



HR&A

# New York State Post-Production Ecosystem

## **Economic and Fiscal Impact Analysis**

February 2023

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## Summary of Findings

1. Thanks to the New York State Film Tax Credit Program (Post-Production or PPC), the post-production ecosystem employed 14,000 people in 2022, and has added jobs at a higher rate than New York State's economy as a whole between 2010 and 2022. The industry saw minimal job loss during the pandemic.
2. Post-production facilities in New York State have expanded operations with the support of the PPC, but facilities have also seen consolidation as the industry matures.
3. The PPC's support of the industry as a whole provides a strong fiscal return to New York State.
4. Changes to the PPC and efforts by facilities are starting to move the needle on diversity and inclusion in the industry, but there is more work to do.

**Source:** Lightcast, 2022; IMPLAN, 2022

\* 2015 number of jobs is based on a previous report by HR&A.

**25%**

increase in post-production ecosystem jobs from 2015 to 2022\*

**8x**

return on statewide fiscal revenue from post-production employment and activities for every \$1M of tax credits issued annually

**\$156M**

of tax revenues generated annually from post-production activities

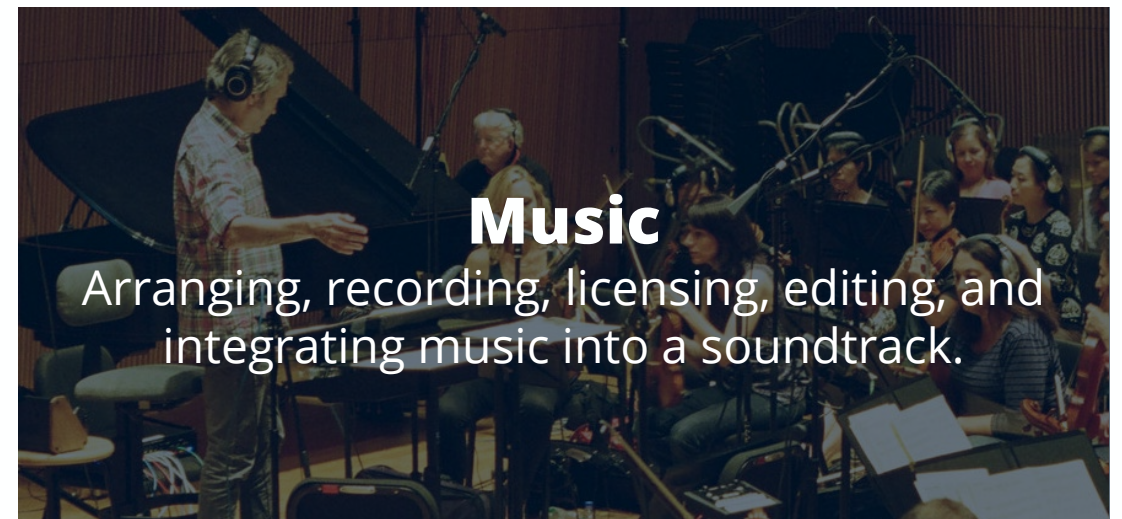
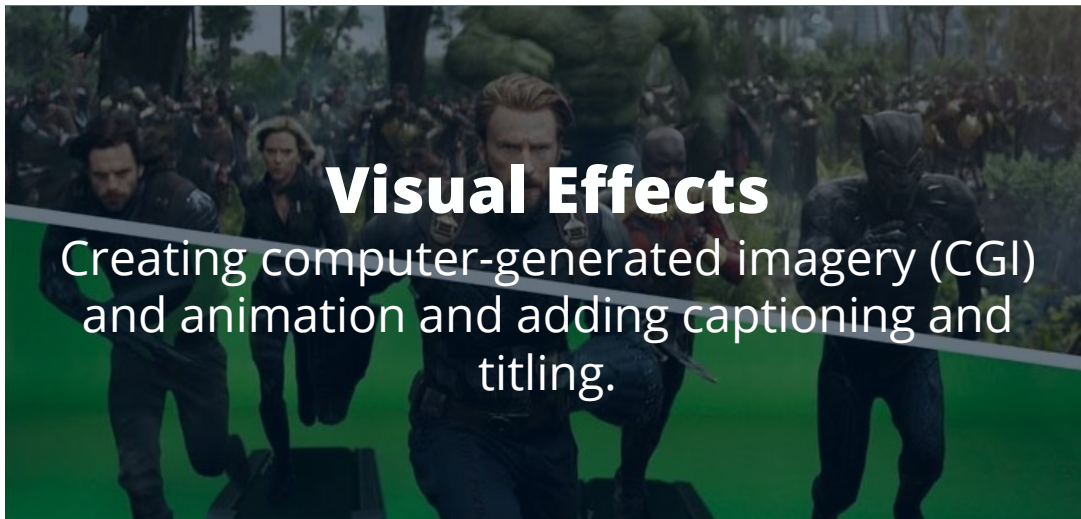
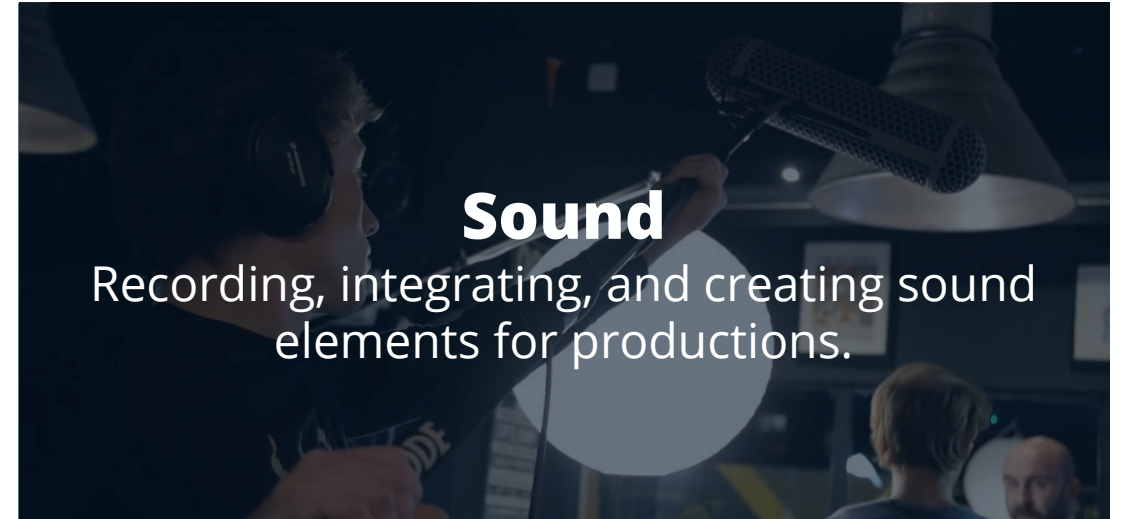
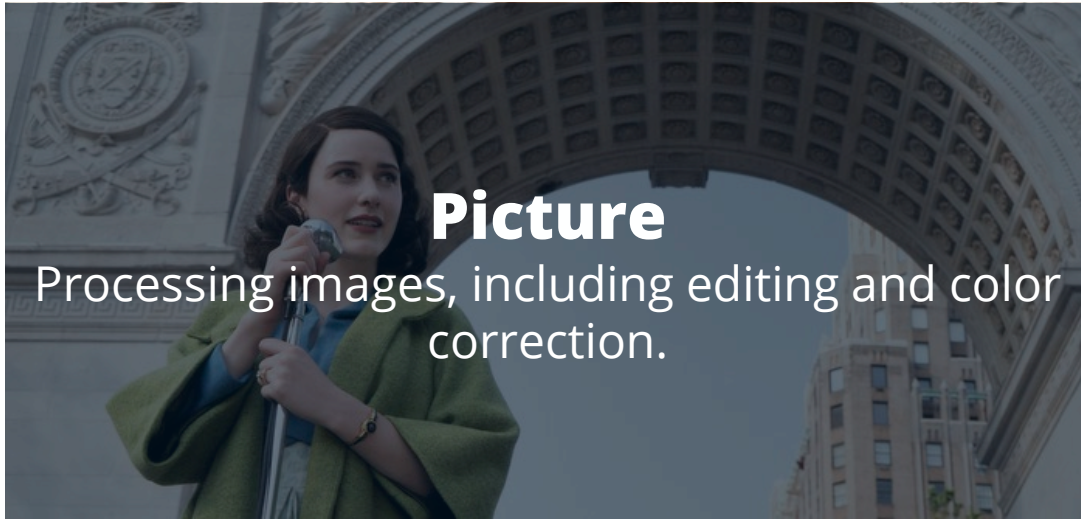


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# Post-Production Ecosystem

## Post-Production Ecosystem

Post-production activities include organizing, refining, and adding to film content captured during production; these activities comprise 4 major categories.



## Post-Production Ecosystem

To evaluate the full extent of the PPC's impact on New York State's economy, this report analyzes the "ecosystem" of post-production employment.

The diversity of post-production activities and the industry's close links to production, sound recording, and extensive partnership with independent artists requires the post-production "ecosystem" to be evaluated considering both businesses ("facilities") within the core industry and occupations within other industries.

An analysis of only the core post-production industry sector would fail to capture the cross-cutting contributions of Film & Video Editors, Multimedia Artists & Animators, Music Directors & Composers, Photographic Process Workers, and Software Developers who support the success and growth of the multiple industries that contribute to the post-production ecosystem. Likewise, an analysis of only technical post-production occupations would exclude the many people working as project managers, administrative staff, and business development professionals in the ecosystem.

This report's combined industry-occupation based approach assesses the complete post-production ecosystem in New York State.

### **Ecosystem**

An ecosystem is the network of businesses and occupations that enable the provision of goods or services. Assessing the entire ecosystem enables the evaluation of the complete economic value of functional roles common across industries.

### **Post-Production Facility**

A post-production facility is a company that provides post-production services as its core business. When counting jobs at facilities, this report includes all jobs employed by the company including technical post-production jobs, business administration jobs, operational jobs, etc.).

