

THE ECONOMIC IMPACTS OF FILM & VIDEO PRODUCTIONS ON SEATTLE

A Report for the
Seattle Mayor's Office of Film and Music

ECONorthwest
888 SW Fifth Avenue - Suite 1460
Portland, Oregon 97204

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1. EXECUTIVE SUMMARY

While not a highly visible industry in Seattle, film and video production is a large contributor to the City's economy. According to the most recent data available (2001), the direct economic output of film and video production in Seattle amounted to over \$207 million. The production of films, videos, television movies, commercials, and commercial still photography in Seattle had the following impact on the economy of the City:

- Film and video production supported 4,991 jobs in Seattle.
- The City enjoyed over \$471 million in additional economic output because of film and video production.
- Local labor income was \$186.3 million higher in 2001 than what it would have been in Seattle without film and video production.
- The State of Washington and the City of Seattle collected almost \$12.4 million in additional taxes due to film and video production.

What is critical to understand about this analysis is that these are **net impacts**. They tell us how much better off the City was because of the activities of the film, video, and commercial photography industries. They are net benefits because without these industries local businesses would have hired firms in other cities, states, and even other countries to do filming and other related work, thus, causing an economic drain to Seattle. Without these industries in Seattle most production companies who came to the City because of its great locations and quality workforce would have gone elsewhere to shoot, thus, spending their money elsewhere.

Film and video production is a labor-intensive, high wage economic activity that responds quickly to a favorable business climate and does so with minimal impacts on infrastructure. It employs skilled workers, many of whom are trained in creative arts and technical skills that are not readily transferable to other industries. Without a viable and significant domestic industry, Seattle would lose most of one of its most productive segments of its labor force and do so at great long-term economic cost. Students graduating from local high schools who are interested in film and video production would be inclined to move out of Seattle to pursue their careers. In a sense relegating Seattle to having its schools educate and train future film and video production professionals for California, British Columbia, New York, and other places with favorable business climates for this industry.

2. INTRODUCTION

This is a report on the economic impacts on Seattle that result from the production of feature films, television movies, videos, commercials, and commercial still photography, which we hereafter refer to as “film and video production.”

ECONorthwest, the leading economic research firm in the Pacific Northwest, conducted this analysis on behalf of the Seattle Mayor’s Office of Film and Music using data primarily from federal government sources and other independent sources.

The analysis was done at the same time ECONorthwest was engaged in similar research for the Washington State Film Office. That effort yielded measurements of the economic impacts of the film and video production on the economy of Washington State.

This report describes the methodology and data used by ECONorthwest. It concludes with assessments of the impacts that film and video production have had on employment, wages, economic output, and taxes in the City of Seattle. All dollar values and employment estimates used in this report are for 2001—the most recent year for which complete economic data are available.

2.1 Why Should City Government Measure These Industries?

Businesses that engage in film and video production are free to choose from a wide selection of locations for filming. The City of Seattle has a plethora of good locations and scenery, but it competes with neighboring cities, states, and provinces, which also have good locations. To obtain a fair share of the business, the City needs to sell Seattle as a friendly, trouble-free, and cost effective place for production companies to work. However, the question sometimes arises whether this effort is worth it. Therefore, it is useful to periodically measure the size and impact of film and video production on the City of Seattle.

Producers of movies, television programs, videos, commercials, and commercial still photography that are not tied to specific news or sports events generally can choose their locations. Unlike stores, manufacturers, or businesses with office workers, they do not have a large, fixed physical plants that mandate that they produce their work at their own facility. Instead, crews routinely travel long distances to find locations that suit their needs and the budgets of their clients.

Although Seattle-based producers naturally prefer Seattle locations, they must bend to the demands of the market in choosing where they will shoot—and like any market, demands are influenced by costs, familiarity, and accessibility. Therefore, a city can stimulate more local productions by influencing market demand. Producers want good affordable locations, a streamlined permitting process, and experienced professional local cast, crew, and support services. This is equally important for productions from out of state.

