



Certified Municipal Finance Officer Program: An Impact Analysis

Chris Shults, PhD, MTAS Project Coordinator

Genoa Wolford-Bowling, University of Tennessee Public Service Intern



Municipal Technical Advisory Service
INSTITUTE FOR PUBLIC SERVICE

Executive Summary

The Municipal Finance Officer Certification and Education Act (the Act) requires all municipalities to have a Certified Municipal Finance Officer (CMFO) or qualified exempt individual per criteria set forth in the Act. There is an exception to the Act given to cities with \$500,000 or less in gross revenues from all funds and with debt of \$500,000 or less from all funds. In cities that meet the exception criteria, the Act requires the city employee designated as the chief financial officer to obtain continuing professional education annually. The goal of the Act was to improve municipal financial practices in Tennessee cities through the development of the CMFO program and continuing education. This study examines if the CMFO program worked to improve municipal financial practices. The results show that the CMFO program has helped to improve municipal financial practices by helping to reduce the number of municipal financial errors in Tennessee cities.

Introduction

The Municipal Finance Officer Certification and Education Act of 2007 requires all municipalities to have a chief financial officer, who is a Certified Municipal Finance Officer (CMFO), or qualified exempt individual per criteria set forth in the Act. There is an exception to the Act given to cities with \$500,000 or less in gross revenues from all funds and with debt of \$500,000 or less from all funds. To attain CMFO status, individuals must complete the CMFO program. The CMFO program is an eleven course program developed and administered by the Municipal Technical Advisory Service (MTAS). The program is designed to improve the knowledge and skills of municipal financial officers in performing fundamental tasks essential to the position and to allow the CMFO to learn more advanced skills required to perform his/her official duties through continuing professional education requirements.

After the Act's passage in 2007, MTAS began developing and offering courses for the CMFO training program. In 2010, the first class of nearly one hundred participants graduated. The program has continued since 2010 and to date more than 450 city clerks, recorders, finance directors and various other public servants have graduated and are now Certified Municipal Finance Officers. The CMFO program has had participants from across the state representing a diverse range of cities and regions, including large areas such as Memphis, Memphis Light Gas and Water, Nashville and Chattanooga as well as some of Tennessee's smallest municipalities, such as Parker's Crossroads and the City of Henry. Although the act requires each non-exempt city to employ a CMFO, many other participants have voluntarily registered for the program and have been certified as a result of the reputation of the class as educational, informative, and relevant to many financial positions.

The CMFO program is championed as an effective tool for developing sound municipal financial practices that adhere to industry and state municipal financial standards. Those who have completed the CMFO program leave with a greater understanding of municipal finance and have often expressed that they see great value in the program. Although the program has

been perceived as very successful, limited research has been conducted to evaluate the success of the CMFO program. The purpose of this research is to analyze the effectiveness of the CMFO program among participating Tennessee municipalities. Two approaches were used to analyze the effectiveness of the CMFO training program. First, MTAS staff examined the relationship between the number of audit findings in participating cities from 2007 through 2014 and the presence of the certified municipal finance officer. If the CMFO training program was successful one would expect to see a decrease in the number of audit findings after a city's chief financial officer became a CMFO. Second, MTAS staff developed a survey designed to determine the CMFO training programs participants' thoughts about the training course and materials presented. MTAS staff wanted to know if the participants thought that the course increased their financial management knowledge and had an impact on their job performance.

Results of the study show that participants in Tennessee's CMFO training program highly value the program and that the program has had a significant impact on financial practices in municipalities. These findings are a testament to the value of the program and the impact participants' post-training skills, knowledge, and abilities have on their city's financial practices. This is significant not only for the program but also for the local government community at large.

Data and Methods

To analyze the effectiveness of the CMFO program, patterns in financial audits of 60 Tennessee municipalities before and after a staff member¹ attained CMFO certification under the CMFO training program were analyzed using a comparison of means test approach². The financial data for this study were obtained from the Comprehensive Annual Financial Reports (CAFRs) from 2007 through 2014 for each municipality in the study. The data were generated by MTAS staff and a graduate student intern, with the assistance of the Tennessee Comptroller of the Treasury Office. The dependent variable is the number of audit findings in each city in the study. The main independent variable is if a city's financial officer has achieved CMFO certification or not. To signify that a city's financial officer has achieved CMFO certification, a binary variable was utilized with 1 indicating a CMFO certification was present and a 0 indicating a CMFO certification was not present.

