State of New Mexico
LEGISLATIVE FINANCE COMMITTEE

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MEMORANDUM

To: Senator John Arthur Smith, Chair SFC
Representative Luciano "Lucky" Varela, Vice-Chair HAFC

Thru: David Abbey, Director LFC

From: Norton Francis, Chief Economist LFC

Re: **Ernst & Young Film Study - REVISED**

This is a revised memo based on new information provided by the NM Film Office that was erroneously reported regarding a survey of film industry participants in a prior version of this memo and also to clarify some issues that have created controversy.

I have reviewed the Ernst & Young (EY) film study prepared for the NM film office. In general, I believe that EY has overstated the case for the fiscal impact of the film production tax credit. There is no doubt that the film production tax credit and the film loan program have employed thousands of New Mexicans, directly and indirectly, and have helped build a vibrant film industry. The question that is being answered by the EY study is whether the economic activity generates sufficient tax revenue to offset the cost of the film production tax credit. NMSU which conducted a study last summer has also compared the results of both studies and I am including that comparison as attachment 1. The EY study includes local government revenues that are not discussed here. The NMSU study also included local gross receipts tax generated but did not break them out separately from the state revenues.

Return on Investment ($ revenue per $ credit) – State return only

	$ ROI		Share of Total
Direct Production Activity	$	0.48	52%
Capital Expenditure	$	0.12	13%
Tourism	$	0.33	35%
TOTAL ROI	**$**	**0.93**	

Summary. The EY study relies on three elements: direct production activity, capital expenditures, and tourism. The EY study weighs all film-related tax revenue against the film production tax credit alone. This assumes that all film activity is related to the credit and not the other several million dollars the state spends on capital outlay, education and job training. Any additional spending included will offset the revenues reported and lower the return on investment (ROI). NMSU has highlighted various differences in the methodology—time frame and amount of expenditures—that suggest that the strict comparison between EY and NMSU is 25 cents ROI for EY and 14 cents for NMSU. EY made several assumptions that NMSU did not.

Three striking features of the EY report are the reliance on a very high income for film industry workers, the inclusion of capital expenditures, and a survey of tourists in New Mexico. The high wage assumes that NM has wages similar to New York City and stands out as a key difference with other studies. The capital expenditures used for the analysis included the construction of Albuquerque Studios, a one-time event. The key assumption in the tourism study conducted for the Tourism Department relies on an extrapolation of a small subsample of survey respondents.

NMSU reports that the use of an input-output model like Implan captures all sectors of the economy including capital expenditures and tourism. It is not clear if these two sectors were explicitly removed from the direct production activity analysis by EY or if there is a potential for some double counting.

Direct production activity. EY reports that $252.8 million of film activity begets $22.6 million of additional tax revenue. This compares to the tax credit of $49 million and suggests that direct production activity has an ROI of $0.45, still significantly higher than the NMSU study which reported an ROI of $0.14. This analysis is fairly straightforward but uses film industry survey data which I have not seen in other studies.

The key assumptions regarding wages and employment are much higher than the NMSU study leading to the higher ROI. NMSU actually had a higher multiplier on economic output than EY reported. The ratio of income to output for EY is 0.80 while the ratio for NMSU is only 0.20 indicating a fundamental difference in the treatment of labor income. In table 3, every study except the EY study shows the share of income to output is 12 percent to 29 percent. Table 2 also shows that the average income from the EY study is comparable to the average income for film production activities in New York City. Included in the list is a study conducted by UNM Bureau of Business and Economic Research on the digital media industry. BBER has done significant work on cultural and arts industries in New Mexico that augments published data from the Bureau of Labor Statistics with data collected on self-employed individuals. BBER has conducted numerous scientific surveys of stakeholders in the arts and cultural industries including the film industry.

