for Workforce and Policy at Boston's Office of Workforce Development, highlighted Boston unions' investments in trying to diversify their workforce to increase membership among women and people of color. She also recommended that a Boston FutureCorps partner with unions and their training programs in order to benefit from unions' strong relationships to employers (K. Gall, pers. comm., December 16, 2020). Greg Mumford, similarly, emphasized YBB's partnerships with the Boston carpenters' union and that unions provide ongoing input into YBB's curriculum. Unions come to YBB to increase the racial and gender diversity of their membership and Mumford explained that the trades "keep increasing their enrollment and... want more and more people" to join (G. Mumford, pers. comm., January 22, 2021).

Multiple interviewees, however, had conflicting perceptions of the ease of entry into unions. X-Cel Education's Instructor and College Transition Specialist, Kelly Folsom, told me "The problem with unions, which you may have heard before... I mean I've been working in this field for 11 years and I don't know if I've ever gotten anyone into a union because it's a 'good ol' boys' network where, if you don't know someone...it just seems really difficult for people to get entry-level jobs or apprenticeships... they make it seem really great, the perfect place to go, but then it's really challenging," (K. Folsom, pers. comm., January 21, 2021). Likewise, when I asked Katrina Conrad from Madison Park Community Development Corporation to tell me about how she works with unions, her first response was, "let me refill my coffee." She went on to explain that unions in Massachusetts keep "their blinds closed," do not inform community members about job opportunities, and "strongarm folks like me" to hire unions for their jobs even though she often needs to go with more affordable non-union contractors to develop affordable housing. She also noted that, while unions intentions and worker protections are good, even when Boston residents, particularly women and people of color, do become union members, they are often passed over for work that instead goes to people who come in from outside Boston (K. Conrad, pers. comm., January 14, 2021). Finally, Amy Nishman, the Senior Vice President of Jewish Vocational Services (JVS) Boston, observed that "The trades in Boston are dominated by unions... who have not always been open to working with community-based job training providers [like JVS]" (A. Nishman, pers. comm., January 12, 2021).

Two examples of non-union based, but community-based job training are the Asian American Civic Association's Building Energy Efficient Maintenance Skills (BEEMS) program and Madison Park Development Corporation's green building workforce development programming. BEEMS is a 22-week program that trains participants for employment as a maintenance technician, with a curriculum that includes the fundamentals of carpentry, plumbing, painting, electricity, energy efficiency and weatherization. Participants can also take remedial math courses and ESOL classes. BEEMS culminates in a 5-week internship and has a network of employer partners in the private sector, including mainly property management companies and hotels. The program is free for low-income and/or dislocated workers (Asian American Civic Association, n.d.). Madison Park Community Development Corporation provides OSHA-10 and OSHA-30 classes and a Train 2 Trades construction training program. Madison Park Development Corporation also helps connect Madison Park and Lower Roxbury

residents to contractors, subcontractors and vendors working on Madison Park Development Corporation's real estate property (Madison Park Development Corporation, n.d.).

Finally, outside of the building trades, I was able to speak with Dan Nicolai, the District Leader for the New England 615 District of 32BJ SEIU, which is a non-building trades union local mostly composed of property service workers, such as janitors, airport workers, commercial and residential facilities maintenance, and customer service workers. While explicitly not a building trades union, some members do work in facilities management and HVAC/R fields, usually hired directly by private commercial property owners. This union has a high percentage of immigrant membership and has a heavy focus on bringing living wages and benefits to traditionally low wage sectors. 32BJ SEIU is also involved in state-level GND conversations (D. Nicolai, pers. comm., December 8, 2020).

Figure 9 shows the relationships between the above unions, training programs and advocacy organizations. It also illustrates pathways that people could take from secondary education, post-secondary education, and apprenticeships into various unions.

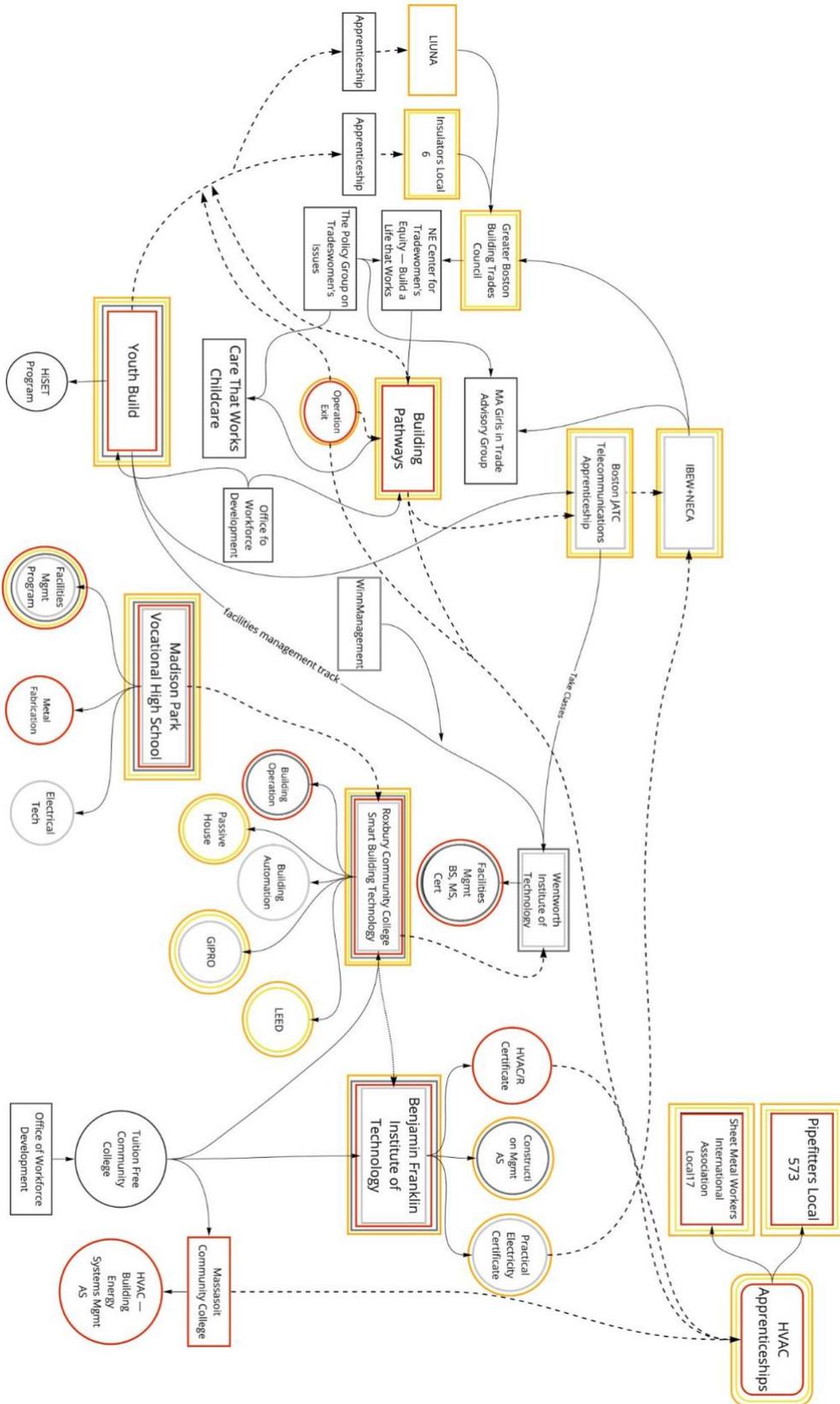


Figure 9. Union and training program ecosystem.

F. Potential Career Pathways and Employer Ecosystem

The above ecosystems all contribute to both the existing and potential built environment career pathways in Boston. The components of built environment career pathways are well established in Boston, and there are a variety of entry points, exit points, and types of jobs and employers. The vastness of these programs and opportunities, however, makes specific potential career pathways difficult to untangle and define (Figure 10).

There is no one organization, training program, or employer that specializes in a single built environment sector. While projects themselves, and sometimes employers, can be divided between new and existing buildings as well as between commercial and residential structures, the skills and credentials required are mostly the same or offered within the same institutions and programs. While not required, people may begin their career pathway within a secondary school or HiSET program, such as MPVHS, YBB, or the Boston Green Academy. From there, they could move on to get a post-secondary education, complete a pre-apprenticeship, apply directly for an apprenticeship, or even go straight to full-time employment, which are options also available to those who did not receive a sector-specific secondary education.

People can eventually be employed by union or non-union contractors, commercial or residential contractors, directly by property owners or City agencies, or directly by utilities for both energy efficiency and renewable energy jobs. There is a particular opportunity to expand BAS employment opportunities with commercial property owners, according to Yve Torrie, the Director of Climate Energy and Resilience at A Better City. A Better City has a membership base of companies in Boston, most of which own commercial real estate that are already using state-of-the-art energy efficiency strategies and technology. These companies are looking to help develop a BAS workforce to operate their buildings. Torrie is on the advisory board of RCC's Smart Building Technology program and is hoping to build out a BAS internship program with A Better City's member companies (Y. Torrie, pers. comm., January 20, 2021).

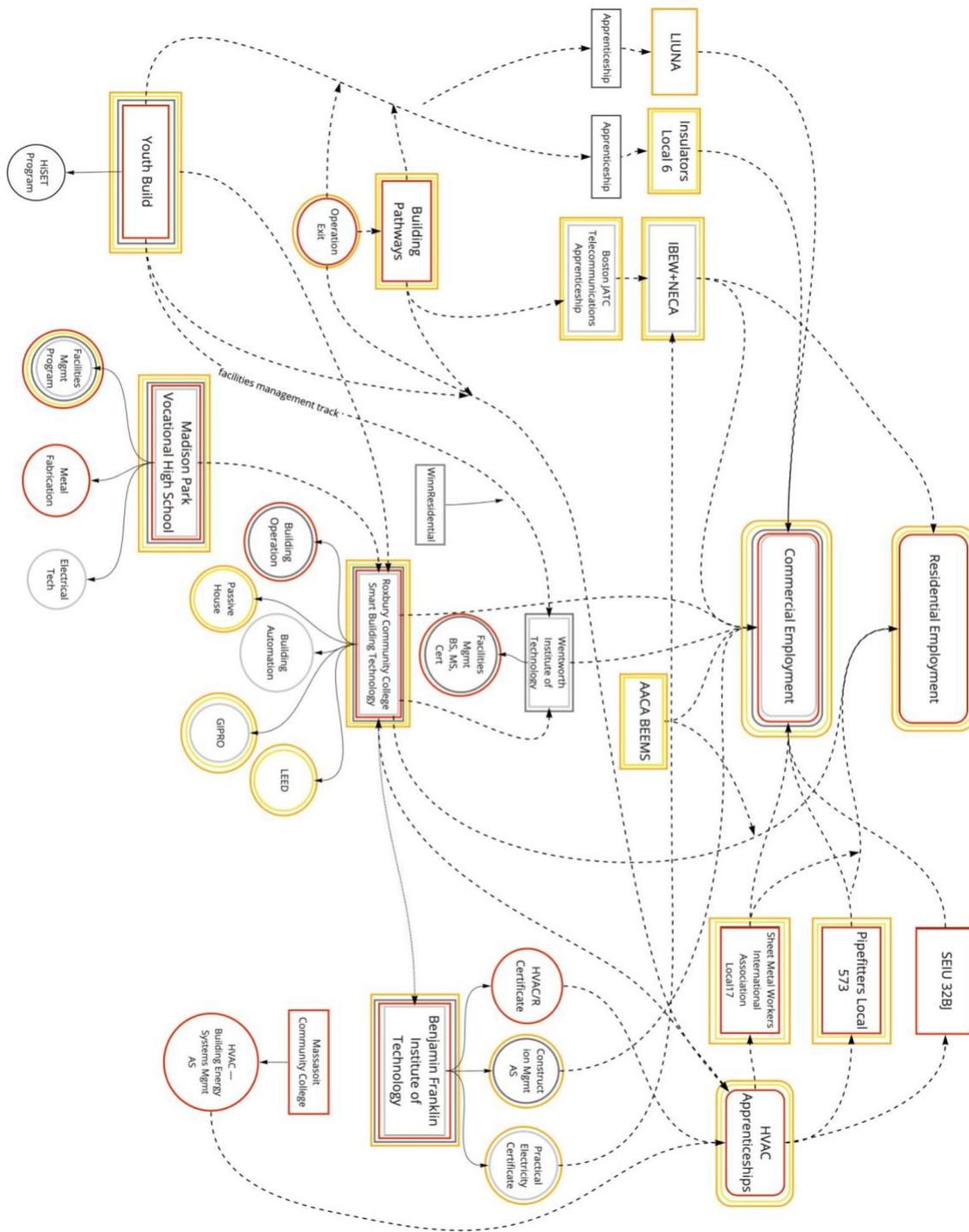


Figure 10. Built environment career pathway ecosystem.

In summary, there is a rich network of organizational and political infrastructure, both in the built and natural environment sectors. Overall, in the urban forestry and green infrastructure sectors, career pathways have multiple options for entry points and careers. However, there are

currently no organizations with robust workforce development programs that focus on career pathways in these sectors. In the wastewater sector, X-Cel Education has created a workforce development program that has a well-defined career pathway, but operates on a small scale. Regarding the built environment, while there is a large network of existing training programs, educational institutions, and employers, career pathways do not exist separately for each sector. Additionally, while workforce development programs exist and are continuing to expand, such as through the creation of the Roxbury Community College Smart Building Technology program, it is not guaranteed that new training and job opportunities will go to people of color and women. This issue is particularly salient given interviewees criticism of the efficacy of the Boston Residents Jobs Policy. Finally, job creation and funding for workforce development in the both the built and natural environment sectors also depend heavily on both the local and state policy environment, as well as on the advocacy organizations that help shape these policies. Now that I have explored these existing sector-specific ecosystems, I will turn to discussing the types of organizations and actors that address all of the non-sector-specific components needed to create a Boston FutureCorps.

Chapter 4. Creating an Enabling Environment for a Boston FutureCorps

Outside of the natural and built environment ecosystems, there is a surrounding ecosystem of expertise, resources, relationships, and advocates without which this corps cannot be successful, impactful, and just in the long-term. This ecosystem consists of five factors, which emerged from both my interview process and participation in Boston City Council meetings. Given their importance to the existence landscape, it is clear that these are the factors that will shape how and by whom any corps is designed, who will have access to the corps, how the corps and its participants will be sustainably supported and resourced, and how the corps will be justly embedded within existing social and economic infrastructure.

I. Addressing Barriers to Employment

Emily Jones, a Senior Program Officer who leads both the Green Homes and Family Income & Wealth Building Initiatives, at Local Initiative Support Corporation (LISC) Boston, summed up the importance of addressing barriers to employment, particularly for green jobs: “[There] will be more and more jobs. We know that this area [referring to green sectors] is theoretically going to expand... but that doesn’t mean the jobs are going to go to the people who haven’t had access to these jobs previously” (E. Jones, pers. comm., January 7, 2021). “Getting a job” means both being eligible to be hired and having the resources and support to keep the job. Moreover, it is important to consider not only barriers to employment, but also barriers to good employment. Figure 11 shows seven barriers to employment and relevant organizations in Boston who have expertise in addressing them. Below, I will explore more in depth the five barriers that came up most often in my interviews.

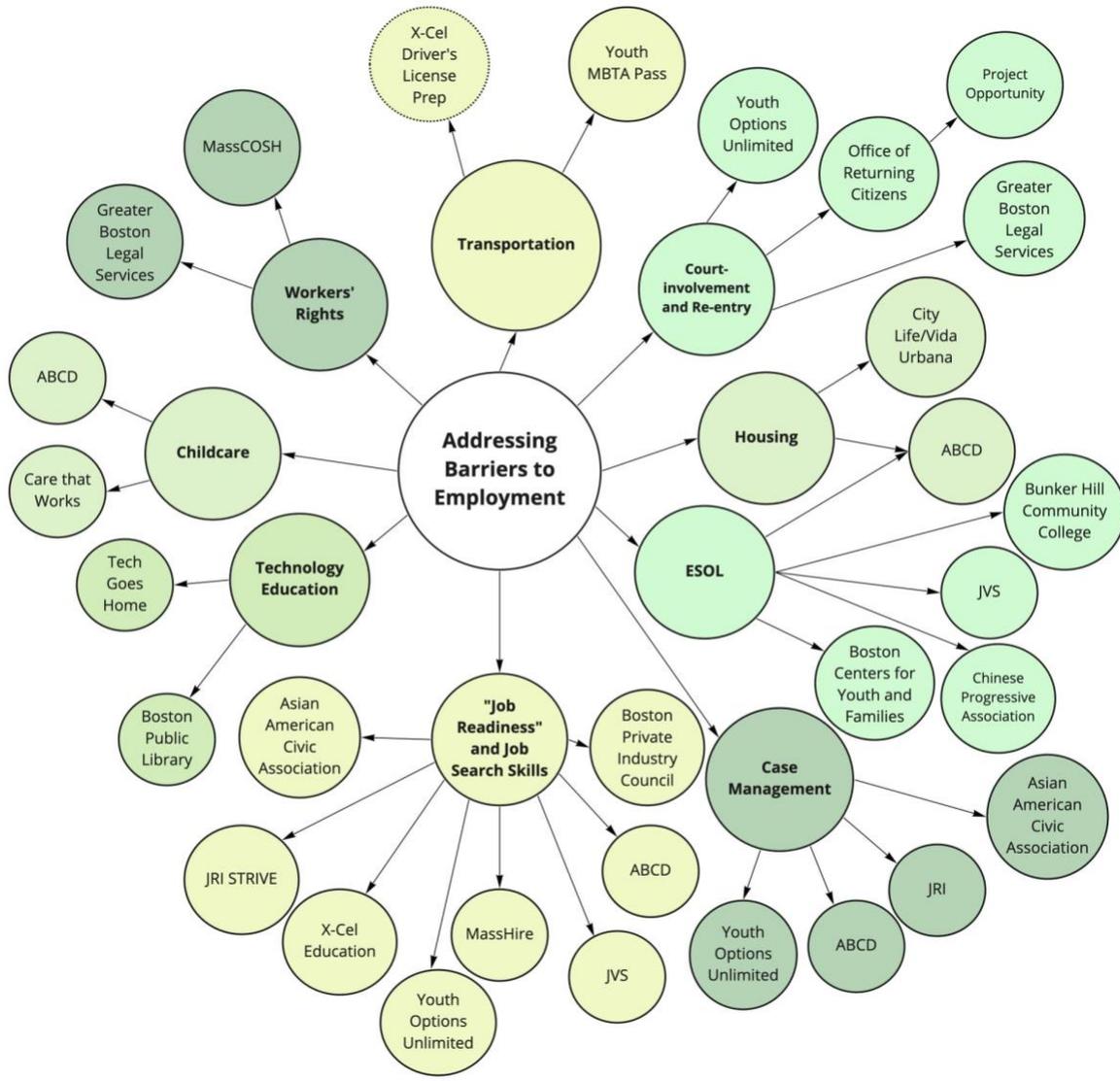


Figure 11. Organizations with expertise in addressing various barriers to employment.

A. Childcare

Action for Boston Community Development’s (ABCD) GATE program supports parents by paying for both job training courses at partner organizations and childcare for the duration of the training program and 90 days after graduation. GATE’s Work Family Services Coordinator also works with parents to understand their options for long-term childcare and secure a placement with a childcare provider (Action for Boston Community Development, n.d.a). Miranda Popkey, an ABCD staff member, ended our interview by saying “If there is anything to take away from this interview... whatever it [the corps] ends up looking like, and if you want

parents to be involved, there has to be some kind of childcare support” (M. Popkey, pers. comm., December 9, 2020). The Massachusetts Department of Early Education and Care provides childcare vouchers for families that are eligible, based on factors such as income and disability status (Mass.gov, n.d.b). According to Popkey, however, there are a limited number of slots in this program and families can be on the waitlist for years. Also, even for families who do not meet this income eligibility, childcare can be prohibitively expensive.

In addition to the barrier of affordability, childcare providers are often not open during early morning or evening hours. As of 2018, 42% of low-income children under 13 have parents who work during the hours that most childcare providers are closed and about 60,000 parents in Massachusetts either turn down or change jobs due to issues with childcare each year (Community Labor United, 2018). Care That Works is a coalition of grassroots community organizations and labor unions that organize working parents and grandparents, nannies and au pairs, and child care workers both in Boston and throughout the state. They recently launched a non-standard-hours, affordable child care pilot program through a network of licensed child care workers from SEIU Local 509. They are working toward a vision of a publicly-funded child care system that provides affordable care with both standard and non-standard hours, is controlled by families and workers, and that provides fair wages and benefits to caregivers (Care That Works, n.d.). Therefore, a corps that provides access to child care not only addresses this barrier to employment, but can also help support good jobs in the low-carbon care sector, as described in Chapter 1 (Battistoni, 2017).

B. Transportation

Kelly Folsom from X-Cel education highlighted transportation as another key barrier to employment: “One of the main challenges for trades jobs and our conservation corps is that students need to get a driver’s license if they don’t have a driver’s license... because a lot of employers require it and if you don’t have a license, that’s kind of a red flag to them and they’re going to worry about your ability to get to and from work” (K. Folsom, pers. comm., January 21, 2021). Folsom has been looking into starting a program at X-Cel that is specifically dedicated to helping people prepare and pay for a driver’s license. Ideally, in terms of being a “green” corps, participants should also have access to public transportation. Boston currently has a reduced price MBTA pass for young people ages 18-25 who are students, in job training programs, or

receiving certain state and federal benefits. This program could potentially be expanded to include corps participants (Massachusetts Bay Transportation, n.d.).

C. Job Readiness

Most existing corps and job training programs that I came across in my research included some form of job or career “readiness” training. This can include anything from computer skills, to resume and interview preparation, to personal financial management, to general work “etiquette”. For example, Don Sands, the Executive Director of X-Cel Education, explained that one of the most important goals of the first phase of the X-Cel Conservation Corps is for corps members to develop skills such as showing up on time, consistent attendance, teamwork, and taking direction. Kelly Folsom added that one of the reasons these skills are so important is that most of the people he works with at X-Cel have “a chip on their shoulder” from being failed by employment or education systems in the past and these skills can help build confidence. Job readiness training can encompass any skills that are needed to overcome barriers to employment – it assumes that no skill or knowledge needed for employment is “basic” or inherent.

D. Implications of the Criminal Legal System

Multiple job training organizations in Boston have expertise in working with people involved in the criminal legal system, who are often shut out from employment opportunities. First, the X-Cel Conservation Corps, for example, does not require a background check to apply for their program and 60-70% of corps members have a criminal record. They work with these corps members during the program to help them access legal support. Second, Youth Options Unlimited (YOU) is a program within the Office of Workforce Development designed specifically for court-involved or gang-affiliated Boston youth ages 16-24. Participants complete both a paid summer job and a year-long transitional employment position, as well as receive intensive social services. YOU also runs Operation Exit, a paid job training program for returning citizens in either the building trades, culinary arts, municipal government, or web development (YOU Boston, n.d.). The City of Boston also administers Project Opportunity, a program that connects residents with free legal consultation for sealing and expunging CORI records and trains City departments to meet the needs of residents with CORIs (Office of Workforce Development, n.d.c). To be a truly inclusive program, a corps can not only include people who are involved in the criminal legal system, but also connect them with free legal

assistance as well as work with employers that currently exclude these applicants to change their hiring practices.