Why should the government do this? Quite simply no entity in the economy other than the City government has a vested interest in exclusively promoting Seattle locations. Private sector companies, for instance, may suggest to a client a Seattle location for a shoot, but that client could just as easily choose Vancouver, British Columbia or Spokane. Without some level of promotion backed up by an office to service production needs the tendency is to go where they are welcomed and where production can be done on time, on budget, and with a minimum of extraneous hassle. In short, the best entity to market Seattle is the City of Seattle itself.

By making Seattle an easy and attractive place to film, the City benefits by stimulating employment and tax revenues for comparatively little incremental expense to government. The returns happen quickly because location decision-making is often measured in weeks, not years.

In the longer term, features, television commercials, and still photography that show Seattle's unique blend of an exciting urban scene and natural beauty will stimulate more tourism. In effect they become advertising that carries the message that Seattle is special. People around the world see these messages and respond. This is a type of advertising that costs the City and its tourism industry very little and has lasting effects. Finally, as more productions are shot in Seattle by local and out of state crews, the size of domestic or city-based industry grows, as will its support infrastructure.

2.2 Defining the Industry

At first glance, one would think that the film, video, and commercial still photography industries would be easy to define. However, the line between what belongs in the industry and what does not belong is quite blurred.

For instance, an actor who is a paid employee of a movie production company clearly would be considered part of the film & video industry. However, when that same person works for a live stage production, they do not count as being part of the film and video industry. Furthermore, if they are self-employed and work on a film, but are not paid as an employee of the film's producer, their self-employment industry is as a performer, not as a film production person and they would not be counted directly as part of the industry. ECONorthwest worked around this problem by measuring the expenses of the local film industry. Doing so allowed us to pick-up the income of such self-employed performers as an indirect output of the industry.

For this report we define film and video production as the recording of moving or still images for theatrical, commercial, or educational purposes. News and sports events are excluded because rarely do producers have a choice of locations for recording them. Likewise, portrait and private event photography are excluded.

Clearly a corporation with workers and establishments in Seattle whose primary line of work is in the film, video, or commercial production business belongs in the definition used in this report. However, many other entities are engaged in these lines of work and routinely make location decisions.

Besides corporations, there are about 780 self-employed individuals living and working in Seattle who engage in film and video production. Critically important too are the out of state companies who come to Seattle to produce films and videos, or to do commercial film and photo shoots. Finally, other industries, ranging from manufacturers to television broadcasting stations, do some film, video, and commercial still photography in Seattle for their own “in-house” purposes.

Collectively the output and employment from film and video production by all these entities constitute the industries, which are the subject of this report. ECONorthwest collected data and made estimates for each component using the best data available. The total direct spending was calculated and then used to derive their impacts on Seattle as the spending by the industries and their workers flow through the City’s economy.

In summary, ECONorthwest determined the revenues, self-employment earnings, and payrolls for the following components of film and video production:

- Business establishments in Seattle with employees that are primarily in the film and video production, film and video postproduction, and commercial still photography industries. In this report, we refer to the production of these businesses as the “**domestic industry.**”
- The local spending and hiring by groups, businesses, and individuals based outside of Washington who came to Seattle in 2001 to produce a film or video, or to conduct commercial photographic shoots. They are called “**out of state crews**” in this report.

For competitive reasons, expenditures by individual productions are highly guarded figures. ECONorthwest tallied confidential production cost data for individual productions in the state. In some cases, we made estimates of those that did not reveal their expenditures using industry guidelines. For example, the average TV show spends about \$85,000 a day on location. For a single episode of a show a shoot may last 7 to 14 days. High-end feature films spend \$100,000 or more per day on location. Low budget films and documentaries will spend between \$15,000 and \$35,000 a day. Local spending on television commercials usually runs from \$50,000 to \$100,000 a day. Still photography shoots average about \$25,000 a day.

- The economic output of business establishments in Seattle that are not in the film, video, or commercial still photography businesses, but who do some of their own film and video productions is referred to as “**in-house production.**”
- Freelancers and other self-employed Seattle residents who engaged in film and video production during 2001 and reported their earnings to the Internal Revenue Service. They are called “**freelancers**” in the report.

- Original entertainment television and cable programming by broadcasters based in the City of Seattle and scoring for films by Seattle-based musicians are included under in-house production.