The primary controversy is how to present direct film production income. NMSU and most other studies have relied on data from the U.S. Bureau of Labor Statistics on the Motion Picture and Sound Recording industry. This is a subsector of the Information 2-digit NAICS (North American Industrial Classification System) sector. BLS publishes data on total employment, number of establishments, total wages, average weekly wage and average annual wage. As shown below, the Quarterly Census of Employment and Wages (QCEW) for New Mexico shows that the average annual wage peaked at $41,226 in 2005 and was $31,926 in 2007. Growth in the number of employees and the number of establishments was very strong indicating heightened activity that corresponds to the increases in the film credit.

Table 2: NAICS 51211 Motion picture and video production

	All Employees	Number of Establishments	Total Wages (in thousands)	Average Weekly Wage	Average Annual Pay
2001	286	88	6,185	416	21,633
2002	460	84	12,450	520	27,042
2003	362	81	8,490	451	23,437
2004	506	76	7,738	294	15,292
2005	1,048	100	43,222	793	41,226
2006	1,826	126	60,370	636	33,068
2007	2,288	136	73,054	614	31,926

Source: BLS Quarterly Census of Employment and Wages

The QCEW is derived from employers who are covered by NM unemployment insurance. Nationally, the QCEW captures about 99.7 percent of wage and salary civilian employment – in NM only 91.4 percent of employment is captured by the QCEW.

The QCEW requires employers to report payroll on the 12th of each month and the data includes all compensation including overtime. Health insurance, payroll taxes

> *Total wages*. Covered employers in most States report total compensation paid during the calendar quarter, regardless of when the services were performed. A few State laws, however, specify that wages be reported for, or be based on, the period during which services are performed—rather than for the period during which compensation is paid. Under most State laws or regulations, wages include bonuses, stock options, severance pay, the cash value of meals and lodging, tips and other gratuities, and—in some States—employer contributions to certain deferred compensation plans, such as 401(k) plans.
>
> Covered employer contributions for old-age, survivors, and disability insurance; health insurance; UI; workers′ compensation; and private pension and welfare funds are not reported as wages. Employee contributions for the same purposes, however, as well as money withheld for income taxes, union dues, and so forth are reported, even though they are deducted from the worker′s gross pay.

IMPLAN uses a variety of data sources to capture components left out by the QCEW and the household survey. IMPLAN reports the number of jobs without distinction between full and part time which is why the employment number.

Table 3: IMPLAN Data (Data from 2006)

	Output	Employment	Income
Motion Picture and Video Industries	504,661	3,209	86,037
Average Income	26,811		
Output per worker	157,264		

The EY study relies on a survey conducted for the Economic Development Department's Film Office by two independent professional pollsters who conducted an online survey and a telephone survey of film industry stakeholders. The study reports below-the-line earnings average $49,500 which includes most of the crew and technicians that work on a film. The above the line, which includes directors, producers and actors, are added "bringing the average compensation up to $82,400." The direct income reported by EY is $202.9 million which is 80 percent of the reported output of $252 million. Dividing this income by the direct jobs reported yields an average income of $91,396. As noted above, most other studies do not show similar results and the government reported data and industry standard input-output model data also do not show similar data.

Table 4: Comparison of Film Studies (complete table with references attached)
Compares Direct Income with Direct Output and Direct Employment

	Income/Output	Average Income
NM - EY	80.3%	91,396
New York City	32.7%	91,114
Florida	29.0%	40,905
Seattle	41.2%	37,672
Arizona	20.4%	35,761
NM - NMSU	20.3%	34,879
Louisiana	11.8%	23,118
NM - UNM	22.0%	$ 19,310

Capital Expenditures. EY reports $5.6 million of additional tax revenue from $115 million of capital expenditures, an ROI of $0.19 which is added to the $0.45 above. As the report says, 85 percent of the capital expenditures were for the construction of Albuquerque Studios. Fiscal impact analyses should focus on annual ROI and not a point in time. The capital expenditures for FY08 should properly be considered one-time expenditures and so they would not be counted in FY09 when the credit is expected to be $60 million. However, some level of capital expenditure should be considered as the industry has grown and attracted significant investment.