E. Accessing Networks of Services

Coordinating access to and assistance from all of the above services is also a challenge in itself. Case management services are a tool for programs to ensure that they are identifying and addressing each individual's needs. Figure 11 is only a portion of the relevant service providers in Boston, and services are only helpful if people can access them. Amy Nishman from JVS described the ideal system of services as having “deep partnerships with warm handoffs... where you know where you're sending this person and then they're sending them back to you” (A. Nishman, pers. comm., January 12, 2021). Case management services can also continue after a participant leaves the corps. Tracey Aimee from YOU recommended that a corps continue to provide wraparound services to participants for at least 90 days after graduating (T. Fils-Aimee, pers. comm., December 1, 2020).

II. Educational Institutions as Enabling Partners

Education is relevant to multiple facets of a corps program: a corps might require a certain level of education as a prerequisite, partner with an educational institution to include courses or a degree within the corps' curriculum, and/or prepare corps members for future post-secondary education (Figure 13). Secondary educational institutions can serve as important partners by referring graduates to join the corps, building students' interest in environmentally-focused careers, and providing their expertise and training facilities to support a corps' curriculum. For example, MPVHS can not only refer students in relevant career tracks, but also Kevin McCaskill expressed interest in expanding their current adult education programming to provide training and credential preparation to corps members (K. McCaskill, pers. comm., January 18, 2021).

A corps might require participants to have a HiSET or high school diploma, in which case they could refer potential participants who do not meet this requirement to an existing HiSET program. X-Cel Education offers both free pre-HiSET and HiSET preparation courses, with rolling admissions, for people 18 or older. Their rolling admission approach allows them to accept new students at any time, without a waiting period, which allows them to quickly accommodate students who might be in immediate need of support, such as those who have

recently been released from incarceration or placed on probation. X-Cel also has a unique approach, in that they offer their courses throughout Boston by partnering with and offering classes at neighborhood-based nonprofit organizations (X-Cel Education, n.d.b). Potential participants could also be referred to HiSET courses at Bunker Hill Community College or at their local Boston Center for Youth and Families location.

JVS and ABCD also offer programs for people to earn a high school diploma. JVS's Adult Diploma Pathway Program provides a free 18-month education for people ages 20 or older to earn a high school diploma from Boston Central Adult High School (JVS Boston, n.d.). ABCD runs University High School, aimed at students ages 16-22 who have fallen behind in a grade level or left high school without earning their diploma, and William J. Ostiguy High school, which serves students recovering from substance abuse disorders (Action for Boston Community Development, n.d.b). Alternatively, a corps could offer HiSET preparation courses concurrently with its training program, similar to YouthBuild's Building Trades Exploration program (YouthBuild, n.d.). X-Cel education also occasionally allows Conservation Corps participants to concurrently enroll in their HiSET preparation course based on the level of support a person will require to complete their HiSET (K. Folsom, pers. comm., January 21, 2021).

Finally, a corps can also support participants in earning Associate's and Bachelor's degrees, either during or following the corps program. Potential partners with expertise in college preparation courses include X-Cel Education, JVS, Asian American Civic Association (AACA), and Success Boston. X-Cel's and JVS's college preparation programs serve college-bound students who have earned their HiSET or high school diploma in preparing for college placement tests, refreshing academic skills, and developing individualized learning strategies. X-Cel also has a strong partnership with Bunker Hill Community College and continues to support X-Cel students through their post-secondary career (X-Cel Education, n.d.b). Success Boston, run by the Boston Private Industry Council, works with Boston Public School graduates who are attending Bunker Hill Community College, Roxbury Community College, the Benjamin Franklin Institute of Technology, Quincy College, and students transitioning to UMass Boston (Boston Private Industry Council, n.d.). AACA specifically works with immigrants to guide them through the college application process (Asian American Civic Association, n.d.). The Boston FutureCorps can learn from IBEW Boston JATC, whose apprentices can simultaneously take

courses at Wentworth Institute of Technology, and MPVHS, whose students can earn college credit at Roxbury Community College. The Boston FutureCorps could potentially offer corps members a concurrent college education, potentially through Boston's Tuition Free Community College program.

Regardless of how the corps incorporates secondary and post-secondary education, including an environmental education component in the corps' curriculum can help corps members understand how their work is meaningful, provide opportunities for them to connect climate change to their lived experiences, and provide them with resources to become environmental advocates in their communities. The Boston FutureCorps can partner with environmental organizations and community members during the corps' planning process to develop an environmental education curriculum that serves the goals of the corps (Figure 12). In Southwest Boston CDC's Green Team, for example, participants learn about the ecosystem of Hyde Park's woodlands and "why maintaining healthy woodlands is critical to keeping [their] community healthy, especially in this era of climate change" (Southwest Boston Community Development Corporation, 2020). Similarly, Speak for the Trees Boston's Teen Urban Tree Corps' mission includes empowering youth to become advocates and stewards for their communities' urban forest through learning about the history of Boston's tree canopy and how it is important for healthy and resilient neighborhoods (Speak for the Trees Boston, 2020). The Boston FutureCorps can also use the Roots of Success Environmental Literacy and Work Readiness Program (ROS), developed by Dr. Raquel Pinderhughes. Pinderhughes et al. (2020) states that the program provides "individuals from frontline communities, many of whom have been failed by the education system, with the knowledge and skills needed to understand the causes and consequences of environmental problems and injustices, envision effective solutions, work in the green economy, participate in decision making circles, and become activists" (p. 1). Since 2009, ROS has worked with over 600 programs, serving over 25,000 people, 50% of whom were incarcerated during their participation. The program, which is taught by instructors certified in ROS, also includes 10 customized versions for serving specific populations, including a Job Training and Reentry Program, a High Schools & Youth Program, and a Spanish Speakers Program (Pinderhughes et al., 2020).

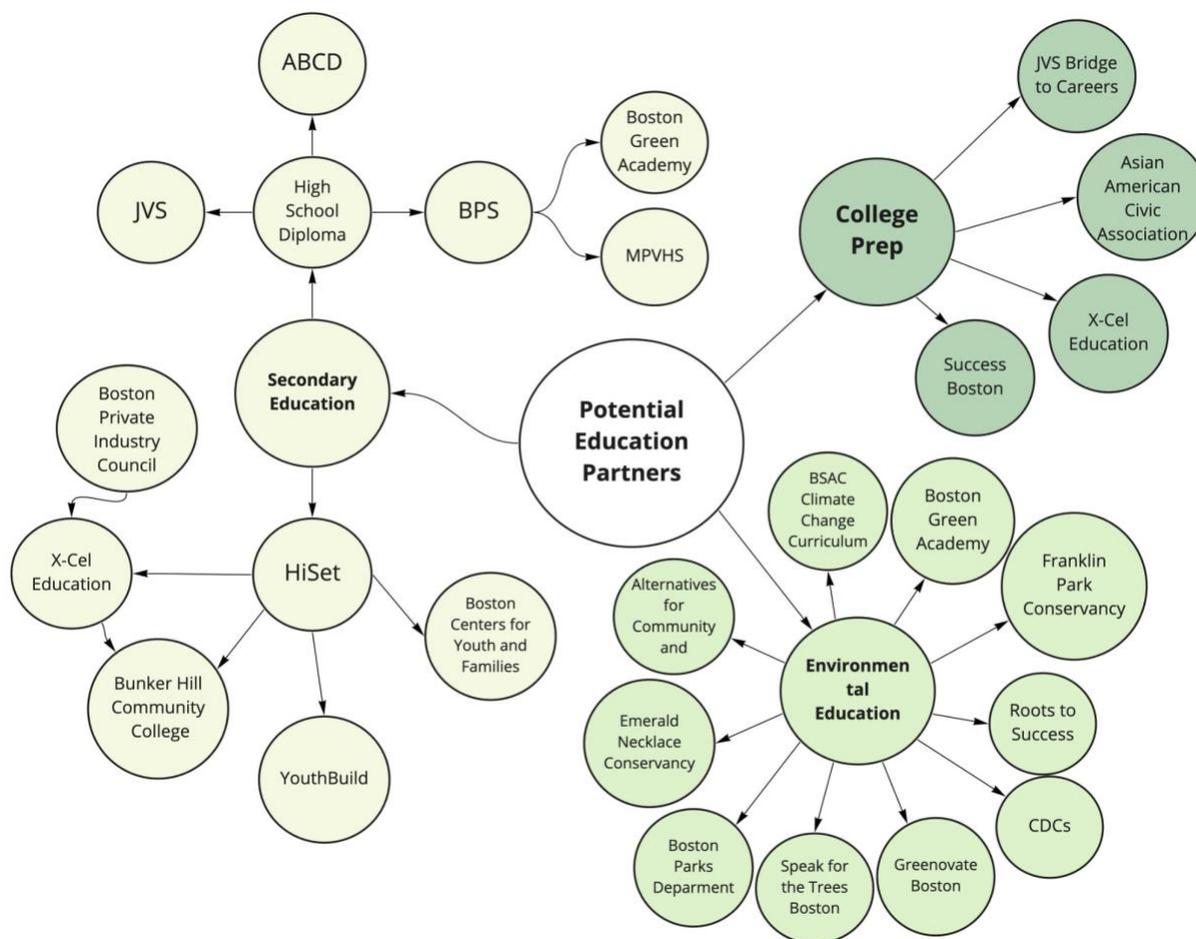


Figure 12. Potential educational partners.

III. Advocacy Organizations as Enabling Partners

Through my interviews, I learned that advocacy groups and coalitions in Boston can serve two essential roles. First, they can serve as a connection and trusted messenger to the communities from which participants will be recruited, which will be discussed in the following section. Second, the corps can acknowledge and learn from these groups' expertise and take their guidance in designing the corps. This relationship can involve both the process of selecting the projects and initiatives that the corps should prioritize and working with these groups to ensure that the corps serves and aligns with the goals and conditions they are advocating for.

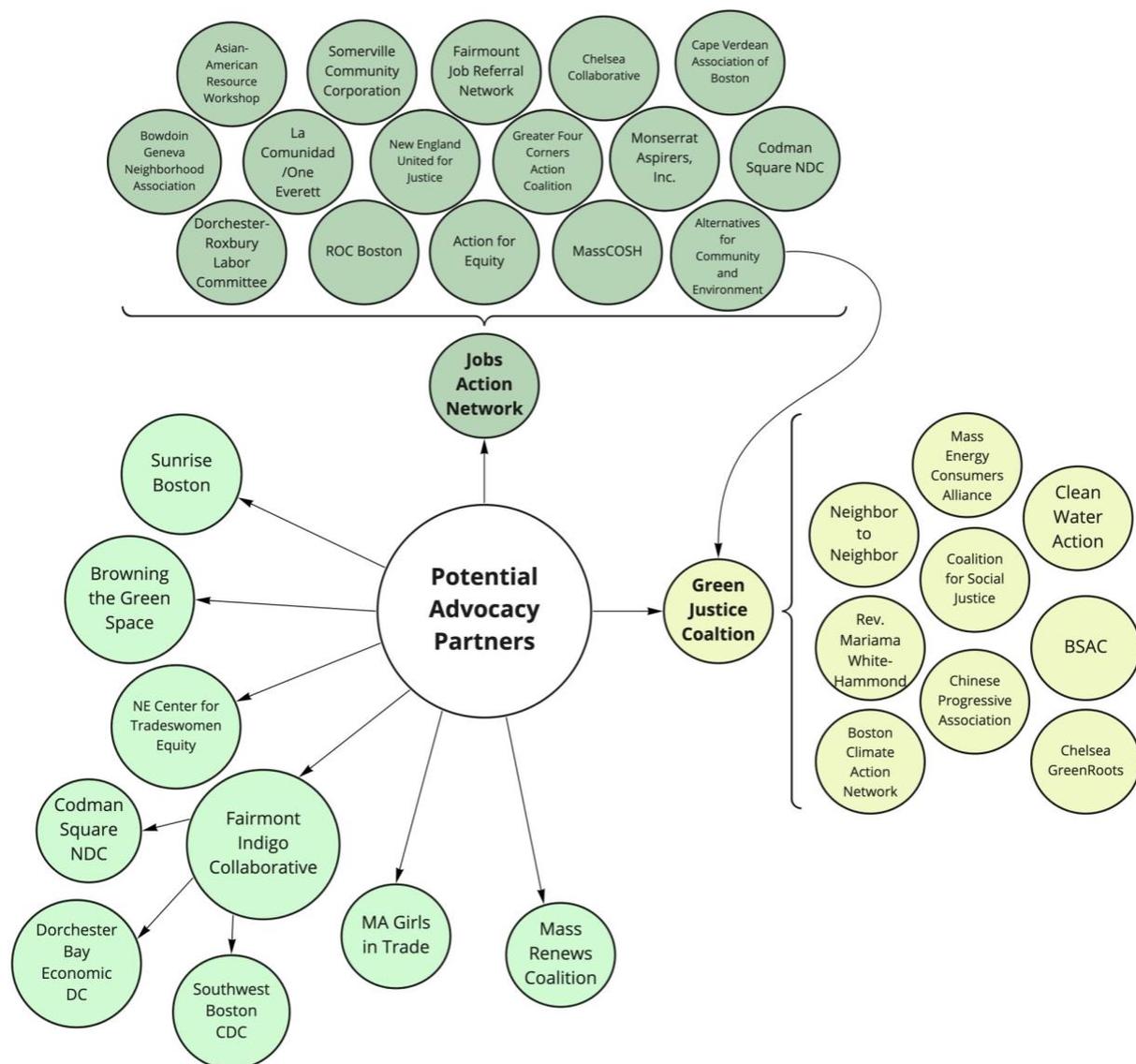


Figure 13. Potential advocacy partners. These groups were identified both through interviews and my own analysis of prominent Boston advocacy groups.

For example, the Jobs Action Network, which is made up of 16 member organizations (Figure 13), including CSNDC, has a Community Pipeline campaign led by Action For Equity. This coalition first formed in response to the development of the Encore Casino in Everett in 2013, embarking on a multi-year, regional campaign to ensure high job quality standards and racially equitable hiring requirements. Through engaging the Massachusetts Gaming Commission and Encore, the coalition secured a standard for a \$41,000 average salary and 75% full-time hires. Beyond strong standards, the Jobs Action Network also secured funding from the Gaming Commission to provide intensive outreach and application assistance efforts to connect Boston residents to jobs at Encore. Their efforts led to Encore employing 51% people of color,

with 40% people of color at the supervisory level (Jobs Action Network, 2019). Weezy Waldstein, the Jobs Coordinator at Action for Equity, emphasized the importance of public, enforceable commitments by employers, which the Jobs Action Network has strong expertise in designing and securing (W. Waldstein, pers. comm., January 12, 2021).

The Fairmount Indigo CDC Collaborative also expressed interest in working with the Boston FutureCorps. The Fairmount Indigo CDC Collaborative is a partnership, founded in 2004, between Southwest Boston Community Development Corporation, Codman Square Neighborhood Development Corporation, and Dorchester Bay Economic Development Corporation that focuses on transit equity and anti-displacement initiatives. The Collaborative also has a Climate Resiliency initiative that works to identify neighborhood-based climate resilience and mitigation strategies such as urban tree canopy expansion, land and water conservation, net zero construction, and electrification of the Fairmount Commuter Line (Southwest Boston Community Development Corporation, n.d.). Saba Ijadi, the Collaborative's Climate Justice Coordinator, ran a series of climate justice roundtables with community members in Dorchester, Hyde Park, West Roxbury, Mattapan, and Roslindale and found that residents were interested in creating a green jobs program that partners with community colleges, feeds into apprenticeships, and engages high school students. Ijadi's work developing a green job program in these neighborhoods aligns exactly with my research and should also inform the City Council's design of the Boston FutureCorps (S. Ijadi, pers. comm., December 3, 2020).

A third key coalition that has relevant expertise is the Green Justice Coalition, which is a partnership of 11 community-based, environmental, and labor organizations (Figure 13) that advocate for a Just Transition and sustainable economy through statewide and Boston-based campaigns. Their Boston campaigns focus on equitable GHG emission reduction strategies, community choice energy, and community-owned microgrids, which are all areas that could be particularly relevant to the built environment-focused components of a corps. Alternatives for Community and Environment (ACE) is a member of both the Jobs Action Network and the Green Justice Coalition and has been working in the environmental justice field in Massachusetts for 25 years. Sofia Owen, a Staff Attorney at ACE, noted that the Boston FutureCorps should engage with community organizations and advocates in a way that provides them with funding and technical support, particularly for under-resourced base-building organizations like ACE (S. Owen, pers. comm., January 13, 2021).

ACE also has vast experience in youth-led environmental justice activism through its Roxbury Environmental Empowerment Project (REEP), which develops the leadership of Boston youth who are primarily of color and from Roxbury, Dorchester, and Mattapan. Similarly, the Boston Student Advisory Council (BSAC) is a group of elected Boston Public School (BPS) students who lead organizing efforts, including climate change-focused campaigns. BSAC's Climate Justice committee has contributed to both the Boston Climate Action Plan and the BPS Facilities Master Plan (Youth on Board, n.d.). Ahria Ilyas, a Climate Justice Organizer with BSAC, recommended that having youth advocates involved in designing the corps will lead to more young people being interested in joining: "...just having youth involved in the process is really important to them because they can be like, oh, if they can do it and they're my age, I can be involved too" (A. Ilyas, pers. comm., December 9, 2020). Beyond REEP and BSAC, the Sunrise Movement, which is "a youth movement to stop climate change and create millions of jobs in the process," has a Boston hub that is deeply engaged in city and state-level policy advocacy and could be a powerful resource for the City in creating momentum around the Boston FutureCorps (Sunrise Movement, n.d.).

Finally, on the state and regional level, the City can engage with Massachusetts Renews, previously known as the Green New Deal Table, which is a coalition of over 40 grassroots organizations including environment justice organizers, youth activists, labor unions, racial justice groups, housing advocates, and frontline and Indigenous communities. Their two main policy goals are to (1) create "thousands of dignified, well-compensated jobs and launch a large-scale, union-led job training program to give workers the skills necessary to join expanding Green New Deal industries," and (2) pass food justice legislation that will improve access to fresh, local food and create "food-security jobs" (Massachusetts Renews, 2021). One state policy they are currently advocating for, which could influence the development of the Boston FutureCorps, is HD. 3338, "An Act Providing for Building Justice With Jobs". This Act would expand MassSave and Low Income Weatherization Assistance programs, with a focus on retrofitting buildings in low-income communities, create union-led job training programs, and require that companies bidding on projects created by the Act use equitable hiring practices. They are working toward creating a Farm Corps, which would employ people to work on community-based farms and be targeted toward creating good jobs for recent immigrants with farming experience, young people interested in agriculture, and recently incarcerated people in

Massachusetts (M. White-Hammond, pers. comm., January 4, 2021). Engaging with the Massachusetts Renews Coalition would serve to both work with advocates focused on state level policies and reach labor unions already involved in climate justice work.

IV. Methods Matter: Outreach, Engagement, and Participatory Design

In order to both engage community members in the design of the corps, and eventually to recruit corps participants, several interviewees stressed that the City needs to support a public education campaign through trusted community organizations and “credible messengers”. The purpose of this campaign can be to communicate (1) why the corps is being created, (2) the potential economic and environmental impacts of the corps, (3) how community members can be involved in the planning process, and (4) types of green jobs and the opportunities that they can provide. John Smith, the Interim Director of the Dudley Street Neighborhood Initiative (DSNI), recommended that the corps include a “community education component” led by partner organizations so that people can learn about the incentives of joining (J. Smith, pers. comm., January 12, 2021).

Community-based organizations who have existing relationships with and have earned the trust of Boston residents, particularly in marginalized neighborhoods, should be the main organizations tasked with, and paid to, disseminate information about the Boston FutureCorps. Community Development Corporations (CDCs), for example, have ties to specific neighborhoods and proven commitment to residents through work such as affordable housing development and social service provision. Katrina Conrad from Madison Park Development Corporation suggested that, due to their “close relationships to residents, the very first thing that would be ideal would be to link up with CDCs for the sake of outreach. No one really has a closer relationship with their residents than a CDC, right, because there are so many departments under its umbrella and that allows them to kind of go out and truly create relationships with their residents so that way your message is received better” (K. Conrad, pers. comm., January 14, 2021).

Amy Nishman from JVS suggested ABCD as another trusted organization, specifically to reach those who could benefit the most from the corps:

I would think about the populations that need economic recovery and pull in the organizations that are best serving those... and pulling in those people because they are going to have... the community trust. If you go to them first and their name and logo is

on the stuff you're putting out, that's how to get people to come. The city is helpful for sure but, like, if you haven't had great experiences with the government, but you see ABCD on there, you're like 'ABCD I know them, they give people jobs' (A. Nishman, pers. comm., January 12, 2021).

Other trusted organizations include those with expertise in community organizing and/or workforce development, such as DSNI, ACE, Action for Equity, X-Cel Education, Asian American Civic Association, and the Chinese Progressive Association (Figure 14).

Nishman also noted that she anticipates that a barrier to recruiting participants to learn about the corps is that "...when people don't understand what the job is, it's hard to get them to come to something to learn about the job" (A. Nishman, pers. comm., January 12, 2021). One solution for this is a "credible messenger" model. Broadly, a credible messenger is an individual person with lived or related experience that can communicate with an audience in a way that others cannot (Lynch, 2018). Green City Force (GCF), as mentioned in Chapter 2, is a corps that trains young people in New York City public housing to "power a green and inclusive economy through service" (Green City Force, n.d.a). Their Love Where You Live campaign uses a credible messenger model, training young people in NYCHA communities to educate other residents about energy efficiency, wastewater, and recycling (Green City Force, n.d.a). Similarly, Daryl Wright from the Emerald Cities Collaborative envisioned that "young people could be mobilized as ambassadors, you know, to [their] communities within Boston" (D. Wright, pers. comm., December 2, 2020). Trusted organizations, in addition to reaching out to whole communities, could also train people who express initial interest to teach others in their own community about the Boston FutureCorps as a way to recruit participants as well as build trust between the community and the corps program itself.

These organizations must also be included in a participatory design process for the corps. Reverend Mariama White-Hammond, an environmental and social justice advocate, a fellow in the Green Justice Coalition and a leader in the Massachusetts Renews Coalition, emphasized that "this question of 'what is the process going to be' is huge... and the City needs to be transparent about whether it [the corps] is fully baked or whether there are real opportunities for people to engage and then go from there" (M. White-Hammond, pers. comm., January 4, 2021). There is tension around the stage at which this community engagement should occur. Councilor Bok's opinion is that "We need to do a little more work to articulate for people what 'this' is, if you

know what I mean... If you say to people, ‘what if we have green jobs for our young people in the city’, people are like, ‘that sounds great. Sign me up!’ But in terms of creating an opportunity for meaningful participation and dialogue, you have to give people more to hold on to” (K. Bok, pers. comm., January 14, 2021).

