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Estimating the Job Creation Potential Through the Massachusetts Climate Adaptation Superfund Proposal

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Table of Contents

Introduction 1

Climate Adaptation Priorities 2

Reference Case Assumptions 3

Employment Creation Calculations Under Reference Case 5

Appendix 1. Employment Estimation Within Input/Output Models and Time Dimension of Model Estimates 7

Appendix 2. Funding Spending Allocation Shares Under the *Mass Ready* and Climate Superfund Proposals 9

Appendix 3. Components of Total Job Creation Estimates Under Reference Case 10

Appendix 4. Climate Superfund Job Creation Estimates Under Alternative Assumptions 12

Acknowledgments 15

About the Auth*ors* 16

ESTIMATING THE JOB CREATION POTENTIAL THROUGH THE MASSACHUSETTS CLIMATE ADAPTATION SUPERFUND PROPOSAL

Introduction

In January 2025, Senator James Eldridge and Representatives Steven Owens and Jack Patrick Lewis introduced into the Massachusetts State Legislature a bill that would establish a Climate Adaptation Superfund for the state. This measure would require fossil fuel companies that have been major contributors to greenhouse gas emissions in Massachusetts between 1995 – 2024 to pay for a range of climate adaptation programs throughout the state. The bill describes the overall Superfund project as an initiative "designed to avoid, moderate, repair or adapt to negative impacts of climate change or to assist communities, households and businesses in preparing for future climate-change-driven disruptions."

This study examines the prospects for creating new jobs throughout the Massachusetts economy via implementing the climate adaptation projects included in the Superfund initiative. Specifically, we estimate here the number of jobs that are likely to be generated when these adaptation measures are undertaken in Massachusetts. The study does not consider the more basic set of questions associated with this Superfund project, i.e. how effectively it will contribute toward meeting the climate adaptation needs of Massachusetts residents and the Massachusetts economy.

We generate our job creation estimates on the basis of three key assumptions: These three assumptions concern: 1) the overall spending level for the Superfund project; 2) the allocation of a given level of Superfund spending among the various adaptation measures; and 3) our estimates as to the job creation levels resulting from implementing any given adaptation activity.

We focus the discussion on what we term our Reference Case scenario. This Reference Case is based on a set of midrange figures for the three assumptions. Our most basic result generated by our Reference Case scenario is the following: *if the full set of adaptation measures described in the Superfund bill are implemented at an annual budget of $1 billion per year for 25 years, we estimate these activities will generate roughly 7,600 jobs per year in Massachusetts.*[1]

To put in perspective this 7,600 job creation per year figure under our Reference Case scenario: this number of jobs is approximately 45 percent higher than the number of jobs that would be generated in Massachusetts if the same $1 billion were spent following the state economy's existing overall spending and job creation pattern. That is, approximately 4,300 jobs are generated in Massachusetts when $1 billion is spent in the state according to the state's current overall spending allocations.

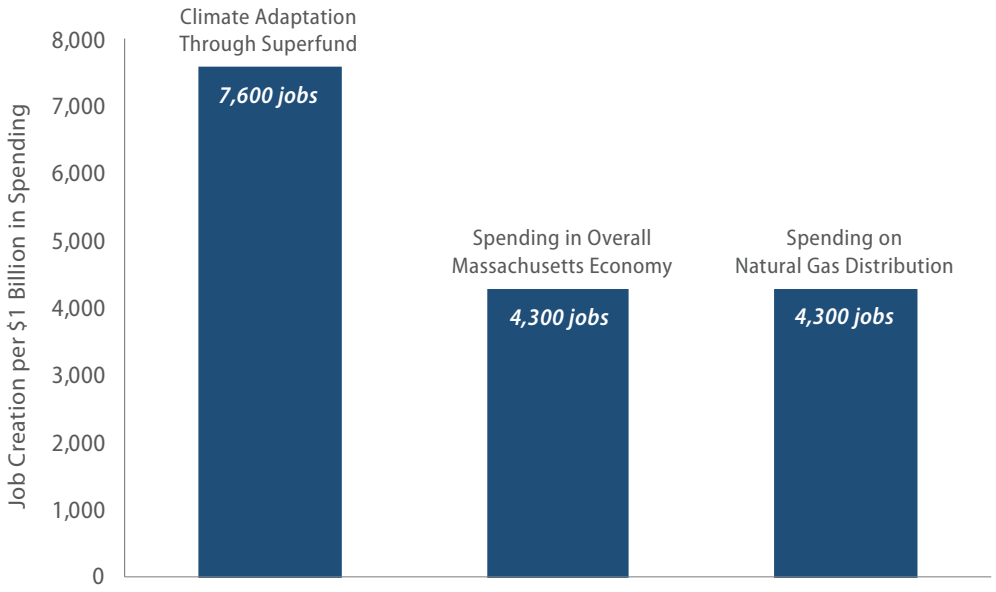
The 7,600 jobs per year that we estimate will be generated by the Superfund project in our Reference Case is also roughly 45 percent greater than if the same $1 billion were spent in Massachusetts within the state's largest fossil fuel-based industrial sector, which is natural gas distribution.

