INSTITUTE FOR PUBLIC POLICY AND BUSINESS RESEARCH
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Local Government Fiscal and Economic Impact Model

Cost-Benefit Analysis of New and Expanding Firms Requesting Property Tax Abatements

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This model is intended to be used as a tool for decision making and facilitates the estimation of the fiscal impact of a new firm or project. Conceptual limitations arise from the assumptions necessary for economic modeling. Empirical limitations of the input data may affect the reliability of the model's outcome. It is essential that complete and accurate data about current characteristics of the firm or project are supplied. Because of the limitations outlined above, the outcome obtained through this model does not represent precise values but reasonable approximations of the magnitude of fiscal impact. Furthermore, the benefits and costs derived from the model do not include any intangible social or environmental costs or benefits.

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EXECUTIVE SUMMARY

Introduction

The Fiscal and Economic Impact Model is an assessment tool which is used to analyze the fiscal and economic consequences of a new development such as a new firm's location or an existing firm's expansion within a community. The Model is based on a cost-benefit analysis (CBA) to examine the fiscal and economic impact that a firm has on a community in terms of measurable tangible costs and benefits. In particular, the purpose of the Model is to estimate the costs and benefits associated with the granting of a property tax abatement to a new or expanding firm. Employing over 240 input variables, the Model differs from a simple financial accounting framework because a much broader range of impacts -- both direct and indirect -- are taken into account.

The Fiscal and Economic Impact Model of the Institute for Public Policy and Business Research at the University of Kansas is an extension and refinement of a cost-benefit model originally developed by Dr. David Darling of Kansas State University's Extension. For a detailed description of the Institute's conceptual and technical improvements and refinements, and for a proposed further development, refer to Appendix 1.

Key Concepts

- ***Fiscal and Economic impact on the public and private sectors.*** The Model estimates the fiscal impact of a new development on three distinct sectors of the local economy: city and

county governments, and local public school districts. In addition, the economic impact on the private sector is reflected in incremental personal income, sales and employment. However, impacts that accrue for each individual resident in Douglas County are not measured in the current Model (e.g. effects on personal income and spending, and positive and negative intangible effects). External impacts that occur outside Douglas County due to the new development are ignored.

- ***Key input variables.*** A wide range of input variables -- all relating to the three sectors and to the new development -- are employed in calculating the economic impact. Of all the 240 variables employed within the Model, several appear --from existing analysis-- to have the most impact on the outcome: (1) total number of new residents associated with new development, (2) number of new school children related to new residents, given the high public education cost per student, (3) capital expenditures incurred to city, county and school district(s) to accommodate new firm, new residents and new school children, and (4) incremental operational cost incurred to city, county and school district(s) to accommodate new firm, new residents and new school children.

- ***Net present value.*** The Model calculates the present value of all future benefits and costs associated with a project including the receipt of future property taxes and the depreciation of real and personal property. After determining the current value of costs and benefits over a 15-year period, the outcome provides an important basis for determining whether a project is acceptable or otherwise. In essence, it indicates whether or not the benefits outweigh the costs over a certain period of time.

- ***Project risk.*** A community granting a tax abatement to a new or expanding firm faces

several risks: (1) some businesses may leave the community after the abatement expires; (2) some firms may be more prone to failure; and (3) other intangible consequences (costs and benefits) may result from the project, such as pollution, traffic congestion and environmental changes on the cost side, and time savings of better transportation, pleasures of more public facilities and services, better quality of life including increased job opportunities, and enhancement of further business location and entrepreneurship on the benefit side. Recognizing these externalities, the Model utilizes a risk-adjusted discount rate of 7.5% and a threshold benefit-cost ratio of 1.25 to 1 instead of 1 to 1 to account for unmeasurable intangible costs and benefits.

Reliability of the Outcome

The Fiscal and Economic Impact Model employs a comprehensive cost-benefit analysis to estimate the net fiscal and economic impact to the community of a new or expanding company requesting a property tax abatement. The reliability of the Model's outcome is affected by limitations inherent to economic modeling: (1) the ability to utilize variables which accurately reflect the "real world" situation; (2) the accuracy of the firm's information regarding its projected future employment and operating expenditures within the community; and (3) the sensitivity of the Model to critical input variables such as the rate of immigration of new employees. These limitations suggest that the results of the Model should be viewed within a range rather than a single outcome. Furthermore, the results do not reflect the unmeasurable social or environmental costs or benefits, the benefits accruing during the construction phase of a project, and the costs associated with the chance that a firm might locate or expand in the

community without a property tax abatement.

Developmental Stage of the Model

Overall, the Model has a high level of complexity regarding the identification of all relevant impacts. It represents an effective tool for assessing the fiscal impact of a new project on the local level and evaluating the value of property tax abatements to communities. Since some of the variables and concepts contained within the Model need comprehensive research and investigation, additional research will be necessary to provide more refined concepts and more precise values for some input variables.

SECTION I:
INTRODUCTION AND KEY CONCEPTS

Introduction

The Fiscal and Economic Impact Model is a sophisticated approach to estimate potential public and private sector revenues and expenditures resulting from a new development and the granting of a property tax abatement. Conceptually, the Model is based on a cost-benefit analysis (CBA) which evaluates the fiscal and economic consequences of a new development. In particular, the model is equipped to estimate the impact on the community of a new or expanding firm requesting a property tax abatement. The Model concentrates on monetary, tangible costs and benefits. Intangibles such as traffic congestion, pollution, environmental changes on the cost side, and pleasures of more public facilities or services, enhanced living standards and quality of life including better job opportunities on the benefit side are not presently analyzed within the framework of the Model. However, intangible impacts are accounted for in a higher threshold for benefit-cost ratios (see threshold ratios later in this section).

The Model differs from simple financial accounting -- which may only focus on the abatement itself or number of jobs created -- by taking into account a much broader and relatively complete range of revenue and cost factors which may be the direct or indirect result of the new firm. For example, when measuring the impact of new jobs created by the firm, the

Model examines the direct economic impact of new residents who come to the community (e.g. spending in the local community, use of community services, contribution to local governments' revenues, and use of local public schools). Indirect effects are simulated through an employment and income multiplier on the one hand, and are accounted for by using variables such as the number of vacated jobs, displaced worker etc. on the other hand. Overall, the Model investigates the consequences of a new development across three sectors: city and county governments and local school districts. Private sector impacts on personal income and sales are also estimated.

Development and Current Developmental Stage of the Model

An original cast for the Model was created by Dr. David Darling, an economist with the Agricultural Extension Services at Kansas State University. Based on this original impact model by David Darling, which was in the early stages of development in terms of applicability, the Institute for Public Policy and Business Research (IPPBR) at the University of Kansas has developed a more sophisticated and workable model. Substantial conceptual and technical improvements, refinements and alterations were necessary to generate a satisfactory model and ensure a higher degree of reliability: identifying and researching additional relevant impacts, differentiating between salary levels of new jobs generated, incorporating the concept of discounting future benefits and costs to present values, generating benefit-cost ratios, etc. (refer to Appendix 1 for complete listing).

Despite the Model's complexity at this stage of development, additional improvements

conceptual improvements and possible future investigations are compiled in Appendix 1. This suggests that the current Model is still not complete. Not all of the concepts or variables are static; in fact, further study may yield better estimates for particular variables. However, with the information that exists today, the Model is an effective tool in evaluating the effect of property tax abatements on a community.

