Around the World: Recovery Plans to the Pandemic

Emerging Leaders Academy XV

EMERGING LEADERS ACADEMY

By

ELA Class of 2022

Emerging Leaders Academy XV: Class Roster

Stephanie Boyce
Deputy Director of Public Works
City of Raytown, MO

Caitlin Brady
Roadway Program Manager
Maricopa County DOT, AZ

Deirdre Brosnihan
Engineering Division Manager
Pima County Regional Flood Control District, AZ

Allison Bruner
Professional Engineer
TREKK Design Group, Kansas City, MO

Robert Delgadillo
Director of Public Works/City Engineer
City of Azuza, CA

Elizabeth Dollimore
Storm Drainage Engineer
City of Mississauga, ON

Leslie Donnelly
Street Preservation Project Manager
City of Olathe, KS

John Findley
City Engineer
City of Liberty, MO

Charles Fredericks
Engineering Technician – Streets
City of Eagan, MN

Nicholas Godin
Capital Improvement Program Manager
City of Palmdale, CA

Brittany Hart
Assistant Public Works Director
City of Winter Haven, FL

Alana Lewicki
Project Resource Branch Manager
Maricopa County DOT, AZ

Jack Renfro
Professional Engineer
HNTB, Kansas City, MO

Sarah Schweiger
Water Resources Engineer
City of Minnetonka, MN

Noely Serrato
Assistant Engineer
City of Santa Clarita, CA

Ryan Webb
Engineering and Community Development Director
The Confederated Tribes of Grand Ronde, OR

Emerging Leaders Academy XV: Academy Coordinators

Deanne Cross
Associate Director of Education
American Public Works Association, NC

Diane M. Linderman
Managing Director
VHB – Richmond, VA

Steven Johnson
Sewer Operations Administrator
City of Des Moines, IA

Susan Hann
Assistant Superintendent Facilities Services
Brevard Public Schools, FL

Special Thanks and Acknowledgement

ELA Class XV would like to thank our supervisors and management for recommending, believing in, and supporting us through the Emerging Leaders Academy. To APWA, thank you for the opportunity to participate in Class 15 of the academy. Lasty, we would like to offer our sincere appreciation and gratitude to our instructors, Susan Hann, Steven Johnson, Diane Linderman and Deanne Cross for your time, leadership, guidance and for challenging us to grow as leaders. This Academy placed us alongside like-minded public works professionals from all over North America. We have gained an abundance of knowledge, built connections, and learned so much about ourselves as leaders along the way and we are forever grateful for the experience. We won't stop learning, growing and leading!

Dedication

This project is dedicated to the beavers…IYKYK

Table of Contents

Figures

Tables

Photos

0. Executive Summary

The COVID-19 pandemic severely impacted the world, causing governments on all levels to shift their priorities and determine the necessary steps to sustain their economy and keep their people safe. The intent of this project is to **identify funding programs implemented to support pandemic recovery, analyze the application of funds programmed for pandemic recovery, and evaluate agency goals for a post-pandemic future.** To do this, the project reviews the funding programs implemented in response to the pandemic by regions of the United States as well as a few chosen countries, analyzes and compares their priorities and recovery plans in reaction to the COVID-19 pandemic, and provides a Toolkit for Grant Applications that includes tips and advice for navigating the grant process for the IIJA (Infrastructure Investment and Jobs Act) and other similar programs.

1. Introduction

According to the American Public Works Association (APWA), Public Works is the combination of physical assets, management practices, policies, and personnel necessary for government to provide and sustain structures and services essential to the welfare and acceptable quality of life for its citizens. When the COVID-19 pandemic struck in 2020, the ability of governments around the world to not only provide and sustain but improve the structures and services essential to the wellbeing of its constituents was jeopardized. As the United States (U.S.) reacted to the pandemic, financial relief valves were provided to support local response measures, and funding began to flood into Tribal, State, and Local agencies. The intent of this project is to **identify funding programs implemented to support pandemic recovery, analyze the application of funds programmed for pandemic recovery, and evaluate agency goals for a post-pandemic future,** which should enable Public Works Professionals to make more informed decisions, and be better equipped to effectively respond at the individual agency level. While a plethora of funds have been established and allocated, most come with a myriad of restrictions and requirements, making it difficult to navigate the metaphorical seas of the pandemic response. The combination of an influx of funding to invest in infrastructure, replace lost public sector revenue, and respond to public health and negative economic impacts, and the response to the pending retirements of the "silver tsunami" and the ever-evolving shift to a more virtual world, have created a challenge for Public Works Departments around the world to continue to provide an acceptable quality of life for its citizens. Public Works Professionals looking to lead their agencies into the future must be cognizant of this paradigm shift, flexible in their response, and creative in the recognition and management of their workforce.

2. Dedicated Recovery Plans in the United States

2.1. Introduction

On March 11, 2020, the World Health Organization (WHO) declared COVID-19 a global pandemic. At this time in the United States, many lives had already been impacted; hospitals were becoming full, businesses were closing, schools were trying to rapidly switch to remote classes, and supply chains were failing. The United States had swiftly transitioned over the course of a few months from a period of growth and security to fear and uncertainty. By May 28, 2020, over 100,000 deaths had been linked to COVID-19, which the Center for Disease Control (CDC) described as a "sobering development and a heart-breaking reminder of the horrible toll of this unprecedented pandemic." By January 31, 2021, the United States had reached over 432,000 deaths linked to COVID-19, and as a result, there was a resounding call for the government to take action to help the American people in these unprecedented times.

On March 11, 2021, exactly one year after the WHO declared COVID-19 a global pandemic, President Joe Biden signed into law the American Rescue Plan Act (ARPA) of 2021, also known as the American Rescue Plan, or the COVID-19 Stimulus Package. The law is arguably one of the most progressive pieces of legislation in United States history, providing $1.9 trillion of relief in response to the COVID-19 pandemic. ARPA built on many of the measures of previous legislation, such as the Coronavirus Aid, Relief, and Economic Security (CARES) Act from March 2020 and the Consolidated Appropriations Act from December 2021. The relief provided by the ARPA comes in 4 primary categories which can be seen in the figure below.

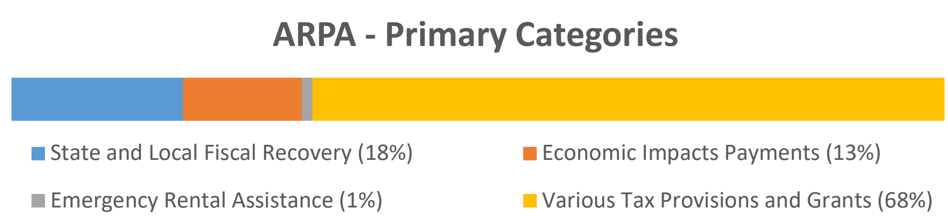


Figure 1 – ARPA Primary Categories

ARPA provided much needed relief to Tribal, State, and Local governments, enabling them to continue to support the public health response and lay the foundation for a strong and equitable economic recovery. In addition to helping governments address the revenue losses experienced as a result of the pandemic, ARPA funding helped replenish the costs incurred as a result of their response to the public health emergency and provide support for a timely recovery – including through assistance to households, small businesses and nonprofits, aid to impacted industries, and support for essential workers (treasury.gov, 2021). The ARPA also provided resources for Tribal, State, and Local governments to invest in infrastructure, including water, sewer, and broadband services, which would allow public works agencies to implement projects that were once not feasible. The funding, provided with minimal restrictions on the use as compared to other federal grants and loans, has allowed agencies around the country to use their funds in a way that best suits their respective community.

The ARPA funding is divided into two allocations with one equal distribution among all 50 states and the District of Columbia and one formula-based distribution accordingly to the state's unemployment. A visualization of the estimated allocations can be seen in the Figure below.

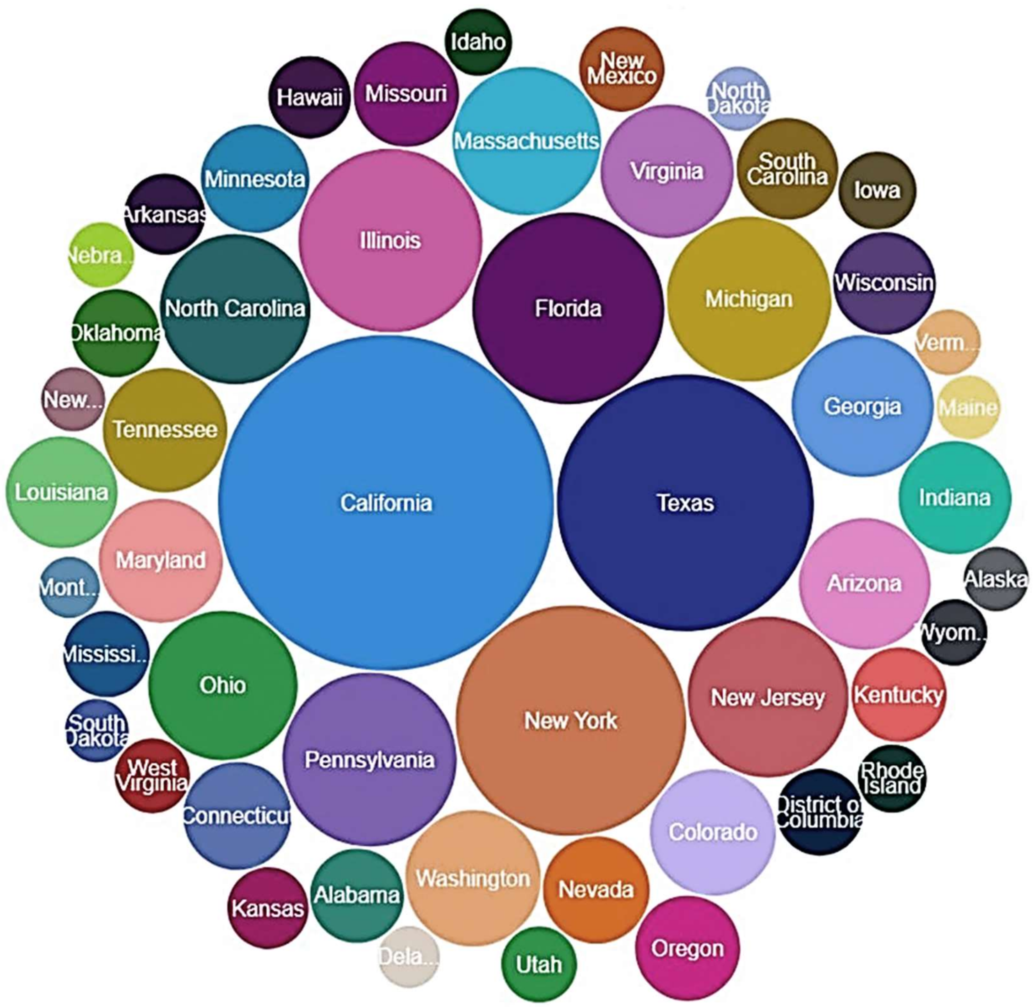


Figure 2 – Estimated State ARPA Allocations

It is a requirement that States report their use of ARPA funds under 14 different categories. For comparison and analysis, these categories have been summarized into five main classifications:

1. Replacement of Lost Public Sector Revenue
2. Public Health & Negative Economic Impacts
3. Providing Premium Pay
4. Investment in Infrastructure
5. Other

2.2. Analysis by Region

Despite the United States facing many similar COVID-19 related challenges, the country is too vast to analyze as a monolith. Therefore, the United States was divided into four primary regions: Northeast, South, Midwest, and West. These regions have commonalities in the issues they face and the resources they possess, but differ in priorities and how they have chosen to respond.

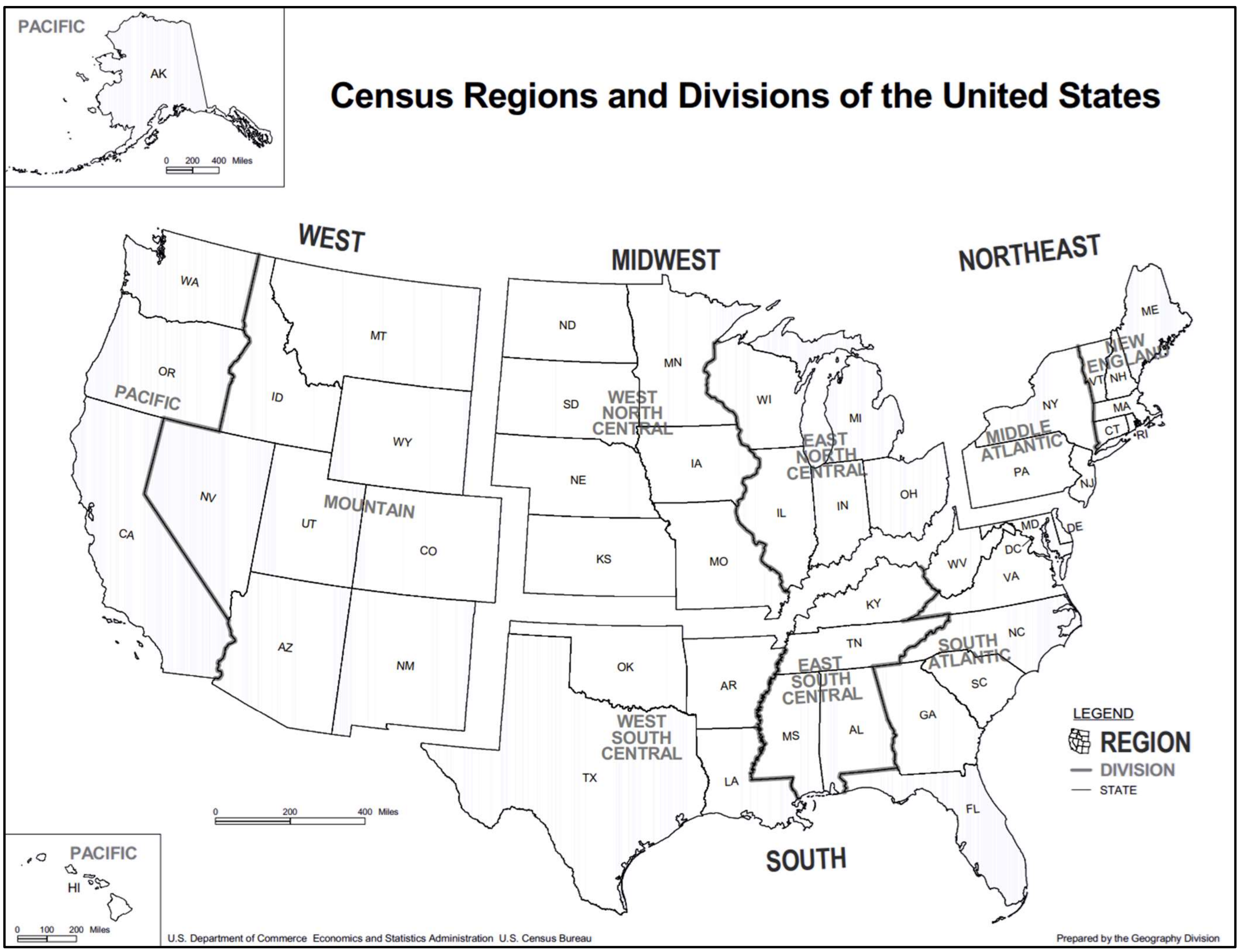


Figure 3 – Census Regions of the United States

2.2.1. Northeast

The Northeast region is comprised of Pennsylvania, New York, Vermont, New Hampshire, Massachusetts, Connecticut, New Jersey, Rhode Island, and Maine. Within the Northeast region, the largest portion of ARPA funds were allocated to replace lost public sector revenue. The next largest portion were reported under the "Other" category. This data may be unintentionally skewed, as the state of New York received the largest allocation of ARPA funding in the northeast region ($6.0 Billion) and reported all funds under the "Other" category and labeled the entire allocation as "State Operation and Administration". Additionally, the state with the second largest allocation in the region ($4.6 Billion), Pennsylvania, reported $4.2B under the "Other" category. Smaller states such as Maine only received $1.0B but provided a more robust division of their allocation amongst all 14 categories. The figure to the left illustrates the Northeast region's allocation of ARPA funding.

