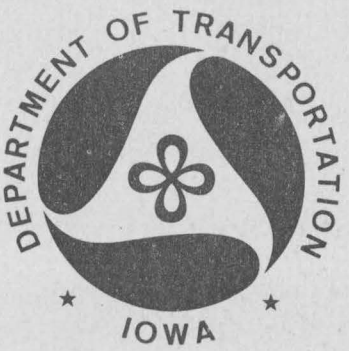


IOWA UNIFORM DATA MANAGEMENT SYSTEM

System Development and Testing

October 1, 1980

Federal Project Number
RPT-3715(001)-93-52

00368512I C

Federal Project Number
RPT-3715(001)--93-52
Report 1 of 5

Uniform Data Management System:

SYSTEM DEVELOPMENT AND TESTING

Prepared for the:
Iowa Department of Transportation

by: East Central Iowa Council
of Governments,
Greenwood and Crim, P.C., and
Kirkwood Community College

on: September 1, 1980

This report was prepared through a grant provided by the United States Department of Transportation, Federal Highway Administration, pursuant to the provisions of Section 18, Title III of the Surface Transportation Assistance Act of Transportation.

TABLE OF CONTENTS

Table of Contents - Continued

1. INTRODUCTION

The Uniform Data Management System (U.D.M.S.) was initiated in April, 1980. The broad purpose of this project was to develop a system of acquiring appropriate accounting information and operating data on Iowa's 33 transit properties. The first phase of this project was to develop and test a computer "software" program designed to accumulate state-wide transit industry financial and operating data by uniform category.

Rather than develop a uniquely Iowa program, the U.D.M.S. project was built upon the Section 15 (the Urban Mass Transportation Act, as amended, November, 1974) Uniform System of Accounts and Records and Reporting System. The Section 15 program is a nationally required reporting system for large urban transit properties receiving Section 5 operating grants from U.M.T.A. Section 15 was principally conceived for large urban, line haul fixed route transit services. The value of beginning with Section 15 for Iowa's project was that it was nationally conceived, that it had defined transit activities and recording procedures in a uniform manner, and that it would allow Iowa's transit data to be comparable with other transit information around the country. UDMS's task would be to adopt this system to Iowa's transit conditions, particularly the 16 regional transit systems that provide rural transportation services throughout the state. It was crucial that the UDMS system be responsive to Iowa's circumstances. The system needed to be practical to implement and useful for internal transit management.

The motivation for creating an Iowa UDMS program grew out of similar problems and was intended to accomplish similar goals as the federally conceived Section 15 program. The specific problems were identified by Iowa's transit properties and articulated by the Iowa Public Transit Association:

a. There was a lack of uniform, comparable transit data across the state. Transit properties were gathering different information,

in different ways, with different definitions and for different purposes.

b. A large majority of the state's 33 public transit properties had inadequate accounting systems and inconsistent operating data collection methods. Audit citations and inconsistent performance reporting plagued Iowa's transit properties.

The goals of the UDMS program mirrored the intentions of the Section 15 program:

a. Create a consistent, standardized, comparable set of financial and non-financial data between all of Iowa's 33 transit systems.

b. Create an effective internal managment tool to improve ongoing operations, analyze and change performance characteristics, plan better services, and develop more appropriate purchase of service contracts.

c. Create an external reporting tool that would satisfy all reporting requirements of all levels of government and thereby reduce the overall reporting burden that transit systems suffered under.

The first phase of the UDMS project consisted of 5 basic components:

(1) System organization - a detailed analysis of the data elements and output reports required by Section 15.

(2) Program Design - the design of an automatic data processing system to produce the reports that meet the requirements of Section 15.

(3) Program preparation - the preparation of a computer software program having output capability compatible with the accounting and management reporting requirements of Section 15.

(4) System Test - the installation of the UDMS program in two active transit systems, East Central Iowa Transit, a 6 county regional/rural transit system operating a 25 van system emphasizing elderly and handicapped services, and Iowa City Transit, a fixed route, 19 bus municipal service operating in an urban area of about 50,000.

(5) System processing - processing the financial and non-financial data of East Central Transit and Iowa City Transit.

Because the program was designed in two separate but related elements, this report has been divided into a discussion of the financial element and the non-financial element.

2. FINANCIAL ELEMENT PROGRAM DEVELOPMENT

The financial element of the program was developed by using the following procedures:

A. Analyzing financial data requirements.

B. Establishing the discipline of financial data input.

C. Designing the system output format for financial reports.

D. Developing the detailed programming specifications to produce financial reports in the proper format.

E. Program testing.

F. Processing procedure.

A. Financial Data Requirements

Necessary financial data includes the following:

(1) Complete chart of accounts

(2) Balance sheet

(3) Capital subsidiary schedule

(4) Revenue detail schedule

(5) Revenue subsidiary schedule

(6) Expenses classified by function - (single mode system)

(7) Expense summary by function - (multi-mode system)

(8) Expense summary by object class - (multi-mode system)

(9) Direct, joint, and total expenses by object class and mode, by function - (multi-mode system)

(10) Operators' wages subsidiary schedule

(11) Fringe benefits subsidiary schedule, and

(12) General ledger

The Chart of Accounts reflects the following Information:

(1) Details each account, by number and description, that is available to the particular transit system

(2) Identifies the account type -

(a) Balance sheet (asset, liability, or equity)

(b) Revenue

(c) Expense

(d) Capital assistance

(e) Operating assistance

(f) Operators wages, or

(g) Fringe benefits

(3) Identifies the parent account associated with accounts reflected on the subsidiary schedule.

In addition, the chart of accounts is flexible in that it can be expanded when necessary for additional accounts and deletions can be made when accounts are no longer needed.

B. Discipline of Financial Data Input

Financial data can be accurately entered to the system data base only by a prescribed, associated sequence of input steps as follows:

(1)	One digit, numeric	identifies mode
(2)	One digit, numeric or alpha	identifies department
(3)	Three digits, numeric	identifies specific function or lack of function
(4)	Five digit, numeric	identifies object class

Assigning the appropriate digit(s) in proper sequence to individual pieces of financial data is termed "coding the information".

The example below reflects the coding for a gasoline purchase for revenue service vehicles.