1 In Appendix 1, we provide details on our employment estimation methodology.

That is, spending in Massachusetts within its existing natural gas distribution sector will also generate approximately 4,300 jobs overall, i.e. 3,300 fewer jobs than spending on climate adaptation measures through the Superfund project.

Figure 1 below shows our estimates of the job creation that would result in Massachusetts through spending $1 billion either on 1) the climate adaptation Superfund program; 2) overall activity in the state's economy, or 3) natural gas distribution.

FIGURE 1: Job Creation in Massachusetts Through Spending $1 Billion on Alternative Projects



Source: See Appendix 1.

Climate Adaptation Priorities

The Superfund proposal highlights 10 broad climate adaptation projects that will be priorities under the measure. These include the following:

- Relocating, elevating, or retrofitting sewage treatment plans vulnerable to flooding.
- Upgrading storm water drainage systems.
- Installing energy efficient cooling systems and other weatherization and energy efficiency upgrades and retrofits to public and private buildings, including schools and public housing.
- Making defensive upgrades to roads, bridges, subways and transit systems.

- Responding to toxic algae blooms, loss of agricultural topsoil, and other climate-driven ecosystem threats to forests, farms, fisheries, and food systems.
- Implementing nature-based solutions for coastal and flood protections.
- Addressing urban heat island effects through green spaces, urban forestry, and other interventions.
- Undertaking preventive health care programs and providing medical care to treat illness or injury caused or aggravated by the effects of climate change.
- Preparing for and recovering from hurricanes, droughts, heat waves, blizzards, severe storms, wildfires, flooding and other extreme weather events.
- Upgrading parts of the electrical grid to increase stability and resilience, including supporting the creation of self-sufficient clean energy microgrids.

The bill also states that, in addition to these 10 areas, other projects could also be designated as appropriate candidates for receiving superfund support.

Reference Case Assumptions

Each of these adaptation activities will entail hiring some combination of private businesses and public agencies throughout the state to undertake these projects. In turn, these private businesses and public agencies will employ people to execute the projects for which they have been hired.

The Superfund bill does not specify an overall spending level for the project or the proportions in which an overall budget should be allocated among the various adaptation priorities. Under our Reference Case scenario, we generate an overall budget figure and proportional spending amounts per project by drawing on two sources, the New York State Superfund initiative which became law in December 2024, and the Mass Ready Act which Governor Maura Healy introduced to the Massachusetts legislature in June 2025. We then utilize publicly available statistics on employment levels for specific activities in the Massachusetts economy to complete our job creation estimates.

The key specifics on each of these steps in our estimation method are as follows (further details are in Appendix 2):

Overall Budget Allocation. New York State enacted in December 2024 its own Climate Change Superfund Act. This law includes a budgetary allocation for a series of measures similar to those prioritized in the Massachusetts Superfund proposal. The budgetary allocation for the New York Superfund is $3 billion per year for 25 years, totaling to $75 billion. We generate an overall budget figure for the Massachusetts Superfund based on the population and overall economic activity level (GDP) in Massachusetts relative to those for New York State. The Massachusetts GDP per capita is approximately equal to that in New York, while the Massachusetts population is roughly one-third as large as New York's. Thus, with the New York State Superfund budget at $3 billion per year for 25 years, we have set the Massachusetts measure at $1 billion per year for 25 years under our Reference Case (i.e. one-third of New York's $3 billion annual budget is $1 billion).