Individuals, crews, and companies in these industries produced the following types of products in Seattle during 2001:

- Feature films
- Movies for televisions
- Direct to video programs and movies
- Animation on film or video
- Original local television and cable programming other than news or sports shows
- Television commercials and print advertisements
- Documentaries
- Religious programs
- Training, educational, and instructional videos
- Photographs for catalogs, print advertisements, and magazines
- Photography by manufacturers for use in brochures and manuals
- Components to complete film, video, and commercial photography products (postproduction services) such as musical scoring, editing, printing, and captioning.

What the definition does not include are activities that relate closely to film and video production, but whose final products are not normally recorded as images for theatrical, commercial, or educational purposes. Among the sectors excluded are:

- Live theater
- Dance and music performances
- Radio
- Cable television systems
- Sound recording other than scoring for films and video
- Televised football games
- Makers of software and video games
- Books, comics, magazines, and other printed media (commercial photography is an input into these sectors, however)
- Movie theaters
- Portrait photography
- News and private event photography

- Local cable news shows
- Film and video distributors

2.3 Three Industry Codes

The US Census collects data for industries, which it categorizes along the North American Industry Classification System or “NAICS” code method. The film, video, and commercial photography industries analyzed by ECONorthwest fall into three NAICS codes. They are:

- 1) **NAICS 51211:** The motion picture and video production industry comprise establishments primarily engaged in producing motion pictures, videos, television programs, or television and video commercials. It does not include movie distributors, video retailers, or theaters.
- 2) **NAICS 51219:** Postproduction services and other motion picture and video industries comprises establishments primarily engaged in providing specialized motion picture or video postproduction services, such as editing, film/tape transfers, scoring, subtitling, credits, closed captioning, and computer-produced graphics, animation and special effects, as well as developing and processing motion picture film.
- 3) **NAICS 541922:** The commercial photography industry comprises establishments primarily engaged in providing commercial photography services, generally for advertising agencies, publishers, and other business and industrial users. This excludes such activities as news, portrait, and wedding photographers.

2.4 Industry Structure

Film and video production is done by networks of individuals, small businesses, and sometimes large companies that operate under highly flexible structures. It is somewhat akin to the construction industry.

Productions are short-term coalitions. For example, a production company filming a movie may only have a small number of direct employees, but will typically hire large numbers of self-employed (freelance) technicians, local caterers, actors, camera crews, and various subcontractors who come together to work for periods as short as a few days and usually no longer than a few months.¹ In Seattle, productions are rarely done entirely by single firms working alone. Even for small projects it is common to see teams of firms and freelancers working together. For out of state producers, it is often more efficient to bring in local experienced professional help on an ad hoc basis than it is to fly or drive in employees from out of state.

¹ Coe, Neil M., “A Hybrid of Agglomeration? The development of a satellite-Marshallian industrial district in Vancouver’s film industry.” *Urban Studies*. September 2001. Page 1753.

Individuals and firms will work on several different projects over the course of a year. In doing so, they can, in good times, assemble the equivalent of a full year's employment. When there is a paucity of projects in Seattle, they must go to other cities, states, or even countries for work, be unemployed, or find temporary employment in other industries.

Collectively most of the products of these industries are either sold to buyers in other states or made for Seattle based firms who, if they could not find a local firm to produce the product, could easily go out of Seattle to get the job done. Thus, the dollars that fuel film and video production act primarily as exports. Given that productions have high local spending contents and pay fairly good wage rates, their impact on the economy of Seattle is highly stimulative.

2.5 Method Used to Measure Economic Impacts

ECONorthwest used its measurements of film and video production in Seattle to drive an economic model that calculates what the ultimate impacts of these industries were on the City's economy in 2001. The type of model used for this is called an input-output model. ECONorthwest used a popular version of this known as the IMPLAN (for IMPact Analysis for PLANing) model.

Input-output models are mathematical representations of an economy. They show how various parts of the economy are linked to one another. IMPLAN models are widely used by universities, governments and businesses. It was originally developed by the U.S. Forest Service to assist federal agencies in their land and resource management planning. For this report the IMPLAN model for Washington was used.