MODE	DEPT.	FUNCTION	OBJECT	AMOUNT	DESCRIPTION
5	1	010	504.01	879.63	Ajax Gas Co. - July gasoline

Financial data input is made to record cash receipt transactions, cash disbursement transactions and adjustments to general ledger accounts (recording initial balance sheet, adjusting for accrual information, correcting errors, etc.). The forms used to accumulate, code and enter financial data to the system are as follows:

(1)	Cash receipts journal	Exhibit A
(2)	Receipts summary	Exhibit B
(3)	Cash disbursements journal	Exhibit C
(4)	Check copies	Exhibit D
(5)	Cash summary	Exhibit E
(6)	Journal entries	Exhibit F

C. Output Format for Financial Reports

The system output format was designed to produce financial reports at Level B or Level C. Each transit property will have the capability of reflecting expenses by mode, whether they are a single mode system or a joint modal system.

The system also has the ability to reflect additional object classifications for non-annual reports. For example, Level C object codes for supplies are 504.01, 504.02, and 504.99. The volume of object codes could

be expanded to include all numbers between 504.03 and 504.98. All added object codes would appear on the non-annual reports. When the annual report is prepared, the system would summarize the added object codes and report the total dollars in account 504.99 - the format of Level C.

D. Detailed Programming Specifications

After determining the financial data requirements, establishing the discipline of financial data input, and designing the output format for the financial reports, the detailed programming specifications were developed. The detailed programming provides the commands and establishes the processing conduit which enables the computer to accept input data, process the data and produce the desired output.

E. Financial Element - Program Testing

The program was tested by processing known information for two active systems - East Central Iowa Council of Governments Regional Transit System and Iowa City Transit. The output reports were comparatively reviewed and the necessary program corrections were made.

F. Financial Element - Processing Procedure

In conjunction with the preparation of the program, a procedure for accumulating and processing information was determined. Properties will use the cash basis of accounting until their fiscal year end. Adjustments to convert from a cash basis to an accrual basis will be made at fiscal year end.

The procedure for accumulating and processing information for Non-urban properties varies from the procedure utilized by urban properties. The procedure for each type of property is described below.

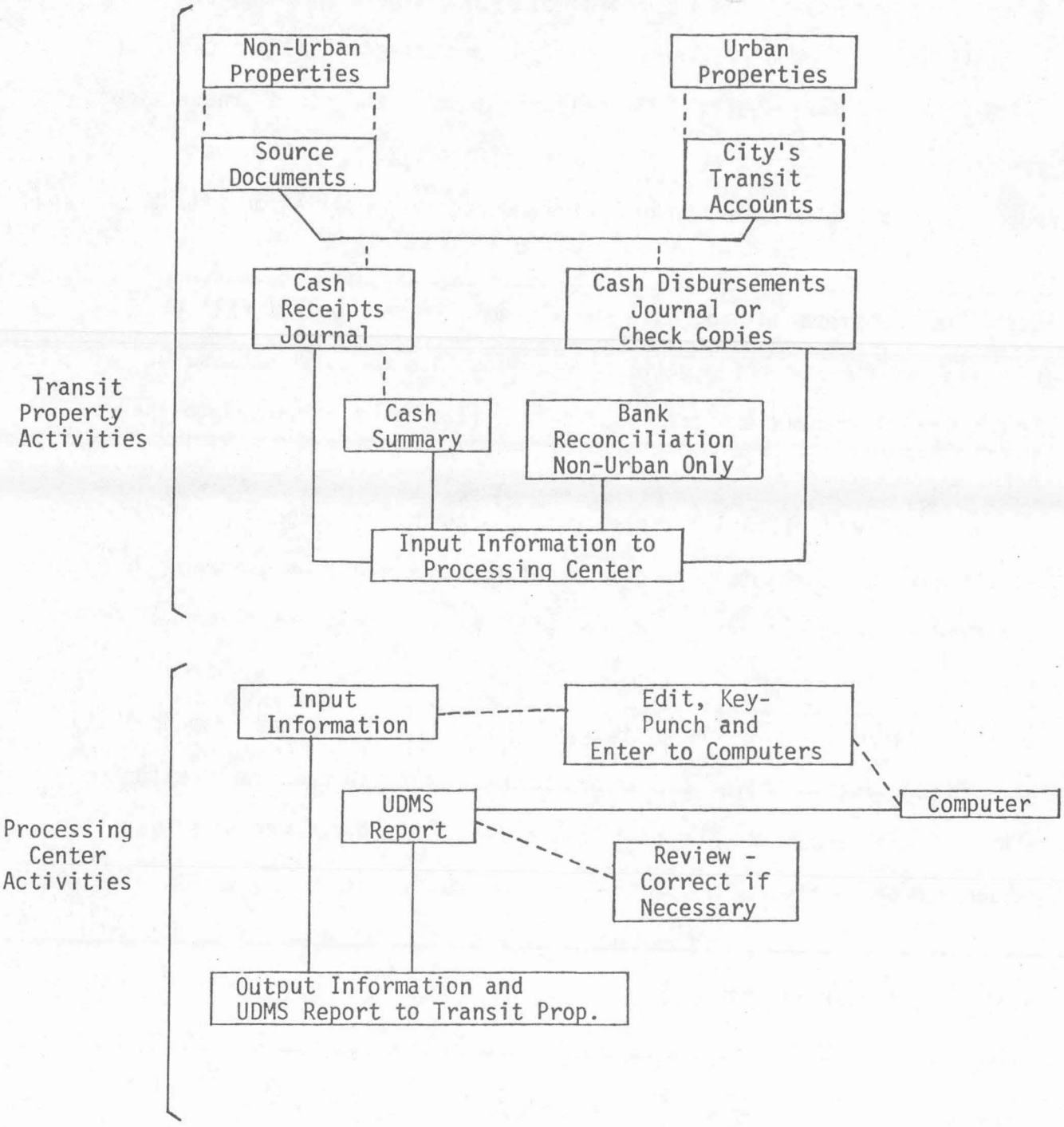
For non-urban transit properties, the financial information accumulated

from source documents will be directly coded on the input forms previously described. Coding will be in accordance with the developed chart of accounts and will occur at the transit property level to be processed on a monthly and quarterly basis. The dollar amount of the coded transactions for the month or quarter should be substantiated via a monthly bank reconciliation. The coded information and bank reconciliation will be forwarded to a designated processing center for review and processing, utilizing the prepared program. The financial report output will be reviewed by the processing center and adjustments made, if necessary. The financial reports and the input data will then be forwarded to the transit property.

Urban properties having their transit accounts included within their City's chart of accounts will code input for processing on quarterly basis. The City's existing transit accounts will be thoroughly interfaced with the UDMS chart of accounts, and coding will be prepared not from source documentation, but from the City transit accounts as created from the City's accounting system. After the information is coded in accordance with the UDMS chart of accounts, the rest of the processing procedure is similar to non-urban properties.