### **Tax Credit Applicant**

The entity applying for the FPC/PPC is the corporation, partnership, or limited partnership that is engaged in the production of the film or television program.

### **Pandemic and Pandemic Recovery**

This report refers to the Covid-19 Pandemic as largely impacting employment in 2020, with recovery starting in 2021.

## Post-Production Ecosystem

The New York State Film Tax Credit Program is designed to strengthen the production and post-production industries in New York State and contributes to a significant increase in jobs.

### Film Production Credit (FPC)

- **Credit:** Refundable tax credit for 25% of qualified spending, with 10% bonus for qualified labor costs in specific upstate counties.
- **Annual Allocations:** \$420M, guaranteed through 2029.
- **Target:** Productions primarily shot in-state, which receive credits for both production and post-production spending.

### Post-Production Credit (PPC)

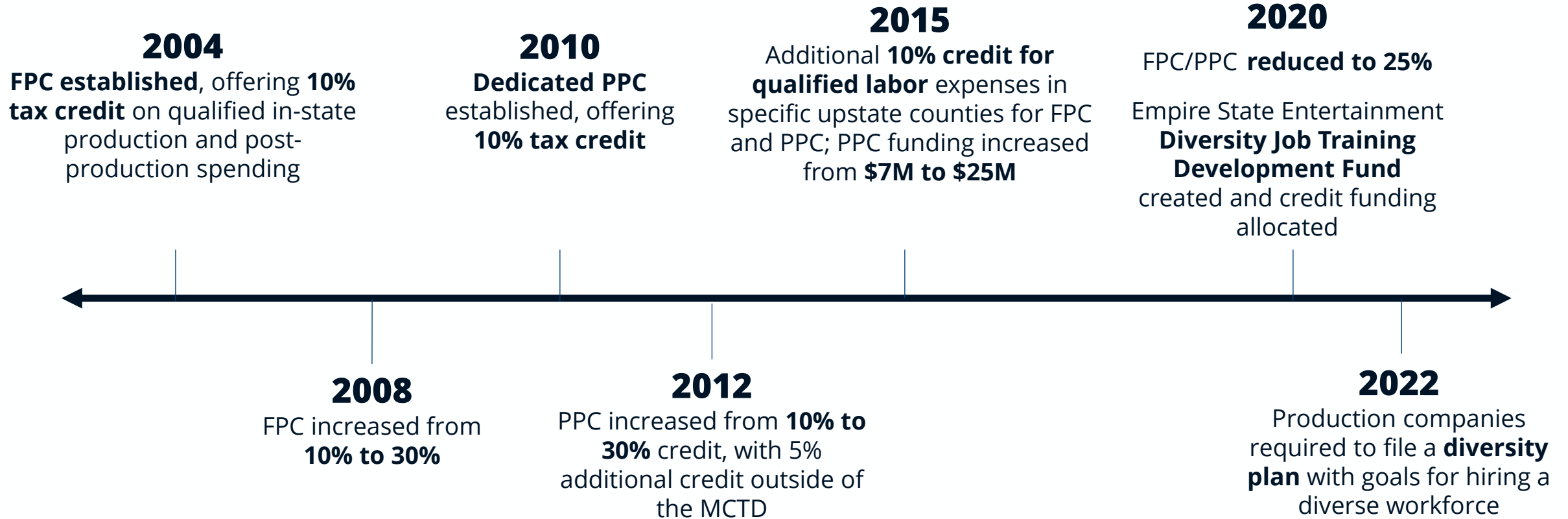
- **Credit:** Refundable tax credit for 25% of qualified spending inside the Metropolitan Commuter Transportation District (essentially, New York City and its metro area) and 30% for qualified post-production costs at an upstate qualified post-production facility.
- **Annual Allocations:** \$25M set-aside as a component of the FPC, guaranteed through 2029.
- **Target:** Productions primarily filmed out-of-state, but which bring some or all of their post-production spending in-state.

### Allocation to Empire State Entertainment Diversity Job Training Development Fund

Effective Jan. 2020, recipients of FPC and PPC are required to relinquish 0.25% of their earned tax credit to capitalize the Empire State Entertainment Diversity Job Training Development Fund. This is a first-in-the-nation program to support efforts to recruit, hire, promote, retain, develop and train a diverse and inclusive workforce in the motion picture and television industry in New York.

## Post-Production Ecosystem

The two tax credit programs' multi-year funding have fueled the growth in post-production ecosystem employment and infrastructure investment.







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# Employment

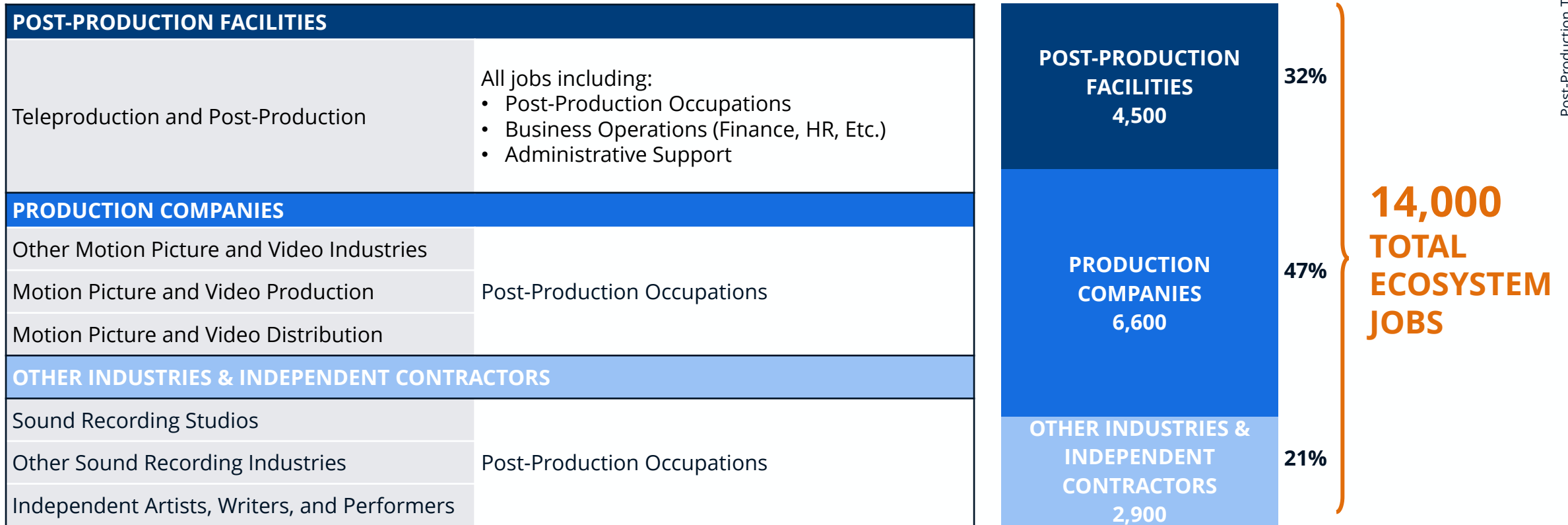
*The post-production ecosystem employed 14,000 people in 2022 and has added jobs at a higher rate than New York State's economy as a whole. Post-production saw minimal job losses during the pandemic.*

# Employment

In 2022, there were 14,000 jobs in the post-production ecosystem in New York State, a 30% increase from 2010 when the PPC was established.

In 2022, approximately one-third of ecosystem jobs were at post-production facilities, including editors, special effects (SFX) artists and other post-production professionals, as well as jobs associated with business operations and administration. Almost half of post-production jobs were editors at production companies, while approximately one-fifth of jobs were independent contractors or employees of sound recording studios.

## POST-PRODUCTION ECOSYSTEM IN NEW YORK STATE



Source: HR&A ecosystem definitions; Lightcast, 2022

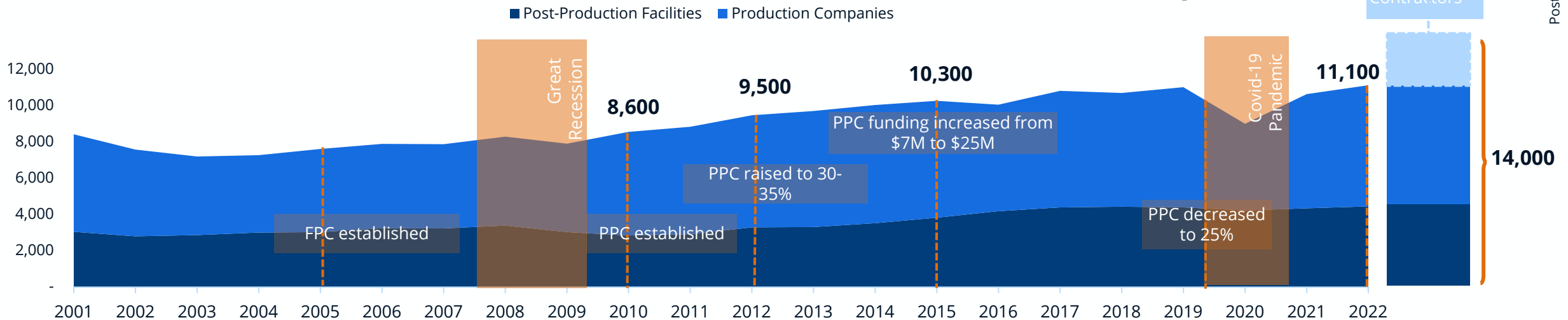
# Employment

The introduction and expansion of the PPC has contributed to the expansive growth of the post-production industry in New York State.

Post-production jobs in New York State saw minimal growth prior to 2010, when the PPC was established. Beginning in 2010, the number of post-production jobs increased consistently at an annual growth rate of 2.2%. Compared to 2015, when this study was first conducted, the total number of jobs in the ecosystem increased by 25%: from 11,200 to 14,000.

