American Recycling Infrastructure Plan

July 15, 2021

Prepared by

For Recycling Is Infrastructure Too Campaign

Contacts:
Bob Gedert, change@nrcrecycles.org, 512-568-8340
Neil Seldman, nseldman@ilsr.org, 202-607-9786
Richard Anthony, ricanthony@aol.com, 858-232-0826

Written and Edited By:
Bob Gedert, Jeremy Drake and Gary Liss
American Recycling Infrastructure Plan

Introduction

The American Jobs Plan, introduced by the Biden / Harris Administration on March 31, 2021, calls for a bold new infrastructure plan for the American people. President Biden stated:

“The American Jobs Plan will lead to a transformational progress in our effort to tackle climate change with American jobs and American ingenuity. It’ll protect our community from billions of dollars of damage from historic super storms, floods, wildfires, droughts, year after year, by making our infrastructure more secure and resilient and seizing incredible opportunities for American workers and American farmers in a clean energy future.”

On that same day, the National Recycling Coalition (NRC), the Institute for Local Self-Reliance (ILSR) and Zero Waste USA issued an immediate request for the inclusion of “waste reduction, reuse, recycling and composting that will stem climate disruption, address racial justice, and create thousands of jobs throughout the country” in its news release Recycling is Infrastructure Too! This Recycling Infrastructure Plan is the follow-up, with detailed policies and programs that should be included in the infrastructure bill discussion on Capitol Hill.

Talks continue in the halls of Congress on what is best to include in the infrastructure bill. Reuse, recycling, and composting have a proven track record of creating jobs that support economic recovery for the American economy. The 2020 USEPA Recycling Economic Information Project includes updated information about the number of recycling jobs, wages and tax revenue. The report determined that the American recycling industry consisted of approximately 681,000 direct jobs, $37.8 billion in wages; and $5.5 billion in tax revenues.

According to ILSR’s May 2013 report, Pay Dirt: Composting in Maryland to Reduce Waste, Create Jobs & Protect the Bay, expanding composting and local compost use could support almost 1,400 new full-time jobs in Maryland, paying wages ranging from $23 million to $57 million. A 2020 City of Austin economic development study of how much and what type of reuse and recycling infrastructure investment demonstrated the economic benefits in Austin in 2018 of over $1.1 billion in total economic activity, $616.2 million in value-added, about $304 million in labor compensation, and approximately 6,300 permanent jobs. Minnesota’s recycling manufacturing industry (including recycling collection, MRFs and remanufacturing plants) supported more than 60,000 jobs and paid almost $3.4 billion in wages and added nearly $15.7 billion to Minnesota’s economy, based on a 2013 study. A 2021 report from Reuse Minnesota found that the statewide reuse economy generates about $5.8 billion each year and accounts for over 55,000 jobs in Minnesota, about 1 percent of overall employment in the state.

Recycling is climate change too. Data from a 2009 report, Opportunities to Reduce Greenhouse Gas Emissions through Materials and Land Management Practices, U.S. Environmental Protection Agency Office of Solid Waste and Emergency Response shows that infrastructure and supporting programs that prevent, reuse, recycle and compost our discards would mitigate 42% of the carbon that our society emits to the atmosphere. Since logging, mining, farming, transportation, and manufacturing of consumer goods, packaging and food causes significant climate change and is set to cost Americans increasingly over the coming decades, we need to consume our resources more wisely and invest in both infrastructure and programs and incentives to reduce these carbon emissions.
Adding billions of dollars in economic activity to the American economy each year, the recycling circular economy is in its infancy, while recycling infrastructure (such as material recovery and composting facilities) is fractured and in need of repair much like U.S. bridges and road systems. With a combination of investments in physical infrastructure (like collection vehicles, carts and processing facilities) and supporting infrastructure (e.g. policies, programs, education and training), American recycling infrastructure will grow significantly beyond the economic strength it currently has, creating the circular economy described by the Ellen Macarthur Foundation and already accomplished in large part in China. All materials, products and packaging in a circular economy are returned to the soil and nature (as “biological nutrients”) or to the economy (as “technical nutrients”) such as metals, glass and concrete.

Recycling Infrastructure Plan

The Plan presents the following fifty (50) Recycling Infrastructure initiatives, brought forward by a coalition of national reuse, recycling and composting experts, local government organizations and environmental leaders that desire to strengthen our national recycling infrastructure. This Plan also provides innovative funding mechanisms for this infrastructure investment, so this does not have to be supported solely by the General Fund of the U.S. Government. These initiatives are presented as investments in physical infrastructure, and then needed investments in supporting infrastructure needed to maximize the efficiency and use of these physical investments. The dollar estimates for each initiative are for the first year of a proposed 3-year investment strategy. The focus for these investments is on one-time expenses that would modernize the industry, and then be sustainable thereafter based on fees for services. The recommended funding source for this infrastructure investment could continue to help fund supporting infrastructure thereafter, and also be used to help fund other climate change initiatives.

To maximize investments in American Recycling Infrastructure, the following is a phased distribution plan for best impact in local communities. The phases are “Physical Infrastructure” in financial need immediately, and then “Infrastructure Support Policies and Programs” supporting the investment in Physical Infrastructure with policy changes, market development, and education and training. The initiatives outlined in this plan will help address the estimated 180 million tons of municipal solid waste (MSW) discarded to landfills and incinerators annually in the United States. Additional initiatives should be considered to address the roughly 140 million tons of construction and demolition debris landfilled annually, most of which is concrete from roads and bridges projects making this debris particularly relevant to this discussion.

Physical Infrastructure

Physical Infrastructure projects require the immediate infusion of funding to support the stressed and underdeveloped recycling systems throughout the country.

Reduce Initiatives

Federal Policies

A. Invest in Edible Food Capture Infrastructure to Reduce Food Loss and Waste (Congressional action, USEPA)

Authorize the USEPA to administer a national grant program to expand the infrastructure and technology needed to address the problem of spoiled and wasted food.
Local food banks and other community entities engaged in food redistribution programs could expand their ability to capture, transport, and store edible food and direct it to hungry people. Examples of necessary equipment include reusable National Sanitation Foundation (NSF) certified food transport containers, refrigerated transport vehicles, and expanded on-site energy efficient refrigeration capacity.