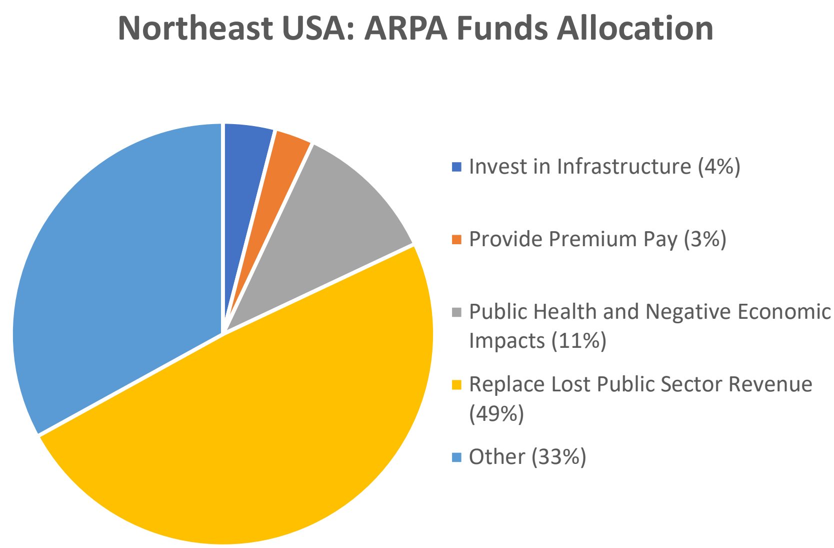


Figure 4 – ARPA Allocations: Northeast

2.2.1.1. Northeast Project Example: Maine's Fishery and Hatchery Operations

In the legislation approved by the Governor of Maine in 2021 the state planned to use a total of $20 million to provide funding for fishery and hatchery operations. The Maine fishing industry contributes more than $370 million to Maine's economy and provides over 3,300 jobs. Fishing is also a large part of the tourism economy in Maine, where in 2020 there were over 343,000 fishing licenses purchased, with that number increasing by 13% in 2021 (Governor Mills, Commissioner Camuso Strock Presumpscot River with Brook Trout, Highlight Fall Angling Opportunities & Encourage Maine People to Get Outdoors., 2021). The Maine Department of Inland Fisheries and Wildlife produce over 1 million trout and salmon species each year to both ensure a sustainable population for Maine's waters as well as support the states outdoor fishing economy (Fish Hatchery Infrastructure Revitalization, n.d.).

The $20 million in funding is planned to continue to strengthen Maine's outdoor economy through investment to improve infrastructure at the fish hatcheries; specifically, the two hatcheries of New Gloucester and Grand Lake. The New Gloucester fish hatchery was originally constructed in 1932 during the Great Depression and the Grand Lake Stream hatchery was first established in 1936. The fisheries will receive funds that will allow them to improve water intakes, increase oxygen supplies, improve treatment of hatchery waters, and convert earthen raceways to modern circular tanks (Governor Mills, Commissioner Camuso Strock Presumpscot River with Brook Trout, Highlight Fall Angling Opportunities & Encourage Maine People to Get Outdoors., 2021).

Photo 1 – Brook trout stocking on the Presumpscot River

(Governor Mills, Commissioner Camuso Strock Presumpscot River with Brook Trout, Highlight Fall Angling Opportunities & Encourage Maine People to Get Outdoors., 2021).

Other aspects that the funding will be used to address is managing fish disease threats, conservation of an endemic population of landlocked Atlantic salmon, and improving the quality of hatchery effluent at all eight fish culture facilities which in turn will improve water quality of the receiving waters (Maine to get $20 m for Hatcheries in American Rescue Plan, 2021).

2.2.2. Midwest

The Midwest region is comprised of North Dakota, South Dakota, Nebraska, Kansas, Missouri, Iowa, Minnesota, Wisconsin, Illinois, Indiana, Ohio, and Michigan. Within the Midwest region, the largest portion of ARPA funds were allocated to Public Health and Negative Economic impacts. Subcategories of this include economic relief and development, housing services, and public health response. The next largest portion was allocated to Replacing Lost Public Sector Revenue, including access to justice, education, state operation and administration, and unemployment. Investing in infrastructure was the third largest allocation, which more specifically included broadband, general infrastructure, and water infrastructure. The remaining categories, Providing Premium Pay and "Other", received insignificant allocations. The figure to the left illustrates the Midwest region's allocation of ARPA funding.

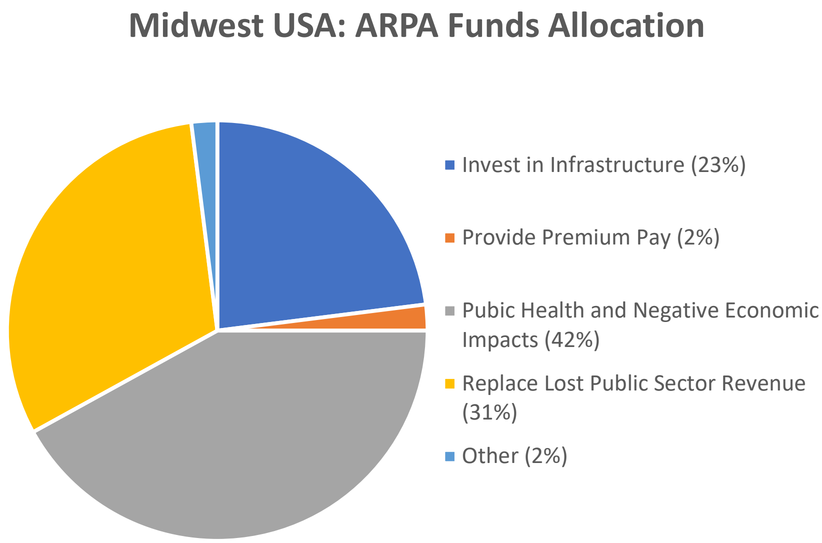


Figure 5 – ARPA Allocations: Midwest

2.2.2.1. Midwest Project Example: Indiana's Next Levels Trails

In September 2018, the Governor of Indiana announced the Next Level Connections program including the Next Level Trails (NLT). The Next Level Connections program has the goals of bringing affordable broadband to rural Indiana, linking communities with more hiking, biking, and riding trails, completing major road improvement projects, increasing the number of non-stop international flights to Indiana, completing the analysis of a water port in Lawrenceburg, and pursuing the West Lake and South Shore rail projects in Northwest Indiana (Next Level Connections, n.d.).

In 2021, the NLT used $60 million of ARPA funding to continue to fund the trail system in Indiana. The state awarded this funding via grants to local jurisdictions managing the land acquisition, design, and construction of the individual trail projects. The NLT is a multi-use trail for non-motorized use with a variety of surface types. The emphasis for the trails was to connect cities, towns and counties or destinations such as schools, parks, neighborhoods, commercial centers, or local attractions (State Parks Next Level Trails, 2022). This funding will allow towns, cities, and counties to expand their existing trail systems as well as add in new trails to improve community wellness, tourism, and environmental stewardship in their communities.

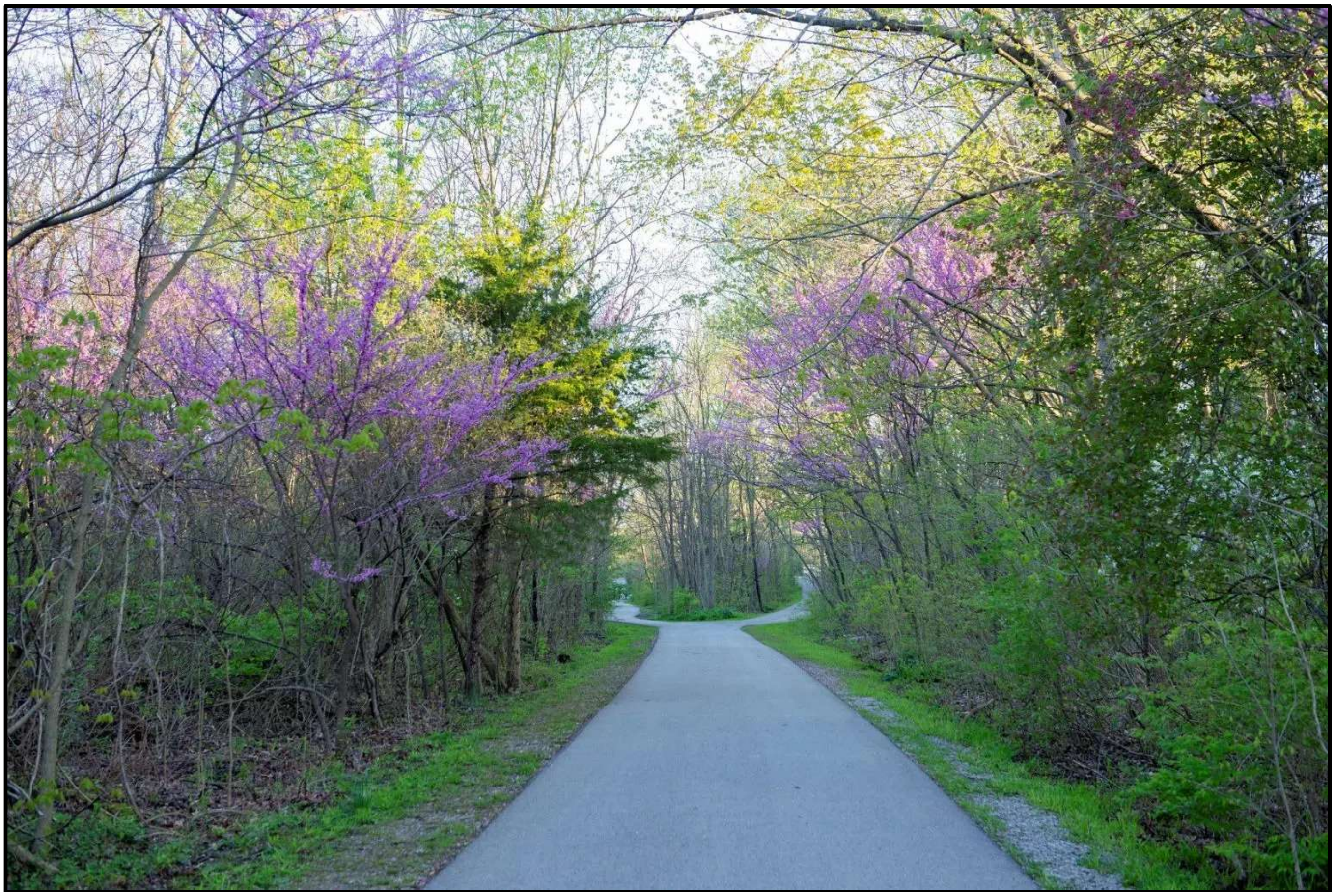


Photo 2 – The Big-4 Rail Trail, Zionsville, Indiana

(More Momentum: Zionsville Awarded NExt Level Trail Grants., 2021).

2.2.3. South

The South region is comprised of Texas, Oklahoma, Arkansas, Louisiana, Mississippi, Alabama, Georgia, Florida, South Carolina, North Carolina, Tennessee, Kentucky, Virginia, West Virginia, Maryland, Delaware, and the District of Columbia. Within the South region, the largest portion of ARPA funds were allocated to Investments in Infrastructure. Subcategories of this include broadband, general infrastructure, and water infrastructure. The second-largest portion was allocated to Public Health and Negative Economic Impacts, including arts, culture and tourism, economic relief and development, housing, and public health response, followed closely by Replacement of Lost Public Sector Revenue. The remaining categories, Providing Premium Pay and "Other", received insignificant allocations. The figure to the left illustrates the South region's allocation of ARPA funding.

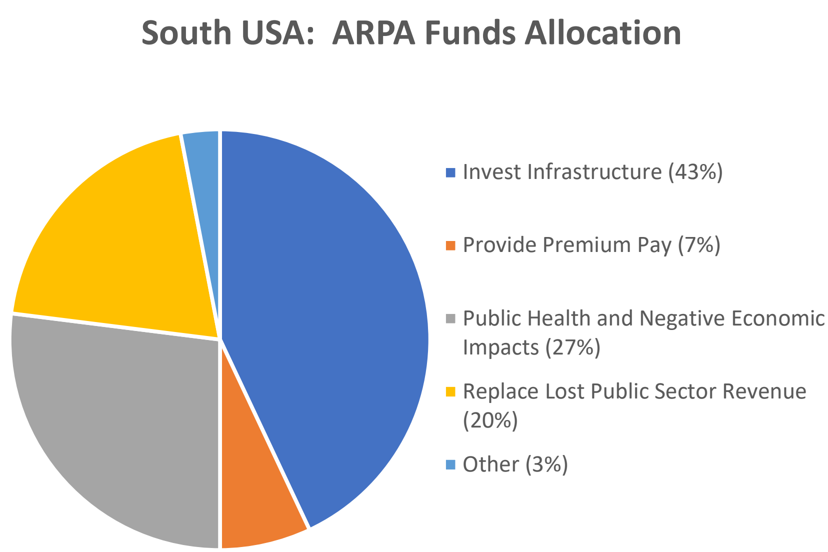


Figure 6 – ARPA Allocations: South

2.2.3.1. South Region Project Example: Polk County Stormwater Infrastructure

Polk County, Florida intends to invest $18.8 million dollars toward implementing water quality projects that improve stormwater infrastructure, establish wetland treatment areas, and provide protection of water resources in and around central Florida. Many of the streams and lakes within Polk County have a high concentration of nutrients such as nitrogen, phosphorous and E. coli which are harmful to humans and other animals. Rural and low-income areas are particularly disadvantaged by these impacts. By improving water quality through wetland treatment areas, the adjacent communities will be able to improve public health.