Similarly, union membership in the Motion Picture Editors Guild Local 700\* recorded strong growth in recent years with 1,130 members in 2022, compared to 860 in 2018. This represents a 30% increase in just 4 years, demonstrating that the industry offers increasing opportunities for good-paying union jobs.

### New York State Post-Production Jobs at Post-Production Facilities and Production Companies



Source: Lightcast, 2022

\*The Motion Picture Editors Guild Local 700 is the New York State branch of the national union that represents staff in key post-production roles, including picture editors, music and sound editors, assistant editors, and entry-level editing room assistants.

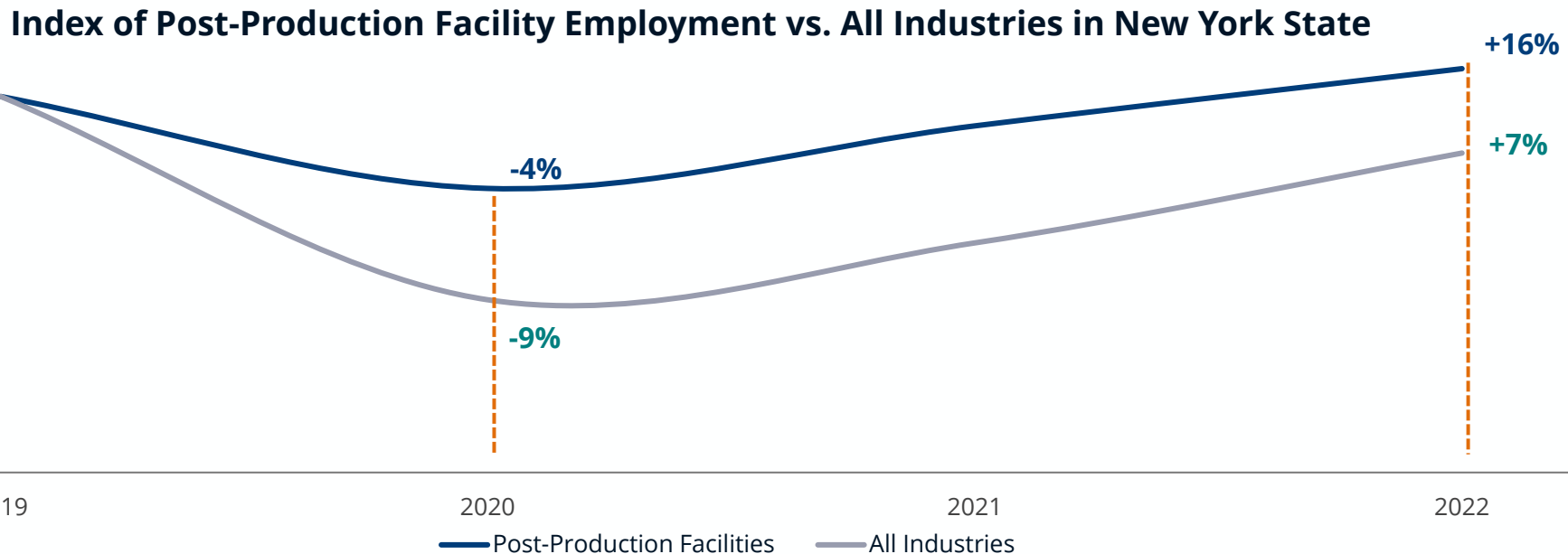
\*\*This graph does not include historical data for independent contractors due to a lack of historic year-over-year data.

# Employment

Jobs at post-production facilities were resilient through the Pandemic compared to other industries in New York State, with a net gain of over 220 jobs compared to 2020.

The post-production ecosystem demonstrated resiliency during the pandemic. In 2020 the ecosystem lost 2,000 jobs, however it rebounded quickly and by 2022 it had surpassed 2019 levels of employment. The number of people employed at post-production facilities decreased by only 4% during the pandemic, while New York State employment dropped by 9% between 2019 to 2020. This can in part be attributed to the nature of post-production jobs, which are well-suited to remote work.

In total, post-production facilities in New York saw a strong recovery, with a 16% increase between 2020 to 2022. In comparison overall New York State jobs saw only 7% increase in the same period. The resilience of the ecosystem meant facilities were able to erase all job losses that occurred in the beginning of the pandemic and add an additional 220 jobs above 2020 levels.



Source: Lightcast, 2022

## Employment

Although PPC data shows an average of roughly 1,500 tax credit hires annually, the ecosystem supports 8.3 additional jobs for every tax credit hire across multiple occupations.

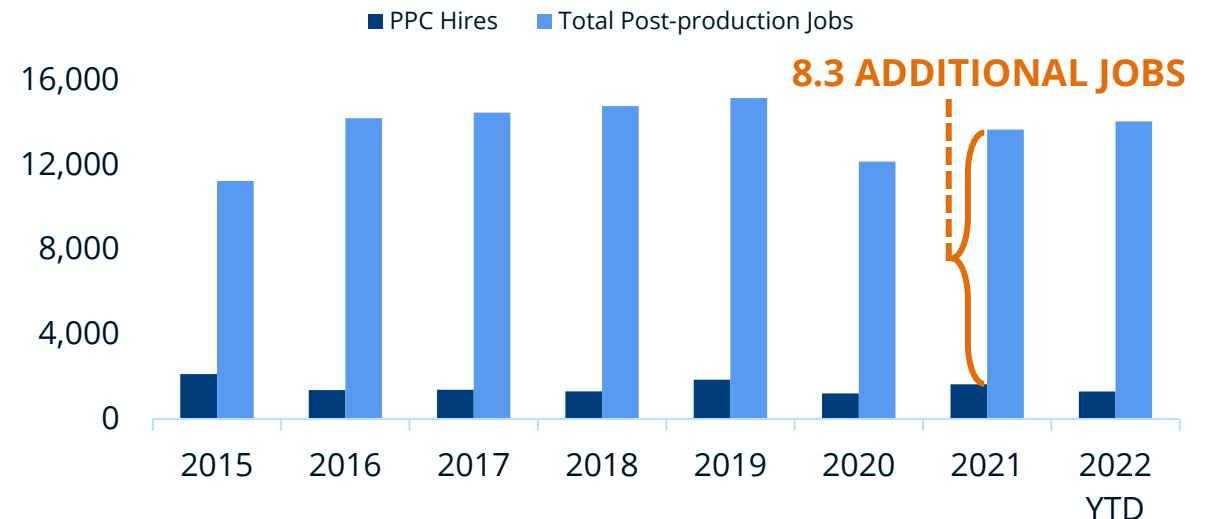
In total, the PPC has supported roughly 12,000 “hires” associated with the credit between 2015 and 2022, averaging 1,500 hires per year. As of 2022, for every 1 PPC hire, the industry supports, on average, an additional 8.3 post-production jobs (1,500 PPC hires annually vs. 14,000 ecosystem jobs in 2022).

PPC hires are indicated in the credit application along with the number of hours spent per hire for that production. A PPC-supported hire is an employee who is added to payroll at a post-production facility or production company for a specific project. For the purposes of the tax credit application, hires do not include independent contractors, management, and other business and administrative employees. However, all of these jobs are essential to post-production work.

For example, Season 2 of “See” had 20 hires under the credit with approximately \$11M in spending. This is an extreme case

of the underrepresentation of total project staff in PPC hires, as each average spend per hire was roughly \$550,000 – a figure that included independent contractors, equipment, and other expenses in addition to the hires’ salaries. A typical production includes somewhere between 10-60 post-production staff, compared to an average of 17.7 hires per tax credit.

### PPC Hires and Post-Production Ecosystem Jobs



## Employment

The post-production ecosystem further generates roughly 15,000 economic “multiplier” jobs annually outside of the ecosystem, supporting more than a total of 29,000 jobs.

Economic impact analysis quantifies the total impact of the post-production ecosystem in New York State in terms of total jobs, labor income, and total output (industry spending) generated. This analysis takes into account how spending flows through the State’s economy in several ways.

The direct impact is associated with spending and employment for post-production facilities and production companies employing editors and artists that make up the ecosystem. The indirect impact is spending and employment

for businesses that supply facilities and companies with the post-production ecosystem. The induced impact represents the spending and employment associated with household spending by employees who are directly and indirectly employed by the post-production ecosystem.

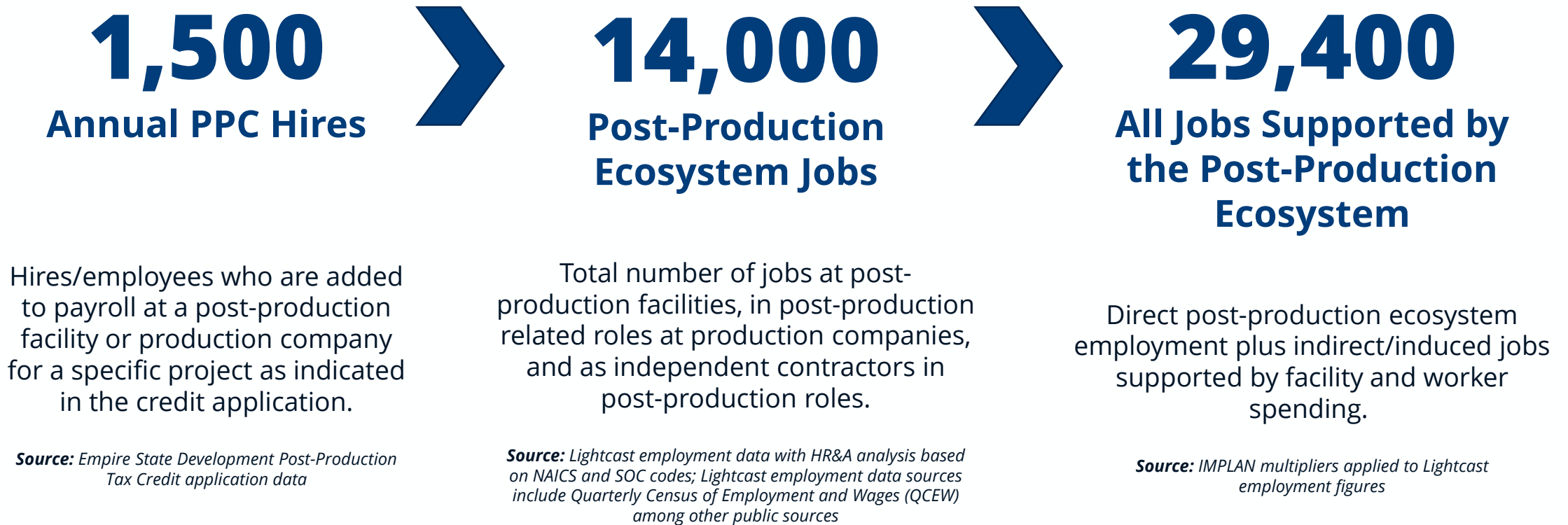
In addition to roughly 14,000 jobs, the post-production ecosystem supports an additional 15,000 jobs through indirect and induced economic activity, totaling 29,000 jobs and \$2.43 billion in labor income.

