

NEBF and NEAP

# Economic Impacts of Real Estate Investments

## CONTENTS

Acknowledgements . . . . .	2
Executive Summary . . . . .	3
Introduction . . . . .	5
Background . . . . .	8
Real Estate Investment Managers in the Study . . . . .	13
Economic Impact Methodology . . . . .	18
Economic Impact Results . . . . .	25
Conclusion . . . . .	33
Appendices . . . . .	34

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Cover Photo: National Real Estate Advisors,  
Sheraton Grand at The Bloc, Mixed-Use,  
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NEBF and NEAP engaged Alec Josephson, senior economist, and president of Pinnacle Economics, to prepare this economic impact analysis. Pinnacle Economics specializes in measuring economic, fiscal and socioeconomic impacts and its earlier, extensive work with BentallGreenOak, AFL-CIO Housing Investment Trust and Ullico using input-output modeling to measure the impacts of real estate investments established a framework and methodology for this report.

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Above all, NEBF and NEAP want to express our appreciation to Pamela Silberman of PSS Advisory Services for the work she did as project manager on this report. Based on her decades of work in the real estate industry, we knew that she would be invaluable in bringing this report to life. Pamela's experience within a real estate firm made her the perfect person to work with our investment managers on the collection and interpretation of data. She also understood the details of econometric modeling and helped us solve methodological problems. Without her, NEBF and NEAP could not have completed this effort and we owe her a profound debt of gratitude.

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# Executive Summary

Investment drives the engine of economic growth. Every state and local economy benefits from the investment activity of U.S. pension funds.

Pension plans, first and foremost, invest to earn appropriate risk-adjusted investment returns on the plans' assets. Along with employer contributions, these investment returns enable the plans to pay retirement benefits to the hard-working men and women who participate in the plans. In addition, these investments have a positive impact on economic growth in communities around the nation causing:

- local economies to grow,
- businesses to thrive,
- local tax bases to expand, and
- new jobs to be created.

This study quantifies certain economic, social and fiscal impacts of real estate investments that the National Electrical Benefit Fund (NEBF) and the National Electrical Annuity Plan (NEAP) (the Plans) made on behalf of electrical workers during the period of 2012 through 2020. The study shows that, in addition to earning profitable returns to provide a secure source of income for retired electrical workers, these real estate investments have played a vital role in sustaining the Plans' economic security by:

- driving increased demand for real estate, thereby supporting the construction industry,
- creating opportunities for NECA contractors and jobs for IBEW members,
- growing employer contributions into NEBF and NEAP,
- stimulating economic activity in communities where NECA contractors and IBEW members live and work by supporting millions of jobs in other industries, generating significant business revenue and personal income, and creating tax revenue for local, state and federal governments.

Established and jointly trusted by the International Brotherhood of Electrical Workers (IBEW) and the National Electrical Contractors Association, Inc. (NECA), NEBF and NEAP are committed to earning profitable returns to provide



a secure source of income for retired electrical workers. To this end, the Plans' investment portfolios are managed solely in the interests of the Plans' participants and beneficiaries by prudently seeking to achieve risk-adjusted returns that meet or exceed market benchmarks and match actuarial assumptions.

As the Plans are financed by participating electrical contractors who are bound by and signatory to collective bargaining agreements with the IBEW and its affiliated local unions, the Plans' Trustees realize that maintaining future contributions to the Plans and allowing for the ability to continue to earn benefits are in the best interest of the Plans' participants. Accordingly, to the extent possible and as permitted by law, the Plans prefer to seek investments that preserve and stimulate employment of the Plans' participants. The Trustees regularly review and assess NEBF and NEAP by monitoring asset value (measured in dollars) and investment growth (based on rates of returns). **This study is not intended to evaluate the results of the Plans' investment programs. It has a more focused and limited objective—to measure and validate the collateral benefits to the Plans' participants resulting from the Plans' recent real estate investment activities.**

The study covers a nine-year period beginning at the start of 2012 through the end of 2020. Using an IMPLAN model, Pinnacle Economics—an economic consulting firm that specializes in economic and fiscal impact analysis—estimates the employment, wages, benefits, economic output and tax impacts at the state and national level generated by NEBF's and NEAP's real estate investments. The analysis recognizes that expenditures related to this real estate activity have a "multiplier effect" and ripple through local, regional, and national economies.

**Table 1:  
NEBF and NEAP Economic Impacts, by Type 2012 – 2020 (2020 Dollars)**

TYPE OF IMPACT	OUTPUT	LABOR INCOME	JOBS	HOURS OF WORK
Direct Hard Costs	\$6,256,159,000	\$3,931,054,000	34,528	69,288,800
Direct Soft Costs	\$1,404,332,000	\$796,002,000	8,172	15,729,900
Indirect	\$2,803,700,000	\$1,021,378,000	16,322	30,941,500
Induced	\$3,927,701,000	\$1,356,839,000	25,167	45,999,300
<b>Total</b>	<b>\$14,391,892,000</b>	<b>\$7,105,273,000</b>	<b>84,188</b>	<b>161,959,500</b>

SOURCES: Pinnacle Economics using: 1) previously measured economic impact results for six real estate investment firms investing on behalf of NEBF and NEAP, 2) NEBF's and NEAP's investments with each real estate manager, and 3) the IMPLAN economic impact modeling software.

NOTE: Due to rounding, numbers may not sum precisely to the totals shown.

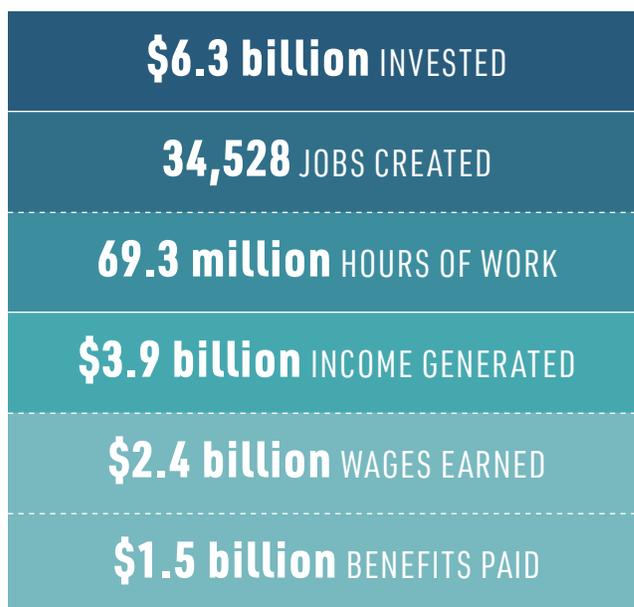
As further detailed in this report, between 2012 and 2020, the total impacts of NEBF's and NEAP's real estate investments in more than 835 projects across 33 states, created \$14.4 billion in economic activity (or output) for communities throughout the U.S. As shown in **Table 1**, the total economic impacts for workers and business owners amount to \$7.1 billion in labor income, and 84,188 jobs nationally with 162.0 million hours of work across many industries.

Based on the direct hard cost investments of NEBF and NEAP's real estate investment activity, the economic impacts attributable to direct construction-related spending that accrue to construction industries and workers total \$6.3 billion and generated \$3.9 billion in construction income, 34,528 construction jobs and 69.3 million hours of work between 2012 and 2020 as shown in **Figure 1**.

The analysis is based on investments made at the discretion of six real estate investment managers responsible for investing NEBF and NEAP assets. Their investment strategies are driven by real estate market factors and each managers' investment objectives. As a result, the outcomes are not geographically uniform across U.S. real estate markets.

Economic impact analysis based on IMPLAN, or input-output modeling, quantifying the impact of pension benefit payments or the collateral benefits of pension investments has been conducted by other public employee and multi-employer pension plans. However, because of differences in inputs, data, assumptions and methodology, those analyses may not be comparable with this analysis. Other than validating the IMPLAN approach to estimating results, readers should avoid drawing conclusions based on such comparisons.

**Figure 1:  
NEBF and NEAP Direct Construction Impacts  
2012 – 2020 (2020 Dollars)**



NEBF's and NEAP's real estate investing activity over 9 years has generated \$14.4 billion in economic activity throughout the U.S.

# Introduction

Pension plans, first and foremost, invest to earn appropriate risk-adjusted investment returns on the plans' assets. Along with employer contributions, these investment returns enable the plans to pay retirement benefits to the hard-working men and women who participate in the plans. In addition, these investments have a positive impact on economic growth in communities around the nation. When local economies grow, businesses thrive, contributing to the tax base of local governments, and creating new jobs. Investment drives the engine of economic growth.

Pension plan trustees assume enormous responsibilities when they agree to serve. As fiduciaries, they are required, both legally and ethically, to put the best interests of plan participants ahead of all other objectives. They do this by administering their plans efficiently, by making profitable investments, and by looking decades ahead. Trustees must balance the needs of participants in the past, the present, and the future. This can only be accomplished by building sustainable investment programs that contribute to economic growth tomorrow while building wealth to pay benefits today.

Experienced trustees recognize that growth in plan assets is a means to an end, not the sole reason for the existence of the plan. The ultimate objective is to provide a steady, reliable income stream to participants who have earned a retirement benefit. No retiree should ever have to worry whether he or she will receive the amount they have earned, right on schedule. The challenge facing trustees is not merely to maximize the short-term wealth of the plan. Rather, it is to create dependable future income. They do this by pursuing profitable investment strategies which also build healthy economies and businesses, strengthen local communities, and train the workforce of tomorrow.

This study quantifies certain economic, social and fiscal impacts of the real estate investments that the National Electrical Benefit Fund (NEBF) and the National Electrical Annuity Plan (NEAP) (the Plans) made on behalf of electrical workers during the period of 2012 through 2020. These retirement plans are managed with the sole focus of providing a secure source of income for retired electrical workers, but it is clear from this study that the Plans play a vital role in stimulating economic growth across the U.S. that ultimately supports millions of jobs in many industries, generates significant business revenue and personal income, and creates tax revenue for local, state and national economies.

Established and jointly trusted by the International Brotherhood of Electrical Workers (IBEW) and the National

Electrical Contractors Association, Inc. (NECA), NEBF and NEAP are committed to earning profitable returns to provide a secure source of income for retired electrical workers. To this end, the Plans' investment portfolios are managed solely in the interests of the Plans' participants and beneficiaries by prudently seeking to achieve risk-adjusted returns that meet or exceed market benchmarks and match actuarial assumptions.

As the Plans are financed by participating electrical contractors who are bound by and signatory to collective bargaining agreements with the IBEW and its affiliated local unions, the Plans' Trustees realize that maintaining future contributions to the Plans and allowing for the ability to continue to earn benefits are in the best interest of the Plans' participants. Accordingly, to the extent possible and as permitted by law, the Plans prefer to seek investments that preserve and stimulate employment of the Plans' participants.

The Trustees regularly review and assess NEBF and NEAP by monitoring asset value (measured in dollars) and investment growth (based on rates of returns). **This study is not intended to evaluate the results of the Plans' investment programs. It has a more focused and limited objective—to measure and validate the collateral benefits to the Plans' participants resulting from the Plans' recent real estate investment activities.**



The IBEW first offered its members a self-funded pension plan in 1927. After World War II, with membership and the economy growing, the IBEW teamed with NECA to establish a new pension, funded by employer contributions earned by electrical workers, and the National Electrical Benefit Fund (NEBF) (a defined benefit plan) was ratified by mutual agreement in 1946. Today, NEBF is the third largest Taft-Hartley Pension Plan in the US and the 205th largest pension fund globally<sup>1</sup> based on total assets. To extend pension benefits to utility and transmission line workers, the IBEW and NECA formed what is now known as the National Electrical Annuity Plan (NEAP) (a defined contribution plan) in 1973.

Invested under the direction of two separate jointly governed Board of Trustees represented by management and labor, the pension and benefit portfolios are diversified by asset class to achieve plan objectives. The portfolios are comprised of equity, fixed-income and alternative investments. NEBF and NEAP have been investing in real estate for over 35 years, since as an asset class, real estate offers competitive risk-adjusted returns, stable income, low correlation with other asset classes, and a hedge against inflation.