The Peace Creek Canal is a proposed location for creating wetland treatment systems. These constructed wetlands would help filter and break down contaminants while also creating additional storage capacity for flood protection along the Peace Creek Canal. Other bodies of water are also being vetted for small-scale treatment projects. Some of the work funded with ARPA funding would include feasibility studies and water quality management plans (APR Recovery Plan, 2021).

Photo 3 – The 105-mile Peace River

(USF Water Institute, School of Geosciences, n.d.).

2.2.4. West

The West region is comprised of Washington, Oregon, California, Idaho, Nevada, Montana, Wyoming, Utah, Alaska, Hawaii, Colorado, Arizona, and New Mexico. Within the West region, the largest allocation of ARPA funds was allocated to Lost Public Sector Revenue. Subcategories of this include access to justice, education, state operation and administration, and unemployment. The next largest category of allocation was Public Health and Negative Economic Impacts, including arts, culture and tourism, economic relief and development, housing, and public health response. Investing in Infrastructure was the third largest allocation, which more specifically included broadband, general infrastructure, and water infrastructure. The remaining categories, Providing Premium Pay and "Other", received insignificant allocations. The figure to the left illustrates the West region's allocation of ARPA funding.

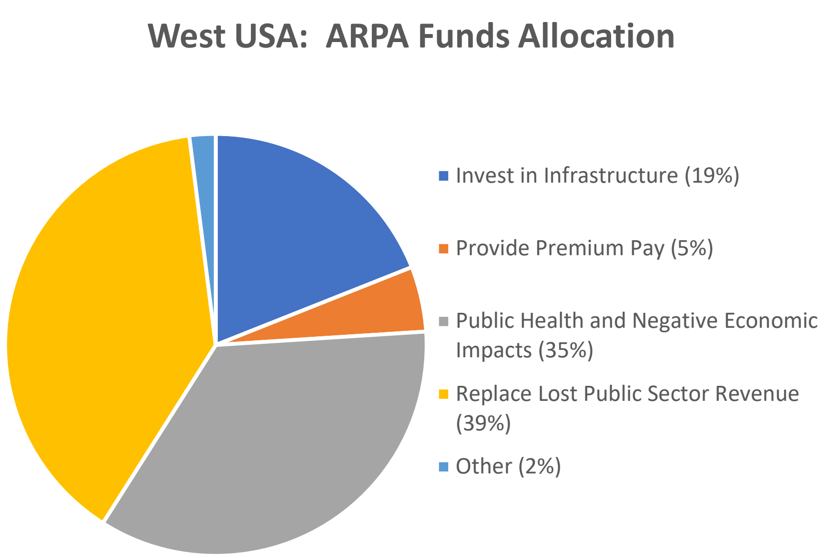


Figure 7 – ARPA Allocations: West

2.2.4.1. West Region Project Example

In their Council meeting on June 1, 2021, the City of Stockton, California approved the allocation of $78 million in ARPA funding. The city allocated $10 million to small business support and economic recovery, $12 million to address homelessness and housing, $15 million to address City government recovery, $9 million for broadband infrastructure, $200k for Personal Protective Equipment, and the remaining approximately $21 million to purchase or construct touchless restrooms, police vehicles, fire apparatus, electric vehicles, upgrades to the Stockton Animal Shelters, and HVAC upgrades for a public housing building (Legislation Text #21-0444, 2021).

Clackamas County in Oregon is allocating their $40.6 million dollars in a similar manner. The County's focus areas for reinvestment are supporting public health response, addressing negative economic impacts, replacing public sector revenue loss, investing in water, sewer, and broadband infrastructure, and premium pay for essential workers. Thus far, there has been $6 million committed to addressing negative economic impacts and $12 million to replace public sector revenue lost. The County has spent $2.5 million on supporting public health response, $2.5 million invested in water, sewer, and broadband infrastructure, and $4 million premium pay for essential workers (Recovery - American Rescue Plan Act, 2022).

The allocation of ARPA funds looks similar for many Counties and Cities in the Western region of the United States, with the emphasis on recovering lost public sector revenue. The remaining funds are divided up to meet other needs such as broadband expansion, infrastructure improvements, or public health.

2.3. Goals and Objectives

The goal of the American Rescue Plan Act (ARPA) is to provide direct economic relief to Americans impacted by the COVID-19 pandemic. In the same way that Americans received direct relief through stimulus payments, tax credits or extended unemployment insurance, ARPA funding provided emergency funds directly to state, local and tribal governments for a broad array of uses. Guidelines give local governments great flexibility in using these funds for anything from premium pay for essential workers to investing in infrastructure. Many efforts and projects are already underway spending ARPA funding and investing back into the communities. In the first six months since President Biden signed the act the Treasury Department has disbursed $700 billion in funding (American Rescue Plan: Treasury's Progress and Impact After Six Months, 2021).

2.4. Funding Challenges

While many agencies have approved and/or spent most or even all of the funding allocated to it by ARPA, many agencies are still facing challenges in spending their allocation of ARPA funds. These challenges can be attributed to many variables, such as funding deadlines, supply-chain breakdowns, procurement requirements, cost escalation or overall confusion surrounding the program. The table below outlines a variety of challenges an agency may face when applying for or spending ARPA funds, as well as a mitigation method or solution to each challenge. **A Grant Toolkit has also been provided in the appendix of this document to help with this process.**

Challenge	Mitigation Method / Solution
Completing projects on time per the rules and guidelines set out by the program.	Utilizing alternative delivery methods such as Design-Build, Job Order Contracts, or Construction Manager at Risk to help accelerate the typical Design-Bid-Build project structure.
Approvals from elected officials causing delays for projects that were awarded government funds.	Begin early discussions with elected officials to highlight the planned impact for the project and emphasize the cost and missed opportunity of delays on available funding.
Project delays resulting from agency approvals (i.e. conservation authorities, utility companies, etc.).	Utilize the highest connection point possible between organizations and jurisdictions to help reach the decision makers expeditiously. As with the elected official, starting early to gain buy in will be critical.
Difficulty determining eligible uses.	Seek clarification from the information available online or through other jurisdictions.
Confusion around rules/guidelines set out by the program.	Seek clarification from the information available online or through other jurisdictions.
Lack of human resources to meet timelines (internal staff to manage project + procurement of consultants).	Consider supplementing the public works staff with consultants to help meet the timeline and provide contracted oversite of projects.
Increasing cost of construction that invalidates early Engineer’s estimates or that reduces the ability of the local government to provide a match.	Using recent construction numbers for the Engineer’s estimate vs. historic data. Including a reasonable construction inflation factor to the Engineer’s estimates to account for continued cost increases. Consider discussing with local contractors their expectations on what a reasonable inflation percentage could be for the local area.

Table 1 – ARPA Funding Challenges and Mitigation Methods

2.5. Observations and Comparative Analysis

Similar priorities can be seen amongst the states within each region, which is further reflected in each region's spending of their allocated ARPA funds. The figure below provides a comparative analysis of the categories of ARPA spending by region in the United States.

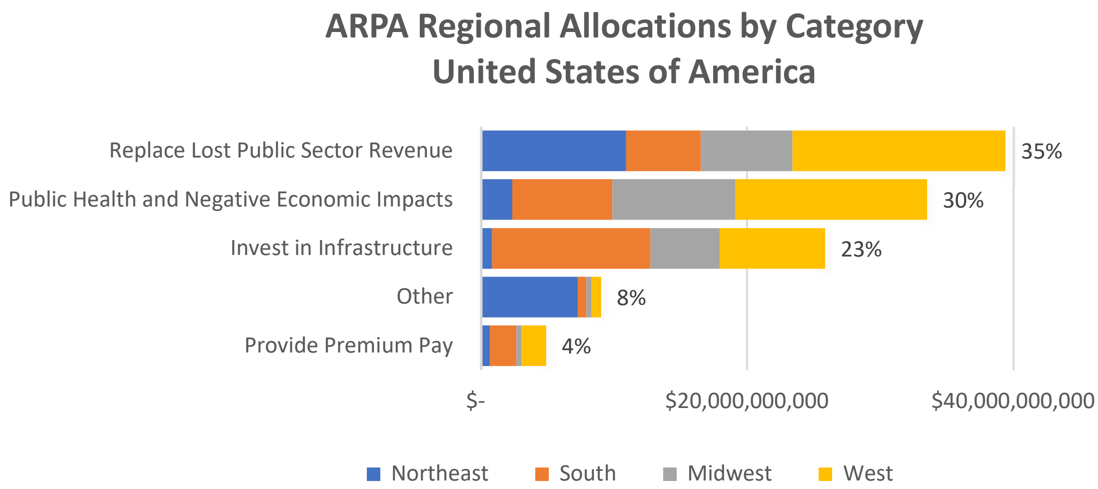


Figure 8 – ARPA Regional Allocations by Category

The Northeast and West regions utilized the largest portion of their allocation on replacing lost public sector revenue which could be theorized to be the result of the Northeast and West having experienced the most significant impact to public sector revenue during the pandemic. This is because both the Northeast and West were the regions of the United States which had the most stringent COVID-19 shutdowns and closures. These regions also include the 2 largest cities, New York, NY and Los Angeles, CA, which both employ hundreds of thousands of public sector employees.

The Midwest region however utilized their largest portion of the allocation on public health and addressing negative economic impacts. This provided funds to respond to the public health emergency, assist households, small businesses and nonprofits, aid impacted industries, and address public sector capacity issues. This could be theorized to reflect the Midwest regions pragmatic response to the pandemic and lower government sector cost burden.

The South region ultimately utilized the largest portion of their allocation on investing in infrastructure. This could be theorized to reflect the Republican political lean of the South region and their reluctance to address COVID-19 as stringently as in the Northeast and West. Therefore, the decision to spend the available ARPA funding on infrastructure may have been the most politically palatable solution.

Looking at the average across the four regions, replacement of lost public sector revenues followed by public health and negative economic impacts and investment in infrastructure were the largest categories of investment within the United States. These 3 categories appear to address the largest needs across the United States after the pandemic to stabilize communities and rebound from the impacts of COVID-19.

3. International Response

3.1. Introduction

As the WHO declared COVID-19 a global pandemic on March 11, 2020, many countries around the world, in addition to the United States, were already feeling its effects. Although all countries were impacted by COVID-19, the responses around the world to the declaration of a global pandemic were varied. Businesses were closed, travel restrictions were enacted, and new rules were introduced, albeit in varying degrees.

As the pandemic progressed, one thing became evident for all countries: the economy was suffering. Even those with few government-initiated closures were experiencing a financial impact as a result of the lack of foreign investment, tourism loss, increased number of hospital patients, etc. Like the United States, there were pleas from citizens around the world, asking their respective governments to provide aid in these unprecedented times.

Since the pandemic began over two years ago, governments around the world have developed their own unique recovery plans to respond to this health and financial crisis. A search of the vast pandemic recovery plans around the world have made one thing very clear: there is no template. Like the restrictions that were imposed at the beginning of the pandemic, it is evident that countries have taken varying approaches to the development of their recovery plans, however, that is not to say that there aren't many ways to be successful on the road to recovery. The aim is that one can learn from what others have done in the past to aid in the preparation of future recovery plans.

3.2. Analysis by Country

The recovery response from four countries, Canada, United Kingdom, Mexico, and New Zealand, were selected for further investigation. These countries were selected based on population, relationship with the U.S., proximity to the U.S., size of recovery plan and accessibility of plan information. Each plan varies in term length, rules, area of focus and amount of funding, and the programs they support range from short-term health improvements to long term infrastructure and innovation investments. Regardless of their differences in approach, each recovery plan shares the common goal of economic recovery.

3.2.1. Canada

Canada's COVID-19 Economic Response Plan is multi-faceted, providing support for people, businesses and organizations facing hardship as a result of the COVID-19 pandemic. Through this plan, the government has committed over $212 billion in direct support to Canadians and businesses. Programs that were created through this plan include but are not limited to: job and growth funds; wage support; rent support; self-employed benefits; tourism relief; and support for cultural workers, festivals, and events, etc. (Overview of Canada's COVID-19 Economic Response Plan, 2022).

Among the many programs offered by the Government of Canada as part of their recovery plan, is the Investing in Canada Infrastructure Program – COVID-19 Resilience stream. The Investing in Canada Infrastructure Program, established in 2016 by the Government of Canada, will deliver over $33 billion in infrastructure investment through bilateral agreements between the federal government and each of the provincial and territorial governments (Investing in COVID-19 Community Resilience, 2022). There are five defined streams in this program, with the fifth being the most recently added COVID-19 Resilience stream. The COVID-19 Resilience stream provides $3 billion in investment for eligible projects that fall under one of the five categories, as illustrated in the figure below (Investing in COVID-19 Community Resilience, 2022).

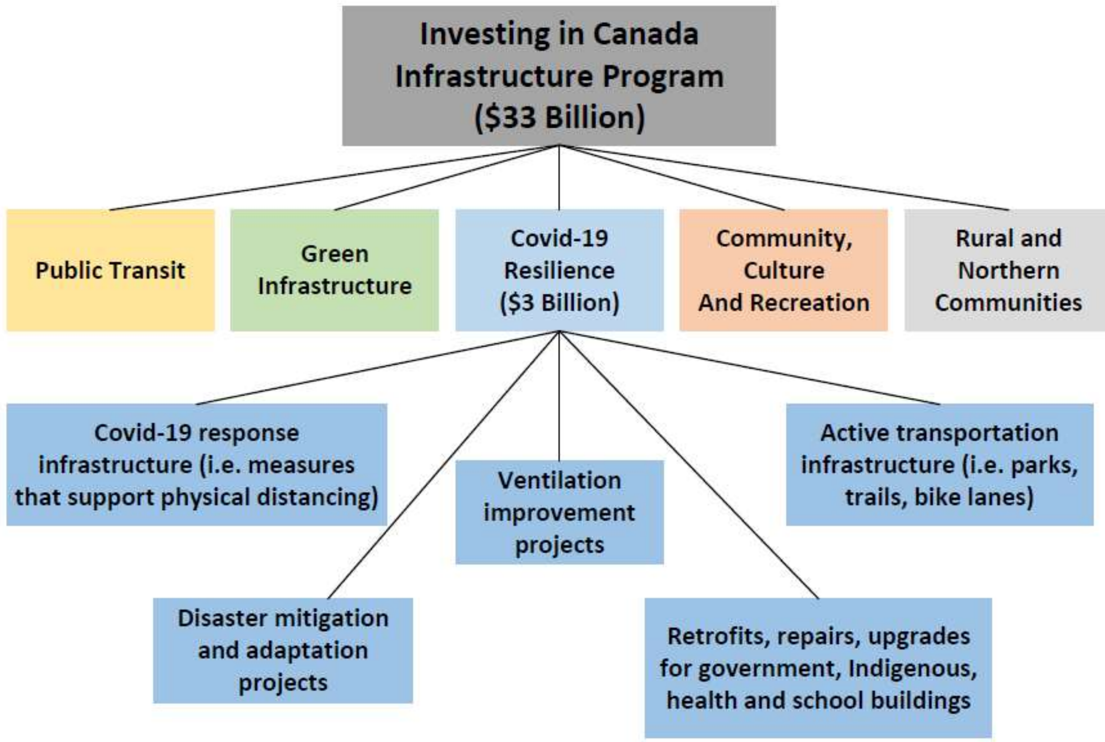


Figure 9 – Investing in Canada Infrastructure Program

(Investing in Canada Infrastructure Program, 2021)

Individual project applications are to be made to the Provincial/Territorial governments to receive project funding up to a maximum of $10 million (Investing in COVID-19 Community Resilience, 2022). Most projects must be completed by the end of 2023 to qualify for the funding and must start construction no later than September 30, 2023 (Investing in COVID-19 Community Resilience, 2022). Some examples of projects include HVAC upgrades in government buildings, public service counter enhancements to facilitate physical distancing, and pedestrian/cycling trail enhancements. To date 1,977 projects have been approved for funding in the COVID-19 Resilience stream with an estimated value of $2.4 billion (Investing in Canada Plan Project Map, 2022). The project distribution is shown in the figure to the left.