Two sources of data are particularly central to the IMPLAN models: the National Income and Product Accounts published annually by the U.S. Bureau of Economic Analysis (BEA) and the BEA input-output model for the United States. The IMPLAN model for Washington was derived from the national model and local economic data. ECONorthwest enhanced the precision of the standard Washington IMPLAN model by incorporating data it estimated for the industries of interest in this report.

ECONorthwest maintains models for Washington and for King County. There is no model available just for Seattle because much of the economic data necessary for building an IMPLAN model is available only on the county level. Nonetheless, we are able to approximate the economic impacts on the city level because we were able to accurately measure most forms of direct industry output and employment for film and video production in Seattle during 2001. We then allocated on a sector-by-sector basis the share of indirect and induced economic impacts, which we estimates occurred in the City.

2.6 Types of Economic Impacts

There are several types of economic impacts. Below are the definitions of the more common measures:

- Output: For each industry, IMPLAN reports total output. Output is approximately the same as total sales or revenues. There are two major exceptions—retailing and wholesaling. For these, output is basically the difference between what retailers and wholesalers buy goods for and how much they sell them for.
- Personal income: This is the sum of employee compensation and proprietors' income. Employee compensation includes workers' wages and salaries, as well as other benefits such as health and life insurance, and retirement payments. Proprietors' income is money made by the self-employed and small business owners. It includes the earnings of freelancers and partners in small production companies.
- Other Income: These are payments to individuals in the form of rents received on properties, royalties from contracts, dividends paid by corporations, and profits earned by corporations.
- Jobs: The number of jobs is measured by IMPLAN as the sum of proprietors, partners, part-time workers, the self-employed, and fulltime paid employees. Thus, IMPLAN mixes full and part time jobs—weighing them equally. Because of this, you cannot calculate the average annual wage from IMPLAN.

ECONorthwest had to estimate the number of jobs for film and video production—especially by out of state crews who worked in the City of Seattle—by first determining the number of full-time equivalent (FTE) jobs and then applying a ratio of jobs to FTE's, which in Seattle is approximately 1.19-to-one. Because one individual may work on several, even more than a dozen, individual productions in a year, we used this method to convert large numbers of very short-term employment periods into what would statistically be a normal year of employment for a generally fully employed person in the industry.

- Direct Impact: The direct impacts are those arising from the initial spending by the film, video, and commercial photography industries, such as money spent to pay employees and contracted workers, to buy goods and services, and to pay for rent and permits.

- Indirect impact: When businesses and governments that supply the goods, services, permits, rents, and other things to an industry in turn buy goods and services from other places, indirect impacts are generated. So, for example, if a movie production company buys food from a Seattle caterer, that is a direct impact. However, because of that direct spending, the caterer buys food from a Seattle supplier. That purchase is an indirect impact. Further spending, such as the supplier buying bookkeeping services from a Seattle accounting firm, stimulates additional indirect impacts for the City.
- Induced impact: Besides spending effects, the extra incomes earned by workers and business owners because of the film, video, and commercial photography industries also filter through the economy, these are called induced impacts. For example, the higher profits and wages earned by the catering business that supplied the production company puts money in the pockets of the caterer and his or her employees. When they spend this extra money that they earned in Seattle to buy various local goods and services, they generate induced impacts for the City.
- Leakage: Leakage is not an impact measurement, but it is an important factor in IMPLAN modeling. Leakage occurs because not all the money earned in the City economy is spent in Seattle. If in our example, the caterer buys some produce for the film & video crew from a farm in Yakima County, then the money used to pay the farmer provides no indirect impact to Seattle—it leaks away. Likewise, employees will spend some of their wages outside of Seattle or save some of it. These too are sources of leakage.

Leakage is the reason why ECONorthwest chose to use a Washington IMPLAN model instead of its King County IMPLAN model to estimate economic impacts on Seattle. If we used the county model the spending that leaks out to neighboring counties but later come back to the City (a common phenomenon with major cities) would be lost and cause a significant underestimate of impacts. Since we know the direct spending inside Seattle, we determined that using a state model as a basis would produce a much more accurate picture for the City's economy.

