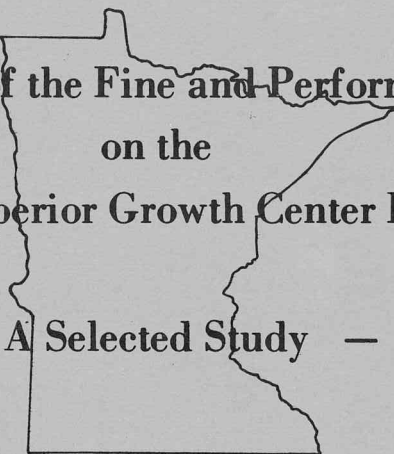


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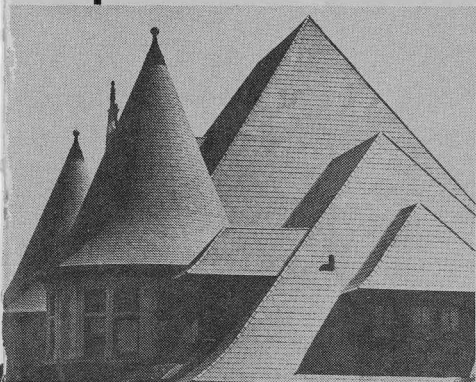
The Impact of the Fine and Performing Arts on the Duluth-Superior Growth Center Region

— A Selected Study —



by

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INTRODUCTION

This report is an attempt to estimate the interindustry, employment and income impact of selected fine and performing arts organizations within the Duluth-Superior Growth Center Region.¹ Income, employment and expenditures are all based upon figures received for the fiscal year, 1977. The multipliers used in the estimation procedure were obtained from an input/output table constructed for the Growth Center Region on the basis of a two-region model developed by Wilbur R. Maki.²

THE FINE AND PERFORMING ARTS

The arts in America have experienced an unprecedented growth and development in the last decade. Part of this growth is due to an increasing cultural awareness by the public of a vital community resource. A recent Louis Harris Poll reported that over ninety percent of the nation's adults believe that the arts are important to the quality of life in their respective home communities.³ A later article published by the U.S. News and World Report stated that for the first time in our history a majority of Americans are participating in some type of cultural pursuit.⁴

Much of the artistic activity in this country is associated with cultural and educational institutions. Both the public and private sectors are responsible for the support and maintenance of a variety of the arts and arts-related activities. The most common types of organizations include the performing arts groups of music, dance and theatre; the fine arts and exhibition groups of art galleries, museums and art historical societies, plus a multitude of auxilliary enterprises such as art guilds, music and theatre clubs and public libraries. Perhaps the largest single institution in support of the arts is education, and this encompasses private and public schools from kindergarten through college.

ECONOMIC IMPACT OF THE ARTS

It is very difficult and sometimes imprecise to measure the cultural effects that the arts bring to a community. The pleasure, pride and enrichment that is exhibited by the presence of artistic organizations can be expressed only in qualitative terms, the judgement of critics and occasional public opinion surveys.

A more tangible and quantified approach to an assessment of the arts' presence in a community is through an economic impact study. This type of study and methodology attempts to measure how the arts, as an industry, do interact with the economy of a community and region.

Similar to schools and hospitals, the fine and performing arts industry is relatively labor intensive and limited in one way or another in the mass distribution of its products. The majority of expenditures in the arts is related to wages and salaries. Thus, employee expenditures also impact significantly upon the economy.

The fine and performing arts, therefore, like any other industry, have a major effect upon a community. The arts organizations employ workers, they buy supplies, construct and maintain buildings, print and publish, advertise and promote and also require outside professional services such as attorneys, accountants, architects, insurance firms and realty brokers. In addition, these organizations have an all too often hidden impact on real estate values, tax values and insurance premiums.⁵

Cultural organizations also attract tourists and visitors to the community. While in the community, these people buy services and goods from restaurants, motels, hotels, transportation enterprises and a variety of other businesses. Directly or indirectly, this economic impact affects everyone in the community. A study in 1973 by the National Research Center for the Arts, Inc. concluded that visitors from out of town attending an arts event will spend more than three times the cost of their ticket on such things as restaurants and parking.⁶

ORGANIZATIONS SELECTED FOR THE STUDY

Participating organizations for this study were selected from the cities of Duluth, Minnesota and Superior, Wisconsin. Those selected are all non-profit and tax exempt groups from both the private and public sectors. All organizations are in some way associated with a mission to provide education and service through the fine and performing arts. It is believed that with the groups represented, the major part of the economic activity in the arts has been accounted for.