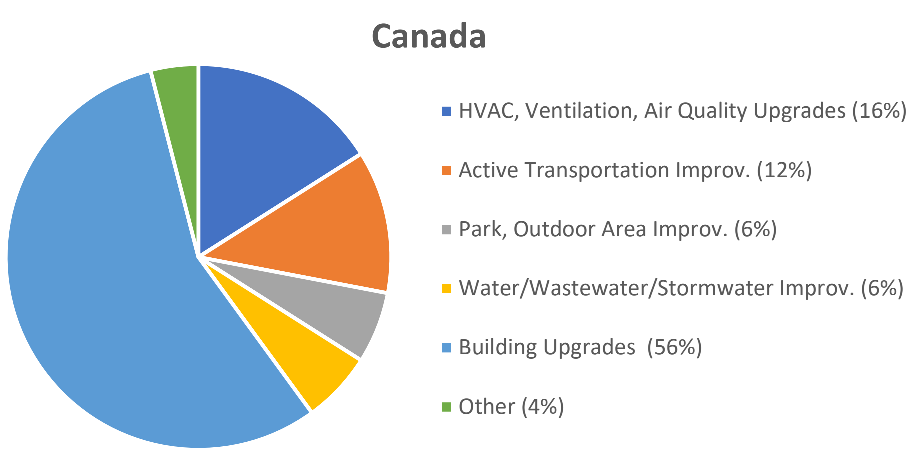


Figure 10 – Canada's Distribution of Project Type

(Investing in Canada Plan Project Map, 2022)

3.2.1.1. Goals, Objectives, and Analysis

The goal of Canada's Economic Response Plan is to mitigate the impacts of the pandemic on Canadians, businesses, and organizations. Through various direct support programs, the Government of Canada aims to protect the health and well-being of Canadians, support workplaces, safeguard jobs and provide aid to vulnerable populations (Overview of Canada's COVID-19 Economic Response Plan, 2022). Through their continued infrastructure investment, the Government of Canada aims to help communities build the necessary infrastructure to keep Canadians safe and healthy, create local construction jobs and support local businesses.

Most funds in Canada's Economic Response Plan were distributed directly to people and businesses as a result of the Government of Canada's view that it was urgent to get money in people's pockets immediately. This short-term reactive approach gave Canadians the freedom to spend funds where they wanted. In contrast, the dedicated infrastructure funding for the COVID-19 Resilience stream was developed with many rules and restrictions, requiring public agencies to focus on infrastructure improvements directly related to COVID-19. Although the focus of this program is mainly focused on improving the health, safety, and well-being of citizens, it is evident through this infrastructure investment that Canada intends to achieve their overarching goal of economic recovery. Going forward, the Government of Canada continues to invest in large infrastructure projects, such as transit improvements, through long term programs outside of the recovery plan.

3.2.1.2. Canada Project Example: City of Toronto

As part of the COVID-19 Resilience stream, the City of Toronto received approximately $26.6 million from the Government of Canada and the Province of Ontario (Investing in Canada Plan Project Map, 2022). The amount was approved for investment in various City projects, which included HVAC upgrades, active transportation enhancements and accessibility works. As recommended by Ontario Public Health as a means of greater infection control prevention, the main focus for the City of Toronto was to improve the air quality and ventilation for the City's most vulnerable populations. The City of Toronto operates several long-term care homes and homeless shelters. These types of locations were the hardest hit during the pandemic in terms of outbreaks and deaths. The City of Toronto invested $2.3 Million into HVAC upgrades for seven long term care homes for seniors operated by the City of Toronto, while $7.7 Million was invested into HVAC infrastructure for 10 City-run homeless shelters (Toronto - Investing in Canada Infrastructure Program, 2020). Air handling unit upgrades, ventilation modifications and increased fresh air intake were some of the projects undertaken to protect those that were affected most during the pandemic (Toronto - Investing in Canada Infrastructure Program, 2020).

3.2.2. United Kingdom

The United Kingdom (UK) has compiled a comprehensive funding program to facilitate pandemic recovery. Published in 2021, *Build Back Better – our plan for growth,* provides £600 billion ($631 billion) over the course of five years (Build Back Better - Our Plan for Growth, 2021). The three categories the plan focuses on are infrastructure, skills development, and innovation, as illustrated in the figure below. The UK has earmarked £100 billion ($105 billion) in infrastructure by the end of 2022; £4.2 billion ($4.4 billion) in intra-city transport settlements, and £12 billion ($12.6 billion) for green industrial solutions. This plan outlines that infrastructure is a critical component of development of marketable skills and innovation as it serves to connect communities to centers of learning and industry. As a result of this investment, the government hopes to see a trickle-down effect of positive impacts into individual lives that will, in turn, build back a better United Kingdom.

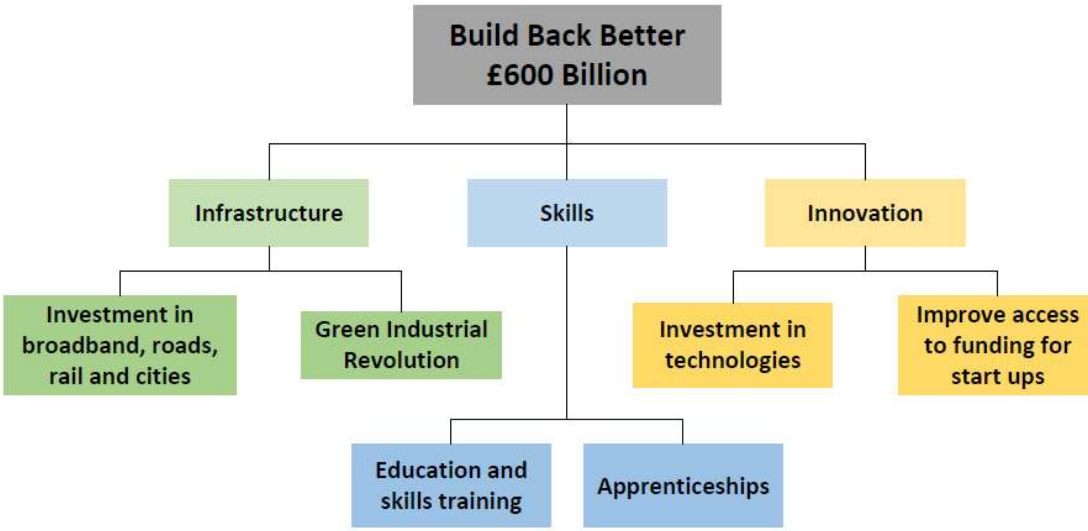


Figure 11 – United Kingdom's Build Back Better Categories

(Build Back Better - Our Plan for Growth, 2021)

3.2.2.1. Goals, Objectives, and Analysis

The primary goal of the United Kingdom's recovery plan is to invest in people and infrastructure with the intention of stimulating the economy. Additionally, the UK is utilizing this investment opportunity to improve equity, environmental impact, and innovation to become a more competitive nation.

This long-term approach to economic recovery invests funds into three different categories to support people's jobs, businesses, and public services. Similar to other countries, the UK Government has chosen to invest in infrastructure. They believe that investment in quality infrastructure along with innovation will create jobs and is crucial for economic growth. Additionally, with the belief that the best way to improve citizens' lives is to give them skills, the UK Government has chosen to invest in education and skill development. As infrastructure projects are undertaken, the UK will indeed achieve their goal of job creation. Although the UK's recovery plan focuses on long term investments and UK citizens may not see an immediate impact, it is apparent that their plan intends to achieve successful economic recovery in the UK.

3.2.2.2. United Kingdom Project Example: Hinkley Point C Power Plant

The Build Back Better plan proposes to increase funding to help carry out the Ten Point Plan; a plan that intends to support green jobs and push towards net zero emissions. A few of the ways this will be carried out will be to improve nuclear capabilities and enhance green public transport which includes cycling and walking. One example of a project that the recovery plan will help fund is the Hinkley Point C Power Plant. The plant is predicted to come online in the mid-2020s and will create 25,000 local jobs. The plant will play a key role in delivering deep decarbonization of the electricity system. The economic impact will be a boost of $1.5 billion during construction, and an additional $40 million annually for operation. The recovery plan will aid green public transportation by investing tens of billions of pounds in enhancements of the rail network and buses. The intent is also to electrify more railway lines and purchase more zero emission buses. The impact will be to create up to 3,000 jobs by 2025, double cycling rates from 2013, and greatly decrease emissions of carbon dioxide. (The Ten Point Plan for a Green Industrial Revolution, 2020)

3.2.3. Mexico

Mexico has prepared a multi-billion-dollar infrastructure plan to respond to the COVID-19 pandemic. As a result of the pandemic, foreign investment in Mexico has stalled. This infrastructure plan was prepared with the intention of attracting foreign investment to aid in restarting the country's economy. The infrastructure plan involves a contribution from both public and private sectors and includes over 40 major projects. Projects will be focused in areas such as transportation, energy, telecommunication, and water management. These major projects are distributed across 20 states with several currently under construction. (Mexico Finance Chief Readies Infrastructure Plan to Jump-Start Economy, 2022)

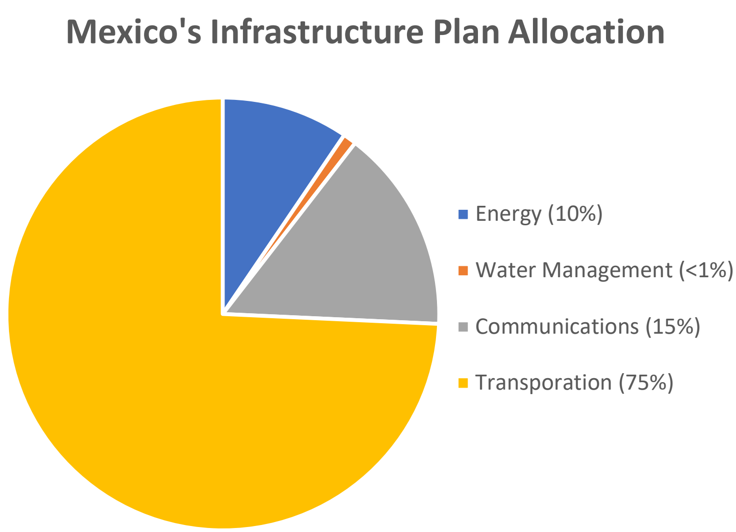


Figure 12 – Mexico's Infrastructure Plan Allocation

Mexico's infrastructure plan will be investing approximately $39 billion into transportation (Mexico to invest US$38.6bn in road, rail infrastructure in 2022, 2022). Much of this investment in transportation will be allocated towards 15 rail projects, six of which are already in construction (Mexico to invest US$38.6bn in road, rail infrastructure in 2022, 2022). The figure to the left illustrates Mexico's infrastructure plan allocations.

In combination with this infrastructure plan, Mexican government officials have been reaching out to U.S. investors to emphasize the cost and supply advantages of investing in Mexico rather than Asia (Mexico Finance Chief Readies Infrastructure Plan to Jump-Start Economy, 2022). With the improvement of supply chains and border crossings, Mexico is seeking to reinforce their participation in the trade agreement with the United States and Canada (Mexico's Infrastructure Plan 2020-2024, 2020). It is their hope that with these large infrastructure projects and their ongoing lobbying efforts, the Mexican economy will successfully restart.

In addition to Mexico's infrastructure plan, Mexico is receiving aid from the North American Development Bank (NADB), a financial institution governed by both Mexico and the U.S. that provides financing to projects in the U.S.-Mexico border region. In response to the COVID-19 pandemic, the NADB has also approved a temporary financing program to support projects with environmental benefits, economic benefits in the Mexico-U.S. border region, and health and wellbeing benefits to border residents. This program will provide as much as $200 million in assistance (North American Development Bank Approves COVID-19 Recovery Program, 2020).

3.2.3.1. Goals, Objectives, and Analysis

The primary goal of the Mexican government's recovery plan is to increase investments from the United States which would otherwise have gone to Asia and decrease Mexico's dependence on imported fuels (Mexico Finance Chief Readies Infrastructure Plan to Jump-Start Economy, 2022).

In contrast to other countries, Mexico's recovery plan has a singular focus on infrastructure investment. The Federal government of Mexico intends to jump start the economy and increase tourism through foreign investment in infrastructure. Most countries lost tourism due to pandemic travel restrictions and ideally would like to boost it through their recovery plans. Mexico's economy is heavily dependent on tourism and as a result, the primary focus of their infrastructure plan is improving their transportation network.

These short- and long-term foreign infrastructure investments will help the Mexican economy recover and will move operations away from Asia which would be beneficial to address widespread supply shortages and rising shipping and labor costs.

3.2.3.2. Mexico's Project Example: Mayan Train

Since Mexico's economy is heavily dependent on tourism, Mexico has allocated additional funding to the construction of the Mayan Train Project. The Mayan Train project is over 900 miles of railway that will run through the Yucatan Peninsula and connect passengers to several tourist hotspots throughout the Mexican Caribbean as well as several Mayan sites (Mexico's New Mayan Train Project Suspended, 2022). This railway's proposed route, shown in the figure below, will contain 18 stops through five main regions of Mexico, which include Quintana Roo, Campeche, Yucatan, Chiapas, and Tabasco (Mexico's New Mayan Train Project Suspended, 2022).