2.6.1 Counterfactual

IMPLAN models report gross impacts. In other words, they calculate all the impacts that can be traced back to the initial stimulus, which in this case is the spending on film and video production. Thus, it answers the question—how much of the economy is tied to this industry? That is not the same as the question—how much better off is the economy because of the industry? For that one would have to model the economy both with and without the industry and then subtract the two. That “without” estimate is called the counterfactual scenario.

In most cases the counterfactual is quite significant. For example, if we were to model the impact of a restaurant, the counterfactual scenario would tell us that much of the money consumers spent at the restaurant would have been spent anyway on eating out or at home if the restaurant did not exist. Thus, the net impact of the restaurant is much less than its gross impact.

Past research by ECONorthwest indicates that the counterfactual scenario for film and video production is very small. For out of state crews there are virtually no counterfactual effects, because if they do not film in the City of Seattle there is nearly a 100 percent loss in direct spending. For the domestic industry the counterfactual is also very small. If there were no commercial photographers in Seattle, for instance, most advertisers would simply hire firms in other cities or states. The absence of a domestic industry would not free-up local consumers and businesses to spend their money elsewhere in the City. For these reasons, the counterfactual scenarios for film and video production are negligible. Therefore, ECONorthwest considers the economic impacts reported here to be basically net impacts.

3. INDUSTRY DIMENSIONS

ECONorthwest relied primarily on four data sources to estimate the size of the industry. They are the U.S. Economic Census, covered employment & payroll data from the Washington State Employment Security Department, out of state production spending reports from the Washington Film Office, and occupational surveys by the U.S. Bureau of Labor Statistics.

3.1 Data Sources

The main data source for the analysis was the Economic Census, which is published by the U.S. Census. We believe their statistics are the most complete because they contact all entities and use sources, such as IRS tax filings, to capture data on self-employed workers who are normally not counted in employment data. The Census reported the number of establishments, total revenues, employment, and payroll in 1997 for King County businesses in the three NAICS codes, which are the subject of this report. The Economic Census also provided revenues and establishment totals for non-employer businesses, which consist mostly of self-employed freelancers and unincorporated partnerships.

The Economic Census is conducted every five years. The last Census for King County was done for the year 1997. ECONorthwest calculated proportions of each sector in King County that occurred in Seattle and projected the Census data to the year 2001 using covered employee payroll, establishment, and employment statistics for the three NAICS codes graciously provided to ECONorthwest for this research by the Washington State Employment Security Department—a State agency that monitors employment trends.

Covered payroll data is a fair proxy for the Census, especially when projecting data out over a short period of four years. The Employment Security Department counts all workers who are covered by unemployment insurance, which are all the employees of businesses in the industries being studied. They provided ECONorthwest with data on the establishment level including their county and city of residency. However, the Employment Security data does not capture uncovered workers, such as freelancers and the self-employed, as well as some of those from other states who work in Seattle on shoots done by out of state production companies.

The Washington State Film Office asks productions shot in Seattle by out of state crews to report their spending in the City. They capture most of the mid to large productions and many, but certainly not all, of the small projects. Commercial and catalog photo shoots often do not report to the Film Office. The reports identified productions shot either entirely or partially in Seattle. ECONorthwest was able to summarize the data collected by the Film Office and, from our experience, make a reasonable determination of the non-reports. We estimate that of the \$21.3 million spent in Seattle by out of state productions in 2001, slightly less than a fourth (\$5.2 million) went unreported.

The U.S. Bureau of Labor Statistics (BLS) regularly gathers employment and wage data for various occupations by surveying about 400,000 establishments. The BLS covers occupations such as film and video editors, photographers, producers, actors, movie camera operators, and set designers on both a national and metropolitan area level. Using the 2001 BLS occupation data, ECONorthwest estimated the amount of in-house commercial photography, film, and video work.