A flow chart outlining the processing procedures observed by non-urban and urban properties follows:

PROCESSING
PROCEDURES



3. NON-FINANCIAL ELEMENT PROGRAM DEVELOPMENT

As in the financial program, every attempt has been made to retain the integrity of the Section 15 forms and approach. It was the feeling of the project staff that the further UDMS diverged from the existing Section 15 approach, the less compatibility Iowa data would have with nationally collected information. If we had set out to create a uniquely Iowa U.D.M.S. program based on the perceived limits and needs of Iowa's transit properties, particularly as manifest in regional properties, many of the Section 15 forms and requirements would have been altered. As it is, the Section 15 program has been retained essentially intact, but the U.D.M.S. input forms have been developed to more easily record Iowa transit property information. (See input forms)

The non-financial element of the program was developed by using the following procedures:

A. Non-Financial Data Requirements

B. Data Collection

C. Data Input

D. Data Output

E. Data Utilization

A. Non-Financial Data Requirements

Section 15 contains a variety of reporting elements designed to measure transit service supplied and transit service consumed. Required non-financial data includes:

(1) Form 401 - Transit System Service Period Schedule

(2) Form 402 - Revenue Vehicle Maintenance Performance and Energy Consumption Schedule

(3) Form 403 - Transit Way Mileage Schedule

(4) Form 404 - Transit System Employee Count Schedule

(5) Form 405 - Transit System Accidents Schedule

(6) Form 406 - Transit System Service Supplied, Services Consumed and Service Personnel Schedule

(7) Form 406A - Annual Report to UMTA "Fixed Route Systems"

(8) Form 406B - Annual Report to UMTA - Demand Responsive

(9) Form 408 - Revenue Vehicle Inventory Schedule

Section 15 Form 407 Rail mode "Transit System Service Supplied, Service Consumed, and Service Personnel Schedule" has not been programmed at all and forms 406A "Annual Report to UMTA - Fixed Route", and 406B "Annual Report to UMTA - Demand Responsive" have been designed as monthly/quarterly data elements, rather than annual. Form 408 "Revenue Vehicle Inventory Schedule" has been programmed to individually list revenue vehicles, rather than by category. Finally, because of the small size of Iowa properties, operating statistics are programmed to be recorded completely rather than rounded to the nearest thousand.

B. Data Collection

In the experience with East Central Iowa Transit and Iowa City Transit (and in subsequent experience with additional transit properties), it became clear that different transit systems were gathering and recording different kinds of non-financial data, in differing amounts and in varying degrees of exactitude.

The only uniformly designed non-financial report used in the state was the Iowa D.O.T. quarterly report for state transit assistance recipients. Even with this report, the supporting data (e.g. drivers logs , gas consumption record, ridership breakdown, hours of revenue) varied widely. Among the other agencies requiring non-financial information, there was no uniformity of reporting. Local and regional variations reflected locally perceived information needs. Transit agencies using multiple funding sources were required to report differently to each funding agency.

(1) Historical reconstruction - Preparing the UDMS non-financial reports on the test properties required reconstructing information from existing data records. In this process a variety of problems were encountered.

(a) Road calls - The UDMS definition of road calls is precisely limited in scope to "mechanical failure" and "other reasons" (see U.D.M.S. Accounting and Reporting Release #1 for further definition) while most properties record road calls, most do not define them in the same manner as UDMS. Historical reconstruction has meant going back over each "road call" in order to properly code it. Small systems and/or regional systems have not been too difficult but larger systems like Iowa City Transit take considerable time and effort.

(b) Labor hours for inspection and maintenance - In East Central Iowa Transit's 1980 financial printout, only total maintenance costs were recorded. Labor and parts were not separated out. In order to reconstruct this data element for UDMS it was necessary to go back to the original billings. On those billings, labor was identified only by dollar amounts. An hourly figure was constructed by dividing the existing hourly rate of the specific contracting garage into the dollar figure for labor.

Inspection has generally not been recorded, even when it is a regular part of a preventative maintenance program. Inspection will be calculated for properties where a consistently observed labor investment is made in inspecting vehicles.

(c) Transit way mileage - This data element is only relevant to fixed route systems. Only the directional miles on mixed traffic right-of-ways need to be determined. Currently, in Iowa, no transit systems have access to exclusive right-of-ways or to

controlled access of right-of-ways.

(d) Transit system employee count - None of the systems currently being dealt with have employees working under a capital grant. Working on the preparation of a captal grant does not qualify as capital labor. Maintenance employee classification applies only to in-house maintenance not to contracted maintenance (line 21-25). General administration personnel (line 31-32) can only be applied if the umbrella agency, council of government or City, has an approved cost allocation plan consistent with the U.S. Department of Health, Education and Welfare (now Health and Human Services) Publication OASC-10 (refer to Glossary).

(e) Accidents - Accident reports and accident claims maintained by the transit properties do not generally conform to the Section 15 form. In the historical reconstruction, individual claims and internal accident records were sorted for appropriate coding to Form 405, "Transit System Accident Schedule."

(f) Service supplied, consumed and service personnel - Transit properties have been reporting simple total miles and hours of service on the Iowa DOT Quarterly Reports. For UDMS, systems must begin to log both total vehicle miles and hours (by peak periods for fixed route) and record revenue service miles and hours separately.

(2) Sampling Procedures

Data to be collected for Forms 406A "Fixed Route Report" and 406B "Demand Responsive Report" reply on sampling procedures. These procedures have been carefully detailed in UMTA Circular C 2710.1 "Sampling Procedures for Obtaining Fixed Route Bus Operating Data Required under the Section 15 Reporting System" and C 2710.2 "Sampling Procedures for Obtaining Demand Responsive Bus System Operating Data Required Under the Section 15 Reporting System." The procedures are unchanged in the UDMS

program although the approach has been somewhat expanded in the Demand Responsive method and the sample frequency contracted in the fixed route method (see data input).

Actual experience with sampling in East Central Transit and Iowa City Transit has emphasized the need to very precisely monitor this activity. It is extremely important that quality controls be exercised in the sampling process. The number of samples being used during the fiscal year is relatively small and sloppy or inaccurate recording of sample information will substantially effect the extrapolations made from the data.

In both fixed route and demand responsive sampling the transit manager or project director must stay in close contact with the sampling process, making sure that everything is being done consistently and diligently. In fixed route large bus sampling, quality controls are easier to maintain because sample takers are solely responsible for sampling on board vehicles. It is somewhat more difficult to maintain high quality sampling on demand responsive van or small bus systems where drivers are doing the sampling. With only one sample every eight days, (as required in Circular C 2710.2) the sample size is even smaller than in fixed route systems and inaccurate information will render false conclusions.

