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ABSTRACT

Results of a study of the economic impact of Madison Area Technical College and the District 4 Area Vocational, Technical, and Adult Education (VTAE) programs on the local economy are presented in this report. Chapter 1 outlines the purpose, scope, and methodology of the study, and assesses the productivity/income, financial, and economic development effects of VTAE District 4. Chapters 2 through 5 detail the economic impact of the expenditures of the District 4 campuses (via wages and salaries, payroll taxes, purchases of supplies and equipment, student loans, and scholarships); of faculty and other employees; and of the over 50,000 full-time and 37,700 part-time students attending District 4 campuses in fiscal year 1980-81. Finally, the report provides a summary of total dollar flow to the District 4 economy, indicating: (1) a total $71.3 million went to local businesses directly because of the VTAE program; (2) finance, insurance, and real estate were the greatest beneficiaries of the presence of the District's VTAE program; (3) $2.6 million in local government revenues came from the colleges' students and staff; (4) an estimated $2.4 million went to services provided by local households and to local charitable and not-for-profit institutions; (5) using conservative income multipliers, it was estimated that the District 4 economy derived $169 million of sales as a result of the District 4 VTAE program. Student and employee survey forms are appended. (HB)

MADISON AREA TECHNICAL COLLEGE
211 NORTH CARROLL STREET, MADISON, WISCONSIN 53703

# GRADUATE SCHOOL OF BUSINESS

## UNIVERSITY OF WISCONSIN -MADISON



# THE ECONOMIC IMPACT OF MADISON AREA TECHNICAL COLLEGE-AREA VOCATIONAL TECHNICAL AND ADULT EDUCATION DISTRICT NO. 4 PROGRAMS ON THE LOCAL ECONOMY



William A. Strang, Principal Investigator
Daryush M. Nowrasteh, Project Coordinator
Thomas R. Ellis, Project Assistant

June 1982

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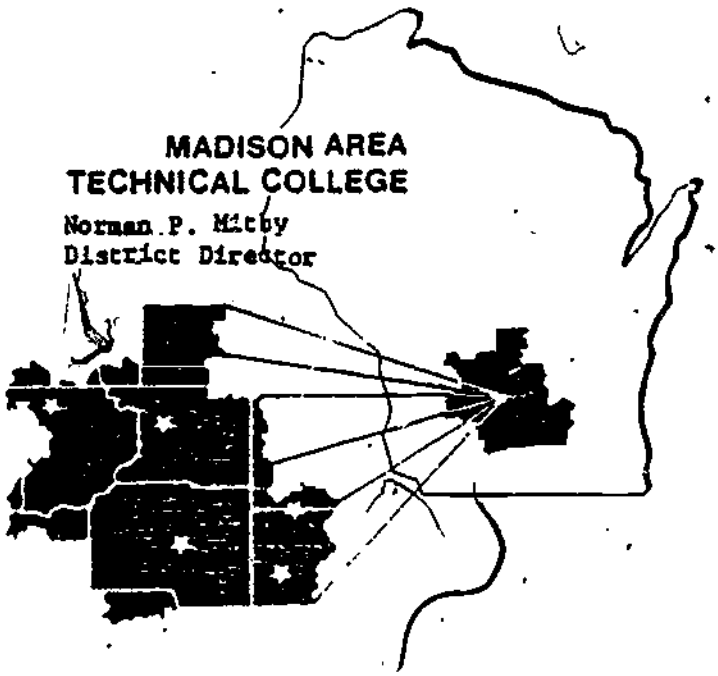


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Additionally, we would like to thank the Area VTAE District No. 4 Board for its funding support for the effort. We would especially like to recognize Norman P. Mitby, Director of District No. 4 for this role in obtaining support for the project and Mr. Joseph H. Seiverd, Assistant Director of Student Services, who contributed to the effort with his budget.

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William A. Strang, Principal Investigator
Daryush M. Nowrasteh, Project Coordinator

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# CHAPTER 1

## PURPOSE, SCOPE, AND METHODOLOGY

## PURPOSE, SCOPE AND METHODOLOGY

Public institutions, just as business enterprises, have important economic impacts on the communities they serve. In Madison, it has been recognized for years that state government and the university are a vital element of the economic base of the community. The State is the largest employer in the Madison SMSA. Its employees respend their incomes in the community, thus providing incomes for others through the "multiplier effect."[1]

The Madison Area Technical College and District 4 Area Vocational, Technical and Adult Education[2] programs involve several institutions, employ substantial numbers of people, and educate large numbers of students in the community. In discussions of the role of government on the economic base, the vocational system is often overlooked, perhaps because it is financed primarily from local property taxes, but is not clearly identifiable as either a city, county, or state agency. In any event, the economic impact of District 4 VTAE programs has not been systematically evaluated in the past.

During the summer of 1981, the District 4 Administrator of Planning and Economic Development developed a program in conjunction with the University of Wisconsin Bureau of Business Research to formally study the question of the District's impact.

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[1]The "multiplier effect" refers to the economic activity generated as dollars are spent and respent in the community (e.g., $100 is spent at a hotel; the hotel respends $80 in the community for such things as utilities, mortgage interest, labor, food supplies with $20 leaking out of the local economy; then each recipient of portions of the $80 respends a portion of what they receive). Thus, the original $100 expenditure yields a greater total local impact (i.e., $100 + $80 +....) than the simple direct impact.

[2]These will be referred to as MATC, VTAE, and or District 4 programs from this point in the manuscript. Most often District 4 will be used as the broadest term.

The Scope of the Study

The District 4 Program clearly has multiple economic impacts, both tangible and intangible, on the community. The specific focus of this study was the dollar expenditure impact of the institutions, the employees, and the students. The study closely parallels that done by the University of Wisconsin in 1971.[3] The approach is much like that which would be used to evaluate the importance of a major business institution (e.g., Oscar Mayer) in the local economy. The local economy is that included in the area shown in Figure 1-1. At times in this report it is referred to as the local economy and at other times as the District 4 economy.

The basic approach was to sample expenditures at the institutional level to determine how much was spent in the local economy and where it was spent, to survey District 4 employees to measure their local expenditures by economic sector, and finally to survey students in order to measure their local expenditures.

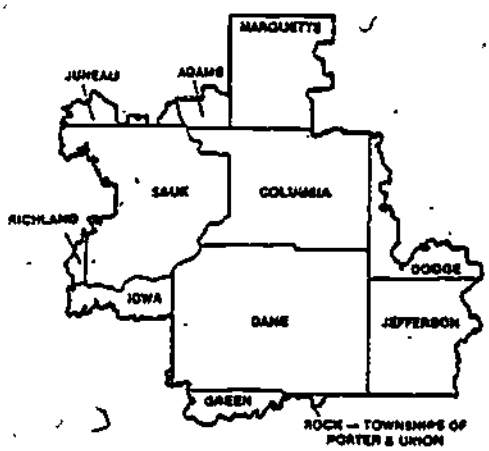
The basic logic of the approach used is that if there were no District 4 Vocational Programs, the institutional and employee expenditures would not take place in the local economy (the District). We also assumed that if a program were not available in the District, the full-time students (enrolled in full-time post high school programs) would leave the District to obtain the desired education in the same sense that young people "go away to college." If they were attending a vocational education program outside the District, then their expenditures (room, board, clothes, entertainment, etc.) would be made outside

[3] William A. Strang, The University and the Local Economy, Wisconsin Economy, Wisconsin Economy Studies No. 4 (Madison: U.W. Bureau of Business Research, September, 1971).

# Figure 1-1

## Geographic Definition of "The Local Economy"
## (The District 4 Economy)

**TAX SUPPORTING TOWNS, VILLAGES AND CITIES**
The listed towns, villages and cities, orportion of them, contribute to the financial support of the Area Vocational, Technical and Adult Education District No. 4.




**ADAMS COUNTY**
Towns
Dell Prairie
Jackson
New Haven
Springville

**COLUMBIA COUNTY**
Towns
Arlington
Caledonia
Columbus
Courtland
Dekorra
Fort Winnebago
Fountain Prairie
Hampden
Leeds
Lewiston
Lodi
Lowville
Marcellon
Newport
Otsego
Pacific
Randolph
Scott
Springvale
West Point
Wyocena
Villages
Annigator
Cambria
Doylestown
Fall River
Freedland
Pardeeville
Poynette
Randolph
Rio
Wyocena
Cities
Columbus
Lodi
Portage
Wisconsin Dells

**DANE COUNTY**
Towns
Albion
Berry
Black Earth
Blooming Grove
Blue Mounds
Bristol
Burke
Christiana
Cottage Grove
Cross Plains
Dane
Deerfield
Dunkirk
Dunn
Fitchburg
Madison
Maiden Rock
Medina
Middleton
Monroe
Oregon
Perry
Pleasant Springs
Primrose
Roxbury
Rutland
Springdale
Springfield
Sun Prairie
Vermont
Verona
Vienna
Westport
Windsor
York
Villages
Belleville
Black Earth
Blue Mounds
Brooklyn
Cambridge
Cottage Grove
Cross Plains
Dane
Deerfield
De Forest
Maple Bluff
Mazomanie
McFarland
Mt. Horeb
Oregon
Rockdale
Shorewood Hills
Waunakee
Cities
Madison
Middleton
Monona
Stoughton
Sun Prairie
Verona

**DODGE COUNTY**
Towns
Calamus
Chyman
Elba
Emmet
Fox Lake
Lebanon
Lowell
Portland
Shields
Woodlore
Village
Randolph
City
Watertown

**GREEN COUNTY**
Towns
Adams
Brooklyn
Exeter
New Glarus
Washington
York
Villages
Belleville
Brooklyn
New Glarus

**IOWA COUNTY**
Towns
Arena
Clyde
Dodgeville
Mineral
Ridgeway
Wyoming
Village
Arena

**JEFFERSON COUNTY**
Towns
Aztalan
Cold Spring
Concord
Farmington
Hebron
Ixonia
Jefferson
Koshkonong
Lake Mills
Milford
Oakland
Palmyra
Sullivan
Sumner
Waterloo
Watertown
Villages
Cambridge
Jamesa Cross
Sullivan
Cities
Fort Atkinson
Jefferson
Lake Mills
Waterloo
Watertown
Whitewater

**JUNEAU COUNTY**
Towns
Lindina
Lyndon
Seven Mile Creek
Summit
Wonewoc
Villages
Union Center
Wonewoc
City
Wisconsin Dells

**MARQUETTE COUNTY**
Towns
Buffalo
Crystal Lake
Douglas
Harris
Mecan
Montana
Moundville
Neshkoro
Newton
Oxford
Packwaukee
Shields
Springfield
Westfield
Villages
Endeavor
Appleton
Oxford
Westfield
City
Montello

**RICHLAND COUNTY**
Towns
Buena Vista
Ithaca
Westford
Village
Lone Rock

**ROCK COUNTY**
Towns
Porter
Union

**SAUK COUNTY**
Towns
Bratoe
Bear Creek
Dellona
Delton
Excelsior
Fairfield
Franklin
Freedom
Greenfield
Honey Creek
Ironton
La Valle
Merrimac
Prairie du Sac
Reedsburg
Spring Green
Sumpter
Troy
Washington
Westfield
Winfield
Woodland
Villages
Ironton
Lake Delton
La Valle
Loganville
Merrimac
North Freedom
Plain
Prairie du Sac
Rock Springs
Sauk City
Spring Green
West Baraboo
Cities
Baraboo
Reedsburg
Wisconsin Dells

the District. Thus the existence of a local program keeps the expenditures in the local economy.