$100 Million annual investment for three years - grants to local government or private sector operators (source: NRC)

**Reuse Initiatives**

**Federal Policies**

A. **Establish Reuse Warehouses & Reuse Centers (Congressional action, USEPA)**

Authorize the USEPA to administer a national grant program to establish reuse warehouses and reuse centers that can collect from the curbside, evaluate the condition of durable consumer products, repair, salvage parts, and redistribute previously purchased items through centralized reuse rather than disposal to create jobs and support local economies.

State and Local Government requirements for reuse should be given preferential treatment and linked to the establishment of reuse centers. Other examples of local reuse centers are for office equipment, teachers supplies, chemistry lab supplies donated from industry, furniture rehab and reuse, and construction materials reuse. EPA should offer grants to develop guidance on how to build, staff and operate a PERF (Product Evaluation and Repair Facility) including repair rooms for furniture, electronics, appliances, clothing/shoes, and books. Funding for staff training to evaluate, repair and salvage should be included here.

$250 Million annual investment for three years - grants to local government or private sector operators (source: NRC)

B. **Establish Federal Regional Office Reuse Centers (Congressional action, USEPA)**

The USEPA should establish regional office reuse centers in national government office clusters that can collect and redistribute previously purchased office supplies and office equipment through a centralized re-disbursement policy that encourages reuse rather than disposal. Federal, State and Local Government requirements for reuse should be given preferential treatment linked to the establishment of reuse centers.

$50 Million annual investment for three years (source: NRC)

C. **Install Water Refill Stations to Replace Single-Use Plastic Water Bottles at National Parks and Across Public Lands (Congressional action, National Parks Service)**

The National Park Service should install water refill stations in national parks and across public lands with existing services like visitor centers, and rest areas.

$25 Million annual investment for three years (source: #breakfreefromplastic)

D. **Support Community Repair Spaces and Repair Shops**
Authorize the USEPA to administer a national grant program to fund overhead and equipment to develop community repair spaces (Fixit Clinics and Repair Cafes) and to assist independent repair shops to obtain state-of-the-art repair equipment (including pilot programs for equipment for auto repair shops to repair electric vehicles).

$50 Million annual investment for three years (source: NRC)

**Recycling Initiatives**

A. **Fund Implementation of Cart-based Collection to Improve Recycling Services to 38 Million Residences in Underserved Communities (Congressional action, USEPA)**

Authorize the USEPA to administer a recycling grants program to invest in the distribution of 38 million recycling carts, and the vehicles needed to service the collection of recyclables.

Investment is needed for equitable and informed access to curbside recycling programs that use efficient best management practices focused on cart-based collection while recognizing that some residents will still require bin-based collection. In addition to investment in collection containers (carts and bins), new trucks will also be needed to serve the expansion in cart use and to optimize curbside service. Trucks with automated collection improve the efficiencies of recycling collection and protect the health and safety of sanitation workers through a contactless system.

$1.34 Billion for infrastructure annually for three years – grants to local governments (source: NRC and The Recycling Partnership)

B. **Invest in New and Existing Material Recovery Facilities (MRFs) (Congressional action, USEPA)**

Authorize the USEPA to administer a recycling grants program to invest in the distribution of funds to modernize, construct, and/or rebuild MRFs to process residential, commercial, industrial, and institutional collected recyclables.

Existing MRFs in the U.S. need capital for new and best-in-class equipment to process increased tonnage resulting from improved access to address equity issues, and for changes in the types of materials collected from existing collection programs. A substantial injection of capital would modernize the national MRF infrastructure and improve the fate of all materials in the system, whether in establishing recyclability, enhancing quality, or improving processing capture rates. In addition, MRFs must deal with incoming flows of contamination of new product designs, requiring adjustments to equipment. Capital investment across the nation to existing MRFs could assist in creating a national set of collection standards. Under-served areas need new MRFs to enable them to offer accessible collection programs. MRFs across the country need to be rebuilt. Reports of MRF fires caused by Lithium-Ion batteries are on the rise and are estimated to cost North American recyclers $1.2 billion dollars annually in damages. Some MRF operators have chosen not to rebuild after such fires thereby reducing material recovery capacity in some areas.

$1 Billion for infrastructure annually for three years – grants to MRF operators (source: NRC and The Recycling Partnership)

C. **Invest in Hub-and-Spoke Transfer Infrastructure (Congressional action, USEPA)**


Authorize the USEPA to administer a recycling grants program to invest in the distribution of funds to support remote and rural recycling collection systems.

The remote and rural areas of the country are challenged to collect material efficiently. This piece of the system requires what is often called “hub-and-spoke” in which mostly rural curbside or drop-off programs use transfer capacity to consolidate and send material to mostly urban-based MRFs. The hub-and-spoke model addresses the fact that MRFs require a critical level of material flow that rural areas cannot meet alone, but those rural areas also need processing options to take advantage of the efficiencies of commingled collection; it often parallels infrastructure in place to transfer solid waste. The model uses two different categories of material transport – large tractor trailer-based transfer stations and smaller compactor-based transfer. An analysis of where MRFs exist and where transport is needed in each state is required to estimate hub-and-spoke capital requirements. Some hub-and-spoke systems already exist in the U.S., and a factor was applied to recognize infrastructure already in place.

$60 Million for infrastructure annually for three years – grants to public, private, local government, NGO and tribal operators
(source: NRC and The Recycling Partnership)

D. Invest in Recycling Infrastructure Development for Lithium-Ion Batteries (Congressional action, USEPA, DOE)

Authorize the USEPA or the Department of Energy (DOE) to administer a recycling grants program to invest in the distribution of funds for the research, development and construction of lithium-ion battery recycling infrastructure within the US.

Lithium-ion (Li-ion) batteries are a type of rechargeable battery that are commonly used for portable electronics and electric vehicles and are growing in popularity for military and aerospace applications. More than 800 million lithium-ion batteries are produced annually and, as noted above, pose a significant hazard to the recycling collection infrastructure. As most electric vehicle manufacturers have established goals to convert their production fleets to electric vehicles, the demand for lithium-ion batteries will grow exponentially. It is imperative that an American recycling infrastructure be developed for these lithium-ion batteries to create a circular economy that supports the electric car industry. The basic components of the batteries are recyclable, however there are no known disassembly and recycling facilities in the US at this time. There is a need for research, development and construction of lithium-ion battery recycling infrastructure within the US. The recent NREL report entitled “A Circular Economy for Lithium-Ion Batteries Used in Mobile and Stationary Energy Storage: Drivers, Barriers, Enablers, and U.S. Policy Considerations” provides valuable initial insight into this issue.