The Austin Civilian Conservation Corps, which was established as a response to the COVID-19 pandemic, is using a dual approach to community engagement. The first phase of their program was framed as an urgent crisis response, created with no community engagement, that created about 90 jobs through funding existing job training programs and commissioning art projects. They are now in the process of creating a long-term corps, starting with a four-month community engagement and action research process spearheaded by two POC-led, trusted organizations. These organizations are hosting remote community gatherings focused on understanding community members’ “deep lived experiences” of the effects of the pandemic and how green jobs can serve their needs. They are also establishing a community advisory group that will direct the ongoing evaluation and adaptation of the program (D. Culotta, pers. comm., January 4, 2021).

Throughout my interviews, people proposed a number of recommendations for the participatory process to design the Boston FutureCorps. Both DNSI and ACE expressed interest in serving as conveners for this process. For example, Sofia Owen explained that, with adequate funding to serve their organizational goals, ACE could work with community members to learn about people’s understanding of “what jobs are needed or where holes are in the development or scoping [sic]” and get input on the design of the policy. She added that “there is an opportunity for this to be a collaborative process in a way that often the drafting of this stuff is not... being in the room with people drafting the ordinance is always beneficial” (S. Owen, pers. comm., January 13, 2021). Both Owen and Ahria Ilyas from BSAC also urged that the process be creative. Owen suggested going as far as creating a play or animation to “explain what the ordinance creating the corps actually means and how it will impact their lives and the lives of their family members and why it matters” (S. Owen, pers. comm., January 13, 2021). Ilyas recommended creative engagement as a way to both allow people to connect the corps to their personal lives and to counter “Zoom fatigue”, especially when engaging young people: “They don’t want to feel like they are sitting in a classroom because they already do that for eight hours a day” (A. Ilyas, pers. comm., December 9, 2020).

Regardless of what creative components the process involves, multiple people emphasized that the process needs to be different than the City's standard practices. One interviewee described the City's tendency to "divide and conquer" and added that "They talk to groups separately and make you feel special but don't help groups talk to each other. It's important to make sure that the City is not taking over the whole process." This interviewee noted, however, that Greenovate Boston is often more sensitive to these issues, while the BPDA is "notorious for non-inclusivity" (Anonymous, pers. comm., November 13, 2020). Another interviewee agreed with this depiction of the BPDA: "BPDA has been doing a roughshod over people. They do not listen... They hold these meetings. They go 'uh huh, uh huh' and then they go and do what they want" (Anonymous, pers. comm., November 24, 2020). One method to ensure the City uses equitable engagement practices is to create an advisory council that represents the communities this corps is aiming to serve, similar to what was created in Austin. For example, Don Sands from X-Cel education suggested creating an advisory committee of young people of color (D. Sands, pers. comm., November 17, 2020). This council could potentially draw from ACE's experience leading the Residential Advisory Council for the creation of BERDO 2.0.

Once the corps design process is complete, the outreach process will need to focus on participant recruitment, which can occur through partnerships with current workforce development and job training programs, schools, and social service and public assistance providers. When I asked current job training programs and corps about their main outreach method, the most common response was word-of-mouth. For example, PowerCorpsPHL, a green service and workforce development corps in Philadelphia that works with 150 young people each year, initially accepted applications only through city social service agencies, the local YouthBuild program, GED providers, and probation offices. Their program now has well established partnerships with those organizations and a strong network of alumni such that half of their applicants now hear about PowerCorpsPHL through word-of-mouth while the other half are referred by social service providers (J. Hillengas, pers. comm., December 10, 2020). This type of approach can help ensure that people from communities that would benefit most from the corps are prioritized in the recruitment process. Figure 14 shows potential recruitment partners separated by whether they work primarily with young people or adults.

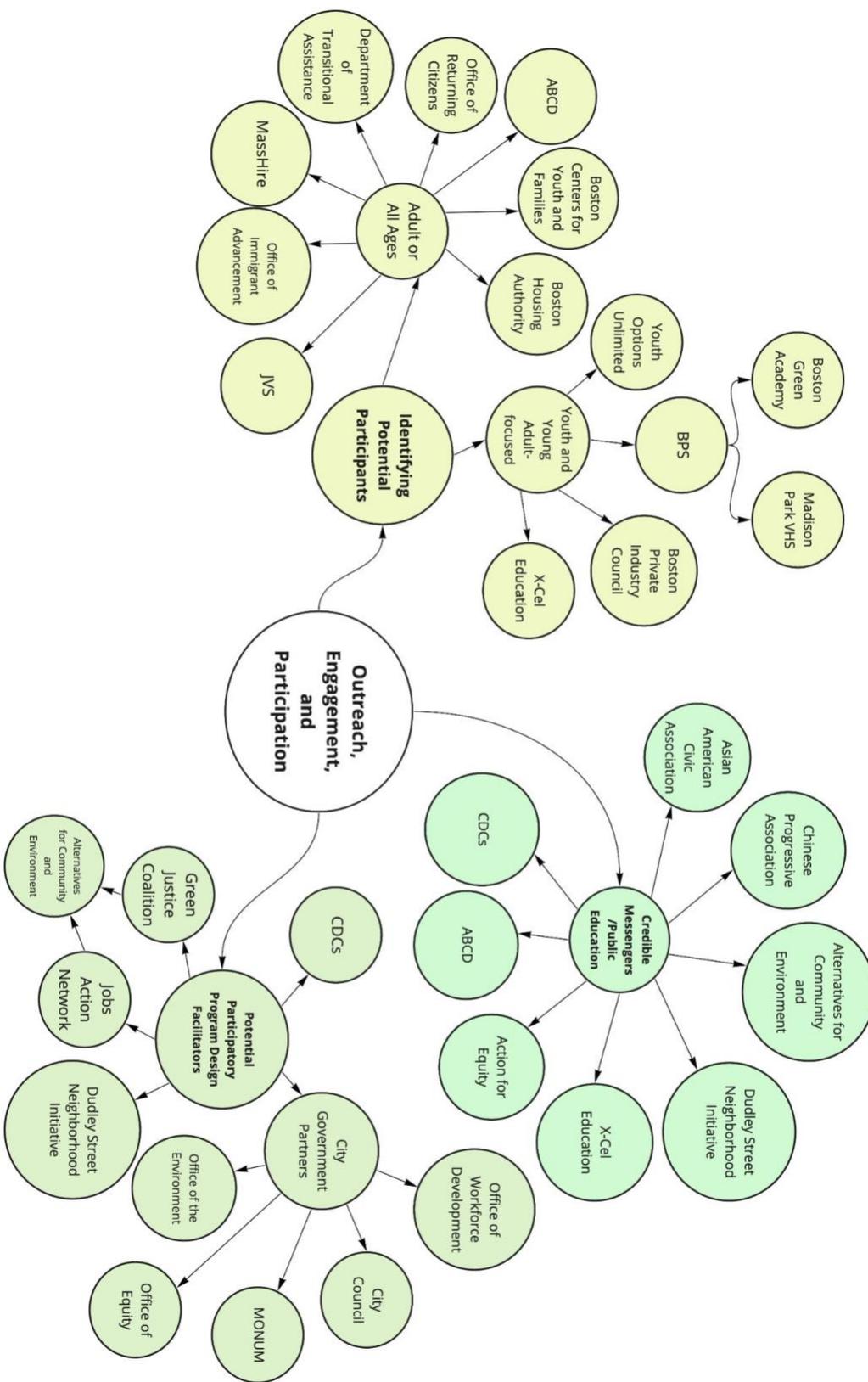


Figure 14. Outreach, education, and participatory planning ecosystem.

V. *Potential Funding Mechanisms*

While the particular makeup of the corps' funding stream will depend heavily on the ultimate design of the program, it will most likely include a combination of federal, state, city, and private sources (Figure 15). One metric to consider while constructing the funding mix is the estimated cost per corps member. Both Green City Force and PowerCorpsPHL budget for around \$30,000 per participant, with participants serving an average of 6 months. (L. Shepherd, pers. comm., November 10, 2020 and J. Hillengas, pers. comm., December 10, 2020). Capri St. Vil, the Director of Equity, Diversity, and Inclusion at The Corps Network, emphasized that "...to do it right you can't do it cheap...corps members are *always* paid and the amount of training and the amount of support services needed to support corps members leads to expenses...and you need those pieces in place" (C. St. Vil, pers. comm., December 8, 2020). Julia Hillengas, the Executive Director of PowerCorpsPHL, had a slightly different perspective: "There is a myth that urban corps are expensive, but it is expensive to not have them! It's expensive to spend money on the things you will have to spend it on if you don't have a corps," referring to corps members requiring less public assistance, cities accruing the long-term costs of not completing climate and/or infrastructure projects, and cities paying higher costs for people other than corps members to do this work (J. Hillengas, pers. comm., December 10, 2020). Below I discuss both existing and potential opportunities that can be pieced together to provide the amount of funding necessary to create a Boston FutureCorps.

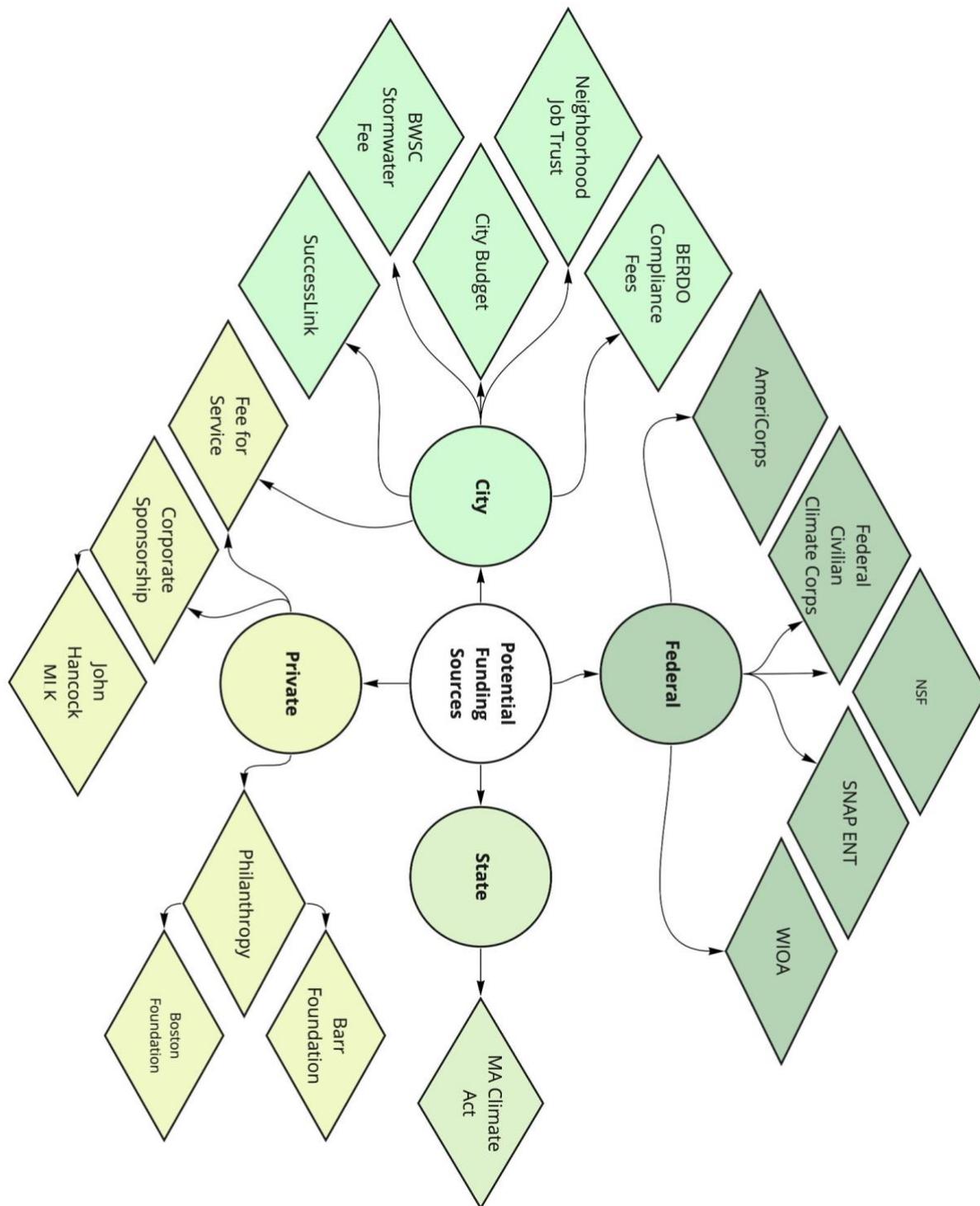


Figure 15. Potential funding mechanisms.

A. *Federal Funding*

The two main sources of federal funding for the Boston FutureCorps are from AmeriCorps, administered by the Corporation for National and Community Service (CNCS), and the Workforce Innovation and Opportunity Act (WIOA), both of which are programs that have persisted throughout changing federal administrations. AmeriCorps consists of three programs: AmeriCorps VISTA, which provides nonprofit, faith-based, and other community organizations, as well as public agencies with full-time Corps members. AmeriCorps NCCC is a full-time, residential program for people 18-24 who engage in short-term service projects. Finally, the AmeriCorps State and National program, which I imagine a Boston FutureCorps is most likely to use, provides grants to eligible organizations (nonprofit, faith-based and community organizations, public agencies, Indigenous tribes, and higher education institutions) running a corps program that focuses on education, health, environment, economic opportunity, veteran services, and/or disaster services for participants 17 or older (AmeriCorps, 2015). The State and National program provides \$13,300 for each corps member per year of service, but has a number of restrictions, such as requiring that participants have a high school diploma or GED and prohibiting work that benefits for-profit entities (AmeriCorps, n.d.).

These restrictions require significant organizational capacity to meet reporting requirements and will influence aspects of program design, such as eligibility standards. AmeriCorps funding is also far from the amount required to reach the benchmark of \$30,000 per corps member. PowerCorpsPHL, for example, supplements their AmeriCorps funding two to four times over (J. Hillengas, pers. comm., February 16, 2021). Hillengas describes AmeriCorps as having great benefits, such as education stipends, health insurance, and childcare assistance, but also as “tricky for a startup” and requiring dedicated staff to handle compliance. In fact, the first step that the PowerCorps advisory committee took when starting the program was completing the AmeriCorps grant application. Hillengas also secured a unique benefit in Philadelphia by working with the City to give preference, during the hiring process, for city staff to people who have participated in any AmeriCorps program (J. Hillengas, pers. comm., February 16, 2021).

A second funding source, which can be used in combination with AmeriCorps funding, is WIOA. The Boston Office of Workforce Development distributes WIOA funds to Boston organizations, with oversight from the Boston Private Industry Council. Title I Youth funds can

be distributed to alternative education institutions, as well as to career exploration and training programs where youth can earn a high school diploma or GED, gain work experience, and/or earn a recognized credential. To be eligible, youth must be 14-24 and Boston residents (Office of Workforce Development, n.d.a). Massachusetts' SNAP Path to Work program, administered by the Massachusetts Department of Transitional Assistance, also provides funding to organizations that provide job search training, HiSET and ESL training, and/or sector-specific skills training to people who qualify for SNAP benefits (SNAP Path to Work, 2020).

Finally, the Boston FutureCorps can potentially receive funding through the various federal legislation and proposals that include funding for a nationwide Civilian Climate Corps, as discussed in Chapter 2, which may be more susceptible to changes in federal politics. For example, as noted previously, both the Evergreen Action proposal and Senator Markey's and Representative Ocasio-Cortez's bill, "to amend the National and Community Service Act of 1990 to establish a Civilian Climate Corps to help communities respond to climate change and transition to a clean economy, and for other purposes" would create a grant program for "Partner Corps" that would provide up to 100% of the cost for Partner Corps to carry out climate service projects, as well as fund services such as housing vouchers, childcare, counseling, and provide education awards of up to \$50,000 (S.1244, 2021, H.R.2670, 2021). As mentioned in Chapter 1, Biden's American Jobs Plan would invest \$10 billion into the Civilian Climate Corps (FACT SHEET: The American Jobs Plan, 2021). Finally, Representative Ocasio-Cortez and Representative Bush (D-MO), also introduced legislation in April 2021 that would authorize up to \$1 trillion for cities, tribes and territories to fund their own local versions of the Green New Deal, which could also potentially fund aspects of the Boston FutureCorps (H.R. 2644, 2021).

B. State Funding

The opportunities for Massachusetts State funding will depend on the implementation of the most recent climate policy law, "An Act for Creating a Next Generation Roadmap for Massachusetts Climate Policy", which outlines a strategy for reaching net-zero emissions by 2050. The bill was vetoed by Governor Charlie Baker in early January 2021, claiming that reducing emissions 50% below 1990 levels by 2030 was unnecessary (Murphy, 2021). The bill was sent to Baker's desk again in February and was returned to the Senate with amendments, most of which they adopted before the bill was sent back to, and approved by the house in March 2020. They denied Baker's request to change the 2030 target to 45% below 1990 level, as well as

rejected his amendment that changed the language in a proposed municipal building code that promotes net-zero construction (Young, 2021). Governor Baker finally signed the bill on March 26, 2021. The Act creates legally binding emissions reductions targets, in 5-year increments, that will be measured independently in six sectors: electricity, transportation, commercial and industrial buildings, residential buildings, industrial processes, and natural gas distribution. The Act also creates new standards for public participation in the development decision-making process and creates a new environmental justice advisory council. Most pertinently, the Act requires MassCEC to spend \$12,000,000 each year on clean energy equity workforce development programs. The Act will also affect the funding that a corps may be able to receive from MassSave programs and incentives, which was directed to expand their focus from just energy efficiency to put more emphasis on emissions reduction (Wasser, 2021).

C. City Funding

A Boston FutureCorps can potentially access a variety of types of municipal funding mechanisms depending on the structure of the program. These mechanisms include city contracts, Boston's budgeting process, as well as linkage and compliance fees. As Chris Cook, the Chief of Environment, Energy, and Open Space for the City of Boston, stated, "...the least of the problems, ironically, is funding" (C. Cook, pers. comm., December 17, 2020). First, a corps can enter contracts with City departments and agencies. The Los Angeles Conservation Corps, for example, has 100-150 open contracts at any given time, 30% of which are with the City of Los Angeles. They have contracts through the City's general fund, as well as through the discretionary funds of the Department of Sanitation, the Parks Department, and the Department of Water and Power (W. Butts, pers. comm., December 21, 2020). Similarly, the Seattle Conservation Corps, which is a program housed within the City's Parks Department, has a \$1 million contract with the Seattle Public Utilities to maintain their green infrastructure as well as contracts with the Department of Transportation (R. Blaw, pers. comm., November 6, 2020). The Boston FutureCorps could potentially contract with the Boston Water and Sewer Commission, the Parks Department, Boston Housing Authority, the Department of Public Works, and the BPDA.

The Boston FutureCorps could also be included directly in the City's budget. For example, as previously mentioned, Councilor Bok introduced the proposal for a Boston Conservation Corps with the intent to use excess funds from the City's capital budget. Hillengas

stressed that a large initial investment by the City of Philadelphia was crucial for PowerCorpsPHL's startup process: "We started fast and big with 100 people per year and a \$2.5 million budget including seed funding from the City" (J. Hillengas, pers. comm., December, 10, 2020). The Austin Civilian Conservation Corps was also started with a large investment from the City, \$500,000 from the general fund reserves. Daniel Culotta, the Community Engagement Lead at Austin's Innovation Office, highlighted the benefit of having these "untethered funds" as an initial investment, which made it more appealing for other departments to invest as well to pay for work they were already planning on doing (D. Culotta, pers. comm., January 4, 2021).

Multiple interviewees also suggested funding opportunities provided by various existing and potential fees. The Neighborhood Job Trust (NJT) is funded through linkage fees from commercial development. Developers can either put money into job training for people to be permanently employed on the developer's site or put money into the trust. The NJT then funds job training programs for low and moderate-income Boston residents (Office of Workforce Development, n.d.b). The corps could also be funded through compliance fees for buildings regulated by BERDO that do not meet reporting or emission reduction standards. Finally, the Boston Water and Sewer Commission is looking to implement a stormwater fee, the cost of which is currently embedded in sewer rates, that would fund the installation, inspection, and maintenance of green infrastructure. This fee would be calculated based on the amount of impervious surface on a property. The fee could contribute to funding a corps and would also create jobs by incentivizing property owners to hire people to maintain existing green infrastructure (C. Jewell, pers. comm., January 11, 2021).

D. Private Funding

Private funding sources include corporate sponsorship, philanthropic foundations, and fee-for-service work. These sources may have the most potential to remain independent of election cycles. Ruth Goldman, the Consulting Program Officer at Merck Family Fund, suggested that a corps utilize Boston's "corporate community" and "appeal to some of the downtown office folks" who often make contributions related to parks and open space and youth workforce development (R. Goldman, pers. comm., March 10, 2021). John Hancock's MLK Scholars program, for example, sponsors summer employment for 600 Boston teens at 60 local organizations each year, including Speak for the Trees Boston (John Hancock, n.d.). Corporate

philanthropy could also include funds from Boston’s electric and gas utilities, National Grid and Eversource. Goldman noted that the corps will almost certainly require grants from philanthropic foundations. She also suggested focusing on creating a partnership with the Barr Foundation to serve as an “anchor funder” as well as exploring opportunities with the Boston Foundation. She stressed that the corps should have “champions” outside of city government who can help lead the fundraising process, such as leaders from a foundation, company, or well-known nonprofit. Finally, the corps can also potentially provide fee-for-service work to private entities. However, this funding source would not be possible in an AmeriCorps program.

VI. *Summary*

This chapter highlights the importance of a supportive ecosystem of actors, programs, and policies – these five enabling factors that emerged through my interview process provide an empirical example of an expansive system of social, organizational, economic, and political infrastructure that depend deeply on their interrelated component parts. The ecosystems related to addressing barriers to employment and education, for example, includes a wide array of organizations with various expertise, but coordination among groups is challenging. The ecosystem for advocacy, however, is relatively more coordinated and is well positioned to provide vital input on program design. The ecosystem specific to outreach, engagement, and participation was highlighted by interviewees as key to the corps’ success, but will require resources from the City. Finally, there are several strong and feasible funding opportunities for a corps from multiple sources. Beyond informing the development of the ecosystem maps presented in the previous chapters, the interviews I conducted also shed light on how different stakeholders view the complexities of green jobs and the implications of different potential structures of the Boston FutureCorps.

Chapter 5. “Raking or whatever”: Perceptions and Politics of a Boston FutureCorps

Austin’s City Council announced its plan to use COVID-19 federal aid funds to create the Austin Conservation Corps in May 2020. Mayor Pro Tem Delia Garza, while supportive of the program, told press:

My initial reaction is we’re creating these hard labor jobs, and I get the comparison to FDR, but there is currently an incredibly different work ethic now than people in that time, so it’ll be interesting to know the appetite for people to apply for fairly hard labor type of jobs [sic]... I would make sure we could try to provide some digital training of some sort, so maybe people doing this work – raking or whatever – then have the opportunity to get more access to tech. This work is honorable work, absolutely, but the idea of us creating this corps of jobs ... I just have a weird feeling about that (Swiatecki, 2020).