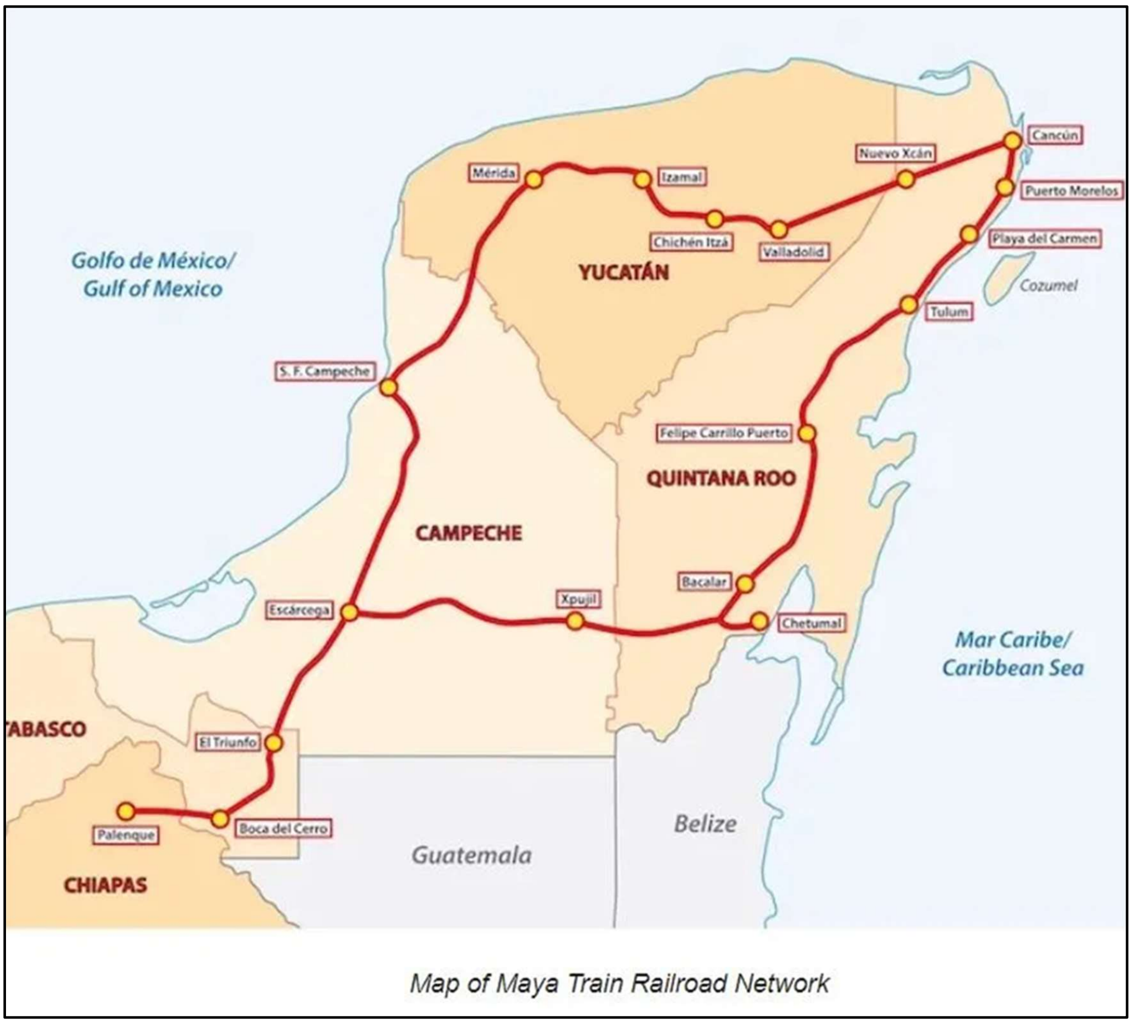


Figure 13 – Mexico's Mayan Train Project

(Mexico's New Mayan Train Project Suspended, 2022)

3.2.4. New Zealand

In May 2020, the New Zealand cabinet passed the COVID-19 Response and Recovery Fund (CRRF), a new spending initiative to fund their COVID-19 pandemic response. The CRRF reserved $50 billion for recovery efforts across all sectors of the New Zealand economy. When the funding was announced, less than $30 billion had been committed to specific projects, initiatives, or other expenditures which has left over $20 billion available to respond to new needs and ideas as they arise. The CRRF funds both operating and capital projects, with the majority committed to operational needs. The summary of the CRRF Foundational Package spending when it was announced can be seen in the table below. (Summary of Initiatives in the COVID-19 Response and Recovery Fund (CRRF) Foundational Package, 2020)

Year Ending 30 June $ billions	2020 Forecast	2021 Forecast	2023 Forecast	2023 Forecast	2024 Forecast	Total
Budget Day Announcements						
Operating Expenditure	5.0	2.0	2.1	1.5	1.4	12.0
Capital Expenditure	0.5	1.4	1.0	1.0	-	3.9

Table 2 – CRRF Foundational Package

There are a total of 28 different initiative areas included in the CRRF including business, science, and innovation, conservation, environment, health, housing and urban development, land, transportation, and trade recovery, to name a few. The figure to the left illustrates the funding allocations by initiative area (Covid-19 Funding Allocation and Expendature, 2020). Funding encompasses programs such as capital investment in new research facilities, expanding support to low-income households and small businesses, enhancing pest management and biodiversity on public and private lands, and phasing out plastics and implementing waste disposal levy expansion to improve New Zealand's waterways.

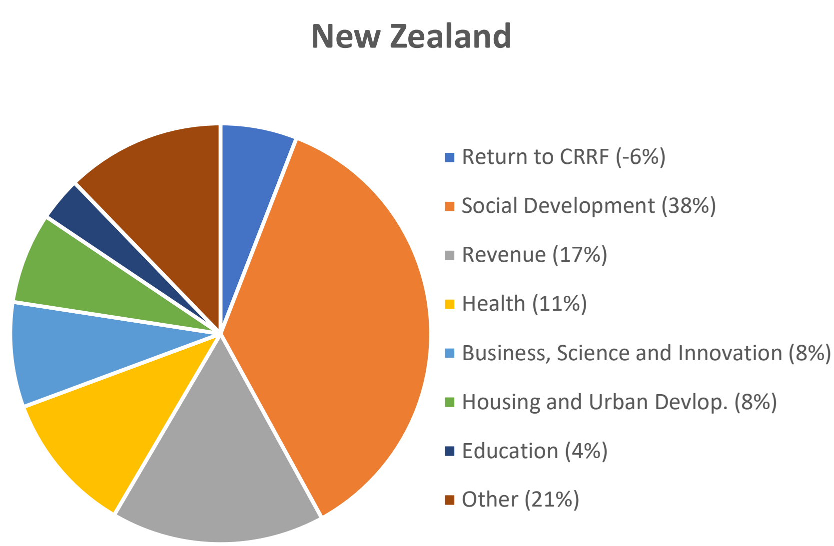


Figure 14 – COVID 19 Response and Recovery Fund Breakdown

New Zealand's economy is greatly dependent on trade, making the COVID-19 pandemic shutdowns particularly harmful. The CRRF included a trade recovery strategy covering exports, international trade institutions, and key trade relationships. New Zealand is retooling support for exports by increasing the number of exporters eligible for support from the New Zealand Trade and Enterprise, increasing economic diplomacy programs for businesses facing trade barriers, improving exporter tools and services through creation of digital content for increased capability and resiliency, and broadening New Zealand's brand in priority markets by promoting the country as a safe, sustainable, and stable location to invest (Trade Recovery Strategy, n.d.).

3.2.4.1. Goals, Objectives, and Analysis

The CRRF allocates funding across all sectors of the New Zealand economy outlining the goals of the country for a post-pandemic future. Through a broad, comprehensive funding package, the country can address any need as it arises and respond to changes quickly, making the economy less susceptible to future pandemic or global disruption events. Additionally, New Zealand was able to focus on equity through allocating funds to directly support reforming the health systems and housing programs for the native Māori peoples.

3.2.4.2. New Zealand's Project Example: Business Connect

Once the CRRF was implemented, a portion of the funds were allocated to the development of a pre-existing program called Business Connect. Business Connect is a federal digital platform available for free to all government agencies with the goal of integrating business needs with government services. It can cover services such as applying for licenses, permits, or registrations in a "one-stop shop" manner, making it easier for government agencies to provide services to businesses and businesses to comply with regulations. Business Connect is designed to reduce administrative time and costs and improve the transparency of government processes for business applications using standardized fillable forms, online tracking updates of application status, and the ability to save and re-use information already provided in other applications (such as name, address, business license number, etc.). As of May 2022, Business Connect is operational to apply for an alcohol license from two local councils, food business registration from four local councils, and importation payment accounts from New Zealand Customs.

While Business Connect was in development prior to COVID-19, it received additional funding through the CRRF and was instrumental during COVID-19 pandemic travel restrictions to allow workers to travel across restricted areas to provide essential services. The application was built in two weeks and available for use in February 2021, within 30 minutes of the Prime Minister's announcement of the travel restrictions (Business Travel Register - Covid Services - February to March 2021, 2021). Over 30,000 workers received documentation through Business Connect allowing them to travel across restricted areas and provide essential services to the people of New Zealand. This immediate proof of concept demonstrated Business Connects ability to coordinate across multiple government agencies at various levels to provide fast, easy, transparent services to businesses.

4000	businesses supported
30000	workers able to travel
10 mins	on average to complete the form
16	government agencies involved
2 weeks	to build the service

Figure 15 – Business Connect Stats

3.3. Observations and Comparative Analysis

Every country has its own unique set of goals, action plans, and processes to achieve post pandemic recovery, but broad themes are evident throughout the countries. The goal for each country is economic recovery and to ultimately be in a better place than they were before and during the height of the pandemic. Whether it be investment in infrastructure, direct stimulus, a focus on green energy, or job creation, countries used their recovery plans to give a boost to the essential functions of their society.

Countries have taken varying approaches to respond to this health and financial crisis. It is evident that recovery plans from around the world differ in term length, rules, area of focus and amount of funding. For example, the UK plan is a drawn-out plan, listing goals and actions up to ten years into the future, whereas other plans from countries such as New Zealand are as short as five years. Canada's Covid-19 infrastructure portion of their plan required funding to be distributed through a detailed application process, whereas other countries distributed funding directly to municipalities, leaving it up to them to decide where it was spent. The United States has put a heavy emphasis on replacing lost public sector revenue, and bolstering the economy, in contrast to programs such as the UK's, which emphasized green energy as one of the key components or Mexico's which highlighted foreign investment and tourism. Although the specifics of the plans vary from Country to Country, each pandemic recovery plan can be broken down to a common goal, economic recovery and the overall betterment of society.

4. Preparing for a More Resilient Future

4.1. Infrastructure Overview

The importance of timing in the context of public administration and policy making cannot be understated, and timing played a crucial role in the passing of the Bipartisan Infrastructure Law (BIL) in the United States. Knowing that U.S. infrastructure was falling behind and aging quickly, Congress had worked for years to try and pass a law that would increase the funding for public roads, bridges, and utilities. Getting bipartisan support was not a simple task, but when the economy was disrupted and Americans began losing their jobs, the timing was right for such a bill. Though the Infrastructure Investment and Jobs Act (IIJA) was not a direct response to the COVID-19 pandemic, it could be argued the same bill would not have passed if the pandemic did not hit the United States economy as hard as it did. The economy needed a stimulus, Americans needed jobs, and infrastructure was still aging – all factors which aided in the passing of the IIJA.

Analyzing existing reports that track the quality of U.S. infrastructure helps to explain why the BIL is so vital. There are multiple studies and metrics used to determine the status of U.S. infrastructure, but the report commonly cited by the White House was published in 2019 by the World Economic Forum that compared the competitiveness of 141 countries' economies. The report considered multiple factors, including infrastructure, and overall, the United States ranked 2nd just behind Singapore. However, the U.S. falls to the 13th spot when it comes to infrastructure alone (The Global Competitiveness Report 2019, 2019).

Another report that determines the status of the U.S. infrastructure is the *2021 Report Card for America's Infrastructure* by the American Society of Civil Engineers (ASCE). This report, compiled every 4 years, scored America's infrastructure as a C-, meaning the system is in mediocre condition and requires attention. This is an improvement over previous years and the first time in the last 20 years the grade is higher than a D, but it still is an indicator that US infrastructure needs vital improvements. For example, the ASCE report states that there is a water main break every two minutes that costs an estimated 6 billion gallons of treated water to be lost each day. Additionally, the U.S. public roadway system moves 72% of the nation's goods but 43% of those public roadways are in poor or mediocre condition (ASCE's 2021 American Infastructure Report Card: GPA: C-, 2022).

Turning the focus to infrastructure funding, the United States Federal infrastructure funds over the last 100 years have played a critical role in the economic and geopolitical growth of the United States. The infrastructure that was built by the Work Progress Administration (WPA) in the late 1930's and early 1940's, and the creation of the Federal-Aid Highway Act and establishment the Highway Trust Fund in the 1950's, have all led to a deep history of federal infrastructure funding and prioritization, which has significantly contributed to the quality of life for its citizens. Over the last 20 years, federal infrastructure spending has averaged around $100 billion a year until the spike in 2020 due to the pandemic, and in 2021 due to the IIJA.