The logic applied to full-time students cannot be applied to part-time students. For the most part, the latter students are living in the District for reasons other than the existence of the VTAE program. Their job is in the District or their spouse's job is in the District. If the VTAE program did not exist locally, it would not be expected that they would leave the area. Thus, it would not be reasonable to credit their living expenditures to the VTAE program. However, directly as a result of their participation in VTAE programs, the part-time students incur certain local expenses (e.g., bus transportation, parking, classroom supplies, restaurant bills). These expenditures are made locally because of the VTAE program, and it is reasonable to enumerate them.

## OTHER ECONOMIC IMPACTS OF THE DISTRICT 4 VTAE PROGRAM

Although they are not part of this research project, several economic benefits beyond expenditures accrue to the local economy. These are briefly discussed here.

### The Productivity/Income Effect of VTAE

The District 4 stresses occupational skills and technical knowledge through its educational offerings in more than 77 unique post-secondary program areas. The vocational-technical system attempts to generate a supply of skilled practitioners fitted to the demands of the labor market. The District 4 programs add to the employability of participants, thus raising their income potential. This may be the greatest economic contribution of the District 4 programs--the adding to the usefulness of the graduating

students. While this dimension of the local District 4 contribution is not part of the formal research project undertaken here, it is so important that it cannot be wholly passed by.

In 1980-81, the VTAE District 4 graduated 1,731 students from its diploma/degree programs.[4] The average salary of those graduates within six months after graduation was about $11,500.[5] If one assumes that high school graduates without vocational or technical training begin working at close to the minimum wage and progress at 7-8 percent annually, then such persons would be earning in the area of $8,300 at an equivalent time in their careers. Thus, in a very real sense, the VTAE program could be said to have added $3,200 to the earning capacity of each graduate, or about $5.5 million in personal income to the graduating class (1,731 x $3,200= $5,539,200).

That personal income benefit, of course, will apply over the working careers of that graduating class, so each year the community receives the benefit of the improved productivity and incomes of all the classes that have graduated or improved themselves from their VTAE education experience.

In 1980-81, there were several thousand part-time students enrolled in District 4 programs. While these students may not obtain or even desire a degree, most of them will be able to improve their job skills by taking one or two courses relevant to their work. As a result of that experience, they add to their productivity and personal income potential. If, for example, 10,000 such students were able to add $500 to their annual income as a result of VTAE program participation, then the annual impact of that participation would be $5 million to the District 4 economy.

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[4] District Director's Report (Madison: Area Vocational, Technical and Adult Education District No. 4, 1981), p. 24.

[5] Ibid.

As this dimension of the VTAE economic contribution is not part of this study, we will go no further here. A specific study of the increased earnings resulting from VTAE programming would be useful at a later point.

The Financial Effect of VTAE

During the 1980-81 fiscal year, District 4 had $13,231,000 on deposit with financial institutions within the District 4 area and another $32,020,000 outside the District, but in Wisconsin.[6] This amount is unusually high now as funds for the delayed building program have been held for some time. However, even after these funds are spent for the building, considerable operation funds will be held with local financial institutions.

The Economic Development Effect of VTAE

Economies develop for a multiplicity of reasons. Studies as to why businesses locate in one area as opposed to another consistently show that no one factor dominates. However, the quality and supply of the work force is most often the leading reason given for business location. In a 1973 study of Wisconsin's economy, a "supply of skilled labor" consistently ranked as one of the leading location factors cited by manufacturers.[7] More specific to vocational education, an annual study of business climates in the various states uses vocational enrollments as one of 22 factors that determines a state's business climate.[8]

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[6]"Area Vocational, Technical and Audlt Education District No. 4 Investment Schedule," January 12, 1981.

[7]Jon G. Udell, Wisconsin's Economy as seen by Industry, Labor and the General Public (Madison: University of Wisconsin Bureau of Business Research, January, 1973), pp. 56, 66, 70.

[8]Alexander Grant & Company, The Third Study of General Manufacturing Business Climates of the Forty-Eight Contiguous States of America (Chicago: Grant Thornton International, 1982), p. 23.

The VTAE system thus is one vital element of the economic system and it plays a role in attracting industry to an area. The economic contribution of the VTAE program in this regard is extremely difficult, perhaps impossible, to measure. Nonetheless, this intangible role in the attraction and retention of industry to the local economy is one of the most important economic contributions of the vocation, technical, and adult education program to its community.

## CHAPTER 2

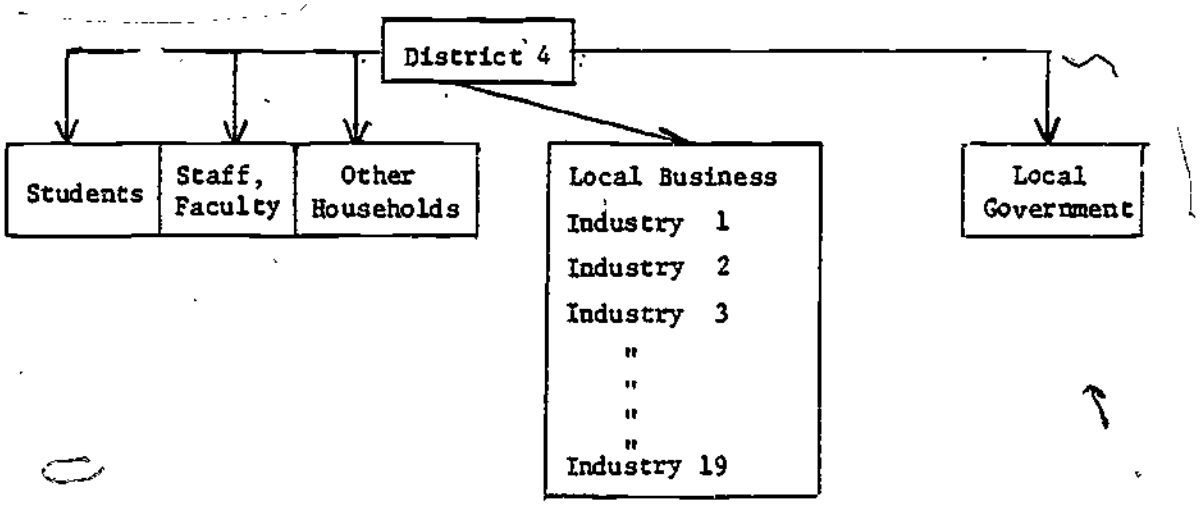
## THE ECONOMIC IMPACT OF VTAE DISTRICT 4 INSTITUTIONAL EXPENDITURES

## VTAE INSTITUTIONAL OPERATING EXPENDITURES

Payments from VTAE District 4 (referred to as District 4 from now on) to persons, businesses, and local government represent one major flow of funds to the community. Institutional operating expenditures are composed primarily of wages and salaries, payroll taxes, purchases of supplies and equipment, student loans, and scholarships. Figure 2-1 demonstrates a typical flow of funds directly from District 4 to the District 4 area economy (also referred to as the local economy).

Figure 2-1

Flow of Funds from District 4 to the Local Economy




### Payments to Students

District 4 annually pays students' wages for work performed. Student help and work study, along with scholarships and loans, combine to comprise the flow of funds to students. Loans are not normally viewed as income because they represent a commitment to sacrifice future income. However, for the purposes of this study it is appropriate that student loans be considered as an income stream from the viewpoint of the local community. The student loan

funds become available for expenditure during the students' stay in the District 4 economy. After the students graduate, they normally begin to repay the loan. How this would effect the local economy in the future would depend on whether the graduate remained in District 4. All payments to students represent a dollar flow to members of the local community. Table 2-1 summarizes total dollar flows to students.

Table 2-1

Total Dollar Flows to Students
in 1980-81

| | | |
|---|---|---|
| Student Help | | $ 124,195 |
| Work Study | | 175,142 |
| Student Loans and Grants: | State and Federal | 6,413,733 |
| | MATC Foundation | 43,327 |
| Total | | $6,756,397 |

Payments to Faculty and Staff

The single largest expenditure category for the District 4 campuses was wages and salaries to faculty and staff. The total estimated payroll for District 4 for fiscal year 1980-81 was $13,174,293. Subtracting student wages and work study of $299,377, nonstudent faculty and staff wages were $12,874,916.

Although this study is primarily concerned with dollar flows, it is appropriate here to mention that $2,050,004 was spent for fringe benefits for District 4 employees. These supplementary benefits are nontaxable income to employees, providing them the opportunity of spending their wages and salaries on things other than health and life insurance or retirement programs. These supplementary benefits are presented in Table 2-2.

Payments for Supplies, Services, and Equipment

The balance of District 4 operating expenditures relate to the purchases

of supplies, services, and equipment. In the case of payments to students and staff it was assumed that all were residents of District 4. Exceptions to

Table 2-2

Fringe Benefits Paid to District 4 Employees
1980-81

| | |
|---|---|
| Health Insurance | $ 698,247 |
| Life Insurance | 60,967 |
| Teacher Retirement | 1,102,172 |
| Income Protection | 91,563 |
| Circuit Benefits | 37,074 |
| Classified (Physical Exam, Workers Comp., Unemployment Comp.) | 59,981 |
| Total | $2,050,004 |

Source: District 4 Accounting Department.

this would be infrequent and would have little effect on the study's conclusions. However, in the case of supplies, services, and equipment, a sample of invoices showed that an estimated 61.5 percent of the District 4 dollar expenditures were made outside the District 4 area. Non-District 4 expenditures would not have a direct impact on the area's economy, and therefore they had to be segregated from local area expenditures. Total 1980-81 expenditures for supplies, services and equipment were $11,848.144.

The percentage of District 4 purchases was estimated by sampling from the 4,065 invoices representing economic transactions during fiscal 1980-81. Invoices for all District 4 campuses were included in the sample. A sample size estimation based on the coefficient of variation for the invoices indicated that a sample of 452 would be appropriate given a confidence level of 95 percent and a desired precision of better than 10 percent. We excluded all invoices from this sample that exceeded $15,000, and later took a 100 percent

sample of these transactions that exceeded this amount.