(3) Sample Taking

In fixed route bus operations, on board samples need to be employed to gather sample information. The amount of time required for these samples is determined by the total number of bus trips and the frequency of sampling to be observed. In small fixed route systems, the most modest sampling plan (see Circular 2710.1) is more than adequate for gathering sufficient information.

In demand responsive van operations, drivers can normally conduct sampling. It is absolutely essential when using drivers to sample to emphasize the importance of consistent, accurate sampling. They must be impressed with the fact that while they will be sampling very infrequently, they must take the time to record every piece of information on the day they sample.

From the experience in East Central Iowa Transit, it seems that the best approach to training drivers to sample will be achieved by a general meeting of all drivers (In East Central Iowa Transit this sample training was combined with a day long driver training seminar and Regional Transit Advisory Committee meeting) followed by individual meetings with drivers at each property. Each driver in the system was required to perform one experimental sample to assure that there were no misunderstandings regarding procedure or detail. Even with the two sessions, there were some drivers who made mistakes.

Finally, it should be noted that there will be some driver reluctance to do sampling at all. Older drivers or drivers that have been with the system for a long time may resent this new responsibility. Drivers who have tight schedule will object to taking the time to record information. While there are some shortcuts that can be observed in recording information, tight schedules cannot be allowed to interfere with accurate reporting. Re-emphasize to the drivers that they will not be sampling very often (it is estimated that in a system the size of East Central's, that any one driver would be sampling no more than 5 or 6 times a year).

C. Data Input

Two distinct sets of input forms have been developed to facilitate the uniform and comprehensive collection of non-financial information. One

specific set of forms has been assembled for demand responsive systems and one for fixed route systems. Split mode systems will need to fill out both sets.

These forms are based on the Section 15 Level C forms but have been adopted to some of the specific needs of Iowa properties in the UDMS program. In these form packages the exact categories of Section 15 reporting are utilized, but all non-relevant information for mode type has been removed. Also new work sheets, developed for recording sampling information, have been included in the respective packages.

Both sets of forms have been designed for monthly or quarterly collection, with a space provided to record date of compilation. In addition to system name and I.D. number, a space for department name has been added to reflect county departments or individual transit service units that need to be broken out individually. Also, client group identification has been added to those forms where that is a significant consideration.

D. Data Output

Non-financial data output will depend on the type of transit system and its components. For exclusively demand responsive systems, the printout will not contain Form 403 "Transit Way Mileage Schedule", 406A "Fixed Route Report", or 407 "Rail Report". It will, however, contain additional detail by department for Forms 401, 402, 404, 405, 406, 406B. Additional detail by client group will be provided for form 406B. For exclusively fixed route systems, the printout will not contain form 406B. Additional detail by department or client group can be provided.

E. Data Utilization

A key question that has been asked throughout the development of the UDMS program is: How much information should be gathered? The UDMS program

was designed to strike a balance between the type of information desired and the amount of information and difficulty of gathering that information required to assure validity. Certainly some of the best information is the hardest to gather and the most time consuming. But what information should be gathered and at what cost in time and labor?

At each turn of the program, project staff attempted to justify data collection with data utilization. If a specific demonstrable use for information could not be justified, it was not included. Alternately, if some additional subdivision of information was seen as valuable and not excessively difficult to achieve, it was included. Section 15 requirements were contracted or expanded in light of maintaining that balance.

UDMS was not designed as a "jump through the hoop", passive external reporting system. It was principally designed as a dynamic internal management tool. And as such, the information gathered must be gathered seriously and used seriously. This requirement places an additional burden on transit operators, transit planners, and Iowa DOT district managers. The information generated must be used. The rewards of collecting and reporting the data elements are more efficient transit operations, better transit contracts, better and more detailed information with which to articulate transit's needs to policymakers.

Some of the uses of UDMS information will be revealed in Phase IV - performance measurement and auditing - however the internal use of the information should start with implementation. In order to initiate this process of data utilization, project staff will put together some internal uses of system data on a system by system basis. For fixed-route, small urban systems data utilization may be chiefly concerned with evaluating routing and scheduling. In the Iowa City-Coralville area where four service elements overlap, such an evaluation will be highly useful.

For regional systems, depending on the amount of sampling available, an approach will be laid out for a cost allocation - billing procedure. This procedure will follow many of the concepts laid out by the Ecosometrics report on coordinated transportation systems (A Model Uniform Billing and Accounting System for Coordinated Transportation Systems by Sue Knapp, Ecosometrics, Inc., January 31, 1979).

Ecosometrics' procedures are based on dissagregating passenger trips by client group. UDMS goes one step further by providing sample data on trip efficiencies by client group. Ecosometrics did not go to this length because it argued that it is too "difficult to keep passenger hours of service (and miles of service) when a system mixes clients." (P. 5) While this is certainly true when one records such information on a daily basis, this level of detail can be provided by employing a sampling technique. Because the sampling approach is seldom and random, it is not perceived as an excessive responsibility for a transit operation.

The key feature lost in the ecosometrics method is the relative value of each trip. Different client groups and different passenger types generate different trip times and miles. For example, demand responsive elderly trips are longer and take more time than headstart trips within most coordinated systems. Only sampling can tell you that approximate value.

In the UDMS program, sample information is designed to identify transportation utilization characteristics by client group. It is expected that client groups will be defined by the transit property as pre-identified client categories like elderly, handicapped, etc., but it is also designed to utlize contract categories like sheltered workshops, congregate meal sites, etc. By gathering ridership information by client group, specific unit costs can be developed. These unit costs can be translated into cost allocation or billing plans.

4. SOFTWARE DEVELOPMENT AND FUTURE PROGRAMMING

The software development for the UDMS program was made more difficult by the way the project proceeded. The original software program was designed entirely around the Volume II and Level C documents. Not enough work had been done on actual data collection and data input forms prior to the initiation of the software. As we began to work with the Section 15 materials, it became progressively more evident that program changes would be required to accomodate Iowa's 16 regional transit properties. These modifications inevitably led back to changes in the software program.

In the first several months of the project, it remained unclear how much of the Section 15 program should be left intact for UDMS. The integrity of the Section 15 program was important if compatability with nationally generated information was to be maintained. On the other hand some Iowa transit properties, particularly regional systems, did not fit all the Section 15 categories very well. Ultimately, a functional compromise was reached, but creating an appropriate software to reflect that compromise took time and money. In retrospect it would have been better to have developed the data collection needs first, the input forms second, and the software last.