Funding Allocation Shares Within Overall Spending Level. The Mass Ready Act proposes a set of climate adaptation and resilience investment initiatives for the Massachusetts economy that are similar to those in the Superfund bill. In a 6/24/25 letter to the Massachusetts State Legislature, Governor Maura Healy describes the aims of the Mass Ready Act as follows:

> The Act offers a proactive, cost-effective, and forward-thinking strategy to prepare Massachusetts for the increasing threats of climate change and extreme weather. It pairs smart policy with targeted investments that will strengthen our infrastructure, safeguard communities, and support equitable access to public resources. By investing now in climate-ready infrastructure and modernizing key systems, Massachusetts can reduce future disaster recovery costs, protect public safety, and promote long-term economic and environmental stability.

The overall budget proposal for the Mass Ready Act is $2.9 billion. This is significantly less than the $1 billion per year figure over 25 years for Massachusetts Climate Superfund proposal, assuming that the Massachusetts Superfund is roughly scaled, as we describe above, to the New York Superfund law. Still, the Mass Ready Act is useful for our purposes because it does provide specifics as to the allocation of proportional shares of spending for the various adaptation and resilience projects it is proposing. We draw on these relative funding shares proposed in the Mass Ready Act as rough benchmarks for the allocations we assign in our Superfund Reference Case. In Appendix 2, we provide details on how we assigned relative funding shares under our Reference Case.

Job Creation by Adaptation Activity. To estimate the level of job creation generated by each of the adaptation activities, we work with an input/output model of the Massachusetts economy. Input/output models provide data on all economic activity within a given economy, specifying the set of inputs—including equipment, buildings, land, energy and workers—required to produce any given output. For example, to upgrade storm water drainage systems in Massachusetts, private civil engineering firms will be commissioned by the state to design the upgrades. Municipal public works departments will then employ water system operators and water technicians to oversee the upgrade projects. Construction firms will employ workers engaged in excavation, utility installation, and site work, along with laborers to assist with these respective tasks.

Overall, working with an input-output model for the Massachusetts economy, we estimate that roughly 5.7 workers will be employed in the state for every $1 million spent on storm water drainage system upgrades. This includes the people working directly on the upgrade projects—what is termed the "direct" job creation channel—and the people along the supply chain providing inputs to the projects, termed the "indirect" job creation channel. Jobs generated through the indirect channel include, for example, employees at concrete production firms and truck drivers delivering concrete to storm water drainage sites. Our overall job creation estimate also includes the people employed via what is termed the "induced" job channel. This refers to jobs generated in Massachusetts through the overall rise in spending in the state resulting from workers becoming employed via both the direct and indirect job creation channels, and consequently having more money to spend. In Appendix 3, we provide more details on these components of our employment estimates within the Reference Case.

Employment Creation Calculations Under Reference Case

In Table 1, we document our assumptions under the Reference Case both on how we allocate the overall $1 billion per year Superfund budget among the 10 listed adaptation activities (column 2) as well as our estimates for job creation per $1 million in spending for each of these 10 activities (column 3). Working from these two assumptions, along with the overall $1 billion per year Superfund budget assumption, we then generate employment estimates for each of the activities (column 4). Finally, through adding these employment estimates for each of the 10 activities, we generate our overall result that spending $1 billion per year in Massachusetts on these 10 adaptation activities will produce a total of 7,585 jobs per year in the state. We then rounded this Reference Case job creation estimate to roughly 7,600 jobs per year.

We note that our estimate of this level of overall job creation in Massachusetts will continue on a year-by-year basis as long as our Reference Case assumptions remain intact for each year that the Superfund project continues. These assumptions include, again: 1) overall Superfund spending remains at $1 billion per year in Massachusetts; 2) the proportional distribution of the $1 billion annual budget shown in Table 1 remains constant among the 10 adaptation activities; and 3) the employment creation level per $1 billion in spending shown in Table 1 remains constant.

Correspondingly, our estimate of overall job creation through the Superfund project will vary to the extent that any of these Reference Case assumptions themselves vary at any point over the lifetime of the project. In Appendix 4, we present alternative employment estimates generated by 1) increasing the overall budget allocation from $1 billion to $2.4 billion per year; and 2) assuming that the $1 billion overall allocation is divided into equal shares among the 10 adaptation activities. As we see in Appendix 4, when we increase the total funding allocation to $2.4 billion annually, our overall job creation per year estimate rises from 7,600 under the Reference Case to about 18,200 jobs. When we allocate the overall $1 billion budget equally among the 10 adaptation activities, our job creation per year estimate rises to about 8,600 jobs.