Garzia highlights two central questions: (1) What is a green job? (2) What is the purpose of a corps? If people have similar conceptions of a corps – that people no longer have strong work ethics, that green jobs are only temporary “hard labor” that lead to tech jobs, and perhaps that corps members will primarily be raking – it will be hard to build the momentum and buy-in needed to create a Boston FutureCorps. In this chapter, I will explore how those I interviewed think about these questions and how their answers can inform the design of the corps.

Stakeholders’ conceptions of green jobs will influence the sectors and careers for which the corps will be designed, as well as how the corps will be perceived by potential participants. Similarly, understanding stakeholders’ conceptions of and hopes for the Boston Future Corps’ purpose will affect which actors are included in the program design and implementation process, public perception of the corps, and the nature of the corps’ overall impact.

I. What is a Green Job?

A. Green Jobs are Expansive

A narrow definition of green jobs only serves to constrain the number and types of people who can participate in and benefit from the process of building a green economy. It paints these jobs as a distinct silo of work, solely responsible for addressing the climate crisis while other sectors practice business as usual. A primary theme that emerged from my interviews was the

opportunity to use the Boston FutureCorps to communicate an expansive, cross-cutting definition of green jobs.

As discussed in Chapter 1, the promise of green jobs gained national recognition during the Great Recession, with the ARRA directing billions of dollars, unsuccessfully, towards clean energy infrastructure and long-term career opportunities in the energy efficiency and renewable energy sectors (Arnoff et al., 2019). Amy Nishman, the Senior Vice President at JVS, gave a first-hand account: “I was there when weatherization was a big deal, which was maybe like 10 or more years ago, and I don’t know if you read about this, but we trained people too early and then there were not jobs on the other side. It was really heartbreaking... I watched it happen” (A. Nishman, pers. comm., January 12, 2021). Although these sectors are still essential, if people’s understanding of green jobs is limited to jobs like home energy auditors and solar panel installers, they might assume a Boston FutureCorps will have the same fate as that of the programs in the era of the ARRA.

One relevant area of tension multiple interviewees spoke of is the distinction of green jobs as “new”. Mary Vogel, the Director of Building Pathways, asserted that within the built environment sectors, “We don’t need a new workforce... it’s just a matter of transferring skills to so-called green jobs. All of our members are educated in green technology and are not separate workers” (M. Vogel, pers. comm., January 5, 2021). Likewise, according to Chris Sherlock, every electrical apprentice at the IBEW Boston JATC learns about solar, wind, electric vehicles, and energy efficiency (C. Sherlock, pers. comm., December 11, 2020). Amy Nishman, on the other hand, expressed uncertainty about the longevity of green jobs: “...it’s what is hard about the green jobs industry because it’s so new and in my experience with weatherization... it just made me more cautious around that” (A. Nishman, pers. comm., January 12, 2021). Similarly, both Dave Queeley from CSNDC and Charlie Jewell from Boston Water and Sewer Commission described the field of green infrastructure inspection and maintenance as an entirely new career opportunity, where the official industry credential was only finalized within the last two years (D. Queeley, pers. comm., November 13, 2020; C. Jewell, pers. comm., January 11, 2021). The urban tree care profession, however, has existed formally in the US since the late 19th century (Gerhold, 2007). This tension is one source of complexity in defining green jobs – there is a need for a new workforce, new skills, and new training programs in some sectors but not in others. As previously discussed, existing union training systems can have high barriers to entry. Programs

in newer sectors, however, have less existing organizational infrastructure. An expansive definition of green jobs allows space for both circumstances.

Daniel Culotta, who is leading the development of the Austin Conservation Corps, expressed how the way we define green jobs is a matter of equity: “Our focus is equitable access to green jobs, part of that is broadly defining green jobs... everyone thinks a green job is solar panels, green buildings and that’s pretty much it. I think green jobs can be a lens, that any job can be a green job” (D. Culotta, January 4, 2021). Similarly, Saba Ijadi from the Fairmount Indigo CDC Collaborative noted that “if you limit the definition of green jobs, you’re going to limit the people who are interested in getting those jobs and the whole point is to be inclusive... so if we are like ‘oh it’s just construction’, that eliminates a whole portion of people who aren’t interested in doing construction or physically can’t... you want to be able to connect people who have gone through any kind of training with as many jobs as possible” (S. Ijadi, pers. comm., December 3, 2020).

One way to translate this broad lens of green jobs to a corps is to have multiple tracks or pathways within one program. PowerCorpsPHL’s model, for example, includes a 4- month Foundations phase, which Executive Director Julia Hillengas described as “more like a classic corps,” including a focus on work readiness skills, a goal of building trust with corps members, and a curriculum that offers basic skills in and exposure to a number of sectors. Participants can then choose one of several Industry Academies, become an Assistant Crew Leader, or be placed in paid internships with employer partners in fields outside of the Industry Academies. The Academy options currently include green infrastructure, electrical & solar, and urban forestry. PowerCorps is developing a new track in partnership with the local masonry union. Hillengas also noted that all of their programming is “designed in lock step with the City’s climate action plans” (J. Hillengas, pers. comm., December 10, 2020). The benefit of this model is that PowerCorps can theoretically continue to add tracks in additional fields.

Green City Force (GCF) has a different approach: GCF Corps Members, who are residents of New York City Housing Authority developments, participate in 4-10 months of paid service work in their own communities while receiving training and various certifications in agriculture, culinary skills and nutrition, electrical work, plumbing, carpentry, pest management, recycling, composting, and hydroponics. Graduates can go on to work at GCF’s energy efficiency social enterprise or receive assistance securing full-time employment with one of

GCF's many employer partners (Green City Force, n.d.b). GCF's approach highlights how multiple types of skills and careers can contribute to place-based, closed-loop sustainable systems development, in this case within NYC's public housing communities (L. Shepherd, November 10, 2020). GCF is also among the founders of the NYC Green Economy Network, a collaborative effort anchored by JobsFirstNYC, which works with organizations focused on creating equitable economic opportunities for young adults. They define "green economy" as "an aspirational destination for the societal project of working towards an economy rooted in environmental, social, racial, and economic justice", intersecting with resiliency, sustainability, circular economy, and climate (Green Economy Network, n.d.) The network "is deeply rooted in a desire to work collaboratively to ensure that Black and Brown young adults, women, and those most affected by the converging crises of health, racial equity, and climate change are able to access good, career path jobs in the green economy." The founders see this new network as an opportunity to create a more collaborative workforce development field targeted towards multiple types of employment within a NYC green economy (Green Economy Network, 2021).

While a corps will not be able to offer training in every possible type of green job, through intentional public education, outreach, and collaboration, it can reframe people's ideas of what these jobs can be. The corps can also emphasize transferable skills and provide exposure to multiple career pathways. Going beyond more traditional sectors, like renewable energy, energy efficiency and urban forestry, green careers can include public transportation operators, bike mechanics, urban farmers, and care and education workers – different career pathways can also accommodate people with a greater variation in age, skill level, and interests.

B. Green Jobs are Good Jobs

Another primary theme that appeared across my interviews was that green jobs must be good jobs. Eleanor Fort, the Deputy Director of Programs at Green for All, reflecting on the organization's initial campaigns for green jobs during and following the Great Recession, noted "we assumed that green jobs would be pathways out of poverty, but that is not true for all 'green jobs', those that are seasonal, part-time, or don't provide benefits or livable wages." Green for All now looks to ensure that climate policies lead to jobs that explicitly promise fair pay, benefits, and are both accessible to and benefitting marginalized communities (E. Fort, November 22, 2020). Similarly, Weezy Waldstein from Action for Equity noted that:

There is a history of sort of claiming the space of green jobs and giving people of color not great jobs then patting themselves on the back. There is a history that goes back a very long time of... making assumptions that people are only able to do certain kinds of ‘donkey work’ and then people make choices based on their exclusion from certain spaces... so you end up with a multifaceted set of reasons why we have such a completely segregated, bifurcated labor market (W. Waldstein, pers. comm., January 12, 2021).

According to those I interviewed, in order to pat oneself on the back, an employer offering a green job must provide (1) a living wage, (2) benefits, including healthcare, (3) opportunities for upward movement and long-term careers, (4) work that benefits someone’s own community, and (5) work that the people find meaningful and fulfilling. This is true for both long-term green jobs as well as participants’ experience within a Boston FutureCorps.

When asked how he defines a good green job, Tom Connolly, who participated in the X-Cel Conservation Corps and now has long-term employment as a licensed wastewater operator, responded by describing his current job: “It feels rewarding. I go into work and I am spending my time doing something that is good for people, animals, and the world. I feel proud of what I do. My job is important. If no one did this job, there would be huge problems. It’s a good job, doing something I enjoy and it pays well.” Connolly, also a musician, discussed how the schedule and pay of his work as a wastewater operator allows him to dedicate time to music rather than work a second job (T. Connolly, pers. comm., January 15, 2021). Hearing Connolly’s personal narrative served to ground what I learned from other interviewee’s general hopes for the kind of jobs that a Boston FutureCorps could create.

II. What is the Purpose of the Boston FutureCorps?

Succinctly articulating the purpose of this corps remains a challenge. As reflected in the title of this thesis, the purpose, broadly, is to simultaneously pursue climate, economic, and racial justice in the City of Boston. Exactly how to translate this overarching goal to a programmatic, logistical level, however, is what the participatory program design process will elucidate. Weezy Waldstein advised, “Be clear on your intent, regardless of the name. Then you can go and say what it would really take. It also helps you win it. If you are clear on the intent, you can really describe the value of it and build up your alliances around it” (W. Waldstein, pers. comm., January 12, 2021). Greg Mumford, the Executive Director of YouthBuild Boston, expressed a

similar sentiment when I asked about his first impression of the idea of this corps: “Well, I don’t know I’d have to look at it. I’m not sure what this is trying to do” (G. Mumford, pers. comm., January 22, 2021).

Bureaucratic silos within city government may also pose a challenge to truly integrating climate, economic and racial justice goals. City Councilor Kenzie Bok warned of the disadvantages of “mission creep”, or when a department or agency’s goals become too broad or deviate from their ultimate purpose:

I used to work at the Boston Housing Authority and we would go back and forth all the time... on the one hand you’re housing a vulnerable population. There are a million support services and wrap-arounds that you want to provide. On the other hand, you have to be like, ‘our job is to provide housing and we’re only really good at that. We are the Boston Housing Authority, not the Boston social services authority.’ Similarly, with a jobs program... If you make a jobs program do all the work of dealing with every aspect of our society that is crumbling or inadequate, you can overburden it to the point that you don’t serve as many people as you should (K. Bok, pers. comm., January 14, 2021).

While Chris Cook, the Chief of Environment, Parks, and Open Space for the City of Boston, also noted the challenge of mission creep, he emphasized that climate and workforce development goals have to be integrated:

They have to and I’ll tell you why. Success isn’t that we build a freaking wall out in Boston Harbor and we actually prevent waves from hitting us – that’s not success. Climate change has actually very little to do with any of that, you know. It’s not about loss of property and things like that. It’s about the kid growing up in Roxbury who’s either going to have a future or they’re not going to have a future, and we owe it to that kid to connect them to the opportunity so they can have the best possible future... The challenge is existential (C. Cook, pers. comm., December 17, 2020).

Integrating these goals without overextending individual government departments and nonprofit organizations will require careful and sustained collaboration, with each group contributing their individual expertise to a unified program. If groups have similar areas of expertise, another challenge is to avoid duplicating efforts. Pat Alvarez from Southwest Boston CDC noted that “there’s a lot of redundancy and groups with the same goals, but maybe slightly

different, and that makes it I think more difficult to get focused...Let's not compete for resources" (P. Alvarez, pers. comm., November 24, 2020). Similarly, Frank Mruk from Roxbury Community College's Smart Building Technology Program recalled:

When I first came to Boston a number of years ago, I kept asking... It seems to me like everyone, a lot of people are doing the same thing. There are all these overlaps. If we're going to solve this problem and meet some of the goals, we really have to get smart about these overlaps and stop duplicating something that someone's doing better than I am... Boston is small enough and well-networked enough that you can kind of work these things out a lot easier than you could in New York or California (F. Mruk, pers. comm., January 25, 2021).

In order to organize this non-duplicative, collaborative network, starting from the existing ecosystems explored in the previous chapters, there are a number of purposes that could be incorporated into the mission of the Boston FutureCorps, which I will describe below. These purposes fit among three themes: people-centered, environment-centered, and purposes at the intersection of people and the environment. These purposes, importantly, are not mutually exclusive.

A. People-Centered Goals

1. Target Population

Who will participate in the Boston FutureCorps? The target population will inform the corps' eligibility requirements, outreach strategies, curriculum, and wraparound services. Most existing corps are directed toward young adults, in part due to the funding restrictions dictated by AmeriCorps, which requires participants to be at least 17, and WIOA youth employment grants, which require participants to be 14-24. According to The Corps Network, corps are generally locally-based organizations that serve those ages 16-25, as well as veterans up to age 35. Corps often focus on these age ranges because young adults have distinct needs compared to those of older unemployed or underemployed adults (C. St. Vil, pers. comm., December 8, 2020). Councilor Bok views young adult workforce development programs as particularly beneficial because "...if you think about how to build wealth in a more equitable way in this country... If we'd like to build Black wealth in Boston, putting a bunch of Black teenagers onto the route of making more money throughout their whole lives, that is a disproportionately impactful way to

move the needle... Although, that's not a reason to focus on youth exclusively" (K. Bok, pers. comm., January 14, 2021).

A corps also has the opportunity to benefit adults outside of the typical corps age range, particularly as an equitable wealth-creation strategy in the wake of the COVID-19 pandemic. It can not only serve as a way to address unemployment, but can also give people who are stuck in low-wage jobs opportunities to make a living wage and access benefits through meaningful work (D. Nicolai, pers. comm., December 8, 2020). PowerCorpsPHL, for example, originally decided to limit their program to people ages 18-26 with high school degrees or GEDs because they saw a gap in services for this population compared to the youth programming, GED preparation programming, and services for older adults provided by other organizations in Philadelphia. However, they have since expanded to serve those ages 18-28 and will most-likely expand again to allow those up to 30 as a response to the pandemic (J. Hillengas, pers. comm., December 10, 2020).

When deciding the age range for the Boston FutureCorps, decision-makers can take into account both the opportunities to benefit both young and older adults, which populations may be already served through existing programs, and which existing programs might be in need of additional or more stable funding. In the meeting I facilitated with the Emerald Necklace Conservancy, Speak for the Trees Boston, and Southwest Boston CDC, these organizations (which currently provide seasonal paid training and educational programming for those ages 15-18) noted that they already have robust expertise in providing environmental education and training for this age group. Their expertise is focused on job readiness and career exposure rather than on securing long-term employment. However, these organizations are open to serving as a year-round pipeline for their participants to enter into an employment-focused BostonFuture Corps, provided that they can be promised sufficient and stable funding (P. Alvarez, K. Jackson, K. Mauney-Brodek, D. Meshoulam, pers. comm., March 30, 2021).

The target population may also focus on factors other than age. For example, Green City Force (GCF) serves only young adults who are residents of New York City public housing. The founders of GCF focused their model on public housing because they viewed it as "a city within a city", and a way to model a city-wide corps by starting in communities that are most affected by youth unemployment and environmental injustice (L. Shepherd, pers. comm., November 10, 2020). The Seattle Conservation Corps, which only serves unhoused residents of Seattle, has a

mission to interrupt the cycle of homelessness by offering employment through public works projects and a living wage job. Participants are offered robust social services, high school-level education, one year of full-time work as a city employee, and assistance in securing a permanent full-time job after the program (R. Blaw, November 6, 2020). Finally, Pennsylvania Horticultural Society's Roots to Re-Entry program provides participants, who are transitioning back into their communities after release from the Philadelphia Prison System, with training to enter horticulture and landscape industries. Participants receive 12 weeks of training while still incarcerated and are connected with a network of employers and support services upon their release (Vibrant Cities Lab, n.d.).

2. *Short and Long-term Economic Goals*

When discussing the purpose of the corps, interviewees had a variety of opinions regarding the timeframe of the Boston FutureCorps' intended outcomes. There was disagreement about whether the program should focus on short-term outcomes, such as crisis-response for those in financial distress or temporary educational and career exposure programs, or whether it would focus on long-term employment, and if those two goals should even be thought of as separate.

Weezy Waldstein from Action for Equity stressed that she would be in favor of a program focused on immediate outcomes where “the point is giving people work while they’re out of work and hungry right now” and that the program help participants “try and get the most out of it in terms of putting people forward in their lives” (W. Waldstein, pers. comm., January 12, 2020). One example of this sort of crisis-response corps is New York City's recently announced Cleanup Corps, which Mayor De Blasio introduced in January 2021. The corps aims to temporarily employ 10,000 New Yorkers for beautification projects across the city, such as removing graffiti, washing sidewalks, creating murals, caring for community gardens and public spaces, and working with community-based organizations for neighborhood-specific cleanup efforts (City of New York, 2021). However, this type of temporary, crisis-response program was not favored by multiple interviewees, who pushed for the Boston FutureCorps to ensure that participants would have the opportunity to secure long-term employment after the corps.

Kelly Folsom, an Instructor and College Transition Specialist at X-Education, finds the idea of a “crisis program” that promises participants quick money to be problematic: “I’ll do a three-week training program and I’d like to make \$100,000 per year’, you know, and I’m like,

yeah if that existed I would also do that... The reality is that you have to put in the time, effort, and energy” (K. Folsom, pers. comm., January 12, 2021). Folsom went on to assert that the way to address this need, for both a crisis response and long-term opportunities, is to ensure that the training program provides the same or better compensation as compared to other jobs, that would not lead to long-term opportunities for growth, that a participant might consider. Tracey Fils-Aimee, the Assistant Deputy Director of Programming at Youth Options Unlimited, expressed a similar sentiment. Her ideal Boston FutureCorps would give participants a livable wage that is sustainable, “not just one year that won’t end up meaning anything... It must position them to secure full-time employment” (T. Fils-Aimee, pers. comm., December 1, 2020). City Councilor Kenzie Bok, noted that she does not support the City “just funding a bunch of nonprofits to train people, none of whom end up actually working in these supposedly good jobs that we think are at the end of the rainbow. We need to create this pipeline” (K. Bok, pers. comm., January 14, 2021).

The most common answer as to how a corps secures this kind of employment is to create a “pipeline” through strong relationships to employers. Saba Ijadi from the Fairmount Indigo CDC Collaborative explained that the biggest barrier to a successful program that he has found in his research is a disconnection from employers. Even once people have training in green infrastructure or construction, “it’s still difficult to find a job because contractors and subcontractors can be a difficult field to break into... we would need some kind of incentives or some kind of agreement so that people who have gone through the program will be given priority for those jobs” (S. Ijadi, pers. comm., December 3, 2020). Miranda Popkey from ABCD noted that two elements need to exist: strong partnerships with employers and a market for the jobs that the program is training people to do (M. Popkey, pers. comm., December 9, 2020). However, multiple people also discussed how standard assessments of labor market data might be misleading or inconclusive for the purposes of green jobs, given the complexity of the relevant sectors. Daniel Culotta and those establishing the Austin Conservation Corps are developing both employer partnerships and a new “advanced methodology” for an economic study of the green job landscape in Austin, focused on the economic development of individuals rather than that of specific sectors (D. Culotta, pers. comm., January 4, 2021).

It is also worth considering the nature of the employers at the end of these pipelines. These employers will most likely exist across both the public and private sector, union and non-

union contractors, and include the option of self-employment. Two other options that were discussed during my interviews are social enterprises and worker-owned cooperatives, both of which are also discussed as employment strategies in CSNDC's report on green infrastructure workforce development opportunities in Boston. They define a social enterprise as a mission-driven nonprofit organization that includes a fee-for-service component (Pond, Queeley, and Lutz, 2020). Green City Force, for example, runs a social enterprise called Illuminators, which employs GCF graduates to provide subcontracted services, such as energy audits, to low-to-moderate income families and businesses (Green City Force, n.d.c). CSNDC also discussed creating a new worker-owned cooperative, which is a business that is owned and governed by its employees. For example, Dig Cooperative Inc. in Oakland, CA, is a design/build general contracting firm that specializes in green building and green infrastructure for both commercial and residential properties. They partnered with the City of Oakland Redevelopment Agency to provide a three-month green job training program that connected participants to apprenticeships following graduation (Dig Cooperative Inc, n.d.).

3. Targeting Personal Development through Corps Participation

The Boston FutureCorps can be more than a jobs program, providing opportunities for participants that are not solely for the sake of employment. Lisbeth Shepherd from GCF described the value of corps as creating a “universal notion about agency”, giving corps members the opportunity to participate in “a period of solidarity” while working toward building a new society (L. Shepherd, pers. comm., November 10, 2021). Both Shepherd and Julia Hillengas, expressed how GCF's and PowerCorpsPHL's cohort models help create a space for solidarity and personal development. Hillengas described how PowerCorpsPHL's Foundations phase is instrumental in building this environment, which is where corps members build relationships with others in their cohort (J. Hillengas, pers. comm., December 10, 2020). Describing the culture of PowerCorpsPHL, Hillengas told the Philadelphia Inquirer, “What PowerCorpsPHL is really good at is creating a space of seeing people, valuing them, respecting them. We talk a lot about love” (Press, 2020). In fact, during the spring of 2020, PowerCorpsPHL tried to maintain this aspect of the program by offering daily trauma-informed group check-ins remotely (J. Hillengas, pers. comm., December 10, 2020).

Creating this type of environment can translate into a program having successful rates of post-graduation employment, but these values of solidarity and personal growth can also be

reflected in other sorts of metrics. For example, in the Boston City Council working session in March 2020, Hillengas put great emphasis on their program’s recidivism rates one year after graduation, which is 3%, as compared to the citywide recidivism rate of 45%. Hillengas attributes this success not only to the paycheck that participants receive, but also to the corps’ ability to give people a sense of purpose and a shared vision for the future (J. Hillengas, pers. comm., December 10, 2020). Seattle Conservation Corps offers another example of instilling values beyond employment into measuring the success of their program. Participants are encouraged to take paid time off from their normal corps activities to “take care of life things” and get assistance finding housing, going to court, and going to substance abuse programs and doctor’s appointments. Participants keep track of their accomplishments on their “green sheet” (R. Blaw, November 6, 2020). Measuring such outcomes communicates to participants that their personal value is made up of more than just their ability to be employed.

B. Environmentally-Centered Goals

1. Meeting City Climate Goals

In both City Councilor Wu’s and City Councilor Bok’s initial proposals for a Boston Urban Climate Corps and Boston Conservation Corps, respectively, the program is positioned as part of a city-level Green New Deal and a strategy for the City of Boston to accelerate its timeline for decarbonization (Office of City Councilor Michelle Wu, 2020; Office of Councilor Kenzie Bok, 2020). The Boston FutureCorps can not only lead to green jobs for graduates that are part of this decarbonization, but can also supply the City of Boston with a long-term workforce of corps members whose projects are serving its climate action plan (F. Mruk, pers. comm., January 25, 2021). In turn, the City’s climate action plan can both create wealth for, and receive sustained public input from, Boston’s marginalized communities. For example, Councilor Wu’s Green New Deal for Boston proposes that the corps can provide city-funded resilience and energy upgrades for affordable and public housing developments, rapidly install city-wide green infrastructure and “sponge city” districts where all stormwater is managed on-site, and create and manage new urban agriculture projects (Office of City Councilor Michelle Wu, 2020). Councilor Bok’s plan envisions corps members installing green infrastructure, assisting with retrofits of municipal buildings, planting and maintaining the urban tree canopy,

and expanding the City’s current curbside composting pilot (Office of Councilor Kenzie Bok, 2020).