The 452 sample invoices were drawn randomly. Each invoice drawn was identified as to whether it was a transaction within the District 4. Those transactions within the district were classified by industry. The total sample of vouchers involved transactions amounting to $294,501. Of this amount, $156,800 were expenditures made to businesses in the District 4 economy (53.2% of total invoice expenditures)

We were concerned that the extension of our sample results to total estimates might be inaccurate because of large purchases made either locally or nonlocally. For example, if the $11,848,144 of purchases included several two or three million dollar purchases made either locally or nonlocally, our sample might not be accurate if it missed even one of these large transactions. Therefore, as mentioned, we took a sample of all vouchers less than $15,000, and we also took a 100 percent sample of all vouchers exceeding $15,000. These larger invoices involved 76 transactions with 43 being Non-District 4 purchases and 33 being District 4 purchases. The combined total of large invoices was $7,228,046, representing 61 percent of total purchases for supplies, services, and equipment. The Non-District 4 purchases in the large invoice sample (invoices exceeding $15,000) amounted to $5,291,808, while District 4 purchases in this sample were $1,935,618.

The $7,228,046 was subtracted from total expenditures for supplies, services, and equipment to obtain a total value of the $15,000-and-under transactions. The resulting total was multiplied by the 53.2 percent determined to be local (from the sample of 452 invoices). This yielded an estimate of $2,460,191 District 4 purchases under $15,000. The sample was 6.4 percent of this amount, so we employed an expansion factor of 15.69 to estimate

the totals of each industry in the all transactions less than $15,000 category.* The results of our 100 percent sample of all transactions exceeding $15,000 were then added to our estimated figure from the small invoices sample to arrive at total by industry. The following are the estimates of local area expenditures for each industry:

General Merchandising Stores

| Sample | x | Expansion Factor | + | Large Sample** | = | Estimated Total |
|---|---|---|---|---|---|---|
| $766 | | 15.69 | | 0 | | $12,019 |

These purchases included items bought at merchandising stores such as department, discount, and variety stores.

Apparel Stores

| Sample | x | Expansion Factor | + | Large Sample | = | Estimated Total |
|---|---|---|---|---|---|---|
| — | | 15.69 | | — | | — |

While a few purchases may have been actually made, none appeared in the sample. The amount is undoubtedly very low, if not zero.

Food Stores

| Sample | x | Expansion Factor | + | Large Sample | = | Estimated Total |
|---|---|---|---|---|---|---|
| $3865 | | 15.69 | | 0 | | $60,642 |

Purchases from food stores included primarily items bought for cafeteria operations on the MATC campuses.

Furniture and Appliance Stores

| Sample | x | Expansion Factor | + | Large Sample | = | Estimated Total |
|---|---|---|---|---|---|---|
| $683 | | 15.69 | | 0 | | $10,716 |

These purchases refer basically to capital purchases made locally to furnish offices and other facilities.

---

*The expansion factor of 15.69 is based on the fact that 6.4% x 15.69= 100%.

**Transactions exceeding $15,000.

Other Retail Stores

| Sample | x | Expansion Factor | + | Large Sample | = | Estimated Total |
|---|---|---|---|---|---|---|
| $48,028 | | 15.69 | | $215,388 | | $968,947 |

These purchases included a variety of retail stores such as hardware stores, book stores, florists, specialty item stores, office supply stores, and others. The estimated total for this category is very large because this category includes numerous transactions to a wide variety of business establishments.

Restaurants

| Sample | x | Expansion Factor | + | Large Sample | = | Estimated Total |
|---|---|---|---|---|---|---|
| -- | | 15.69 | | -- | | -- |

These purchases refer to the portion of travel expense funds paid to District - sponsored visitors that could be traced to local eating places. Unfortunately, information was unavailable to trace these expenditures. Checks written to individuals not in business would encompass these expenditures. The amounts are therefore included in another category, "Work Performed by Persons Not In Business."

Amusement Places

| Sample | x | Expansion Factor | + | Large Sample | = | Estimated Total |
|---|---|---|---|---|---|---|
| $350 | | 15.69 | | 0 | | $5,491 |

Theatres, sporting events, museums and other entertainment establishments would comprise this category.

Automobile Sales and Service and Parts

| Sample | x | Expansion Factor | + | Large Sample | = | Estimated Total |
|---|---|---|---|---|---|---|
| $10,071 | | 15.69 | | 69,198 | | $227,212 |

This category included direct purchases by District 4 from local service stations, garages, and automobile dealers. Supplies necessary for teaching vocational skills regarding automobile maintenance are included in this category if they were purchased from the mentioned retailers.

Construction Repair Business

| Sample | x | Expansion Factor | + | Large Sample | = | Estimated Total |
|---|---|---|---|---|---|---|
| $2547 | | 15.69 | | 46,160 | | $86,122 |

Construction expenditures for repair and maintenance work were included in the purchasing sample.

Personal and Business Services

| Sample | x | Expansion Factor | + | Large Sample | = | Estimated Total |
|---|---|---|---|---|---|---|
| $46,495 | | 15.69 | | 301,091 | | $1,030,597 |

This broad category included items ranging from medical, legal, and consultant fees to service charges by local banks which would not include interest charges.

Finance, Insurance, and Rental

| Sample | x | Expansion Factor | + | Large Sample | = | Estimated Total |
|---|---|---|---|---|---|---|
| 984 | | 15.69 | | $479,728 | | $495,167 |

Included here are finance charges paid to local lending institutions, insurance expenses paid to local firms, and rental expenses paid through the Dane County Treasurer and Commercial Marine Bank in Madison.

Local Government

| Sample | x | Expansion Factor | + | Large Sample | = | Estimated Total |
|---|---|---|---|---|---|---|
| $9,358 | | 15.69 | | $414,558 | | $561,385 |

These payments include local taxes and other funds paid to the Madison City Treasurer. Also the payment to the U.S. Postal Service in Madison is included.

Charitable and Other NonProfit Organizations

| Sample | x | Expansion Factor | + | Large Sample | = | Estimated Total |
|---|---|---|---|---|---|---|
| 8,839 | | 15.69 | | 0 | | $138,684 |

This category includes charitable organizations and other non-profits such as the university and local school district.

Lodging Places

| Sample | x | Expansion Factor | + | Large Sample | = | Estimated Total |
|---|---|---|---|---|---|---|
| 0 | | 15.69 | | 0 | | 0 |

These purchases refer to the portion of travel expense funds paid to District 4 - sponsored visitors that could be traced to local hotels or motels. Information was not available to trace these expenditures. The amount would be included in the category "Worked Performed by Persons Not In Business."

Work Performed by Persons Not In Business

| Sample | x | Expansion Factor | + | Large Sample | = | Estimated Total |
|---|---|---|---|---|---|---|
| 24,814 | | 15.69 | | 0 | | $389,332 |

This broad category refers primarily to District 4 residents who perform a task for the District and also to employees who travel on its behalf. Also included would be special funds paid to individuals to perform duties or pick up supplies on behalf of the District. Visiting guests sponsored by the District would receive money from this category for lodging or restaurants.

Utilities

| Sample | x | Expansion Factor | + | Large Sample | = | Estimated Total |
|---|---|---|---|---|---|---|
| 0 | | 15.69 | | $313,800 | | $313,800 |

This category includes gas and electricity payments paid within the District 4.

Wholesalers

| Sample | x | Expansion Factor | + | Large Sample | = | Estimated Total |
|---|---|---|---|---|---|---|
| 0 | | 15.69 | | $95,695 | | $95,695 |

All agents, brokers, and wholesalers selling items such as office supplies, food, and other equipment were included in this category.

The impact of District 4's institutional expenditures on District 4 area economy is presented in summary form in Table 2-3. Incorporating the adjustments detailed above with the estimates derived from the large sample, the total direct local impact was $4,395,809.

The balance of institutional expenditures for supplies, services, and equipment ($7,452,335) has an economic impact outside the area. Much of this impact, of course, is in the state of Wisconsin.

In 1980-81, institutional expenditures were about $11.8 million for supplies, services, and equipment. A major building program is expected to be undertaken and completed in the next few years. The building program will add

about $60 million to institutional expenditures over a fairly short period. These added expenditures will greatly stimulate the District 4 economy, particularly the District 4 construction industry, which as been depressed in recent years.

A more detailed study of purchases of supplies might uncover several good business opportunities for local business people. Such a study, which is beyond the scope of the present work, would also provide better data regarding the impact of District 4 on the various sectors of the local business community.

Table 2-3

District 4 Purchases of Supplies, Services, and Equipment from Businesses in the District 4 Economy, 1980-81

| Industry | Estimated District 4 Purchases |
|---|---|
| General Merchandise | $ 12,019 |
| Apparel | 0 |
| Food | 60,642 |
| Furniture and Appliance | 10,716 |
| Other Retail | 968,947 |
| Wholesalers | 95,695 |
| Restaurants | 0 |
| Amusement | 5,491 |
| Automobile Sales, Service and Parts | 227,212 |
| Construction Repair | 86,122 |
| Personal and Business Service | 1,030,597 |
| Finance, Insurance and Rental | 495,167 |
| Lodging Places | 0 |
| Utilities | 313,800 |
| Subtotal to Business | $3,306,408 |
| Charitable and Other Non-Profit Organizations | 138,684 |
| Local Government | 561,385 |
| Work Performed by Persons Not in Business | 389,332 |
| GRAND TOTAL | $4,395,809 |

## CHAPTER 3

## THE ECONOMIC IMPACT OF VTAE DISTRICT 4 FACULTY/EMPLOYEE EXPENDITURES

## VTAE FACULTY/EMPLOYEE EXPENDITURES

The expenditures of District 4 employees represent a substantial dollar inflow to the local economy. As previously stated, the 1980-81 payroll for District 4 operations was $13,174,293. Because the employees are members of the District 4 economy, this payroll can be viewed as a flow of dollars into the local economy. However, one can also view the employees as internal to the District 4 "community" (institution, students, employees) and use their expenditures in the local economy as the dollar flow stemming from wages and salaries. We have chosen to do this in this section of the report.

One of the major problems of measuring the impact of the District payroll on the local economy is the fact that an employee's expenditures are often not entirely accounted for by VTAE earnings. For example, an employee will usually have some outside sources of income, such as interest on savings, dividends on stock, royalties, rent, or income from work done outside institutional working hours. For example, an employee might earn $15,000 annually from District 4 and an additional $4,000 from other sources. The employee's annual expenditures in the local economy would only be partially explained by his institutional income.