	<i><b>Jobs</b></i>	<i><b>Labor Income</b></i>	<i><b>Output</b></i>
Direct	14,060	\$1,480 M	\$4,250 M
Indirect/Induced	15,180	\$950 M	\$2,990 M
<b>Total Effect</b>	<b>29,240</b>	<b>\$2,430 M</b>	<b>\$7,240 M</b>

Source: Lightcast, 2022; IMPLAN, 2022

## Employment

Direct employment through the PPC generates two “multiplier” impacts – first within the ecosystem, and second across a range of occupations supported by ecosystem spending.



## Employment

The ecosystem continues to provide good-paying jobs. The average salary for employees of post-production facilities increased 42% while statewide salaries grew by 27% (2015 to 2021).

The post-production ecosystem provides good-paying jobs. In 2021, average salary in New York State's post-production facilities was \$119,000, 17% higher than the average salary for all industries statewide. In 2015, the average salary at New York State post-production facilities was \$83,400, which was then only 5% higher than average salary across all industries statewide. Between 2015 and 2021, post-production salaries increased at a substantially higher rate of 42% compared to salaries in other industries statewide, which grew by only 27%.

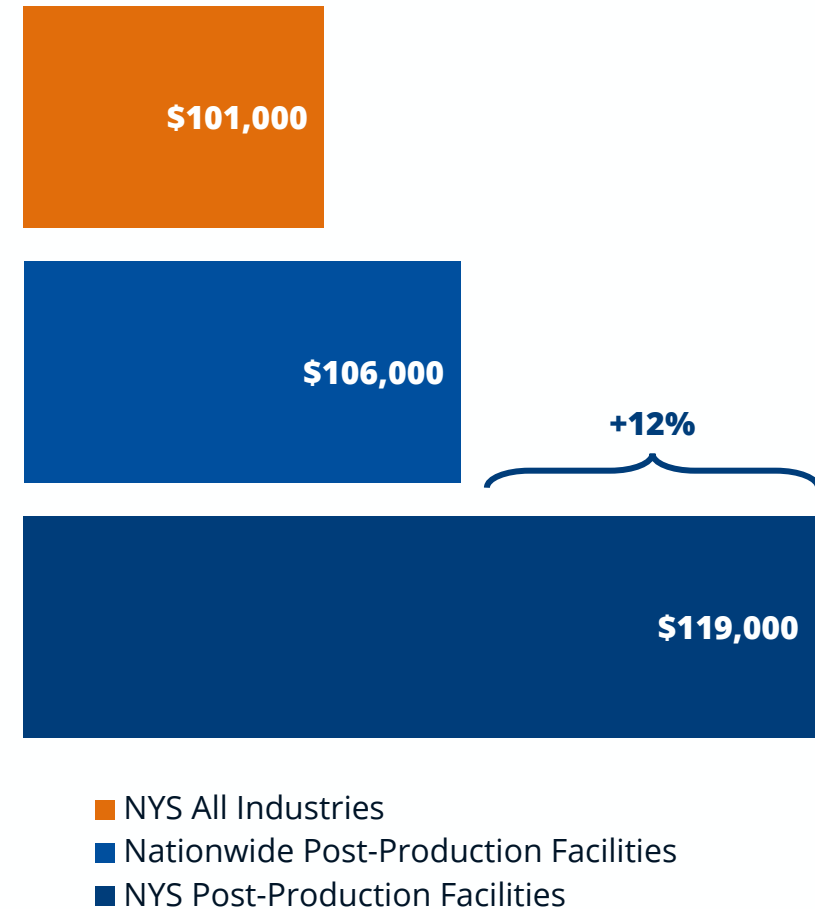
Average salaries at New York State's post-production facilities were also 12% higher than at peer facilities nationwide, reflecting the industry's support for its employees in the context of a higher cost of living and doing business in New York State.

The most common post-production occupation is Film & Video Editors. In 2021, the average wage for these employees was roughly \$52 per hour. This is 53% higher than the statewide average wage of about \$34 per hour.

*Source: Lightcast, 2022*

*\*2022 data was not available at the time of analysis.*

### Average Earnings in 2021\*





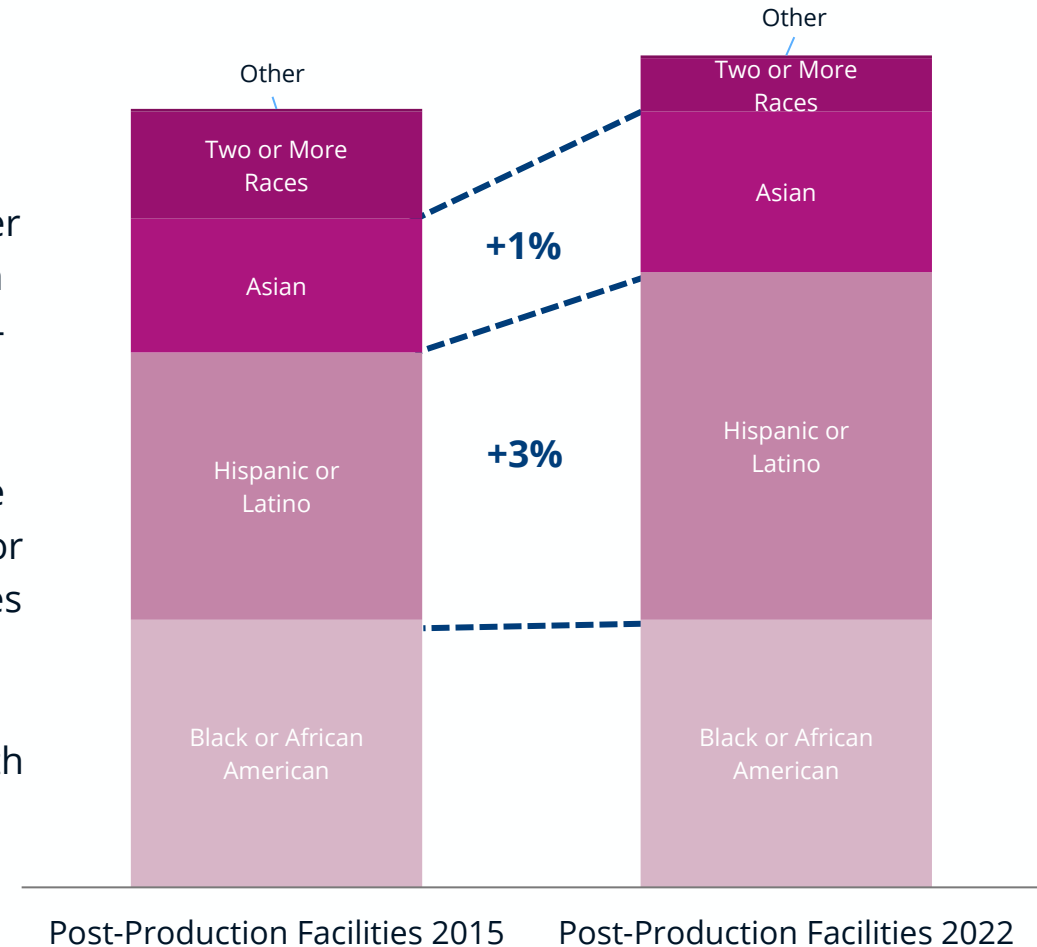
# Employment

There is work to be done to increase access, diversity and inclusion in post-production facilities.

Compared to industries across NYS, post-production facilities have less minority representation. While there has been a slight increase in Hispanic/Latino and Asian representation between 2015 and 2022, Black/African American representation stayed stagnant at 10% from 2015 to 2022 and the majority (69%) of post-production facility employees were white in 2022. Female representation at post-production facilities is 37%, approximately 10% less than other industries in New York State. Female representation experienced a slight decline since 2015, which may be associated with the COVID-19 Pandemic and associated challenges for working mothers.

Approximately 70% of employees at post-production facilities have a bachelor's degree or higher and 10% have some college degree or a postsecondary degree award, which mostly consists of employees in technical post-production roles. Educational attainment continues to be a barrier to entry for those without traditional college education, although programs exist to bring employees with non-traditional backgrounds into the industry.

### Non-White Employees at New York Post-Production Facilities\*



Source: Lightcast, 2022

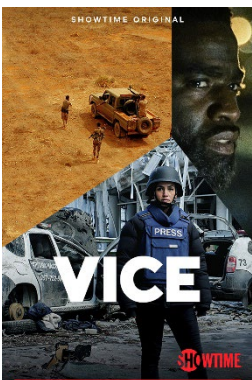
\*Analysis is limited to post-production facilities and does not encompass the ecosystem as data is only available by the industry level. Analysis does not include post-production jobs at production companies and independent contractors.

# Employment

Workforce development programs in New York State support more diverse hiring by training and providing connections to entry-level job opportunities.