In developing the Austin Conservation Corps, Daniel Culotta views the corps as an opportunity to create connections between Austin’s workforce development and climate plans in order to strengthen the argument for the corps to exist: “the closer you can align with those things the better, because it gives you something to stand on. You’re not just making up some random program that you want to do that someone’s going to make room for” (D. Culotta, pers. comm., January 4, 2021). Likewise, the Los Angeles Conservation Corps, which has existed since 1986, is in the process of aligning more closely with Los Angeles’s climate action plan as a way to secure more funding. Executive Director Wendy Butts described how she went line by line through LA’s 2020 Community Climate Action Plan to note exactly which strategies and goals the LA Conservation Corps can currently contribute to, as well as consider what new training might be beneficial to add to the corps’ curriculum (W. Butts, pers. comm., December 21, 2020). On the other hand, Culotta also cautioned that “if plans aren’t seen as important by everyone, or not prioritized by everyone, you have got to be a little careful about what you build into the bedrock”. The corps should not attach so closely to one plan that it alienates other departments’ or community organizations’ goals (D. Culotta, pers. comm., January 4, 2021).

C. Goals at the Intersection of People and the Environment

1. Target Scale

When I asked interviewees to tell me about their first impressions of a Boston FutureCorps, two of the most common questions I received, but do not have the answer to, were: How many people will be able to participate and for how long? These questions have also been a prominent theme in my discussions with Lisbeth Shepherd. Lisbeth considers these questions in terms of “centering the scale of the problem, not the initial scale of implementation.” The challenge of considering the tradeoffs between the number of people served and the quality of the program is overshadowed by “the vastness of the issues” (referring to climate, economic, and racial injustice). She views the Boston FutureCorps, and corps like it in other cities, as an opportunity for a paradigm shift in the “spirit of universality and scale in the Green New Deal” (L. Shepherd, March 10, 2021). Inspired by Lisbeth, I asked the organizations present in the March 2020 focus group meeting to consider, starting from their organizational models as they

are today, what would it take to serve 10,000 people? Their collective answer was long-term, sustainable, and reliable funding that was removed from election cycles (P. Alvarez, K. Jackson, K. Mauney-Brodek, D. Meshoulam, pers. comm., March 30, 2021). Lisbeth, likewise, warned that if the initial conception of the corps is too small, it is “destined to be someone’s pet project” and may not survive through changes in political administrations (L. Shepherd, March 10, 2021).

In practice, the initial scale of the Boston FutureCorps will not immediately be able to match the scale of Boston’s various crises. What Lisbeth urges, however, is that the program must be designed, implemented, and evaluated with an overarching pursuit of transformation and this paradigm shift. Logistical challenges, compromises, and navigating bureaucracy can be viewed as steps that, while serving marginalized communities and addressing climate change in the short-term, are also moving toward a vision for Boston’s future that is co-created through a participatory program design process. When Lisbeth and others were first starting GCF, they “knew they were part of something that is meant to be much bigger and that [they] needed to start in frontline communities” (L. Shepherd, pers. comm., November 10, 2020).

2. *Spatial Considerations of Justice*

One strategy to ensure the City supports workers and communities of color is to make explicit the inherently spatial impacts of the corps. Lisbeth Shepherd advised that the Boston FutureCorps should focus both on priority people and priority places in order to bring about systemic changes related to climate, economic, and racial justice. In addition to the kind of work the corps completes, the location of this work also matters. The selection of priority sites – for expanding and maintaining green infrastructure and the urban tree canopy, for retrofitting and weatherizing homes and buildings, for constructing new net zero carbon buildings, and for installing renewable energy – is a matter of justice (L. Shepherd, pers. comm., March 10, 2021). The location of these sites is a matter of distributive justice: What communities will experience the benefits of the corps’ work? Will corps members be able to perform work that contributes to their own neighborhoods? The process of selecting the sites is a matter of procedural justice, alongside the need for a participatory program design process: Who decides what factors or data will be used to select the location of the corps’ work? Who is involved in making the final decisions for the corps’ work sites?

American Forests addresses these questions through their Tree Equity initiative, working against the present-day effects of redlining, which led to low-income, disinvested neighborhoods

having low tree cover. Their initiative works to not only plant and maintain trees in these neighborhoods, but also ensures that community members are part of the decision-making process and trained and hired as tree care workers (American Forests, 2021a). Speak for the Trees Boston started a Tree Equity mapping process, which involved training community members to inventory their local trees, creating maps that compare tree cover to climate and socioeconomic factors, and conducting public education campaigns to teach people about the benefits of the urban canopy (D. Meshoulam, pers. comm., November 4, 2020). Boston's process for creating the City's Urban Forest Plan is also centering environmental justice and equity with the direction of a social equity and anti-racism consultant, which is a strategy that can translate to the City's process for spatial prioritization of work in other green sectors (Boston Parks and Recreation, 2021).

CSNDC and X-Cel Conservation Corps are also addressing these questions as they further develop their respective programs. CSNDC's report on green infrastructure and workforce development, for example, aims to answer the question of how green infrastructure can create equitable economic opportunity and environmental benefits particularly for the Codman Square neighborhood, with a focus on young people and men of color. In the development of their program, they plan to consider which local women-owned and minority-owned businesses could engage in green infrastructure work, the needs and aspirations of unemployed and underemployed community members, and potential sites for green infrastructure in and around the neighborhood (Pond, Queeley, and Lutz, 2020). X-Cel Conservation Corps, which has already been operating for three years, is now looking to undertake more training projects within corps members' own neighborhoods, rather than traveling outside of the city to do water quality and conservation projects (D. Sands, pers. comm., November 17, 2020). In the development of the Boston FutureCorps, the program design process can work with groups such as Speak for the Trees Boston, CSNDC, and X-Cel Education who have expertise in these spatial justice questions, as well as environmental justice organizations, such as ACE, and the population of community members who have place-specific lived experience of where different types of work would most benefit their community.

3. Grounding the Corps' Goals in Racial Justice

One goal that should be built into the bedrock of the corps is racial justice. In City Councilor Michelle Wu's plan for a Boston Green New Deal, she envisions an Urban Climate

Corps as completing “climate-related mitigation and resilience work that also closes employment inequities across neighborhoods and racial lines.” She frames the entire plan as a way to spur “radical rethinking of our systems” and that the “triple force of this brutal pandemic, the threat of climate change, and public activism over 400 years of systemic oppression, brings renewed urgency” (Office of City Councilor Michelle Wu, 2020). In City Councilor Bok’s proposal for a Boston Conservation Corps, she references the corps as consistent with Mayor, then City Councilor, Kim Janey’s “Black and Brown Agenda for Boston.” This agenda calls for policies such as a 10% reduction and reallocation of the Boston Police Department’s budget, \$300 million for affordable and mixed-income housing, a small business relief fund for Black and brown-owned businesses, and a focus on equity in the new net zero carbon building standards (Janey et al., 2020).

In fact, The Corps Network (TCN) is working with their member corps across the country to expand their focus on racial justice through their Moving Forward Initiative (MFI), which was established in 2017. In the release of this initiative, TCN openly acknowledged the “racial inequities at the origin of Corps” and how the New Deal Civilian Conservation Corps was a product of Jim Crow policies. MFI expresses TCN’s commitment “to – with the guidance of experts in racial equity – help make racial equity the standard in resource management... and create a conservation work environment in which diversity is celebrated” (The Corps Network, 2017). In my interview with Capri St Vil, TCN’s Director of Equity, Diversity and Inclusion, she explained that MFI is an overarching theoretical framework for corps program design with a focus on supporting corps to explicitly serve communities of color and simultaneously work with employers to improve their racial equity practices. She also noted that she considers a corps’ ability to connect graduates with careers that offer upward movement a matter of racial justice (C. St. Vil, pers. comm., December 8, 2020).

Multiple interviewees who are already focused on racial justice in green job sectors, such as Browning the Green Space and the Emerald Cities Collaborative (which were discussed in Chapter 2), agreed that a Boston FutureCorps could align with their goals. Browning the Greenspace, which is a relatively new organization, wants “to be a name that people know to bring in” when discussing how to implement programs at the intersection of racial justice and green jobs, and sees the Boston FutureCorps as an opportunity to contribute their knowledge (K. Bow, pers. comm., February 8, 2021). Daryl Wright from the Emerald Cities Collaborative,

which works mainly in the built environment sector, supports the idea of the Boston FutureCorps and emphasized that diversifying the building trades workforce is a “must do proposition”; he noted that if the City is going to achieve its climate goals, it must employ more women and people of color because there “aren’t enough white males to go around” (D. Wright, pers. comm., December 2, 2020). However, Ben Silverman, who leads the BERDO policy development for the City of Boston, explained that, while the City agrees that they need to ensure that new green building initiatives support workers and communities of color, they “don’t know exactly how [they] are going to do it” (B. Silverman, pers. comm., January 5, 2021).

With this list of purposes for the Boston FutureCorps and a working definition of the green jobs that it would lead to, I will discuss interviewee’s perceptions of how the corps relates to the Green New Deal.

III. Should We Say “Green New Deal”?

This thesis was originally inspired by, and is grounded in, the spirit and principles of the GND. City Councilor Wu’s proposal for a Boston Urban Climate Corps is embedded within her plan for a Boston Green New Deal. City Councilor Bok also referenced Councilor Wu’s plan in her proposal for a Boston Conservation Corps. Programs and policies that aim to fully integrate climate, economic, and racial justice are exactly what the GND calls for. Does this need to be represented in the name or outreach for the Boston FutureCorps? Most interviewees expressed doubt – the saying “Green New Deal” would more likely hurt the acceptance of the corps rather than bolster its messaging. My own experience supports this sentiment. While conducting outreach for interviews, I received many more responses after I removed “Green New Deal” from my emails.

First, many people noted that the term carries polarizing political implications. Josh Kriesberg, a Workforce Development Project Manager at the Massachusetts Clean Energy Center, while personally supportive of the Green New Deal, said that MassCEC does not use the term internally. He described it as a “political football” and that people should not “just be saying ‘we need a Green New Deal’ without understanding the repercussions.” He is wary that politicians will latch on to the phrase for a campaign and then deprioritize it during their administration (J. Kriesberg, pers. comm., January 18, 2021). Daryl Wright explained that the Emerald Cities Collaborative does support and talk about the GND internally and with youth partners, but agreed that the politics around the GND are “too deep” and that there must be other

ways to communicate the same thing without saying “Green New Deal” because the language has been “hijacked” (D. Wright, pers. comm., December 2, 2020). IBEW, on the other hand, has externally endorsed the federal GND legislation. However, Chris Sherlock explained that there is a divide within the union: “one group loves it because they know it’s the future, but there is also a group that loves coal and nuclear” (C. Sherlock, pers. comm., December 11, 2020).

Second, several interviewees expressed the view that the Green New Deal is just a new, potentially confusing, term for issues and solutions that they have already been working on for many years. When I asked Chief Chris Cook if he uses the term Green New Deal in any of his work, he responded:

It’s all, you know, it’s all the same... The Green New Deal has a connotation with it that is all very tied to Markey and Ocasio-Cortez and the actual legislation they proposed. So as you start to talk about that language as it applies to Boston – it’s the same language that’s been used for workforce development and the same language that’s been used for environmental nonprofits for years. So whether it’s advantageous or not advantageous to use it... You know it’s green. It’s new. As far as a deal, I don’t know. It’s still just the work (C. Cook, pers. comm., December 17, 2020).

The term may also not resonate with potential corps members. Julia Hillengas noted that PowerCorpsPHL has not discussed the GND internally or externally because “locally, it just doesn’t mean much to people yet” (J. Hillengas, pers. comm., December 10, 2020).

Overall, there was a general tension between people’s support for what the GND stands for and a hesitance to attach themselves or their work to those words. However, one point of counterevidence to this reluctance is Senator Ed Markey’s 2020 re-election campaign. In August 2019, Markey was trailing his primary opponent, Joe Kennedy by 17 points. With his renewed endorsement of a GND and the force of thousands of youth activists in the Sunrise Movement, Markey won the primary election by 11 points and the general election by 33 points. Michelle Goldberg, in a New York Times Op-Ed, posited “In boosting Markey, Sunrise sent a message to Democrats, especially those in blue states. You don’t need an impeccable record — if you champion the Green New Deal, the movement will have your back. And that support can be priceless” (Goldberg, 2020). Likewise, City Councilor Michelle Wu is endorsed by the Sunrise Movement in her campaign for the 2021 Boston mayoral election, with a platform that heavily centers her Boston Green New Deal proposal. With the new federal administration, it’s possible

that the political connotations of the GND may shift both nationally and within the City of Boston. This could occur through public education and outreach campaigns such as those discussed in Chapter 3 aimed at building support for the Boston FutureCorps. The degree to which the Boston FutureCorps uses the term Green New Deal in its messaging should be decided during participatory program design. In the next chapter, I will discuss how, regardless of whether GND terminology is included, the values that undergird the GND should fundamentally guide this process. A values-based design and implementation process for the Boston FutureCorps will provide meaningful and cross-cutting standards by which to evaluate the corps' explicit and implicit impacts on the pursuit of climate, economic, and racial justice.

Chapter 6. Conclusion: Values-Based Program Design – Having the Courage to See

As I described in Chapter 1, in her vision of a post-Green New Deal future, Representative Alexandria Ocasio-Cortez tells us that the first step is to imagine that future, that “we can be whatever we have the courage to see” (The Intercept, 2019). The first step, however, is to consider what values should scaffold this vision of the future. That vision can then serve as a guidepost, a standard by which to consider decisions and progress. Rather than using siloed environmental, economic, and social indicators, focused primarily on what is possible in the short term, a values-based corps requires values-based indicators. Values-based program design can ensure that aspects of the corps are considered both with intersectionality and with this long-term vision in mind. In this chapter, I will first lay out the values that I think should ground and guide the development of the Boston FutureCorps. I will then recommend a series of values-based indicators that decision-makers should consider as the Boston FutureCorps is designed, implemented, and evaluated.

I. Values Rooted in Justice

In his book, *Justice: What is the Right Thing to Do?*, Michael Sandel, a political philosopher at Harvard University, “observes that a just society distributes goods such as income and wealth, duties and rights, powers and opportunities, and offices and honours, ‘in the right way; it gives each person his or her due’” (Sandel, 2009 qtd. in Murphy, 2011). What or how something is due can be considered through different conceptions of justice. For example, distributive justice is “concerned with the fair distribution of the burdens and benefits of social cooperation among diverse persons with competing needs and claims” (Kaufman, 2012). Procedural justice, on the other hand, is concerned with the process by which the outcome is created and how that process is perceived by participants (Tompkins and Applequist, 2008). Finally, reparative justice “embodies a corrective aim of returning communities to a state of well-being through various forms of compensation and the creation of new capabilities for individuals and communities so they are able to effectively meet their needs and exert their rights” (Schlegel, 2020). These conceptions of justice provide a framework to consider the interrelated values of climate justice, economic justice, and racial justice that should guide the Boston FutureCorps. To borrow a phrase from the Climate Justice Alliance: “Transition is inevitable. Justice is not” (Climate Justice Alliance, n.d.).

A. *Climate Justice*

The climate justice movement is an expansion and reframing of the environmental justice movement. In a review of environmental justice and climate justice discourse, Schlosberg and Collins (2014), note that the birth of the environmental justice movement is often traced to protests in 1982 in opposition to the disposal of polluted soil at a landfill in a low-income, majority Black neighborhood in North Carolina. These protests led to a series of large-scale, formal studies on the relationships between race, poverty, and environmental hazards. Broadly, the movement shifted the conception of the environment “away from wilderness, or nature detached from everyday life” and toward any place where “people live, work, and play” (Scholsberg and Collins, 2014). In 1991, the movement was furthered by a group of Black, Asian, Hispanic, and Indigenous activists who gathered for the First National People of Color Environmental Leadership Summit, where they produced “The Principles of Environmental Justice”. These principles include, non-exhaustively, the right of all species to be free from ecological destruction, public policy based in mutual respect for all people, the right to clean air, land, food and water, the right to self-determination and equal participation at every level of decision-making, and the right of victims of environmental injustice to reparations and compensation (Climate Justice Alliance, n.d.).

Climate justice embodies and centers these principles and recognizes that “the environment and the climate system are not simply symptoms of existing injustice, but instead the necessary conditions for the achievement of social justice” (Scholsberg and Collins, 2014). The Bali Principles of Climate Justice, formulated by a coalition of international organizations in 2002, built on the 1991 environmental justice principles as a framework, adding a focus on fossil fuels and disproportionate contributions to and effects of climate change (Bali Principles of Climate Justice, 2002). The NAACP Environmental and Climate Justice program articulated the relationship between these movements: “Climate change and environmental injustice are about sisters and brothers from West Virginia to Tennessee who are breathing toxic ash from blasting for mountaintop removal. Environmental injustice and climate change are about the fact that in many communities it is far easier to find a bag of Cheetos than a carton of strawberries and this only stands to get worse as drought and flooding impact the availability and affordability of nutritious food” (NAACP, n.d.). Bluntly, climate justice is about valuing survival and thriving: How are the ability and resources to survive and thrive are produced and distributed? Who

designs and participates in the processes by which survival and thriving is achieved? Will those processes leave us with a world that has repaired the cumulative harms that led to the need for a climate justice movement in the first place?

The broad value of climate justice rests on a number of, perhaps more tangible, pillars that can more directly guide the Boston FutureCorps, some of which I will describe here. First, climate justice is a matter of public health. Valuing public health requires considering the disproportionate effects of climate change on access to clean air, water, and nutrition, as well as climate-related hazards such as extreme heat and storms. In his community engagement process, Saba Ijadi from the Fairmount Indigo CDC Collaborative found that participants were most interested in addressing climate change from a public health perspective. Ijadi advised that “it really does help to start from a health perspective because a lot of the issues people have with health are directly impacted by climate change and could also be addressed through climate change policies and programs” (S. Ijadi, pers. comm., December 3, 2020). Second, climate justice requires valuing equitable access to and control of resources, such as energy and infrastructure. This includes considering distributional justice (the quality and type of energy, homes, buildings, and other utilities that people have access to), procedural justice (the process for making decisions regarding how these resources are created, distributed, and maintained), and reparative justice (how these resources help address the harm that past and present resource extraction have on marginalized communities). Third, beyond the goal of eliminating GHG emissions, climate justice involves equitably distributing the burden of that effort and the accountability for past emissions. A climate policy or program that centers the burden on individuals, particularly those most harmed by climate change, to reduce emissions rather than centering the responsibility of larger institutions and systems, is not just.

B. Economic Justice

Economic justice refers to the ability of both individuals and communities to equitably contribute to and benefit from the economy, including how people earn a living, enter into contracts, and exchange resources (Center for Economic & Social Justice, n.d.). Economic, environmental, and climate justice converge in the movement for a Just Transition: “a vision-led, unifying and place-based set of principles, processes, and practices that build economic and political power to shift from an extractive economy to a regenerative economy” (Climate Justice Alliance, n.d.). The movement for a Just Transition frames economic justice through this shift

from extraction to regeneration: shifting economic control to communities, democratizing wealth and workplaces, advancing ecological restoration, centering racial justice and social equity, and relocalizing production and consumption, and retaining and restoring Indigenous cultures and traditions (Movement Generation, n.d.). The Just Transition Principles, adapted from The 1991 Principles for Environmental Justice and the Jemez Principles for Democratic Organizing provides a set of guiding values for achieving economic justice, some of which I will describe here:

1. *Buen Vivir:*

The Climate Justice Alliance defines Buen Vivir as “[living] well without living better at the expense of others” and that “the rights of peoples, communities, and nature must supersede the rights of the individual” (Climate Justice Alliance, n.d.). Gudynas (2011) explains that “the richness of the term is difficult to translate into English. It includes the classical ideas of quality of life, but with the specific idea that well-being is only possible within a community”, with community defined as also including the natural environment (p. 441). An economy that realizes Buen Vivir prioritizes community, rather than individual, wealth creation and, likewise, work that serves community well-being.

2. *Meaningful Work:*

A regenerative economy creates opportunities for work that is “life-affirming” and that allow people to “learn, grow, and develop their full capacities and interests” (Climate Justice Alliance, n.d.). Similarly, the Center for Economic and Social Justice defines the purpose of economic justice as “to free the person to engage creatively in the unlimited work beyond economics, that of the mind and the spirit” (Center for Economic & Social Justice, n.d.). As discussed in Chapter 4, a green job, by definition, is one that provides meaningful work.

3. *Self-Determination:*

This is a feature of procedural justice: “communities must have the power to shape their economies, as producers, as consumers, and in our relationships with each other” (Climate Justice Alliance, n.d.). Weezy Waldstein from Action for Equity also emphasized that self-determination, in the form of neighborhood control, must ensure that wealth creation in one neighborhood is not dependent on jobs entirely in a different neighborhood (W. Waldstein, pers. comm., January 12, 2021).

4. *Equitable Redistribution of Resources and Power:*

This involves working against and transforming “current and historic social inequities based on race, class, gender, immigrant status and other forms of oppression”

(Climate Justice Alliance, n.d.). This requires actively identifying and rejecting solutions that further the extractive economy, including those that do not provide a living wage and adequate effort in addressing barriers to employment.

5. *Regenerative Ecological Economics:*

Economic justice is not possible at the expense of the environment and must “undermine extractive economies... that erode the ecological basis of our collective well-being” (Climate Justice Alliance, n.d.). This includes, for example, localizing and democratizing production and consumption of food systems and clean energy.

It is also important to note that the term “workforce development,” while useful as a generally understood and communicable term, is at odds with economic justice. It frames people as simply an exploitable labor supply, that some people exist as a “force” to create capital for others. An economically just Boston FutureCorps, that follows the above principles, has the opportunity to create a platform for people to do more than just train for a job that they need in order to survive, to be more than just a jobs program.

C. *Racial Justice*

Racial justice is inherent to true climate and economic justice. To repeat a quote used in Chapter 1 regarding the pervasiveness of white supremacy in attempted social reforms, “The predicament of social reform, as one writer pointed out, is that ‘everything must change all at once.’ Otherwise, change is swallowed up by the remaining elements, so that we remain roughly as we were before. Culture replicates itself forever and ineluctably” (Delgado and Stefancic, 2017, p. 91). A Boston FutureCorps with a core value of racial justice must do more than employ participants of color and complete projects in neighborhoods of color. As Delgado and Stefancic (2017) also assert, “only aggressive, color-conscious efforts to change the way things are will do much to ameliorate misery” (p.27).

The Boston FutureCorps can work to explicitly name and contribute to repairing past and current racial harms. It can connect the dots between these harms, climate change, and economic inequity. Communities of color in Boston are more likely to have higher rates of unemployment, lower incomes, lower tree cover and more impervious surfaces, and are more likely to suffer the health effects of air pollution (Boston Women’s Workforce Council, 2020; Greenberg, 2020; Kincade, 2021; Speak for the Trees Boston, n.d.). Addressing these disparities requires

acknowledging their roots in, and providing reparations for, the systemic plunder and oppression of these communities.