There remains the need to continually modify and adjust the UDMS software program. As experience is gained with UDMS, further programming changes will occur. Some changes are already anticipated as a result of the development work and work on additional transit properties. It seems essential that as we proceed into the future, periodic revision and reprogramming should be scheduled.

5. FURTHER UDMS DEVELOPMENT

With the completion of the work under Phase I - computer software development and system testing in Iowa City Transit and East Central Iowa Transit - additional work on the UDMS system has been programmed. Projects include (a) implementation of the system in 19 additional transit properties, (b) develop a UDMS users'

manual, and (c) develop performance standards and implementation of performance audits.

(a) Implementation of additional transit properties is designed as Phase II. Phase II is conceived in two stages:

Stage 1 properties include:

(1) Southern Iowa Economic Development Association (SIEDA) - Region 15

(2) Central Iowa Regional Association of Local Governments (CIRALG) - Region 11

(3) City of Coralville - Coralville Transit

(4) Frontier Transit - Region 5, Fort Dodge

(5) Great River Bend Services, Inc. - Region 9

(6) Region Six Planning Commission - Region 6, Marshalltown

(7) City of Burlington - Burlington Urban Service

Stage 2 properties include:

(1) Region 1 Transit System - Decorah

(2) North Iowa Area Regional Transit System - Mason City (Region 2)

(3) Region 3 Transit System - Spencer

(4) Siouxland Interstate Transportation System - Sioux City (Region 4)

(5) Intransit - Waterloo (Region 7)

(6) Care-Van - Dubuque (Region 8)

(7) Region XII Council of Governments - Carroll

(8) Southern Iowa Trolley - Creston (Region 14)

(9) Southeast Iowa Regional Planning Commission - Burlington (Region 16)

(10) City of Muscatine - Muscatine Transit

(11) City of Mason City - Public Transit Company, Inc.

(12) Southwest Iowa Transit Agency - Atlantic (Region 13)

(b) Phase III is the development of a users' manual. This will consist of a single document which will supply complete narrative assistance for the input of all data into the UDMS system by transit system personnel, and

provide comprehensive narrative assistance in the beneficial use of output from that system by transit system personnel.

(c) Phase IV is the development of performance standards and implementation of performance audits. A set of performance standards will be developed based on Section 15 and UDMS data characteristics. These standards will be designed exclusively for Iowa's transit systems but include features of projects undertaken by other states. Performance audits will be conducted on three implemented properties.

GLOSSARY AND BIBLIOGRAPHY

Accrual Basis Accounting

Under the accrual basis of accounting, revenues and expenses are recorded in the fiscal period in which they were earned or incurred. The accrual basis reflects income in the period the services were rendered whether or not payment was actually received; expenses are reflected in the period the goods or services were received whether or not payment was actually made. (See also: Cash Basis Accounting)

Cash Basis Accounting

Under the cash basis of accounting, cash receipts and cash disbursements are recorded in the fiscal period the actual cash transaction occurred. The cash basis reflects the actual flow of cash in and out regardless of when the income was earned, or when the liabilities for expenses were incurred. (See also: Accrual Basis Accounting)

Client

A member of an identifiable group whose membership is limited to those taking advantage of a specific program, service or facility.

Demand Response

Synonymous with Dial-A-Ride, meaning transportation systems in which shared vehicles (usually vans) provide door-to-door service on a demand response basis to a number of individuals with different origins and destinations.

Ecosometrics

Ecosometrics, Inc. is a consulting firm that authored: A Model Billing and Accounting System for Coordinated Transportation Systems, January 31, 1979.

F.A.R.E.

Federal Accounting and Reporting Elements was the developmental predecessor to the Section 15 program.

Function

Function is the classification of expenses as to the type and purpose of the expenditures. Functions are identified with a three-digit code. Level C classifies expenses to four separtate functions as follows:

	Function Code
Vehicle operations	010
Vehicle maintenance	041
Non-vehicle maintenance	042
General administration	160

Level C

U.M.T.A. Uniform System of Accounts and Records and Reporting System, Level C Reporting Manual and Sample Forms. Level C applies to transit properties with 100 revenue vehicles or less.

Mode

Mode refers to the type of transportation service provided. In Level C, six (6) different transportation modes are specifically identified and accorded distinctive numbers:

1. Motor Bus
2. Rail Rapid Transit
3. Street Car
4. Trolley Bus
5. Demand Response
6. Ferry Boat
9. Other

OASC - 10

A Guide for State and Local Government Agencies, Cost Principles and Procedures for Establishing Cost Allocation Plans and Indirect Cost Rates for Grants and Contracts with the Federal Government, U.S. Department of H.E.W., December, 1976.

Object

Object is the identification of the articles or types of services given or received. Objects are identified with a five-digit code. An example of articles purchased is gasoline or tires. An example of a type of service given could be fares for transportation provided. Labor is an example of a type of service received.

Regional Transit System

Public transit systems serving all or part of multi-county areas with the administrative and overhead support services for the overall regional transit system consolidated into one existing or new agency to be mutually agreed upon by the participating members.

Section 15

Section 15 of the Urban Mass Transportation Act, as amended, November, 1974, contains the provisions of the Uniform System of Accounts and Records and Reporting System.

U.M.T.A.

Urban Mass Transportation Administration.

U.D.M.S.

Uniform Data Management System. This acronym refers to Iowa's accounting and reporting system only.

Volume II

Urban Mass Transportation Industry Uniform System of Accounts and Records and Reporting System, January 10, 1977. This volume contains the definitions and hierarchical relationships for this uniform system of accounts and records.

(This form is reduced 62% of the original size)

Exhibit A

NAME: ____________________

ID No.: ____________________

RECEIPTS JOURNAL

MONTH, YEAR: ____________________ PAGE ____ of ____

RECEIPTS CODING				DATE	DEPOSIT (WITHDRAWAL) SAVINGS A/C		DEPOSIT TO CHECKING A/C	CODING AMOUNT	SOURCE/NATURE of FUNDS
MODE	DEPT	FUNCTION	OBJECT		A/C No.	$	$		
				TOTAL THIS PAGE					
				TOTAL FOR MONTH/QTR.				TOTAL SHOULD AGREE WITH CASH SUMMARY	