TABLE 1.
Climate Superfund Job Creation Estimates Under Reference Case
Overall funding assumption is $1 billion per year

1. Adaptation activity	2. Funding allocation	3. Job creation per $1 million in spending	4. Total job creation *(= columns 2x3)*
Relocating, elevating, or retrofitting sewage treatment plants	$200 million (20% share)	6.0 jobs	1,200 jobs
Upgrading storm water drainage systems	$200 million (20% share)	5.7 jobs	1,140 jobs
Installing energy efficient cooling systems and other weatherization and energy efficiency upgrades	$150 million (15% share)	8.5 jobs	1,275 jobs
Making defensive upgrades to roads, bridges, subways and transit systems	$150 million (15% share)	6.6 jobs	990 jobs
Responding to toxic algae blooms, loss of agricultural topsoil, and other climate-driven ecosystem threats	$50 million (5% share)	13.3 jobs	665 jobs
Implementing nature-based solutions for coastal and flood protections	$50 million (5% share)	11.0 jobs	550 jobs
Addressing urban heat island effects	$50 million (5% share)	11.0 jobs	550 jobs
Undertaking preventive health care programs and providing medical care to treat illness or injury resulting from effects of climate change	$50 million (5% share)	10.0 jobs	500 jobs
Preparing for and recovering from extreme weather events	$50 million (5% share)	8.5 jobs	425 jobs
Upgrading electrical grid to increase stability and resilience	$50 million (5% share)	5.8 jobs	290 jobs
TOTALS	**$1 billion**	**----**	**7,585 jobs**

Sources: See Appendix 1 for jobs per $1 million in spending estimates and Appendix 2 for spending share allocations.

Appendix 1. Employment Estimation Within Input/Output Models and Time Dimension of Model Estimates

Input/Output Model Estimation

All figures have been estimated on the basis of calculations generated within the 2025 IMPLAN cloud version of input/output modelling for Massachusetts. The IMPLAN Massachusetts input/output model features 528 industries within the Massachusetts economy. The data in the model are from 2023 (the most recent available) and the figures are in 2024 U..S dollars.

For an in-depth discussions of our methodological approach to estimating job creation within an input/output model framework, see: Pollin et al. (2014) Green Growth, https://www.americanprogress.org/issues/green/reports/2014/09/18/96404/green-growth/

Massachusetts Economy-Based Share of Overall Adaptation Spending Level

The IMPLAN-based input-output model includes two options regarding the share of overall economic activity that will take place within the geographic area in which the spending on the activity originates. As an example, consider the case in which the Massachusetts state government spends money to upgrade its storm water drainage systems. The question to address within the input-output model is: how much of the total spending on the storm drainage system upgrades will remain within the Massachusetts economy, and how much will "leak" out as spending in other states, or other national economies, as imports? One option provided by IMPLAN is to assume that the existing share of Massachusetts-based spending on storm drainage system upgrades will remain intact. The other option provided by IMPLAN is to assume that 100 percent of spending on the storm drainage system upgrades will remain within the Massachusetts economy. Of course, the purpose of the Massachusetts Climate Superfund project is to provide significant new climate adaptation spending within the Massachusetts economy. It is therefore reasonable to assume that the Massachusetts-based spending share on these adaptation measures is likely exceed the existing share of state-based spending. At the same time, it is not reasonable to expect that Massachusetts-based spending could rise to 100 percent of these adaptation projects. Thus, for the employment estimates we present here, including with our Reference Case, we assume that the Massachusetts-based share of spending and job creation will be the midpoint figure between the existing and the 100 percent spending shares.

Time Dimension in Measuring Job Creation

Any type of spending activity creates employment over a given amount of time. To understand the impact on jobs of a given spending activity, one must therefore incorporate a time dimension into the measurement of employment creation. For example, a project that creates 100 jobs that lasts for one year only needs to be distinguished from another project that creates 100 jobs that continue for 10 years each. The climate adaptation projects proposed under the Climate Adaptation Superfund are meant to continue for 25 years.

Within the context of this time dimension, there are two ways the level of job creation is typically expressed. One is through measuring "job years." This measures cumulative job creation over the total number of years that jobs have been created. Thus, an activity that generates 100 jobs for one year would create 100 job years. By contrast, the activity that produces 100 jobs for 10 years would generate 1,000 job years. With this study, with our estimate that approximately 7,600 jobs will be created through spending $1 billion under

our Reference Case, the cumulative level of job creation over the full 25 years, with spending proposed at $1 billion per year, would be 190,000 job years (i.e. 7,600 jobs x 25 years = 190,000 job years).