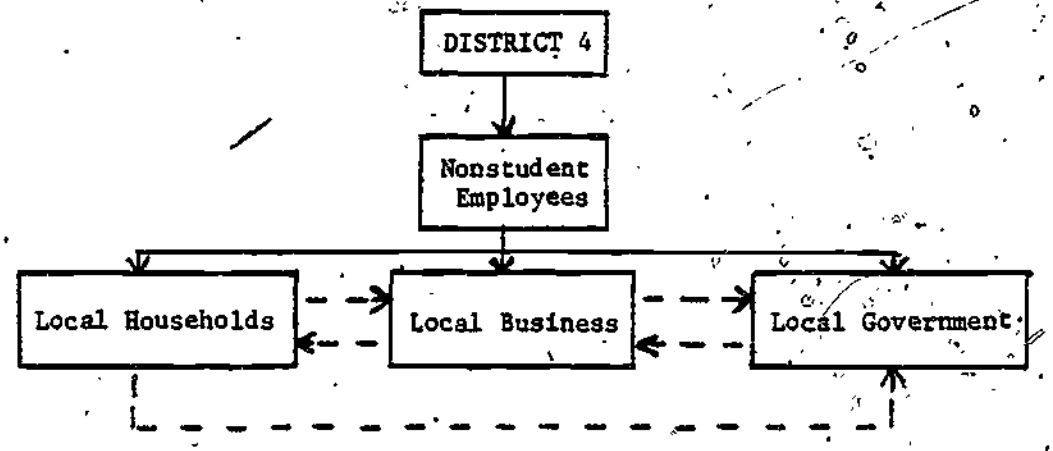
The case can also be considered where the District 4 employee may only be contributing a portion of household income, while expenditures would be reported on the basis of total household income. The sample of 102 employee questionnaires indicated an average of 68.2 percent of their household income was accounted for by District 4 employment. This means that the spouses of District 4 employees are contributing 31.8 percent to household incomes. In this sense, the District payroll is partially explanatory of expenditures. In this

case, using employee expenditures to measure impact would overstate the importance of the District payroll on the local economy. Having no basis for adjusting these two situations, we used the employee survey to determine percentage allocations of income to expenditure categories and then applied those percentages to the payroll available for expenditure in the local economy.

The flow of employee expenditures to the District 4 economy is shown in Figure 3-1. The solid lines represent flows measured in this section. The dashed lines represent flows that occur, but that are not discussed in this section of the report.

Figure 3-1

Flow of Employee Expenditures




Because student expenditures are considered elsewhere in this report, employee gross earnings in 1980-81 were obtained by subtracting the $299,877 paid to students in hourly wages from gross payroll. The result was $12,874,956.

From the $12,874,956, taxes were deducted to determine what income was available for expenditure in the District 4 economy. These calculations are shown in Table 3-1.

Table 3-1

Nonstudent Disposable Income

| | | |
|---|---|---|
| U.S. Nonstudent Payroll | | $12,874,956 |
| Less: Federal Income Taxes* | 2,113,594 | |
| State Income Taxes* | 702,029 | |
| Social Security Taxes | 793,277 | 3,608,900 |
| Nonstudent Disposable Income from District 4 | | $ 9,266,056 |

*The assumption is that tax deductions from payroll equal taxes paid.

Additional deductions were made from payroll to purchase services desired by the employees. These included life and health insurance, retirement investment, government bonds and various other items itemized in Table 3-2.

Table 3-2

Employees Income Available for Local Expenditure

| | | |
|---|---|---|
| Nonstudent Disposable Income from MATC | | $9,266.056 |
| Group Life Insurance | $ 68,437 | |
| Group Health Insurance | 7,470 | |
| Retirement Plan Benefits | 14,899 | |
| Union Dues | 83,861 | |
| Credit Union | 454,279 | |
| Tax Shelters and Annuities | 457,659 | |
| US Bonds | 6,728 | |
| Miscellaneous Expenditures | 16,222 | 1,109,555 |
| Nonstudent Income from MATC District 4 Available for Local Expenditure | | $8,156,501 |

Thus, it would appear that the District 4 faculty and staff had $8,156,501 available to spend in the local economy during the 1980-81 fiscal year.

To determine expenditures by employees, we surveyed a number of faculty and staff at the Madison and other District 4 campuses. The questionnaire was included in an employee mailing going to all District 4 employees. The

questionnaire used is presented in Appendix A. From the survey, we obtained 102 usable responses. The totals in each expenditure category were obtained. From these amounts we calculated the percentage of disposable income that was spent on the various categories. The results are shown in Table 3-3. In total, District 4 employees spent an estimated $7,273,254 in local businesses, $283,846 to local government, and $108,481 to local households and $169,655 to charitable organizations.

Table 3-3

Employee Expenditures by Industry in the District 4 Economy

| Industry | | Estimated Expenditures |
|---|---|---|
| Construction (repairs only) | | $ 535,822 |
| Utilities* | | |
| Telephone | $ 4,960 | |
| Heating and Electricity | 263,455 | 268,415 |
| Personal and Business Services | | 241,432 |
| Finance, Insurance, and Real Estate | | |
| Interest | 732,454 | |
| Rent | 148,448 | |
| Insurance | 301,791 | 1,182,693 |
| General Merchandise Stores | | 375,199 |
| Food Stores | | 848,276 |
| Automobile Sales and Services | | |
| Service | 299,472 | |
| Sales | 2,526,689 | 2,826,161 |
| Apparel Stores | | 220,226 |
| Furniture and Appliance Sales | | 336,048 |
| Eating and Drinking Places | | 194,125 |
| Other - Retail | | 178,627 |
| Lodging Places | | 4,241 |
| Amusement Places | | 61,989 |
| TOTAL EXPENDITURES TO LOCAL BUSINESS | | $7,273,254 |
| Local Government | | 283,846 |
| Local Charitable Organizations | | 169,655 |
| Local Households | | 108,481 |
| TOTAL EXPENDITURES INSIDE DISTRICT 4 | | 7,835,236 |
| Expenditures Outside District 4 | | 320,550 |
| TOTAL EXPENDITURES | | $8,155,786** |

*Estimates for utilities and telephone service were provided by the Madison Utility and Telephone Companies.

**Total expenditures in Table 3-2 is $715 less than we calculated for in Table 3-3 due to rounding in calculations.

In fiscal year 1980-81, 8.9 percent of the sample purchased homes. Of those sampled who purchased homes, 20 percent said they purchased homes from builders, while 48 percent indicated they purchased their homes from homeowners. The newly constructed homes purchased by District 4 employees provided an important dollar flow to the construction industry. Banks, savings and loans, and realtors in the District 4 area would have gained by the 90 percent of respondents who financed their homes in District 4.

The reader is warned that the classification of expenditures by industry has not been perfectly accomplished. Respondents to the survey were required to do their own classifying, using the guidance given them by the questionnaire. Although the questionnaire helped to orient the respondents to the kinds of expenditures included in each category, it is likely that many made errors in their classifications. However, we feel confident that the data obtained have allowed us to make reasonable estimates of employee expenditures by the various industry groups.

# CHAPTER 4

## THE ECONOMIC IMPACT OF VTAE DISTRICT 4 FULL-TIME STUDENT EXPENDITURES

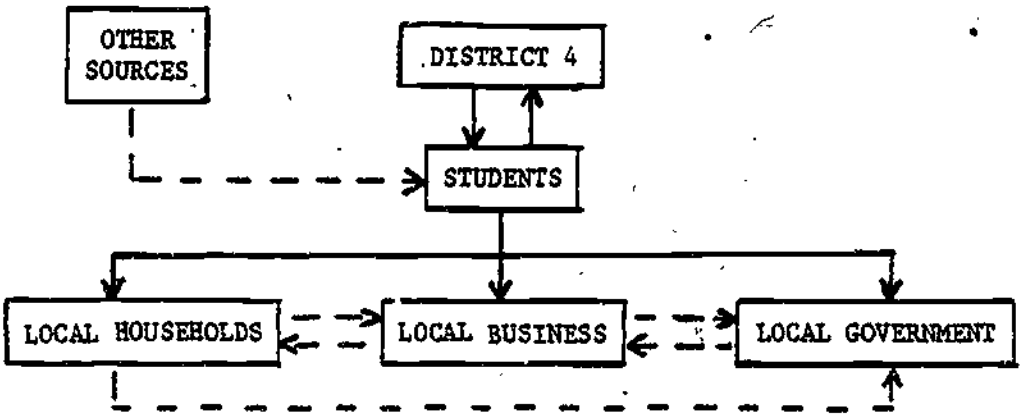
## FULL-TIME STUDENT* EXPENDITURES

The over 50,000 students attending District 4 campuses in fiscal 1980-81 undoubtedly spent a lot of money in the area. The purpose of this section is to examine just how much the 13,026 full-time students spent in the District 4 economy and to document the distribution of their expenditures by industry.[1]

The flow of student expenditures to the local economy is shown in Figure 4-1 below. The solid lines represent flows measured in this section; the dashed lines refer to flows that occur, but are not relevant to the purposes of this study.

Figure 4-1

Flow of Full-Time Student Expenditures




To obtain student expenditure data, we distributed 450 questionnaires to a random selection of classes representing the full-time degree programs on

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*Students enrolled in full-time post high school programs.

[1]The estimate of the number of full-time students is probably low. The actual number could have been as large as 16,000. Thus, impact estimates here, following our consistent policy, are conservative.

several of the District 4 campuses. Instructors handing out the questionnaires to students were asked to be helpful regarding questions about the questionnaire. We conducted our survey in the classrooms because of the difficulty of the questionnaire. Responses to a mail survey might have been low and we anticipated that the classroom approach would raise the response rate. The full-time student questionnaire is in Appendix B.

If the randomness of our survey was compromised by distributing it through the classrooms, it was certainly compensated by the quality of the information that we received. The survey process yielded 273 usable questionnaires and responses appeared to be of high quality, despite the potential difficulty of expenditure recall. From the survey, we calculated mean expenditures for each expenditure category. These were then expanded to estimates for the entire full-time student body.

The basis for extending the monthly expenditures from the sample to annual expenditures by the full-time student body was as follows. First, we concluded that the primary instruction activity takes place over a nine-month period. There are several hundred full-time students in a summer session, but the bulk of the programs are built around the normal academic year. The basic assumption about full-time students was that the lack of a District 4 VTAE program would result in their leaving the District 4 economy to attend a similar program elsewhere. For the most part, these students would probably return to District 4 during the summer months. For this reason, we used nine-months expenditures as the typical situation and this became the basis for estimating the annual impact per student. Because some students would perhaps establish residency on an annual basis, this measure (9 months) is conservative. A more accurate assumption might be 9.5 or 10 months. However, the smaller number is used to maintain our consistent conservatism.

The second step in estimating total impact on the District 4 economy, of course, was to multiply the mean expenditures per student by the number of full-time students.