Exhibit B

NAME: ____________________ RECEIPTS SUMMARY FOR MONTH

ID No.: ____________________ MONTH, YEAR: ____________________ PAGE _____ of _____

RECEIPTS SUMMARY FOR MONTH

MODE	DEPT	FUNCTION	OBJECT	$	DESCRIPTION

TOTAL FOR MONTH AGREES WITH TOTAL OF SAVINGS & CHECKING

NAME: _____

ID No.: _____

DISBURSEMENTS JOURNAL

MONTH, YEAR: _____ PAGE ___ of ___

DISBURSEMENTS CODING				DATE	CHECK AMOUNT	CODING AMOUNT	CHECK NUMBER	PAYEE/NATURE of DISBURSEMENTS
MODE	DEPT	FUNCTION	OBJECT					
				TOTAL THIS PAGE				
				TOTAL FOR THE MONTH/QTR.			TOTAL SHOULD AGREE WITH CASH SUMMARY	

(This form is reduced 62% of the original size)

Exhibit C

Exhibit D

2901

EAST CENTRAL IOWA COUNCIL OF GOVERNMENTS
IOWA CITY, IOWA 52240

_____ 19__

73-2162
230

PAY TO THE ORDER OF _____ $ _____

_____ DOLLARS

Iowa State Bank & Trust Company
Iowa City, Iowa 52240

NOT NEGOTIABLE

⑈073921624⑈ ⑆01 4435 5⑈

EAST CENTRAL IOWA
COUNCIL OF GOVERNMENTS
IOWA CITY, IOWA 52240

DELUXE - FORM DVD-3 V-S

DATE	DESCRIPTION	AMOUNT	DISTRIBUTING ACCT. NO.	DISTRIBUTING AMOUNT

EMPLOYEE _____

PERIOD ENDING	TOTAL EARNINGS	DEDUCTIONS								TOTAL DEDUCTIONS	NET PAY
		SOCIAL SECURITY TAX	NATIONAL DEF. U.S. INC. TAX	STATE INCOME TAX							

V-S A

Exhibit E

NAME: ______________________ CASH SUMMARY

ID No. ______________________ MONTH, YEAR: __________ PAGE _____ of _____

FROM CASH RECEIPTS JOURNAL/SUMMARY

MODE	DEPT.	FUNCTION	OBJECT	AMOUNT	DESCRIPTION

TOTAL FOR THE MONTH/QTR.

FROM CASH DISBURSEMENTS JOURNAL OR CHECK COPIES

MODE	DEPT.	FUNCTION	OBJECT	AMOUNT	DESCRIPTION

TOTAL FOR THE MONTH/QTR.

Exhibit F

NAME _____ JOURNAL ENTRIES

ID No. _____ MONTH, YEAR: _____ PAGE _____ of _____

JOURNAL ENTRY CODING				JE No.	DEBIT (CREDIT)	DESCRIPTION
MODE	DEPT	FUNCTION	OBJECT			

Operators Time Sheet

Transit Property: _____

Employee: _____

Pay Period: _____ to _____

Wages Category: / Date																	Total Hours	Amount
Driving, Line Service																		
Driving, Charter Service																		
Overtime																		
Accident/Witness Time																		
Dispatching																		
Administration-Operations																		
Vehicle inspection/Maint.																		
Administration-Vehicle Maint.																		
Non-Vehicle Maintenance																		
Administration-Non-Veh. Maint.																		
Administration-Other																		
Fringe Benefits:																		
Sick Leave																		
Holiday																		
Vacation																		
Other Paid Absence																		

Exhibit G

Non-Operators Time Sheet

Transit Property: _____

Employee: _____ Pay Period: _____ to _____

Wages Category: / Date																	Total Hours	Amount
Driving, Line Service																		
Driving, Charter Service																		
Overtime																		
Accident/Witness Time																		
Dispatching																		
Administration-Operations																		
Vehicle Inspection Maint.																		
Administration-Vehicle Maint.																		
Non-Vehicle Maintenance																		
Administration-Non-Veh. Maint.																		
Administration-Other																		
Fringe Benefits:																		
Sick Leave																		
Holiday																		
Vacation																		
Other Paid Absence																		
Total Hours																		

Exhibit H

comment ____________________

DRS VEHICLE TRIP SHEET

Client group ____________________

(1) Survey Date ________ (2) Day of Week ________ (3) Survey Vehicle No. ________

(4) Driver Number ________ (5) Vehicle Total Capacity ________ (6) Vehicle Seated Capacity ________

(7) Number of Pass.	(8) Pick-up Address	(9) Pick-up Odometer Reading	(10) Pick-up Time	(11) Drop-off Address(es)	(12) Drop-off Odometer Reading	(13) Drop-off Time	(14) Trip Distance (12)-(9)	(15) Passenger Miles (7)x(14)	(16) Trip Time (13-10)	(17) Passenger Minutes (7)x(16)

Total Passengers in Sample (18)

Total Vehicle Trips (19)

(20) (21) (22) (23)

(24) Capacity ...es

Exhibit I

UDMS

DRS SUMMARY SHEET

(weekly tabulations)

	(1)	(2)	(3)	(4)	(18)	(19)	(20)	(21)	(22)	(23)	(24)	(25)
Comments	Survey Date	Day of Week	Vehicle Number	Driver Number	Total Passengers	Total Vehicle Trips	Total Trip Distance	Passenger Miles	Total Trip Time	Passenger Minutes	Capacity Miles	Seat Miles
Forwarded to Page 2												

Exhibit J

UDMS

DRS SUMMARY SHEET

(weekly tabulations)

	(1)	(2)	(3)	(4)	(18)	(19)	(20)	(21)	(22)	(23)	(24)	(25)
Comments	Survey Date	Day of Week	Vehicle Number	Driver Number	Total Passengers	Total Vehicle Trips	Total Trip Distance	Passenger Miles	Total Trip Time	Passenger Minutes	Capacity Miles	Seat Miles
Forwarded from Previous Page												
Total for the Year												

Exhibit J

U.D.M.S.