It should be noted that as the tax year was for 2007, there was an adjustment made for Albuquerque Studios being in a tax increment for development district (Mesa del Sol) but the incremental GRT was not being distributed until 2008.

Tourism. This is the key difference between the two studies. The Tourism Department has conducted a survey to gauge the impact of the film industry, asking visitors to the visitor centers or people who request vacation guides to answer some questions about films and New Mexico. The results were then used to extrapolate the total number of visitors who came because of film and how long they extended their stay. EY used this study as an input and came up with direct economic activity of $166 million and total state tax collections of $15.7 million, 36 percent of the total tax revenue generated. Even though the Tourism Department presented a conservative estimate in the executive summary, the study showed three possible scenarios. EY went with the middle scenario, which was $150 million higher than the conservative scenario and assumes that 25 percent of the people who reported being influenced by films visited *because* of filming in New Mexico.

Table 5: Tourism Impacts

Dollars in millions	Tourism Study	EY
Spending	$132	$285
Employment	1,450	3,828
Earnings	$26	$124
State Taxes	$8	$16
Local Taxes	$2	$10

The film tourism survey reports that films in New Mexico increase tourism by 4.3 percent but assuming that tourists who stop by the visitors center or request a catalog can be applied to all tourism ignores the fact only 40 percent of visitors to New Mexico are classified as "general vacation" or "leisure."[1] The 4.3 percent increase should be applied to 40 percent of the tourism impact rather than the entire amount. This would significantly reduce the impact of film tourism.

Concerns about the Tourism survey.

- There is no information about the percentage error. Typically, polls are in the 3 to 5 percent error range.
- The first question asks if the respondent is aware of any films, TV series or documentaries filmed in New Mexico and question five asks which film the respondent remembers seeing implying that the respondent was aware that these films were filmed in NM.
- Question six is unclear whether the respondents had not visited film sites or would not like to visit film sites. In either case, most of the respondents answered no to this question.
- Most of the respondents answered no to receiving information about visiting film locations, including 80 percent from the visitor centers.

Tax Calculations. EY did not consult with the Taxation and Revenue Department regarding the tax rates to use. Like NMSU, EY used ratios to personal income to calculate various tax rates for the indirect inputs. They included property tax and other taxes that NMSU did not consider

[1] Dept of Tourism presentation:
www.newmexico.org/department/research/docs/Gov_conf_2006_RESEARCH_PRESENTATION.pdf

which would lead to a higher tax impact. However, NMSU included local government taxes in the gross receipts tax effective rate, which implies an overestimation of the gross receipts tax. Table 3 shows the discrepancies. Both of the studies used data from the US Census Survey of Government Finances while the column labeled LFC uses actual general fund data. It is likely that EY used data for the corporate income tax rate that included the significant oil and gas activity that drove up corporate income tax collections.

Table 6: Tax Rate Comparisons

	EY	NMSU	LFC
Property tax	0.09%		
Gross receipts tax	3.00%	4.14%	2.97%
Gross receipts tax for direct output/income	*5.00%*		*3.775%*
Individual income tax	2.10%	1.98%	2.14%
Corporate income tax	0.60%	0.43%	0.47%
Other taxes	1.41%		1.14%

EY chose to calculate some taxes directly without using the averages shown in the tables above. It is unclear how they adjusted the data to reflect taxable spending for the gross receipts tax but the text indicated that they used a 5 percent state rate which omits the 1.225 percent municipal "pass-back." This omission, however, will increase the local taxes by the same amount.

Only EY included "other taxes" in the analysis. This adds approximately 9 cents to the film production ROI. The detail of the category is unknown

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DA:NF/svb

Comparisons of the Arrowhead Center Film Impact Study (AHC) and the Ernst and Young Film Impact Study (EY)

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The differences in the two studies are significant. The AHC study found a return of 14.4 cents for each dollar of state expenditures on the film production tax rebate. The EY study found a return of $1.50 for each $1.00 of state tax credits. This report summarizes key differences between the reports.