In partnership with NYC Small Business Services and New York City Mayor’s Office of Media and Entertainment, Brooklyn Workforce Innovations’ **“Made in NY” Post-Production Training Program** prepares low-income, unemployed, and underemployed New Yorkers for entry level opportunities in the post-production industry such as Post-Production Assistant. The program provides 6 weeks of soft skills and technical training in industry-standard software. Upon completion of the program, participants receive career guidance and placement support for two years.

*Examples of production and companies Made in NY graduates are hired at.*



The Training Program has seen an increasing number of companies reaching out in efforts to build a more diverse workforce with skills training. The Program was adapted quickly to the remote work environment and saw success in connecting students to well-paying New York post-production jobs even during the pandemic. Over the past 5 years, roughly 75% of program graduates have found employment in the post-production sector.

Made in NY’s program serves New Yorkers across the 5 boroughs from diverse ethnicities and educational levels, with Hispanic/Latino residents the most represented.

**48%**

of participants in the Made in NY Post program have an Associate’s Degree or less

**75%**

of Made in NY Post program graduates were employed within the post-production sector

Source: Made in NY, 2022

## Employment

Specialized skills training programs also provide New Yorkers without prior post-production experience the resources they need to get more senior post-production jobs.

Reel Works', a New York-based nonprofit, **MediaMKRS Program** hosts 2 tiers of free 8-week training programs that are funded as a part of Warner Bros. Discovery Access to Action's commitment to build a more inclusive workforce. Post-Production Coordinator and Supervisor Training Programs provide trainees with competitive skills to obtain mid-level post-production jobs to work on high-end scripted productions. Through the programs, trainees connected with industry professionals.

# 83%

of program graduates were employed in post-production management jobs.

### MediaMKRS Graduates Profiles



Javon did not have a traditional college degree and had limited post-production experience. After completing Post-Production Coordinator Training, he was immediately hired as a Post-Production Coordinator at Jax Media, a TV and film production company. He currently works as a Post-Production Coordinator at Condé Nast.



Gautam was a Line Producer & Production Manager prior to completing a Post-Production Coordinator Training and upon graduating, landed a Post-Production Coordinator position on a HBO film. He then returned to take the Supervisor Training Program and is now a manager at Story Syndicate, a New York based film and TV production company.



Gabriella was a Production Assistant prior to participating in Post-Production Coordinator Training. After the program, she was hired at Nickelodeon as Post-Production Coordinator and promoted to Post-Production Manager after just 3 months. She's gone on to work for HBO, A+E Networks, the History Channel, and most recently landed a position with Apple+.

Source: MediaMKRS, 2022

# Employment

Post-production facilities are pursuing diversity and inclusion initiatives, including creating roles dedicated to equitable hiring/management and investing in educational programs.

## Streamland Media

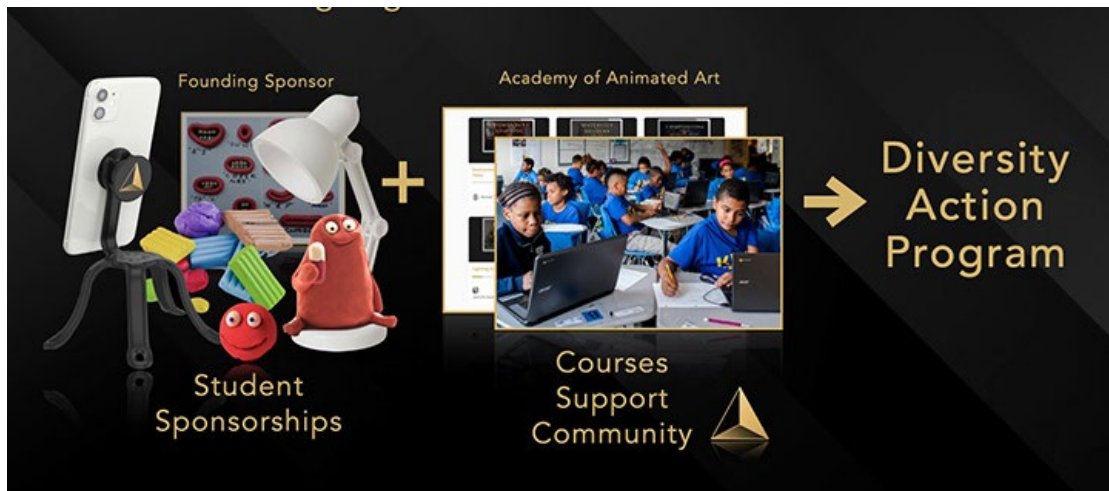
Streamland Media has acquired several post-production facilities to create the largest post-production facility in the world. In 2021, Streamland named Kim Spikes as its Senior Vice President of Culture and Engagement where she focuses on enhancing the diversity, equity and inclusion platforms, amplifying its green initiatives, team members, and connecting with communities.

### Example of Change in Diversity, Equity, Inclusion

Given the technical nature of the industry, Streamland partners with organizations like Made in NY and MediaMKRS to provide training programs that help students grow their skills to enter and advance in the post-production ecosystem.

One of Streamland’s goals is to retain talent, and particularly diverse talent, by helping employees advance within the company. Internally, Streamland has programs grow employees' management skills, which are crucial to retention of diverse talent and their ability to access higher-paid jobs.

Source: Streamland Media, 2022



Beyond working with organizations that help a diverse set of recent graduates transition into the industry, Streamland has partnered with the Academy of Animated Art, a company providing 3D animation courses, to create a pilot program in New York: The Diversity Action Program, which introduces a younger group of students to the post-production industry. The program works with middle schoolers to teach animation, computer fundamentals, and design principles.



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# Businesses

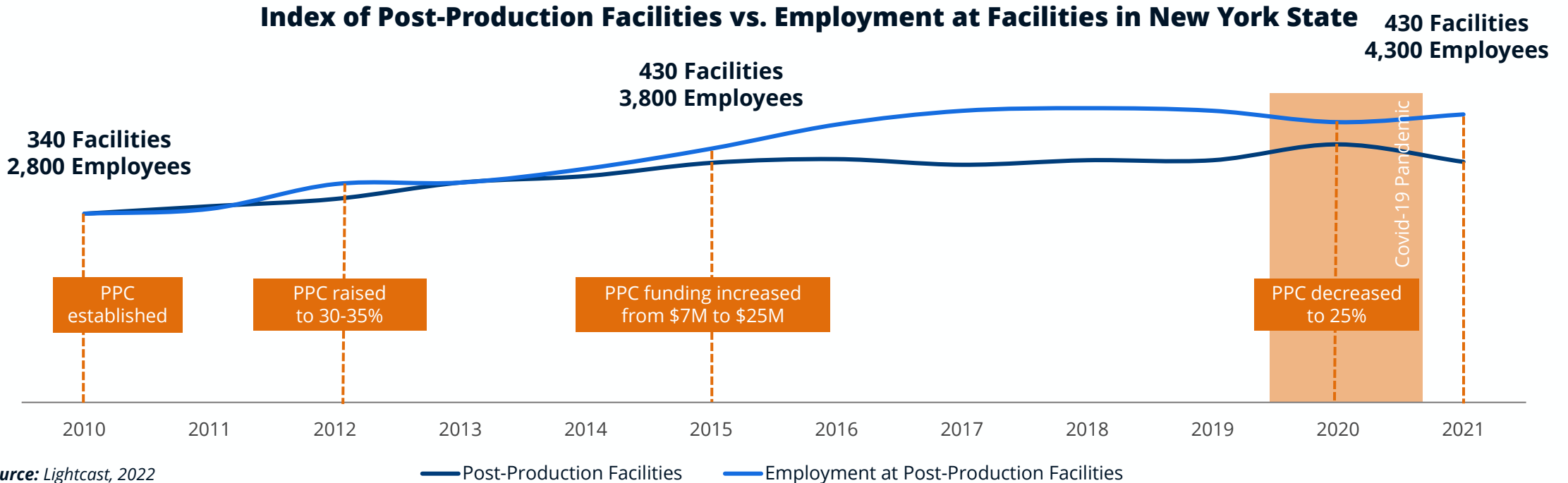
*Post-production facilities in New York State have expanded their operations with the support of the PPC, but have also seen consolidation and limited new facility formation as the industry matures.*

# Businesses

The number of post-production facilities in New York State has remained stable since 2015, although facilities have grown in terms of employment.

The number of post-production facilities in New York State grew from 340 in 2010, when the PPC was established, to roughly 430 in 2015. The number of facilities has remained relatively stable since 2015, with 430 facilities in 2021. The number of facilities peaked in 2020 at 470 facilities, but in the following two years has declined, erasing 7 years of growth.

However, at the same time, employment at those facilities has grown, reflective of businesses maturing, and facilities have consolidated across the industry to remain competitive. Average facility employment increased from 8.3 employees per facility in 2010 to 10 employees per facility in 2021\*.



Source: Lightcast, 2022  
\* 2022 data was not available at the time of analysis.

# Tax Revenues

TILL is an example of a production that was filmed out of state but spent millions of dollars on post-production work in New York.



TILL was shot in Georgia but conducted post-production in New York.

Films and TV shows may conduct production activities out-of-state but employ visual effects and post-production talent in New York State, supporting local jobs by leveraging the New York post-production tax credit. These projects include productions like *Tulsa King*, which was shot in Oklahoma, but had visual effects work completed in New York, or *Only Murders in the Building* which also had visual effects work completed in New York.

### TILL Tax Credit Data

**\$1.9M**

Tax credits

**53\***

Post-production staff employed

**\$3.5M**

Total spend

\*The post-production staff employed does not include VFX talent or those working at the post-production facilities in non-technical roles. These are only jobs reported on the tax credit application and directly paid based on timecards.