Table 1 is a list of some of the key occupations that are prevalent in the film and video production and postproduction industries, and in commercial photography. It covers the metropolitan statistical area (MSA), which includes King, Island, and Snohomish counties. Data on Seattle alone are not published in part because they would potentially reveal confidential information about major private businesses. We believe that average wages are higher in the City of Seattle. The BLS reports data on paid employees for local business establishments, which does not include the self-employed, certain small companies, or out of state crews working in the area. From the table we see that fairly substantial numbers of workers in these occupations are employed in industries outside of film, video, television, and the photographic services industries.

Table 1: Film, Video & Photography Related Occupations, 2001 Employment in the Seattle, Bellevue & Everett MSA

Seattle, Bellevue & Everett MSA, Occupation	Employees by Occupation	Film, Video, Photography & Other Service Industries	Television, Newspapers & Related Industries	Apparent In-House Employment in Other Industries
Audio visual equipment technicians	570	460	20	90
Film & video camera operators	170	40	110	20
Film & video editors	100	20	70	10
Photographers	520	300	90	130
Producers & directors	590	390	160	40
Set & exhibit designers	80	60		20

Source: BLS 2001 Occupational Employment Statistics, http://www.bls.gov/oes/2001/oes_7600.htm

3.2 Size of the Film, Video, and commercial Photography Industries

ECONorthwest determined that the output of the film, video, and commercial photography industries in Seattle was approximately \$207.2 million in 2001. Table 2 lists some of the key economic statistics. The industries spent over \$63.0 million on payrolls in Seattle and contributed \$22.3 million to the incomes of proprietors, which are mostly freelancers and other self-employed workers in the industry. Proprietors' income is reported here net of business expenses. In total the industries directly supported 1,486 full and part time workers in addition to 779 self-employed persons.

Table 2: Size of Film and Video Production in Seattle, Total of Domestic Industry, Out of State Crews, In-House Production and Freelancers in 2001

Industry Segment	Output	Payroll	Proprietors' Income	Paid Employee Jobs	Self Employed Persons
<i>Seattle-Based:</i>					
Commercial photography	\$53,311,801	15,659,767	8,311,629	426	253
Motion picture & video production	106,615,081	34,745,315	11,289,921	722	461
Postproduction services	28,007,873	11,238,985	606,985	303	16
<i>Out-of-state crews</i>	21,326,384	1,404,502	2,106,753	36	50
Less duplicate output	(2,109,020)				
Total	\$207,152,119	\$63,048,569	\$22,315,288	1,486	779

Note: Purchases of commercial photography, film & video production, and postproduction services in Seattle by out of state crews are deducted to offset double counting.

Many of the persons engaged in commercial photography in Seattle during 2001 (outside of the printed news media) were either freelancers or employees of companies whose main business was not commercial photography. Still, the commercial photography companies had disproportionately larger sales and, therefore, captured 71 percent of the business in the City.

In motion picture and video production, 39 percent of the people working in the City were freelancers. This explains why in Table 2, the amount of proprietors' income for the industry was so high—\$11.3 million. The money self-employed persons earn, net of business expenses, is proprietors' income and not wages.

Out of state crews spent about \$21.3 million in Seattle in 2001. They hired the equivalent of 36 workers and 50 self-employed people in the City. Most worked between one day and two weeks on each production. Thus, gross hiring of Seattle area residents by out of state crews amounted to approximately 2,800 individual job assignments.

On Table 3 we show where out of state production companies spent their money in Seattle in 2001. Much of it was on local labor—\$3.5 million. Lodging is also a major expense item for this industry. We estimate that \$2.6 million was spent on motels and hotels in the City of Seattle by out of state crews in 2001. Other major spending categories include car rentals, food, personal and business services, and construction. About \$426,000 was spent on Federal, State, and City government services for such items as permits and park fees.

Table 3: Spending in Seattle by Out of State Production Companies, 2001

Local Spending by Type	Amount
Labor (including self employed)	\$3,511,255
Transportation	1,198,928
Lodging	2,648,144
Car & truck rentals	1,334,030
Motor fuels and service stations	668,490
Food & beverage places	896,920
Other retail	1,446,428
Construction & repair	669,790
Equipment rentals	1,334,030
Personal services	1,165,433
Business services	3,557,780
Government services	426,528
Other location expenses	2,468,629
Total Local Spending	\$21,326,384

As shown in Table 4, the domestic industry accounted for nearly 75 percent of the total direct output. In-house production contributed about \$8.2 million to the total, while freelancers and out of state crews generated a little more than 10 percent of the total output each in the year 2001.