$250 Million for infrastructure – grants to innovators/developers
(source: NRC)

Compost Initiatives

A. Invest in Composting Infrastructure (Congressional action, USEPA)

Authorize the USEPA to administer funding to local governments and public educational institutions to upgrade and expand commercial-scale composting and other infrastructure for discarded organic materials, including the collection of source-separated yard waste and food scraps and food rescue and food bank programs.
Organics management programs divert waste from landfills into more useful alternatives with significantly lower environmental and public health impacts, including by reducing methane releases. The US Composting Infrastructure Coalition can offer expertise in this space.

$200 Million annual investment for three years - grants to local governments
(source: #breakfreefromplastic)

**Infrastructure Support Policies and Programs**

Supporting Infrastructure reinforces the investment in Physical Infrastructure through policy changes, market development, and public education. Implementation of these initiatives will maximize the investment in the needed physical infrastructure and will further support the critical shift toward a circular economy. Without this infrastructure support and maximizing public participation in recycling, the physical infrastructure will not be used to the extent necessary to achieve the benefits to climate and job creation.

**Reduce Initiatives**

Reduce, also known as source reduction or waste prevention, means reducing waste at the source, before products and materials are discarded at the end of their useful life. Prevention also includes programs, incentives and legislation that encourages residents and businesses to consume fewer new products and packaging, and procure used, rent, borrow and share more.

**Federal Policies**

A. **Fund the Development of Food Loss and Waste Public-Private Partnerships (Congressional action)**

Congress should allocate funding for cities and states to apply to develop public-private sector partnerships for the purpose of accelerating food waste reduction, which could be managed through the Federal Interagency Food Loss and Waste Collaboration.

There is evidence that public-private sector partnerships can accelerate food waste reduction, with an estimated 80:1 return. The Pacific Coast Collaborative’s West Coast Voluntary Agreement to Reduce Wasted Food and NRDC’s Food Matters project show how cities, states, and businesses can work together to share best practices, discuss common-sense policymaking, and address shared sustainability challenges around Food Loss and Waste.

$50 Million in investment and partnerships. (source: Food Loss & Waste Plan)

B. **Adopt a National Extended Producer Responsibility (EPR) Framework for Difficult to Recycle Items. (Congressional action, USEPA)**

Direct the USEPA to establish a national EPR framework that embraces the Precautionary Principle of “Do No Harm” where EPR can provide incentives to redesign products to eliminate toxins and potential human harm.

In addition, encourage reuse, recycle and compost in the design of new products. Items to consider in this national framework should include paint, carpet, lithium-ion batteries, all forms of household batteries, mercury-containing devices, electronics, tires, and mattresses. The
national EPR framework should also include plastics that are not commonly recovered cleanly from 60% or more of the material recovery facilities in the US, as “difficult to recycle” plastics. An effective national EPR model involves open transparency, producer financial responsibility, and local, state and national governmental oversight and direction, and tools to hold the system accountable. As local governments bear the largest burden of end-of-life costs, there should be a local government reimbursement component involved with each EPR program (e.g. funded by unredeemed deposits). A national third party NGO (with state and local government oversight) should operate each EPR national product collection network, in harmony with existing state EPR programs.

$100 Million annually for EPR policy development & programs   (source: NRC Policies)

C.  **Adopt a Set of Federal Government Source Reduction and Waste Elimination Policies**  
(Congressional action, USEPA)

Direct all federal agencies by congressional action to adopt federal purchasing policies and waste disposal practices that place emphasis on reducing, reusing, and recycling.

Source reduction, also known as waste prevention, means reducing waste at the source, and is the most environmentally preferred strategy. Purchasing products that incorporate these features supports source reduction.

Reduces expenses - internal policy development   (source: **USEPA**)

D.  **Stop Subsidizing Plastics Producers**  
(Congressional action, DOE, DOC, USEPA, federal agencies)

Direct the Department of Energy to end all loan and guaranteed financing programs that increase plastics production, from extraction, pipelines, storage to manufacturing and export.

Direct all federal agencies to ensure that polluters who enter into settlement agreements in connection with their violations of laws and regulations are not able to deduct the payments from their taxes.

Direct the Department of Commerce to include more environmentally sound alternatives to plastics as a cornerstone of its next Strategic Plan, including mechanisms for shifting federal financing and other support from the petrochemical industry to financing research and development for alternatives to plastics, including reusable products as well as sustainable waste reduction and management technologies.

Direct the USEPA to enforce financial assurance obligations under the Comprehensive Environmental Response, Compensation, and Remediation Act (Superfund) for oil refining and chemical manufacturing industries to ensure that companies are not self-bonded and are fully funding closure costs.

Direct the Department of Commerce to advocate for the selection of U.S. suppliers of plastic alternatives in foreign government procurement opportunities, to provide assistance to green investors that want to do business in and with the United States, and to produce other opportunities to promote plastics solutions that reduce impacts to public health and the environment.
$0 expenses for internal policy development (source: #plasticfreeepresident)

E. Stop All Subsidies for “Chemical Recycling,” also known as: “Advanced Recycling”, “Conversion Technologies” and “Alternative Technologies” (Congressional action, DOE, USEPA)

Direct all Federal agencies to stop providing any grants, loans, loan guarantees or other financial support for the planning, development and implementation of facilities that operate over biological temperature (212°F.) and eliminate purposefully called misleading names such as “Chemical Recycling (if less than 90% of the yield from incoming materials goes to fuels),” “Advanced Recycling”, “Conversion Technologies” and “Alternative Technologies”.

Reduces expenses [e.g. DOE grants $27 million] (source: NRC)

F. Eliminate Federal Subsidies to Fossil-Fuel Industries that Fuel the Climate Crisis (Congressional action, Treasury)

Congress should direct the U.S. Department of Treasury to eliminate all U.S. investments in fossil-fuels and redirect those funds to climate change investments.

This would be an important demonstration of leadership on climate change. Current federal subsidies in fossil-fuels leads toward the excessive production of plastics that Americans want to reduce.

Reduced Federal financial subsidies (source: NRC policies)

G. Eliminate Federal Subsidies to Mining, Extracting and Manufacturing of Products (Congress and Administration)

Congress should repeal oil depletion allowances and timber harvesting credits from the federal tax code.