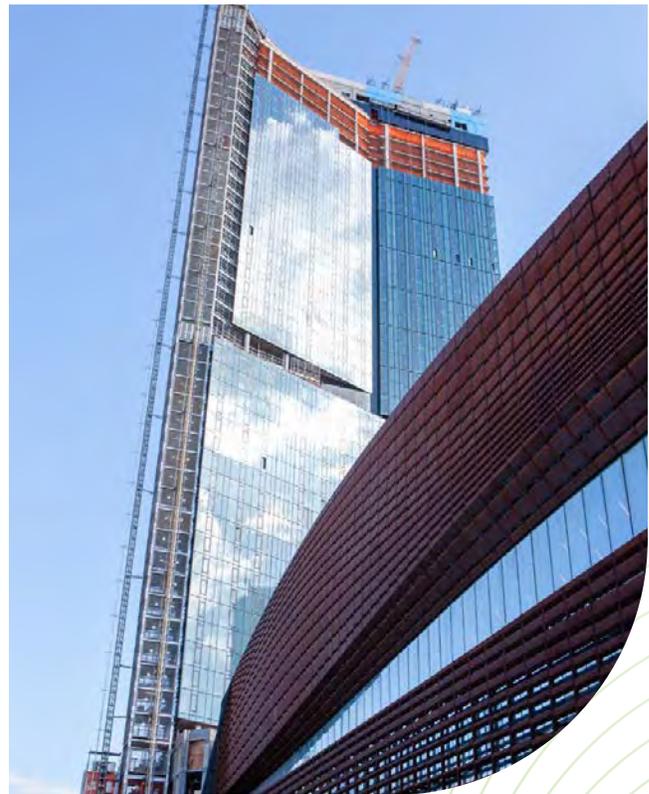
Commercial real estate is a large source of employment for the electrical industry. NEBF and NEAP invest in a diverse collection of office, industrial, multifamily residential, and other property types. This study analyzes the real estate investments of NEBF and NEAP since real estate investment activities generate quantifiable, tangible job creation through new construction, renovation, maintenance, and tenant improvements. By investing in real estate, NEBF's and NEAP's investment programs generate business opportunities for NECA contractors, create jobs for IBEW members, and overall, support the electrical industry.

Every \$1.00 invested in real estate by NEBF and NEAP supports \$0.08 in pension benefits for the construction industry.

Moreover, the initial investment dollars ripple through the economy and create an even greater economic footprint that strengthens local and national economies. This analysis is a proof-of-concept to show that when secondary or collateral benefits are part of investment objectives, the outcomes can and should be measured and quantified.

## IMPLAN Model

Economic impact analysis is an objective approach that establishes rigorous, standardized measurement of direct, indirect and induced impacts. The input-output modeling system, originally developed by a joint effort of the Minnesota IMPLAN Group (MIG) and the USDA Forest Service in 1978 and now privately operated by the IMPLAN Group, LLC, is a state-of-the-art software model used by over 2,000 public and private institutions. IMPLAN is an input-output dollar flow model that tracks the way a dollar injected into one sector is spent and re-spent in other sectors of the economy, generating waves of economic activity, or "economic multiplier" effects. (See *Economic Impact Methodology*)



AFL-CIO Housing Investment Trust,  
18 Sixth Avenue at Pacific Park, Multifamily, Brooklyn, NY

<sup>1</sup> Thinking Ahead Institute, *Pensions & Investments World 300*, September 2020, values as of September 30, 2019, p. 46.

## Multiplier Effect

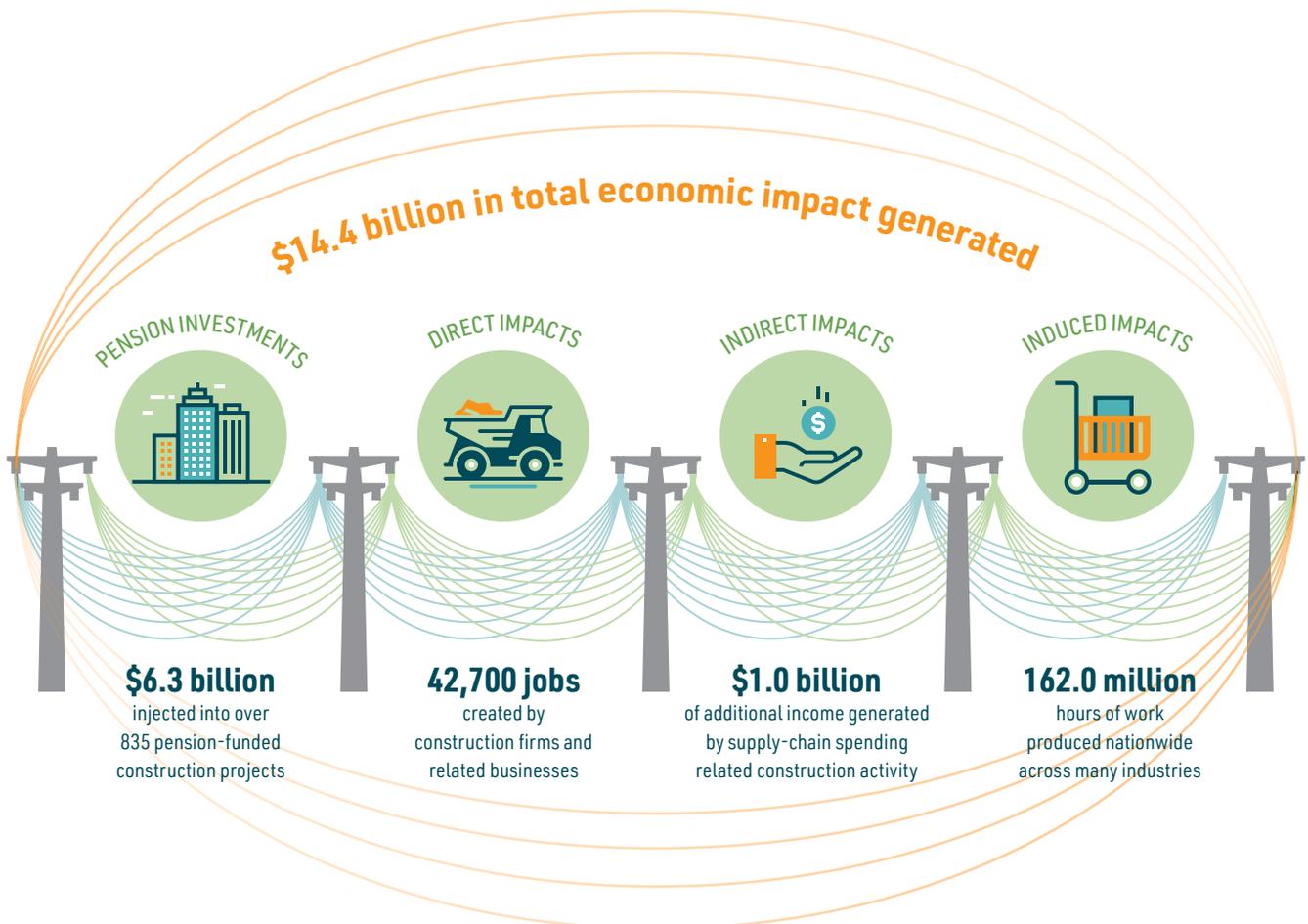
The real estate investing activity of NEBF and NEAP provides a steady infusion of economic activity year over year where one recipient's spending becomes someone else's income. For example, with real estate projects the ripple effect starts with the direct impact of wages paid to construction workers or other service providers at the job site which in turn creates indirect impacts from supply chain and other spending, and then flows through to induced impacts from consumption spending of income, such as purchasing groceries, apparel, and gasoline.

Using economic multipliers, this report focuses on the expenditure effect of NEBF's and NEAP's real estate investments managed by six real estate investment managers. In total, over a nine-year period, these managers have created substantial economic activity across the U.S.

with direct construction-related impacts of \$36.1 billion in output, \$20.5 billion in income, and 165,444 jobs, and total impacts, including multiplier spending effects, amounting to \$80.4 billion in output, \$37.8 billion in income, and 434,738 jobs. Based on NEBF's and NEAP's real estate holdings between 2012 and 2020, the Plans' share of construction-related impacts total \$6.3 billion in output, \$3.9 billion in income, and 34,528 jobs. The Plans' share of total impacts amount to \$14.4 billion in output, \$7.1 billion in income, and 84,188 jobs. (See *Economic Impact Results*)

NEBF and NEAP beneficiaries provide vital services and skills to power America. But the impact of NEBF and NEAP go far beyond simply safeguarding their participants' retirement savings.

**Figure 2:**  
**The Multiplier Effect—Generating Economic Activity and Powering the Economy**



# Background

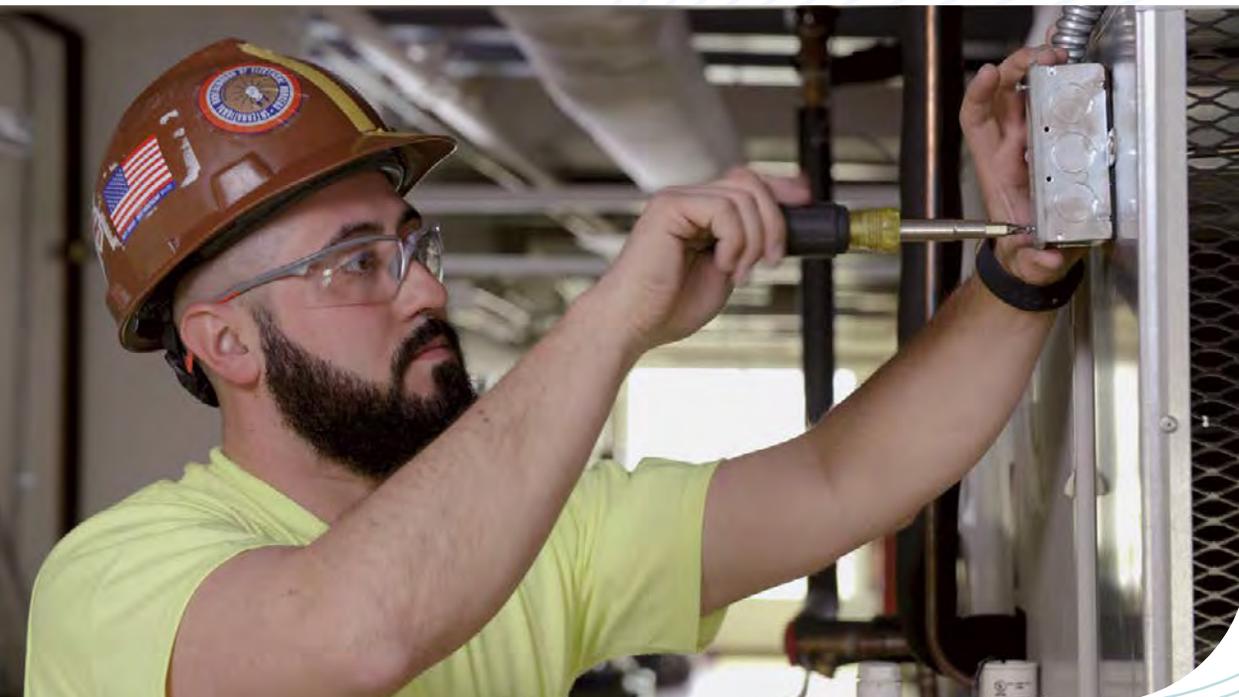
To provide retirement security, dignity, quality-of-life and peace-of-mind, contractors and electrical workers partnered to create retirement programs that would be managed professionally, administered efficiently, and maintained for the long term. The founding organizations include:

The **National Electrical Contractors Association (NECA)** is the voice of the \$171 billion industry responsible for bringing lighting, power and communications to buildings and communities across the U.S. NECA's national office and 118 local chapters advance the electrical contracting industry through advocacy, education, research and standards development. Whether high-voltage power transmission or low-voltage lighting, electrical contractors ensure these systems work in a safe, effective and environmentally sound manner. The primary services of the association are designed for signatory contractors who hire union (IBEW) electricians.