In fiscal year 1980-81, there were 13,026 full-time students enrolled at District 4 campuses. This enrollment figure was multiplied by nine months to obtain 1980-81 student months spent in the District 4 area as a result of the VTAE campuses. Thus, we estimated 117,234 student months as our expansion factor.

Students responding to our survey represented a cross section of the student body. In addition to representing various degree programs, they lived in many different communities of the District 4 area. Of the 273 respondents, 121 (44%) lived in Madison while 152 (46%) were from other cities and towns in District 4.

Again, as in the employee survey, classification problems did exist. We used an almost identical questionnaire for the student and employee groups, and this encountered some of the same difficulties mentioned in the employee section of this report. The major difference in the two surveys was the greater student response: 273 student returns versus only 102 in the employee survey.

The local expenditure estimates for District 4 full-time students are presented in Table 4-1. In addition to the expenditures shown in that table, students spent $3,129,377 for VTAE services (see Table 4-2).

Table 4-1

Full-Time Student Expenditures by Industry
in the District 4 Economy

| Industry | | Estimated Expenditures |
|---|---|---|
| Construction (repairs only) | | $ 3,293,689 |
| Utilities | | |
| Telephone | $ 628,458 | |
| Heat and Electricity | 3,039,710 | 3,668,168 |
| Personal and Business Services | | 3,178,683 |
| Finance, Insurance, and Real Estate | | |
| Interest | 2,847,541 | |
| Rent | 9,696,541 | |
| Insurance | 2,520,297 | 15,064,379 |
| General Merchandise Stores | | 4,389,241 |
| Food Stores | | 13,333,328 |
| Automobile | | |
| Sales | 1,431,429 | |
| Service | 4,949,720 | 6,381,149 |
| Apparel Stores | | 2,921,354 |
| Furniture and Appliance Stores | | 1,637,407 |
| Eating and Drinking Places | | 3,335,776 |
| Other Retail | | 2,222,757 |
| Lodging Places | | 150,305 |
| Amusement Places | | 1,139,702 |
| TOTAL EXPENDITURES TO LOCAL BUSINESS | | $60,715,938 |
| Local Charitable and Religious Institutions | | 1,032,773 |
| Local Government | | 1,760,620 |
| Local Households | | 521,327 |
| TOTAL EXPENDITURES INSIDE DISTRICT 4 | | $64,030,658 |

Table 4-2

Selected Student Expenditures Paid
to District 4 VTAE Programs

| | |
|---|---|
| Full-Time Tuition | $2,521,631 |
| Activity Fees | 124,374 |
| Material Fees | 452,625 |
| Field Trip Fees | 14,164 |
| Graduation | 15,965 |
| Uniform Fees | 618 |
| TOTAL | $3,129,377 |

Note: These numbers represent expenditures by full and part-time students.

# CHAPTER 5

## THE ECONOMIC IMPACT OF VTAE DISTRICT 4 PART-TIME STUDENT EXPENDITURES

## PART-TIME STUDENT EXPENDITURES

When considering the economic impact of the District's 37,711 part-time students, we could not make the same assumptions as were made for the full-time students. We counted all expenditures of the full-time students, as defined by the MATC Handbook, as dollar income to the District 4 economy. Our assumption was that these full-time students either stayed in the area or were drawn to the area because of the educational opportunities provided by the District. However, this would not be the case for the part-time students, who consist of working people or housewives who attend a District 4 campus to take advantage of instruction offered, but who are not in the District 4 area specifically for the purpose of attending a VTAE program.

We did, however, identify various expenditures that were necessary for those attending the District 4 campuses. We included only expenditures directly related to the VTAE involvement, such as transportation to and from the campus, supplies and equipment necessary for classes, out-of-home food costs that were necessary because students were at a campus during meal hours, and expenditures for nursery care for mothers attending VTAE classes. The part-time student questionnaire is in Appendix C.

Four hundred part-time student questionnaires were issued to a selected group of classes representing VTAE programs at several District 4 campuses. We received 230 usable responses and the results were extended to total part-time students and summarized in Table 5-1.

Table 5-1 indicates that $11.4 million were directly spent in the District 4 as a result of part-time students' involvement at a District 4 campus program. While it might be argued that these students would have spent the money in the local economy anyway, it should also be remembered that some percentage of the money would have been spent outside the District. The

37,711 part-time students undoubtedly had a positive effect on Madison Metro and retail stores selling supplies and equipment. Also restaurants benefited from the campuses as indicated by almost $3 million in food costs. Applying a multiplier effect demonstrates a part-time student direct and indirect impact on the District 4 area of over $24.6 million that could be attributed to this student group's expenditures directly traceable to their participation in a VTAE program.

Table 5-1

Part-Time Student Expenditures Directly Related to District 4 Involvement

| | Direct Impact | Multiplier Effect | Direct and Indirect Impact |
|---|---|---|---|
| Transportation Expenses | $ 4,468,329 | 2.10 | $ 9,383,491 |
| Parking Expenses | 1,161.738 | 2.81 | 3,264,484 |
| Supplies and Equipment | 2,033,037 | 1.68 | 3,415,502 |
| Food Costs (eating places) | 2,952,261 | 2.27 | 6,701,632 |
| Nursery Care | 739,152 | 2.47 | 1,825,705 |
| TOTAL | $11,354,517 | 2.17 | $24,590,814 |

The part-time students were also asked how much they spent the previous month in downtown Madison "because they were drawn to the area by MATC involvement." The averege student who spent anything, spent $22.21 in the past month in downtown Madison. Extrapolating this to nine months, the average would be $199.89. For the sample as a whole, including those who spent nothing because they attended a campus other than the downtown Madison campus, the average monthly expenditures in downtown Madison were $8.73

Although the part-time students are not evaluated on the same basis as the institution, employees, and full-time students (because their presence cannot be fully attributed to the presence of a District 4 program), they do have a significant impact. Their numbers are so large that even at a modest per capita expenditure for a few specific things, they spend a great deal.

## CHAPTER 6

## SUMMARY: TOTAL DOLLAR FLOWS TO THE DISTRICT 4 ECONOMY

## SUMMARY: TOTAL DOLLAR FLOWS TO THE DISTRICT 4 ECONOMY

The direct dollar flows from the District 4 campuses to the District 4 economy that were discussed in chapters 2-5 previously are brought together in this summary. Additionally, the recycling of these dollars throughout the economy (the multiplier effect) is considered to provide a more complete picture of the District 4 program's impact on the local economy.

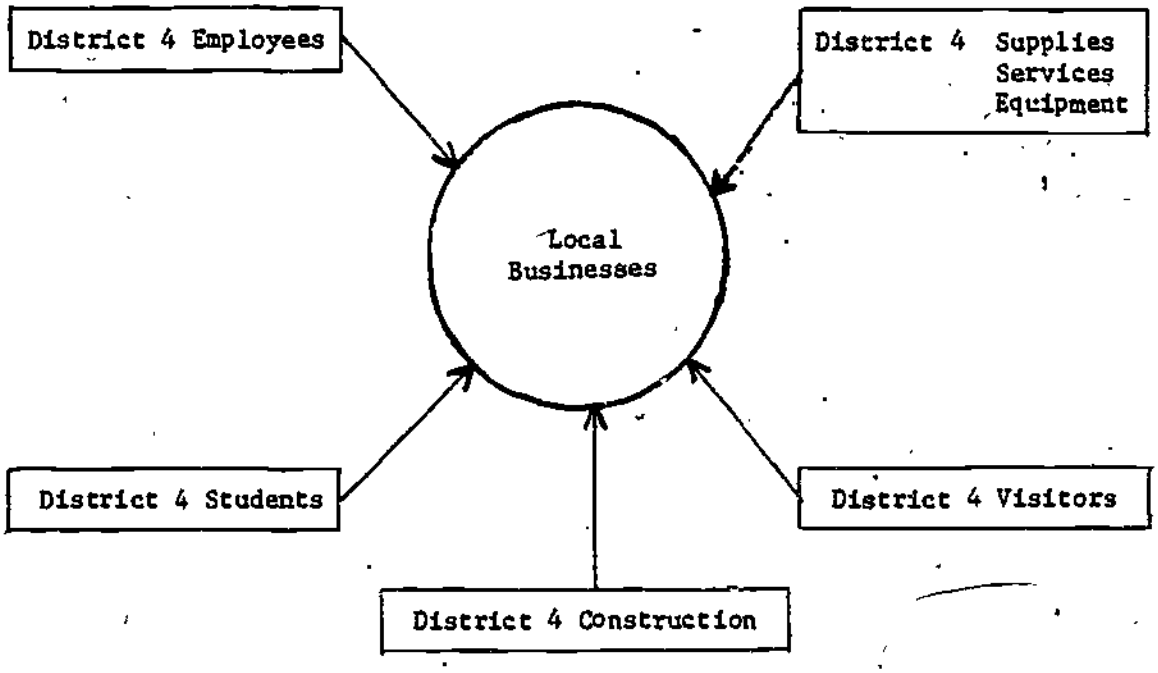
### DIRECT FLOWS

#### Direct Flows to Local Businesses

The several direct flows of dollars to local business attributable to the District 4 presence in the local economy are indicated in Figure 6-1.

Figure 6-1

Direct Flows to Local Businesses



The amounts of several of these dollar flows to the District 4 business community are presented in Table 6-1. Finance, insurance, and real estate (primarily the latter subcategory) are the greatest beneficiaries of the presence of the District's VTAE program, achieving a total direct dollar flow of more than $16.7 million. Other principal recipients include food stores ($14.2 million), and automobile sales and service ($9.4 million). A total direct flow of $71.3 million to businesses located in District 4 was estimated on the basis of this study.

Several factors support the idea that $71.3 million is a conservative figure. Full-time student summer enrollments were not considered. Part-time students, who spent $11.4 million in the local economy because of their enrollment in a VTAE program are also not included, on the basis that they are not living in the local economy because of VTAE programming.

Visitor expenditures also were not an element of this study. Certainly the VTAE presence in the District brought substantial numbers of visitors to the District. Such visitor expenditures would most likely fall in the categories of eating and drinking places, lodging places, and auto sales and service.

Institutional expenditures for construction during the period of the study were estimated at only $86,000. In the next few years, a large building program is expected to inject close to $60 million into the economy. This will come at an especially opportune time for a depressed local construction industry.

Thus, when summer enrollments, part-time students, and visitors impact and the large anticipated construction expenditures are considered, it becomes clear that the $71.3 million direct flow is very conservative.