Additional actions the Administration can take to eliminate federal subsidies that create unfair disadvantages in the capital market system:

- Identify and alter tax policies that enhance polluting industries and products at the expense of more environmentally benign systems and goods. Shift taxes from income and labor ("goods") to resource depletion, wasting, and polluting activities ("bads").
- End federal subsidies for virgin materials extraction, processing, and manufacturing.
- Eliminate mining byproducts’ exemptions from hazardous waste rules.
- Revise the Resource Recovery and Conservation Act (RCRA) and revamp federal Subtitle D regulations to require landfills to minimize air emissions and protect groundwater resources in perpetuity.
- End subsidies for wasting facilities (such as tax breaks provided by private activity bonds and guaranteed markets for electricity from waste incinerators through the Public Utilities and Regulatory Policy Act).
- Direct federal agencies to require externalized product development and manufacturing costs to be included in purchase costs and not subsidized by the overall taxpayer base. (e.g. timber in national forests for paper products, water from public sources for single-use water bottling plants)

Reduced Federal financial subsidies (cost savings to taxpayers) (source: NRC policies)
H. Eliminate Single-Use Plastic Items and Replace Them with Reusable Products Through the Use of the Purchasing Power of the Federal Government (Congressional action, GSA)

Appoint a Plastic Pollution Czar to coordinate plastic reduction efforts amongst federal agencies and internationally.

The federal government is the single largest purchaser of goods and services in the United States, spending more than $450 billion on products and services each year. That means the government is one of the country’s largest consumers of disposable plastic products. By altering its product specifications to give preference to reusable products, the federal government could both significantly reduce the amount of plastics going to landfill and incinerators each year and spur demand for alternatives to single-use plastic products.

Direct the head of each federal agency to ensure that it does not purchase single-use plastic products, or allow them to be sold on federal property, with limited exemptions. Require each agency to submit a plan detailing what it will do to eliminate single-use plastic products.

Issue an Executive Order immediately prohibiting all federal agencies and federal contractors from purchasing or selling single-use plastic water bottles in national parks or other federal facilities.

Direct the EPA to update its Environmentally Preferable Purchasing Program and Comprehensive Procurement Guidelines to clarify agencies must not acquire single-use plastics.

Work with federal agencies to develop and implement a strategy to phase out single-use plastic products across the federal government. The new strategy should have numerical goals, timelines to achieve them and sufficient funding for any new capital costs, such as installing dishwashing equipment, water fountains, and other improvements.

In any new stimulus or other spending bills, include as eligible for funding projects that reduce the use of plastic by the federal government and other federally funded projects or entities.

$50 Million in investment and purchasing. (source: #plasticfreepresident)

I. Reduce and Mitigate Plastic in the Ocean by US Government Agencies (Congressional action, NOAA, USEPA)

Direct the National Oceanic and Atmospheric Administration (NOAA) to develop regulations, in consultation with the USEPA, to reduce and mitigate abandoned, lost or otherwise discarded all plastic from any governmental agency.

Example: fishing gear, as well as to reduce plastic in hunting and fishing items. Additionally, burning plastic fishing gear must be prohibited.

$25 Million investment to develop standards and education. (source: #plasticfreepresident)

J. Increase Disaster Debris Recovery Through Waste Avoidance and Prevention Practices (Congressional action, FEMA. USEPA)

Direct FEMA and USEPA to establish a national task force to identify best practices for funding, infrastructure, collaboration, contracting and deployment for disaster debris prevention and
management, including the elimination of poor practices such as the use of air curtains to burn compostable debris. The best practices developed should be disseminated through community training and FEMA reimbursement schedules. Examples of infrastructure include wood chippers, mobile mini sorting facilities, trucks, and staging areas.

$25 Million investment in development of standards, education and grants for development of state and local disaster debris prevention and material recovery plans.

$200 Million annual investment for three years in new equipment and facilities that reduce, reuse, recycle or compost disaster debris (source: NRC)

**Market Development**

**A. Create a National Pay As You Throw (PAYT) Program**

Congress should direct USEPA to create a National Pay As You Throw (PAYT) program with best practices for implementing PAYT and provide grant funding for communities to buy collection containers, collection vehicles and processing facilities (for recycling and composting) if they adopt a PAYT program.

Rate structures for trash collection can create a “market incentive” to reduce waste and recycle more. PAYT (also called trash metering, unit pricing, save as you throw, variable rate pricing, or user-pay) is a pricing model for disposing of municipal solid waste. Users are charged a rate based on how much waste they present for collection to the municipality or collection agent. Collection and processing of reusables, recyclables and organics should be bundled as part of the costs of waste-related services to incentivize residents and businesses to dispose less in the trash. States that have already legislated PAYT include OR, MN, WI, VT and several others. Over 9,000 cities large and small have implemented PAYT. San Francisco has had PAYT since the 1930s. USEPA has been recommending PAYT since 1990 and its studies show that PAYT is the single most effective means of reducing wasting and increasing reuse, recycling and composting. University of New Hampshire researchers evaluated the waste programs of 180 New Hampshire towns, representing 90 percent of the state’s population. The 34 towns with PAYT programs saw waste disposal rates drop by 42 to 54 percent compared to towns without PAYT.

$100 Million annually for EPR policy development & community grants (source: NRC Policies)

**B. Fund Refillable Bottle Market Development Grants (Congressional action, DOC, USEPA)**

The Congress should direct the Department of Commerce and the US Environmental Protection Agency to establish the National Refillable Bottle Market Development grants program to encourage bottlers to create a bottle return system that utilizes the original bottle as a refillable, rather than breaking the bottle and recycling the glass. The market development grants program parameters should be based on the best practices recommendations of a blue-ribbon panel of recycling experts. Adopt a target for a minimum amount of refillables being part of this system.

$100 Million annual investment for three years - Self-funded national program thereafter (source: NRC)

**C. Require Infrastructure Use of Recycled Content Products (GSA)**
Direct federal agencies to establish the eligibility of funding of reuse systems, recycled content and compost products within all federally funded infrastructure projects (e.g. use of rubberized asphalt on roads and parking lots, and the use of compost products on building and roadway landscaping projects).