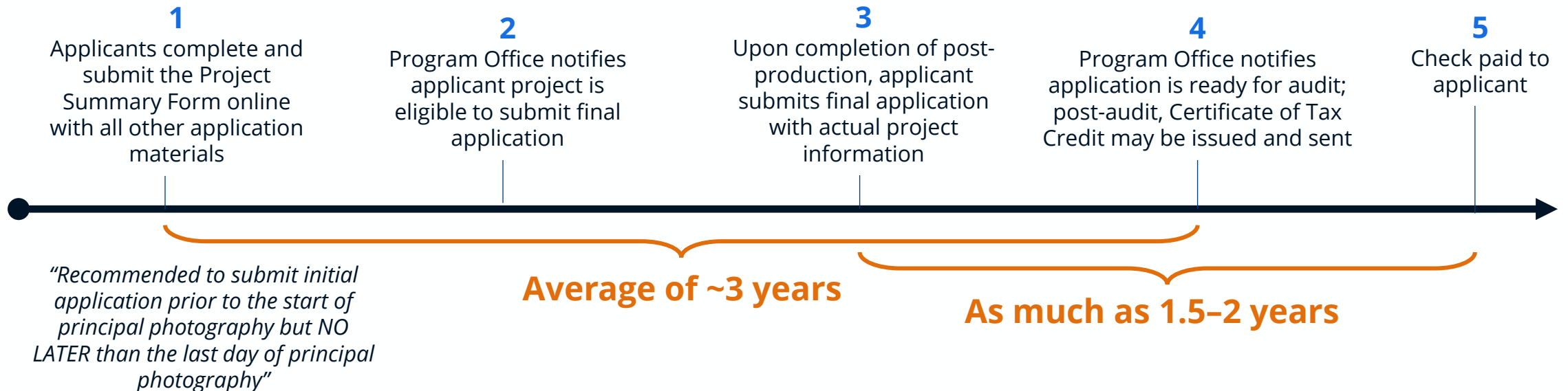
## Businesses

The tax credit approval and issuance process is time-consuming, which requires production companies to have financial capacity to “carry” costs on their balance sheet over several years.

In order to receive tax credit payment from the Program Office, applicants must complete an initial application upon project commencement and a final application once post-production is finished. There is an average of 3 years from initial application to certificate issuance and as much as 2 years to receipt of the tax credit check.

This has implications for smaller production companies as productions with smaller budgets are less likely to be able to carry post-production costs while waiting for tax credit issuance.

### PPC Application Process



Source: Empire State Development, 2022



Post-productions facilities in New York are expanding through mergers and increased investment in their talent.

## Crafty Apes + Molecule VFX

Crafty Apes acquired Molecule VFX, an established visual effects company based in New York and Los Angeles, in 2022 with the intent of expanding their NYC footprint under the Crafty Apes banner. In 2022, 50% of the projects they worked on in New York were filmed outside of New York, with post-production in New York due to the PPC.

## Company Expansion

The pandemic required businesses to adapt to remote work across industries, but post-production has been particularly able to adapt quickly due to the nature of the work. Crafty Apes reduced physical operations significantly and has been using the capital that otherwise would have been invested in facility expansion for investment in personnel. The facility has increased internal training programs for new hires and existing hires.

*Source: Crafty Apes, 2022*

Crafty Apes also has plans to use its existing space for internal education and training purposes. They also are planning to engage workforce development programs and community college programs to partner in using their space for workforce training.



## Businesses

There are several competitive tax incentive programs nationally that support post-production and competing will require continued investment in New York's PPC.

There is increasing competition nationwide for post-production spending, and while employment by New York facilities has continued to increase (roughly 25% since 2015), states with competing tax credits also offering lower costs of living and doing business.

New York's high labor costs particularly affect new and small facilities. To compensate, facilities have grown in size through mergers and investment in their talent, but continue to be reliant on the PPC, which drives production companies' choice of post-production facility location. In 2021, only 14% of all post-production firms in the United States were in New York State, compared to 20% in 2015.

State	Year Post-Production Credit Created	Number of Employees (2021)
California	2009	13,856
Connecticut	2006	60
Georgia	2005	305
Nevada	2013	122
New Jersey	2018	148
New Mexico	2002	18
New York	2010	3,245

*Source: National Conference of State Legislatures, 2022*

## Businesses

Nevertheless, the PPC is critical to operating a post-production facility in New York State.

### Primary Challenges

Post-production facilities face high costs in New York, and particularly New York City due to the combination of high real estate and workforce costs. The high cost of labor is a large challenge for post-production facilities in New York State. However, the quality of New York State's post-production talent is also high and there is a continued strong demand for post-production talent.

### Costs

Labor costs in New York State are expensive compared to other states that offer a post-production tax credit. Facilities face high costs particularly in New York City due to the combination of high real estate and workforce costs. The reduction in tax credits from 30% to 25% has made it more challenging to convince productions to bring post-production work to New York. Without the tax credit, facilities interviewed indicated that they would be unlikely be able to employ people in New York State.

*Source: Crafty Apes, 2022*

### Labor Shortages

There is plenty of work in the post-production ecosystem, but the ecosystem is constrained by a limited labor pool that further drives up labor costs. In particular, there is demand for senior post-production roles that require at least 6 years of experience.

### Shifts in Industry

Prior to the PPC, independent films were a large component of filmmaking in New York State. With the introduction of the tax incentive, feature films became more prominent in New York with television series also becoming more prominent as a financial backbone for the State.

The PPC has helped the State's post-production industry to take on larger projects. New York State has seen a smaller share of independent productions undertaking post work, partially due to challenges with accessing the tax credit and rising expenses to produce within New York.



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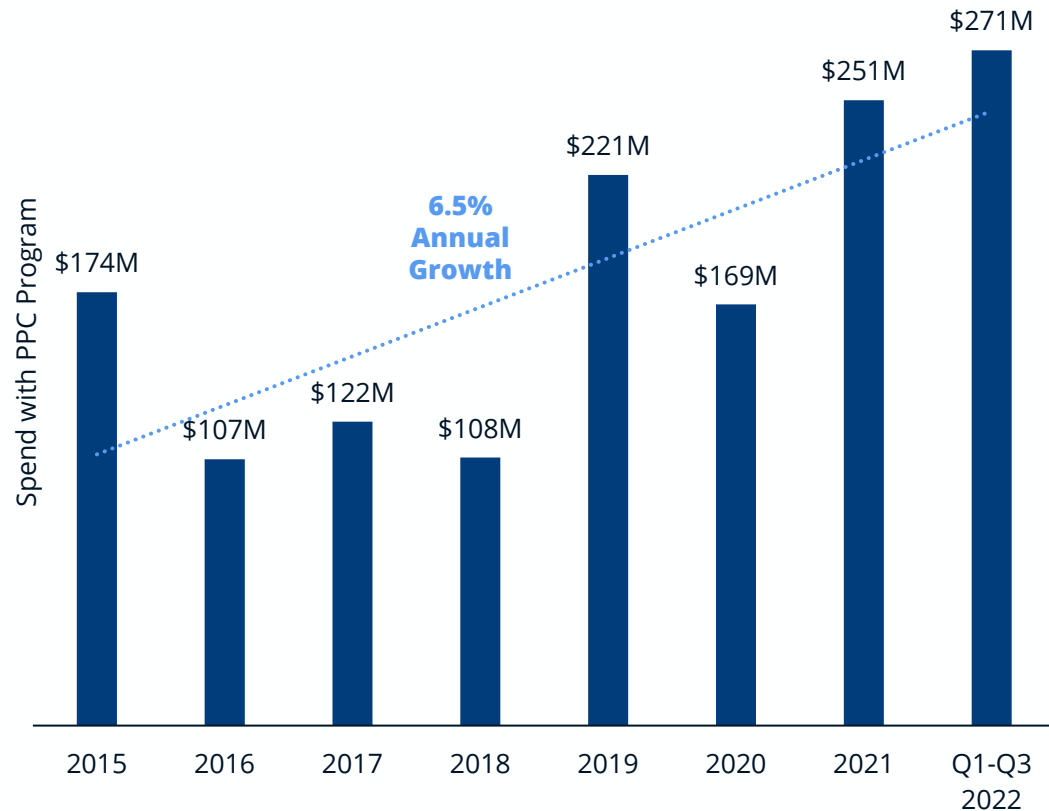
# Tax Credit & Revenues

*The PPC's support of the industry as a whole provides a strong fiscal return to New York State.*

## Tax Revenues

Qualified spending under the PPC has increased since 2015 at an annual rate of 6.5%, reaching record highs in both 2021 and 2022.

### Estimate of Qualified New York State Spend Associated with PPC Program



The PPC program saw initial applications total over \$250M in spending in 2021, with Q1-Q3 of 2022 alone exceeding that figure. This would translate to roughly \$60M in tax credits, far exceeding the \$25M annual allocation and potentially pushing payments out by several years.

New York State received 107 initially certified (i.e., granted conditional approval) applications for the PPC in 2022 to date, 18% more than the initial applications received in 2015. Applications saw a spike in 2019, with 216 total applications when the PPC was renewed for an additional 3 years.

Source: Empire State Development, 2022

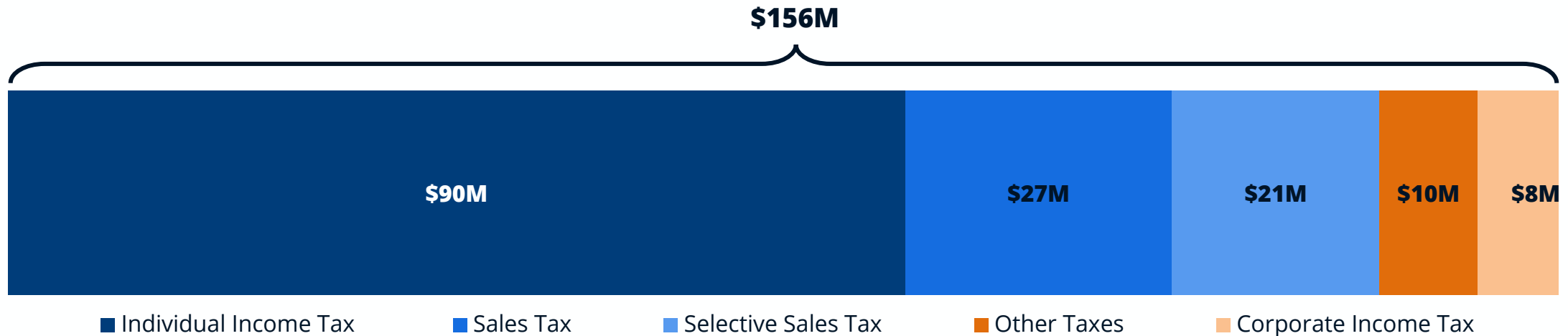
## Tax Revenues

In total, the post-production ecosystem generates \$156 million in tax revenues annually for New York State.