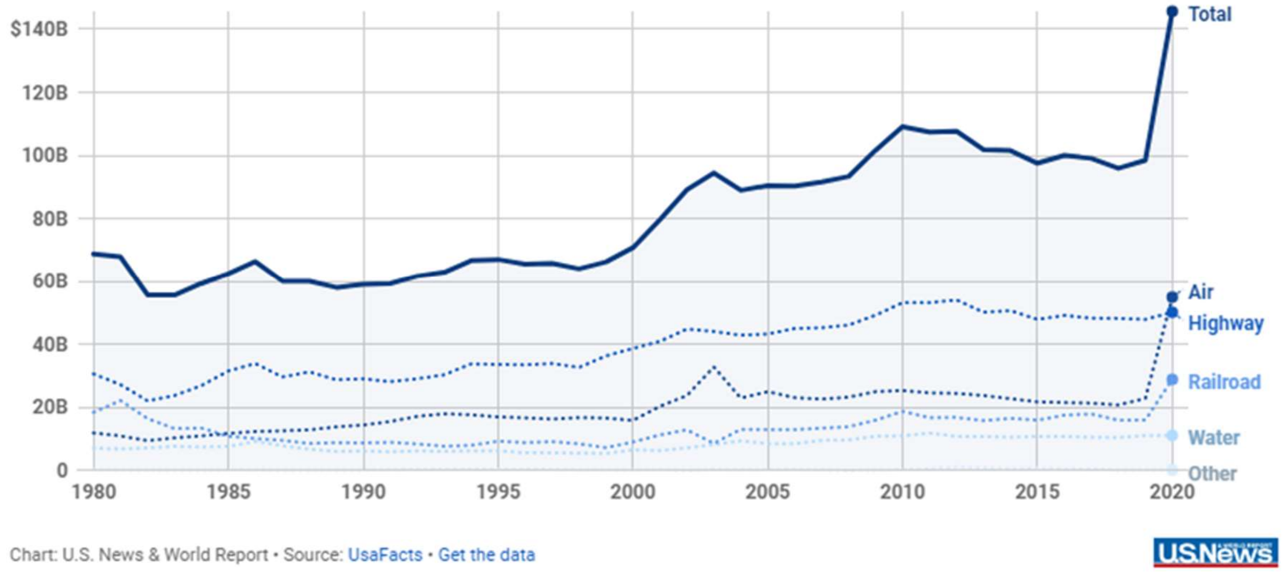


Figure 16 – Federal Infrastructure Spending Timeline

(A Look at Infrastructure Spending: Old and New, 2021)

While those dollar figures may seem large, they are put into perspective by comparing the percent invested against total gross domestic product (GDP), which makes clear that the United States has fallen far behind in the funding of public infrastructure. In recent years, non-defense government infrastructure investment was at its lowest level on record, dating back to the immediate post-WWII period. Dating back to 1929, the U.S. federal government has, in total, invested 0.4% of real GDP in physical infrastructure; U.S. state and local governments have invested a total of only 2.4% over that same timeframe (Infrastructure Investment and Jobs Act: Why it Matters for CRE, 2021). To put that into a global perspective, the U.S. ranks among the lowest in relative infrastructure investment since 2007, where it ranks 15th out of 17 eligible economies that have cumulatively produced more than $10 trillion in output from 2007-2020. Out of all 56 countries for which data is available, the U.S. ranks 53rd (Infrastructure Investment and Jobs Act: Why it Matters for CRE, 2021). All of which will, over the long-term, have a negative impact on the quality of life for its citizens, in the same way that the large investment of the 30’s, 40’s, and 50’s had a positive impact.

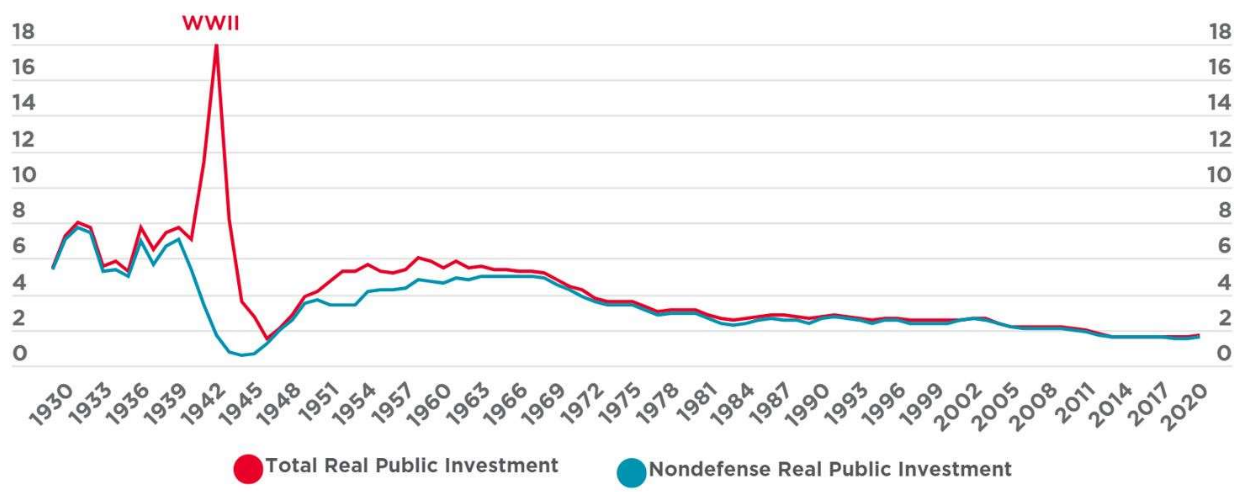


Figure 15 – Spending on Infrastructure as a Percent of GDP

4.2. Infrastructure Investment and Jobs Act (IIJA)

On November 15, 2021, President Biden signed the Infrastructure Investment and Jobs Act (IIJA) into law, creating the Bipartisan Infrastructure Law (BIL). The $1.2 trillion bill covers many aspects of infrastructure from transportation to water to broadband to electricity, with over $567 billion going to discretionary and formula programs under USDOT's jurisdiction between FY 2022 and FY 2026. The IIJA contains language from S.1913 or the Surface Transportation Reauthorization Act (STRA), consisting of the Environment and Public Works (EPW) Committee's highway title and the Commerce Committee's rail title, to reauthorize the federal surface transportation program (The Infrastructure Investment and Jobs Act, 2021).

Additionally, the IIJA contains a new provision granting cities authority to apply an approved design guide of their choice to federally funded projects on locally owned streets. Meaning that when states administer Federal funds to cities, they are neither required nor permitted to require cities to comply with state design standards (IIJA section 11129). The law also states that the USDOT must consider recommendations from the National Committee on Uniform Traffic Control Devices (NCUTCD) when updating the Manual. The language also directs USDOT to consider the protection of vulnerable road users and autonomous vehicles in its update (IIJA Section 11135). The figure to the left illustrates the IIJA funding allocations by project categories.

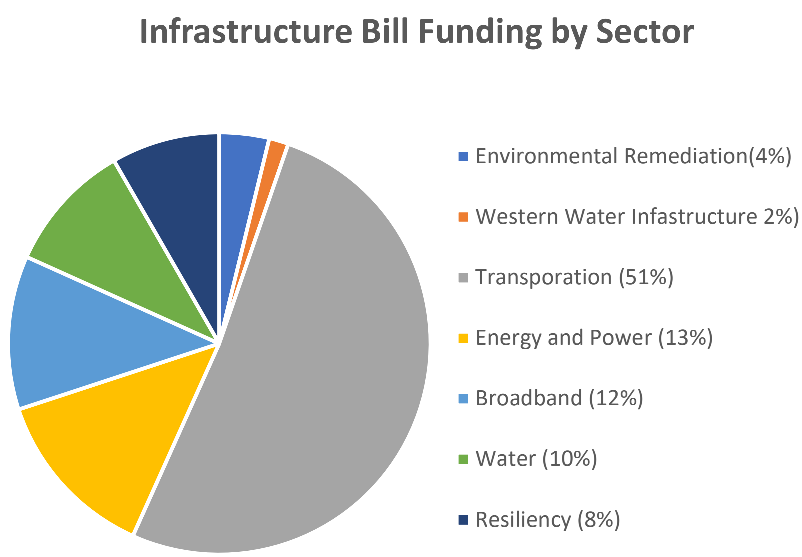


Figure 17 – IIJA Funding by Sector

These sectors can be further broken down as shown in the table below:

Amount	Category
$110 billion	Construction, repair, and research for roads and bridges
$66 billion	Upgrade and maintain the country's passenger and freight rail systems
$65 billion	Update power lines, prevent hacking of the power grid, and provide clean energy
$65 billion	Expand broadband in rural areas and in low-income communities
$55 billion	Lead pipe replacement, chemical cleanup, and clean drinking water in tribal communities
$50+ billion	Protect infrastructure from cybersecurity attacks and address natural disasters
$39 billion	Upgrade public transit, create new bus routes, and increase accessibility for seniors/disabled
$25 billion	Upgrades and expansions of U.S. airports, control towers, and control systems
$21 billion	Clean up superfund and brownfield sites, abandoned mines, and old oil and gas wells
$11 billion	Address highway, pedestrian, pipeline, and other safety areas
$8 billion	Address Western water infrastructure including mitigating drought conditions

Table 3 – IIJA Funding Breakdown

4.3. APWA and the IIJA

The American Public Works Association (APWA) established three priorities to address with the 117th United States Congress, which included surface transportation reauthorization, emergency management, and water resiliency. (APWA 117th U.S. Congress Policy Priorities, n.d.) These priorities and their objectives are summarized in the table below:

PRIORITY	OBJECTIVE
Surface Transportation Reauthorization	1. Increase the federal motor fuel tax, and provide a more stable, long-term revenue source for national and regional multi-modal transportation systems 2. Eliminate unnecessary, duplicative, and burdensome requirements that delay the delivery of critical transportation improvements 3. Increase the emphasis on safety for all transportation system users
Emergency Management	1. Provide for training and planning for disaster response 2. Enable measures to minimize or eliminate the impact of disasters 3. Support communication across sectors for effective mitigation and response 4. Streamline funding, management, and response mechanisms 5. Defend public infrastructure against cyber threats
Water Resiliency	1. Update water and wastewater regulations 2. Protect people, property, and the environment 3. Preserve and enhance water infrastructure 4. Utilize a science-based approach to regulations 5. Streamline local, state, and federal governance structures

Table 4 – APWA Priorities and Objectives

These priorities and more specific objectives align with the Infrastructure Investment and Jobs Act (IIJA) through its substantial contributions to transportation and water infrastructure, as well as overall resiliency.

4.3.1. Surface Transportation Reauthorization

The IIJA provides a $400 billion investment over 5 years in roads, bridges, and major projects (Building a Better America - A guidebook to the bipartisan infrastructure law for state, local, tribal, and territorial governments, and other partners, n.d.), and includes provisions that address two of the three objectives of APWA's Surface Transportation Reauthorization priorities. Objective #1 is addressed through the $50 million set-aside for a new National Motor Vehicle Per-Mile User Fee Pilot program, which is intended to demonstrate a national motor vehicle per-mile user fee to restore and maintain the long-term solvency of the Highway Trust Fund and to improve the surface transportation system. Objective #3 aligns with the IIJA through the $40 billion in dedicated funding for bridges, $8 billion for the Infrastructure for Rebuilding America Program, $7.5 billion for Rebuilding American Infrastructure Sustainably and Equitably (RAISE) grants, $5 billion for the National Infrastructure Project Assistance or "Megaproject", as well as multiple other programs that invest in the construction, repair and research of roads and bridges, and invest in the overall improvement of public transit.

4.3.2. Emergency Management

The IIJA provides a $50 billion investment in Emergency Management (Building a Better America - A guidebook to the bipartisan infrastructure law for state, local, tribal, and territorial governments, and other partners, n.d.) and includes provisions that address three of the five objectives of APWA's Emergency Management priorities. Objectives #2 and #3 align with the IIJA through the $34.75 billion allocated to resiliency, including Promoting Resilient Operations for Transformative, Efficient, and Cost-Saving Transportation (PROTECT) Grants ($8.7 billion), Wildfire Management ($8.25 billion), Investments in Resilience through the Army Corps of Engineers ($7 billion), Western Water ($3.8 billion), Flood Mitigation Assistance Program ($3.5 billion), and weatherization ($3.5 billion). Objective #5 aligns with the IIJA through the $1.3 billion allocated to protect infrastructure from cybersecurity attacks, including multiple programs that researches, analyzes, and/or develops technologies to strengthen defensive cybersecurity capabilities in a spectrum of strategic technical areas to mitigate risk to the nation's critical infrastructure.

4.3.3. Water Resiliency

The IIJA provides a $55 billion investment in water resiliency (Building a Better America - A guidebook to the bipartisan infrastructure law for state, local, tribal, and territorial governments, and other partners, n.d.) and includes provisions that address three of the five objectives of APWA's Water Resiliency priorities. Objectives #2 and #3 aligns with the IIJA through the $37.1 billion allocated to support and improve water infrastructure, including Drinking Water and Clean Water State Revolving Funds ($23.4 billion), Indian Water Rights ($2.5 billion), Indian Health Service Water and Sewer ($1.8 billion), Water and Sewer Tax ($1.25 billion), Rural Water ($1 billion) and Western Water ($7.1 billion). Objective #4 aligns with the IIJA through the $25 billion allocated to the treatment of water and/or replacement of pipes due to level/type of contaminants, including Lead Service Lines ($15 billion) and PFAS chemicals and Emerging Contaminants ($10 billion).

While the Infrastructure Investment and Jobs Act provides a significant injection of funds to support APWA's three priorities as outlined above, it does not specifically address the procedural changes that APWA included within the objectives of its priorities. While the injection of funds will create both blue and white-collar jobs and should have the long-term effect of improving the grades received in future Report Cards for America's Infrastructure, more attention should be given to the systematic revisions that will sustain long-term change.

4.4. Managing Resources

Starting in the spring of 2021, workers started quitting their jobs in droves, hoping to find employment with better compensation, flexibility, and workplace culture; a trend now called the 'Great Resignation' that is still very much alive in 2022. Public Works organizations were not immune to this trend, and amid this reshuffle, it is critical that the industry adapt to an ever-changing climate to better retain, attract, and develop talent.

As the pandemic lingers and continues disrupting the once 'normal' workplace that had been established, society has shifted views on public health and safety, as well as the way that we work. Public Works leaders must rethink workforce and employee planning, management, and performance; they must also consider management of external resources, like consultants and contractors as both the public and private sectors prepare for an increased workload resulting from amplified funding from the federal government. Leaders must turn their focus from the past to the future and determine what is needed for their staff to be prepared to deliver an increasing number of projects.

Leaders need to embrace the fact that strategic and workforce planning looks different post-pandemic and must begin identifying the talent and roles that will be necessary to prosper as the way public works continues to evolve. When managing turnover, leaders' instinct is often to default back to filling roles with the functions listed on the job description, often giving little attention to revision, and focusing on the quickest route to getting someone on board. Though understandable, the flaw with this approach is that job descriptions evolve within the first several months post-hire. Leaders must hire based on expertise, problem-solving abilities, and contributions; not functions of a job that will change or become obsolete over time. However, a key element in cultivating a high-efficiency team, and retaining that team, includes identifying these traits during the hiring process before upskilling and reskilling staff to maintain and continue growing the team.

One primary force behind the 'Great Resignation' and high employee turnover that has spiked in the last 2 years is job (or employee) burnout. Job burnout risk factors include heavy workload and or long hours, minimal work-life balance, little-to-no control over your work, unclear job expectations, and dysfunctional workplace dynamics (Job burnout: How to spot it and take action, 2021). Employees often view quitting as their only solution to relieving the stressors that burnout creates in the workplace. The first step in preventing or addressing job burnout, is *listening* to work-related problems. It is a leaders' role to support their staff, yet not enough make frequent employee check-ins and ongoing conversations a high enough priority. Employees need to believe that their manager can and will address their problems, and more importantly, they need to feel like their manager genuinely cares about them as *people*. Encouraging teamwork, giving ownership, valuing everyone's opinions, making work purposeful and focusing on strengths-based feedback are other ways that leaders can prevent and curb employee burnout.