Organizations selected for this study are:

Arrowhead Regional Development Commission - Arts Program
Chisholm Museum
College of St. Scholastica - Programs in Art, Music and Drama
Duluth Art Institute
Duluth Ballet
Duluth Playhouse
Duluth Public Library - Arts Program
Duluth Public Schools - Arts Program
Duluth-Superior Symphony Association
Matinee Musicale

St. Louis County Heritage and Arts Center
St. Louis County Historical Society
Superior Public Library - Arts Program
Superior Public Schools - Arts Program
University of Minnesota, Duluth-Continuing Education
and Extension, Arts
University of Minnesota, Duluth-School of Fine Arts
University of Wisconsin, Superior-College of Fine and Applied Arts
University of Wisconsin, Superior-Continuing Education, Arts
Wisconsin Women in the Arts, Superior
Womens' Institute

THE MULTIPLIER PROCESS

The impact of any economic entity on a community in which it resides can be measured in a variety of ways and comes from a variety of sources. The most obvious way in which to measure such an impact is to measure the dollars that are spent directly in the community by that economic entity. When discussing a business firm, for example, the direct dollar impact can be measured: (1) by the number of intermediate or semi-finished goods that this firm buys from other business units in the region, (2) by the number of employees that are attached to this business firm, or (3) by the income that this firm pays to its employees which can, in turn, be spent on other local goods and services.

One should be careful in interpreting the extent of this direct impact, however. A dollar that is spent locally may not be entirely for local goods or services. If an employee of a business firm spends a dollar of his/her income at a local retail store, only that portion of the dollar that goes to local production can be counted as a local impact. If the goods that were purchased had been produced outside of the locality, that portion of the spent dollar would need to be deducted to arrive at the true size of the local effect.

The impact of a local economic unit does not end with the direct effect. There is an indirect or so-called multiplier effect that stems from local expenditures and from the structure of any functioning economy. Any time that a business firm purchases intermediate or semi-finished products locally, the other area business establishments find their sales increasing as a result. In order to service these increased sales, the second round business units might also purchase local intermediate and semi-finished products, leading to third round impacts, and so on until the process has had time to phase itself out. Each "round" of expenditure by the various business units (as they purchase from and sell to one another so that production can take place) could be treated as a series of direct impacts of the type described in the first paragraph. If all of these direct impacts were added together, however, it is clear that the total would be much larger than that associated with the first firm's purchases. The new total could be termed as being some multiple of the

initial impact estimate. Thus, the concept of the multiplier process. This process of using a multiplier can be used to estimate other areas of impacts, such as direct and indirect income and employment.

THE MULTIPLIER PROCESS AND THE ARTS INDUSTRY

Although agencies such as universities, libraries and arts organizations are generally not thought of as business units, they exert impacts on the local economy in a way that is not unlike the process described above. They hire local labor and pay the income that these families require for their consumption needs. They purchase local semi-finished or intermediate products, such as legal or business services, that are required to carry on the business aspects of their operations and they sell their products to a multitude of consumers. The aforementioned might include statewide subscribers or direct purchasers of offered services. These agencies and operations have an economic, as well as an artistic impact on the community which is multiplied in terms of sales, jobs and income in exactly the same way that was described in the preceding section.

All that is needed to estimate the size of these impacts is a record of the local purchases made by the art related agencies and the economic structure of the community through which the rounds of impacts must pass. Fortunately, there is a well developed and well known economic tool that can highlight the structure of a regional economy and the resulting sizes of multiplier values. This tool has been discussed at length in several publications and will not be further reviewed here. Specific references are found in the Endnotes of this monograph.⁷ The research team conducted personal interviews with the agencies to determine the extent of their revenue and expenditures.