II. Values-Based Indicators

The decision-makers tasked with the actual design and implementation of the Boston FutureCorps will likely not share all of the values embedded in the broad umbrellas of climate, economic and racial justice described above. However, those they do share, coupled with a participatory process for compromise and conflict resolution, will inform how these values are shaped into an actual program. In Appendix C, I recommend a list of values-based indicators in the form of goals, challenges, and guiding questions for these decision-makers to consider in the program design process. These indicators thoroughly cover a wide range of particular facets of program design and implementation, all of which necessary for decision-makers to consider. The specificity of these indicators will also support decision-makers in critically and rigorously assessing the impacts of different potential structures of the corps. These indicators can be used alongside the ecosystem maps in Chapters 2 and 3 to explore which groups will be affected by, and should be included in, different decisions. I have grouped these indicators into 10 sections:

1. *Planning Process*: These indicators focus on the procedural justice of the program design process for creating the Boston FutureCorps. This includes examining the roles of and power structures among stakeholders, the quality of public participation, and the process of goal setting in order to create non-duplicative programs with respect to existing organizations and initiatives.
2. *Compensation and Funding*: These indicators consider the programmatic, as well as economic and racial justice, implications of different funding sources and decisions regarding corps member compensation, including both the structure and amount and duration of compensation.
3. *Target Participants and Outreach*: These indicators concentrate on both what population the Boston FutureCorps is targeting as well as the outreach process used to recruit this population. The values guiding the corps will affect the choice of target population, where participants are recruited, how the corps is branded and communicated, and how the City will be held accountable for the economic and racial make-up of the corps members.

4. *Addressing Barriers to Employment*: These indicators focus not only on how values will guide what services and resources are offered, to ensure corps members are fully able to participate and equitably supported, but also how they are administered and coordinated.
5. *Individual Agency: Entry and Exit Points*: These indicators consider the paths by which corps members can join the Boston FutureCorps, based on outreach methods and barriers to entry, and graduate, based on the training curriculum, from the corps. They also focus on the corps' ability to provide an environment of self-determination and ability of corps members to procure meaningful employment.
6. *Education and Training*: These indicators focus on the implications of how the corps incorporates both training, secondary education, and post-secondary education into its structure.
7. *Job Guarantees and Career Pathways*: These indicators provide a framework for determining the corps' partnerships with employers, as well as its ability to guarantee long-term, good, green jobs. These indicators also relate to the corps' relationship to Boston's building trades unions, as well as how the corps supports workers' overall agency and bargaining power.
8. *Project Selection*: These indicators can guide the decision-making process for determining the work to be completed by corps members. Beyond the choice of what sector(s) the corps will include, these indicators focus on the implications of specific project selection for distributional and reparative justice.
9. *Governance and Long-term Public Input*: These indicators expand those used for the program design process to consider the ongoing coordination and decision-making processes that will guide the procedural justice of the corps' long-term development.
10. *Scale and Impact*: Finally, these indicators challenge decision-makers to view the corps' program design within broader visions for the future of the City of Boston.

III. *Closing Comments and Future Research*

Peter Marcuse, a leading scholar and practitioner of progressive planning, has defined Critical Planning as an approach that “looks to the roots of problems as well as their symptoms and pursues a vision of something beyond the pragmatic and beyond what is immediately doable today” (Marcuse, 2007). This approach calls for planners to “Expose, Propose, and Politicize”: To *expose* is to explore the roots of a problem and to clearly “communicate this analysis to those

who need it and can use it.” To *propose* is to work “with those affected to come up with actual proposals, programs, targets, strategies.” To *politicize* is to clarify the political implications of what was exposed and proposed, with an attention to organizational strategy and day-to-day politics (Marcuse, 2009, p. 194).

This thesis first exposed the underlying and converging crises of climate change, economic inequity, and structural racism as the forces driving the need for a Green New Deal and the Boston FutureCorps. However, this analysis is contextualized by the complex history of Green New Deal and green jobs discourse, as well as the ethical failures and intentional racist exclusion of the New Deal’s Civilian Conservation Corps. Specific to the City of Boston, this thesis also exposed the intricacies of the existing ecosystem of stakeholders, policies, programs and career pathways that make up the city’s green workforce development infrastructure. These ecosystem maps expose not only existing relationships, but also highlight potential partnerships, redundancies, gaps, and tensions. Further, these maps were produced primarily through an intensive interview process, and therefore represent not only formal or objective relationships, but also a network based on individual stakeholders’ interpretations of these ecosystems. As Marcuse specifies, exposure also includes communicating this analysis. In this case, the ecosystem maps themselves have already been requested by and distributed to multiple stakeholders and are serving as visual tools for both their individual organizational goals and for the broader purpose of designing the Boston FutureCorps.

I worked with stakeholders, both through interviews and less formal conversations, to propose potential definitions for green jobs, purposes of the corps, grounding values, and a series of values-based indicators to be used during the program design process. My proposals are in the form of values, challenges, and guiding questions due to my position as an external researcher.

Marcuse (2009) notes that the most “desirable future” cannot be

...spelled out, defined, now, in advance, except in the most broad principles. Only in the experience of getting there, in the democratic decisions that accompany the process, can a better future be formed. It is not for lack of imagination or inadequate attention or failing thought that no more concrete picture is presented, but left to the democratic experience of those in fact implementing the vision (p. 194).

Thus, Boston City Council and the groups selected to facilitate a democratic, participatory program design process will continue this work of Marcuse's proposal stage of Critical Planning, with my research as a guide.

Marcuse (2007) posits that the politicization of a plan makes “clear that it is not the logic of plans, but the organizing and political action behind them that will produce results.” This proposal for the Boston FutureCorps is embedded in local, state, and federal policy environments that are actively evolving and will substantially affect the corps' structure and implementation. Within the City of Boston, the budgeting process for fiscal year 2022 is currently underway, which will affect the potential for direct funding for the Boston FutureCorps and funding for initiatives that will influence the projects that corps members will be able to complete. The budgeting process can also affect the types of green jobs that will be created. The Boston Mayor elected in the fall of 2021 will determine the administration that will be tasked with overseeing this program's implementation and will be the target of political organizing efforts aiming to influence the corps' implementation. As of April 2021, City Councilor Michelle Wu is the only candidate with a corps in her platform. At the state level, the Boston FutureCorps' implementation will be affected by the implementation of the recently passed climate act. Federally, as discussed in Chapter 1, Biden's plans for a Civilian Climate Corps, along with the supporting legislation and policy proposals, indicate a national movement that recognizes the potential power and impact of corps. Factions of the movement may have different motivations: nostalgia for the New Deal's Civilian Conservation Corps, creating a workforce to support rapid, large-scale infrastructure repair and construction, and creating an equitable and just economy and livable climate. However, plans for a Civilian Climate Corps remain in Marcuse's “proposal” phase, with a focus on radical policy visions and overarching values. The politicization of these federal proposals will unfold in the coming months, which will affect the Boston FutureCorps' political process through both potential funding opportunities and evolving public and political discourse around corps.

This political environment is, importantly, distinct from the environment that surrounded the green jobs movement during and following the Great Recession, which was characterized by “boom and bust” implementation and short-term investments (L. Shepherd, pers. comm., April 17, 2021). Although there are similar promises of large-scale investment, the current movement is inherently tied to the larger movement for a Green New Deal and a framework for long-term

change. Whether or not the Green New Deal is explicitly named in Civilian Climate Corps or Boston FutureCorps policy, these programs have the potential to harness the momentum and values of this movement and to implement policy that reimagines and transforms the nature of labor to serve a tool for climate, economic, and racial justice.

In addition to the translation of my work into the City of Boston's political sphere, my research will also move forward as a larger academic endeavor through a partnership between MIT's Department of Urban Studies and Department of Architecture. Through a multi-year practicum course, tentatively titled "Climate Corps: The Intersection of Transformational Urban Policy and Green Infrastructure", students will collaborate with local organizations in Boston to prototype frameworks and policies for city-level climate corps. This thesis will inform the development of these courses' curricula, contributing to policy development beyond a Boston FutureCorps. This future research will continue to support a Boston FutureCorps, but will also situate it within a larger movement for the climate corps to be a new institution that can be adapted to meet unique the needs and use the existing green workforce development ecosystems of cities, as part of a generational effort for a Green New Deal.

Works Cited

- An act creating a next-generation roadmap for Massachusetts climate policy, S.9, 192nd General Court (2021).
- Action for Boston Community Development. (n.d.a). GATE. Retrieved March 1, 2021, from <https://bostonabcd.org/service/gate/>.
- Action for Boston Community Development. (n.d.b). University High School. Retrieved March 1, 2021, from <https://bostonabcd.org/service/university-high-school-2/>.
- Action for Equity. (2020, May 27). Why we need the Community Stabilization Jobs Act. *Action for Equity*.
https://www.action4equity.org/uploads/1/2/6/3/126323714/community_stabilization-chuck_turner_jobs_act_summary_5.27.20.pdf.
- Adragna, A. (2021, April 20). Progressives formally reintroduce the Green New Deal. *POLITICO*. <https://www.politico.com/news/2021/04/20/green-new-deal-congress-483485>.
- American Forests. (2021a). Tree equity in America's cities. Retrieved March 15, 2021, from <https://www.americanforests.org/our-work/urban-forestry/>.
- American Forests. (2021b, February 19). Career pathways initiative: diversity, equity and inclusion through trees and forests. Retrieved March 15, 2021, from <https://www.americanforests.org/our-work/urban-forestry/workforce-development/>.
- AmeriCorps. (2015). Introduction to AmeriCorps State and National. Retrieved April 15, 2021, from https://www.nationalservice.gov/sites/default/files/documents/Intro_to_AmeriCorps_State_and_National_2015.pdf.
- AmeriCorps. (n.d.). Introduction to AmeriCorps. Retrieved April 15, 2021, from https://www.nationalservice.gov/sites/default/files/documents/Intro%20to%20AmeriCorps%20Members%20Final_tagged.pdf.
- Anguelovski, I. et al. (2019). New scholarly pathways on green gentrification: What does the urban ‘green turn’ mean and where is it going? *Progress in Human Geography*, 43(6), 1064–1086. <https://doi.org/10.1177/0309132518803799>.
- Asian American Civic Association. (n.d.). Building Energy Efficient Maintenance Skills (BEEMS) program. Retrieved March 15, 2021, from <https://aaca-boston.org/maintenance/>.
- Arnoff, K., Battistoni, A., Aldana, D.C., Reiofrancos, T. (2019) *A Planet to Win: Why We Need a Green New Deal*. Verso.
- Aşici, A. A., & Bünül, Z. (2012). Green New Deal: A green way out of the crisis? *Environmental Policy & Governance*, 22(5), 295–306. <https://doi.org/10.1002/eet.1594>
- Bali Principles of Climate Justice. (2002, August 29).
- Battistoni, A. (2017, August 15). Living, not just surviving. *Jacobin*.
<https://jacobinmag.com/2017/08/living-not-just-surviving/>.
- Benjamin Franklin Institute of Technology. (2020, March 12). Skills grant expands BFIT engineering curriculum with state-of-the-art technology. Retrieved March 11, 2021, from <https://www.bfit.edu/ma-skills-grant/>.
- Benjamin Franklin Institute of Technology. (n.d.). Programs. Retrieved March 1, 2021, from <https://www.bfit.edu/academics/academic-programs/>.
- Berkshire Gas, Blackstone Gas Company, Cape Light Compact, Columbia Gas, Eversource,

- Liberty Utilities, ... Unitil. (2018). Massachusetts joint statewide electric and gas three-year energy efficiency plan 2019-2021. *MassSave*. <https://ma-eeac.org/wp-content/uploads/Exh.-1-Final-Plan-10-31-18-With-Appendices-no-bulk.pdf>.
- A Bill to amend the National and Community Service Act of 1990 to establish a Civilian Climate Corps to help communities respond to climate change and transition to a clean economy, and for other purposes, S.1244, 117th Cong. (2021).
- Bonacich, E. (1976). Advanced capitalism and Black/white race relations in the United States: A split labor market interpretation. *American Sociological Review*, 41(1), 34–51. <https://doi.org/10.2307/2094371>
- Boston Green Academy. (n.d.). Environmental science career and technical education pathway. Retrieved March 15, 2021, from <https://www.bostongreenacademy.org/career-pathway>.
- Boston JATC. (n.d.). About the JATC of Greater Boston. Retrieved March 1, 2021, from <https://bostonjatc.com/>.
- Boston Parks and Recreation. (2020, September 28). City of Boston seeks partner to design first urban forest plan. *Boston.gov*. <https://www.boston.gov/news/city-boston-seeks-partner-design-first-urban-forest-plan>.
- Boston Parks and Recreation. (2021, February 12). Firms selected to develop Boston's first urban forest plan. *Boston.gov*. <https://www.boston.gov/news/firms-selected-develop-bostons-first-urban-forest-plan>.
- Boston Planning and Development Agency. (n.d.). Zero net carbon building zoning initiative. Retrieved March 15, 2021, from <http://www.bostonplans.org/planning/planning-initiatives/zero-net-carbon-building-zoning-initiative#overview>.
- Boston Private Industry Council. (n.d.). Postsecondary. Retrieved March 15, 2021, from <https://www.bostonpic.org/programs-initiatives/postsecondary>.
- Boston University, Green Ribbon Commission, & City of Boston. (2020). (rep.). Carbon free Boston summary report 2019. https://www.boston.gov/sites/default/files/file/2020/08/CFB_SummaryRpt_FEB19_0.pdf
- Boston Women's Workforce Council. (2020). Eliminating the gender/racial wage gap: Interventions that work. <https://www.boston.gov/sites/default/files/file/2020/12/BWWC%202020%20Interventions%20Report.pdf>.
- Brecher, J., Blackwell, R., & Uehlein, J. (2014). If not now, when? a labor movement plan to address climate change. *New Labor Forum*. <https://doi.org/10.1177/1095796014541793>
- Broder, J. M. (2010, March 25). 'Cap and trade' loses its standing as energy policy of choice. *The New York Times*. <https://www.nytimes.com/2010/03/26/science/earth/26climate.html>.
- Browning the Green Space. Browning the Greenspace. (n.d.). Retrieved April 1, 2021, from <http://browningthegreenspace.org/>.
- Budryk, Z. (2021, April 19). Sanders, Ocasio-Cortez introduce 'Green New Deal for Public Housing'. *The Hill*. <https://thehill.com/policy/energy-environment/548982-sanders-ocasio-cortez-introduce-green-new-deal-for-public-housing>.
- Building Pathways. (n.d.). Programs. Retrieved March 15, 2021, from <https://buildingpathwaysboston.org/programs/>.
- UN Environment Programme. (2020, December 16). Building sector emissions hit record high,

- but low-carbon pandemic recovery can help transform sector – UN report.
<https://www.unep.org/news-and-stories/press-release/building-sector-emissions-hit-record-high-low-carbon-pandemic>.
- Built Environment Plus. (2021). The road to net zero. Retrieved March 25, 2021, from <https://builtenvironmentplus.org/road-to-net-zero/>.
- Care That Works. (n.d.). Retrieved March 25, 2021, from <https://carethatworks.org/>.
- Carmichael, B. (2012, August 23). Landmark clean water settlement promises cleaner, greener future for Boston. *Conservation Law Foundation*.
<https://www.clf.org/newsroom/landmark-clean-water-settlement-promises-cleaner-greener-future-for-boston/>.
- Center for Economic & Social Justice. (n.d.). Defining Economic Justice and Social Justice: Center for Economic & Social Justice. Retrieved April 15, 2021, from <https://www.cesj.org/learn/definitions/defining-economic-justice-and-social-justice/>.
- City of Boston. (2007). Climate: change - The City of Boston's climate action plan.
<https://www.cityofboston.gov/climate/pdfs/CAPJan08.pdf>.
- City of Boston. (2016a, July 17). Building Energy Reporting and Disclosure Ordinance. *Boston.gov*. <https://www.boston.gov/departments/environment/building-energy-reporting-and-disclosure-ordinance>.
- City of Boston. (2016b, July 5). Boston Residents Jobs Policy on construction projects. *Boston.gov*. <https://www.boston.gov/departments/economic-development/boston-residents-jobs-policy-construction-projects>.
- City of Boston. (2019). (rep.). City of Boston climate action plan 2019 update.
https://www.boston.gov/sites/default/files/embed/file/2019-10/city_of_boston_2019_climate_action_plan_update_4.pdf.
- City of Boston. (2020, May 11). Developing carbon targets for existing large buildings. *Boston.gov*. <https://www.boston.gov/departments/environment/developing-carbon-targets-existing-large-buildings>.
- City of New York. (2021, January 28). State of the city 2021: Mayor de Blasio announces a recovery for all of us. <https://www1.nyc.gov/office-of-the-mayor/news/062-21/state-the-city-2021-mayor-de-blasio-recovery-all-us#:~:text=The%20City%20Cleanup%20Corps%20will,organizations%20to%20clean%20their%20neighborhoods>.
- Climate Justice Alliance. (n.d.). The principles of environmental justice. Retrieved April 1, 2021, from <https://climatejusticealliance.org/ej-principles/>.
- Cohen S. and DeLong J.B. (2016) *Concrete economics: The Hamilton approach to economic growth and policy*. Harvard Business Review Press.
- Coleman, A.R. (2019, March 14) How Black lives matter to the Green New Deal. *The Nation*. <https://www.thenation.com/article/archive/reparations-green-new-deal-aoc/>.
- Collins, C., Asante-Muhammad, D., Hoxie, J., Terry, S. (2019) Dreams Deferred: How Enriching the 1% Widens the Racial Wealth Divide. *Institute for Policy Studies*. https://ips-dc.org/wp-content/uploads/2019/01/IPS_RWD-Report_FINAL-1.15.19.pdf.
- Community Labor United. (2018). Care That Works. Retrieved March 25, 2021, from <http://massclu.org/wp-content/uploads/2018/06/clu-pg1-4.pdf>.
- The Corps Network. (2017). Moving forward initiative. Retrieved April 1, 2021, from <https://corpsnetwork.org/wp-content/uploads/2017/11/MFI-One-Pager-2017.pdf>.
- The Corps Network. (2020). Our impact. Retrieved March 15, 2021, from

- https://corpsnetwork.org/wp-content/uploads/2020/02/Our-Impact-FY19_FINAL.pdf.
- Delgado, R., & Stefancic, J. (2017). *Critical race theory (third edition) - an introduction*. New York University Press.
- Dig Cooperative Inc. (n.d.). East Oakland Boxing Association. Retrieved April 1, 2021, from <https://www.dig.coop/east-oakland-boxing-association.html>.
- Dolan, T., Ellison, B., Hendricks, B., & Ricketts, S. (2021). Building the Civilian Climate Corps. *Evergreen Action*. https://www.evergreenaction.com/policy-hub/Evergreen_ClimateCorps.pdf?source=ema_2021-04-15_ccc_&email=teddyeschneider@gmail.com&zip=02143.
- Ella Baker Center Green-Collar Jobs Campaign. (2010). Making green work: best practices in green-collar job training. <https://www.ellabakercenter.org/sites/default/files/downloads/making-green-work.pdf>.
- Emerald Cities Collaborative. (n.d.). Boston. Emerald Cities Collaborative. Retrieved March, 25, 2021, from <https://emeraldcities.org/cities/boston>.
- Exec. Order No. 14008, 86 Fed. Reg. 7619 (February 1, 2021).
- FACT SHEET: The American Jobs Plan. (2021, March 31). *The White House*. <https://www.whitehouse.gov/briefing-room/statements-releases/2021/03/31/fact-sheet-the-american-jobs-plan/>.
- Falxa-Raymond, N., Svendsen, E., & Campbell, L. K. (2013). From job training to green jobs: A case study of a young adult employment program centered on environmental restoration in New York City, USA. *Urban Forestry & Urban Greening*, 12(3), 287–295. <https://doi.org/10.1016/j.ufug.2013.04.003>.
- Flynn, A. and Holmberg, S. (2019, February 26). The Green New Deal’s supporters should take a crucial lesson from FDR’s original New Deal. *Time*. <https://time.com/5538022/green-new-deal-warning/>.
- The Full Employment and Balanced Growth Act of 1977, H.R.50, 95th Cong. (1977).
- Friedman, T. (2007). A Warning from the garden. *New York Times*. <https://www.nytimes.com/2007/01/19/opinion/19friedman.html>.
- Gerhold, H. D. (2007). Origins of urban forestry. *Urban and Community Forestry in the Northeast*, 103(7), 369–370. https://doi.org/10.1007/978-1-4020-4289-8_1.
- Gioia, D., Corley, K., and Hamilton, A. Seeking qualitative rigor in inductive research: Notes on the Gioia methodology. *Organizational Research Methods*, 16(1), 15-31. <https://doi.org/10.1177/1094428112452151>.
- Goldberg, M. (2020, September 04). How the green new deal saved a senator's career. *New York Times*. <https://www.nytimes.com/2020/09/04/opinion/ed-markey-young-progressive-voters.html>.
- Greenberg, Z. (2020, June 11). Massachusetts communities with dirty air are coronavirus hotspots. *Boston Globe*. <https://www.bostonglobe.com/2020/04/29/metro/pollution-might-affect-states-covid-19-hotspots-harvard-study-shows/>.
- Green City Force. (n.d.a). Love Where You Live. Retrieved April 1, 2021, from <https://greencityforce.org/service-corps/love-where-you-live/>.
- Green City Force. (n.d.b). Service corps. Retrieved April 1, 2021, from <https://greencityforce.org/service-corps/>.
- Green City Force. (n.d.c). Social enterprise. Retrieved April 1, 2021, from <https://greencityforce.org/empower/>.
- Green Economy Network. (2021, March 18). Building an inclusive green economy for New

- York City: Network Planning Launch. <https://jobsfirstnyc.org/latest/building-an-inclusive-green-economy-for-new-york-city-network-planning-launch>.
- Green Economy Network. (n.d.) Green Economy Network Overview. Unpublished.
- Jobs for the Future. (2017). Exploring the green infrastructure workforce. *Jobs for the Future*. https://jfforg-prod-new.s3.amazonaws.com/media/documents/NatureWORKS-Issue-Brief-032317_v3.pdf.
- Green for All. (2012). High road agreements: A best practice brief by Green for All. *The Dream Corps*. https://www.thedreamcorps.org/wp-content/uploads/2019/11/High-Road-Agreements_A-Best-Practice-Brief-by-Green-For-All.pdf.
- The Green New Deal Group. (2008). A Green New Deal: Joined-up policies to solve the triple crunch of the credit crisis, climate change and high oil prices. *New Economics Foundation*. https://neweconomics.org/uploads/files/8f737ea195fe56db2f_xbm6ihwb1.pdf.
- A Green Stimulus to Rebuild Our Economy. (2020, March 31). *Medium*. https://medium.com/@green_stimulus_now/a-green-stimulus-to-rebuild-our-economy-1e7030a1d9ee.
- Gudynas, E. (2011). Buen Vivir: Today's tomorrow. *Development* 54(4), 441–447. <https://doi.org/10.1057/dev.2011.86>
- Gunn-Wright, R. and Hockett, R. (2019). The Green New Deal. *New Consensus*. https://s3.us-east-2.amazonaws.com/ncsite/new_conesnsus_gnd_14_pager.pdf.
- Hackett, R.A. and Adams, P.R. (2018) Jobs vs the environment? mainstream and alternative media coverage of pipeline controversies. *Canadian Centre for Policy Alternatives*. https://www.policyalternatives.ca/sites/default/files/uploads/publications/BC%20Office/2018/12/CCPA-BC_JobsvsEnvnt_web.pdf.
- Harvey, P. (1998). Securing the right to employment: social welfare policy and the unemployed in the United States. Princeton University Press. <https://njfac.org/index.php/philip-harvey/>.
- Horowitz, J.M., Igielnik, R., and Kochnar, R. (2020) Most Americans Say There Is Too Much Economic Inequality in the U.S., but Fewer Than Half Call It a Top Priority. *Pew Research Center*. <https://www.pewsocialtrends.org/2020/01/09/trends-in-income-and-wealth-inequality/>.
- Hughes, E. (2018). Where did the green jobs go? A case study of the Boston metropolitan region (thesis). <https://dspace.mit.edu/bitstream/handle/1721.1/117827/1051771327-MIT.pdf?sequence=1&isAllowed=y>.
- HVAC Career Map. (n.d.). *Careers in Climate Control Technology Map*. <https://hvaccareermap.org/>.
- ILO. (2016) What is a green job? *International Labour Association*. https://www.ilo.org/global/topics/green-jobs/news/WCMS_220248/lang--en/index.html.
- ILO. (2018) World Employment Social Outlook 2018. *International Labor Organization*. https://www.ilo.org/wcmsp5/groups/public/---dgreports/---dcomm/---publ/documents/publication/wcms_628654.pdf.
- ILO. (2019) Work for a brighter future. *International Labour Organization*. https://www.ilo.org/wcmsp5/groups/public/---dgreports/---cabinet/documents/publication/wcms_662410.pdf.
- The Intercept. (2019, April 17). A Message From the future with Alexandria Ocasio-Cortez [Video]. *YouTube*. <https://www.youtube.com/watch?v=d9uTH0iprVQ>.