Reduces expenses for some products and increases expenses for others  (source: NRC)

D. Update Federal Comprehensive Procurement Guidelines (Congressional action, USEPA)

Require U.S. Environmental Protection Agency (USEPA) to implement the recommendations it received from the public to update Comprehensive Procurement Guidelines, including a clear policy based on solid data collection, particularly as affronts to recycled material use and content become more common.

The statutory goal of more recycling of recoverable material would be advanced if increasingly greater amounts of recoverable material were converted into products purchased by the agencies. There are significant areas that need dramatic and meaningful improvements, especially in the areas of Federal oversight, compliance and enforcement.

The Comprehensive Procurement Guidelines (CPG) are initiatives that promote a system approach to reducing materials use and the associated environmental impacts over the materials’ entire life cycle. The CPG program is authorized by Congress under Section 6002 of the Resource Conservation and Recovery Act (RCRA) (42 U.S. Code 6962). Buying products with recycled content fosters the diversion of materials from the solid waste stream and promotes the use of these materials in the manufacture of new products, strengthening the United States’ recycling system.

$50 Million annual investment for three years for any additional costs for the use of these products by Federal agencies (source: NRC)

E. Require Federal Facilities to Measure, Prevent, Rescue/Reuse, Recycle, and Compost discarded Organic materials and products, and to Purchase Finished Compost Products (Congressional action)

Congress should require all federal agencies to divert organic materials from federal facilities to composting systems.

The federal government can send a clear market signal by requiring federal facilities to divert all discarded organic materials from landfills and incinerators. Government entities and agencies should be required to measure and annually report on the progress of a food waste action plan to prevent food from being wasted, rescue and donate surplus food, and recycle and compost food scraps—all of which can also save the government money by eliminating waste.

The Sustainable Acquisition Policy should be updated to require the purchase of compost by federal agencies made from recovered organic materials per the EPA’s existing guidance, giving preference to small business, women- or minority-owned composting facilities.

Economic savings offset (e.g. from ordering less food through prevention systems and not replacing compostable products single-use purchases with repeated use of reusable food ware) offset added purchasing costs (e.g. for reusable containers)
$200 Million annual investment for three years for systems to expand food rescue and distribution, and composting facilities  
(source: Food Loss & Waste Plan)

**Education and Training**

**A. Fund Research and Awareness Campaigns to Reduce Consumer Food Waste (Congressional action)**

Congress should fund campaigns to reduce consumer food waste, with funding of $3 million annually through 2030—$1 million for research into effective consumer food waste reduction strategies and $2 million into consumer-facing behavior change campaigns.

Policymakers can leverage existing national ad campaigns like NRDC’s Save The Food, social marketing campaigns like the US EPA’s Food Too Good To Waste, consumer education provided by FDA through web resources and consumer education animated shorts, as well as sector toolkits (developed by World Wildlife Fund (WWF) for restaurants, hotels, hospitality, and schools) to build unified campaigns that businesses, governments, educators, NGOs, and others can use to drive awareness and action. Additional research is also needed to determine which household activities have the biggest impact in reducing household food waste. Congress should fund household food waste reduction research in alignment with the recommendations from the National Academies of Science’s recent report: A National Strategy to Reduce Food Waste at the Consumer Level. [add footnote] The USDA Food Loss and Waste Liaison—in partnership with EPA and FDA, and close coordination across USDA agencies (such as the National Institute of Food and Agriculture or Food and Nutrition Service)—should ultimately oversee these efforts.

$3 Million annually for education investment and purchasing. (source: Food Loss & Waste Plan)

**Reuse Initiatives**

**Federal Policies**

**A. Develop Federal Procurement Purchasing Policies that Encourage Purchase of Reuse Systems (GSA)**

The Government Services Administration (GSA) should establish green purchasing standards and requirements for all federal departments and agencies that encourage the use of reuse systems (e.g. refillable beverage containers, returnable pallets, reused cardboard boxes and durable/reusable shipping containers).

All products purchased should also have the requirement of minimizing transportation distance and carbon footprint through the intent of buying or reusing local to encourage the development of a circular economy.

Economic savings (from avoided purchase of single-use products) offset added purchasing costs (source: NRC)
B. Require All Federally-Funded Infrastructure Projects to Use Reuse Systems (Congressional action)

Direct all federal departments and agencies to require the use of reuse systems where possible in all infrastructure projects.

Examples include reusable shipping containers, reusable pallets and reusable foodware containers. Reuse systems will reduce project costs (e.g. avoiding continuous purchase of single-use products).

$150 Million annual investment for three years (economic savings from avoided purchases of single use products) (NRC Policy)

C. Fund the Shift To Reusable Foodware Systems in Government Facilities, Educational Institutions, and Public Lands (GSA, DOE)

The Government Services Administration (GSA) and U.S. Department of Education should establish Reusable Foodware Systems and install water refill stations in publicly-funded educational institutions, government buildings, and in public-lands service areas. Filters to capture microfibers in commercial washing and drying appliances should also be installed in all applicable facilities.

$250 Million initial investment (source: #breakfreefromplastic)

D. Reduce Single-Use Plastic in the Capitol and Legislative Offices (Capitol: Office of the Architect)

The Architect of the Capitol should install or upgrade water refill systems and improve organics collection throughout the Capitol Building, legislative offices, and other buildings under the management of the Architect of the Capitol.

$5 Million initial investment (source: #breakfreefromplastic)

E. Promote Reuse and Repair Businesses (Congressional Action, Treasury/IRS, USEPA)

Institute tax credits and grant funding to support reuse and repair.

A tax credit would benefit those businesses that promote reuse of products, packaging and food via repair and rehabilitation, rental, sharing, and donating. Examples include but are not limited to car and bicycle sharing, electronics, appliances and clothing repair, shoe repair, thrift shops, junk removal services that donate products to charity, free stores, car, bike, and tool rentals. Grant funding to USEPA would support the development of community repair spaces (e.g. Fixit Clinics and Repair Cafes). This initiative is in support of President Biden’s Executive Order on Promoting Competition in the American Economy issued on July 9th.

$50 Million annually in tax credits and grants (Source: NRC)

F. Direct EPA to Collect National Data on Reuse Potential (Congressional action, USEPA)

Require USEPA to seek reuse data nationally to support its recycling and solid waste characterization studies.
Residents and businesses discard a tremendous amount of reusable products. Though there are many methods used to reuse and repair durable consumer goods, which USEPA waste characterization studies have indicated is between 15 and 20% in the aggregate, there is very little data to characterize and assess the condition (repairability) of all categories of durable goods left at curbside for disposal. EPA should study the reuse potential in order to have the information needed to develop reuse infrastructure (e.g. how many trucks, buildings, staff, training, is needed).