DRS WEEKLY PASSENGER COUNT SHEET Client Group _____

Week Number	Date (Week ending Sunday)	Total Passengers Carried	Week Number	Date (Week ending Sunday)	Total Passengers Carried	Week Number	Date (Week ending Sunday)	Total Passengers Carried	Week Number	Date (Week ending Sunday)	Total Passengers Carried
1			14			27			40		
2			15			28			41		
3			16			29			42		
4			17			30			43		
5			18			31			44		
6			19			32			45		
7			20			33			46		
8			21			34			47		
9			22			35			48		
10			23			36			49		
11			24			37			50		
12			25			38			51		
13			26			39			52		

TOTAL

CUMULATIVE TOTALS THROUGH SECOND QUARTER

THROUGH THIRD QUARTER

THROUGH FOURTH QUARTER

Exhibit K

UDMS - FIXED ROUTE

SURVEY TRIP SHEET

Comment ____________________

(1) Trip Serial No. ________ (2) Date ________ (3) Day of Week ________ (4) Time Period ________

(5) Route No. ________ (6) Vehicle Inventory Number ________ (7) Total Capacity ________ (8) Seated Capacity ________

(9) Stop No.	(10) Stop Description	(11) Arrival Time	(12) Odometer Reading	(13) Passengers Boarded	(14) Passengers De-boarded	(15) Passengers on Board	(16) Distance Between Stops	(17) Passenger Miles (15)x(16)	(18) Minutes Between Stops	(19) Passenger Minutes (15)x(18)

(26) Capacity Miles (7)x(22)

(27) Seat Miles (8)x(22)

TOTALS	(20)	(21)	(22)	(23)	(24)	(25)

Exhibit L

UDMS - FIXED ROUTE
DAILY RECORD SHEET

Week Ending Sunday _____

Data Elements	Monday	Tuesday	Wednesday	Thursday	Friday	Total for This Week	Previous Cumulative Total	Cumulative Total
(20) Passengers Boarded								
AM Peak								
Midday								
PM Peak								
Night								
Saturday								
Sunday								
Total								
(21) Passengers on Board								
AM Peak								
Midday								
PM Peak								
Night								
Saturday								
Sunday								
Total								
(22) Bus Trip Distance								
AM Peak								
Midday								
PM Peak								
Night								
Saturday								
Sunday								
Total								
(23) Passenger Miles								
AM Peak								
Midday								
PM Peak								
Night								
Saturday								
Sunday								
Total								

Exhibit M

UDMS - FIXED ROUTE
DAILY RECORD SHEET

Week Ending Sunday _____

Data Elements	Monday	Tuesday	Wednesday	Thursday	Friday	Total for This Week	Previous Cumulative Total	Cumulative Total
(24) Bus Trip Time								
AM Peak								
Midday								
PM Peak								
Night								
Saturday								
Sunday								
Total								
(25) Passenger Minutes								
AM Peak								
Midday								
PM Peak								
Night								
Saturday								
Sunday								
Total								
(26) Capacity Miles								
AM Peak								
Midday								
PM Peak								
Night								
Saturday								
Sunday								
Total								
(27) Seat Miles								
AM Peak								
Midday								
PM Peak								
Night								
Saturday								
Sunday								
Total								

Exhibit M

UDMS - FIXED ROUTE

DAILY RECORD SHEET

Week Ending Sunday _____

Data Elements	Monday	Tuesday	Wednesday	Thursday	Friday	Total for This Week	Previous Cumulative Total	Cumulative Total
(28) Trips in Sample								
AM Peak								
Midday								
PM Peak								
Night								
Saturday								
Sunday								
Total								
(29) Number of Bus Trips								
AM Peak								
Midday								
PM Peak								
Night								
Saturday								
Sunday								
Total								
AM Peak								
Midday								
PM Peak								
Night								
Saturday								
Sunday								
Total								
AM Peak								
Midday								
PM Peak								
Night								
Saturday								
Sunday								
Total								

Exhibit M

TRANSIT SYSTEM SERVICE PERIOD SCHEDULE

Transit System Name _____ Department Name _____

Transit System I.D. #_____ Department # _____

Month/Quarter _____ Client Group _____

Date of Compilation _____ Mode _____

LINE NO.	ITEM	WEEKDAYS	SATURDAY	SUNDAY
	LIMITS OF SERVICE PERIOD:			
01	Time AM service begins			
02	Time AM *PEAK* service begins			
03	Time Midday service begins			
04	Time PM *PEAK* service begins			
05	Time Night service begins			
06	Time Night (service ends)			
	TOTAL HOURS			
07	AM Peak period			
08	Midday period			
09	PM Peak period			
10	Night period			
11	ENTIRE DAY—TOTAL HOURS			

Exhibit O

UDMS

REVENUE VEHICLE MAINTENANCE PERFORMANCE AND ENERGY CONSUMPTION SCHEDULE

Transit System Name _____ Department Name _____

Transit System I.D. #_____ Department # _____

Month/Quarter _____ Client Group _____

Date of Compilation _____ Mode _____

LINE NO.	ITEM	AMOUNTS
	NUMBER OF ROADCALLS	
01	For mechanical failure	
02	For other reasons	
03	TOTAL ROADCALLS	
04	TOTAL LABOR HOURS FOR INSPECTION & MAINTENANCE	
	NUMBER OF LIGHT MAINTENANCE FACILITIES	
05	Serving under 200 vehicles	
06	Serving 200-300 vehicles	
07	Serving more than 300 vehicles	
08	TOTAL LIGHT MAINTENANCE FACILITIES	
	ENERGY CONSUMPTION	
09	Kilowatt hours of propulsion power (000)	
10	Gallons of diesel fuel	
11	Gallons of gasoline	
12	Gallons of LPG or LNG	
13	Gallons of bunker fuel	

Exhibit P

TRANSIT SYSTEM ACCIDENTS SCHEDULE

Transit System Name _____ Department Name _____

Transit System I.D. # _____ Department # _____

Month/Quarter _____ Client Group _____

Date of Compilation _____ Mode _____

LINE NO.	ITEM	COLLISION	NON-COLLISION	STATION
	NUMBER OF ACCIDENTS CLASSIFIED AS:			
01	Fatality, Personal Injury & Property Damage			
02	Fatality & Personal Injury			
03	Fatality & Property Damage			
04	Fatality Only			
05	Personal Injury & Property Damage			
06	Personal Injury Only			
07	Property Damage Only			
08	**TOTAL ACCIDENTS**			
	NUMBER OF FATALITIES CLASSIFIED AS:			
	Revenue Vehicle Occupants			
09	On-Duty Occupants			
10	Others			
	Other Vehicle Occupants			
11	On-Duty Employees			
12	Others			
	Pedestrians			
13	On-Duty Employees			
14	Others			
	NUMBER OF PERSONS INJURED CLASSIFIED AS:			
	Revenue Vehicle Occupants			
15	On-Duty Employees			
16	Others			
	Other Vehicle Occupants			
17	On-Duty Employees			
18	Others			
	Pedestrians			
19	On-Duty Employees			
20	Others			