- The reports are based on different time frames. The AHC study examined FY08 while The EY study used calendar year 2007. Because of the different time periods, the AHC study reported $38.195 million in credits and $152.78 million in qualified spending, while the EY study reported $47.1 million in credits and $197.7 million in qualified spending. This difference is not an error in either study. However, the differing time frames alone imply a 29 percent difference in estimated economic impacts.
- The EY study included some non-qualified spending of $55.2 million which was not included in the AHC study. The inclusion of non-qualified spending increased film industry expenditures in the EY study by 27.9 percent. This assumption in the EY study attributes all film expenditures in the state to the incentive program. Combined with the effects of using a different time frame, total expenditures by the film industry in the EY study were $252.8 million or $100 million higher than the $152.8 million reported in the AHC study. That is, the EY study reported direct total expenditures that were 65 percent higher than in the AHC study.
- Both studies report a substantial increase in employment in the film production industry between 2003 and 2007. The increase in film industry employment was reported to be 1,926 in the EY study and 1,922 in the AHC study. Both studies based relied on data from the U.S. Bureau of Labor Statistics (BLS). The small difference (4 jobs) occurs because BLS revised the data slightly.
- While the two studies are consistent in reporting the increase in film industry employment, The EY study attributes nearly all 2007 employment in the film industry (2,220 of the 2,288 total) to the incentive program in the same year. The AHC study estimated 890 direct film industry jobs to the incentive program for FY08. The AHC direct employment figure (890 jobs) was based on using IMPLAN to estimate the direct employment effects of $152.8 million in film industry direct expenditures. If the AHC study were adjusted for differences in the time frame and included the non-qualifying expenditures described above, the estimated direct employment would be 1,486 jobs.

- The two studies contain large differences in direct income per worker. The AHC study (Table 8, p. 12) reports annual income of $34,902 per worker. This estimate was based on IMPLAN impact results using $152.8 million in total direct expenditures and 890 direct jobs. The AHC income per job is somewhat larger than the Bureau of Labor Statistics figure for average annual pay ($30,881) reported in Table 1, page 5 of the AHC study. The comparable figure for income per job in the EY study is $91,396 (EY, Table 2, p. 7). In the EY study, income is 80.3 percent of total film expenditures ($202.9. million in direct income and $252.8 million in total expenditures). The EY study (p. 6) reports that labor compensation was assumed to be 72 percent of the cost of production, but it is not obvious that 'cost of production' and total expenditures mean the same thing. In contrast, labor income in the AHC study is 20.3 percent of total expenditures.
- The EY study includes $165.9 million dollars in direct spending from film tourism. This results in a total impact of $285.2 million including indirect and induced tourism expenditures. AHC did not include film tourism expenditures nor did it have access to a separate study (December 2008) examining the impact of film tourism in New Mexico. (Reference: "The Impact of Film Tourism on the state of New Mexico" prepared for New Mexico Tourism Department by Southwest Planning and Marketing and CRC Associates.) Film tourism expenditures in the EY study account for 32.0 percent of the total impact on output and approximately 36.5 percent of the EY estimated state and local tax revenue attributed to film production. Because the input-output model that is the basis of the IMPLAN software includes all sectors of the economy, some of the effects of the film tourism expenditures are included in the AHC impact estimates.
- The EY study included the effects of capital expenditures associated with the film study while the AHC study did not. In the EY study, the impacts of capital expenditures account for 18.0 percent of the total tax revenue impact. The EY capital expenditures assumption attributes all film industry capital expenditures in the state in 2007 to the incentive program for that year. Because the input-output model that is the basis of the IMPLAN software includes all sectors of the economy, some of the effects of the capital expenditures are included in the AHC impact estimates.
- Both studies used IMPLAN software to estimate the impacts of film industry expenditures on output, employment and income. The total multipliers for output, income, and employment in the AHC study were larger than the multipliers used in the EY study. Computed from Table 8, p12 of AHC and Table 2, p. 7 of the EY study, the implied total multipliers are:
    - Output: AHC 2.257 EY 1.655
    - Income: AHC 2.603 EY 1.419
    - Employment: AHC 2.733 EY 1.725

  Many factors can account for such differences and no attempt is made here to reconcile those differences.