$25 Million annual investment for three years (source: NRC)

**Market Development**

**A. Establish New Office of Waste Reduction Innovation and Recycling Market Development (USDOC)**

The U.S. Department of Commerce (USDOC) should establish a new Office of Waste Reduction Innovation and Recycling Market Development, with a primary focus on creating new domestic jobs and organizing job training programs for companies investing in waste reduction and reusable and refillable technologies and products, and a secondary focus on recycling and composting companies. This Office should also provide grants for research, development and demonstration projects, working through the Small Business Innovative Research Program.

$100 Million annual investment for three years (source: #breakfreefromplastic)

**Recycling Initiatives**

**Federal Policies**

**A. Expand Federal Procurement Purchasing Policies on Buy Recycled Content / Buy Compost Products / Buy Local (Congressional action, GSA)**

The Government Services Administration (GSA) should establish specific standards and requirements for all federal departments and agencies that details the quantity of recycled content products and compost products that will be purchased, following the USEPA Comprehensive Procurement Guidelines.

All products purchased should also be required to minimize transportation distance and carbon footprint through also integrating buying American and buying local guidelines to encourage the development of a national circular economy.

Economic savings offsets added purchasing costs (source: NRC)

**B. Establish Fair Trade Marketing Standards on Plastics Products Displaying the Recycling Arrows (Congressional action, FTC)**

Direct the Federal Trade Commission, in its "Green Guide" on environmental marketing claims, to prohibit companies from falsely claiming their plastic products are recyclable.
Direct the EPA and the National Institute of Standards and Technology to set minimum recycled content standards for beverage containers and other items.

Direct the EPA to develop new data collection methodologies to accurately report waste reduction, recycling, and composting rates throughout the United States. Require consistent reporting from local and state governments and the private sector.

$5 million for policy development and enforcement

C. Join International Efforts to Address the Global Plastic Pollution Crisis Through New and Strengthened Multilateral Agreements (Congressional action)


End the export of plastic wastes (including for "recycling") to non-OECD countries.

Publicly acknowledge the full life cycle impacts of plastic pollution and microplastics on human health and marine and terrestrial ecosystems, and the need for new global governance to address those harms.

Negotiate in good faith a new legally-binding convention on plastic pollution that addresses the full lifecycle of plastics, building on and complementing existing regional and global frameworks while addressing key gaps around global objectives, market restrictions, and a just and safe circular economy for plastics.

Negotiate in good faith a new legally-binding treaty to eliminate fossil fuel extraction, which provides the raw material of 99% of plastics.

$0 expenses for internal policy development

D. Require Waste Reduction Rate Structures for All Federal Waste and Recycling Contracts (GSA)

Direct the Government Services Administration (GSA) to require Pay As You Throw (PAYT) or similar incentive-based commercial or institutional rate structure in waste and recycling contracts for all Federal facilities.

Rate structures for trash collection can create a “market incentive” to reduce waste and recycle more. PAYT (also called trash metering, unit pricing, save as you throw, variable rate pricing, or user-pay) is a pricing model for disposing of municipal solid waste. Users are charged a rate based on how much waste they present for collection to the municipality or collection agent. Waste and recycling contracts should include requirements to conduct regular waste and recycling audits to “right-size” the containers and service schedule to ensure proper scheduling of waste and recycling services.

$50 Million annual investment for three years
E. Utilize Recycled Plastic Composite Lumber in Federal Construction Project Contracts (GSA)

The Government Services Administration (GSA) should establish purchasing requirements for the use of recycled plastic composite lumber in federal construction projects that require exposure to weather and marine environments.

Examples of such projects would include federal ship building ports, federal parks with marine docks, and military posts with marine landing strips. An example of such a use of recycled plastic on a federal property is the Cape Canaveral Air Force Base’s Port Facilities. Another example is the Assabet River Rail Trail in Massachusetts, a multi-use recreational trail that passes through the Marlborough, Hudson, Stow, Maynard and Acton communities, constructed via a contract by the MassDOT. GSA should ensure the recycled plastic specified for marine applications does not degrade into microplastics.

$100 Million annual investment for three years – grants to federal contract partners’ projects (source: NRC)

Market Development

A. Adopt and Establish National Beverage Container Deposit Legislation (Congressional action, USEPA)

The U.S. Congress shall establish National Beverage Container Deposit Legislation that governs all 50 states and US territories, and directs the USEPA to establish the program and regulations. This program shall be separated from the existing proposed package in the Break Free from Plastic Act and considered a self-funded, fee-based national recycling program based on the best practices recommendations of a blue-ribbon panel of recycling experts.

The Reloop “What We Waste” report from April 2021 found that a nationwide container deposit program would reduce beverage container waste by over 80 percent.

Producers of beverages sold in beverage containers of any material, including plastic, metal, carton, and glass, will be required to include a minimum 10 cent refund price on each beverage container. This refund price will be adjusted for inflation every 10 years.

Retailers will be charged this refund as a deposit by the producer and will pass the charge onto consumers. Each time a beverage container is returned, the refund will be refunded to the consumer. Any unclaimed or unreturned deposits will be kept by the National Container Recycling Organization (NGO with Gov’t oversight) to re-invest in recycling collection programs, recycling education and recycling infrastructure. As local governments bear the largest burden of end-of-life costs, there should be direct local government reimbursements (e.g. funded by unredeemed deposits). An effective national model involves open transparency, producer financial responsibility, and local, state and national governmental watchdog involvement and tools to hold the system accountable, with annual reporting to USEPA. States that have existing beverage container programs already in effect before the date of enactment of this act will be able to continue their program or join the federal program.

$100 Million Initial Investment - Self-funded national program thereafter (source: NRC – modified from Break Free From Pollution Act)
B. Develop Federal Procurement Purchasing Policies that encourage Buy Recycled / Buy Compost / Buy Local (SBA)

The Small Business Administration (SBA) should create and expand a Buy Recycled Business Alliance network to sell products to the Federal government. The encouragement of buying recycled will assist in development of new markets, and the creation of recycled content business networks.