Table 6-1

Summary of Direct District 4 Associated Local Expenditures

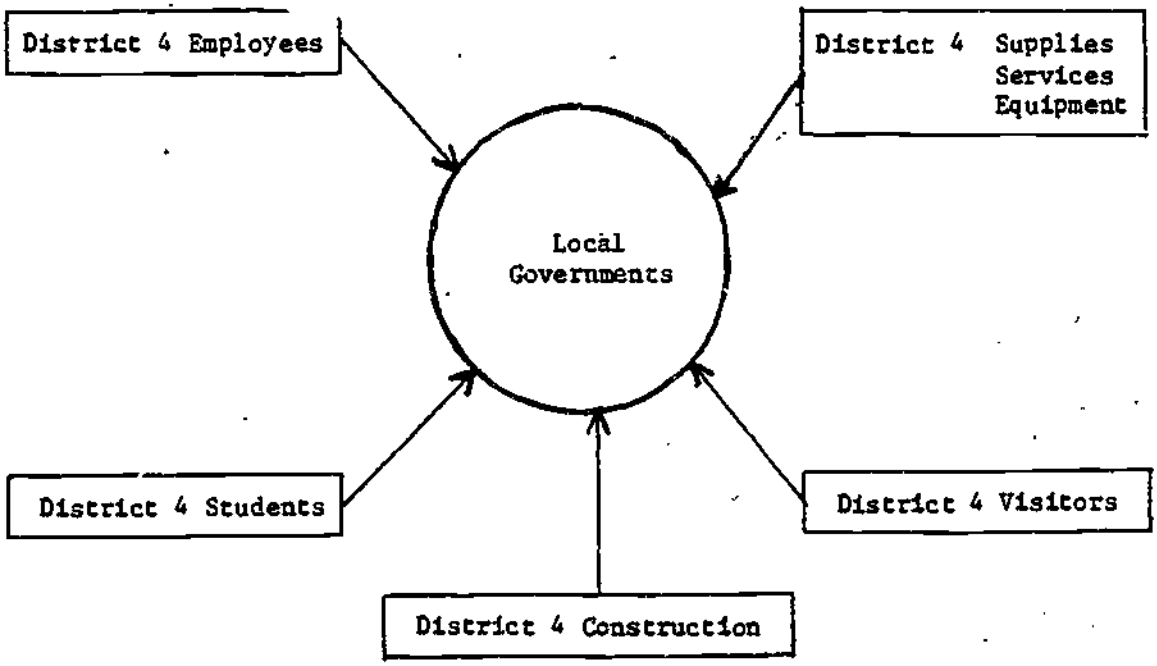
| Industry | Institutional Expenditures | Employee Expenditures | Full-Time Student Expenditures | Total Direct Expenditures |
|---|---|---|---|---|
| Construction | $ 86,122 | $ 535,822 | $ 3,293,689 | $ 3,915,633 |
| Utilities | 313,800 | 268,415 | 3,668,168 | 4,250,383 |
| Personal and Business Services | 1,030,597 | 241,432 | 3,178,683 | 4,450,712 |
| Finance, Insurance, Real Estate | 495,167 | 1,182,693 | 15,064,379 | 16,742,239 |
| General Merchandise Stores | 12,019 | 375,199 | 4,389,241 | 4,776,459 |
| Food Stores | 60,642 | 848,276 | 13,333,328 | 14,242,246 |
| Auto Sales and Services | 227,212 | 2,826,161 | 6,381,149 | 9,434,522 |
| Apparel Stores | --- | 220,226 | 2,921,354 | 3,141,580 |
| Furniture and Appliance Stores | 10,716 | 336,048 | 1,637,407 | 1,984,171 |
| Eating and Drinking Places | --- | 194,125 | 3,335,776 | 3,529,901 |
| Other Retail | 968,947 | 178,627 | 2,222,757 | 3,370,331 |
| Lodging Places | --- | 4,241 | 150,305 | 154,546 |
| Amusement | 5,491 | 61,989 | 1,139,702 | 1,207,182 |
| Wholesalers | 95,695 | --- | --- | 95,695 |
| TOTAL LOCAL BUSINESS | $3,306,408 | $7,273,254 | $60,715,938 | $71,295,600 |

## Direct Flows to Local Governments

Potential direct flows to local governments are indicated in Figure 6-2.

Figure 6-2

Direct Flows to Local Governments




Direct flows from the VTAE "community" to local governments, as determined from our research are indicated in Table 6-2. A total of $2.6 million in local government revenues came from the District 4 community, the major portion of this being property tax payments by District employees and Full-Time Students owning homes.

Table 6-2

Direct Flows to Local Governments

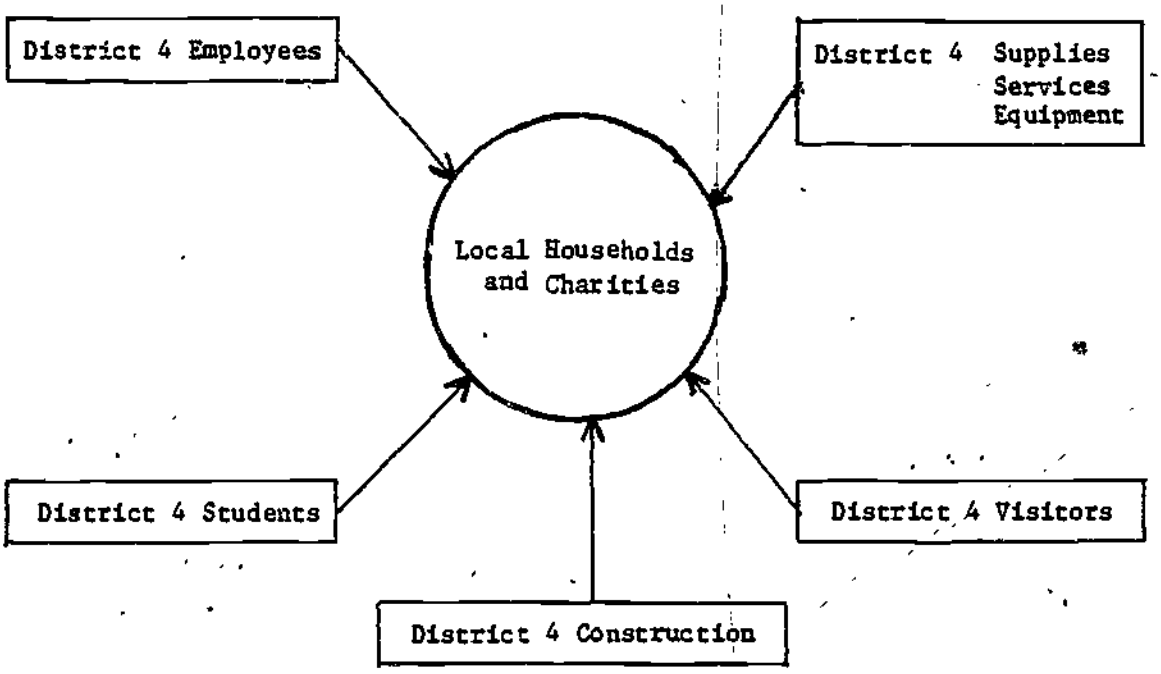
| Source of Payment | Amount of Payment |
|---|---|
| Institution | $ 561,385 |
| Employees | 283,846 |
| Full-Time Students | 1,760,620 |
| TOTAL | $2,605,851 |

Direct Flows to Local Households and Non-Profit Organizations

Each of the various groups associated with District 4 spent dollars for services directly provided by local households. Similarly, the various District 4 groups paid money to local charitable and not-for-profit institutions. These dollar flows are shown in Figure 6-3 and Table 6-3. For the purposes of this study, local charitable institutions were considered as a portion of the local household economic sector. The research provided an estimate of $2.4 million going to this sector.

Figure 6-3

Direct Flows to Local Households*




*Including charities, but not including "District 4 households" (VTAE employees or students, e.g., the VTAE payroll is not included as a dollar flow).

Table 6-3

Direct Flows to Local Households

| Source of Payment | Households | Charities | Total Payment |
|---|---|---|---|
| Institution | $ 389,332 | $ 138,684 | $ 528,016 |
| Employees | 108,481 | 169,655 | 278,136 |
| Students | 521,327 | 1,032,773 | 1,554,100 |
| TOTAL | $1,019,140 | $1,341,112 | $2,360,252 |

Total Direct Flows

The grand total of the dollars flowing into the District 4 economy from students, employees, and District 4 institutions was $76.3 million. This amount certainly has a significant impact on the District 4 economy. To fully estimate just what this impact on the local economy is, it is necessary to estimate the multiplier effects of the direct stream of dollars into the economy. Each dollar flowing into the economy is spent again by the recipient to provide income for other businesses and individuals. This effect is very real and is demonstrated by the effect of a large business in our area initiating operations or closing down. Retail sales, bank deposits, and other business indicators in the community are significantly affected in either situation.

## DIRECT AND INDIRECT FLOWS

One useful approach to studying the multiplier effects of expenditures in a local economy is input-output analysis. However, the construction of an input-output table, with sales multipliers for each industry in relation to all other industries, is both expensive and time consuming. Lacking both time and money, we chose to apply the input-output multipliers used in the 1971 study of the University of Wisconsin-Madison's impact on the Dane County area. The

tables should provide a fairly accurate estimation for the purposes of the present study. Those multipliers are conservative as they were derived originally for a smaller county than Dane.

Income multipliers are applied to District 4-associated purchases from each local industry in Table 6-4. Figure 6-4 shows the many interactions that are accounted for by the use of these income multipliers. In total, we estimated that the District 4 economy derives $169 million of sales as a result of the District 4 VTAE program being located within the area.