- International Society of Arboriculture. (n.d.). Credentials.
<https://www.isa-arbor.com/Credentials/Types-of-Credentials/ISA-Certified-Arborist>.
- Institute for Public Procurement. (2013). Best value in government procurement: Concepts and practices. *NIGP*. <https://www.nigp.org/resource/position-papers/Best%20Value%20in%20Government%20Procurement%20Position%20Paper.pdf?dl=true>.
- IPCC. (2018). Summary for policymakers of IPCC special report on global warming of 1.5°C approved by governments. <https://www.ipcc.ch/2018/10/08/summary-for-policymakers-of-ipcc-special-report-on-global-warming-of-1-5c-approved-by-governments/>.
- Jobs Action Network. (2019, August 2). Action for equity briefing paper #3.
https://www.action4equity.org/uploads/1/2/6/3/126323714/briefing_paper_3_8.2.19.pdf.
- John Hancock. (n.d.). Corporate responsibility. Retrieved on March 5, 2021, from
<https://www.johnhancock.com/about-us/corporate-responsibility.html>.
- Jones, V. (2008). *The green-collar economy: how one solution can fix our two biggest problems*. HarperOne.
- JVS Boston. (n.d.). Adult diploma pathway: earn your high school diploma at JVS Boston.
<https://www.jvs-boston.org/our-services/advance-your-career/adult-diploma/>.
- Kaufman, A. (2012). Distributive justice, theories of. In *Encyclopedia of Applied Ethics (Second Edition)*. Academic Press. <https://www-sciencedirect-com.libproxy.mit.edu/science/article/pii/B9780123739322002271>.
- Kaufman, A.C. (2018, June 30). What’s the ‘Green New Deal’? The surprising origins behind a progressive rallying cry. *Grist*. <https://grist.org/article/whats-the-green-new-deal-the-surprising-origins-behind-a-progressive-rallying-cry/>.
- Kincade, K. (2021, February 05). New department of labor statistics show racial disparities within unemployment and job loss. *WWLP*.
<https://www.wwlp.com/news/massachusetts/new-department-of-labor-statistics-show-racial-disparities-within-unemployment-and-job-loss/>.
- Klein, N. (2019). *On fire*. Simon & Schuster.
- Kouri, R., & Clarke, A. (2014). Framing “green jobs” discourse: analysis of popular usage. *Sustainable Development*, 22(4), 217.
- Lam, L. (2019, October 16). A design for workforce equity. *Center for American Progress*.
<https://www.americanprogress.org/issues/economy/reports/2019/10/16/475875/design-workforce-equity/>.
- Lenton, T. M., Rockström, J., Gaffney, O., Rahmstorf, S., Richardson, K., Steffen, W., & Schellnhuber, H. J. (2019). Climate tipping points — too risky to bet against. *Nature*, 575(7784), 592–595. <https://doi.org/10.1038/d41586-019-03595-0>.
- Liu, Y., & Keleher, T. (2009). Green equity toolkit: standards and strategies for advancing race, gender and economic equity in the green economy. *SSRN*.
<https://doi.org/10.2139/ssrn.2594429>
- Lohan, T. (2019, September 16). Naomi Klein: Gearing up for the Political Fight of Our Lives. *The Revelator*. <https://therevelator.org/naomi-klein-green-new-deal/>.
- Lynch, M. (2018, March 22). How credible messengers translate experience into action in criminal justice. *Urban Wire*. <https://www.urban.org/urban-wire/how-credible-messengers-translate-experience-action-criminal-justice>.
- Madison Park Development Corporation. (n.d.). Workforce diversity & development

- Program. Retrieved March 5, 2021, from <http://www.madison-park.org/workforce-diversity-development-program/>.
- Madison Park Technical Vocational High School. (2015). Application for admission. Retrieved March 5, 2021, from <https://drive.google.com/file/d/0B87dfFUKz0yUYzBDTC1odTVUVFE/view>.
- Maher, N. M. (2002). A new deal body politic: landscape, labor, and the Civilian Conservation Corps. *Environmental History*, 7(3), 435–461. <https://doi.org/10.2307/3985917>.
- MAPC. (n.d.). Local Energy Action Program (LEAP). Retrieved March 5, 2021, from <https://www.mapc.org/our-work/expertise/clean-energy/local-energy-action-plan/>.
- Marcuse, P. (2007, July 22). Social justice in New Orleans – planning after Katrina. *Planners Network*. <https://www.plannersnetwork.org/2007/07/social-justice-in-new-orleans-planning-after-katrina/>.
- Marcuse, P. (2009). From critical urban theory to the right to the city. *City*, 13(2-3), 185–197. <https://doi.org/10.1080/13604810902982177>.
- Mass.gov. (n.d.). Early education and care financial assistance for families. Retrieved March 25, 2021, from <https://www.mass.gov/guides/early-education-and-care-financial-assistance-for-families>.
- Massachusetts Bay Transportation. (n.d.). Youth pass. Retrieved March 25, 2021, from <https://www.mbta.com/fares/reduced/youth-pass>.
- Massachusetts Department of Conservation & Recreation. (n.d.). Urban and community Forestry. Retrieved March 5, 2021, from <https://www.mass.gov/service-details/urban-and-community-forestry>.
- Massachusetts Department of Education. (2020). Cohort 2020 Graduation Rates. Retrieved May 03, 2021, from https://profiles.doe.mass.edu/grad/grad_report.aspx.
- Massachusetts Renew. (n.d.). Policy framework. Retrieved April 5, 2021, from <https://www.massrenews.org/policy?pgid=klk2ypau-d37317c6-4a31-4750-aaff-384a38b629c4>.
- Meyer, R. (2019). A centuries-old idea could revolutionize climate policy. *The Atlantic*. <https://www.theatlantic.com/science/archive/2019/02/green-new-deal-economic-principles/582943/>.
- Mitchell, W. F. (1998). The Buffer stock employment model and the NAIRU: The path to full employment. *Journal of Economic Issues*, 32(2), 547–555. JSTOR.
- MIT Community Innovators Lab (n.d.) Participatory action research. Retrieved December 12, from <https://www.colab.mit.edu/blog/2018/2/6/participatory-action-research>.
- Movement Generation. (n.d.). *Movement generation justice & ecology project*. <https://movementgeneration.org/movement-generation-just-transition-framework-resources/>.
- Mruk, F. (2020). Smart building technology program. Roxbury Crossing, MA; Roxbury Community College.
- Murphy, T. (2011). Ethics, politics, and types of justice. *Transnational Legal Theory*, 2(1), 135–143. <https://doi.org/10.5235/tlt.v2n1.135>.
- Murphy, M. (2021, January 19). State legislature files climate bill, again. *WBUR*.

- <https://www.wbur.org/earthwhile/2021/01/19/state-legislature-climate-bill-refile>. NAACP. (n.d.). Environmental & climate justice. Retrieved April 5, 2021, from <https://naacp.org/issues/environmental-justice/>.
- New legislation for Civilian Climate Corps introduced 88 years after New Deal-era CCC. (2021, April 1). *Chris Coons, United States Senator for Delaware*. <https://www.coons.senate.gov/news/press-releases/new-legislation-for-civilian-climate-corps-introduced-88-years-after-new-deal-era-ccc>.
- Nierman, M. (2020, October 13). Boston's diversity hiring mandate for construction projects is all bark, no bite. *GBH*. <https://www.wgbh.org/news/local-news/2020/10/13/bostons-diversity-hiring-mandate-for-construction-projects-is-all-bark-no-bite>.
- Norton, P. (2003). A critique of generative class theories of environmentalism and of the labour–environmentalist relationship. *Environmental Politics*, 12(4), 96–119. <https://doi.org/10.1080/09644010412331308394>.
- Office of Boston Councilor Kenzie Bok (2020, November 13). *Order for a Hearing Regarding a City-Level Conservation Corps for Boston*. City of Boston in City Council. <https://www.boston.gov/sites/default/files/file/2020/11/Docket%20%231101.pdf>.
- Office of Boston City Councilor Michelle Wu. (2020) Planning for a Boston Green New Deal & Just Recovery. <https://assets.ctfassets.net/1hf11j69ure4/B6NLxlOVxTVMNbHEvFaQE/700f4762bae92990f91327a7e01e2f09/Boston-Green-New-Deal-August-2020-FINAL.pdf>.
- Office of Workforce Development. (n.d.a). Grants. Retrieved March 15, 2021, from <https://owd.boston.gov/about-us/grants-managed/>.
- Office of Workforce Development. (n.d.b). Neighborhood Jobs Trust. Retrieved March 15, 2021, from <https://owd.boston.gov/neighborhood-jobs-trust/>.
- Office of Workforce Development. (n.d.c). Project opportunity. Retrieved March 15, 2021, from <https://owd.boston.gov/projectopportunity/>.
- Our Policy Agenda | Michelle Wu for Boston. (n.d.). Retrieved March 5, 2021, from <https://www.michelleforboston.com/issues/>.
- Oxley, H. W. (1938). The Civilian Conservation Corps and the education of the negro. *The Journal of Negro Education*, 7(3), 375–382. <https://doi.org/10.2307/2291895>.
- Parker, K., Minkin, R., & Bennett, J. (2020, September 24). Economic fallout from covid-19 continues to hit lower-income Americans the hardest. *Pew Research Center's Social & Demographic Trends Project*. <https://www.pewsocialtrends.org/2020/09/24/economic-fallout-from-covid-19-continues-to-hit-lower-income-americans-the-hardest/>.
- Piketty, T. (2016) *How Did We Get Into This Mess?* Brooklyn, NY: Verso.
- Pinderhughes et al. (2020). Roots of success environmental literacy and work readiness program ten year report. <https://rootsofsuccess.org/wp-content/uploads/2020/09/ROS-Ten-Year-Report-FINAL-Sept-2020-.pdf>.
- Policy Group on Tradeswomen's Issues. (2020). The PGTI Model. <https://policygroupontradeswomen.org/wp-content/uploads/2020/07/The-PGTI-Model-v2-7.20.pdf>.
- Pond, L., Queeley, D., & Lutz, K. (2020). (rep.). Resilient green infrastructure and workforce development: defining pathways toward a Boston-area program for underserved communities. Boston, MA: Codman Square Neighborhood Development Corporation and The Nature Conservancy.

- https://www.conservationgateway.org/ConservationPractices/cities/Documents/tnc_Green%20Infrastructure_FiNAL_digital.pdf
- Powell, C. (2020). Color of Covid: The racial justice paradox of our emerging stay-at-home economy. *CNN*. <https://www.cnn.com/2020/04/10/opinions/covid-19-people-of-color-labor-market-disparities-powell/index.html>.
- Pollin, R., Heintz, J. and Garrett-Peltier, H. (2009). The economic benefits of investing in clean energy. *Center for American Progress*. <https://www.americanprogress.org/issues/green/reports/2009/06/18/6192/the-economic-benefits-of-investing-in-clean-energy/>.
- Press, J. B. (2020, April 03). PowerCorpsPHL trains Philly youth for careers that have a future. <https://thephiladelphiacitizen.org/powercorpsphl-philadelphia>.
- To provide direct funding to local, Tribal, and territorial governments to establish Green New Deal programs and initiatives, and for other purposes, H.R. 2644, 117th Cong. (2021).
- Race Forward. (2017). Race-explicit strategies for workforce equity in healthcare and IT. https://www.raceforward.org/system/files/pdf/reports/RaceForward_RaceExplicitStrategiesReport_ExecSummary.pdf.
- Rätzl, N., & Uzzell, D. (2011). Trade unions and climate change: The jobs versus environment dilemma. *Global Environmental Change*, 21(4), 1215–1223. <https://doi.org/10.1016/j.gloenvcha.2011.07.010>.
- Rauchway, E. (2008). *The great depression & the new deal*. Oxford University Press. https://issuu.com/376746/docs/the_great_depression__the_new_deal__pdfdrive.com.
- Recognizing the duty of the federal government to create a federal job guarantee, H.Res. 145, 117th Cong. (2021).
- Recognizing the duty of the federal government to create a Green New Deal, H.Res. 109, 116th Cong. (2019).
- Recognizing the duty of the federal government to create a Green New Deal, H.Res. 332, 116th Cong. (2021).
- Rep. Neguse and Senator Wyden unveil plan to establish 21st Century Conservation Corps, invest in wildfire resiliency. (2021, February 19). <https://neguse.house.gov/media/press-releases/rep-neguse-and-senator-wyden-unveil-plan-to-establish-21st-century-conservation-corps-invest-in-wildfire-resiliency>.
- A Resolution recognizing the duty of the federal government to create a Federal Job Guarantee, S.Res. 166, 117th Cong. (2021).
- Roosevelt, F. (1944). *Franklin D. Roosevelt Presidential Library and Museum*. http://www.fdrlibrary.marist.edu/archives/address_text.html.
- Root, B., & Simet, L. (2021, March 10). United States: Pandemic Impact on People in Poverty. *Human Rights Watch*. <https://www.hrw.org/news/2021/03/02/united-states-pandemic-impact-people-poverty#>.
- Salmond, J. A. (1965). The Civilian Conservation Corps and the negro. *The Journal of American History*, 52(1), 75–88. <https://doi.org/10.2307/1901125>.
- Salmond, J. A. (1967). The Civilian Conservation Corps, 1933-1942: a New Deal case study. *National Park Service*. https://www.nps.gov/parkhistory/online_books/ccc/salmond/chap5.htm#:~:text=The%20act%20of%20March%2031,within%20the%20CCC%20organization%2C%20but.
- Schlegel, N. (2020). Climate justice for the City of Boston: Visioning policies and processes (thesis).

- Senators Schumer, Markey And Rep. Haaland Lead Congressional Democrats And Grassroots Coalition In Announcing Economic Renewal Agenda | Senate Democratic Leadership.* (2020).
<https://www.democrats.senate.gov/newsroom/press-releases/senators-schumer-markey-and-rep-haaland-lead-congressional-democrats-and-grassroots-coalition-in-announcing-economic-renewal-agenda>.
- Schlosberg, D. and Collins, L. (2014). From environmental to climate justice: climate change and the discourse of environmental justice. *WIREs Climate Change*, 5(3), 359-374.
<https://doi.org/10.1002/wcc.275>.
- Schwartz, N.D. (2020, April 16) 'Nowhere to Hide' as Unemployment Permeates the Economy. *New York Times*.
<https://www.nytimes.com/2020/04/16/business/economy/unemployment-numbers-coronavirus.html>.
- Scully-Russ, E. (2013). The dual promise of green jobs: A qualitative study of federally funded energy training programmes in the USA. *European Journal of Training and Development*, 37(3), 257–272. <https://doi.org/10.1108/03090591311312732>.
- SNAP Path to Work. (n.d.). *SNAP Path to Work*. Retrieved March 25, 2021, from <https://www.snappathtowork.org/>.
- Southwest Boston Community Development Corporation. (n.d.). The Green Initiative. Retrieved March 5, 2021, from <https://www.swbcdc.org/portfolio-1/project-two-8zydt>.
- Speak for the Trees Boston. (2020, November 16). Teen urban tree corps summer 2020 report. https://65452064-4113-4c07-87cc-c37037efe8ed.filesusr.com/ugd/794328_4f54f1e6171d471ebc0d1bdd53a79bb9.pdf.
- Speak for the Trees Boston. (n.d.). Exploring Tree Equity in Boston. Retrieved April 01, 2021, from <https://www.arcgis.com/apps/MapSeries/index.html?appid=34e653bf29e64b72a64e78a175732b34>.
- Sunrise Movement. (n.d.). Retrieved April 3, 2021, from <https://www.sunrisemovement.org/?ms=SunriseMovement-WeAreTheClimateRevolution>
- Swiatecki, C. (2020, May 12). Council seeks plan to form conservation corps using federal Covid-19 aid. *Austin Monitor*.
<https://www.austinmonitor.com/stories/2020/05/council-seeks-plan-to-form-conservation-corps-using-federal-covid-19-aid/>.
- Tchnerva, P.R. (2018) *The job guarantee: design, jobs, and implementation*. Annandale-on-Hudson, NY: Levy Economic Institute.
<http://www.levyinstitute.org/publications/the-job-guarantee-design-jobs-and-implementation>
- The THRIVE Agenda. (n.d.). *THRIVE agenda*. Retrieved December 1, 2020, from <https://www.thriveagenda.com/agenda>.
- Thole, G. (2020, June 28). "Green buildings" FAQ. Boston Climate Action Network. Retrieved March 20, 2021, from <https://bostoncan.org/2020/06/28/green-buildings-faq/>.
- Thomas, D. (2006). A general inductive approach for analyzing qualitative evaluation data. *American Journal of Evaluation*, 27(2), 237-246.
<https://doi.org/10.1177/1098214005283748>.
- To amend the National and Community Service Act of 1990 to establish a Civilian

- Climate Corps to help communities respond to climate change and transition to a clean economy, and for other purposes, H.R. 2670, 117th Cong. (2021).
- Tomczak, S. M., & Rofuth, T. W. (2015). Full employment as a permanent policy response to poverty. *Journal of Community Practice*, 23(3–4), 367–391. <https://doi.org/10.1080/10705422.2015.1091802>.
- Tomkins, A. J., & Applequist, K. (2008). Constructs of justice: beyond civil litigation. *Civil Juries and Civil Justice*, 257–272. https://doi.org/10.1007/978-0-387-74490-2_13.
- Torres-Vélez, V. M. (2011). Puerto Ricans and the green jobs gap in New York City. *CENTRO Journal*, 23(2), 95-122.
- UN Environment Programme. (2009). Global green new deal policy brief. Geneva, Switzerland: International Environment House. https://wedocs.unep.org/bitstream/handle/20.500.11822/7903/A_Global_Green_New_Deal_Policy_Brief.pdf?sequence=3&%3BisAllowed=
- UN Environment Programme. (2019). Emissions gap report 2019. <https://wedocs.unep.org/bitstream/handle/20.500.11822/30798/EGR19ESEN.pdf?sequence=13>.
- United States Environmental Protection Agency. (2020, November 2). What is green infrastructure? <https://www.epa.gov/green-infrastructure/what-green-infrastructure>.
- University of Massachusetts Amherst. (2020, August 5). Urban forestry & arboriculture concentration: Department of Environmental Conservation. https://eco.umass.edu/academics/undergraduate-programs/natural-resources-conservation/urban-forestry-arboriculture-concentration/?_gl=1%2Auq9bfw%2A_ga%2AMjAwODg0OTc1MS4xNjEwNTc0Mjk2%2A_ga_21RLS0L7EB%2AMTYxNTY2NDgxMy4yLjEuMTYxNTY2NTE3NS4w&_ga=2.113390147.593712605.1615664813-2008849751.1610574296.
- University of Massachusetts Amherst. (n.d.). Arboriculture & community forest management (AS). <https://www.umass.edu/ses/program/arboriculture-community-forest-management>.
- USDA Forest Service. (2021). Urban and community forestry program. <https://www.fs.usda.gov/managing-land/urban-forests/ucf#collapseThree>.
- U.S. Departments of Labor, Commerce, Education, and Health and Human Services. (2014, July 22). What works in job training: a synthesis of the evidence. <https://www.dol.gov/sites/dolgov/files/OASP/legacy/files/jdt.pdf>.
- van der Ree, K. (2019). Promoting green jobs: decent work in the transition to low-carbon, green economies. *International Development Policy | Revue Internationale de Politique de Développement*, 11 | 2019(11), 248–271. <https://doi.org/10.4000/poldev.3107>.
- Vibrant Cities Lab. (2021). *Explore the realistic occupational personality type*. Retrieved March 15, 2021, <https://www.vibrantcitieslab.com/guide/explore-the-realistic-occupational-personality-type/>.
- Vibrant Cities Lab. (n.d.). *Philadelphia: Roots to re-entry*. Retrieved March 15, 2021, from <https://www.vibrantcitieslab.com/case-studies/roots-to-re-entry>.
- Vong, S. (2019, June 03). The impact of the transcontinental Railroad on Native Americans. <https://americanhistory.si.edu/blog/TRR>.
- Wasser, M. (2021, March 26). What you need to know about the new Mass. climate law. *WBUR*. <https://www.wbur.org/earthwhile/2021/03/26/new-mass-climate-law-faq>.