Additionally, recognition and continued learning are other great ways to keep teams and employees motivated and engaged in an increasingly busy field of work. Unfortunately, inadequate recognition of employees and the work that they do seems to have become commonplace within many Public Works organizations around the country. Employees want, and deserve, more recognition for their work and leaders must continually think about effective recognition strategies for their employees. Holding leaders accountable for recognizing their teams regularly, for both small and large 'wins', is critical to keeping employees engaged and feeling like valued members of the team. Many workers find challenges within their work appealing because they view it as an opportunity to learn new things and collaborate with their coworkers. Leaders should be searching for new and diverse learning opportunities to keep their employees interested and engaged and giving employees leeway to problem-solve and learn firsthand can also help develop a self-assured and competent workforce that maintains a growth mindset.

5. Conclusion

The pandemic has brought forth many challenges and opportunities for Public Works, most of which are likely to remain for many years to come. This project has been able to **identify funding programs implemented to support pandemic recovery, analyze the application of funds programmed for pandemic recovery, and evaluate agency goals for a post-pandemic future,** allowing Public Works agencies to gain a better understanding of the recovery efforts made to provide a more resilient future for the United States.

The American Rescue Plan Act (ARPA) of 2021 provided $1.9 trillion of relief in response to the COVID-19 pandemic, which can be divided into the 4 primary categories below:

- State and Local Fiscal Recovery ($350B)
- Economic Impacts Payments ($242B)
- Emergency Rental Assistance ($21.6B)
- Various tax provisions and grants

ARPA provided much needed relief to Tribal, State, and Local governments, enabling them to continue to support the public health response and lay the foundation for a strong and equitable economic recovery. Examples of projects funded by ARPA range from Recreation and Public Works to Health & Wellness and Housing & Homelessness, depending on the priorities for that Tribal, State, or Local government.

The goal of the American Rescue Plan Act (ARPA) was to provide direct economic relief to Americans impacted by the COVID-19 pandemic. While some agencies have faced challenges with spending their allocated ARPA funding, approximately $700 billion has been disbursed across the nation to date, providing a huge economic stimulus for the country and a great investment into failing infrastructure.

This trend continued across the globe, as many other countries experienced the same health and economic impacts from COVID-19 as the United States. Their respective government have also responded to the pandemic in a similar manner with funding packages to support the health and wellness of its citizens as well as encourage economic recovery. Typically, the funding packages have not been on the same scale as the United States, but the percentage of funding for Transportation and Infrastructure has been comparable to that of the United States.

Resiliency is the key to safeguarding the health and economy of any given country, but resiliency often requires specific funding to improve and maintain critical services and infrastructure. Not only has the United States signed into law funding plans as a direct impact of the COVID-19 pandemic (ARPA and CARES Act), it can be argued that the timing of the pandemic also sparked the signing of an additional funding package (IIJA) to combat the nation's failing infrastructure. This indirect funding package will also help with economic recovery while simultaneously addressing the nations deteriorating roads, bridges, and utilities. Together, these acts provide over $3 trillion that will help the nation overhaul many aspects of the infrastructure from transportation to water to broadband to energy. While these funding packages will have their challenges as Tribal, State and Local jurisdictions create their project lists and learn to manage the resources necessary to deliver these projects, the benefit and opportunity they provide will deliver substantial improvements to the American infrastructure as a whole.

These large funding packages and projects, coupled with the COVID-19 pandemic and paradigm shift in work life balance, have brought about additional challenges with managing personnel and resources to deliver successful projects. Moving forward beyond the pandemic, the successful management of both financial and human resources will be paramount in the efficient delivery of projects and overall economic recovery. Leaders in Public Works will need to implement creative employee management strategies to continue to provide and sustain structures and services essential to the welfare and acceptable quality of life for their citizens.

6. References

A Look at Infrastructure Spending: Old and New. (2021, 09 30). Retrieved from US.. News & World Report: https://www.usnews.com/news/national-news/articles/2021-09-30/a-look-at-infrastructure-spending-old-and-new

American Rescue Plan: Treasury's Progress and Impact After Six Months. (2021, 09 16). Retrieved from U.S. Department of the Treasury: https://home.treasury.gov/news/featured-stories/American-rescue-plan-treasurys-progress-and-impact-after-six-months

APR Recovery Plan. (2021, 08 21). Retrieved from Polk County: https://www.polk-county.net/docs/default-source/communications/polk-county-arp-recovery-plan-8-31-2021.pdf?sfvrsn=3a3b3918_6.

APWA 117th U.S. Congress Policy Priorities. (n.d.). Retrieved from APWA Issues and Positions: https://www.apwa.net//Library//1.26.21%20APWA_Emergency%20Management_11.19.20_vFinal.pdf

ARPA State Fiscal Recovery Fund Allocation Dashboard. (n.d.). Retrieved from National Conference of State Legislatures: https://app.powerbi.com/view?r=eyJrIjoiMmQ2NDRiNDYtN2NkZC00OTE2LThjYzQtYjAzNTE2ZDRjZWFiIiwidCI6IjM4MmZiOGIwLTRkYzMtNDEwNy04MGJkLTM1OTViMjQzMmZhZSIsImMiOjZ9.

ASCE's 2021 American Infastructure Report Card: GPA: C-. (2022, 01 24). Retrieved from ASCE's 2021 Infrastructure Report Card: https://infrastructurereportcard.org/.

Build Back Better - Our Plan for Growth. (2021, 03). Retrieved from HM Treasury: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/968403/PfG_Final_Web_Accessible_Version.pdf.

Building a Better America - A guidebook to the bipartisan infrastructure law for state, local, tribal, and territorial governments, and other partners. (n.d.). Retrieved from The White House: https://www.whitehouse.gov/wp-content/uploads/2022/01/BUILDING-A-BETTER-AMERICA_FINAL.pdf

Business Travel Register - Covid Services - February to March 2021. (2021). Retrieved from Ministry of Business, Innovation and Employment: https://www.businessconnect.govt.nz/business-connect/case-studies/business-travel-register-covid-service/.

Covid-19 Funding Allocation and Expendature. (2020, 05 29). Retrieved from The Treasury New Zealand: https://www.treasury.govt.nz/publications/budgets/covid-19-funding-allocation-expenditure.

Fact Sheet: The American Rescue Plan Will Deliver Immediate Economic Relief to Families. (2021, 03 18). Retrieved from U.S. Department of the Treasury: https://home.treasury.gov/news/featured-stories/fact-sheet-the-american-rescue-plan-will-deliver-immediate-economic-relief-to-families

Fish Hatchery Infrastructure Revitalization. (n.d.). Retrieved from Maine Recovery & Jobs Plan: https://www.maine.gov/jobsplan/program/fish-hatchery-infrastructure-revitalization.

Governor Mills, Commissioner Camuso Strock Presumpscot River with Brook Trout, Highlight Fall Angling Opportunities & Encourage Maine People to Get Outdoors. (2021, 11 23). Retrieved from The State of Maine, Office of Governor Janet T. Mills: https://www.maine.gov/governor/mills/news/governor-mills-commissioner-camuso-stock-presumpscot-river-brook-trout-highlight-fall-angling.

Grand Lake Stream State Fish Hatchery. (n.d.). Retrieved from Maine Dept. of Inland Fisheries and Wildlife - Hatcheries: https://www.maine.gov/ifw/fish-wildlife/hatcheries/grand-lake-stream.html.

Hatcheries. (n.d.). Retrieved from Maine Dept. of Inland Fisheries and Wildlife: https://www.maine.gov/ifw/fish-wildlife/hatcheries/index.html.

Infrastructure Investment and Jobs Act: Why it Matters for CRE. (2021). Retrieved from Cushman & Wakefield: https://www.cushmanwakefield.com/en/united-states/insights/infrastructure-investment-and-jobs-act

Investing in Canada Infrastructure Program. (2021, 06 25). Retrieved from Infrastructure Canada: https://www.infrastructure.gc.ca/plan/icp-pic-INFC-eng.html

Investing in Canada Plan Project Map. (2022, 03 31). Retrieved from Infrastructure Canada: https://www.infrastructure.gc.ca/gmap-gcarte/index-eng.html

Investing in COVID-19 Community Resilience. (2022, 06 02). Retrieved from Infrastructure Canada: https://www.infrastructure.gc.ca/plan/covid-19-resilience-eng.html

Job burnout: How to spot it and take action. (2021, 06 05). Retrieved from Mayo Clinic: https://www.mayoclinic.org/healthy-lifestyle/adult-health/in-depth/burnout/art-20046642#:~:text=Job%20burnout%20risk%20factors&text=You%20have%20a%20heavy%20workload,no%20control%20over%20your%20work

Legislation Text #21-0444. (2021, 06 22). Retrieved from City of Stocktown: http://www.ci.stockton.ca.us/files/ARP_CouncilAgendaItem_15_1_June_22_2021.pdf.

Maine to get $20 m for Hatcheries in American Rescue Plan. (2021, 05 04). Retrieved from The Fishing Wire: https://thefishingwire.com/maine-to-get-20-m-for-hatcheries-in-american-rescue-plan/.

Mexico Finance Chief Readies Infrastructure Plan to Jump-Start Economy. (2022, 02 03). Retrieved from Bloomberg: https://www.bloomberg.com/news/articles/2022-02-03/mexico-readies-new-infrastructure-plan-to-jumpstart-the-economy

Mexico to invest US$38.6bn in road, rail infrastructure in 2022. (2022, 05 24). Retrieved from bnamericas: https://www.bnamericas.com/en/news/mexico-to-invest-us386bn-in-road-rail-infrastructure-in-2022

Mexico's Infrastructure Plan 2020-2024. (2020, 10 08). Retrieved from National Law Review: https://www.natlawreview.com/article/mexico-s-infrastructure-plan-2020-2024

Mexico's New Mayan Train Project Suspended. (2022, 04 24). Retrieved from Traveloffpath: https://www.traveloffpath.com/mexicos-new-maya-train-project-suspended/

More Momentum: Zionsville Awarded NExt Level Trail Grants. (2021, 03 05). Retrieved from Zionsville Monthly Magazine - Zionsville, Indiana: https://zionsvillemonthlymagazine.com/more-momentum-zionsville-awarded-next-level-trails-grant/.

New Gloucester State Fish Hatchery. (n.d.). Retrieved from Maine Dept. of Inland Fisheries and Wildlife: https://www.maine.gov/ifw/fish-wildlife/hatcheries/new-gloucester.html.

Next Level Connections. (n.d.). Retrieved from Indiana Government: https://www.in.gov/gov/files/Next-Level-Connections-Overview.pdf.

North American Development Bank Approves COVID-19 Recovery Program. (2020, 05 23). Retrieved from Gobierno De Mexico: https://www.gob.mx/sre/prensa/north-american-development-bank-approves-covid-19-recovery-program

Overview of Canada's COVID-19 Economic Response Plan. (2022, 03 16). Retrieved from Government of Canada: https://www.canada.ca/en/department-finance/services/publications/economic-fiscal-snapshot/overview-economic-response-plan.html

Recovery - American Rescue Plan Act. (2022, 07 13). Retrieved from Clackamas County: https://www.clackamas.us/recovery#economicimpacts.

State Parks Next Level Trails. (2022, 04 20). Retrieved from Indiana Department of Natural Resources: https://www.in.gov/dnr/state-parks/recreation/grants/next-level-trails/.

Summary of Initiatives in the COVID-19 Response and Recovery Fund (CRRF) Foundational Package. (2020, 06 15). Retrieved from New Zealand Treasury: https://www.treasury.govt.nz/publications/summary-intiatives/summary-initiatives-covid-19-response-and-recovery-fund-crrf-foundational-package-html.

The Global Competitiveness Report 2019. (2019). Retrieved from World Economic Forum: https://www3.weforum.org/docs/WEF_TheGlobalCompetitivenessReport2019.pdf

The Infrastructure Investment and Jobs Act. (2021, 11). Retrieved from National Association of City Transportation Officials: https://nacto.org/program/the-infrastructure-investment-and-jobs-act/

The State of Maine Act to Provide Allocations for the Distribution of State Fiscal Recovery Funds. (2021, 07 19). Retrieved from Maine Legislature: https://legislature.maine.gov/legis/bills/getPDF.asp?paper=SP0577&item=16&snum=130

The Ten Point Plan for a Green Industrial Revolution. (2020, 11). Retrieved from Assets Publishing Service: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/936567/10_POINT_PLAN_BOOKLET.pdf

Toronto - Investing in Canada Infrastructure Program. (2020, 11 26). Retrieved from City of Toronto: https://www.toronto.ca/legdocs/mmis/2020/ex/bgrd/backgroundfile-159036.pdf

Trade Recovery Strategy. (n.d.). Retrieved from New Zealand Foreign Affairs & Trade: https://www.mfat.govt.nz/en/trade/trade-recovery-strategy/trade-recovery-strategy-overview/#article.

US Infrastructure Grade: ASCE's 2021 Infrastructure Report Card. (2021, 11 10). Retrieved from ASCE's 2021 Infrastructure Report Card: https://infrastructurereportcard.org/infrastructure-categories/#:~:text=The%202021%20Report%20Card%20for,to%20a%20D%2D%20in%20transit.

USF Water Institute, School of Geosciences. (n.d.). *Peace River*. Retrieved from Polk County Water Atlas: https://polk.wateratlas.usf.edu/waterbodies/rivers/181964/peace-river.

What Is the US Infrastructure Bill? An Expert Explains. (2021, 11 16). Retrieved from World Economic Forum: https://www.weforum.org/agenda/2021/08/us-infrastructure-bill-explained/.

7. Appendix

7.1. Toolkit/Handout for Grant Applications and Process

August, 2022

IIJA/BIL Grants Toolkit

Brought to you by APWA's Emerging Leaders Academy Class XV

APWA

PRESENTED AT APWA PWX 2022
IN CHARLOTTE, NC

TABLE OF CONTENTS

OVERVIEW

On November 15, 2021, President Biden signed the Infrastructure Investment and Jobs Act (IIJA) into law, creating the Bipartisan Infrastructure Law (BIL). The $1.2 trillion bill covers many aspects of infrastructure from transportation to water to broadband to electricity, with over $567 billion going to discretionary and formula programs under USDOT's jurisdiction between FY 2022 and FY 2026. The IIJA contains language from S.1913 or the Surface Transportation Reauthorization Act (SRTA), consisting of the Senate Committee on Environment and Public Works' highway title and the Commerce Committee's rail title, to reauthorize the federal surface transportation program (NACTO.org).

MAJOR POLICY CHANGES

Local Control:
The IIJA contains a new provision granting cities authority to apply an approved design guide of their choice to federally-funded projects on locally-owned streets. Meaning that when states administer Federal funds to cities, they are neither required nor permitted to require cities to comply with state design standards. (Section 11129)

MUTCD:
The law also states that the USDOT must consider recommendations from the National Committee on Uniform Traffic Control Devices (NCUTCD) when updating the Manual. The language also directs USDOT to consider the protection of vulnerable road users and autonomous vehicles in its update. (Section 11135)

Grant Basics

Getting Started

- [ ] Familiarize yourself with the grants lifecycle
- [ ] Determine your eligibility and identify the right types of funding for your agency
- [ ] Learn about the reporting requirements you will need to comply with if awarded funding
- [ ] Search for the specific grant you will apply for, and confirm your eligibility for application
- [ ] Register with Grants.gov and apply for the grant

How Grant Policies are Made

Stage 1

Congress appropriates funds to Federal agencies and passes other grant-related legislation.