Formed in 1891, the **International Brotherhood of Electrical Workers (IBEW)** represents over 775,000 members who work in a wide variety of fields, including construction, utilities, telecommunications, broadcasting, manufacturing, railroads and government. The IBEW has members in both the United States and Canada and stands out among the American unions in the AFL-CIO because it is among the largest and has members in so many skilled occupations. The IBEW is the most established and extensive electrical union in the world,

existing as long as the commercial use of electricity. As the industry grew, electricians began organizing themselves and setting the stage for increased safety measures, fair pay, and a better standard of living.

The collaborative relationship between NECA and the IBEW provides property owners, developers, and investors with the highest quality services in the construction industry. By working with NECA contractors and IBEW members, developers employ workers with the best training and apprenticeship programs in the electrical industry. Furthermore, since NECA chapters and IBEW locals are party to collective bargaining agreements, NECA contractors provide their employees with wages that ensure a middle-class standard of living and retirement security. Most importantly, real estate owners that engage NECA contractors find that electrical work gets done on time and on budget, at the highest quality, and with the fewest injuries.



## The Plans

### THE NATIONAL ELECTRICAL BENEFIT FUND

NEBF was established in 1946 to provide retirement and disability benefits to workers in the electrical construction industry. NEBF is jointly governed by four Trustees appointed by the IBEW and NECA. NEBF is financed primarily by employer contributions negotiated in collective bargaining agreements between local IBEW unions and their corresponding NECA chapters. Employers contribute 3% of an employee's gross payroll to the Fund on behalf of each participant. The Fund is a multi-employer defined benefit pension plan and is subject to the provisions of the Employee Retirement Income Security Act of 1974 (ERISA) and regulation by the U.S. Department of Labor.

NEBF's assets are all held collectively in an investment pool, managed on a total return basis with the goal of meeting the Fund's actuarial liabilities. NEBF has a well-diversified portfolio of investments that include stocks, bonds, real estate, and other assets. The Trustees of NEBF have ultimate responsibility for the investment program. The investment policy, asset allocation, manager selection and structure of the Fund are established by the Trustees of NEBF, based on the advice of investment staff and fiduciary investment consulting firms. The Fund relies on external discretionary investment management firms to evaluate and make decisions with respect to specific stocks, bonds, real estate properties, and other investments. Each manager is required to serve the Fund as an investment fiduciary. The Fund's real estate allocation target is 15% but can range as high as 20%, depending on capital market conditions and investment opportunities. Consistent with Fund objectives, NEBF requires that each real estate manager adopt a Responsible Contractor Policy (See Appendix: *Responsible Contractor Policy*).

NEBF has over 600,000 participants, roughly half of whom are actively working construction electricians while the other half are retirees. Over 9,000 employers contribute into the plan on behalf of their employees. In 2020, NEBF took in employer contributions of over \$685 million, paid out almost \$1.2 billion in benefit payments, and had \$17 billion in assets at the end of 2020.

# NEBF

**600,000+** PARTICIPANTS

**9,000** EMPLOYERS

**\$685 million**

2020 CONTRIBUTIONS

**\$17 billion** ASSETS

# NEAP

**118,000** PARTICIPANTS

**1,300** EMPLOYERS

**\$864 million**

2020 CONTRIBUTIONS

**\$12 billion** ASSETS

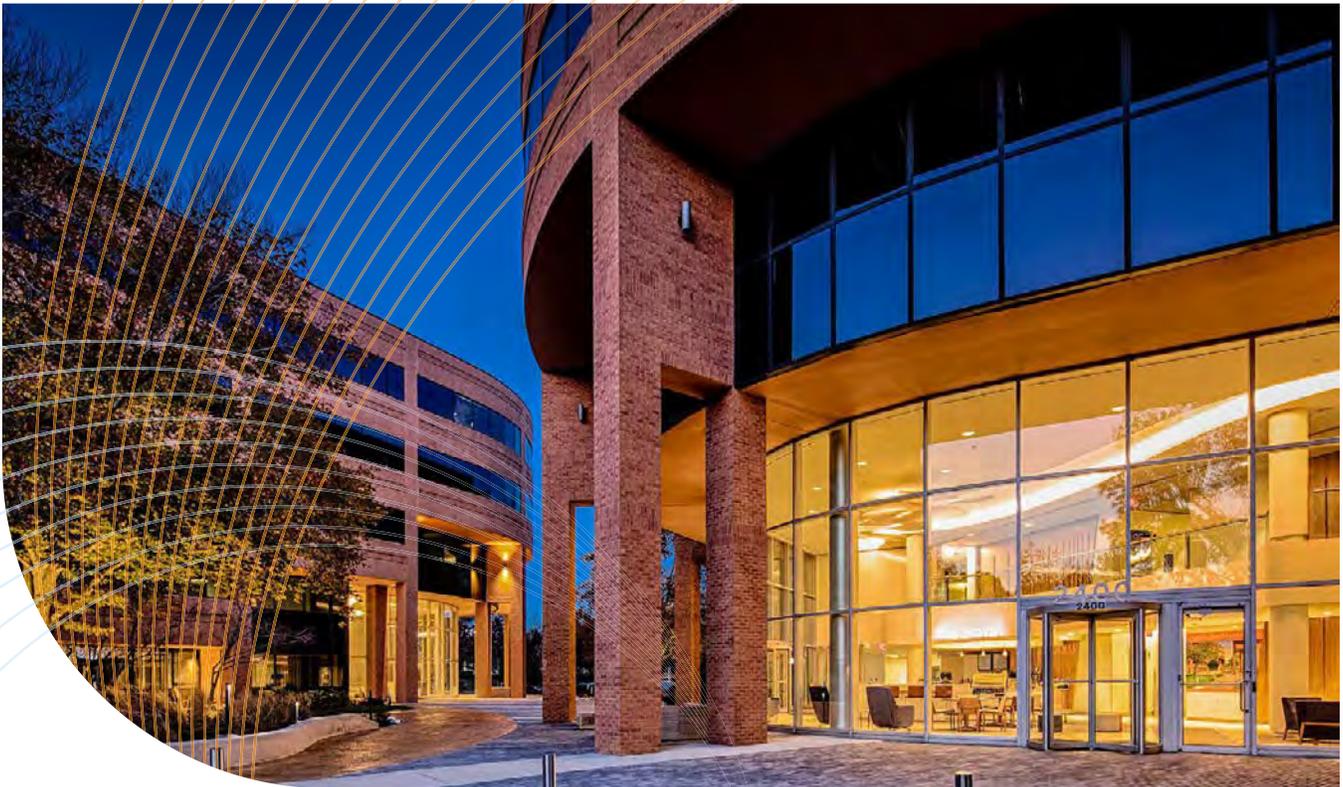
## THE NATIONAL ELECTRICAL ANNUITY PLAN

NEAP was established in 1973 as the result of an agreement reached between the IBEW and the NECA. NEAP is a defined contribution plan that provides retirement and related benefits to employees in the electrical industry, primarily utility and transmission line workers along with the employees of tree-trimming contractors. All contributions are made to each participant's individual account by an employer who operates under a collective bargaining agreement with the IBEW or one of its local unions or has signed a Participation Agreement with NEAP. Employer contributions vary by collective bargaining agreement. In addition to contributions made by the employer, NEAP may also accept other contributions in the form of rollover contributions, and reciprocal transfers from other qualified plans. No voluntary contributions by participants are allowed.

Like NEBF, NEAP is governed by four Trustees appointed by NECA and the IBEW. NEAP's investment program has been structured as a series of five age-based "Life Stage" funds customized to meet the needs of the various age groups of participants. The Plan invests a participant's retirement funds more aggressively during the early years of a career for asset growth, gradually moving toward more conservative

investments and capital preservation over time. All Plan assets are commingled for the purpose of investment and managed collectively in a number of asset class pools, with the Plan maintaining a unitized record keeping system to track and report participant account balances. The Trustees are responsible for setting the asset allocation of each Life Stage fund, selecting external investment managers, and monitoring the performance of each fund. They do so in consultation with professional investment staff and a fiduciary investment consulting firm.

Similar to NEBF, NEAP has a well-diversified portfolio of investments composed of stocks, bonds and real estate. Its investment policy and manager structure are established by the Trustees of the Plan. The Plan relies primarily on external investment management firms to evaluate and make decisions with respect to specific stocks, bonds, real estate properties, and other investments. Each manager is required to serve the Plan as an investment fiduciary. The Plan's real estate allocation target is 10% but can range as high as 15%, depending on capital market conditions. Consistent with Fund objectives, NEAP requires that managers adopt a Responsible Contractor Policy.



ASB Real Estate Investments, Research Grove, Office, Rockville, MD

NEAP has 118,000 participants, most of whom are actively employed in the industry. It has 1,300 contributing employers across the country that funded \$864 million in employer contributions in 2020. At the end of 2020, the Plan had total assets of \$12 billion.

### **Virtuous Cycle of Investment**

The intentional investment of pension dollars in assets that support the electrical industry has created a virtuous cycle that helps to sustain NEBF and NEAP. Above all, the Plans' earn profitable returns and produce significant investment income. Along the way, the Plans' investments in real estate support the construction industry and generate employer contributions, thereby strengthening NEBF and NEAP's financial condition and ability to fund future benefits.

Further, due to the multiplier effect, the Plans' investments also stimulate economic activity in communities where NECA contractors and IBEW members live and work—leading to increased demand for real estate, to new project development and opportunities for NECA contractors, to job creation for IBEW members, and to further employer contributions into NEBF and NEAP.



Salesforce Tower at Wolf Point (Rendering), Office, Chicago, IL  
AFL-CIO Building Investment Trust (Equity)  
Ullico Inc. (Debt)

NEBF's and NEAP's real estate investments strengthen the Plans' financial condition by supporting the construction industry in ways that spark business opportunities for contractors, create jobs for participants, and generate additional employer contributions.

## Direct Construction Impacts

This analysis, as noted, takes into consideration three types of impacts including direct, indirect, and induced as well as the associated multiplier or expenditure effect of this spending. This study does not focus on any single year, but rather captures nine years of data beginning with initial construction funding in each year, and the effect as the construction-related spending cycles through the economy over time. Many factors can cause changes in spending year over year.

However, given the devastating loss of life, and the health, economic, and fiscal consequences caused by the COVID-pandemic, it is important to note the effects in 2020. The U.S. construction industry was not immune and, in early 2020, work was paused nationally as local governments sought federal guidance, enacted directives, and initiated shutdowns. Yet, in many cities, construction activity was swiftly deemed essential, and once virus mitigation protocols were implemented, projects were able to proceed.

At the same time, there were some jurisdictions that kept worksite stoppages in place for several months. However, over the course of the year, construction starts, and productivity ramped up substantially, resulting in significant (albeit lower than 2019) wages and benefits paid to the trades in 2020.

Demographic and consumer trends that influenced real estate investment activity before the pandemic greatly accelerated because of work-from-home and shutdown orders. Demand for apartments, storage and industrial properties increased substantially. On the other hand, retail, hotel, and office properties bore the brunt of the shutdowns and for many, leasing activity, usage and demand fell precipitously. These ongoing factors as well as rising costs for materials and supply chain disruptions could impact the volume and type of construction activity post-COVID.

Figure 3 provides a summary of the direct construction impacts by year across the construction industry and shows the combined effects of increased NEBF and NEAP real estate investment activity and the real estate investment managers' project development activities between 2012 and 2020.

**Figure 3: NEBF and NEAP Direct Construction Impacts, by Year 2012 – 2020 (2020 Dollars)**



# Real Estate Investment Managers in the Study

The following six real estate investment managers manage investments on behalf of NEAP and NEBF in open-end funds, closed end funds, and separate accounts across a variety of core, core-plus, and value-add strategies. Collectively, these real estate managers have assets under management in excess of \$84 billion. For this study, Pinnacle analyzed over 835 construction and tenant improvement projects managed by these firms between 2012 and 2020 across 33 states with total development costs of approximately \$58 billion.