The other way to report the same figures would be in terms of jobs-per-year. Through this measure, we show the year-to-year breakdown of the overall level of job creation. Thus, with the illustrative 10-year project we mention above, we could express its employment effects as creating 100 jobs per year for 10 years. For the Superfund project described in this study, we would express its employment effects under the Reference Case as creating 7,600 jobs per year over 25 years.

We focus here on estimates according to the jobs-per-year measure. We do so because this is the measure that is appropriately scaled to the size of the Massachusetts economy and labor market. Thus as of 2024, a total of approximately 3.7 million people were employed within the Massachusetts economy. Adding approximately 7,600 jobs within this labor market represents an increase of approximately 0.2 percent relative to the state's current employment level. The cumulative level of job creation over 25 years under the Superfund project, amounting to 190,000 job years, does not provide an appropriate indication of the impact these Superfund projects will have within the overall Massachusetts economy at any given time.

Appendix 2. Funding Spending Allocation Shares Under the Mass Ready and Climate Superfund Proposals

In Table 2, we show the main program areas that would be financed under the Mass Ready Act proposal, and the relative shares of the $2.9 billion in total funds proposed under the bill. We drew upon these proposed funding share allocations in developing the funding shares in our Reference Case scenario (as listed in Table 1). For example, the Mass Ready proposal allocates 21.5 percent of total funding for "water quality and environmental protection." We have similarly allocated $200 million, i.e. 20 percent of $1 billion in total Superfund spending, for "upgrading storm water drainage systems." The Mass Ready proposal also allocates 20.7 percent of total funding to "flood protection and dam safety." We correspondingly allocated 20 percent of total funding under the Climate Superfund measure to "relocating, elevating or retrofitting sewage treatment plants."

In cases where the spending categories within the Mass Ready Act do not correspond as closely to those in the Superfund proposal, we allocated the shares proposed under Mass Ready to the Superfund as we considered consistent relative to the two proposals. For example, Mass Ready proposes that roughly 10 percent in total funding be provided for "conservation and natural resources." Following from this, we have allocated 5 percent each within the Superfund spending total to "implementing nature-based solutions for coastal and flood protections" and "addressing urban heat island effects."

The one case in which we have altered the funding allocation under the Superfund measure relative to the Mass Ready proposal is with the Superfund category "installing energy efficient cooling systems and other weatherization and energy efficiency upgrades." Such energy efficiency measures are not specifically incorporated within the Mass Ready proposal. They would likely be included as sub-components within the 28.8 percent allocation for "infrastructure and property management." But the Mass Ready proposal does not indicate how large these sub-component spending shares should be.

We allocated 15 percent of total Superfund spending to energy efficiency measures because such investments are the most cost-effective way to reduce carbon dioxide emissions and thereby contribute to a viable overall climate stabilization project. We then adjusted the remaining Superfund spending categories on the basis of having provided the 15 percent allocation for energy efficiency projects.

TABLE 2.
Spending Allocation Shares Under Mass Ready Act Proposal

Program area	Proposed spending allocation	Share of total spending proposal
Infrastructure and Property Management	$837.1 million	28.8%
Water Quality and Environment Protection	$625.0 million	21.5%
Flood Protection and Dam Safety	$601.6 million	20.7%
Municipal Support and Preparedness	$365.0 million	12.5%
Conservation and Natural Resources	$288.5 million	9.9%
Agriculture and Food Security	$193.0 million	6.6%
Totals	**$2.9 billion**	**100.0%**

Source: The Mass Ready Act

Appendix 3. Components of Total Job Creation Estimates Under Reference Case

In Table 3 below, we present the full set of our job creation estimates under the Reference Case. This includes our estimates of job creation broken out by the three subcategories of job creation, i.e. direct, indirect, and induced job creation.

TABLE 3.