Key Concepts of CBA: Identifying and Monetizing all Relevant Impacts

It is imperative for a thorough cost-benefit analysis to identify all relevant impacts associated with a new project. A second step implies monetizing these impacts and generate a dollar value for the identified costs and benefits. Although, the Model is only concerned with the measurable tangible costs and benefits, the intangibles are of equal importance. However, monetizing intangible costs and benefits would require a major research effort, which is beyond the framework of this analysis (survey of the population based on the willingness-to-pay criteria).

The problems encountered by monetizing the tangible costs and benefits identified and incorporated in the Model, which were not adequately addressed in the original impact model by David Darling, range from simple accounting to complex tasks such as generating primary data on household characteristics of new employees and analysing city/county and school district budgets.

The complexity of these tasks required a substantial amount of background research and analysis regarding the Model's inputs. It is crucial to establish valid measures of the inputs because some are extremely sensitive regarding the outcome of the CBA, such as the number

of new residents and school-children to the community. However, some of the variables or inputs were more readily available through existing data from the city or state government. Therefore, the main task in dealing with the 240 inputs consisted of generating a set of community-specific input variables which could be used as default variables in the CBA. The search for proxies for some of the variables included: (a) conducting a survey of recently hired employees in order to generate reliable input data to estimate the impact of incremental employment; (b) a thorough analysis of the City, County and school districts budgets; (c) a literature search of estimates of per capita expenditures for public services and infrastructure; and (d) a data search for variables which are part of other calculations.

Key Concept of CBA: Accounting for Future Benefits and Costs

An essential component of the Model is the calculation of the present value of a project's future benefits and costs. In other words, the Model determines the direct and indirect economic impact on the community, over time, in a present dollar amount. This includes comparing various project outcomes, such as the benefit from receiving the full value of property taxes from the firm after 10 years versus the potential risk or costs resulting from a company's relocation after receiving the abatement.

The method for accounting for future benefits and costs attempts to logically weigh the pros and cons of a proposed project. The purpose of the CBA is to determine whether or not the project is acceptable: the benefits outweigh the costs over a certain period of time. In order for the CBA to be effective, clearly stated objectives, such as which costs and benefits should be included, must be effectively determined, measured, and included in the analysis. Such

objectives can range from financial (maximizing profits) to social welfare (increase living standards, guarantee employment, or public interest) considerations. Although it is difficult to measure and value all social welfare objectives, CBA experts have argued that a CBA must consider both financial and social welfare objectives.

A commonly accepted standard for good practice of CBA implies:

1) creating clearly stated objectives (see above);
2) allowing a comparison of alternative courses of action (e.g. outcome of a CBA when a firm is not granted a property tax abatement);
3) remaining consistent regarding the criteria used in CBA;
4) tackling the problem of time dimension for future benefits and costs (e.g. benefits incurring after the 10-year abatement period); and
5) providing a useful tool for decision-making.

While it is important to discount future costs and benefits for the time dimension, it is crucial to also discount for a project's risk. Some projects and investments will inherently be riskier than others. For example, some firms may be less likely to stay in a community after the abatement period expires. The Model accounts for risk through three variables: the risk-adjusted discount rate, the project's time period, and the benefit-cost threshold ratio.

- ***Risk-adjusted discount rate.*** The Model uses a risk-adjusted discount rate of 7.5 percent in determining the present value of the future direct and indirect costs

and benefits.[1] Inherent within the rate is a risk premium for undertaking the proposed project.

● ***Project time period.*** In discounting the cost/benefit cash flows, different time periods may be used, depending on the type of firm. If the firm is an existing firm within the community and is expanding, the future cost/benefit flows may be discounted over a fifteen year period. Firms which are new to the area may be discounted over a ten year period. The rationale for this difference is based on the fact that firms which are attracted to the community by the abatement may not be as likely to stay after the abatement expires as an established firm. In addition a comparitive analysis based on various time periods into account may be offered for decision making.

● ***Threshold ratio.*** In order to account for intangible costs and benefits, the Model utilizes a benefit-cost threshold ratio of 1.25 to 1 when granting a 50% property tax abatement for 10 years and discounting future costs and benefits over a 15-year period. Because intangible costs associated with the project are likely to exceed its intangible benefits, the purpose of the threshold is to account for intangible risks which are presently not included within the variables of the Model, such as: a) the case where a firm either leaves prematurely or goes out of business; b) circumstances where the firm would have come to the community without the abatement; and c) intangible costs like increased traffic and pollution.

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[1]This is calculated by the following formula: (tax free municipal bond rate - current expected inflation rate) + risk premium. Current municipal bond rate determined through range provided by Kansas State Treasurer's office; current range for May 1991 was 5 - 8 percent.

All else equal, a ratio of 1.25 to 1 reasonably accounts for all intangible risks. Projects which have a ratio in the range of 1.25-1.0 to 1 are considered only marginally acceptable and suggest closer scrutiny by the decision makers. With further study and refinements, estimates for these risks may be incorporated directly into the Model.

SECTION II:
KEY INPUT VARIABLES

The Model bases its calculations on a series of input variables, such as firm-related and community-specific data, which are to be provided by the user of the Model. If the user does not have a particular variable, the Model will utilize a default estimate which has been determined through other sources, such as survey data or research literature. Inflation is disregarded for the input figures and analysis. The Model focuses on the economic impact in current-year terms, such as 1991 dollars.

Of all the variables within the model, several appear -- from existing analysis -- to have the most impact on the outcome: total number of new residents migrating to the community, per capita municipal/county revenues and expenditures, capital cost to city/county governments incurring from new plant and new residents, number of new school children, public education costs per student, and cost of capital expenditures to accommodate one new student. The Model categorizes inputs within three areas: private, government, and school sectors. The following sections describe the key variables within each section and tell: a) what the variable is; b) how it is determined; and c) its use in the Model.

Private Sector Inputs

Private sector inputs are related to the array of variables which account for the direct and indirect economic impact of the new firm and its employees on the community. These variables measure the potential cost and revenue of the firm with respect to the city, county and the school

districts. The benefits of increased spending in the local economy from the firm and its employees are calculated, and the incremental operational and capital costs incurred to the three sectors are determined. Additionally, the residual impact -- or multiplier effect -- of spending and job creation are incorporated in this section.

1) ***New firm's taxable investment.*** The firm's investment includes its financial stake in real estate and machinery/equipment for the new plant or facility. The actual figures are provided by the applicant (or firm). These figures are used to calculate the value of the property tax abatement and future property tax revenues.

2) ***New firm's operating expenses.*** This figure, also provided by the firm, focuses on the proportion of operating expenses by the firm within the local community, excluding labor costs and debt service. The Model utilizes this data in calculating the economic effects of firm expenditures within the area and on local sales taxes.

3) ***Square footage of new firm.*** The square footage of the new facility is obtained from the firm and employed in calculating capital costs incurred to the city and county and for estimating utilities consumption.

4) ***Total number of new firm's employees.*** The company is asked to estimate the number of immediate, new employees for the new plant by type of employee: managers, professional staff, and production workers. The number of new employees is a critical component in calculating many of the following variables.