What follows is a summary of the expenditures of direct purchases and the result of rounds of secondary impacts that are created in the Duluth-Superior Growth Center Region. The discussion will be based on: (1) the semi-finished and intermediate goods produced because these agencies are located in the region, (2) the direct and indirect income effect that results from their activities, and (3) the direct and indirect employment effect from their operations. Included in these estimates will be the effects that stem from employee consumption levels in addition to the effects of direct purchases made by these agencies.

INTERINDUSTRY IMPACTS

The first set of impacts to be reviewed stems from the purchases of goods and outputs by the various arts organizations as they conduct the business portion of their operations. These are termed as "interindustry" types of impacts. As a reminder, any purchase by an artistic related agency will require that the supplying firm, in turn, purchase

still more from other area industries in order to produce that first round output. Thus, the second, third and subsequent rounds result in a multiplied "interindustry" output effect.

The arts organizations, for the purpose of this study, are divided into two categories. Those agencies whose primary mission is related to teaching and instruction will be called the arts/education sector. All of the other fine and performing arts groups will be referred to as arts/non-education. Table I shows the revenues collected, the salaries paid and the full-time equivalent employment for those units in the arts/education sector. Table II presents the same information for the arts/non-education organizations in the study.

Table I

Arts/Education Organizations

Revenue	Salaries and Fringe Benefits	FTE Employment
\$4,120,446	\$3,669,805	171

Table II

Arts/Non-Education Organizations

Revenue	Salaries and Fringe Benefits	FTE Employment
\$738,839	\$401,581	46

The arts/education organizations had revenues associated with their artistic endeavors amounting to \$4,120,446, while the arts/non-education sector had revenues of \$738,839. It should be pointed out that not all private activity in the non-education area is covered by this analysis. Activities not covered include the smaller, one-person type of operation that sells its products to the public, and the self-employed operation that charges for its services.

Table III presents the first of the impact estimates. These are interindustry estimates of output produced in the Growth Center Region due to the business operations of the arts/education sector and the purchases of their employees out of the incomes that they earn. The first column presents the industry in the region that is impacted, the second column represents the direct-local output that is generated from these business operations (by impacted sector), and the third column presents the multiplied impact estimate that results from subsequent rounds of expenditure.

Table III

Interindustry Impact of the Arts/Education Sector
Including those derived from
Employee Expenditures, 1977

Industry	Direct Impact	Direct and Indirect Impact
Construction	\$ 47,462	\$ 58,261
Food and Kindered Products	287,486	313,730
Lumber and Furniture	11,009	15,560
Pulp and Paper	-0-	2,884
Printing and Publishing	44,063	50,021
Chemicals, etc.	3,940	4,979
Petrol Refining	19,115	25,370
Stone, Clay, Glass	367	1,265
Fabricated Metal	1,101	2,439
Primary Metal	-0-	412
Machinery	824	3,296
Electrical	3,708	5,357
Other Manufacturing	12,149	13,714
Railroad	-0-	2,884
Trucking	8,801	10,819
Other Transportation	129,210	147,645
Communication	12,773	19,366
Electrical Utilities	200,215	212,665
Gas Utilities	20,706	22,060
Other Utilities	11,769	12,731
Wholesale	227,798	253,221
Retail	357,657	408,150
FIRE*	407,052	506,116
Hotels, Personal and Repair Service	92,968	114,437
Business Services	35,442	42,798
Medical and Education	263,066	4,424,175
Other Services	5,266	6,263
Federal Government	41,713	46,386
State-Local Government	24,452	30,666
	<u>\$2,270,112</u>	<u>\$6,757,670</u>

*Finance, Insurance and Real Estate

Attention should be drawn to the second, or "Direct Impact" column in Table III. As was mentioned earlier, only local impact estimates are relevant to this analysis. If an individual employee of the arts/education sector were to buy an automobile from a local dealer, for example, only that portion of the sale that goes to the local dealer is counted. If the dealer sent payment to a Detroit auto manufacturer for the car, this would be deducted from the estimate due to the fact that

the impact is realized in Detroit and not in Duluth-Superior. This phenomenon is often overlooked in local impact studies and the result is that estimates are often over-stated from what is actually happening.