UDMS

Exhibit Q

TRANSIT SYSTEM EMPLOYEE COUNT SCHEDULE

Transit System Name _____ Department Name _____

Transit System I.D. # _____ Department # _____

Month/Quarter _____ Client Group _____

Date of Compilation _____ Mode _____

LINE NO.	EMPLOYEE CLASSIFICATION	EMPLOYEE EQUIVALENTS	
		OPERATING LABOR	CAPITAL LABOR
01	11. Transportation Executive, Professional and Supervisory Personnel		
02	12. Transportation Support Personnel		
03	13. Revenue Vehicle Operators		
04	21 Maintenance Executive, Professional and Supervisory Personnel		
05	22. Maintenance Support Personnel		
06	23. Revenue Vehicle Maintenance Mechanics		
07	24. Other Maintenance Mechanics		
08	25. Vehicle Servicing Personnel		
09	31. General Administration Executive, Professional and Supervisory Personnel		
10	32. General Administration Support Personnel		
11	TOTAL TRANSIT SYSTEM EMPLOYEES		

UDMS

TRANSIT WAY MILEAGE SCHEDULE

Transit System Name _____ Department Name _____

Transit System I.D. # _____ Department # _____

Month/Quarter _____ Client Group _____

Date of Compilation _____ Mode _____

LINE NO.	RAILWAY CLASSIFICATIONS	MILES OF DIRECTIONAL ROADWAY	MILES OF ELECTRIC TRACK	NUMBER OF CROSSINGS	NUMBER OF STATIONS
	RAIL RAPID				
01	At grade, exclusive row*				
02	At grade, with cross traffic				
03	Elevated on structure				
04	Elevated on fill				
05	Open cut				
06	Subway				
07	TOTAL				
	STREETCAR				
08	At grade, exclusive row*				
09	At grade, with cross traffic				
10	At grade, mixed and cross traffic				
11	Elevated on structure				
12	Elevated on fill				
13	Open cut				
14	Subway				
15	TOTAL				
16	FERRY BOAT MILES OF WATERWAY				

	BUS ROADWAY CLASSIFICATIONS	DIRECTIONAL MILES ON EXCLUSIVE ROW*	DIRECTIONAL MILES ON CONTROLLED ACCESS ROW*	DIRECTIONAL MILES ON MIXED TRAFFIC ROW*
17	MOTORBUS			
18	TROL' Y BUS			

Exhibit R

UDMS

TRANSIT SYSTEM SERVICE SUPPLIED, SERVICE CONSUMED AND SERVICE PERSONNEL SCHEDULE

Transit System Name _____ Department Name _____

Transit System I.D. # _____ Department # _____

Month/Quarter _____ Client Group _____

Date of Compilation _____ Mode _____

LINE NO.	ITEM	AM PEAK*	MIDDAY*	PM PEAK*	NIGHT*	AVERAGE WEEKDAY	SATURDAY**	SUNDAY**
	SERVICE SUPPLIED							
01	Number of vehicles in operation							
02	Total vehicle miles (000)							
03	Total vehicle hours (000)							
04	Total vehicle revenue miles (000)							
05	Total vehicle revenue hours (000)							
06	Revenue capacity miles (000)							
07	Charter Service Hours (000)							
08	Charter Service Miles (000)							
09	School Bus Hours (000)							
10	School Bus Miles (000)							
	SERVICE CONSUMED							
11	Unlinked passenger trips (000)							
12	Unlinked passenger miles (000)							
13	Average time per unlinked trip (min)							
	SERVICE PERSONNEL (No.)							
	Scheduled vehicle operators							
14	Full-time							
15	Part-time							
16	Revenue vehicle movement control personnel							
17	Ticket/Token sales agent, fare collectors, gate keepers							
18	Route/schedule information operators							
19	Security agents							
20	TOTAL SERVICE PERSONNEL							

*For average weekday **Average Saturday or Sunday

Exhibit S

UDMS

FIXED ROUTE REPORT

Transit System Name _____ Department Name _____

Transit System I.D. # _____ Department # _____

Month/Quarter _____ Client Group _____

Date of Compilation _____ Mode Fixed Route

LINE NO.		ITEM	WEEKDAYS b AM PEAK	c MIDDAY	d PM PEAK	e NIGHT	SATURDAY	SUNDAY	TOTAL
		Accumulations from Daily Record Sheet							
*	1	(20) Passengers Boarded							
	2	(21) Passengers on Board							
	3	(22) Bus Trip Distance							
*	4	(23) Passenger Miles							
	5	(24) Bus Trip Time							
*	6	(25) Passenger Minutes							
	7	(26) Capacity Miles							
	8	(27) Seat Miles							
*	9	(28) Trips in Sample							
*	10	(29) Total Number of Bus Trips							
		Sample Averages							
*	11	Unlinked Passengers per Trip (1/9)							
*	12	Passenger Miles per Trip (4/9)							
*	13	Unlinked Passenger Trip Time (6/9)							
		Annual Totals							
*	14	Unlinked Passenger Trips (10x11)							
*	15	Passenger Miles (10x12)							

Exhibit T

Exhibit U

UDMS

DEMAND RESPONSIVE REPORT

Transit System Name _____ Department Name _____

Transit System I.D. # _____ Department # _____

Month/Quarter _____ Client Group _____

Date of Compilation _____ Mode DRS

LINE NO.	ITEM	TOTAL, ALL SAMPLES
	ACCUMULATIONS FROM DRS SUMMARY SHEET	
* 01	(18) Total passengers in samples	
02	(19) Total trips	
03	(20) Total trip distance	
* 04	(21) Total passenger miles	
05	(22) Total vehicle trip time	
* 06	(23) Total passenger minutes	
07	(24) Total capacity miles	
08	(25) Total seat miles	
	SAMPLE ESTIMATES	
* 09	Average passenger trip distance (4/1)	
* 10	Average passenger trip time (6/1)	
	ANNUAL TOTALS	
* 11	Total passengers *(From weekly count sheet)*	
* 12	Total passenger miles *(11 x 9)*	

**Required by the Section 15 Reporting System*

UDMS

REVENUE VEHICLE INVENTORY SCHEDULE

Transit System Name _____ Department Name _____

Transit System I.D. # _____ Department # _____

Month/Quarter _____ Client Group _____

Date of Compilation _____ Mode _____

LINE NUMBER	NUMBER OF VEHICLES IN GROUP	VEHICLE TYPE CODE	OWNERSHIP CODE	YEAR OF MANUFACTURE	MODEL NO.	FUEL TYPE CODE	SEATING CAPACITY	STANDING CAPACITY	NUMBER OF ACTIVE VEHICLES DURING PERIOD	TOTAL MILES ON VEHICLES DURING THE PERIOD (000)	AVERAGE CUMULATIVE MILEAGE PER VEHICLE (000)
01											
02											
03											
04											
05											
06											
07											
08											
09											
10											
11											
12											
13											
14											
15											
16											
17											
18											
19											

Exhibit V