Full Job Creation Estimates for Massachusetts Climate Superfund Program Under Reference Case Assumptions

Includes Direct, Indirect, and Induced Job Creation Categories for Reference Case

Adaptation activity	1. Annual funding allocation	Job creation per $1 million in spending				Total job creation			
		2. Direct	3. Indirect	4. Induced	5. Total	6. Direct	7. Indirect	8. Induced	9. Total (= columns 6+7+8)
Relocating, elevating, or retrofitting sewage treatment plants	$200 million	3.0	1.3	1.8	6.0	595	251	356	1,202
Upgrading storm water drainage systems	$200 million	2.5	1.4	1.8	5.7	502	285	350	1,137
Installing energy efficient cooling systems and other weatherization and energy efficiency upgrades	$150 million	5.2	1.2	2.2	8.5	783	173	324	1,280
Making defensive upgrades to roads, bridges, subways and transit systems	$150 million	3.7	1.1	1.7	6.6	554	170	260	985
Responding to toxic algae blooms, loss of agricultural topsoil, and other climate-driven ecosystem threats	$50 million	11.8	0.2	1.4	13.3	588	8	68	664
Implementing nature-based solutions for coastal and flood protections	$50 million	8.7	0.5	1.8	11.0	433	27	92	552
Addressing urban heat island effects	$50 million	8.7	0.5	1.8	11.0	433	27	92	552
Undertaking preventive health care programs and providing medical care to treat illness or injury resulting from effects of climate change	$50 million	5.9	1.4	2.7	10.0	296	70	136	502
Preparing for and recovering from extreme weather events	$50 million	5.2	1.1	2.2	8.5	261	55	109	425
Upgrading electrical grid to increase stability and resilience	$50 million	3.6	0.7	1.5	5.8	182	34	75	291
TOTALS	**$1 billion**	—	—	—	—	**4,627**	**1,102**	**1,860**	**7,588**

Sources: See Appendices 1 and 2.

Note: Small differences in totals through adding columns 6-9 in this table and between this table and Table 1 are due to rounding.

Appendix 4. Climate Superfund Job Creation Estimates Under Alternative Assumptions

In Tables 4 and 5 below, we present job creation estimates for the Massachusetts Climate Superfund project under two alternative sets of assumptions.

High-End Budget Assumption

In Table 4, we generate employment estimates on the assumption that overall spending for the 10 Superfund adaptation measures totals to $2.4 billion per year rather than the $1 billion per year figure under our Reference Case. The $2.4 billion per year figure is derived from the Polluters' Pay Climate Fund Act introduced into the U.S. Congress in July 2025 by Senator Chris Van Hollen.[2] Under this national proposal, the level of U.S. economy-wide spending on climate adaptation measures is estimated at $100 billion per year for 10 years, for an overall budgetary allocation over 10 years of $1 trillion. The explanation as to how this $100 billion national annual budgetary estimate is derived is as follows:

> Using peer-reviewed "carbon attribution" research, it is possible to definitively attribute carbon in the atmosphere to specific companies. The Polluters Pay Climate Fund Act would assess companies based on their global carbon dioxide emissions and authorizes the Treasury Department to charge the largest polluters in proportion to their past carbon emissions, in excess of 1 billion metric tons – resulting in the top polluters contributing $100 billion each year for 10 years to the Fund.

We estimated the Massachusetts share of the overall $100 billion funding level as an equally weighted average of: 1) the Massachusetts share of the overall U.S. population; and 2) the Massachusetts share of overall U.S. GDP. The weighted average that results for Massachusetts is 2.4 percent. Thus, the Massachusetts budget under this national Polluters' Pay proposal would be $2.4 billion per year.

As we see in Table 4, the annual job creation estimate rises correspondingly as the overall spending level rises from $1 billion per year under the Reference Case to $2.4 billion per year under this higher-end budget assumption. Thus, our estimate for annual job creation under this higher-end budget assumption is 18,204 jobs per year.

Equal Budget Shares per Adaptation Activity

In this scenario, we maintain the overall budget level at $1 billion per year over 25 years. But we allocate these funds among the 10 adaptation activities at equal 10 percent shares, amounting to $100 million per activity per year. As Table 5 shows, under this equal budgetary shares assumption, overall job creation for the Superfund project is 8,640 jobs per year. Job creation under this assumption rises relative to the 7,600 job creation per year estimate under the Reference Case. This is because, on balance, the activities that received larger allocations under the Reference Case were relatively capital intensive and those receiving smaller budgetary allocations were relatively labor intensive.