These managers are committed to responsible investment as evidenced by their use of Responsible Contractor Policies which address certain asset-level risks and helps ensure that their projects employ a highly-skilled, stable, and productive workforce. Moreover, many of these managers have integrated environmental, social and governance (ESG) approaches into their investment processes that quantify risks to their portfolios and that consider the impacts on the environment and communities in which they invest. So, in addition to financial return, these managers track, measure and report on their progress toward ESG goals and objectives, including sustainability metrics, economic impacts and job creation.

Participating real estate investment managers include:





AFL-CIO Building Investment Trust, Cadence, Multifamily, South San Francisco, CA

The **AFL-CIO Building Investment Trust (“BIT”)** is an open-ended, core commercial real estate fund with \$5.1 billion in net assets from 248 investors (as of March 31, 2021). The BIT is a bank collective trust for which PNC Bank, National Association (PNC Bank), is Trustee. The investors in the BIT are comprised of qualified pension funds and retirement plans with union beneficiaries. The BIT is the only commercial real estate fund to carry the AFL-CIO name. Created in 1988, the fund makes equity investments in core real estate in gateway markets. The BIT maintains a diversified portfolio across all the major core property types (multifamily, office, retail and industrial). However, it maintains an overweight in multifamily assets compared to its benchmark.

The BIT’s “build-to-core” focus has allowed the fund to invest in 25 new construction projects since 2010, totaling \$4.0 billion in development. The BIT implements a comprehensive labor policy which requires 100% union construction labor as well as additional policies relating to the operations of portfolio investments. The BIT’s investments support the creation of union construction jobs and support local economic development efforts in key markets around the country. NEAP first invested in the BIT in 1989, one of the first 10 investors in the fund.



AFL-CIO Housing Investment Trust, The Penfield, Mixed-use, St. Paul, MN

The **AFL-CIO Housing Investment Trust (HIT)** is a fixed-income, investment grade mutual fund, with \$6.8 billion in assets from 366 investors (as of March 31, 2021). The HIT’s portfolio is internally managed and consists principally of high credit quality securities, primarily multifamily housing mortgage backed securities. More than 91% of the assets in HIT’s portfolio were rated AAA or carried a government or government-sponsored enterprise guaranty. The HIT’s portfolio’s overweight to the highest credit quality and exclusion of corporate bonds seeks to provide diversification and capital preservation for its investors while delivering a yield advantage.

For over 35 years, the HIT has been a leader in putting union capital to work to produce competitive returns and achieve mission-related collateral objectives. The HIT requires that the new construction and rehabilitation that it finances be built with 100% union labor, creating union construction jobs, housing, and broader economic benefits in communities where union members live and work. Since inception in 1984 through March 31, 2021, the HIT has invested \$9.3 billion in more than 550 real estate projects with total development costs of \$17.5 billion, creating more than 120,000 housing units nationwide. This has generated more than 200,000 total jobs and over 183 million working hours for union workers. The HIT is signatory to the UN Principles of Responsible Investment. Headquartered in Washington, DC, the HIT is regulated by the U.S. Securities and Exchange Commission and is registered under the Investment Company Act of 1940. NEBF first invested in the HIT in 1987; NEAP made its first investment in 2010.



ASB Real Estate Investments, Polo Plaza, Office, Del Mar, CA

**ASB Real Estate Investments (ASB)**, a division of ASB Capital Management LLC, is a leading U.S. real estate investment management firm with more than \$7.8 billion in gross assets under management from over 325 institutional clients (as of March 31, 2021). Headquartered in Bethesda, MD, ASB invests in major urban markets across the U.S., concentrating in office, multifamily, retail, and industrial properties.

ASB manages one core investment vehicle, the Allegiance Fund; the Meridian Funds, the firm's low-leverage, closed-end, value-creation series; and one ground-up development separate account. Firm management does not plan to accept any additional real estate mandates outside of its existing exclusive investment products.

ASB is a participant in the Global Real Estate Sustainability Benchmark (GRESB) and believes in the benefits of socially responsible investing and seeks to consistently demonstrate a commitment to enhancing the health, wellbeing, and social engagement of tenants in their built environment. NEBF began investing with ASB in 1984 and NEAP's initial investment was in 2006.



BentallGreenOak, AVE Aviation Center, Industrial, Miami, FL

**BentallGreenOak** is a leading, global real estate investment management advisor that serves the interests of more than 750 institutional clients with approximately \$55 billion of assets under management (as of April 1, 2021). The Multi-Employer Property Trust (MEPT) is an open-end commingled core real estate equity fund that invests in a diversified portfolio of institutional-quality real estate assets in the U.S. Headquartered in Bethesda, MD, MEPT is managed by BentallGreenOak, a company formed in 2019 from the merger of Bentall Kennedy and GreenOak.

Founded in 1982, MEPT's portfolio (as of March 31, 2021) consisted of 98 investments in over 25 major metropolitan markets across the US, invested on behalf of over 334 pension plans with over \$10.0 billion in total assets. MEPT's management team has created a diversified portfolio of high-quality, core, income-producing assets through acquisition, development, or rehabilitation. The Fund invests in office buildings, warehouses, apartments, and retail centers. MEPT is signatory to the UN PRI and is a recognized leader in responsible property investing by GRESB and the U.S. Environmental Protection Agency (EPA). MEPT, since inception, has maintained a Responsible Contractor Policy that requires that all contractors working on its portfolio properties be signatory to bargaining agreements with legitimate trade unions. NEAP initiated its investment in MEPT in 1988.



National Real Estate Advisors, The Hepburn, Multifamily, Washington, DC

**National Real Estate Advisors, LLC (National)** is an investment manager specializing in a build-to-core strategy, developing and managing large-scale, urban commercial and multifamily projects for its institutional client accounts. Based in Washington, DC, National constructs investment portfolios of modern property assets—apartment, office, mixed use, industrial (including data centers), and hotel—with design features, technological enhancements, and amenities that drive high tenant demand and can create value for investors. National was formed in 2010 when NEBF spun out its in-house real estate team into a wholly-owned and independently operated subsidiary. The in-house team began NEBF’s direct real estate investing program in 2000. National’s institutional clients are all IBEW pension funds, of which NEBF is the largest. National is a GRESB participant and invests based on its build-to-core philosophy, which is designed to create value, a modern real estate portfolio, and as an ancillary benefit, good construction jobs.

National’s INDURE Build-to-Core Fund is a commingled, open-end real estate investment fund established in 2010 that was originally seeded with assets from NEBF’s real estate holdings. INDURE has approximately \$4.5 billion in gross assets (as of March 31, 2021) which it manages on behalf of 50 pension trusts and other institutional investors. INDURE seeks to invest in institutional quality, geographically diversified properties. The investments are further diversified by product type and through a mix of debt and equity.

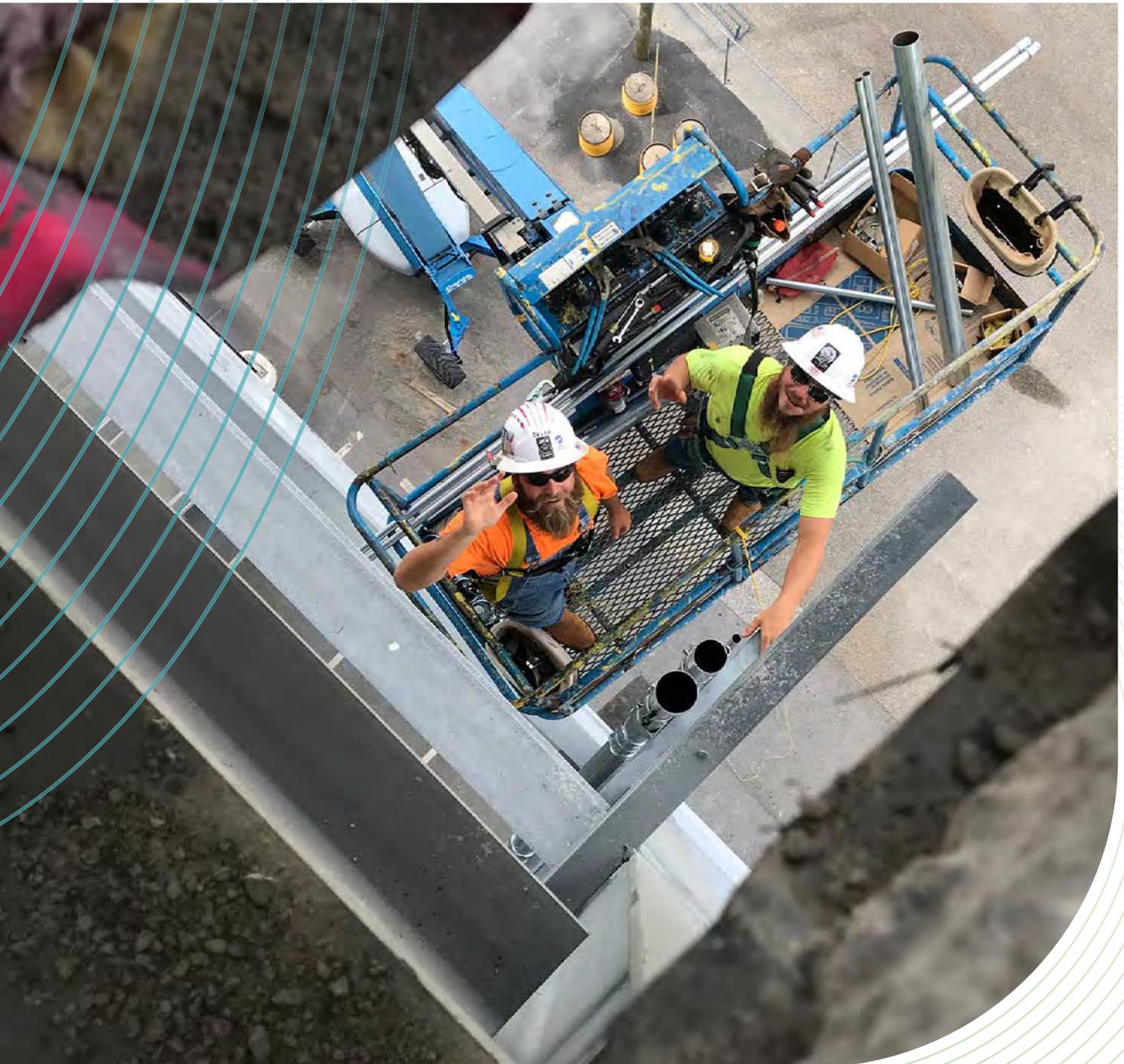


Ullico, The Cascade Apartments, Multifamily, Chicago, IL

The **Ullico Inc. (Ullico)** Family of Companies provides insurance and investment solutions for labor organizations, union employers, institutional investors and union members. Founded over 90 years ago, the company takes a proactive approach to anticipating labor’s needs, developing innovative financial and risk solutions and delivering value to its clients. Headquartered in Washington, DC, Ullico’s products are tailored to promote financial security and stability for American workers.

Separate Account J, commonly known as ‘J for Jobs,’ is a commercial real estate debt investment vehicle that lends to real estate developers and property owners. J for Jobs was established in 1977 for union pension and annuity plans to invest in construction and permanent mortgage loans on US-based commercial properties. Loans made through J for Jobs require that all construction be built with union labor as a condition of the lending agreement. Since inception, J for Jobs has funded more than 500 real estate projects nationwide totaling over \$19 billion, which have been responsible for generating more than 335,000 full-time jobs and over 650 million working hours for union workers. J for Jobs had over \$3.4 billion in assets under management invested (as of March 31, 2021) on behalf of 159 institutional investors. NEBF began investing in J for Jobs in 1987.

The multiplier effect: For every \$1.00 invested by NEBF and NEAP with these real estate managers, an additional \$0.90 is generated in the economy through rounds of spending.