- The calculations of fiscal impacts differ substantially in the two reports. The AHC study fiscal impacts were computed using recent percentages of taxes paid per dollar of income. This method has been used in several impact studies and by many analysts. In the AHC study, all assumptions regarding fiscal impacts are clearly stated and the fiscal impact estimates can be easily replicated. The fiscal impact assumptions stated in the EY report are insufficient to reproduce the stated results. It is simply not clear what EY did to obtain the fiscal impacts.
- AHC did not include property taxes in its calculation of fiscal impacts.
- EY did not consider the cost of lending by the SIC and the JTIP spending in their analysis.
- The following table summarizes differences in the fiscal impact estimates in the two reports.

Tax collections per dollar of Expenditure		Category	Total Tax Impact ($millions)		Line Number
EY	AHC		EY	AHC	
$1.50			$70.50	$5.52	1
		Film Tourism	25.7	0	2
$0.95		Less Film Tourism	$44.80	$5.52	3
		Capital Expenditures	$12.70	0	4
$0.68		Less Cap Ex	$32.10	$5.52	5
		Property Taxes	$4.50	0	6
$0.59		less Prop Taxes	$27.60	$5.52	7
		Dif in total expenditures due to time frame	$8.03	$0	8
$0.42		less time difference	$19.57	$5.52	9
		Difference due to inclusion in EY of non-qualifying expenditures	7.72	$0	10
$0.25	$0.14	Tax Impact	$11.85	$5.52	11

Table Notes by Line Number:

(1) The total tax impacts are from EY (Table 10, p. 15) and AHC Table 13, p. 16). Tax collections per dollar of expenditure computed as total tax impact divided by tax expenditures. Tax expenditures are from EY, Table 10, p. 15 ($47.1 million) and AHC Table 2, p. 7 ($38.195).

(2) Line 2 total Tax impact of film tourism is from EY, Table 9, p. 14. AHC did not report fiscal impacts of film tourism.
(3) Line 3 total tax impacts are the totals from Line 1 minus the totals from Line 2. Tax collections per dollar of expenditure calculated as in Line 1.
(4) Total Tax Impact for Capital Expenditure from EY Table 8, p. 13. AHC did not report on capital expenditures.
(5) Total Tax Impacts are the totals from line 3 minus the tax impacts of capital expenditures on line 4. Tax collections per dollar of expenditure calculated as in line 1.
(6) Line 6 Property Taxes are from EY, Table 7, p. 12. Other property taxes associated with film tourism and capital expenditures have already been excluded. AHC did not estimate property taxes.
(7) Line 7 Total tax impacts are calculated as the totals in line 5 minus property taxes listed in line 6. Tax collections per dollar of expenditure calculated as in line 1.
(8) The $8.03 million reported here as the difference in tax collections due to the time frame was computed as 29 percent of the estimated fiscal impact reported in EY, Table 7, p. 12 after deducting $4.5 million in property taxes already excluded. For further explanation see the first bulleted item in this report.
(9) Line 9 total tax impacts are the line 7 totals less the 'time difference' amount on line 8. Tax collections per dollar of expenditure calculated as in line 1.
(10) Line 10 Total Tax column contains an estimate of the effects of excluding non-qualifying expenditures discussed in bulleted item 2 above. That is, 27.9 percent of the EY Total Tax Impact in Table 7, p. 12 after excluding property taxes.
(11) The total tax impact is the difference between the total reported on line 9 and the non-qualifying tax estimate on line 10. Tax collections per dollar of expenditure calculated as in line 1.