5) ***Number of commuters.*** The new jobs created in a community are not filled exclusively by residents of the community. Some employees commute to work from other parts of the county or neighboring counties. In order to determine the average proportion of commuters

within a firm, a survey of recently hired employees in the community is necessary to obtain the respective data. The data for Lawrence/Douglas County indicate that approximately twenty-three percent of new employees commute from outside the county and almost sixteen percent from within the county (Table 1).[2] The purpose of determining the number of commuters is to see how many new employees will actually be residents of Lawrence and Douglas County and require public services and facilities as well as generate revenue through property taxes. Commuters spend a relatively insignificant proportion of their income within the area.

Table 1

Current Residence of New Employees: Lawrence/Douglas County Firms

Lawrence	61.9%
Other areas of Douglas County	15.6%
Outside Douglas County	22.5%

Source: 1990-1991 Survey of New Employees, IPPBR/KU.

6) ***Average annual wages and benefits.*** The annual salaries and benefits for managers, professionals, and production workers are requested from the new firm. From these figures, the disposable income is calculated by subtracting the contributions to social security and state and federal taxes. The fringe benefits which are included in the Model are contribution towards unemployment insurance, worker's compensation, all health care premiums, and child care.

[2]Helga Upmeier, "Survey of New Employees Hired by New and Existing Companies in Lawrence/Douglas County Between 1989 and 1990," *Institute for Public Policy and Business Research, University of Kansas* (May 1991), p 3.

However, two fringe benefits, including the employer's portion of FICA and paid vacation/holidays, are excluded from the analysis because they do not directly increase disposable income.

Generally, the fringe benefit package does not exceed one-third of total compensation.[3] Salaries and annual benefits are used in the Model to determine the immediate and future economic impact of the new jobs on the community. For example, some of the fringe benefits are directly or indirectly spent in the community, such as health care, while other benefits may not return to the community until an employee reaches retirement age or is disabled.

7) ***Total number of displaced workers.*** Displaced workers include those who lost their jobs because their current employer could not compete with the new firm and either had to lay off workers, go out of business, or move elsewhere. In our use of the Model for the Lawrence/Douglas County area, we assume that no workers will be displaced as a result of the entry of a new firm. This assumption is based on the notion that because the product reach of most new firms will extend beyond the immediate area, the Lawrence/Douglas County area can support several producers/suppliers of a particular product which is exported to other areas of the state, nation, and world.

8) ***Total number of vacated jobs.*** When a current resident of the Lawrence/ Douglas County area takes a job in the new firm, s/he may leaving another job. In fact, survey results for the Lawrence/Douglas County area show that almost half of new employees for firms were

[3]A survey of 108 companies in 1985 revealed that fringe benefits average 16.4 percent in Lawrence, ranging from a legally required minimum of 8-10 percent to a maximum of 40 percent. The majority of establishments contributed 8-25 percent.

previously employed in a full-time job in Douglas County (Table 2).[4] Furthermore, one-fourth were unemployed, and only six percent were new entrants into the labor force.

Table 2

Job Status of Lawrence/Douglas County Residents Prior to Current Employment

Prior Status	Percent[1]
Full-time employee	49.8%
Half-time employee	14.5%
New entrant	5.6%
Unemployed	24.5%
Other[2]	5.6%

[1]unadjusted for additional rounds of employment
[2]includes underemployed and disabled

Source: 1990-1991 Survey of New Employees, IPPBR/KU.

The Model is not concerned with jobs vacated in the short-term, under the assumption that vacant positions will be filled in the long-run by a ready pool of labor, such as current residents of the area (including college students) and in-migrants. Vacated jobs result in **lost personal and disposable income** for the community, which is the salary and fringe benefits of the vacated positions.

9) ***Total number of new workers in the area.*** Because the new firm will be hiring people already in the Lawrence/Douglas County labor force, their vacated jobs will have to be filled (see the previous section). The Model assumes that vacated jobs will be filled by a mix of

[4]Upmeier, p 4.

current residents, in-migrants and commuters, similar to the pattern of recruitment in the new firm. From the survey of new employees in the Lawrence/Douglas County area, the results showed that thirty percent of professionals and seven percent of production workers were new residents who moved to the area because of a job opportunity with a new or existing firm (Table 3).[5] However, this percent applies only to the first set or "round" of jobs created by the new firm. As current residents leave their existing jobs to fill the job vacancies, the additional rounds also open up the possibility for in-migrants. The real migration ratio (calculated in Table 3) adjusts the percentage of in-migrants due to the new firm to account for additional rounds of job creation.

Table 3

Newly Hired Employees by Occupational Category

Occupational Category	% New Residents	Real Migration Ratio (Cumulative Impact)
Professionals	30.3%	50.4%
Maintenance/ Production Wkr.	7.1%	14.5%
AVERAGE	**15.0%**	**29.0%**

Source: 1990-1991 Survey of New Employees, IPPBR/KU.

The total number of new workers in the area, then, is the result of the jobs created by new firm and the short-term job vacancies that it creates in the Lawrence/Douglas County area. For example, if a new firm creates 100 production jobs, then approximately seven of those jobs

[5]Upmeier, p 3.

will be filled by in-migrants or persons living outside of the area. However, the cumulative impact of those 100 jobs will actually be about fifteen in-migrants as current residents leave their jobs for ones with the new firm, opening up additional employment opportunities.

The purpose of calculating the total number of new workers in the area is to determine the total impact of the new jobs created, in terms of payroll, spending, and public services needs, as well as calculate the overall increase in population due to families and partners.

10) ***Total number of new residents.*** The total number of new residents to the area includes workers -- those filling the positions in the new firm and subsequent vacant positions -- and their families or partners who also move with them to the area. To determine the total number of new residents to the area, the average household size for new employees in the Lawrence/Douglas county area is used (Table 4). For example, if the new firm creates 100 production jobs, about seven persons will migrate to the area as a result of the new firm. On average, the household of a production worker in Lawrence/Douglas county is 2.89 persons.

Table 4

Average Household Size of New Residents and Occupational Categories

Category	Persons Per Household
New Residents	2.64
Professionals	2.59
Maint./Prod.Wkrs.	2.89
AVERAGE (all employees)	**2.87**
Kansas Average[1]	2.62

[1] U.S. Bureau of the Census, Current Population Reports, Nov. 1989.

Source: 1990-1991 Survey of New Employees,

Therefore, the total number of new residents associated only with the new firm's hiring will be approximately 20 persons. When taking into account the additional in-migrants to fill jobs vacated in the short-run, the total number of new residents to the area will be 42 persons.[6] As a comparison to the survey figures, the average household size for Kansas was used as a reliability check (Table 4). The total number of new residents is applied to calculations involving per capita city/county expenditures and revenues.

11) ***New housing units.*** The number of new housing units necessary for new community residents is important in calculating additional revenues for the community, such as taxes, and additional expenditures, such as new roads and utilities.[7] However, not every new employee will create one additional housing unit; the Model assumes that 8 out of 10 employees create a housing unit (house, apartment). Therefore, an adjustment factor for housing is used to approximate the total number of new residences as a result of the new employees.[8]

12) ***Spending patterns of employees - local household expenditures.*** The spending patterns of the new firm's employees are estimated in order to reflect the proportion of wages or disposable income which are spent within the community. For the purposes of the Model, estimates from the Bureau of Labor Statistics (BLS) Consumer Expenditure Survey were used

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[6]This figure is calculated by the following formula: (14.5 in-migrants x 2.89 persons, average household).