$50 Million annual investment for three years (source: NRC)

C. Fund Post-MRF End-Market Development / Buy Recycled Campaigns (Congressional action, USEPA)

Authorize the USEPA to administer a recycling grants program to invest in Buy Recycled market development grants.

As processed commodities leave the MRF, they enter a system of additional processing and manufacturing into new products, which would also need to expand as more are collected. This part of the recycling system is dynamic and represents another area of necessary and ongoing capital investment. As markets react to the economic opportunities of both increased recycled supply and increased demand for recycled content, a Buy Recycled retailer and consumer campaign is necessary to increase the consumption of the increasing supply of recycled content material.

$150 Million annual investment for three years for State Government Market Development Grants (source: NRC)

D. Stimulate the Shift to a Circular Economy Through a Product Redesign Grant Program (Congressional action, USEPA)

Authorize the USEPA to administer a recycling grants program to invest in Recycled Content Redesign Grants.

Carts and education will not fix recycling if the packages entering the collection system are not recyclable. Private investments will need to better align the manufacture of goods around circular economy principles, ensure that packages are thoughtfully and safely designed with circularity in mind, can be recovered as they move through the recycling system, and increasingly use recycled content. Examples of collaborative efforts and private investments in this space include The Recycling Partnership Pathway to Circularity program, industry design guides, and the U.S. Plastics Pact.

$150 Million annually for three years - Recycled Content Redesign Grants (source: NRC & The Recycling Partnership)

Education and Training

A. Fund Education and Engagement for Material Quality and Optimized Recovery (Congressional action, USEPA, USDOL)

Authorize the USEPA and USDOL to administer a recycling grants program to invest in recycling education and workforce development grants.
The match to full collection infrastructure is robust and consistent recycling behavior, and resident engagement will be the real key to unlocking significant unrecovered tons of materials. With a $10 per household annual investment in resident education and engagement, improvements to recycling behavior could deliver 9.3 million additional tons of new recyclables into the circular economy, raising the overall residential recycling rate to 68% and recovering over 32 million tons of material annually. ($10/HH per year for five years)

$1 Billion annually for three years - Education grants to local communities
(source: NRC and The Recycling Partnership)

B. Establish Standards for National Waste Reduction, Reuse, Recycling and Composting Training for All Federal Employees and State Agencies that Comply with Federal Requirements (Congressional action, USEPA, USDOL)

Require USEPA, USDOL and other federal and state agencies to establish national standards for and provide grants to implement sustainable materials management (SMM) training programs to improve the quality of professionals working in Waste Reduction, Reuse, and Recycling and Composting.

Create a fund for SMM training of federal employees. Federal agencies contracting for reuse, recycling and composting services should give a preference to service providers that have certified SMM professionals on staff involved with providing those services.

Establish a grant program to state and local governments, community colleges, NGOs and private businesses to expand certification training programs, and to pay for employees to attend such programs.

Promote existing classes and webinars offered by all programs accredited by colleges or universities on federal websites to increase awareness of accredited certification training available.

$50 Million annual investment for three years (source: NRC)

C. Establish National Recycling Industry Internship Program for High School, Community College And College and University Students (Congressional action, DOE, USEPA)

Establish a National recycling industry internship through a partnership with the USEPA and the Department of Education (DOE) to promote new careers in the various fields of recycling, waste reduction, reuse, and composting.

Establish an initial three-year grants program to initiate the internship program with grants to local community colleges and universities to establish intern positions in their sustainability programs that focus on waste reduction, reuse, recycling and composting.

Establish a recycling, waste reduction, reuse, and composting internship program within Americorps.

$50 Million annual investment for three years (source: NRC)
Compost Initiatives

Federal Policies

A. Build Demand for Compost (USDA, Congressional action)

The Congress shall direct the USDA to update its definition of compost products so that a greater number of potential buyers (such as farms, golf courses, roadsides, building landscaping, or operations near waterways) are encouraged to purchase compost; developing a marketing campaign to build compost demand; and streamlining the compost contracting process (e.g., by helping to match compost generators with potential buyers).

In parallel with the efforts to divert organic waste to compost, policymakers should help stimulate demand for finished compost products. Congress should reauthorize and expand appropriations for the recent Community Compost and Food Waste Reduction pilot projects, authorized in the 2018 Farm Bill, through which the USDA invested $1 million into 13 projects to develop and implement municipal compost and food waste reduction strategies—with an emphasis on making compost accessible to farmers.

$0 expenses for policy development and
$50 Million annual investment for three years for funding purchase of compost products
(source: Food Loss & Waste Plan)

B. Expand the Federal Enhanced Tax Deduction for Food Donation to Include Non-Profit Sales and Transport (Congressional action)

Congress should direct the IRS to enhance the tax deduction for food donation to include non-profit sales and transport.

Under current law, the federal enhanced tax deduction for food donations can only be claimed when food is donated to a non-profit that does not charge the end recipient for the food. Expanding the federal tax deduction can incentivize donations to more recipients, including social supermarkets that sell donated food at an extremely discounted price or food rescue organizations that charge recipients a minimal fee to help offset the costs of home delivery. Adding transport services for donated food as a separate cost eligible for an enhanced tax deduction will also help overcome one of the most expensive barriers for businesses and food rescue organizations to get excess food to those in need.

$0 expenses for internal policy development and
$10 Million for loss of tax revenue
(source: Food Loss & Waste Plan)

C. Strengthen Liability Protections for Food Donation (Congressional action)

To encourage food donation, Congress should strengthen liability protections for food donation in a number of ways, including: 1) broadening protections to include food items sold at a low cost and “direct donations,” or food donations offered directly from certain food business donors to end recipients; 2) granting administrative authority of the Federal Bill Emerson Good Samaritan Food Donation Act to USDA and directing USDA to write regulations that clarify the language of the Act; and, 3) requiring USDA to implement an education campaign on donation liability protection for potential food donors and food rescue organizations.
$0 expenses for policy development and $5 million for education campaign and outreach (source: Food Loss & Waste Plan)

D. **Create Tax Credits to Incentivize Food Donations by Farmers (Congressional action)**

To incentivize farmers to donate surplus crops and offset some of the costs of donation (including labor), Congress should provide an alternative tax credit that farmers could opt to claim instead of the existing enhanced deduction.

The existing federal enhanced tax deduction for food donations is not well-suited to farmers and is not often claimed by them, as many farmers operate at low profit margins and do not make enough income to claim a tax deduction. Further, the calculation of the value of the deduction is very onerous for farmers.