The total direct impact from the arts/education sector and its employees is estimated to be \$2,270,112. Approximately \$47,000 of that impact were distributed to the local Construction industry; approximately \$287,000 to the Food and Kindred products industry, and so on down the list of impacted local firm groupings.

The third column of Table III presents the estimated direct and indirect impacts from these firm and employee expenditures in the arts/education sector. The total direct and indirect impact is estimated to be about \$6,757,670. This is \$4,500,000 more than the direct impact. The interpretation is that the spin-off effects of second, third and subsequent rounds of expenditures by indirect firms and their employees lead to an output level in the Region that is over two times larger than the direct purchases made by the arts/education sector.

Table IV presents the same kind of information for the arts/non-education sector. The first column of this table presents the industries that are impacted in the same fashion as was true in Table III. The second column shows the direct effects from these expenditures after external impacts have been netted out, and the final column presents the multiplied impact after all rounds of expenditure have had time to be realized.

As can be seen from this table, the arts/non-education sector creates a local impact of more than \$311,000 on the other industries in the Duluth-Superior Growth Center Region. Some of the larger local industries that share in this output impact include: Food and Kindred Products with over \$57,000 of output; Other Transportation \$54,599; Retail Trade \$52,562; and Finance, Insurance and Real Estate with over \$43,000 of output.

The column of direct and indirect impacts demonstrates much the same pattern as did the similar column for arts/education. That is, the \$1,098,011 total impact shown in Table IV is almost two and one-half times the noted direct impact. This is due to the fact that the arts themselves, and the industries that they do business with relate significantly with the rest of the local economy. Some of the leading industries that are affected by the outputs and local presence of the arts include: Other Services, Food and Kindred Products, Other Transportation, Retail Trade and Finance, Insurance and Real Estate.

Table IV

**Interindustry Impact of the Arts/Non-Education Sector
Including those derived from
Employee Expenditures, 1977**

Industry	Direct Impact	Direct and Indirect Impact
Construction	\$ 2,061	\$ 3,670
Food and Kindred Products	57,459	61,448
Lumber and Furniture	1,204	1,623
Printing and Publishing	5,319	5,934
Chemicals, etc.	160	256
Petrol Refining	1,768	2,589
Stone, Clay, Glass	113	269
Fabricated Metal	1,154	1,313
Machinery	5,836	6,206
Electrical	3,540	3,989
Other Manufacturing	1,735	2,038
Railroad	-0-	147
Trucking	1,045	1,380
Other Transportation	54,599	59,030
Communication Utilities	221	886
Electrical Utilities	6,797	8,834
Gas Utilities	715	949
Other Utilities	160	322
Wholesale	25,194	28,753
Retail	52,562	58,133
FIRE*	43,665	55,115
Hotels, Personal and Repair Services	19,601	22,267
Business Services	1,321	2,217
Medical and Education	18,642	22,981
Other Services	671	739,601
Federal Government	576	1,892
State-Local Government	4,894	5,357
Pulp and Paper	-0-	591
Primary Metal	-0-	221
	<u>\$311,018</u>	<u>\$1,098,011</u>

*Finance, Insurance and Real Estate

INCOME IMPACTS

Another way to assess impacts is from the standpoint of income. Income is defined as all of the wages and salaries, income from property, income from profits, and income from interest that is earned by local household units. In much the same fashion as was described for the interindustry purchases and sales, income is generated directly from the wages and salaries that are paid to the employees for their services to the arts themselves and indirectly from the incomes that are paid out to employees of firms that sell goods and services to the arts.