[7]The calculation for determining the number of new housing units equals: (total number of employees x percentage of in-migrants) x employment multiplier/adjustment factor for housing

[8]The number of new housing units differs by occupational category and is calculated by the following formula: (total number of employees * percent of in-migrants) * employment multiplier/adjustment factor for housing. The adjustment factor for housing has been estimated at 1.25.

as a proxy for local data.[9] Local spending by new employees includes a portion of BLS-categorized expenditures in the areas of food, housing, apparel and services, vehicles and gasoline/motor oil, health care, and other.[10] A more accurate way to determine information on local spending patterns could be developed through a survey of employees. However, the drawback of such an approach is that most employees do not keep accurate spending records. The purpose of calculating the spending patterns of new employees is to ascertain the impact on the local economy in terms of new jobs created and additional rounds of spending (*see **Income Multiplier** below*).

13) ***Proportion of local employee's spending subject to local sales tax.*** From the local expenditures estimated through BLS data, the percentage of expenditures subject to local sales tax was calculated. Some expenditures -- including housing, gasoline, services, and health care -- are not subject to local sales tax and are not included in the percentage. The effect of increased local sales taxes as a result of the new residents is added to city/county revenues.

14) ***Income multiplier for employees' income.*** The income multiplier for employees' income calculates the impact of employee spending in the Lawrence/Douglas county community. As employees spend their income locally on goods and services, their purchases lead to the expansion of existing businesses and the creation of new businesses, all to accommodate the increased demand.[11] The income multiplier is similar to the concept of "rounds" of jobs

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[9]Consumer Expenditures in 1989, Bureau of Labor Statistics, U.S. Department of Labor, November 30, 1990.

[10]Other includes alcoholic beverages, entertainment, personal care, reading, education, tobacco and smoking supplies, miscellaneous expenditures, and cash contributions.

[11]The formula used for calculating the income multiplier equals (spending patterns of employees in the plant community * proportion of employees' income spent which becomes income to other residents)/ [1 - (spending patterns of employees in the plant community * proportion of employees' income spent which becomes income to

created which was addressed earlier. For example, a new employee makes a purchase in a local grocery store. The store, in turn, pays its employees and buys goods and services. This chain of buying and selling continues in the area until the initial purchase "leaks out" of the community through taxes, savings, or purchases in other areas. Income multipliers demonstrate the indirect effect that expenditures have on the local economy.

15) ***Proportion of firm's total operating expenses spent locally.*** The new firm, like its employees, may spend money in the local area for plant supplies, materials, services, and utilities. After the firm's estimated operating expenses are obtained from the company, it is also asked to gauge what proportion of total operating expenses will be spent locally. This figure, provided by the company, may be the average of local expenditures of its other operations, if available. This estimate is used to compute the proportion of plant spending subject to local sales tax and in calculating the income multiplier for plant spending.

16) ***Proportion of new firm's spending subject to local sales tax.*** After the company is asked to estimate the proportion of its total operating expenses spent locally, the proportion of those expenditures which are subject to local sales taxes is estimated. The effect of increased local sales taxes as a result of the new firm's spending has an impact in adding to city/county revenues.

17) ***Income multiplier for plant spending.*** The reasoning behind the income multiplier for plant spending is also similar to that for employee spending: the first "round" of firm expenditures create additional "rounds" of expenditures on goods and services throughout the

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other residents)]

Lawrence/Douglas County area.[12] Income multipliers show the direct and indirect effects of expenditures on the local economy.

18) ***Employment multiplier.*** The employment multiplier estimates the number of jobs which result from the spending related to the new firm and the jobs it created. Just as income spent in the community creates additional income through a multiplier effect, the creation of new jobs also has indirect and direct employment effects. As discussed earlier, some employment opportunities are the result of vacated jobs. However, the employment multiplier is used to calculate the number of new jobs -- within existing and new businesses -- that are created to fulfill the goods and services demands of the new firm and new area residents.[13]

Government Sector Inputs

Government sector inputs cover the city and county revenues and expenditures that are the result of the new plant and new residents. In calculating the impact on the city and county, the Model allocates the cost of providing county services to each firm, on a per employee basis[14], and resident, on a per capita basis.[15] Revenues are also accounted for in a similar fashion. In distributing total city/county expenditures to residential units and businesses, it has

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[12]The income multiplier for plant spending is calculated by the following formula (proportion of operating expenses spent locally * proportion of plant operating expenditures which becomes income to other residents)/ [1 - (proportion of operating expenses spent locally * proportion of plant operating expenditures which becomes income to other residents)]

[13]The employment multiplier is calculated by the following formula: (disposable personal income + secondary induced income + secondary internalized income)/disposable personal income.

[14]The total number of non-farm, non-government wage and salaried employees in Lawrence and Douglas county equal 22,958 and 27,840, respectively. Source: Kansas Department of Human Resources as referenced in the 1990 Kansas Statistical Abstract.

[15]The 1990 population of Lawrence and Douglas county totalled 65,608 and 81,798, respectively. Source: U.S. Bureau of the Census, 1990 as referenced in the 1990 Kansas Statistical Abstract.

been estimated that the residential sector receives 78 percent of all city services, while the business sector requires 22 percent of city services. Furthermore, it is estimated that residents create approximately 70 percent of all revenues and business contribute the remaining 30 percent.[16] All of the government sector inputs are used to calculate the present value of future costs and benefits as a result of expanding city/county services to meet needs of the new firm and new residents.

When new businesses and families move into Lawrence, the city and county incur two kinds of new costs. The first, or operational costs, are mainly salaries and supplies, most of which remain relatively constant each year. The second kind is capital costs. These are basically the one-time costs -- or those incurred during the first year -- associated with expanding the total capacity of government to provide services, such as new and expanded roads, sewers, parks, water mains, water and sewage treatment plants, acquisition of water rights, police and fire vehicles and stations, and road equipment. Therefore, the Model makes a distinction between these two types of costs (*see **Municipal/county expenditures and capital expenditures***).

Increased city/county revenues as a result of the new firm and its employees are also addressed in this section. However, revenues which are not included in this stage of the analysis include local sales tax and property taxes. Local sales taxes are addressed in private sector calculations, while property taxes are considered on their own. In the case of municipal/county revenues and expenditures, both have been analyzed to determine which portions of the budget would be affected by the new firm and the subsequent influx of new residents.