# Economic Impact Methodology

## Input-Output Analysis

The most common approach to estimate the economic impacts associated with investments in real estate projects is called the “expenditure approach.” It involves allocating detailed project spending on hard costs, soft costs, and other costs to industry sectors in an input-output model of the economy in which the project occurs.<sup>2</sup> The expenditure approach is especially conducive to measuring the economic impacts across a portfolio of projects, as was done in this analysis, but can then be easily implemented in future project work where investment activities and portfolios may be significantly different—such as infrastructure investments and private equity—but still have expenditures as the primary modeling inputs.

Input-output models are mathematical representations of the economy and how different parts (or sectors) are linked to one another. Input-output models provide a reasonably comprehensive picture of the economic activities within a region using mathematical equations that describe the flow of commodities between producing and consuming sectors, the flow of income between businesses and institutions, and the trade in commodities between regions. The strengths of the input-output modeling framework include: 1) a double-entry accounting framework that results in a model structure that is well ordered, symmetric, and where, by definition, inputs must be equal to outputs; 2) model construction using secondary source data that is gathered and vetted by government agencies; and 3) a sufficiently detailed sector scheme that allows detailed project costs to be mapped to a generic industry sector or the ability to customize an industry sector so that it more precisely matches the activity or spending.

Input-output models that rely on survey or primary source data are expensive to construct and are generally not available for state and regional economies. As a result, special modeling techniques have been developed to

estimate the necessary empirical relationships from a combination of national technological relationships, and state- and county-level measures of economic activity. These modeling techniques and data have been packaged into the IMPLAN (for Impact Analysis for PLANning) modeling software. The input-output modeling system, originally developed by a cooperative effort between the Minnesota IMPLAN Group (MIG) and the United States Department of Agriculture’s Forest Service in 1978 and now privately operated by IMPLAN Group, LLC, is a state-of-the-art software model used by over 2,000 public and private institutions. This is the modeling software Pinnacle Economics used in this analysis.

## The IMPLAN Economic Impact Model

In general terms, the IMPLAN model works by tracing how spending associated with a project or program circulates through an economy. That is, changes in one sector, or multiple sectors, trigger changes in demand and supply throughout the economy. Initial changes in the model propagate through the economy via supply-chain and consumption-driven spending, altering the equilibrium quantities of inputs and outputs. These “multiplier effects” continue until the initial change in spending leaks out of the economy in the form of savings, taxes, and imports.

IMPLAN is widely used and well respected and is generally regarded as the most reliable input-output modeling platform available. The United States Department of Agriculture (USDA) recognized the IMPLAN modeling framework as “*one of the most credible regional impact models used for regional economic impact analysis*” and, following a review by experts from seven USDA agencies, selected IMPLAN as its analysis framework for monitoring job creation associated with the American Recovery and Reinvestment Act (ARRA) of 2009.<sup>3</sup>

2 Input-output analysis was first put to practical use by Wassily Leontief in the late 1930’s. While at Harvard, Leontief used his input-output system to construct an empirical model of the United States economy. This research gave rise to his 1941 classic, “Structure of American Industry, 1919 – 1929.” For his research, Leontief was awarded the Nobel Prize in Economics in 1973.

3 See excerpts from an April 9, 2009 letter to MIG, Inc., from John Kort, Acting Administrator of the USDA Economic Research Service, on behalf of Secretary Vilsack, at [www.implan.com](http://www.implan.com).



BentallGreenOak,  
The Octagon, Multifamily,  
New York, NY

## Types of Economic Impacts

Economic impact analysis employs specific terminology to identify the different types of impacts. The three types of impacts are discussed within the context of this analysis and include:

- **Direct impacts** represent the output, jobs, and income generated as a result of project spending on the construction of new buildings or improvements to existing structures. The direct impacts are driven by project expenditures on hard costs (i.e., construction services) and soft costs (i.e., architectural, financial, insurance, legal, and permitting services). Other costs represent expenditures on real estate and are excluded from the economic impact analysis as they represent a transfer rather than new economic activity.
- **Indirect impacts** occur as businesses that are directly impacted by project spending buy intermediate goods and services from other businesses. For example, an electrical contractor will purchase light fixtures, bulbs and controls, wire, signs, power tools and equipment. The tool supplier will, in turn, purchase utilities, accounting, and landscaping services. These purchases of goods and services by businesses from other businesses indirectly generate sales, jobs, and income for others. Indirect impacts are typically called supply-chain impacts.

- **Induced impacts** result from the increased income and purchasing power of households who are either directly or indirectly affected by project spending. Construction workers, for instance, will take their families to dinner or purchase healthcare services for their children. Employees at the tool supply business will spend their income in much the same way. This spending induces sales, jobs, and income for workers and businesses in other sectors of the economy. Induced impacts are often called consumption-driven impacts.

As the preceding discussion indicates, spending associated real estate investments has a “multiplier effect” that benefits NECA contractors and the IBEW members they employ as well as workers and business owners in other sectors of the economy. The cycle of direct, indirect, and induced spending does not go on forever. It continues until the initial spending (or change in “final demand”) eventually leaks out of the local economy as a result of taxes, savings, or purchases of non-locally produced goods and services or “imports.” Economists have developed economic multipliers to provide a shorthand way to better understand the linkages between some initial change in final demand and other measures of economic activity (wages or pension benefits) or other sectors of the economy (total output, income, and jobs).

## Economic Impact Measures

The economic impacts measured in this analysis are reported in tables that show the direct effects associated with project hard and soft costs, as well as the subsequent indirect and induced effects. Direct spending is broken out by hard and soft costs in order to isolate the direct impacts for the construction sector. Within these tables, the four economic impact measures provided in this report are:

- **Output** is the broadest measure of economic activity and represents the total value of production and is approximately equal to sales plus additions (or subtractions) to inventories. The direct output for the construction sector is equal to project hard costs.<sup>4</sup> The direct output for sectors affected by project soft costs will be less than project soft costs due to the purchase of non-locally produced goods and services.
- **Labor income** ("income") consists of the wages and benefits to workers, plus proprietary income (sometimes called small business income) earned by self-employed workers and the working owners of small businesses. In addition, as part of a cooperative effort with NEBF, NEAP, investment managers the Housing Investment Trust and Ullico, Pinnacle conducted extensive prevailing wage research that was then used to augment or customize the construction industries in IMPLAN. (This customization process is discussed in detail in the next section.) As a result, Pinnacle is able to break out wages and benefits, including health and welfare ("H&W") benefits, pension benefits, and other benefits (vacation benefits, training, annuity, and all other benefits) from construction income.

- **Jobs** are reported as a mix of full- and part-time jobs.<sup>5</sup> They are seasonally adjusted, but they are not adjusted for full-time equivalents ("FTEs"). One job lasting for twelve months is the same as two jobs lasting for six months each. Given the temporal nature of construction spending, job impacts can be thought of as person-years of labor. For example, one person-year of labor would include a laborer working for three months, followed by a carpenter working for six months, and an electrician working for three months.
- **Hours of work** represents the total number of hours required to produce the output, and are calculated using the job estimates produced by IMPLAN, and job and full-time equivalents ("FTE") data from the U.S. Bureau of Economic Analysis ("BEA") National Income and Product Accounts ("NIPA") for each of the 544 industry sectors in the IMPLAN model.<sup>6</sup>



<sup>4</sup> This is true for all types of construction except data centers, where hard costs include equipment. In these instances, hard costs have been allocated to equipment (52 percent) and labor (48 percent.) Data center modeling is discussed in more detail in the methodology section.

<sup>5</sup> IMPLAN uses the same definition of employment as does the U.S. Bureau of Labor Statistics and the U.S. Bureau of Economic Analysis.

<sup>6</sup> U.S. BEA Tables 6.4D and 6.5D.



## Modeling Inputs and Methodology

Pinnacle compiled economic impact results by analyzing the real estate investment activity of the six managers between 2012 and 2020. Then, Pinnacle adjusted the annual results to reflect NEBF's and NEAP's ownership share of the real estate investments managed by each respective real estate firm. In essence, the economic impacts attributed to NEBF and NEAP are based on their ownership in a given real estate portfolio in a given year. For example, if the investments made by a real estate manager generated 1,000 jobs in 2013 and NEBF and NEAP's investment represented 10 percent of the asset ownership in that year, then the report attributes 100 jobs to NEBF and NEAP.

The economic impact methodology used by the real estate investment managers is similar and is designed to produce economic impact results that are both reliable and highly detailed. This methodology is discussed below.

**Disaggregating Total Development Costs ("TDC")<sup>7</sup>** by hard costs, soft costs, and other costs on a project-by-project basis. Hard costs are allocated to the appropriate construction sector in the IMPLAN model and are used to estimate the direct union construction jobs, income, and output. In a similar fashion, soft costs are allocated to project support activities such as architectural, finance, insurance, legal, and permitting. Other costs are primarily real estate costs but can include any project spending component that represents a transfer rather than the creation of new economic activity. As such, all other costs are excluded from the modeling exercise.

Breaking out project costs adds a layer of complexity to the modeling process, but significantly improves the ability to isolate and measure economic impacts that accrue to construction industries and workers. Importantly, because soft costs are modeled separately but also represent part of the intermediate goods and services purchased by construction industries, Pinnacle used advanced "customizing" techniques recommended by IMPLAN to remove soft costs from the production functions for the construction sectors used in this modeling and to prevent double counting of soft cost impacts.<sup>8</sup>

<sup>7</sup> The expenditure approach within the IMPLAN model initially developed by IMPLAN staff was used in September 1995 in the first economic impact study conducted for Bentall GreenOak's MEPT fund. It was the same methodology employed by Alec Josephson of Pinnacle when engaged by MEPT for succeeding impact studies.

<sup>8</sup> See <https://implanhelp.zendesk.com/hc/en-us/community/posts/115008291488-Construction-Activities>

**State-level economic impact models developed using the IMPLAN modeling system** and IMPLAN data that most closely corresponds to a project's construction time period. For example, projects in 2012–2014 relied on 2012 IMPLAN data and projects in 2017–2020 were modeled using 2017 and 2018 IMPLAN data. This ensures that project spending is fed into an economic impact model that most closely represents construction sector productivity and the structure of the economy when the project occurred. In addition, the economic impact modeling captures the effects of inflation. Inflation has the effect of eroding or reducing purchasing power. All else the same, with inflation, a dollar spent in the future will buy less construction services than it buys now. By entering the project start date, these inflationary effects are included in the modeling.

**Different IMPLAN construction sectors** that are then matched to the hard costs for specific projects. The IMPLAN construction sectors used in this analysis include:

- New commercial structures,
- New multi-family structures,
- New health care structures,
- New power and communication structures,
- Maintenance and repair of nonresidential structures, and
- Maintenance and repair of residential structures.

To maximize the advantages of IMPLAN's detailed and expanded construction industries, each project was matched to the appropriate industry sector in the IMPLAN model.



**Allocation of hard cost impacts across construction occupations** using employment statistics (i.e., trade data) from the United States Department of Labor, Bureau of Labor Statistics (“BLS”). In 2018, the BLS released updated and expanded Occupational Employment Statistics (“OES research”). This data includes state-level employment data for 62 detailed construction occupations in ten construction industries as identified by North American Industrial Classification System (“NAICS”) codes at the four-digit NAICS code level.<sup>9</sup>

Pinnacle mapped the employment, by construction occupation, for each of these construction industries to the construction sectors used in the economic impact modeling.<sup>10</sup> These “trade allocations” estimate the effort, or the percentage of total hours of work, provided by each trade and by type of construction. **Table 2** provides an example of the construction trade allocations for residential and commercial construction, utilities, and infrastructure (not used in this analysis).

9 The ten construction industries include: NAICS 2361: Residential Building Construction, 2362: Commercial Building Construction, 2371: Utilities Construction, 2372: Land Subdivision, 2373: Highways, Street and Bridge Construction, 2379: Other Heavy and Civil Engineering, 2381: Foundations, Structures, & Building Exterior Contractors, 2382: Building Equipment Contractors, 2383: Building Finishing Contractors, and 2389: Other Specialty Trade Contractors.