The tools that were used for this analysis were not sophisticated

enough to allow for the estimation of impacts on income that results from second round employee expenditures in the Growth Center Region. Therefore, the impacts that are reported are undoubtedly understated. In order to partially correct for this deficiency, a separate estimate was made for the income impact of expenditures of those directly hired by the arts organizations on the assumption that these employee expenditure patterns are similar to those of the average Duluth-Superior household. This implies that the arts employees spend roughly the same percentage of their income on food, clothing, fuel, and other goods and services normally purchased by the average household.

Tables V and VI summarize the separate impacts of the arts/education and the arts/non-education sectors. The total for the two is in excess of \$5,000,000 in local income. The total effect for the arts/education group is estimated at \$4,370,371 and the arts/non-education sector at \$1,006,482. It might be pointed out that a number of workers in the arts/non-education group are volunteers. Consequently, the multiplier relating to new income generated in the community from existing income is estimated to be greater than the education multiplier value.⁸

Table V
Income Impact of the Arts/Education Sector, 1977

Total Income of the Arts/Education Sector (Direct Effect)	Income Multiplier	Total Income Impact of the Arts/Education Sector (Direct and Indirect Effect)
\$3,669,805	1.1909	\$4,370,371

Table VI
Income Impact of the Arts/Non-Education Sector, 1977

Total Income of the Arts/Non- Education Sector (Direct Effect)	Income Multiplier	Total Income Impact of the Arts/Non-Education Sector (Direct and Indirect Effect)
\$401,581	2.5063	\$1,006,482

Table VII presents information on the income effects of arts sector employees who spend their earnings in the local community. This table is broken down to highlight the effects on specific area industries, similar to the interindustry estimates presented earlier.

The largest direct effects are realized by the Finance, Insurance and Real Estate Industry with over \$270,000 of generated income. Following closely is the Retail Trade Industry with \$226,975 in generated income. The same two industries also lead in terms of the direct and indirect income that is generated. The total income from the consumption activities of arts employees is \$1,014,851. When added to the income that is realized from the direct purchases of the arts (Tables V and VI) the total income of \$6,391,704 is realized because the arts sector conducts business in the Duluth-Superior region.

TABLE VII
Income Impact of the Employee Expenditures
from both the Arts/Education and
Arts/Non-Education Sectors, 1977

Industry	Direct Income Impact	Income Multiplier	Direct and Indirect Income Impact
Construction	\$ 3,509	1.1949	\$ 4,193
Food and Kindred	54,512	1.1028	60,116
Lumber and Furniture	3,212	1.2952	4,161
Printing and Publishing	17,016	1.0642	18,109
Chemicals, etc.	407	1.2680	517
Petrol Refining	2,549	1.5436	3,935
Stone, Clay, Glass	131	1.2357	161
Fabricated Metal	386	1.1328	437
Other Manufacturing	2,315	1.1326	2,622
Trucking	1,810	1.1172	2,023
Other Transportation	34,722	1.1896	41,305
Electrical Utilities	37,099	1.0335	38,342
Gas Utilities	2,887	1.0276	2,967
Other Utilities	437	1.1047	522
Wholesale	59,248	1.1002	65,185
Retail	226,975	1.0866	246,632
FIRE*	270,861	1.3450	364,308
Hotels, Personal and Repair Services	30,800	1.3214	40,699
Business Services	1,405	1.3616	1,913
Medical Education	93,837	1.1909	111,751
Other Services	507	2.5081	1,270
Federal Government	1,914	1.0706	2,048
State-Local Government	1,198	1.3649	1,635
			<u>1,014,851</u>

EMPLOYMENT IMPACTS

The impact of the arts on the Region can also be discussed from the aspect of employment. Once again, there are two kinds of impacts. First is the direct effect which stems from the expenditures of the arts sector and its employees. The second type is the direct and indirect effect that comes from the rounds of employment in other industries due to the application of the multiplier process.

Tables VIII and IX present the output for FY 1977, the output as corrected to 1970 prices (a step that is necessary due to the fact that a 1970 table of multipliers was used for the analysis), the employment multiplier, and the direct and indirect employment impact of the arts/education and the arts/non-education sectors respectively. The combination of both sectors shows a total direct and indirect effect of 335 employees. By contrast, both sectors directly employ 217 people. It should also be remembered that this does not include the voluntary employees which are common to the non-education category.