1) ***Increase in municipal revenue.*** Both the firm and its employees will have an effect on

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[16]*Service Cost Recovery System*, City of Loveland, Colorado, 1983, p 5.

city revenues. New residents -- and current residents who are new to the labor force or experience salary increases -- contribute to city revenues sources such as alcoholic beverage taxes, redistributed state sales taxes, licenses and permits, fines, motor vehicle property taxes, and other revenue sources.[17] Additionally, homeowners (or tenants) provide revenue to the city through municipal utility bills and franchise fees on non-municipal utilities. New firms also contribute to city revenues through similar sources, as well as through use of municipal utilities, city sales taxes on plant utility bills, and franchise fees on other non-municipal plant utilities. Relevant municipal revenue sources for Lawrence were equal to $6,452,420 and are in **Appendix 2.**

Municipal revenues as a result of the new firm are allocated between business and residential. For 1989, it has been estimated that the new business portion of city revenues is equivalent to $84.32 per employee.[18] City revenue from new residents in the community is $68.84 per capita.[19]

2) ***Increase in county revenue.*** County revenue sources include the general fund, motor vehicle property tax revenues, and other revenue sources. For 1989, relevant Douglas county revenue sources totalled $7,781,044 and are presented in **Appendix 3**. In breaking down the increase in revenues by new residents and firms, the business portion of the increase is estimated

[17]City of Lawrence, 1989 Municipal Revenues.

[18]The business portion of city revenues divided by the total number of non-farm, non-government wage and salaried employees in Lawrence: $1,935,726/22,958.

[19]Based on the residential portion of city revenues divided by 1990 Lawrence population: $4,516,694/65,608.

to equal $83.85 per employee,[20] while residents' portion of county revenues are equivalent to $66.59 per capita.[21]

3) ***Increase in municipal expenditures.*** **Appendix 4** presents the relevant expenditures -- or base level expenditures -- for the City of Lawrence in 1989. The allocation of the new business portion of city service expenditures totals $144.10 per employee,[22] and for residential services, the per capita proportion is equivalent to $178.78.[23]

4) ***Increase in county expenditures.*** As an estimate of the county's cost of providing services, the current Douglas county budget was separated into residential and business related expenditures and 1989 budget expenditures totalled $17,433,802 and is outlined is **Appendix 5.** When separating the county services provided to residences in 1989, the total was equivalent to $186.58 on a per capita basis.[24] The business portion of the county budget totalled $90.14 per employee.[25]

5) ***Annual franchise fees from new plant.*** This incorporates business franchise fees for

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[20]The per employee revenue is calculated by dividing the business portion of county revenue by the total number of non-farm, non-government wage and salaried employees in Douglas county: $2,334,313/27,840.

[21]This is calculated by dividing the residential portion of county revenues into 1990 Douglas county population: $5,446,731/81,798.

[22]The city's expenditures per employee is calculated by dividing the business portion of city expenditures by the total number of non-farm, non-government employees in Lawrence: $3,308,224/22,958.

[23]The per capita calculation of city services is determined dividing the resident portion of city expenditures by the population of Lawrence: $11,729,158/65,608.

[24]The per capita county expenditure is calculated by dividing the residential portion of the budget by Douglas county population: $15,261,497.68/81,796.

[25]The business portion of county expenditures is the result of dividing its portion of the budget by the total number of non-farm, non-government wage and salary employees in Douglas county (in 1989): $2,172,304.32/24,100.

non-municipal utilities. For the new plant, the franchise fees will be: gas - 5 percent of bill; electric - 3 percent of bill; telephone - $0.4 per line, cable TV - 3.25 percent of bill.

6) ***City/county capital investments.*** The Model examines the city and county capital investments which are necessary to accommodate the new firm and its employees. The original Model used a short-run cost concept, such that there is no capital cost for items -- like water treatment plants -- if there is currently an excess of capacity. While this may be a realistic assumption for some declining communities, especially those in less populated areas, this approach is not appropriate for growing communities which could face a capacity constraint. Under this approach, then, if a new water plant were to be constructed to meet additional growth, the full cost of the new plant would be charged against the new businesses moving into the city. However, this would tend to cause an impasse, freezing growth at a moment at which no single new business could pass the CBA.

Therefore, the Model utilizes a long-run average cost concept. This means that the total needed amount of public infrastructure of each type is expected to grow in direct proportion to the total number of families and businesses in the Lawrence/Douglas county area. This assumption is acceptable if the area is expected to experience reasonably steady growth in the future and if public services are approximately constant returns to scale, as many studies have found. To estimate these costs in the Model, a literature survey of nationwide averages for each item was utilized, adjusted only for the general price level.[26] The main available sources for estimates of this type turned out to be studies in support of impact fees; however, Lawrence-specific data could be developed in the future.

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[26]For an overall average of capital investments and listing of sources, see **Appendix 6.**

School District Sector Inputs

One of the greatest impacts that new residents -- and their children -- will have on the community will be felt in local school districts, and the economic consequences associated with them represent the most sensitive set of variables within the Model. The following section outlines the variables within the Model which are used to measure the costs (expenditures) and benefits (revenues) relating to additional children in local public schools.

1) ***Number of school children per new resident.*** The Model estimates the number of new school children which will enter local public schools as their parents move to the Lawrence/Douglas county area. In calculating this figure, the Model relies upon data from the survey of new residents.[27] These results suggest that new residents have, on average, 0.53 children per employees in area public schools in 1990 and estimate 0.85 children (per employee) in 1995 (Table 5).

Table 5

School Children in Local Public Schools:
Ratios Per New Employee and Working Household Members

	Per New Employee (total)	Per Working Household Member
School Children in 1990	0.53	0.35
School Children in 1995[1]	0.85	0.56
Average		**0.46**

[1] expected number of children who will be enrolled in local public schools (K-12) in 1995 according to survey responses.

Source: 1990-1991 Survey of New Employees, IPPBR/KU.

[27]Upmeier, p 4.

The effect of new residents on the school district can be seen in the following example: if a new firm hires 100 production workers, seven will be new residents to the Lawrence/Douglas county area and 8 additional new residents move to the area to fill vacated jobs. Applying the ratios from the new employee survey, those new employees will have approximately 8 children -- on a per employee basis -- who will attend local public schools. However, some of the in-migrants may have spouses or partners who also work, and when taking this into account, the fifteen new residents actually have about 5 children -- per working household member -- attending local public schools.

2) ***Public education costs per student (in 1989-90).*** The budget per pupil, or public education cost per student, is the school district's general fund expenditure for K-12, excluding capital outlays and special funds. For the 1990/1991 school year, the per pupil expenditure was equal to $3,653.23.[28]

3) ***Cost of capital expenditures to accommodate one new student.*** School district capital expenditures have two components: a) remodeling/repair, and b) replacement/addition of school facilities. By allocating the cost of new school facilities to the new residents, the Model utilizes a long run average cost concept which assumes that the community will continue to experience reasonable growth within the future. This is similar to the approach employed in allocating city/county capital expenditures.

Calculating the cost of remodeling and repair per student is relatively straightforward;

[28]Division Director Business and Facilities, Lawrence Public Schools, 1991.

it equals $58.56 per housing unit in the district.[29] In determining facilities' replacement costs, estimated school size and construction costs were utilized. On a per housing unit basis, then, the replacement cost of a new facility is $6343.90.[30] From these calculations, the Model estimates that total capital expenditures per housing unit are $6,402.50 per year.