Ex: 2014, Congress passes the DATA Act, which directs that all Federal award data be available on a single website.

Stage 2

Executive Office of the President issues guidance for implementing the legislation.

Ex: 2015, Executive Office of the President creates task force and launches pilot program to determine how DATA Act will be implemented.

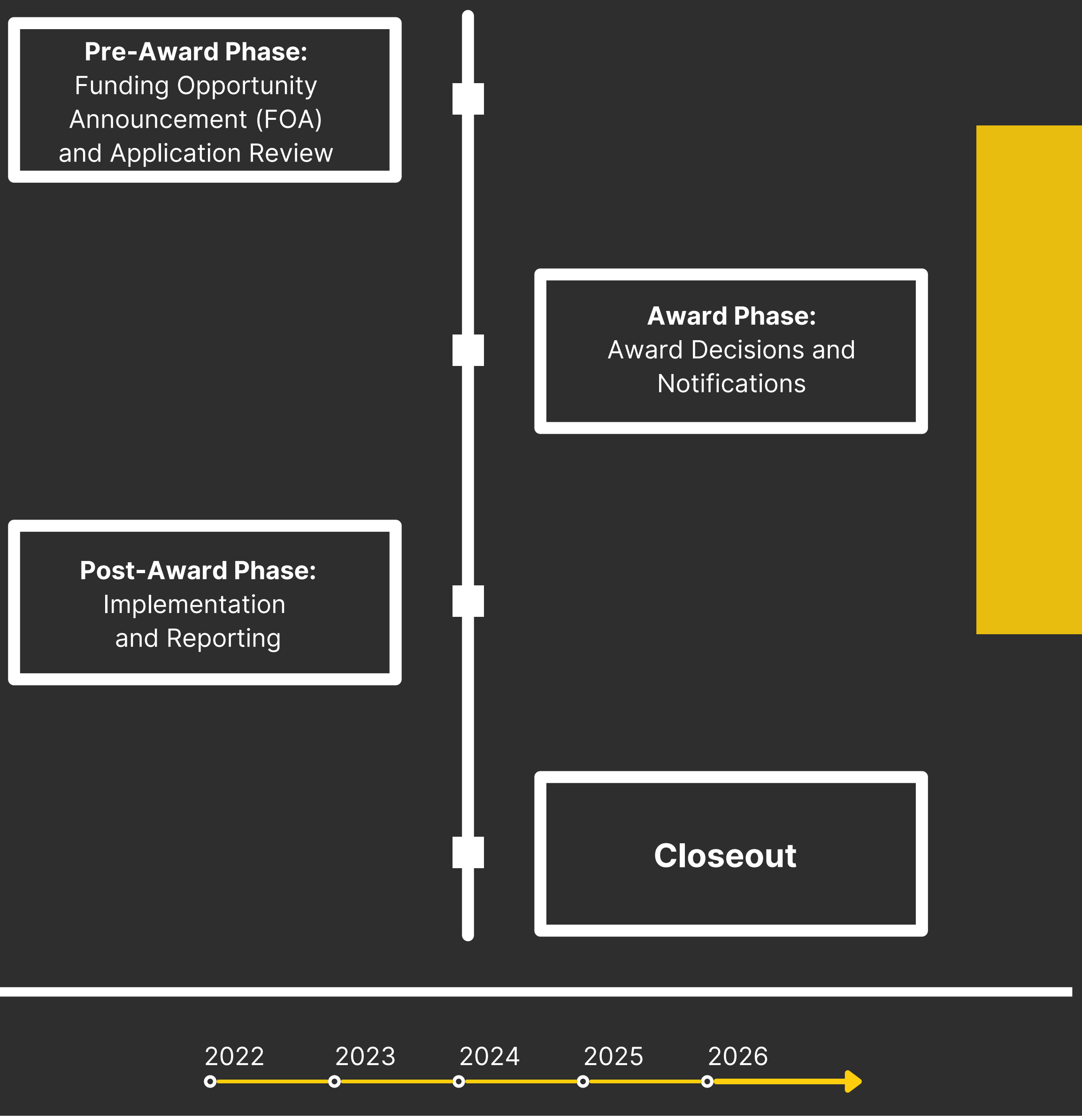
Stage 3

Grant-making agencies develop administrative policies based on guidance.

Ex: 2017, Agencies adjust their internal and external policies to the final guidance issued by the Executive Office of the President.

Grant Lifecycle

Each grant opportunity created by the IIJA/BIL will have its own timeline. The best way to search for Notice of Funding Opportunity (NOFO) and Funding Opportunity Announcements (FOA) is to search online at www.grants.gov. This is the website where federal funding opportunities are posted, and where agencies apply for grants and track the status of applications.



Project Evaluation and Guidance

To aid in the evaluation of the proposed projects for grant submittals, there are a series of questions to consider before devoting significant resources to the preparation of a grant application. It's important to also keep in mind these projects will be evaluated with a preference given to projects that address **historic inequities** and address **underserved communities**. Demonstrating **regional collaboration** and "vertical" **collaboration across Jurisdictions** and levels of government will also be a favorable element for a proposed project. With the emphasis that the BIL is a historic opportunity, **projects which would otherwise be unfeasible** for a Jurisdiction to fund, those "moonshot" projects, are also a priority under this grant opportunity.

- **Does the proposed project demonstrate alignment with Jurisdiction and/or Department goals and priorities?**
  - Alignment with Jurisdictions policies, mandates and regulations, etc.
  - Does the proposal duplicate efforts already addressed in other programs, other departments, or local agencies?
- **Is the proposal competitive enough to warrant the effort and cost of grant preparation?**
  - Compare and contrast proposal vs. grantor priorities
  - What are the grant objectives where your agency would compete well? Poorly?
  - Is the proposal period and time frame reasonable to complete and gather the necessary elements?
- **Is there any issue with grant requirements for data sharing and evaluations compliance?**
  - Does the grant require data sharing and with what kind of entities in general?
  - Does the grant require rigorous evaluation design?
- **What are the impacts to other Departments within the Jurisdiction?**
  - Does the grant design or terms impose new burdens or requirements for other Departments?
  - Could the grant have a budgetary impact on another Department?
  - Could there be a possible overlap with another Department's mission or scope of activity?
- **Who are the sub-recipients, partners, stakeholders, etc. for this proposed project?**
  - Are any sub-recipients or other types of partners proposed or required?
  - Has a sub-recipient versus contractor determination been completed?
  - Are there unusual reporting/monitoring requirements?
- **What are the timing and construction aspects to consider at this stage?**
  - Applicants schedule doable with proposed period of performance?
  - Is there a built-in planning period in the grant? Does it require committees and other structures?
  - Are the planning period's objectives and participation requirements reasonable given capacity?
  - Are deadlines for performance requirements and deliverables reasonable given capacity?
- **Does the Jurisdiction and/or Department have the capacity to support the activities of the grant?**
  - Does the Department have the time and the staff to take on the scope and breadth of the activities proposed?
  - Does the Department have the expertise on staff to meet the requirements of the grant? If not, have they reached out to other departments or agencies to be able to demonstrate that expertise (found others outside the department to fill the gaps)?
  - Has the Jurisdiction confirmed its registration status and identified their grants.gov authorized submitter?
- **What binding agreements are needed to move forward?**
  - Are other agreements required than what are usually drafted and approved? What is the status?
- **Are there any compliance and/or performance obligations, burdens, or expectations that are unusual or may cause a significant impact to the status quo?**
  - Eligibility requirements; Documentation and/or tracking requirements; Document retention more than 3 years; Unusual reporting burdens and frequency; Staff-intensive deliverables; Ambitious outcome targets; Allowable activity restrictions; Unusual monitoring requirements.
- **Are the financial, budget or match issues for the proposed project?**
  - List any unusual cost calculations needed to implement the grant, as well as any unusual requirements on insurance amounts and guarantees, equipment, vehicles, other purchases.

Grant Writing Tips

Grant writing can seem like a daunting task, but following a few simple tips and working as a team can make it a much easier process that your community will be thankful for! Below are a handful of tips to get you started, additionally, the links in the Resources section will further aid your grant writing process.

- **Let the Notice of Funding Opportunity (NOFO) be your guide.**
  - Build a checklist inside the NOFO document that will eventually become the narrative (so that descriptive prompts, rating factors, cost elements and attachments all can be considered jointly and assigned out by the applicant team.
- **Get your team together early and often.**
  - It's vital to get the team together early and often and work off that comprehensive list that includes all the questions to be answered, as well as components to be assembled. It's important to have a collaboration space (SharePoint, Teams or Google Docs), so that the team members work efficiently and don't run into version problems.
  - Additionally, enlist your local representative from the administering federal agency early in the process to begin building a relationship. No grant application should be the first time the local representative is hearing about the project!
- **Enlist content proofreaders early in the process.**
  - Consider asking your early proofreaders to focus on macro issues, such as the organization of narrative sections or the logical flow within your application narrative.
- **Develop a master checklist.**
  - A checklist can mean different things to different people; applicants should think of a multi-page checklist that includes not only a list of required forms and attachments, but also formatting requirements, and a bulleted list of the agency's judging criteria.
- **Give your application a grade.**
  - If you bring in an outside reader, the Appalachian Regional Commission suggests that you "ask them to read the proposal quickly. That is how reviewers will likely go through it, at least initially."
- **Enlist a proofreader late in the process to focus on micro issues.**
  - "Enlist the help of someone not involved in the preparation of the application and proposal to review the proposal," advises a USDA resource. This proofreader can focus solely on micro issues – word choice, sentence structure, and typographical errors.

Available Grants

While the majority of funding in the BIL will flow directly to state transportation departments, with a significant portion reserved for new (USDOT-administered) discretionary grant programs, there are still billions of dollars in grant opportunities available directly to local government agencies. The table below outlines the grant programs open to cities.

Program Name	Amount	Agency	Additional Info
Railway-Highway Grade Crossings	$3B	FHWA	Grants for local governments to improve safety and operations by removing or relocating at-grade crossings. Up to 100% federal share.
INFRA	$8B	OST	$4.8 billion from HTF, $3.2 billion from one-time appropriations
Bridge Discretionary	$12.5B	FHWA	50% federal share for projects above $100 million in total cost, 80% otherwise
Wildlife Crossings Pilot Program	$350m	FHWA	60% of funds reserved for grants to rural areas.
Electric Vehicle Charging	$2.5B	FHWA	Maximum grant amount of $1 5m, 80% federal share. Additional $5B available in formula funding.
Congestion Relief Program	$250m	FHWA	Cities with an urbanized area population over 1 million are eligible for grants of at least $10 million. 80% federal share

Available Grants Cont.

Program Name	Amount	Agency	Additional Info
Promoting Resilient Operations for Transformative, Efficient, and Cost-saving Transportation (PROTECT) grants	$1.4B	FHWA	Additional $7.3 billion available in formula funding. Four categories of sub-grants available: • Planning Grants ($140 million) • Resilience Improvement Grants ($980 million) • Community Resilience and Evacuation Route Grants ($140 million) • At-Risk Coastal Infrastructure Grants ($140 million) Federal cost share ranges from 80% to 100%.
Healthy Streets	$500m	FHWA	Grants of up to $15 million to create cool pavements and porous pavements and to expand tree cover. Funds can be used to hire staff to plan and implement eligible projects. 80 percent federal share, with 80 percent reserved for urbanized areas.
Reconnecting Communities	$1B	FHWA	Planning grants of up to $2 million available, capital construction grants of at least $5 million. 80% federal share
Projects of National Significance (Megaprojects)	$10B	FHWA	80% federal share Multi-year grants available
RAISE (formerly BUILD)	$7.5B	OST	Formerly BUILD/TIGER Grants in amounts between $5 million and $25 million available to urbanized areas. 50 percent of funds reserved for projects in urbanized areas. 80% federal share with the exception of areas of persistent poverty or rural areas, at the Secretary's discretionary.
Culvert R&R, Restoration	$4B	FHWA	80% federal share

Available Grants Cont.

Program Name	Amount	Agency	Additional Info
Safe Streets and Roads for All	$6B	FHWA	80% federal share Grants open only to local government entities. No more than 15% of any year's grants can go towards grants in any one state
Strengthening Mobility and Revolutionizing Transportation (SMART) grant program	$500m	OST	Expansion of the Smart City Challenge 40% of funds reserved for large communities, 30% for mid-sized communities, and 30% for small communities.
Fixed Guideway Capital Investment Grants	$23B	FTA	$8 billion in one-time upfront funding plus $15 billion subject to annual appropriations. Total cost of Small Starts Projects raised from $300 million to $400 million, with total federal funding capped at $150 million.
Transit State of Good Repair grants	$4.75B	FTA	$950m/year
Rail Vehicle Replacement grants	$1 .5B	FTA	80% federal share
Low- and No Emissions Bus Grants	$5.6B	FTA	$375 million in reauthorization and $5.25 billion in supplemental appropriations
All Stations Accessibility Program	$1.75B	FTA	States, local governments, and transit agencies are eligible to apply for grants to upgrade the accessibility of legacy rail fixed guideway public transportation systems. 80% federal share

Resources

Below are links to resources used to created this toolkit that will aid in continued learning about - and applying for - federal funding opportunities.

Source	**Link**	**Description**
Grants.gov	Link	Learn the basics of federal grants; starting with the grant lifecycle all the way through to closeout.
NACTO.org	Link	National Association of City Transportation Officials (NACTO). IIJA briefings and additional information for transportation officials at the local level.
APWA.net	Link	Summary of how APWA was and continues to be involved in the passing and implementation of the IIJA/BIL. APWA provides resources for funding opportunities broken down by topic area.
WhiteHouse.gov IIJA Guidebook	Link	The IIJA Guidebook provides a detailed overview of the funding opportunities, and webinars on various aspects of the IIJA can also be found on whitehouse.gov.
"Infrastructure School" White House webinars	Link	Over the months of February and March 2022, Biden-Harris Administration officials hosted a series of webinars we called "Infrastructure School" to show how to use the BIL Guidebook and provide a deeper look at important information. Recordings of the webinars are at the link to the left.
Project Evaluation Matrix (template)	Link	An Excel template that can be used to gather project information and rate/rank each as the top candidates to submit for each category within the IIJA/BIL.
US DOT Navigator	Link	The DOT Navigator is a new resource to help communities understand the best ways to apply for grants, and to plan for and deliver transformative infrastructure projects and services.

ELA
EMERGING LEADERS ACADEMY