The estimates of Tables VIII and IX do not include the effects that stem from employee expenditures in the community. Using the assumption that their expenditure patterns follow the average for other households in the region, the estimated impact from arts employee expenditures is seen in Table X to be around eighty-three employees. Adding this total to the 335 employees already presented, gives a total arts impact equivalent of 418 employees. This, then, is the total estimated effect from the business operations of the arts sector on the employment base of the Duluth-Superior Growth Center Region.

Table VIII

Employment Impact of the Arts/Education Sector, 1977

FY 1977 Output	1970 Dollar Value Output	Employment Multiplier	Direct and Indirect Employment Effect
\$4,120,446	\$2,583,520	.000103	266

Since the arts/education sector directly employs 171 individuals, this would indicate that .555 people are employed outside of the arts/education sector for every one employed within that sector. This represents an interindustry employment multiplier of 1.555.

Table IX

Employment Impact of the Arts/Non-Education Sector, 1977

FY 1977 Output	1970 Dollar Value Output	Employment Multiplier	Direct and Indirect Employment Effect
\$738,839	\$463,252	.000149	69

Since the arts/non-education sector directly employs 46 individuals, this would indicate that .50 people are employed outside of the arts/non-education sector for every one employed within that sector. This represents an interindustry employment multiplier of 1.50.

Table X

**Employment Impact of Employee Expenditures
of the Arts/Education and Arts/Non-Education Sectors, 1977**

Industry	1977 Value Expenditure	1970 Value Expenditure	Employment Multiplier	Employment Impact
Construction	\$ 17,913	\$ 11,321	.0000401	0.45
Food and Kindred	217,004	136,061	.0000298	4.05
Lumber and Furniture	12,213	7,658	.0000458	0.35
Printing and Publishing	37,456	23,485	.0000200	0.47
Chemicals, etc.	1,628	1,020	.0000171	0.02
Petrol Refining	13,435	8,424	.0000243	0.20
Stone, Clay, Glass	407	255	.0000421	0.01
Fabricated Metal	1,221	765	.0000247	0.02
Other Manufacturing	9,364	5,872	.0000942	0.55
Trucking	6,107	3,829	.0000504	0.19
Other Transportation	135,577	85,007	.0000402	3.42
Electrical Utilities	56,184	35,227	.0000304	1.08
Gas Utilities	6,514	4,085	.0000295	0.12
Other Utilities	1,628	1,020	.0000529	0.05
Wholesale	93,642	58,714	.0001066	6.26
Retail	312,682	196,051	.0001946	38.15
FIRE*	439,709	275,698	.0000359	9.90
Hotels, Personal and Repair Services	68,399	42,886	.0001266	5.44
Business Services	3,664	2,297	.0000662	0.15
Medical Education	180,769	113,342	.0001031	11.68
Other Services	814	510	.0001490	0.07
Federal Government	2,850	1,787	.0002324	0.41
State-Local Government	2,442	1,531	.0001248	0.19
				<hr/> 83.23 <hr/>

*Finance, Insurance and Real Estate

AUDIENCE IMPACT

The twenty organizations participating in this study estimated that over 778,000 people attended or participated in their activities and programs during the year. Of this amount, 322,000 or forty-one percent came from outside the Duluth-Superior area. It must be taken into account that these figures represent attendance figures, with many of the same people being counted as repeats.

The performing arts groups, for example, would expect a large number of returning people at their events during the year. The museums, libraries and other public exhibition sites would likewise count many duplications among their patrons and audiences. Nevertheless, the people served by these fine and performing arts groups is significant.

CONCLUSIONS

Several types of impacts were discussed in this study. The three basic categories used for the estimates were the interindustry output, the income impacts and the employment impacts. These direct economic impacts create a ripple effect in the community because of secondary effects which they generate. The overall direct and indirect impacts were estimated by using a multiplier process. Summary Table I presents the totals for these impacts in terms of the direct and indirect effects of each. Summary Table II shows the size of audience impact.