4) ***Property taxes related to new residents.*** One main source of school district revenue is property taxes from the new firm and residences. The Model calculates the total property tax revenues which are forwarded to the district through two key components: a) the property taxes of the new firm, which are figured through the value of the firm's building, equipment, and land, and b) property taxes on the new residences. Determining the taxes on the firm is fairly straightforward; estimated property values are obtained through the firm. For new residents, however, the Model first computes the average value of their homes and then figures the appropriate property taxes.[31]

5) ***State equalization aid per student.*** State equalization aid is public education funding from the state of Kansas which seeks to "equalize" expenditures across all schools, regardless of wealth inequities. The estimate for the 1991/1992 school year is $700,000 for the district,

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[29]Based on average annual district expenditure divided by housing units in the district ($1,500,000/25,615). Figure includes repair on present facilities and site improvements; excludes new structures. Source: Division Director Business and Facilities, Lawrence Public Schools, 1991.

[30]The total sq.footage of Lawrence public school buildings is approx. 1,625,000 sq.ft.: high school (1) - 275,000 sq.ft.; junior high schools (3) - 90,000 sq.ft. each; and elementary schools (18) - 60,000 sq.ft. each. The total square footage is divided into the number of housing units in Lawrence (25,615) and multiplied by a school cost (including construction, land, and other costs) of $100 per square foot. This figure equals $6343.9 per housing unit.

[31]Average value of homes differs by occupational categories and salary levels. Housing factors, or the relationship between purchase price and income, are used to approximate value of residence. For the Model, the following factors have been used; under $20,000 - 3.31; $20,000 to $30,000 - 2.61; $30,000 to $40,000 - 2.30; $40,000 to $50,000 - 1.92; $50,000 and up - 1.52. Source: *Primary Income to Purchase Price for 1990: Lawrence Area*, Capitol Federal Savings.

which is significantly lower than the previous school year (1990/1991 - approx. $3 M).[32] When calculated for the 1991/1992 school year (8,590 students projected), state aid totals $81.50 per student.

6) ***State income tax return to school district due to new employment.*** The state returns 25 percent of resident income tax receipts to school districts, and the increase in employment will also represent an increase in the amount of income tax revenues returned to the district. The projected figure for 1991/1992 school year is $4,627,547.[33] For every new student, then, the district gains approximately $538.71.

7) ***Motor vehicle tax return to school district due to new employment.*** County receipts from motor vehicle taxes are allocated to the school district. School district general fund revenues from this source are projected to total $2,663,870 in 1991/1992.[34] Each new student represents about $310.11 in additional revenue.

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[32]*Proposed School Finance Plan*, Kansas State Department of Education, 1991.

[33]Kansas State Department of Education, 1991.

[34]Division Director Business and Facilities, Lawrence Public Schools, 1991.

SECTION III: CONCLUSION

The Fiscal and Economic Impact Model of the Institute for Public Policy and Business Research at the University of Kansas employs a comprehensive cost-benefit analysis to estimate the net economic impact of granting a property tax abatement to a new or expanding firm in the community. The Model differentiates between the outcomes on the city and county, the school district, and the private sector economy. The reliability of the Model is dependent on several constraints: 1) its ability to utilize variables which accurately reflect the "real world" situation; 2) the accuracy of the firm's information regarding its expenses, property, and employees; and 3) the credibility of critical input variables, such as the number of in-migrants associated with the new plant, the number of school children per new resident, the number of housing units created, and local spending patterns.

Since some of the variables and concepts contained within the Model required extensive investigation and analysis, additional research will be necessary to provide more precise indices of some key input variables. However, this does not suggest that the Model is incomplete. Instead, it represents a workable foundation upon which to build, and with the information which exists today, the Model is an effective tool for evaluating the value of property tax abatements.

APPENDIX

APPENDIX 1

IPPBR'S CONCEPTUAL IMPROVEMENTS, ADDITIONS AND REFINEMENTS TO THE MODEL CREATED BY DAVID DARLING (KSU)

identification of additional relevent impacts
- -full demographic impact including children and family members of workers
- -full array of school district revenues and expenditures
- -franchise fees to city, local sales tax from utility bills to city
- -payment in lieu of tax

direct employment impact on households: survey of firms
indirect employment impacts:
- - equilibrium labor model
- - employment multiplier

household impact methods:
- - estimate of local versus non-local consumption shares from CES
- - estimate of house value to income ratio from bank data

effect of wage levels on personal income, sales, home purchase, household characteristics etc.
- -investigation for three income categories

differentiation of private-sector benefits
- -disposable and other income, taxable and nontaxable sales

alternate capital cost concept (LRAC)
capital cost methods:
- - literature survey on impact fees
- - Lawrence school cost estimate

aggregate balancing concept (model should predict present government budgets)
allocating city operation costs to households vs. businesses (unit cost concept):
- - survey concept
- - survey implementation

allocating public operating and capital costs between businesses:
- - employment
- - square footage
- - real estate values
- - per business

present value accounting software including
average long-run flow concept for costs and benefits
discount rate method: real tax free bond rate plus risk premium and depreciation of firm's equipment
choice of a benefit/cost criteria: four considerations
- - data and model uncertainty
- - omitted intangible costs
- - investment risk (the firm may leave prematurely)
- - probability of location of firm without abatement

correction of errors contained in the initial model
- -proper assessment ratios for industrial real estate (30%) and equipment (20%)

TECHNICAL IMPROVEMENTS AND ADDITIONS

generate a technical document discribing the model and its input variables
    -explanation of inputs and how inputs can be generated
    -explanation of benefit-cost ratios
laying out a prototype document summarizing the results for a specific company

PROPOSED FURTHER DEVELOPMENT OF MODEL

study the asset value of Lawrence public capital
add separate household types for students, retired
check the aggregate balance
survey the contingent evaluation of intangibles
study the rates at which new and old firms die off or leave
study the rates at which abatements have no impact on location
formalize a sensitivity analysis method
replace multipliers and parts with consistent input-output framework
study the portion of new jobs taken by in-migrants
study the effect of growth on unit operating costs
study the marginal effect of households and businesses on operating costs
generate a submodel to estimate impact of the construction phase of the project

APPENDIX 2

CITY OF LAWRENCE: 1989 MUNICIPAL REVENUES EXCLUDING AD VALOREM TAX, DELINQUENT AD VALOREM TAX, MOTOR VEHICLE TAX, LOCAL SALES TAX, & FRANCHISES FEES

fund balance not considered a revenue

Motor Vehicle Property Tax (all funds)		1,564,908
GENERAL FUND REVENUES ONLY:		
Alcoholic Beverage Tax		403,242
LAVTR (state sales tax redistribution)		375,300
Consumer Use Tax		37,861
Licenses & Permits		241,068
Intergovernmental Revenue		499,896
Charges for Services		165,667
Fines & Forfeits		526,285
Use of Money & Property		684,393
Other Financing Sources		14,946
OTHER REVENUE SOURCES:		
CEMETERY	Charges for Services/Use of Money	58,000
EMPLOYEE BENEFIT	Miscellaneous	763
LEVEE MAINTENANCE	Use of Money	3,864
RECREATION	Charges for Services/Misc.	452,700
SPECIAL ALCOHOL	Intergovernmental Revenue	134,414
SPECIAL GAS TAX	Intergovernmental Revenue (gas tax return)	1,122,208
SPECIAL LIABILITY	Miscellaneous	5,916
SPECIAL RECREATION	Intergovernmental Revenue/Miscellaneous	136,400
STREET LIGHT UTILITY	(only property tax funded)	0
STREET MAINTENANCE	Misc.	24,589
MISCELLANEOUS OTHER SPECIAL REVENUE FUNDS (not investigated)		0
	TOTAL	6,452,420
Subtract Business Portion 30%		1,935,726
		4,516,694
Per capita municipal revenue (pop. 65,608) excluding business portion		$68.84