- Werbin, Z., Heidari, L., Buckley, S., Brochu, P., Butler, L., Connolly, C., ... Hutyra, L. R. (2019). A tree-planting decision support tool for urban heat island mitigation. *PLoS One*, 15(10). <https://doi.org/10.1101/821785>.
- Willis, B. (2018, February 22) New Study Shows Environmental Racism and Economic Injustice in Health Burdens of Particulate Pollution in U.S. Sierra Club. <https://www.sierraclub.org/press-releases/2019/08/new-study-shows-environmental-racism-and-economic-injustice-health-burdens>.
- Wilson, J. (2003). Community, civility, and citizenship: theatre and indoctrination in the Civilian Conservation Corps of the 1930s. *Theatre History Studies*, 23, 77–94.
- X-Cel Education. (n.d.a). Conservation Corps. Retrieved March 14, 2021, from <http://www.x-celeducation.org/new-page>.
- X-Cel Education. (n.d.b). Programs. Retrieved March 14, 2021, from <http://www.x-celeducation.org/our-programs>.
- Yeung, L. H. (2013). Challenges in implementing green workforce development training (thesis). <https://dspace.mit.edu/bitstream/handle/1721.1/81154/858403309-MIT.pdf?sequence=2&isAllowed=y>.
- YOU Boston. (n.d.). About. Retrieved March 1, 2021, from <https://www.youboston.org/about/>.
- Young, C. A. (2021, March 15). Senate agrees to some Baker climate bill amendments. *WBUR*. <https://www.wbur.org/earthwhile/2021/03/15/massachusetts-climate-bill-amendments>.
- Youth on Board. (n.d.). Climate justice & sustainability. Retrieved March 3, 2021, from <https://www.youthonboard.org/climate>.
- YouthBuild Boston. (n.d.). Programs. Retrieved March 3, 2021, from <https://www.youthbuildboston.org/program>.
- Zabin, C. & MacGillvary, J. (2020). Demand-side workforce policy levers. In C. Zabin (Ed.), *Putting California on the high road: A jobs and climate action plan for 2030*. Report. <https://laborcenter.berkeley.edu/wp-content/uploads/2020/09/Putting-California-on-the-High-Road.pdf>.
- Zabin, C. (2020). Supply-side workforce development strategies: Preparing workers for the low-carbon transition. In C. Zabin (Ed.), *Putting California on the high road: A jobs and climate action plan for 2030*. Report. <https://laborcenter.berkeley.edu/wp-content/uploads/2020/09/Putting-California-on-the-High-Road.pdf>.

Appendix A. Interview Questions Template.

1. What are the main goals of your organization/program?
2. How was the organization/program originally envisioned and designed?
3. What leads people to get, and stay, involved?
4. How does this program fit into the broader goals of both the participants and the organization?
5. What changes would you make to your current program structure if given the resources and opportunity? What barriers exist to achieving this vision?
6. Is race and/or racism explicitly considered in your programs design and implementation? How?
7. What is your or your organization's view on the Green New Deal? Do you use the term "Green New Deal" in your work (informally or formally)?
8. What are your first impressions on the idea of the Boston FutureCorps?
9. How would a Boston FutureCorps interact with or affect your work?
10. Who do you think should be involved in designing the Boston FutureCorps?
11. How would your ideal Boston FutureCorps be structured?
12. What kinds of work do you envision participants being employed to do?
13. Do you think the population you currently serve would be interested in participating in a Boston FutureCorps?
14. What types of community processes and conversations do you think would need to happen for this type of program to be created?
15. How do you think this program could work financially?
16. What political or regulatory barriers do you think might affect the creation of a Boston FutureCorps?

Appendix B. Interview Analysis Codes.

Code	Description
Defining Green Jobs	Discussion of interviewees understanding of green jobs
Ecosystem Items	Stakeholders, policies, and programs in Boston to add to ecosystem maps
Employer	Potential and existing employers
Funding	Potential and existing funding sources
Initiative	Relevant existing initiatives
Organization Type	Specific organizations to add to map – separated by type
Advocacy	
Education	
Government	
Private Sector	
Social Service	
Sector-based Training	
Union	
Person	Connections to new people made during interviews
Policy	Relevant existing policies to add to ecosystem maps
Relationship	Relationships between map items
Employment Program Typologies	Discussion of existing employment/workforce development programs and organizations
Challenges	Key challenges faced by program/organization
Compensation	Methods of compensation for participants
Connection to Climate	Programmatic goals related to climate change
Curriculum	Discussion of training and education curricula
Eligibility	Participant eligibility
Employers	Partnerships with employers
Funding Source	Discussion of funding sources and strategies

Goals	Organizational/programmatic goals
Outreach	Outreach strategies
Public Education	Public education initiatives
Race	Discussion of race and racism
Services	Discussion of wraparound services
First Impressions of Corps	Initial reaction to the idea of a Boston FutureCorps
Green New Deal	Discussion of the Green New Deal
Participatory Planning	Discussion of participatory planning practices
Quotes	Potential quotes to include
Sectors	Discussion of specific sectors
Building Operation and Automation	
Building Trades	
Green Infrastructure	
Urban Forestry	
Values and Principles	Discussion of overarching values and principles

Appendix C. Values-Based Indicators Guide.

Planning Process

Goals and Challenges:

1. **Stakeholder identification and power analysis:** Every organization on the ecosystem maps could be involved in the program design process. These groups also vary in terms of capacity, power, and influence. An equitable program design process will need to involve an analysis of which stakeholders to invite to the process, how to recruit them, and how to support and uplift stakeholders with relatively less power.
2. **Creating a trusted process with meaningful participation:** Multiple interviewees emphasized their experiences with opaque processes both in City Council and the BPDA. Recruiting stakeholders and building public buy-in, especially from these groups who are already skeptical of the government processes, will require a transparently created and implemented process that allows stakeholders to substantially shape program design.
3. **Goal setting:** The second section of Chapter 4 outlines a number of possible, and overlapping, purposes for the corps. The planning process will need to consider which goals stakeholders want to prioritize, how they translate to program design, and how the selected goals can be most compatible.
4. **Values:** Given the number of stakeholders, groups are bound to have both shared and conflicting values that will need to be addressed through intentional coalition building. In particular, the process will need to pay careful attention to tension between environmental organizations, community-based organizations, and organized labor.
5. **Avoiding redundancy:** The planning process will need to address the concerns of duplicative programming and competition for funding. The Boston FutureCorps has the opportunity to be transformative for the city, but it also will be created within a complex ecosystem of related efforts.

Guiding Questions:

1. **Role of the City:** What is the role of each City department and agency in the program design process? Will the state government have a role? How will these departments ensure that “mission creep” is avoided, but that the Boston FutureCorps is cohesive with all other city plans?
2. **Role of Employers:** What is the role of potential employers in the program design process? How can the City identify and involve employers as early as possible without the program becoming primarily profit-driven?

3. **Role of organizations:** What is the role of nonprofit organizations in the program design process, particularly those with existing green job training programs? How will these organizations be compensated for their participation?
4. **Role of the public:** What is the role of community members in the program design process? How will community members be incentivized and compensated for their participation?
5. **Conveners and facilitators:** Who will be the conveners and facilitators for the participatory program design process? What will be the form of and funding source for these convenings? How will the City be held accountable for ensuring procedural justice?
6. **Learning from models:** How will models from other cities be brought into the program design process?
7. **Racial equity accountability:** How will the City be held accountable for ensuring that neither the program design process nor the policy governing the program are race neutral?

Compensation and Funding

Goals and Challenges:

1. **Social assistance gap:** While there is consensus among interviewees that the Boston FutureCorps needs to provide a living wage, it is possible that these wages will lead to some participants becoming ineligible for public assistance due to their higher household income. Loss of this assistance might leave corps members and their families in even more financial stress.
2. **Funding sustainability:** In order for the Boston FutureCorps to be a long-term program, and more than a political “pet project”, it needs long-term, reliable funding that is as untethered as possible from both local and federal political administrations as possible.
3. **Funding restrictions:** Funding sustainability, however, may have trade-offs with restrictions imposed by certain funding sources, such as those dictated by philanthropic grants, as well as by AmeriCorps and WIOA grants.
4. **Avoiding job displacement:** It is possible that the Boston FutureCorps could be viewed as a cheap source of labor within the city, with lower wages that lead to the displacement of existing workers. Avoiding this outcome will require collaboration with unions and the private sector.

Guiding Questions:

1. **Compensation:** How will corps members be compensated (i.e. stipend, hourly pay, salaried City employees)? Will corps members have opportunities for a raise while in the corps? How will the City ensure that corps members are paid a living wage?

2. **Schedule:** How many hours per week will corps members work? How will this be split between projects and classroom education? Will corps members have the option of both full-time and part-time work?
3. **Funding services:** Will corps members receive stipends for specific uses (i.e., housing, education, childcare)? Will the corps cover the cost of certifications and/or educational degrees?
4. **Funding sources:** What mix of federal, state, city, and private funding sources will the corps use? Will this mix of funding be dynamic? Will the corps be partially funded through a fee-for-serve or social enterprise component?
5. **Federal funding:** Will the Boston FutureCorps receive funding from the proposed federal Civilian Climate Corps?
6. **Economic justice:** How will the corps avoid unjust influences from private funders? How will the City be held accountable for ensuring that corps members receive a living wage and overall adequate financial assistance with long-term economic benefits?

Target Participants and Outreach

Goals and Challenges:

1. **Credibility:** As discussed in Chapter 4, in order to recruit corps members, potential participants will need to learn about the program through trusted networks and credible messengers that were involved in the program design process.
2. **Spatial justice:** Corps members can benefit individually from the education, training, and wages they receive, but their neighborhoods will not see the benefits of their labor unless project locations are intentionally selected through an equity lens. However, local hire policies, without proper enforcement and intentional policy design, can lead to employers giving local residents lower-tier jobs to meet this hiring requirement.
3. **Reaching Participants:** Even if the program is designed to explicitly prioritize recruiting people from marginalized neighborhoods, it's possible that the policy design will not translate into an equitable corps member population, similar to the outcomes of the Boston Residents Jobs Policy.
4. **Branding:** As discussed in Chapter 1, the name of the corps will greatly impact how it is perceived by stakeholders and potential participants. The overall branding of the program, which can be established during the participatory program design process, will be vital for recruitment, funding, and credibility. To reiterate, if the program is called the Boston Conservation Corps, as is currently the case in Councilor Bok's proposal, this could misrepresent the goals of the corps and alienate potential corps members.

Guiding Questions:

1. **Outreach strategy:** Who will be tasked with designing and implementing ongoing outreach? How will outreach be conducted in partnership with other organizations who serve similar target populations?
2. **Age group:** What age group will be eligible for the corps? Where will the corps refer people who want to participate but fall outside this age range? How will the corps partner with the network of Green Teams that serve high-school age young adults?
3. **Public education:** How will the outreach process include public education about the corps' goals and the opportunities provided by green jobs? Who will lead the public education initiative?
4. **Target participant selection:** Will the Boston FutureCorps serve a specific population (i.e., returning citizens, unhoused community members, public housing residents, etc.)? If these groups are eligible, but not the only population included in the program, how will the outreach process make the corps accessible to these groups?
5. **Participant Numbers:** How many corps members will participate in the program's first year? How will this number be able to increase over time?
6. **Accountability:** How will the City be held accountable for the racial make-up of the corps, including staff members? How will the City be held accountable to corps members based on the program outcomes communicated to them in the outreach process?

Addressing Barriers to Employment

Goals and Challenges:

1. **Provider collaboration:** There is already a vast pool of organizations with expertise in providing aspects of wraparound services. The challenge of incorporating these services into the corps will require fostering collaboration among these providers.
2. **In-house capacity:** One method to address the challenge of collaboration, and the challenge of the accessibility of services, is to provide some services in-house. However, in-house services will be constrained by staff capacity and funding sources.
3. **Follow-up support:** Multiple interviewees expressed the need for wraparound services to continue after corps members graduate. This is a challenge involving both organizational capacity and provider collaboration, as well as continued communication with Boston FutureCorps graduates.
4. **Cost:** Wraparound services will make up a substantial portion of the Boston FutureCorps' cost per corps member.

Guiding Questions

1. **Services:** What services will the Boston FutureCorps provide in-house? Which services will be provided by external organizations and how will those organizations be selected? How

will service providers be compensated? These questions should be considered for the following services: childcare, transportation, CORI expungement, assistance with court involvement, re-entry support, healthcare, food security, housing security, English language instruction, mental health counseling, technological literacy, job-readiness support, disability rights support and case management.

2. **Evaluation:** How will service providers be evaluated? How will corps members be able to give feedback on wraparound service providers?
3. **Accessibility and identifying needs:** How will corps members be supported in accessing external services? How will the needs of different corps members be identified?
4. **Complementary initiatives:** How will the Boston FutureCorps help advance complementary initiatives by the City that aim to address the issues that create the need for these services (i.e., living wage and benefit requirements, universal basic income, affordable healthcare, public childcare, free public transportation, affordable housing, and decriminalization)?
5. **Long-term support:** How will the Boston FutureCorps provide long-term support to corps graduates as well as help participants build their own individual support networks while they are still in the corps?
6. **Care Work:** Addressing barriers to employment requires working with organizations that are in the care economy. How can the Boston FutureCorps help uplift this sector as important to climate, economic, and racial justice?

Individual Agency: Entry and Exit Points

Goals and Challenges:

1. **Accessibility of entry points:** This relates to the Boston FutureCorps' ability to address barriers to employment. Entry points can be restrictive due lack of wraparound services, eligibility requirements (i.e., age, residency, citizenship), and prerequisites (such as a high school degree).
2. **Value of exit points:** This refers to the value of the training and certifications with which corps members leave the Boston FutureCorps with and the corps' ability to directly connect graduates with good green jobs and/or further education. The prerequisites required for entry into the corps will determine the quantity and type of training and education needed to reach a valuable exit point.
3. **Retention:** Having a variety of entry and exit points allows for self-determination, as well as the ability to meet the needs and goals of more participants. However, it may also pose challenges related to corps member retention.
4. **Single-sector vs multi-sector tradeoffs:** One of the key decisions for the program design process will be the type and number of sectors included in the Boston FutureCorps. More sectors will create more entry and exit points, but will potentially decrease organizational capacity and funding for individual sectors.

Guiding Questions:

1. **Cohort vs. rolling model:** Will the Boston FutureCorps accept a certain number of cohorts each year or will there be rolling admission? Could this be different for each sector in the corps?
2. **Length of program:** How long will the program last for individual corps members? Is there a minimum and maximum amount of time? Does it vary by sector?
3. **Choosing entry and exit points:** Will entry and exit points change over time due to changing job availability and program partnerships? How will the corps work with people who want to join the corps but do not meet the eligibility requirements or require extra support before joining?
4. **Corps member options:** How will corps members be supported in choosing their specific pathways within the corps? How will the Boston FutureCorps support participants who later decide they want to enter a career pathway in a sector that is not included in the corps?
5. **Meaningful employment:** How will the Boston FutureCorps ensure that exit points both lead to long-term, meaningful employment as well as set up participants to exit the program with benefits and personal development unrelated to their employment?

Education and Training

Goals and Challenges:

1. **Linking training to employment:** One of the main downfalls of the ARRA-era green job movement was a mismatch between training and job availability. Even if a certification is specific to a sector with job availability, a certification alone, without a network of employers, does not guarantee participants access to jobs. The certifications that are valuable in certain sectors may also change overtime, specifically for newer sectors, such as green infrastructure.
2. **High School Education:** Providing a high school or HiSET degree will decrease barriers to entry. This would require either in-house programming or a partnership with an existing organization, such as X-Cel education. It could also contribute to the racial equity of the program's eligibility requirements, as Black and Hispanic students in Boston are more likely to leave high school without a diploma (Massachusetts Department of Education, 2020). However, this will have a substantial effect on overall program design and will require additional organizational capacity.
3. **Trainers:** Racial equity is not only important for participants of the program – it must also be central to selecting program staff. Beyond the necessity of racial equity in the corps' hiring practices, equitable racial representation among staff will be necessary to establish the credibility of the corps, and of green jobs in general, among participants of color (T. Fils-Aimee, pers. comm., December 1, 2020). After the corps has been established, this could be achieved by hiring corps graduates as staff.

4. **Vocational High School Funding:** Massachusetts state government determines what programs within public vocational high schools will be funded. Therefore, adding urban forestry and/or green infrastructure education into MPVHS's curriculum will require state-level cooperation (D. Meshoulam, pers. comm., November 4, 2020).

Guiding Questions:

1. **Sector(s):** What sectors will be included in the initial program design of the corps? What sectors will be added over time and who will be tasked with developing these pathways? How will corps members be introduced to each sector? Will corps members specialize in a sector, and if so, at what point in the program will this occur? How will they be supported in this decision? Will the same sectors be offered each year or cycle of the corps?
2. **Choose certifications:** How will certifications included in the corps be selected? Will they be optional or required parts of the program? What certifications will all corps members be able to receive? If applicable, what certifications will be specific to corps members' choice of sectors? How will the corps get input from employers and trade associations?
3. **General training and education:** Will the corps provide a high school or HiSET education? If so, will this occur in house or through a partnership? If this is a prerequisite, where will the corps refer applicants who want to participate but do not yet have a high school or HiSET degree?
4. **Role of higher education:** Will corps members be able to earn college credits or a post-secondary degree? How will the corps partner with community colleges and other post-secondary institutions in Boston? How will the corps prepare participants to enter post-secondary educational programs following graduation?
5. **Employers:** How will the corps create a network of employer partners? What will be expected of employer partners?
6. **Educational inequities:** How can the corps complement other initiatives that are addressing overall educational inequities in Boston?

Job Guarantees and Career Pathways

Goals and Challenges:

1. **Employer relationships:** Guaranteeing corps graduates jobs will require long-term, reliable relationships with employers. The corps should also be intentional about placing corps members into good green jobs with racially just and safe work environments. Employers should also be evaluated for their ability to contribute to Boston's long-term climate goals.
2. **Job availability forecasting:** As discussed in chapter 4, labor market and job availability forecasting is challenging, particularly for newer sectors. Boston can learn from the economic study being conducted for the City of Austin's Civilian Conservation Corps.

3. **Unions:** There is existing tension among stakeholders with respect to the accessibility of building trade union apprenticeships and jobs. The program design process will need to explore this tension and build consensus about the role of building trade unions in the corps' career pathways.

Guiding Questions:

1. **Employers:** How will the corps work with employers to assess job availability? How can the corps create a dynamic curriculum to respond to the changing needs of employers? How will employers be evaluated for their reliability, ability to provide good green jobs with upward movement, and commitment to climate, economic, and racial justice?
2. **Partnering with unions:** How will the corps partner with unions both for curriculum development and projects completed by corps members, as well as for post-corps employment?
3. **Sectors without unions:** Existing proposals for a national Civilian Climate Corps include a promise of union jobs. If the Boston FutureCorps also plans to provide graduates with union jobs, how does this translate to sectors, such as green infrastructure and urban forestry, which do not have established unions in Boston?
4. **Alternative employment options:** Will the corps incorporate opportunities for employment that are not with employer partners, such as through a social enterprise or the creation of a worker cooperative? Will the corps support those who wish to start their own businesses following graduation?
5. **Demand policies:** How will the City ensure that its climate policies and initiatives create new job opportunities that directly connect to training provided in the corps?
6. **Use ecosystem maps:** How will the ecosystem maps in this thesis be used as a scaffold for development of career pathways and employer-trainer partnerships?
7. **Defining green jobs:** What is the Boston FutureCorps' formal definition of a green job?
8. **Worker power and agency:** How will the City use comprehensive policies, such as Community Workforce Agreements and Project Labor Agreements to support the Boston FutureCorps and the creation of good green jobs? How will the corps contribute to increasing the overall bargaining power and agency of workers in Boston?

Project Selection

Goals and Challenges:

1. **Spatial equity:** While a given project that corps members complete may contribute to the City's overall climate goals, project selection must also include a spatial equity component, being intentional about what specific neighborhoods will experience the direct environmental and economic benefits that a project provides. Spatial equity also requires public

participation in the project selection process as well as projects that acknowledge and directly address current and historical injustice.

2. **Non-market based selection:** Achieving spatial equity will also involve the City ensuring that project selection is not primarily driven by market forces and profit maximization.
3. **Gentrification:** Projects completed in marginalized neighborhoods have the potential to contribute to “Green Gentrification”, and should be coupled with affordable housing policies and neighborhood-led development goals (Anguelovski et al., 2019).
4. **Connecting to overall goals:** Individual projects should be evaluated based on their contribution to climate, economic, and racial justice.

Guiding Questions:

1. **Decision-makers and collaboration:** What is the process for project selection and who are the final decision-makers? Will corps members be able to provide input in this process? How can the City ensure that external community organizations and community members can provide input in this process? How will the City collaborate with community organizations to ensure projects are contributing to neighborhood priorities?
2. **Data:** How will the following data will be considered in evaluating potential projects: BERDO data and compliance, tree cover and canopy health, stormwater and flooding risks, urban heat islands and impervious surfaces, American Community Survey and 2020 Census data, projected climate impacts of projects, skills and certifications required to complete projects, timeframe of projects, surveys and interviews with community members and organizations, etc.
3. **Accountability:** How will projects be evaluated, both in their selection and after completion, to help hold the Boston FutureCorps accountable to its commitments to climate, economic, and racial justice?
4. **Acknowledging and addressing past harms:** How will project selection embed an ethic of reparative justice, particularly related to environmental injustice, redlining, and urban renewal?

Governance and Long-term Public Input

Challenges:

1. **Continued evaluation:** The Boston FutureCorps should have a design that is dynamic and can be responsive to ongoing evaluation, as well as to public and corps member input. This evaluation should consider not only the percentage of participants who secure long-term employment, but also their income distribution relative to the changing cost of living, job quality and security, and overall economic well-being.

2. **Maintaining grassroots component:** Beyond participatory program design, the Boston FutureCorps should strive to maintain strong partnerships with grassroots organizations to remain accountable to their needs.
3. **Government silos:** This program does not fit squarely in any one department within the city government. Regardless of which department(s) administer the corps, it will need to balance tradeoffs between departmental silos and mission creep. This could potentially involve creating a new department or agency.
4. **Coordination:** Given the extensive existing green workforce development ecosystem in Boston, the corps will need to navigate the degree to which it resources existing organizations through a more decentralized approach and/or the degree to which the corps is centralized within a city department or individual organization.

Guiding Questions:

1. **Decision-makers and coordination:** In which department(s) will the Boston FutureCorps sit within the city government? Will this department directly run the corps or will it function through funding a separate nonprofit organization or organizations?
2. **Communication:** How will cross-departmental, cross-sector, and cross-organization communication occur within the larger governance of the corps?
3. **Advisory groups:** Continued evaluation of the corps can involve advisory groups. How will advisory group members and facilitators be selected? What will advisory groups be tasked with? How will the corps be held accountable to the advisory groups' input? How can advisory groups help ensure that the governance of the corps is based in distributional and procedural justice?

Scale and Impact

Goals and Challenges:

1. **Logistics vs. impact:** While initial program design will need to grapple with the specifics of logistical implementation, this should not preclude the overarching goals of the Boston FutureCorps from attempting to meet the scale of impact needed to meaningfully address the climate crises, as well as entrenched economic and racial injustice.
2. **Maintaining long-term vision:** The overarching goals, values and long-term vision of the Boston FutureCorps should guide incremental implementation, such that smaller-scale decisions are made with large-scale intentions. This vision must extend beyond election cycles at all scales while maintaining both community and political buy-in.

Guiding Questions:

1. **Time scale:** What is the long-term timescale of the corps? Will this be a permanent program? What is the time-scale for the first iteration, or pilot, of the corps?

2. **Spatial scale:** Will the initial iteration of the corps intend to have city-wide or neighborhood-specific impacts?
3. **Connection to Green New Deal:** Even if the term Green New Deal is not explicitly used, how can the City instill the values of the GND in the long-term vision and eventual scale of the corps?
4. **Impact scale:** What is the future of the City of Boston and what values are guiding this vision? What energy and transportation will we use? What will the natural environment look like? What will the economy look like? How have we adapted to the changing climate? How do we practice climate, economic and racial justice? **How can the Boston FutureCorps help create this future?**