2 The justification and main features of the bill are presented in this summary. The full bill is presented here.

TABLE 4.
Climate Fund Superfund Job Creation Estimates Under High-End Budget
Overall funding assumption is $2.4 billion per year

1. Adaptation activity	2. Funding allocation	3. Job creation per $1 million in spending	4. Total job creation *(= columns 2x3)*
Relocating, elevating, or retrofitting sewage treatment plants	$480 million (20% share)	6.0 jobs	2,880 jobs
Upgrading storm water drainage systems	$480 million (20% share)	5.7 jobs	2,736 jobs
Installing energy efficient cooling systems and other weatherization and energy efficiency upgrades	$360 million (15% share)	8.5 jobs	3,060 jobs
Making defensive upgrades to roads, bridges, subways and transit systems	$360 million (15% share)	6.6 jobs	2,376 jobs
Responding to toxic algae blooms, loss of agricultural topsoil, and other climate-driven ecosystem threats	$120 million (5% share)	13.3 jobs	1,596 jobs
Implementing nature-based solutions for coastal and flood protections	$120 million (5% share)	11.0 jobs	1,320 jobs
Addressing urban heat island effects	$120 million (5% share)	11.0 jobs	1,320 jobs
Undertaking preventive health care programs and providing medical care to treat illness or injury resulting from effects of climate change	$120 million (5% share)	10.0 jobs	1,200 jobs
Preparing for and recovering from extreme weather events	$120 million (5% share)	8.5 jobs	1,020 jobs
Upgrading electrical grid to increase stability and resilience	$120 million (5% share)	5.8 jobs	696 jobs
TOTALS	**$2.4 billion**	**----**	**18,204 jobs**

Sources: See Appendix 1 for jobs per $1 million in spending estimates and Appendix 2 for spending share allocations.

TABLE 5.

Climate Fund Superfund Job Creation Estimates Under Equal Share Funding

Overall funding assumption is $1 billion per year; All programs allocated $100 million

1. Adaptation activity	2. Funding allocation	3. Job creation per $1 million in spending	4. Total job creation *(= columns 2x3)*
Relocating, elevating, or retrofitting sewage treatment plants	$100 million (10% share)	6.0 jobs	600 jobs
Upgrading storm water drainage systems	$100 million (10% share)	5.7 jobs	570 jobs
Installing energy efficient cooling systems and other weatherization and energy efficiency upgrades	$100 million (10% share)	8.5 jobs	850 jobs
Making defensive upgrades to roads, bridges, subways and transit systems	$100 million (10% share)	6.6 jobs	660 jobs
Responding to toxic algae blooms, loss of agricultural topsoil, and other climate-driven ecosystem threats	$100 million (10% share)	13.3 jobs	1,330 jobs
Implementing nature-based solutions for coastal and flood protections	$100 million (10% share)	11.0 jobs	1,100 jobs
Addressing urban heat island effects	$100 million (10% share)	11.0 jobs	1,100 jobs
Undertaking preventive health care programs and providing medical care to treat illness or injury resulting from effects of climate change	$100 million (10% share)	10.0 jobs	1,000 jobs
Preparing for and recovering from extreme weather events	$100 million (10% share)	8.5 jobs	850 jobs
Upgrading electrical grid to increase stability and resilience	$100 million (10% share)	5.8 jobs	580 jobs
TOTALS	**$1 billion**	**----**	**8,640 jobs**

Sources: See Appendix 1 for jobs per $1 million in spending estimates and Appendix 2 for spending share allocations.

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Shouvik Chakraborty is a an Associate Research Professor at the Political Economy Research Institute. His research focuses on the employment impacts of green energy investments. This work also examines issues at the intersection of inequality, climate change and environmental justice, especially with respect to developing countries. Separately, he researches subjects related to international trade between advanced countries and developing countries. He is the co-author of the 2015 study *Global Green Growth: Clean Energy Industrial Investments and Expanding Job Opportunities*. In 2019, he co-edited a broad-ranging book on the current political economic situation in India, *A Quantum Leap in the Wrong Direction?* He is a member of the UNESCO Inclusive Policy Lab, a global initiative dedicated to knowledge crowdsourcing and its translation into policy. He is also a contributor to the blog of the International Growth Centre, a research organization affiliated with the London School of Economics and the Institute for New Economic Thinking (INET). He is a member of the Indian Society of Ecological Economics (INSEE), the International Society for Ecological Economics (ISEE), and the Eastern Economic Association (EEA).

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