*Excluding Ad Valorem Tax, Delinquent Ad Valorem Tax, Payments in Lieu of Tax, Transfers from other Funds, Motor Vehicle Tax, Fund Balance, Local Sales Tax, Franchise Fees)

APPENDIX 3

1989 DOUGLAS COUNTY REVENUES
EXCLUDING AD VALOREM TAX, DELINQUENT AD VALOREM TAX, PAYMENTS IN LIEU, & TRANSFERS FROM OTHER FUNDS

TOTAL GENERAL FUND REVENUES	2,779,257
including Mortgage Registration $465,035, Interest $1,066,047, City/County Revenue Sharing $349,475, Fees, Charges and Other	
MOTOR VEHICLE PROPERTY TAX	1,701,532
LAVTR (state sales tax redistribution)	428,643
OTHER REVENUE SOURCES:	
AMBULANCE (other than prop. tax, LAVTR, Motor Vehicle)	355,095
APPRAISER	200
COUNTY ADMINISTRATOR	0
COMMUNITY COLLEGE TUITION	2,423
DIRECT ELECTION FUND	15,853
EMPLOYEE BENEFITS (p. 45 KPERS, KPF not included)	4,487
EXTENSION COUNCIL	0
FAIR FUND	15,472
HEALTH	0
HISTORICAL FUND	0
INDIRECT ELECTION	0
MENTAL HEALTH	0
MENTAL RETARDATION	0
NOXIOUS WEED	76,291
PARK MAINTENANCE	9,068
PHYSICALLY HANDICAPPED	0
REAPPRAISAL (p. 90 Reimbursed Expense)	134,407
ROAD & BRIDGE (p. 95 City/County Highway Gas Tax)	980,420
SERVICE FOR THE ELDERLY	0
SOIL CONSERVATION	0
SPECIAL ALCOHOL	3,929
SPECIAL AUTO FEES	168,088
SPECIAL BRIDGE	1,570
SPECIAL BUILDING (Community Correction Grant)	67,531
SPECIAL LIABILITY	0
SPECIAL PARKS & RECREATION	3,929
UTILITY SERVICE FUND	39,078
VALLEY VIEW HOME CARE (no revenues in 1990 and beyond)	902,675
	7,875
EQUIPMENT RESERVE (transfers only)	0
SPECIAL HIGHWAY (transfers only)	0
RISK MANAGEMENT (interest, reimbursements)	83,221
SPECIAL ROAD & BRIDGE	0
TOTAL	7,781,044
Subtract Business Portion 30%	2,334,313
	5,446,731
Per capita county revenue (1989 population 81,798)* (excluding bus. portion)	$66.59

APPENDIX 4

EXPENDITURES BY VARIOUS CITY FUNDS FOR BUSINESS SECTOR AND PRIVATE RESIDENTS
LIST OF CITY REVENUES
CITY OF LAWRENCE, 1989 BUDGETARY DATA

GENERAL FUND	1989 Actual	Current Capital Outlay	Operating Expenditures: Commodities & Personnel	Allocation Ratios for Business Sector	Proportion of Expenditures for Business Sector		
City Commission	26,207	0	26,207	0.66	17,297		
City Manager	98,086	85	98,001	0.5	49,001		
Planning	220,086	9,593	210,493	0.33	69,463	est. P. Banks	
Human Resources	122,379	780	121,599	0.33	40,128	est. R. Samuel	
Administrative Services	89,707	14,754	74,953	0.25	18,738		
Employee Relations (personnel)	95,561	340	95,221	0.25	23,805		
Finance	185,107	85	185,022	0.25	46,256	Julia Karr, Dir.	
General Overhead	450,309	19,674	430,635	0.3475000	149,646	AVERAGE	
Legal	104,850	0	104,850	0.01	1,049	Tom Porter, Prosecutor	
Municipal Court	76,571	1,425	75,146	0.2	15,029		
Police	3,350,338	135,689	3,214,649	0.33	1,060,834		
Animal Control	130,996	105	130,891	0.1	13,089		
Fire	2,413,610	47,286	2,366,324	0.41	970,193	based on assess. prop. value	
Building Inspection	195,236	11,183	184,053	0.4	73,621	est. R.Shaugnesee	
Engineering	342,128	15,337	326,791	0.4	130,716	est. 2 Terese Gorman	
Central Maintenance	299,872	21,379	278,493	0.2	55,699	est. J.Karr	
Airport Maintenance	43,281	2,255	41,026	0.75	30,770	est. J.Karr	
Property Maintenance	299,946	0	299,946	0.2	59,989	est. J.Karr	
Parks	539,928	20,648	519,280	0	0		
Forestry	158,221	31,821	126,400	0	0		
Health	217,891	0	217,891	0	0		
General Fund Total	9,460,310	332,439	9,127,871		2,825,321		30.95%
CEMETARY FUND	126,293	13,595	112,698	0	0		

(continued)	1989 Actual	Current Capital Outlay	Operating Expenditures: Commodities & Personnel	Allocation Ratios for Business Sector	Proportion of Expenditures for Business Sector		
EMPLOYEE BENEFITS	1,646,727	0	1,646,727	0.32875	541,362	AVERAGE	
(transfer $248,000 sanitation, $317400 water & sewer, $50300 + 47500 recreation + gas tax)							
GUEST TAX FUND	not investigated because guest tax is not a city revenue						
LEVEE MAINTENANCE	63,791	18,217	45,574	0	0	water, sewer, sanitation	
LIBRARY	770,881	0	770,881	0	0		
NOXIOUS WEED	80,638	102	80,536	0	0		
RECREATION	823,535	16,547	806,988	0	0		
SPECIAL ALCOHOL FUND	118,455	11,331	107,124	0	0		$30.32 per wage earner
SPECIAL GAS TAX FUND (street repair, traffic signals)	1,088,578	129,651	958,927	0.25	239,732	est. J.Karr	
SPECIAL LIABILITY FUND (self-insured risk management)	223,127	0	223,127	0.05	11,156	est. J.Karr	
SPECIAL RECREATION (swimming, tours, activities)	114,442	47,775	66,667	0	0		
STREET LIGHTS UTILITY	258,424	0	258,424	0.25	64,606	est. J.Karr	
STREET MAINTENANCE (snow removal, paving, etc.)	262,181	0	262,181	0.2	52,436	est. J.Karr	
TOTAL	15,037,382	569,657	14,467,725		3,734,613		(25.8%)

MISC. NON-BUDGETED FUNDS not investigated because of special funding (gov. agencies)

(Aging Advocacy, Airport Improvement, Community Development Grant, Equipment Reserve, Fair Housing Assistance, Justice Assistance Liability Reserve, Rehabilitation Escrow Summer Youth, Transportation Planning, Workers Comp. Reserve)

AGENCY AND TRUST FUNDS not investigated

SPECIAL RESERVE FUNDS not investigated
(Equipment Reserve, Liability Reserve, Workers Comp. Reserve)

DEBT SERVICE FUND AND CAPITAL RESERVE FUND not investigated in context with operating expenditures