Table 4: Total Direct Output in Seattle by Industry Component, 2001

Industry Component	Total Output
Domestic industry	\$155,338,386
In-house production	8,210,473
Freelancers	24,385,896
Out-of-state crews	21,326,384
Less duplicate output	(2,109,020)
Total	\$207,152,119

About \$2.1 million of the total output is double counted in two or more sectors. ECONorthwest deducted this to arrive at a net total output of \$207.2 million. Duplication occurs because the output of one sector can contain spending on another sector. For example an out of state commercial crew may pay a local Seattle commercial photographer for some work, which causes the output of both components to rise. Instances of such potential double counting must be deducted in the analysis.

3.3 Average Wages

As a rule, film, video, and commercial photography occupations pay above average wages. Calculating average wages for the industries is problematic because so much labor income is earned by the self-employed whose compensation is not reported in state wage rate data. In addition, many paid employees work irregular hours or work for companies in unrelated industries. Further complicating the analysis is the preponderance of part-time work. Film, video, and commercial photo shoot jobs may last only a few days at a time. As a result, IMPLAN and covered employment data cannot readily be used to calculate the average annual wage for full time employment in film and video production.

To provide some insight as to the wage rates of occupations in the domestic industry, we turned to the BLS occupational employment and wage survey for the Seattle, Bellevue, and Everett MSA. Shown in Table 5, we see that for most occupations the annualized compensation of employees in fields prevalent in the film, video, and commercial photography production areas were above the area average of \$41,620 in 2001.

Table 5: Average Fulltime Annual Wages of Paid Employees in Film, Video, and Commercial Photography Occupations in the Seattle, Bellevue & Everett MSA, 2001

Seattle, Bellevue & Everett MSA, Occupation	Average Annual Fulltime Wage by Occupation
Actors	\$49,100
Audio & video equip. technicians	43,670
Film & video camera operators	40,320
Film & video editors	48,740
Photographers	42,660
Producers & directors	65,490
Set & exhibit designers	40,620
Sound engineering technicians	56,470
All occupations in Washington	\$41,620

Source: BLS 2001 Occupational Employment Statistics website at http://www.bls.gov/oes/2001/oes_7600.htm

4. ECONOMIC AND FISCAL IMPACTS

The analysis in Table 6 shows that film, video, and commercial photography production contributed \$207.2 million in direct output to Seattle's economy. ECONorthwest used IMPLAN to track the impacts, which resulted from that production, and found that over \$471 million in total economic output was attributable to it.

4.1 Economic Impacts

The results of the IMPLAN model are summarized in Table 6. It shows the contribution to economic output from direct, indirect, and induced sources. The wage impacts of these industries are great because they tend to be both labor intensive and well paying. Over \$91 million in indirect and induced wages earned in Seattle in 2001 can be traced back to film and video production. A total of 4,991 jobs were tied to these industries.

Table 6: Economic Impacts Attributable to Seattle Film and Video Production in 2001

Impact Type	Output	Wages	Proprietors' Income	Total Labor Income	Other Income	Jobs
Direct	\$207,152,100	\$63,048,600	\$22,315,300	\$85,363,900	\$2,883,400	2,266
Indirect	140,413,500	48,234,500	5,373,200	53,607,700	19,429,500	1,511
Induced	124,095,700	43,450,700	3,957,000	47,407,700	20,689,500	1,215
Total	\$471,661,300	\$154,733,800	\$31,645,500	\$186,379,300	\$43,002,400	4,991

Film and video production affect Seattle *directly*, through the purchases of goods and services from suppliers in the City, and *indirectly*, as those suppliers are compelled to buy goods and services elsewhere in Seattle so that they can fulfill the orders they get from the industry. Those "intermediate" purchases of goods and services work their way through the economy from one supplier to the next, although their dollar impact lessens quickly after a few steps (because some money is spent out of the city, taxed, or saved). The value of the indirect output totaled \$140 million.