10 Real estate investments by National also included data centers. Pinnacle worked closely with National during the economic impact modeling process to develop a custom trade matrix based on detailed ex post construction data provided by Sabey Data Centers for data center construction between 2014 and 2018. In addition, Sabey provided a breakdown of hard costs allocated to equipment (58.2 percent) and allocated to construction (41.8 percent). Hard cost expenditures on equipment were then excluded from the economic impact modeling.

All mapping was conducted at the state level. To overcome small sample sizes and confidentiality constraints for some states, Pinnacle then aggregated states into the following four regions: Northeast, South, Midwest, and West.

**Table 2:  
Example of Northeast Region: Construction Trade Allocations**

TRADE	RESIDENTIAL AND COMMERCIAL	POWER AND COMMUNICATIONS	INFRASTRUCTURE
Asbestos Workers and Insulators	1.1%	1.0%	1.0%
Boilermakers	0.3%	0.1%	0.2%
Bricklayers and Trowel Trades	2.9%	2.5%	2.6%
Carpenters	18.3%	6.5%	7.3%
Cement Masons	4.6%	4.0%	3.8%
Electrical Workers	15.5%	12.7%	12.4%
Elevator Constructors	1.7%	0.4%	0.4%
Ironworkers	1.9%	1.3%	1.1%
Laborers	16.6%	24.2%	23.7%
Operating Engineers	4.6%	14.0%	18.2%
Other	6.2%	8.2%	7.3%
Painters	6.8%	5.8%	6.1%
Plumbers and Pipefitters	10.9%	11.4%	8.6%
Roofers	3.0%	2.7%	2.8%
Sheet Metal Workers	4.0%	2.4%	2.5%
Teamsters	1.7%	3.0%	2.0%
<b>Total ALL</b>	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>

SOURCE: Pinnacle Economics using U.S. Department of Labor, Bureau of Labor Statistics, Occupational Employment Statistics, 2017.  
 NOTES: "Other" trades consist of construction and building inspectors; first-line supervisors of construction trades (not management or other occupations working off-site); helpers, construction trades, all other; and miscellaneous construction workers.

Pinnacle gathered detailed prevailing wage and benefits data for union construction trades employed on these projects. IMPLAN's generic construction sector production functions are based on government data that includes both covered and uncovered employment, small businesses and

sole proprietors, and union and non-union workers.<sup>11</sup> These generic production functions would also include construction activities that fall outside local or state Prevailing Wage Laws, for example, projects under a certain budget threshold.

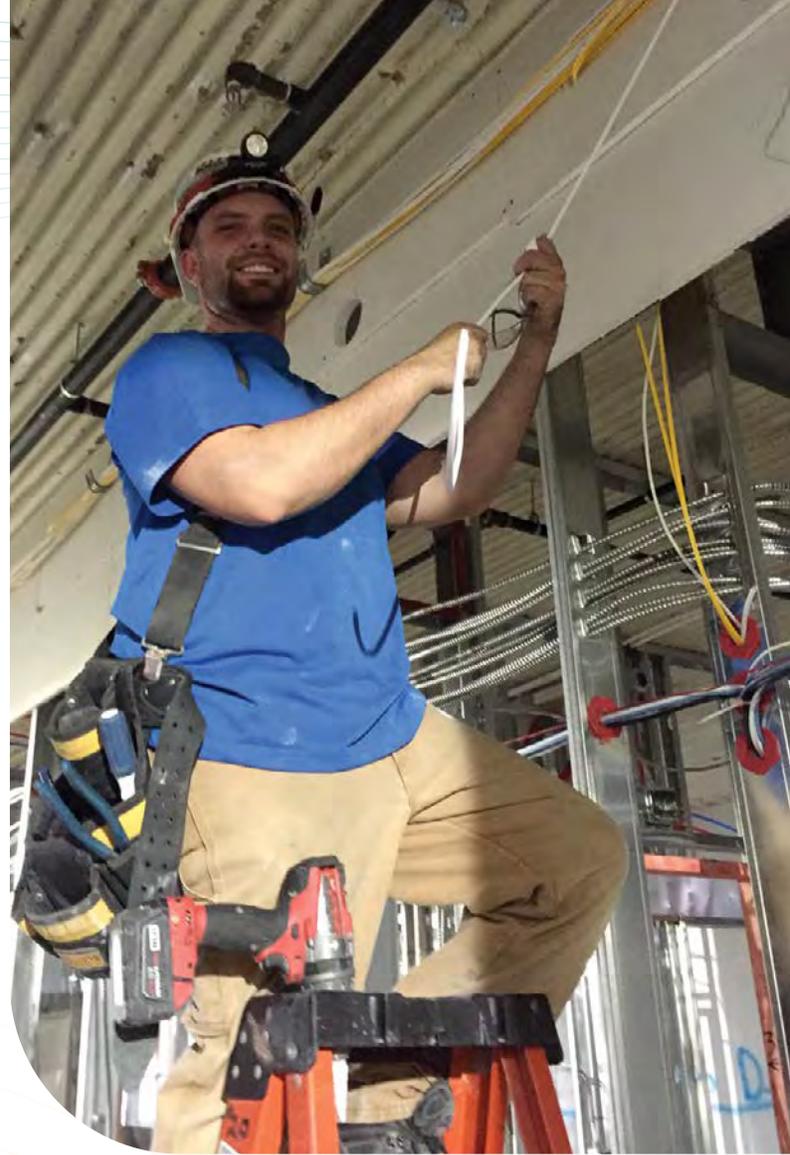
<sup>11</sup> The IMPLAN model relies on data that is collected and vetted by government agencies. IMPLAN's employment and income data are based on data collected by U.S. Bureau of Labor Statistics as part of their census of Quarterly Census of Employment and Wages ("QCEW") program. Additional adjustments rely on data from the U.S. Census Bureau's County Business Patterns and U.S. Bureau of Economic Analysis' Regional Economic Accounts ("REA").

In order to provide the most accurate estimate of construction-sector and economy-wide impacts, Pinnacle augmented or “customized” the generic production functions for the construction sectors in the IMPLAN model based on extensive research of prevailing wages and fringe benefits, by trade, across Metropolitan Statistical Areas (“MSAs”) where these projects occurred. This research and calculations involved<sup>12</sup>:

- Acquiring hourly wages and fringe benefits (H&W benefits, pension contributions, and other benefits<sup>13</sup>) for journeymen and apprentice workers, by construction trade. For apprentice workers, wages and fringe benefits were gathered for periods or phases of the apprenticeship.
- Calculating weighted-average wages and benefits for apprentices in each trade based on the number of apprentice periods and the hours of work in each period.
- Using journeyman-to-apprentice ratios, by MSA or state, to estimate the approximate mix of workers on a project. (These journeyman-to-apprentice ratios can vary by trade.)
- Calculating weighted-average wages and benefits for construction trades based on the mix of wages and fringe benefits of both journeymen and apprentice workers.

Prevailing wage and fringe benefit data varies by jurisdiction. In some instances, states or cities maintain the full range of wages and fringe benefits, by construction trade, on a centralized web-based platform with access to different counties and cities. In other instances, only summary information is available for each construction trade. As a result, there are generally three classes of prevailing wage and fringe benefit information:

1. **Full data.** Wages and the full range of fringe benefits are reported for both journeymen and apprentice workers. In addition, apprentice data is broken out by training periods and durations. States with the full range of data include California (by county or region), Illinois (Chicago), Ohio (Cleveland and other cities, counties), and Massachusetts.



2. **Partial, highly detailed data.** Wages and total fringe benefits are reported for both journeymen and apprentice workers, with apprentice data broken out by training periods and durations. Detailed fringe benefits estimated using data from other states (#1 above).
3. **Partial, less detailed data.** Wages and total fringe benefits are reported for journeymen workers only. Apprentice wages and benefits estimated using detailed data from other states (#1 above).

<sup>12</sup> The prevailing wage research was led by Pinnacle and developed with extensive cooperation and input from staff at ULLICO and the AFL-CIO Housing Investment Trust (HIT).

<sup>13</sup> Other benefits consist of vacation (when broken out separately), training, annuity, and all other benefits. In some instances, this information is not reported. As a result, other benefits would be understated, as would income.

# Economic Impact Results

Between 2012 and 2020, the six real estate investment managers invested in 836 real estate projects in 33 states with total development costs of \$58 billion. Based on NEBF's and NEAP's ownership share of real estate assets managed by these firms, approximately \$9.2 billion in total development costs is attributed to NEBF and NEAP and the economic impacts associated with that project spending are shown in **Table 3**, by type of impact.

**Table 3:**  
**NEBF and NEAP Economic Impacts, by Type 2012 – 2020**

TYPE OF IMPACT	OUTPUT	LABOR INCOME	JOBS	HOURS OF WORK
Direct Hard Costs	\$6,256,159,000	\$3,931,054,000	34,528	69,288,800
Direct Soft Costs	\$1,404,332,000	\$796,002,000	8,172	15,729,900
Indirect	\$2,803,700,000	\$1,021,378,000	16,322	30,941,500
Induced	\$3,927,701,000	\$1,356,839,000	25,167	45,999,300
<b>Total</b>	<b>\$14,391,892,000</b>	<b>\$7,105,273,000</b>	<b>84,188</b>	<b>161,959,500</b>

SOURCES: Pinnacle Economics using: 1) previously measured economic impact results for all six firms, 2) NEBF's and NEAP's investments with each real estate manager, and 3) the IMPLAN economic impact modeling software. Hereafter abbreviated as Pinnacle, IMPLAN, BLS and prevailing wage research.

## Direct Hard Costs

As shown in the first row of **Table 3**, NEBF's and NEAP's investment in these funds supported \$6.3 billion in hard costs, or direct construction-related spending, which generated \$3.9 billion in construction income, 34,528 construction jobs and 69.3 million hours of work for the construction trades between 2012 and 2020.

## Direct Soft Costs

The second row of **Table 3** reports the economic impacts attributed to soft cost spending, including architectural and engineering, permitting, finance and other non-construction costs.<sup>14</sup> In total, NEBF's and NEAP's investment supported project soft costs that generated \$1.4 billion in economic activity, including \$796.0 million in income, and 8,172 jobs with 15.7 million hours of work between 2012 and 2020.

## Indirect and Induced

The direct expenditures on hard costs and soft costs begin a multiplier spending effect as state economies respond to the indirect (supply-chain) and induced (consumption-driven) spending linked back to the real estate projects. In total, NEBF's and NEAP's investment generated \$14.4 billion in economic activity (or output) to impacted communities throughout the U.S. As shown in **Table 3**, between 2012 and 2020, the total economic impacts for workers and business owners amount to \$7.1 billion in labor income, and 84,188 jobs nationally with 162.0 million hours of work across many industries.

NOTE: All dollars are reported in 2020 dollars for comparison purposes. Due to rounding, numbers may not sum precisely to the totals shown.

<sup>14</sup> The \$1.4 billion in direct soft cost output is less than the total expenditures on soft costs due to the propensity to import goods and services, e.g., the Boston project that employs an architectural firm from New York.

**Table 4:  
NEBF and NEAP Total Economic Impacts, by Aggregate Industry Sector 2012 – 2020**

AGGREGATE INDUSTRY SECTOR	OUTPUT	LABOR INCOME	JOBS	HOURS OF WORK
Agriculture	\$23,353,000	\$8,141,000	192	349,700
Mining	\$32,441,000	\$9,099,000	124	250,600
Construction	\$6,326,485,000	\$3,960,550,000	34,946	70,123,800
Manufacturing	\$845,121,000	\$157,943,000	2,127	4,325,400
TIPU	\$640,976,000	\$171,936,000	2,268	4,456,500
Trade	\$1,253,190,000	\$512,576,000	10,513	19,300,900
Service	\$5,023,626,000	\$2,103,564,000	31,632	59,619,400
Government	\$246,700,000	\$181,464,000	2,385	3,533,100
<b>Total</b>	<b>\$14,391,892,000</b>	<b>\$7,105,273,000</b>	<b>84,188</b>	<b>161,959,500</b>

sources: Pinnacle, IMPLAN, BLS and prevailing wage research.