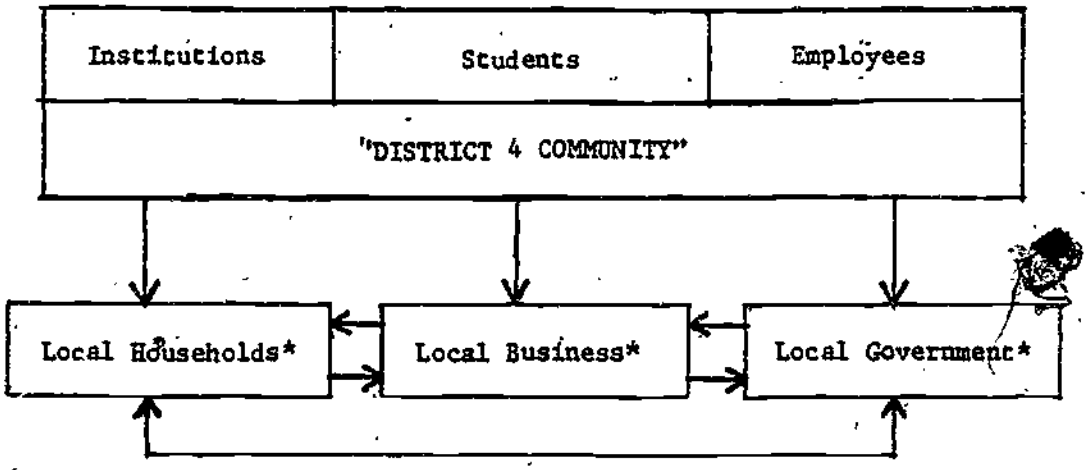
Table 6-4

Direct and Indirect Benefits to the Local Economy from District 4-Associated Expenditures ($000's)

| Industry | Direct Impact | Sales Multiplier | Direct and Indirect Impact |
|---|---|---|---|
| Construction | $ 3,916 | 2.87 | $ 11,238 |
| Utilities | 4,250 | 2.33 | 9,903 |
| Personal and Business Services | 4,451 | 2.81 | 12,507 |
| Finance, Insurance, Real Estate | 16,742 | 2.95 | 49,390 |
| General Merchandise Stores | 4,776 | 1.73 | 8,263 |
| Food Stores | 14,242 | 1.47 | 20,936 |
| Auto Sales and Service | 9,435 | 1.89 | 17,831 |
| Apparel Stores | 3,142 | 1.82 | 5,718 |
| Furniture and Appliance Stores | 1,984 | 1.75 | 3,472 |
| Eating and Drinking Places | 3,530 | 2.27 | 8,013 |
| Other Retail | 3,370 | 1.63 | 5,494 |
| Lodging Places | 154 | 2.37 | 365 |
| Amusement | 1,207 | 2.40 | 2,897 |
| Wholesalers | 96 | 1.86 | 178 |
| TOTAL LOCAL BUSINESS | $71,295 | 2.19 | $156,205 |
| Local Government | $ 2,606 | 2.83 | $ 7,375 |
| Local Households | 1,019 | 2.47 | 2,517 |
| Local Charities | 1,341 | 2.47 | 3,312 |
| TOTAL LOCAL ECONOMY | $76,261 | 2.22 | $169,409 |

Figure 6-4

Interaction between "District 4 Community"
and the Local Economy




*Not shown are the interactions within each economic sector. These are particularly important among local businesses.

Flows to Local Business, Local Government, and Local Households

While Table 6-4 shows the local economic impact of sales resulting from District 4-associated expenditures, it does not explain how each industry benefits. These estimates are made in Table 6-5, again using the multipliers used a decade ago in the University study.

In reading Table 6-5, readers should be reminded that the multipliers were based on a study done more than 10 years ago in a smaller local economy than the District 4 economy. Thus, the industry sales generated are just estimated, and are subject to challenge. Generally, the estimates should be low because such multipliers are higher for larger economies. The estimates for the manufacturing industry are especially vulnerable to questioning, because the composition of the manufacturing sector varies so widely from local economy to local economy.

Table 6-5

Direct and Indirect Sales Accruing to Local Economic Sectors
Because of District 4 VTAE Programs
(000's)

| Industry | Direct Sales | Sales from Multiplier Effect | Direct and Indirect Industry Sales |
|---|---|---|---|
| Agriculture | $ --- | $ 495 | $ 495 |
| Construction | 3,916 | 3,282 | 7,198 |
| Manufacturing | --- | 1,338 | 1,338 |
| Transportation, Communication, Utilities | 4,250 | 6,544 | 10,794 |
| Wholesalers | 96 | 5,635 | 5,731 |
| Building Material, Farm Equipment | --- | 2,154 | 2,154 |
| Personal and Business Services | 4,451 | 2,044 | 6,495 |
| Finance, Insurance, Real Estate | 16,742 | 3,427 | 20,169 |
| General Merchandise | 4,776 | 2,424 | 7,200 |
| Food Stores | 14,242 | 5,797 | 20,039 |
| Auto Sales and Services | 9,435 | 6,830 | 16,265 |
| Apparel Stores | 3,142 | 738 | 3,880 |
| Furniture and Appliance Stores | 1,984 | 469 | 2,453 |
| Eating and Drinking Places | 3,530 | 1,663 | 5,193 |
| Other Retail | 3,370 | 2,954 | 6,324 |
| Lodging Places | 154 | 262 | 416 |
| Amusement | 1,207 | 191 | 1,398 |
| TOTAL BUSINESS | $71,295 | $46,247 | $117,542 |
| Local Government | $ 2,606 | $ 2,729 | $ 5,335 |
| Local Charities | 1,019 | | |
| Local Households | 1,341 | 44,110 | 46,470 |
| TOTAL LOCAL ECONOMY | $76,261 | $93,086 | $169,347 |

The finance, insurance, and real estate industry ($20.2 million) and the food store industry ($20.0 million) are the greatest beneficiaries of the presence of District 4 VTAE programs, followed closely by the automobile sales and se vice sector ($16.3 million). The transportation, communication, and

utility industry ($10.8 million) also received substantial benefit, with about 60 percent of its sales being generated with the multiplier effect rather than directly.

Local households, which receive relatively little directly from District 4 operations (payrolls were not included) received more than $44 million indirectly through employment opportunities resulting from the local sales activity that was generated.

Local government received about $5.3 million because of the presence of District 4 operations. This estimate does not include state aids that would be gained because of the "District 4 community" population in the area (i.e., the employees and students)..

The sales impacts estimated in Table 6-5 should be measured against total dollar flows in the District 4 economy to assess their relative importance. Unfortunately, sales data by industry for District 4 were not available. A 1980 Sales Management Publication did, however, provide industry totals for five groups within Dane County. We realize that this study includes the many cities and towns included in the District 4 area outside of Dane County. However, the Dane County figures will help to put total District 4 expenditures in perspective. We might add that the Madison campus is the largest of all District 4 campuses in terms of both students and dollar expenditures by a substantial margin.

Table 6-6 compares all District 4 expenditures using totals from Table 6-5 to expenditures in Dane County to provide some insight regarding the sales impact. The District 4 presence in this comparison represents 5.3 percent of total sales in the five business sectors we evaluated. In a relative sense; District 4 expenditures were most important to food stores (7.8% of total sales) and automotive sales (7.2% of total). These percentages can be assumed

to be high because we have excluded the District 4 area outside of Dane County. However, the numbers do clearly indicate that the VTAE programs have a significant impact on the District 4 economy.

Table 6-6

Direct and Indirect District 4-Associated Sales in Fiscal Year 1980-81 as a Percentage of Total Sales in Dane County* (Selected Industries, 1980)

| Industry | Sales in Dane County ($000's)[a] | Direct/Indirect District 4 Associated Sales ($000's) | Percent of Total |
|---|---|---|---|
| Food Stores | $258,523 | $20,039 | 7.8 |
| Eating and Drinking Places | 197,917 | 5,193 | 2.6 |
| General Merchandise | 193,883 | 7,200 | 3.7 |
| Auto Sales and Services | 224,367 | 16,265 | 7.2 |
| Furniture and Appliance Stores | 96,319 | 2,453 | 2.5 |
| Five Industry Totals | $971,009 | $51,150 | 5.3 |

*Dane County used because retail sales for entire District were not available.

[a]Sales Management 1980 Survey of Buying Power.

Summary

This study focused on the expenditure flows of District 4 operations (institutional expenditures), employees, and students. These expenditures were estimated at $71 million, and, after considering their multiplier effect, added $169 million in sales to the District 4 economy.

Part-time students spent an added $11 million specifically because of their VTAE program participation.

When the long planned building program for the District in Madison begins, a large injection of funds--approximately $59 million--will flow into the economy. With the estimated multiplier effect of construction expenditures,

these expenditures should add about $169 million in extra (above normal operations) sales to the District 4 economy.

In January, 1981, District 4 had $13 million on deposit in financial institutions within the District. These funds, of course, allow the financing of individuals and businesses in the local economy.

Finally, the graduating class of 1980-81 increased its income potential by an estimated $5.5 million by virtue of having completed a degree/diploma program through District 4. That extra income, which is based on increased productivity, is largely spent in the local economy. Indeed, the added $5.5 million of the 1980-81 class is but a small piece of the added income to be considered, because each class before that one also has increased its income potential in a similar manner.

The dollar effects of the presence of District 4 programs in the local economy are concisely summarized in Table 6-7 (please note that these are not really additive, but simply indicative of various estimated economic effects). Other important and intangible effects of the programming are not specifically considered, but should not be overlooked. The first intangible is the role that vocational and technical education plays in economic development. Certainly, it is one of several important factors influencing industrial location in an area.

VTAE programs in the District 4 area are supported with about $10 million of local property taxes, $6 million of state aids, and lesser amounts of federal and other support. When these taxation levels are evaluated with an understanding of their economic effects, the value of VTAE investments can be more clearly appreciated.

Another important intangible is the pleasure and satisfaction that individuals taking non-vocational programs obtain from their participation in adult

education programs. What these students learn may have an economic impact (e.g., sewing may reduce family clothing costs) or it may have no important economic impact (e.g., french cooking). In the end, we must recognize that the impact of District 4 operations on the area population cannot be simply measured in dollars, despite the importance of that very substantial economic effect.

Table 6-7

Summary of All Economic Impacts

| | Millions of $ |
|---|---|
| 1. Direct Expenditures | |
| Institutional | 3.3 |
| Employees | 7.3 |
| Full-time Students | 60.7 |
| Total Direct | 71.3 |
| 2. Direct and Indirect Expenditures for Institution, Employees and Full-time Students | 169.4 |
| 3. Part-time Student Expenditures that are VTAE-Related | 11.4 |
| 4. Direct Impact of Planned Construction in 1982-84 | 59.0 |
| 5. Direct and Indirect Impact of Planned Construction in 1982-84 | 169.3 |
| 6. Deposits in Local Financial Institutions | 13.2 |
| 7. Added Annual Income to 1980-81 Graduates for Full-time Programs | 5.5 |

Appendix A (EMPLOYEES)

AREA VOCATIONAL, TECHNICAL and ADULT EDUCATION/DISTRICT No. 4

Dear MATC Employee:

The District Board has asked us to conduct a study to give them an idea of how MATC and its programs affect the local communities in which they operate. As one part of this study, we are asking you to take a few minutes of your time to complete the attached questionnaire.

If our results are to be representative, we need your best estimates of your answers. Your responses, of course, will not be identified with your name in any way. When you have completed the questionnaire, please return it to Dar h Nowrasteh's mailbox, as he is managing the study for us.

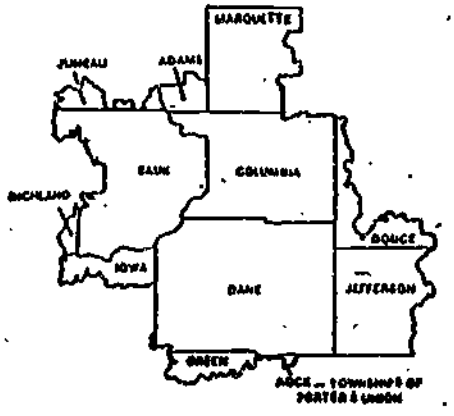
Thank you for your cooperation. The successful completion of this project should help us to work more effectively in the community.