In addition to spending on goods and services, the industries hire people, cause other businesses to hire people, and contract with freelancers and local small business owners. This puts more money in the hands of Seattle residents and businesses, and *induces* further spending in the City. The recipients of personal income tend to spend their earnings in Seattle whereas businesses that are indirect suppliers are more apt to buy products from out of the City so that they may fulfill orders. The output from induced impacts was over \$124 million, which when combined with direct and indirect makes the total economic impact of film, video, and commercial photography in excess of \$471 million in 2001.

Table 7 shows the distribution of impacts across sectors of Seattle's economy. Film and video production is shown separately on the table, although most of that activity occurs in the service sector. Money spent by these industries and those who work in them is widely spread throughout the City's economy. This is a consequence of the high local labor content of film, video, television movie, commercials, and commercial still photography and their relatively low reliance on purchases of goods made out of state. The results clearly demonstrate the importance of these industries on the economic vitality of the Seattle.

Table 7: Total Economic Impacts by Sector Attributable to Film and Video Production in Seattle in 2001

Industry Sector	Output	Wages	Proprietors' Income	Labor Income	Other Income	Jobs
Film & video production	\$207,152,100	\$63,048,600	\$22,315,300	\$85,363,900	\$2,883,400	2,266
<u>Elsewhere in the Economy:</u>						
Natural Resources	\$204,600	\$47,600	\$6,100	\$53,700	\$17,900	2
Construction	15,711,200	5,956,100	1,149,400	7,107,300	388,200	129
Manufacturing	15,893,900	3,107,300	145,300	3,252,000	1,619,900	59
Transportation, Communications & Utilities	25,172,300	6,045,000	935,900	6,981,900	5,746,300	105
Wholesale & Retail Trade	57,463,900	26,095,800	1,002,500	27,092,900	7,515,500	918
Finance, Insurance & Real Estate	38,859,000	6,513,100	832,900	7,346,500	14,248,100	165
Services	99,411,600	40,729,900	5,258,100	45,991,700	8,720,500	1,306
Government	11,792,700	3,190,400	-	3,189,400	1,862,600	43
Total	\$471,661,300	\$154,733,800	\$31,645,500	\$186,379,300	\$43,002,400	4,991

4.2 State and Local Revenue Impact

Film, video, and commercial photography production in Seattle stimulates state and local taxes primarily through higher sales and property values. It also stimulates other revenues, such as fees. The IMPLAN model, using State and local government data accounts for these revenue impacts. As shown in Table 8, the IMPLAN model estimated the fiscal impact to be almost \$12.4 million. That is the amount of money Seattle and the State would have lost if there were no film, video, and commercial photography production in Seattle in 2001.

Table 8: Net Impact of Film, Video, and Commercial Photography Production on State and Local Taxes & Revenues in Seattle in 2001

Type	Amount
B&O, Commercial Property, Other Indirect Business Taxes & Fees	4,177,400
Miscellaneous Direct Corporate Payments to Government	\$4,500
Personal Property Taxes and Sales Taxes	8,058,900
Unemployment and Other Social Insurance Taxes	110,700
Total	\$12,351,500

5. CONCLUSION

While many people associate service industries with low paying jobs, film and video production is a classic example of a high wage service sector. Unlike many other high wage industries, their demands on physical infrastructure and government services are relatively modest. In addition, they spend disproportionately large sums locally.

Thus, as would be expected, this impact analysis reveals that film and video production in Seattle was a substantial contributor to the City's economy. It accounted for 4,991 jobs, \$471.7 million in economic output, \$186.4 million in local labor income, and \$12.3 million in state and local taxes in 2001. Furthermore, the starting point of most of this economic activity either came from out of state or was displaced from out of the City by local firms choosing to spend their money locally. Therefore, if the industry had not been in-place virtually all of the economic impacts would have been a net lost to Seattle.

Overwhelmingly the purview of small businesses and self-employed Seattle residents, and with no single, dominant industry location, it is perhaps understandable that public awareness of film and video production is not great. Nonetheless, it is a critical source of employment for many in Seattle and of services essential for the growth and development of many businesses in the City.