If all of the economic activity connected with these selected arts groups were to leave the Duluth-Superior Growth Center Region, a discernable affect and considerable impact on jobs, revenues and business volume would be noticed.

Summary Table I

**Estimated Direct and Indirect Output, Income and
Employment Impacts from Selected
Fine and Performing Arts Business Operations in
the Duluth-Superior Growth Center Region, 1977**

Type of Impact	Size of Impact
Output	\$7,855,691
Income	\$6,391,704
Employment	418

Summary Table II

**Estimated Number of People Attending
or Participating in those Selected
Fine and Performing Arts Organizations**

Audience Impact	Number of People
Duluth-Superior Area	456,627
Outside Area	322,053
TOTAL	778,680

The arts, as represented by only those groups selected for this study, represent a sizeable industry in the Duluth-Superior area. Likewise, the arts as a cultural entity attract large numbers of individuals from both within and outside the area.

RECOMMENDATIONS FOR FURTHER STUDY

It is difficult to identify all areas of the fine and performing arts in an area the size of the Duluth-Superior Growth Center Region. The total impact of the arts industry and business operations upon the area economy is likewise difficult to assess with complete accuracy. Therefore, the following areas are suggested for further study:

1. A comprehensive study should be undertaken which would include all areas of the arts, including proprietary and business enterprises.
2. More research is needed to estimate the additional expenditures which are made by people attracted to the Region for arts related events.
3. Information should be obtained to assess the amount of dollars that are provided for the support of the arts from state and federal sources and private foundations.
4. Finally, additional study is needed to ascertain how the cultural resources of the area attract new business and other types of consumers. Competition among cities for new industry is intense and often decisions to locate are based upon the availability and vitality of cultural activities.

ENDNOTES

¹ The Duluth-Superior Growth Center Region consists of the Cities of Duluth, Cloquet and Two Harbors, Minnesota and Superior, Wisconsin.

² Wilbur R. Maki, Professor of Agriculture and Applied Economics, University of Minnesota, St. Paul.

³ Louis Harris Poll, cited in *A Comparative Study of the Vital Statistics of Some of Philadelphia's Major Cultural Organizations*, Greater Philadelphia Cultural Alliance, October, 1977, p. 4.

⁴ U.S. News and World Report, August 8, 1977. "The Culture Boom," pp. 50-53.

⁵ Other studies of the economic impact of the arts include: *An Assessment of the Impact of Selected Large Performing Companies Upon the Canadian Economy*, A study conducted by Urwick, Currie and Partners, Ltd. Management Consultants - Canadian Council Information Services, Ottawa, Ontario, Canada, September, 1974; *Economic Impacts of Arts and Cultural Institutions: A Model for Assessment and a Case Study in Baltimore, M.D.* A report by David Cwi and Katherine Lyall, Research Division, National Endowment for the Arts, October, 1977; and *Perspectives on the Economic Development Potential of Cultural Resources*,

prepared by Louise W. Wiener for the White House Conference on Balanced National Growth and Economic Development, 1978.

⁶ Study by National Research Center of the Arts, Inc., by Diana Loercher, "The Arts for Arts' Sake? There's Money in Them, Too", as quoted in the **Christian Science Monitor**, November 2, 1978, p. B8.

⁷ For a further discussion of the measurement of economic impacts see: **The Interindustry Impact of Reserve Mining Company on the Arrowhead Region of Northeast Minnesota plus Douglas County, Wisconsin**, Wayne A. Jesswein and Richard W. Lichty, Arrowhead Regional Development Commission, 1974; and **Urban and Regional Economics: Structure and Change**, M. Jarvin Emerson and Charles Lamphear, Allyn and Bacon, Inc., Boston, 1975, Chapters 2 and 3.

⁸ The income multiplier is actually a ratio of total direct and indirect income generated by a business activity, divided by the income that is paid to the employees and owners of the business unit directly, or, direct and indirect income divided by direct income. The multiplier is larger for the arts/non-education sector due to the fact that many of the non-education employees are "volunteers." This would have the effect of lowering the denominator of the multiplier ratio and therefore its over-all value.

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