Current account per capita operating expenditures:

a. including business portion: $220.52

b. excluding business portion: **$163.59**

City operating expenditures for businesses by size of firm: **$162.37 per employee**

($3,734,613 div. by 23,000 private sector employees)

APPENDIX 5

EXPENDITURES BY VARIOUS COUNTY FUNDS, DOUGLAS COUNTY, 1989 BUDGET

GENERAL FUND	1989 Actual	Allocation ratios for Businesses	Proportion of County Expenditures for Business Sector		Capital Outlay
Administrator	$122,157	0.30	36,647		115
Auditor	2,200	0.30	660		0
Budget	82,908	0.10	8,291		345
Buildings & Grounds	369,500	0.00	0	est. D.Hill	23,882
Clerk	154,303	0.30	46,291		284
Commissioners	257,864	0.30	77,359		12,082
Community Service Coordinator	27,696	0.20	5,539		0
Coroner	21,327	0.10	2,133		0
Countywide Oper.	300,737	0.10	30,074		0
Data Processing	258,128	0.10	25,813		416
District Attorney	598,478	0.15	89,772	est. J.Flory	16,913
Emerg. Preparedness	115,227	0.10	11,523		7,206
Grants and Matching Funds	140,690	0.10	14,069		0
Industrial Development	151,929	1.00	151,929		75,000
Juvenile Detention	0	0.00	0		0
Purchasing and Accounting	106,955	0.01	1,070		6,109
Reappraisal Advis. Services	10,331	0.36	3,719	see apprs. cost	0
Register of Deeds	111,053	0.05	5,553		5,921
Sheriff	2,048,840	0.10	204,884	est. L.Anderson	78,672
Treasurer	200,100	0.10	20,010	est. N.Hempen	358
Unified Courts	243,413	0.01	2,434		10,732
Public Works	130,506	0.20	26,101	est. F.Hempen	13,412
General Fund Total	$5,454,344		$763,870		$251,602
MISCELLANEOUS FUNDS					
Ambulance	$955,613	0.00	0		4,441
Appraisers Cost	245,899	0.36	88,524	Based on ass.	500
Bond & Interest	1,358,116	0.15	203,717	prop. value	0
Community College Tuition	210,912	0.00	0		0
Direct Election	64,101	0.00	0		0
Emergency Telephone Service	0	0.00	0		0

MISCELLANEOUS FUNDS (continued)	1989 Actual	Allocation ratios for Businesses	Proportion of County Expenditures for Business Sector		Capital Outlay
Employee Benefits	$1,611,134	0.19	305,076	Average	0
Extension Council	236,191	0.01	2,362		0
Fair Fund	67,144	0.10	6,714		3,618
Health	313,625	0.00	0		0
Historical Societies	55,597	0.00	0		0
Indirect Election	29,304	0.00	0		0
Mental Health	300,000	0.00	0		0
Mental Retardation	240,879	0.00	0		0
Noxious Weed	186,668	0.00	0		0
Park Maintenance	99,270	0.00	0		2,320
Physically Handicapped	105,000	0.00	0		0
Reappraisal	448,777	0.36	161,560	see apprs. cost	1,092
Road & Bridge	2,360,549	0.20	472,110	est. F.Hempen	1,117
Service Program for the Elderly	252,587	0.00	0		0
Soil Conservation	60,000	0.00	0		0
Special Alcohol Programs	2,732	0.00	0		0
Special Auto Fees	168,105	0.00	0		5,219
Special Bridge	605,817	0.20	121,163		15,928
Special Building	101,373				100,407
Special Liability	61,897	0.10	6,190		0
Utilities Service	237,146	0.00	0		11,667
Valley View Care Home	1,242,280	0.00	0		0
RESERVE FUNDS					
Ambulance Reserve	$14,293	0.00	0		14,293
Equipment Reserve	$40,900	0.00	0		40,900
Risk Management	$105,720	0.01	1,057		0
Special Highway Improvement	$194,061	0.20	38,812		172,955
Spec. Road & Bridge	$3,770	0.20	754		3,770
TOTAL	$17,433,802		$2,171,909		629,830

Current account per capita operating expenditures:
a. including business portion: $205.43
b. excluding business portion: **$178.88**

City operating expenditures for businesses by size of firm: **$ 90.12 per employee**
($2,171,909 div. by 24,100 private sector employees)

APPENDIX 6

AVERAGE IMPACT FEES IN U.S. COMMUNITIES ACCORDING TO NATIONAL SURVEYS

Type of Impact Fee for Single-Family Unit	Average National Surveys I (Nelson)[1] infl. adj.	Average National Surveys II (Center, FL)[2] 1990	Average Colorado Survey 1983[3] infl. adj.	Lowest Average
Water Plant Investment				
Water Meter/Other				
Water Resource				
TOTAL WATER CHARGE	674	1,261	13,618	674
Sewer Plant Investment				
Sewer Connection				
TOTAL SEWER CHARGE	928	1,467	1,384	928
ROAD (street oversizing)	869	1,547	385	385
PARKS	769	526		526
OTHER PUBLIC FACILITIES		95	984	95
FIRE PROTECTION	273	135	194	135
POLICE	141	53	194	53
LIBRARY		86		86
BUILDING PERMIT/Building Fees	881		473	473
PLAN CHECK/Planning Fees	74		228	74
USE TAX on construction material			1,347	1,347
LAND DEDICATION (or fee in l			723	723
OFF-SITE STORM DRAINAGE	222		296	222
SCHOOLS	1,061	559		559
TOTAL (Comprehensive Fee)	5,218	4,468	6,208	5,607
Type of Impact Fee for Industrial & Comm.	**industrial and commercial impact fees (50,000 sq.ft. facility)**			
Water Plant Investment				
Water Meter/Other				
Water Resource				
TOTAL WATER CHARGE	no data	39,959 blown up proport.	42,975	39,959
Sewer Plant Investment				
Sewer Connection				
TOTAL SEWER CHARGE		18,272 blown up proport.	11,115	11,115
ROAD (street oversizing)		92,017 ind+comm.	10,726	10,726
PARKS		no fee	no fee	
OTHER PUBLIC FACILITIES		3,983 ind+comm.	2,361	2,361
FIRE PROTECTION		7,450 ind+comm.	1,630	1,630
POLICE		4,117 ind+comm.	1,630	1,630
LIBRARY		no fee	no fee	no fee
BUILDING PERMIT/Building Fees			6,728	6,728
PLAN CHECK/Planning Fees			3,785	3,785
USE TAX on construction material			33,488	33,488
LAND DEDICATION (or fee in l			14,497	14,497
OFF-SITE STORM DRAINAGE			7,098	7,098
SCHOOLS		no fee	no fee	no fee
TOTAL (Comprehensive Fee)	165,798	136,034	133,018	

[1]Nelson, Arthur C., *Development Impact Fees: Policy Rationale, Practice, Theory, and Issues*. Chicago, 1988 (American Planners Association), p. 9.

[2]Survey by Center for Governmental Responsibility, University of Florida, *Growth Management Studies Newsletter*, June 1990, Vol. 5, No. 2.

[3]Comparative Impact Fees for Colorado Communities: City of Loveland, Service Cost Recovery System June 1983, p. 10-15.