The direct, indirect, and induced economic impacts generated by the post-production ecosystem generate substantial tax revenue for New York State and local governments. HR&A quantified the fiscal impact on state tax revenues, including individual income tax, corporate tax, sales tax, selective sales tax and other taxes.

In 2022, the full post-production ecosystem generated a total of \$156 million in tax revenue for New York State. Of the \$156 million in tax revenues, individual income tax represents the vast majority of fiscal revenues – at 58% and sales taxes represent 30%.

### NYS Fiscal Revenue, Post-Production Ecosystem Activity, 2022



Source: HR&A analysis of Lightcast and IMPLAN data, 2022

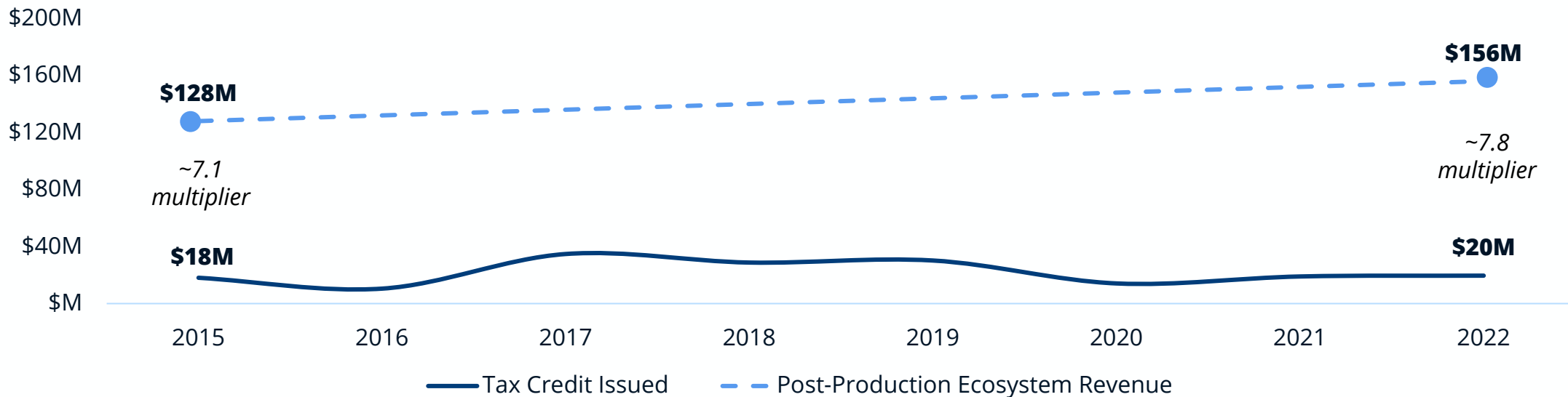
## Tax Revenues

For every \$1M of tax credits issued annually, post-production employment and activities generate roughly \$8M in statewide fiscal revenues.

The New York State tax credits are instrumental to the ecosystem's continued growth in an increasingly competitive global industry and provide a return on investment for the state that creates more revenue than State spending.

The scale and predictability of these credits has unlocked a robust stable volume of work for the post-production ecosystem. Since 2015, the return on tax credits issued has increased by nearly 10%, even as actual tax credits issued has remained relatively stable.

### Post-Production Ecosystem Fiscal Impact vs. PPC Tax Credits Issued

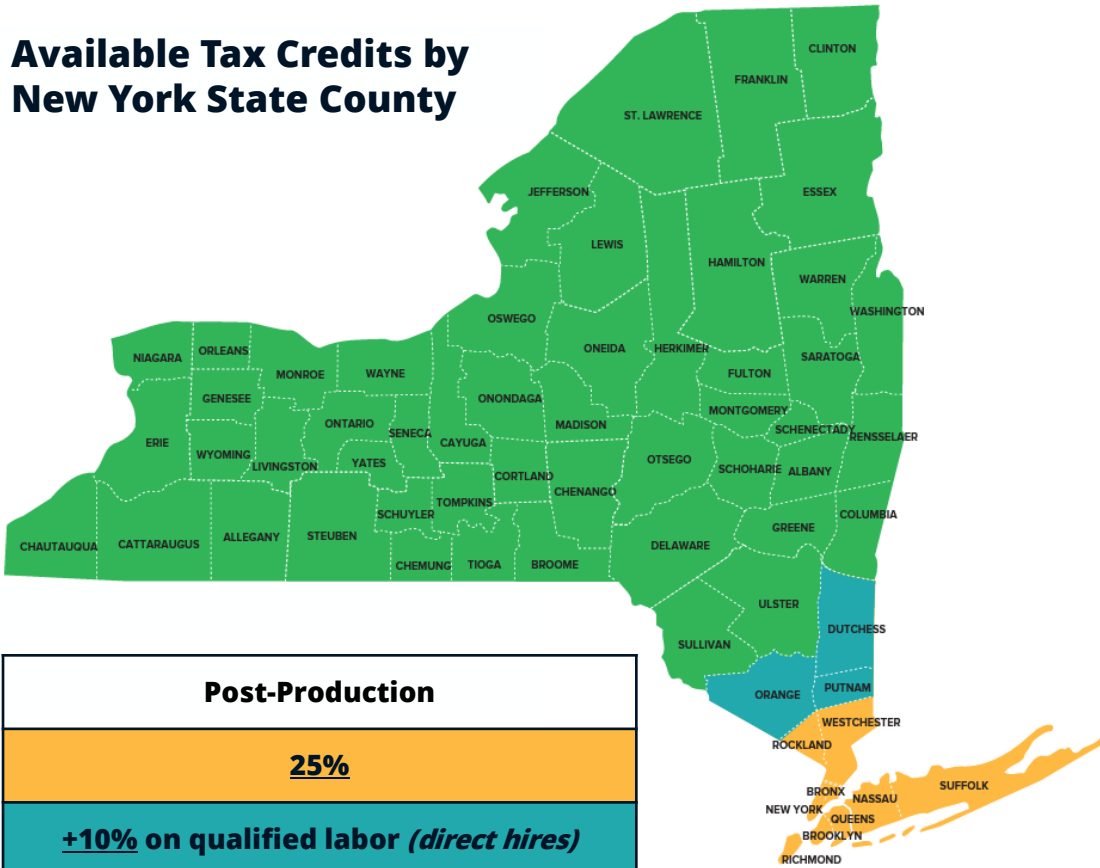


Source: Empire State Development, 2022; HR&A analysis of Lightcast and IMPLAN data, 2022

# Tax Revenues

Like the FPC, the PPC is designed to incentivize post-production activities outside of New York City and in Upstate NY.

## Available Tax Credits by New York State County



In addition to the eligibility to receive a fully refundable credit of 25% of qualified post-production costs, productions with budgets over \$500,000 can receive 10% credit on qualified labor expenses incurred outside the Metropolitan Commuter Transportation District (MCTD). An additional 5% credit is made available in the Post-Production Program for costs incurred in Upstate NY.

There is opportunity to grow an upstate post-production workforce as remote and hybrid work is being adopted by post-production facilities, coupled with an increase in independent contractors in the industry. However, broadband access and talent-related constraints will have to be mitigated.

Source: Empire State Development Post-Production Tax Credit Program, 2022



## Tax Revenues

The Diversity Credit is a recent effort to hire a more diverse and inclusive workforce with over \$130,000 of funding towards the program to date.

The New York Entertainment Workforce Diversity Grant Program is a first-in-the-nation diversity workforce development fund program that was announced in 2019 to support job training and workforce development across New York State's entertainment industry. Eligible programs for receipt of funding include training in film and television editing and development, with a focus on supporting racial and ethnic workers representation and/or those located in economically distressed areas of New York State.

The grant program is funded by an allocated percentage from New York State's Film Tax Credit Program: 0.25% of earned tax credit from the FPC and PPC are diverted the fund. The grants range from a minimum of \$25,000 to a maximum of \$500,000 can be awarded to eligible applicants.

Eligible programs include training of individuals involved in the creation of or editing of a film or television product. These skills and crafts include but are not limited to:

- Grip/Electric
- Carpentry
- Writing
- Editing
- Showrunners
- Production Assistant





04

# Technical Appendix

# Technical Appendix

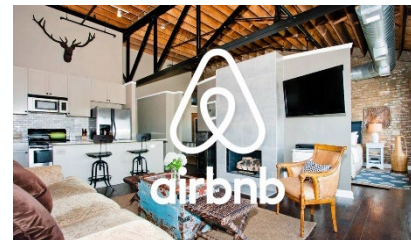
HR&A Advisors specializes in analyzing the economic and fiscal impacts of industries, policy interventions, and development projects.

## About HR&A Advisors, Inc.

HR&A Advisors, Inc. is an industry-leading real estate, economic development, and public policy consulting firm based in New York City, with offices in Atlanta, Dallas, Los Angeles, Raleigh, and Washington, D.C. The firm has studied the economic impacts of the New York City technology ecosystem, Times Square, the High Line, the New York State Film Production Credit, and the New York State affordable housing industry.