NOTES: 1) TIPU stands for Transportation, Information, and Public Utilities. 2) Trade includes wholesale and retail trade. 3) Services consist of the entire range of service industries including professional services, health and social services, lodging, eating, and drinking, and more.

**Table 4** reports the total economic impacts by aggregate industry sector and demonstrates how the initial project spending on hard costs and soft costs generate additional economic activity in other sectors of the national economy. The construction and service sectors are the largest beneficiaries of project spending. Service-sector activity is largely generated by consumption-driven spending, and to a lesser extent, expenditures on soft costs. Total construction sector impacts are slightly larger than the direct impacts for that sector due to secondary spending effects.

### Construction Sector Impacts

Focusing on direct impacts for the construction sector, **Table 5** shows how the direct construction jobs and hours of work generated nationally are dispersed across construction trades. These trade allocations are based on occupational data for construction NAICS codes obtained from BLS with minor proprietary adjustments made by the funds based on their knowledge of specific projects within their portfolio. The trade allocations represent averages across various types of construction, i.e., office, industrial, retail, data centers, hospitality, and multi-family construction. Individual projects will differ due to unique project characteristics.

**Table 5:  
NEBF and NEAP Direct Construction Jobs and Hours of Work, by Trade 2012 – 2020**

TRADE	JOBS	HOURS OF WORK
Asbestos Workers and Insulators	454	910,500
Boilermakers	63	126,300
Bricklayers and Trowel Trades	1,661	3,332,700
Carpenters	5,799	11,637,800
Cement Masons	2,188	4,386,600
Electrical Workers	4,755	9,540,000
Elevator Constructors	368	739,100
Ironworkers	909	1,824,000
Laborers	5,514	11,068,300
Operating Engineers	849	1,703,600
Other	2,768	5,556,500
Painters	2,887	5,796,000
Plumbers and Pipefitters	3,124	6,269,600
Roofers	1,670	3,351,900
Sheet Metal Workers	1,050	2,107,200
Teamsters	468	938,700
<b>Total</b>	<b>34,528</b>	<b>69,288,800</b>

sources: Pinnacle, IMPLAN, BLS and prevailing wage research.

**Table 6** reports the income, wages, and benefits that accrue to the construction trades between 2012 and 2020. Electricians, for example, received \$600.6 million in income, broken out as \$361.0 million in wages and \$239.6 million in fringe benefits. Fringe benefits consist of \$112.2 million in health and welfare benefits, \$117.8 million in pension benefits, and \$9.6 million in all other benefits.

**Table 6:**  
**NEBF and NEAP Direct Construction Income, Wages, and Benefits, by Trade 2012 – 2020**

TRADE	INCOME (A=B+C)	WAGES (B)	ALL BENEFITS (C=D+E+F)	H&W BENEFITS (D)	PENSION BENEFITS (E)	OTHER BENEFITS (F)
Asbestos Workers and Insulators	\$51,397,000	\$33,292,000	\$18,105,000	\$9,552,000	\$8,068,000	\$485,000
Boilermakers	\$8,747,000	\$5,003,000	\$3,745,000	\$1,037,000	\$2,270,000	\$437,000
Bricklayers and Trowel Trades	\$188,763,000	\$115,940,000	\$72,823,000	\$26,817,000	\$40,455,000	\$5,550,000
Carpenters	\$670,232,000	\$421,512,000	\$248,720,000	\$96,465,000	\$124,296,000	\$27,959,000
Cement Masons	\$240,137,000	\$143,957,000	\$96,180,000	\$36,125,000	\$48,694,000	\$11,360,000
Electrical Workers	\$600,609,000	\$360,966,000	\$239,643,000	\$112,180,000	\$117,843,000	\$9,621,000
Elevator Constructors	\$53,580,000	\$31,793,000	\$21,787,000	\$9,661,000	\$9,801,000	\$2,325,000
Ironworkers	\$112,847,000	\$62,100,000	\$50,747,000	\$16,364,000	\$28,145,000	\$6,239,000
Laborers	\$522,422,000	\$314,326,000	\$208,095,000	\$79,607,000	\$112,672,000	\$15,816,000
Operating Engineers	\$102,512,000	\$63,428,000	\$39,084,000	\$17,978,000	\$17,809,000	\$3,297,000
Other	\$329,362,000	\$198,584,000	\$130,778,000	\$53,179,000	\$66,094,000	\$11,505,000
Painters	\$288,816,000	\$187,825,000	\$100,991,000	\$42,427,000	\$52,069,000	\$6,496,000
Plumbers and Pipefitters	\$419,039,000	\$262,278,000	\$156,761,000	\$67,060,000	\$75,395,000	\$14,306,000
Roofers	\$167,151,000	\$102,111,000	\$65,040,000	\$28,939,000	\$30,910,000	\$5,191,000
Sheet Metal Workers	\$129,666,000	\$73,525,000	\$56,141,000	\$19,209,000	\$33,612,000	\$3,319,000
Teamsters	\$45,774,000	\$27,424,000	\$18,350,000	\$9,326,000	\$7,746,000	\$1,279,000
<b>Total</b>	<b>\$3,931,054,000</b>	<b>\$2,404,064,000</b>	<b>\$1,526,990,000</b>	<b>\$625,926,000</b>	<b>\$775,879,000</b>	<b>\$125,185,000</b>

SOURCES: Pinnacle, IMPLAN, BLS and prevailing wage research.  
NOTE: H&W is an abbreviation for Health and Welfare.

Every \$1 million of development costs funded by NEBF and NEAP through real estate investments has generated \$427,000 of income and benefits for the construction industry.



**Table 7** and **Table 8** show the direct union construction job impacts between 2012 and 2020 distributed by state. The 20 states with the largest impacts are listed from the largest to smallest impacts.

**Table 7:  
NEBF and NEAP Direct Construction Job and Hours  
of Work, by State in Descending Order 2012 – 2020**

STATE	JOBS	HOURS OF WORK
CA	5,304	10,649,700
MA	4,907	9,846,700
NY	3,580	7,163,300
WA	3,440	6,915,400
PA	2,829	5,684,300
IL	2,533	5,071,800
DC	2,401	4,828,600
NJ	2,237	4,489,000
TX	1,553	3,117,600
MN	747	1,498,600
HI	701	1,396,700
OR	669	1,344,600
AZ	594	1,194,500
MO	541	1,087,700
MD	520	1,043,900
CO	484	972,200
FL	464	932,800
VA	382	764,100
OH	287	577,200
MI	187	375,400
All Other States	168	334,600
<b>Total All</b>	<b>34,528</b>	<b>69,288,800</b>

SOURCES: Pinnacle, IMPLAN, BLS and prevailing wage research.

NOTE: Job rankings in Table 7 will not necessarily match income rankings in Table 8.

**Table 8:**  
**NEBF and NEAP Direct Construction Income, Wages, and Benefits, by State in Descending Order 2012 – 2020**

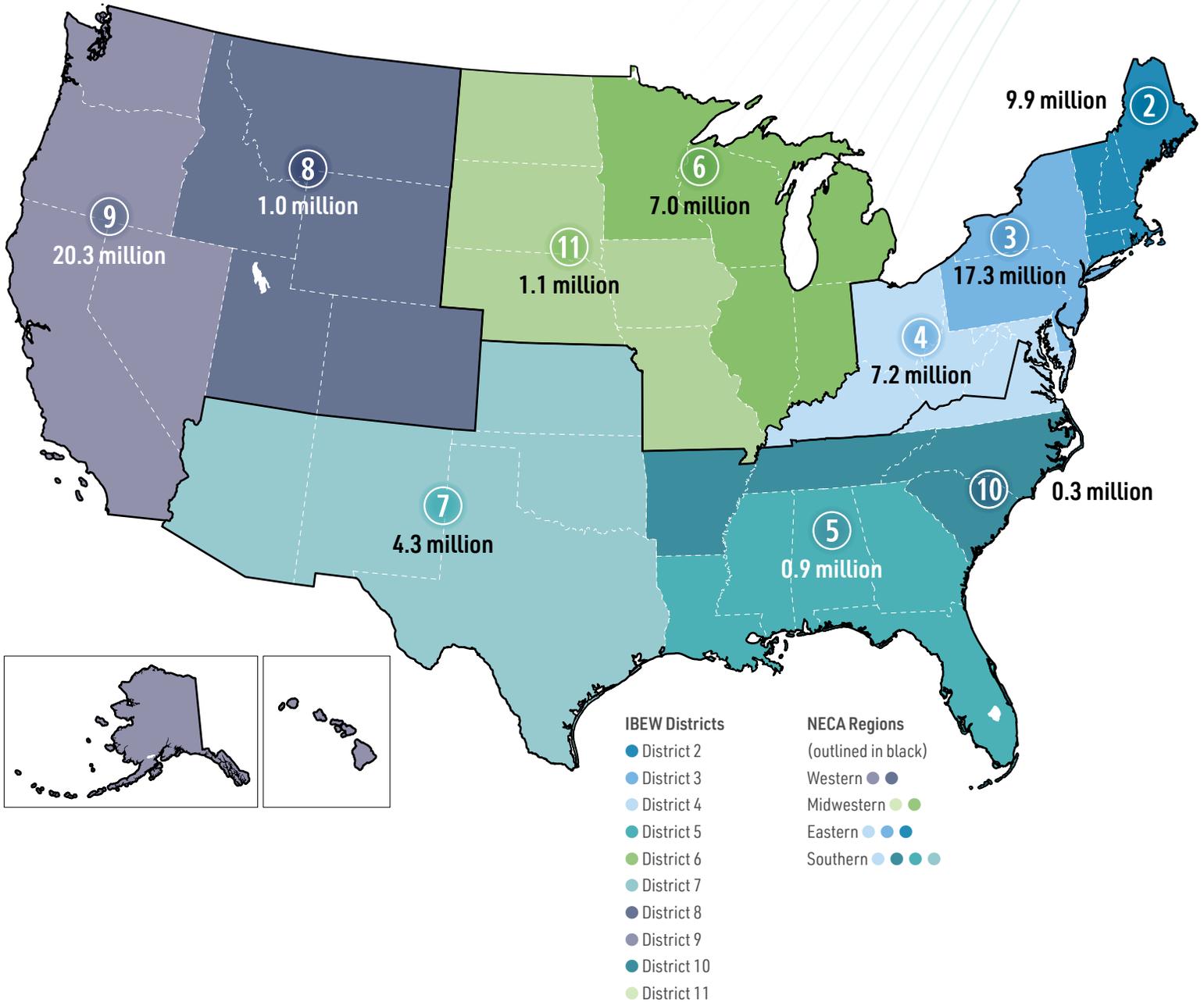
STATE	INCOME (A=B+C)	WAGES (B)	ALL BENEFITS (C=D+E+F)	H&W BENEFITS (D)	PENSION BENEFITS (E)	OTHER BENEFITS (F)
CA	\$617,460,000	\$378,695,000	\$238,765,000	\$97,967,000	\$100,378,000	\$40,420,000
MA	\$575,320,000	\$354,023,000	\$221,296,000	\$86,556,000	\$133,551,000	\$1,189,000
NY	\$569,396,000	\$328,120,000	\$241,276,000	\$99,399,000	\$121,861,000	\$20,015,000
PA	\$366,145,000	\$215,931,000	\$150,221,000	\$61,970,000	\$75,435,000	\$12,817,000
WA	\$354,439,000	\$236,839,000	\$117,600,000	\$47,750,000	\$63,529,000	\$6,320,000
IL	\$315,244,000	\$188,289,000	\$126,955,000	\$54,164,000	\$66,667,000	\$6,123,000
NJ	\$296,724,000	\$170,378,000	\$126,338,000	\$52,187,000	\$63,662,000	\$10,488,000
DC	\$184,848,000	\$117,884,000	\$66,964,000	\$27,510,000	\$33,883,000	\$5,571,000
TX	\$108,358,000	\$69,302,000	\$39,056,000	\$16,033,000	\$19,813,000	\$3,209,000
HI	\$89,917,000	\$55,868,000	\$34,049,000	\$14,630,000	\$16,568,000	\$2,851,000
MN	\$82,631,000	\$52,413,000	\$30,218,000	\$12,489,000	\$15,243,000	\$2,485,000
OR	\$70,630,000	\$45,408,000	\$25,221,000	\$10,369,000	\$12,631,000	\$2,222,000
AZ	\$56,124,000	\$34,787,000	\$21,337,000	\$8,792,000	\$8,821,000	\$3,724,000
MO	\$52,262,000	\$33,336,000	\$19,093,000	\$7,848,000	\$9,661,000	\$1,584,000
MD	\$46,358,000	\$29,011,000	\$17,347,000	\$7,157,000	\$8,755,000	\$1,435,000
CO	\$32,906,000	\$21,050,000	\$11,856,000	\$4,898,000	\$5,969,000	\$989,000
VA	\$30,160,000	\$20,424,000	\$9,736,000	\$3,978,000	\$5,032,000	\$725,000
FL	\$27,188,000	\$17,328,000	\$9,860,000	\$4,061,000	\$4,986,000	\$814,000
OH	\$23,556,000	\$14,583,000	\$8,972,000	\$3,722,000	\$3,916,000	\$1,335,000
MI	\$16,250,000	\$10,144,000	\$6,107,000	\$2,515,000	\$3,069,000	\$522,000
All Other States	\$15,143,000	\$10,250,000	\$4,723,000	\$1,929,000	\$2,448,000	\$348,000
<b>Total All</b>	<b>\$3,931,054,000</b>	<b>\$2,404,064,000</b>	<b>\$1,526,990,000</b>	<b>\$625,926,000</b>	<b>\$775,879,000</b>	<b>\$125,185,000</b>

sources: Pinnacle, IMPLAN, BLS and prevailing wage research.  
 NOTE: H&W is an abbreviation for Health and Welfare.