Sincerely,

Norman Mitby,
Director

NM:jk

AREA VOCATIONAL, TECHNICAL and ADULT EDUCATION/DISTRICT No. 4



The purpose of this questionnaire is to obtain an estimate of your monthly expenditures made within the MATC District 4. A map has been provided to clarify the MATC boundaries for you. We understand that it may be difficult for you to recall exactly your expenditures, but your best estimate will be very helpful to us.

A. What percentage of your total household income is accounted for by your MATC District 4 employment? (Please enter your response in the box)

[ ] %

Please think about the total amount you spent LAST MONTH and then classify these costs by the kinds of stores where you spent your money.

B. 1. Estimated Last Month's Expenditures to businesses in MATC District 4

1. GENERAL MERCHANDISE STORES (examples-Sears, Pranges, K-Mart) $_____
2. CLOTHING AND APPAREL STORES $_____
3. FOOD STORES $_____
4. FURNITURE AND APPLIANCE STORES $_____
5. OTHER RETAIL STORES (liquor stores, hardware stores, drug stores, jewelry stores, book stores, florists $_____
6. RESTAURANTS AND BARS $_____
7. AMUSEMENT PLACES (theaters, sports events, art galleries or museums, private golf courses) $_____
8. AUTO REPAIR SHOPS, SERVICE STATIONS, AUTO DEALERS (Do not include auto purchases) $_____
9. CONSTRUCTION REPAIR BUSINESS (home or apartment) $_____
10. PERSONAL AND BUSINESS SERVICES (doctors, dentists, lawyers, beauty shops, laundries, optometrists, dry cleaners, T.V. repairs, etc.) $_____
11. INSURANCE BUSINESSES (life, health, disability, automobile, accident, property, etc.) $_____
12. PAYMENTS TO LOCAL GOVERNMENT AGENCIES (property taxes, parking fees, traffic tickets, public golf courses, etc.) $_____
13. CHURCHES AND OTHER LOCAL CHARITABLE AND RELIGIOUS INSTITUTIONS $_____
14. MOTELS AND HOTELS $_____
15. SERVICES OBTAINED FROM LOCAL HOUSEHOLDS (babysitting fees, lawn work, cleaning, other work performed by persons not in business) $_____
16. RENTAL EXPENSES (apartment, home, etc.) $_____
17. MORTGAGE PAYMENTS (if any - please do not include the property tax portion of your payment) $_____

Now you may wish to add up your last month's expenditures in MATC District 4. If the total seems too high or too low, you might go back over the questions and revise your estimates if necessary. Please list your best estimate of monthly expenditures in MATC District 4. $[ ]

C. You have estimated your last month's expenditures within MATC District 4.

Next please estimate how much you spent last month OUTSIDE of MATC District 4. (for example mail order purchases, money spent on a vacation trip, a car bought out of the area) $[ ]

D. 1. Do you own a home in the MATC District 4?

(Please circle your answer)

1. YES
2. NO → If NO, please go to Part E.

2. When did you purchase the home? _____ year

3. Was the home financed in the MATC District 4?

(Please circle your answer)

1. YES
2. NO

4. What was the mortgage amount and interest rate?

$_____ Amount _____ % Rate _____ No. of Years

5. Who did you buy your home from?

(Please circle your answer)

1. builder
2. homeowner
3. other

E. 1. Did you purchase an automobile (new or used) in MATC District 4 last month?

1. YES
2. NO

2. What was the approximate purchase price of the automobile? $_____.

3. Did you finance the purchase through a business located in MATC District 4?

1. YES
2. NO

$_____ Loan amount

_____ %

_____ mos. Length of loan

F. 1. What MATC District 4 Campus do you attend?

_____

2. In what community do you live?

_____

3. How much (if anything) did you spend in retail stores and restaurants last month in downtown Madison because you were drawn to the area by MATC involvement?

$_____

Thank you very much for your cooperation.

APPENDIX B (STUDENTS FULL-TIME)

AREA VOCATIONAL, TECHNICAL and ADULT EDUCATION/DISTRICT No. 4

Dear MATC Student:

We are conducting a study to help us better understand how the MATC program affects the local community in several ways. As part of this effort, your class was selected on a random basis to respond to a short questionnaire.

Because you are part of a sample, your answers are very important if the results are going to be representative of the study body as a whole. I encourage you to complete the attached questionnaire with your best estimates of the expense items being studied.

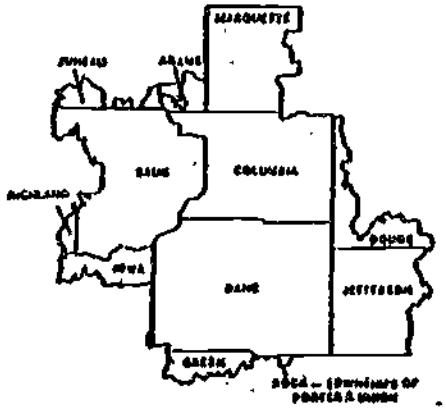
Thank you for your cooperation.

Sincerely,

Norman Mitby,
Director

NM:jk

AREA VOCATIONAL, TECHNICAL and ADULT EDUCATION/DISTRICT No. 4



The purpose of this questionnaire is to obtain an estimate of your monthly expenditures made within the MATC District 4. A map has been provided to clarify the MATC boundaries for you. We understand that it may be difficult for you to recall exactly your expenditures, but your best estimate will be very helpful to us.

A. Do you live with one or both of your parents?

(Please circle your answer)

1. YES
2. NO

Do you pay them money for board?

(Please circle your answer)

1. YES → How much $_____
2. NO

Please think about the total amount you spent LAST MONTH and then classify these costs by the kinds of stores where you spent your money.

| | Estimated Last Month's Expenditures to businesses in MATC District 4 |
|---|---|
| B. 1. GENERAL MERCHANDISE STORES (examples-Sears, Pranges, K-Mart) | $_____ |
| 2. CLOTHING AND APPAREL STORES | $_____ |
| 3. FOOD STORES | $_____ |
| 4. FURNITURE AND APPLIANCE STORES | $_____ |
| 5. OTHER RETAIL STORES (liquor stores, hardware stores, drug stores, jewelry stores, book stores, florists | $_____ |
| 6. RESTAURANTS AND BARS | $_____ |
| 7. AMUSEMENT PLACES (theaters, sports events, art galleries or museums, private golf courses) | $_____ |
| 8. AUTO REPAIR SHOPS, SERVICE STATIONS, AUTO DEALERS (Do not include auto purchases) | $_____ |
| 9. CONSTRUCTION REPAIR BUSINESS (home or apartment) | $_____ |
| 10. PERSONAL AND BUSINESS SERVICES (doctors, dentists, lawyers, beauty shops, laundries, optometrists, dry cleaners, T.V. repairs, etc.) | $_____ |
| 11. INSURANCE BUSINESSES (life, health, disability, automobile, accident, property, etc.) | $_____ |
| 12. PAYMENTS TO LOCAL GOVERNMENT AGENCIES (property taxes, parking fees, traffic tickets, public golf courses, etc.) | $_____ |
| 13. CHURCHES AND OTHER LOCAL CHARITABLE AND RELIGIOUS INSTITUTIONS | $_____ |
| 14. HOTELS AND MOTELS | $_____ |
| 15. SERVICES OBTAINED FROM LOCAL HOUSEHOLDS (babysitting fees, lawn work, cleaning, other work performed by persons not in business) | $_____ |
| 16. RENTAL EXPENSES (apartment, home, etc.) | $_____ |
| 17. MORTGAGE PAYMENTS (if any - please do not include the property tax portion of your payment) | $_____ |

Now you may wish to add up your last month's expenditures in MATC District 4. If the total seems too high or too low, you might go back over the questions and revise your estimate if necessary. Please list your best estimate of monthly expenditures in MATC District 4. $_____

C. You have estimated your last month's expenditures within MATC District 4.

Next please estimate how much you spent last month OUTSIDE of MATC District 4. (for example mail order purchases, money spent on a vacation trip, a car bought out of the area) $_____

D. 1. Do you own a home in the MATC District 4?

(Please circle your answer)

1. YES
2. NO → If NO, please go to Part E.

2. When did you purchase the home? _____ year

3. Was the home financed in the MATC District 4?

(Please circle your answer)

1. YES
2. NO

4. What was the mortgage amount and interest rate?

$_____ Amount _____ % Rate _____ No. of Years

5. Who did you buy your home from?

(Please circle your answer)

1. builder
2. homeowner
3. other

E. 1. Did you purchase an automobile (new or used) in MATC District 4 last month?

1. YES
2. NO

2. What was the approximate purchase price of the automobile? $_____.

3. Did you finance the purchase through a business located in MATC District 4?

1. YES
2. NO

$_____ Loan amount

_____ %

_____ mos. Length of loan

F. 1. What MATC District 4 Campus do you attend?

_____

2. In what community do you live?

_____

3. How much (if anything) did you spend in retail stores and restaurants last month in downtown Madison because you were drawn to the area by MATC involvement?

$_____

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Thank you very much for your cooperation.

# APPENDIX C (STUDENTS-PART TIME)

Part Time Student Questionnaire

If you are taking less than 12 credits. or you spend less than 20 hours a week at the MATC during a typical week, we ask you to spend a few minutes filling out this questionnaire.

We are interested in knowing what expenses you have as a result of attending your MATC District 4 Campus. Please estimate the expenditures you made last month in the MATC area that are related to your participation in MATC programs. Do not include money you pay to MATC itself.

| | Estimated Last Month's Expenditures |
|---|---|
| A. 1. TRANSPORTATION EXPENSES How much did you spend last month getting to and from classes? Consider money spent for taxis, buses, or gasoline if you drive your own car. | $_____ |
| If you drive a car. how much do you spend for parking in an average month? | _____ |
| II.. SUPPLIES AND EQUIPMENT Please indicate your estimate of average monthly expenses for supplies and equipment that are necessary for your instruction. | _____ |
| III. FOOD COSTS Please list your average monthly costs for eating at restaurants that are a result of being an MATC student. (example - You have dinner out because you attend a night class immediately after work). | _____ |
| IV. NURSERY CARE If you have children and must pay for child care while you attend MATC classes. please list your average monthly expenditure. | _____ |
| Please total your average monthly expenditures for the items listed above. | $_____ |

B. 1. Do you park in downtown Madison (please circle answer)

a. Yes
b. No → Go to Question 4

2. If yes, how many hours per week? _____hrs.

3. What time of day do you park? (please circle answer)

a. Day
b. Evening

4. How much did you spend in retail stores and restaurants last month in downtown Madison because you were drawn to the area by MATC involvement? $_____