Congress should also appropriate funds to support programs—such as the Farm to Food Bank Program created within The Emergency Food Assistance Program (TEFAP) in the 2018 Farm Bill—to help cover the harvesting, processing, packaging, and transportation costs of donating agricultural products to local food banks.

$0 expenses for policy development and $10 million for emergency food assistance programs (source: Food Loss & Waste Plan)

**Market Development**

A. **Establish New Positions for Regional Supply Chain Coordinators at USDA and Partners (Congressional action, USDA)**

Direct the USDA to hire regional supply chain coordinators and fund market development grants to efficiently transport food to where it is needed most.

A lack of real-time food supply data has led to an inability to efficiently find and transport food from where it is grown or stored to where it is needed most. In addition to investing in more transparent and centralized waste information flows, there is a critical need to invest in new positions within the USDA and with trusted partners to achieve supply chain resiliency goals. Regional Supply Chain Coordinators would oversee the efficiency and adaptability of regional food supply chains by aggregating critical data sources on surplus products, stranded assets, and gaps in cold storage and distribution infrastructure. These positions could be especially effective in bringing federal funding and assistance to food deserts, after disasters and in other communities facing barriers to access.

$10 Million annually (source: #breakfreefromplastic)

**Education and Training**

A. **Clarify Guidance on Food Safety for Donations (FDA, USDA, FTC)**

Congress should require FDA, USDA and FTC to publish and enforce guidance that can help promote more uniformity in state and local regulations around food safety for donations, and can also inform food donation practices by national food businesses.
U.S. federal food safety legislation and regulations developed by FDA and USDA generally do not mention the food safety practices that should be followed for food donations, leading to confusion and varying rules in different states and localities. These laws and agency regulations should be updated to feature donation-specific chapters—on topics such as temperature, transportation, and labeling of donated foods. In December 2020, USDA’s Food Safety and Inspection Service (FSIS) published draft guidance along these lines that lays out the food safety protocols for meat or poultry to be donated from FSIS-inspected facilities. FDA should follow suit with guidance on food safety protocols for donations from FDA-inspected facilities. As retail and food service establishments are licensed and inspected under state law rather than federal law, with guidance provided by the FDA Food Code, FDA also should provide guidance for states and localities on food safety for donated food.

$50 Million annual investment for three years for education guidance and training

(source: #breakfreefromplastic)

**Funding Sources**

**Adopt National Green Jobs Fee on Landfills and Incinerators**

Many European nations have adopted significant fees on landfills of $20-40/ton to fund recycling programs and reduce greenhouse gases. This proposal recommends that the Federal government adopt a national $20/ton¹ Producer Responsibility Fee on landfills and incinerators (any thermal processing facilities that operate above 212 degrees F.) to help fund the above programs and contribute a new revenue source that would actually help meet the nation’s Climate Change goals at the same time. This is often referred to as a “sin tax”, much like taxes on cigarettes and alcohol, where the government taxes the “socially unwanted” to discourage their use at the same time as generating needed revenues. A surcharge of this amount could generate about $3.6 billion per year² and at the same time shift economic calculations throughout the country to make reuse, recycling and composting immediately more financially attractive. In the first year, two-thirds of the revenue from this Green Jobs Fee could cover one-time costs of the US Treasury to implement the above physical infrastructure programs with the remaining funds supporting social infrastructure. By the third year of implementing this fee these percentages should change to two-thirds of these revenues funding above social infrastructure programs.

Proposed $20/ton Producer Responsibility fee generates $3.6 Billion annually (NRC proposal)

**Extended Producer Responsibility Programs**

Extended Producer Responsibility (EPR) programs that hold producers fiscally responsible, but not necessarily physically responsible, for the proper management of products and packaging they produce according to the Zero Waste Hierarchy of Highest and Best Use have been suggested above. National or

1 The lower end of the range implemented in Europe
State level EPR programs should require a local government reimbursement from industry fees because local governments bear the first line of expense of products' end-of-life management costs.

These programs provide their own funding for the development of needed infrastructure, so should be considered as self-contained, fully funded infrastructure programs. These programs don’t require a Federal investment of financial capital. Instead, these just require a Federal investment of political capital to establish these programs. As a reminder of how these are fully funded programs, we’re including a summary of the references to such programs above here:

- Adopt a National Extended Producer Responsibility (EPR) framework for difficult to recycle items: Support Policies, Reduce Initiatives, Federal Policies, Section C
- National Refillable Bottle Market Development: Support Policies, Reduce Initiatives, Market Development, Section A
- National Container Deposit Legislation: Support Policies, Recycling Initiatives, Market Development, Section A

**Programs that Reduce or Eliminate Federal Subsidies**

These programs reduce funding required by the Federal government and will stimulate the development of infrastructure, once the marketplace adjusts. As a result, these should be considered as contributing to offsetting the cost of infrastructure investments detailed above. These programs reduce Federal investments of financial capital. As a reminder of which programs these are, the following is a summary of those programs here:

- Adopt a set of Federal Government source reduction and waste elimination policies: Support Policies, Reduce Initiatives, Federal Policies, Section C
- Stop subsidizing plastics producers: Support Policies, Reduce Initiatives, Federal Policies, Section D
- Stop all subsidies for “Chemical Recycling,” also known as :“Advanced Recycling”, “Conversion Technologies” and “Alternative Technologies”: Support Policies, Reduce Initiatives, Federal Policies, Section E  [a minimum savings of $27 million from DOE grants program]
- Eliminate federal subsidies to fossil-fuel industries that fuel the climate crisis: Support Policies, Reduce Initiatives, Federal Policies, Section F
- Eliminate federal subsidies to mining, extracting and manufacturing of products: Support Policies, Reduce Initiatives, Federal Policies, Section G

**Fees on non recyclable packaging or products that are toxic to the environment or create needless waste**

Products that consume materials that are designed for single or few uses and not designed for compost, reuse, or recycling should be subject to a federal fee. Examples include but are not limited to disposable floor cleaning pads, paper towels, mercury switches in sneakers to create light, etc. Plastic packaging and products deemed non recyclable and non reusable by the Plastic Pact should also be subject to this federal fee. The revenues gained from the packaging fee can be dedicated to the plastics and toxics initiatives described in this Plan.