The impacts of NEBF's and NEAP's investment program are visible across IBEW's Districts and NECA's Regions. (See **Figure 4**) The magnitude of monetary impact as a result of NEBF and NEAP real estate investing activities go far beyond the retirement benefits paid to recipients in each District since these investments spur economic activity and generate other collateral benefits across the U.S.

**Figure 4:**  
**IBEW U.S. Districts and NECA Regions: Direct Construction Hours of Work<sup>15</sup>**



<sup>15</sup> IBEW's District 1 which represents Canada is not shown since NEBF's and NEAP's real estate investment activity is in the U.S.

Table 9 shows additional direct construction impacts across IBEW Districts.

**Table 9:  
NEBF and NEAP Direct Construction Income, Wages, and Benefits, by IBEW District 2012 – 2020**

IBEW DISTRICT	INCOME (A=B+C)	WAGES (B)	ALL BENEFITS (C=D+E+F)	H&W BENEFITS (D)	PENSION BENEFITS (E)	OTHER BENEFITS (F)
2	\$576,825,000	\$354,901,000	\$221,924,000	\$86,811,000	\$133,877,000	\$1,236,000
3	\$1,232,264,000	\$714,429,000	\$517,835,000	\$213,556,000	\$260,958,000	\$43,320,000
4	\$285,165,000	\$182,053,000	\$103,112,000	\$42,406,000	\$51,628,000	\$9,079,000
5	\$27,531,000	\$17,571,000	\$9,960,000	\$4,103,000	\$5,037,000	\$819,000
6	\$414,382,000	\$251,004,000	\$163,378,000	\$69,209,000	\$85,030,000	\$9,140,000
7	\$164,765,000	\$104,164,000	\$60,434,000	\$24,844,000	\$28,655,000	\$6,935,000
8	\$32,906,000	\$21,050,000	\$11,856,000	\$4,898,000	\$5,969,000	\$989,000
9	\$1,132,549,000	\$716,879,000	\$415,670,000	\$170,731,000	\$193,125,000	\$51,815,000
10	\$12,353,000	\$8,636,000	\$3,717,000	\$1,516,000	\$1,935,000	\$267,000
11	\$52,314,000	\$33,377,000	\$19,104,000	\$7,852,000	\$9,666,000	\$1,585,000
<b>Total All</b>	<b>\$3,931,054,000</b>	<b>\$2,404,064,000</b>	<b>\$1,526,990,000</b>	<b>\$625,926,000</b>	<b>\$775,879,000</b>	<b>\$125,185,000</b>

SOURCES: Pinnacle, IMPLAN, BLS and prevailing wage research.  
NOTE: H&W is an abbreviation for Health and Welfare.

Table 10 shows the total economic impacts across IBEW districts.

**Table 10:  
NEBF and NEAP Total Economic Impacts, by IBEW District 2012 – 2020**

IBEW DISTRICT	OUTPUT	INCOME	JOBS	HOURS OF WORK	STATE AND LOCAL TAXES
2	\$1,988,009,000	\$1,038,338,000	11,755	22,592,500	\$58,651,000
3	\$3,953,498,000	\$2,123,859,000	22,154	42,569,100	\$157,290,000
4	\$1,171,677,000	\$527,280,000	7,465	14,420,300	\$33,139,000
5	\$149,467,000	\$56,906,000	1,020	1,977,200	\$3,801,000
6	\$1,688,663,000	\$774,872,000	9,601	18,370,600	\$59,697,000
7	\$896,873,000	\$364,352,000	5,453	10,484,000	\$21,472,000
8	\$208,334,000	\$77,404,000	1,253	2,404,600	\$4,748,000
9	\$4,115,603,000	\$2,029,676,000	24,027	46,321,600	\$140,902,000
10	\$38,395,000	\$22,180,000	224	437,800	\$826,000
11	\$181,373,000	\$90,404,000	1,237	2,381,700	\$4,175,000
<b>Total All</b>	<b>\$14,391,892,000</b>	<b>\$7,105,273,000</b>	<b>84,188</b>	<b>161,959,500</b>	<b>\$484,700,000</b>

SOURCES: Pinnacle, IMPLAN, BLS and prevailing wage research.



This report validates that the collateral benefits, in jobs created and hours worked, resulting from NEBF's and NEAP's real estate investment activities strengthens the Plans' ability to fund future benefits.

## Conclusion

NEBF and NEAP have sophisticated investment programs that are managed solely in the interests of the Plans' participants and beneficiaries and are designed to achieve the primary objective of providing a steady, reliable income stream to participants who have earned a retirement benefit. The Plans' portfolios are broadly diversified to reduce investment risk. They are governed by Trustees who are held to the highest fiduciary standard and who ensure that the Plans follow disciplined procedures to reduce operational risks.

The Plans believe that maintaining future contributions and allowing participants to continue to earn retirement benefits are in the best interest of the Plans' participants. On that basis, as a secondary or collateral objective, the Plans aim to make real estate investments that preserve and stimulate employment of their participants where possible and permitted by law. Moreover, the Plans' real estate investments seek to support the electrical construction industry in ways that create business opportunities for electrical contractors, create jobs for electrical workers, and generate additional employer contributions. What this study shows is that, over the period examined, the Plans' real estate investments have produced quantifiable, tangible job creation through new construction, renovation, maintenance, and tenant improvements. And this activity has resulted in further employer contributions, thereby strengthening NEBF and NEAP's financial condition and ability to fund future benefits.

The Plans believe that when collateral benefits are included as secondary investment objectives in the decision-making process, the outcomes should be measured and quantified. This report validates the achievement of significant collateral benefits, in jobs created, participant hours worked, and employer contributions, resulting from NEBF's and NEAP's investment activities. This analysis supports NEBF and NEAP in building sustainable investment programs that build wealth to pay retirement benefits today while contributing to economic growth and the Plans' sustainability tomorrow.



# Appendices

## Responsible Contractor Policy

Real estate owners, developers, and real estate investment management firms have a multitude of complex decisions to make when constructing a new building or managing an existing property. That process can be made easier and more effective by employing a Responsible Contractor Policy for the selection of firms to do the necessary development and construction work. A Responsible Contractor Policy establishes a set of business practices based on the principle that the optimum economic outcomes, such as completing projects on time, on budget and of the highest quality, can be achieved by using the best-trained, safest, and most efficient workforce in the construction and building maintenance industries.

A Responsible Contractor Policy promotes the selection of construction and maintenance contractors whose employees are covered by a collective bargaining agreement. The policy includes requirements that a responsible contractor will have a record demonstrating its:

- Utilization of workers with the highest levels of skills in its industry;
- Uncompromising commitment to health and safety on the job;
- Compensation of its workforce with fair wages and benefits, including pension, and medical insurance; and
- Support of the industry's efforts to train the next generation of employees.



A Responsible Contractor Policy typically includes provisions to exclude contractors engaging in misconduct, illegal activities, violations of licensing, permitting, or state and local safety and health standards, or other unethical practices. By definition, a firm that has been disbarred by state or local authorities is not a responsible contractor.

A Responsible Contractor Policy also reflects a firm's commitment to governance, accountability, and enforcement of its contracting practices. With transparency and communication, enforcement may be demonstrated by providing advance notice of construction and maintenance contracts to be let, by maintaining a competitive bidding process, and by disclosing the identity of contractors hired. Policy accountability can be demonstrated by tracking the number of work hours generated by its construction and maintenance activities.

When conducting due diligence on the real estate firms they hire to manage portfolio assets, institutional investors look for the adoption and implementation of a Responsible Contractor Policy. Presence of a policy shows that the investment manager operates at the highest industry standards and with a commitment to governance best practices.

Real estate owners that engage NECA contractors find that electrical work gets done on time and on budget, at the highest quality, and with the fewest injuries.



## About Pinnacle Economics

This project was conducted by Alec Josephson of Pinnacle Economics. Alec has almost 30 years of economic consulting experience and formed

Pinnacle Economics in January 2013. He has conducted, directed, and/or authored well over 1,000 economic impact studies, and is a nationally recognized expert in economic impact analysis using the IMPLAN modeling software. He has presented advanced economic impact modeling techniques at classes, seminars, and conferences, and economic impact modeling results to business, governments, councils, and commissions.

Josephson has developed cutting edge analytical techniques to quantify the economic and fiscal impacts across a broad range of applications. He is an expert at developing custom production or expenditure functions (called “analysis by parts”) for unique industries and projects that are not defined by generic industries or spending patterns in the IMPLAN model; identifying potential counterfactual spending scenarios to measure both gross and net impacts; measuring important geographic spillover effects using multi-regional, input-output modeling techniques (“MRIO”); and augmenting the IMPLAN model econometrically or with additional data to isolate and quantify impacts on union trades, minority and women-owned businesses (“M&WBE”), small businesses, state and local taxing jurisdictions, business location decisions, and more.

Josephson’s clients are both private (Facebook, Intel, Nike) and public (Oregon Health & Science University, Portland Public Schools, Energy Trust of Oregon). His economic impact modeling framework for renewable energy and energy efficiency projects is an industry leader. Recently, after a comprehensive survey and review of impact methodologies in the United States and Canada, the American Council for an Energy-Efficient Economy (“ACEEE”) recommended the hybrid modeling approach developed by Pinnacle Economics for the ex-post verification of energy efficiency job creation.<sup>16</sup>

Josephson measured the economic impacts for all six real estate investment firms included in this study. His work in this area spans almost two decades. He was the day-to-day project manager, lead analyst, and sole author in the five economic and fiscal impact reports conducted for Bentall GreenOak and its predecessor companies between 2006 and 2018. He has a long history of working with the AFL-CIO’s Housing Investment Trust and ULLICO Real Estate Investment Group’s “J for Jobs” fund, as well as recent work with National Real Estate Advisors and the AFL-CIO Building Investment Trust.

Josephson’s consulting experience has blended with 30 years teaching at the college level, most recently with Clark College in Vancouver, Washington, and Pacific University in Forest Grove, Oregon. Alec earned a M.S. in Economics and a B.S. in Political Science from Portland State University.

<sup>16</sup> Casey J. Bell, James Barrett, and Matthew McNeerney, “Verifying Energy Efficiency Job Creation: Current Practices and Recommendations,” Report F1501, September 2015. <https://www.aceee.org/research-report/f1501>