The following technical appendix details:

- Ecosystem Definition: HR&A's process for defining the post-production ecosystem in New York State
- Multiplier Impact Methodology: HR&A's process for measuring the economic and fiscal impacts of the post-production ecosystem
- Data Sources: The economic data packages (EMSI and IMPLAN) that HR&A employed in the course of this analysis
- General and Limiting Conditions



# Technical Appendix

## Ecosystem Definition

Working with industry experts, HR&A identified a list of relevant post-production industries and occupations and used the following two questions to determine the appropriate share of jobs to include in post-production occupations falling under the production industry and other relevant industries:

1. Does the industry center on the creation of audiovisual content or does it involve the creation of content in other media (e.g., live theater, music recording)?
2. If an occupation centers on the creation of audiovisual content, do its primary activities fall within the post-production or production process?

Using these questions, 100% of Film & Video Editors and Multimedia Artists & Animators were included across the three industry categories because these occupations center on the creation of audiovisual content (Yes to Q1) and their primary activities fall within the post-production process (Yes to Q2). However, 0% of Producers & Directors and Actors

outside the post-production industry were included because these occupations involve other media, such as live theater (No to Q1) and the audiovisual component of their work is concentrated within production (No to Q2). Industries are based on the 2022 NAICS codes as defined by the U.S. Census Bureau. Occupations are based on the Standard Occupational Classification (SOC) codes as defined by the Bureau of Labor Statistics.

<b>Post-Production</b>	<b>Production</b>	<b>Other Relevant Industries</b>
<i>All Jobs</i>	<ul style="list-style-type: none"><li>• <i>Film &amp; Video Editors</i></li><li>• <i>Multimedia Artists &amp; Animators</i></li><li>• <i>Music Directors &amp; Composers</i></li><li>• <i>Photographic Process Workers</i></li><li>• <i>Software Developers (Applications &amp; Systems)</i></li></ul>	<ul style="list-style-type: none"><li>• <i>Film &amp; Video Editors</i></li><li>• <i>Multimedia Artists &amp; Animators</i></li></ul>

# Technical Appendix

## Ecosystem Definition

### NAICS Codes & Classification

#### POST-PRODUCTION FACILITIES

512191 Teleproduction and Post-Production

#### PRODUCTION COMPANIES

512199 Other Motion Picture and Video Industries

51211 Motion Picture and Video Production

51212 Motion Picture and Video Distribution

#### OTHER INDUSTRIES & INDEPENDENT CONTRACTORS

512240 Sound Recording Studios

512290 Other Sound Recording Industries

711510 Independent Artists, Writers, and Performers

### SOC Codes & Classifications

#### CORE POST-PRODUCTION OCCUPATIONS

27-4032 Film & Video Editors

100%

100%

27-1014 Multimedia Artists & Animators

100%

100%

#### SECONDARY POST-PRODUCTION OCCUPATIONS

27-2041 Music Directors & Composers

100%

0%

15-1132 Software Developers, Applications

100%

0%

15-1133 Software Developers, Systems Software

100%

0%

51-9151 Photographic Process Workers

100%

0%

#### All OCCUPATIONS IN Teleproduction and Post-Production

27-4014 Sound Engineering Technicians

0%

0%

27-4011 Audio & Video Equipment Technicians

0%

0%

27-2012 Producers & Directors

0%

0%

27-2011 Actors

0%

0%

27-4031 Camera Operators

0%

0%

27-2042 Musicians and Singers

0%

0%

## Technical Appendix

### Multiplier Impact Analysis Methodology: Economic Impacts

Created by MIG, Inc. (formerly the Minnesota IMPLAN Group, Inc.), IMPLAN is a leading national input-output model. IMPLAN's clients include many public and private sector organizations, such as the federal government, New York State Department of Labor, New York Office of the State Comptroller, and Cornell University. IMPLAN traces the pattern of commodity purchases and sales between industries that are associated with each dollar's worth of a product or service sold to a customer, analyzing interactions among 530 industrial sectors for New York State. IMPLAN reports direct impacts and multiplier (indirect and induced impacts) for sectors across the economy.

HR&A utilized the 2021 IMPLAN model to estimate the economic impacts of the post-production ecosystem. HR&A designated New York State as the study area. The economic impact study is designed to measure the impact of the post-

production ecosystem in terms of employment, employee compensation, and economic output (spending) generated:

- **Employment** includes full-time and part time jobs.
- **Income** includes all forms of employment income, including Employee Compensation (wages and benefits) and Proprietor Income.
- **Economic output** is the total value of production across all industries in the economy. It is equivalent to total spending in the economy.

# Technical Appendix

## Multiplier Impact Analysis Methodology: Fiscal Impacts

HR&A calculated fiscal impacts to New York State by estimating effective State tax rates for five categories of taxes and applying these rates to the level of personal income generated by post-production spending as estimated by IMPLAN.

Effective State tax rates are calculated based upon the relationship between New York State personal income in 2020, reported by the Bureau of Economic Analysis, and New York State tax collections in 2020, as reported by the U.S. Census Bureau's State and Local Government Finance Bureau. The year 2020 was used for analysis, as it was the most recent year that data was available. Ratios of tax collections to personal income were calculated for the following major tax revenue streams reported by the Census: individual income tax, corporate income tax, general sales tax, selective sales tax, and other taxes.

### Ratio of New York State Tax Revenue to Total Personal Income

Individual Income Tax	<b>3.72%</b>
Corporate Income Tax	<b>0.33%</b>
Sales Tax	<b>1.11%</b>
Selective Sales Tax	<b>0.86%</b>
Other Taxes	<b>0.41%</b>

*Source: U.S. Census Bureau's State and Local Government Finance Bureau*

# Technical Appendix

## Data Sources

A CareerBuilder company, Lightcast is a leading national provider of employment data and economic impact analysis. Lightcast clients include the New York State Department of Labor, North Carolina Department of Commerce, and Oklahoma Department of Commerce. HR&A utilized Lightcast's Analyst tool in estimating the size of the New York State post-production ecosystem and its associated wages, educational requirements, and demographics.

Lightcast gathers and integrates labor market data from a wide array of sources, including the U.S. Bureau of Labor Statistics Quarterly Census of Employment and Wages (QCEW) and Occupational Employment Statistics (OES), U.S. Bureau of Economic Analysis, O\*NET, U.S. Census Bureau American Community Survey (ACS) and County Business Patterns (CBP), and state departments of labor.

Lightcast's proprietary estimation process enables it to accurately report detailed data for every county in the United States, including employment data which is not disclosed by government sources due to confidentiality issues. Lightcast reports industry-level data to the six-digit NAICS code and occupational data to the five-digit SOC code. Moreover, Lightcast provides a cross-walk between industry and employment data (staffing patterns and reverse staffing patterns) that enabled HR&A to account for both jobs in the traditionally defined post-production industry and jobs in post-production occupations in the broader production industry and other relevant industries.

Lightcast also reports the most common educational or training requirements for each of the 800+ SOC codes based upon data from the U.S. Bureau of Labor Statistics.



# Technical Appendix

## General and Limiting Conditions

Any person who relies on or otherwise uses this Economic and Fiscal Impact Study (the “Study”) is required to have first read, understood and accepted the following disclosures, limitations and disclaimers, and will, by reason of such reliance or other use, be deemed to have read, understood and accepted the same.

1. HR&A Advisors, Inc. (“HR&A”) has been engaged and compensated by Post New York Alliance to prepare this Study, finalized in January 2023. In preparing this Study, HR&A has used its independent professional judgment and skills in good faith, subject to the limitations, disclosures and disclaimers herein.
2. This Study is based on estimates, assumptions and other information developed by HR&A and Post New York Alliance. Every reasonable effort has been made to ensure that the data contained in this Study are accurate as of the date of this Study; however, factors exist that are outside the control of HR&A and that may affect the estimates and/or impacts noted herein. HR&A neither guarantees any results nor takes responsibility for their actual achievement or continuing applicability, as actual outcomes will depend on future events and circumstances beyond HR&A’s control.
3. HR&A relied on information, data, and forecasts provided by the Empire State Development Corporation (ESD) under the Freedom of Information Law, IMPLAN, Lightcast, and U.S. Bureau of Labor Statistics. HR&A reviewed the information provided using its independent professional judgment and skills in good faith. HR&A assumes no liability resulting from errors, omissions or any other inaccuracies with respect to the information provided by the respective organizations referenced above.
4. In addition to relying on data, information, and forecasts as referred to above, HR&A has included in this Study estimates and assumptions made by HR&A that HR&A believes are appropriate, but HR&A makes no representation that there will be no variances between actual outcomes and such estimates and assumptions.
5. No summary or abstract of this Study, and no excerpts from this Study, may be made for any purpose without HR&A’s prior written consent.

## Technical Appendix

### General and Limiting Conditions (continued)

6. No opinion is intended to be expressed and no responsibility is assumed for any matters that are legal in nature or require legal expertise or specialized knowledge beyond that of an economic and fiscal impact consultant.
7. HR&A is not acting as a Registered Investment Advisor or an advisor to potential investors. Prior to taking any action related to the information in this Study, any investor should consult with its own financial, legal, tax, accounting, and other advisors to the extent it deems appropriate.
8. Many of the figures presented in this Study have been rounded. HR&A disclaims any and all liability relating to rounding errors.
9. This Study may be relied on and otherwise used only by persons who receive this Study from HR&A or with HR&A's prior written consent and only for the purpose stated in writing in conjunction with such receipt or consent. No reliance on or other use of this Study by any person or for any purpose other than as stated in the previous sentence is permitted. HR&A disclaims all responsibility in the case of any reliance on or other use of this Study in conflict with the above portions of this paragraph.
10. If the Study is referred to or included in any offering material or prospectus, the Study shall be deemed to have been included for informational purposes only and its use shall be subject to these General and Limiting Conditions. HR&A, its directors, officers and employees have no liability to recipients of any such offering material or prospectus. HR&A disclaims any and all liability to any party.
11. This Study is qualified in its entirety by, and should be considered in light of these General and Limiting Conditions. By use of this Study each party that uses this Study agrees to be bound by all of the General and Limiting Conditions stated herein.