The data show that city finance officers attained CMFO certification in differing years. A number of finance officers received CMFO certification in 2010 and others received their CMFO certification in 2012. To test the effectiveness of the CMFO program and ensure consistent comparison across all cities in the study, the number of audit findings, in each city, for three years before CMFO certification was attained was compared to the number of audit findings, in each city, for three years after CMFO certification was attained. This yielded a total of 6 years

¹ To mitigate variation produced by personnel in financial practices, only cities that retained the same CMFO and the same auditor will be considered in pre- and post-training data. These requirements yielded 60 municipalities.

² A paired t test was used to test the mean difference in the number of audit findings before and after a staff member attained CMFO certification.

of financial data for each city, with each city having three years of pre-CMFO data and three years of post-CMFO data. Although consistency across cities is paramount in assessing the effectiveness of the CMFO program, there is still a need to have a clearer understanding of the financial practices of cities over the entire study period, from 2007 through 2014. To that effect, all years of data were used to generate general patterns in financial practices over time.

In addition to examining the relationship between the number of audit findings and the CMFO training program, MTAS staff, in conjunction with the Tennessee Comptroller of the Treasury Office, developed a survey for CMFO graduates. The survey was designed to determine the CMFO graduates' thoughts about the CMFO training program and asked specific questions about job-related knowledge and performance. The survey was administered by a graduate student intern with the Institute for Public Service (IPS) and was conducted using Qualtrics, a software program for conducting surveys.

Findings

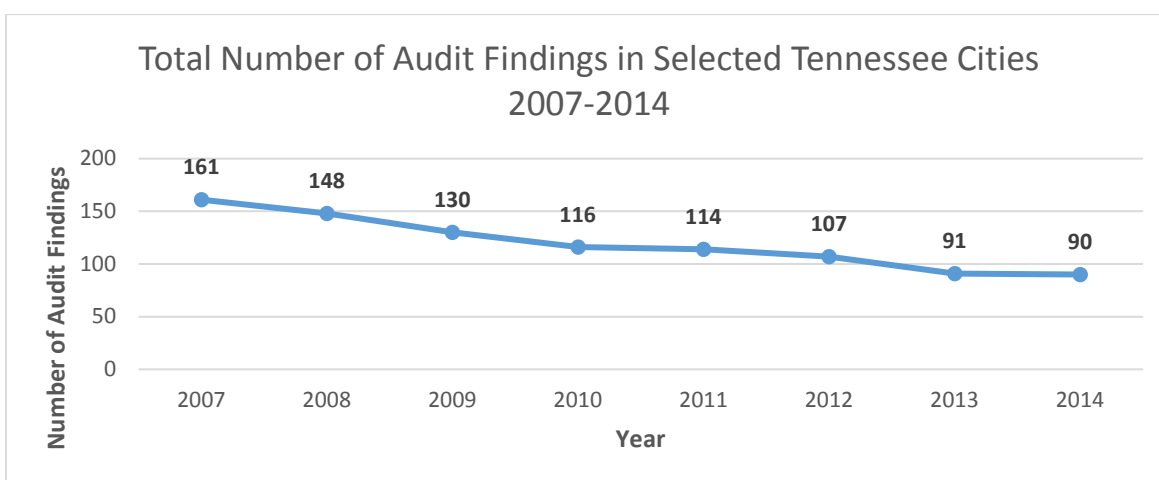
There are a total of 60 Tennessee municipalities included in this study. In 2010, 17 of the cities in the study had a finance officer attain CMFO certification. In 2012, 43 of the cities in the study had a finance officer attain CMFO certification. **Table 1** provides a full list of each city in the study and the year in which a city's finance officer attained CMFO certification.

Table 1. CMFO Certification Years for Tennessee Cities

2007	2008	2009	2010	2011	2012	2013	2014
			Arlington		Allardt		
			Ashland City		Altamont		
			Covington		Ardmore		
			Dunlap		Atwood		
			Goodlettsville		Baileyton		
			Henderson		Baxter		
			Humboldt		Bell Buckle		
			Jefferson City		Berry Hill		
			Lafayette		Blaine		
			Loudon		Bluff City		
			Manchester		Burns		
			McMinnville		Cornersville		
			Pigeon Forge		Cowan		
			Pleasant View		Crab Orchard		
			Pulaski		Cumberland Gap		
			Sparta		Dayton		
			Tullahoma		Eastview		
					Greenfield		
					Huntsville		
					Kingston Springs		
					Lakesite		
					Lobelville		
					Loretto		
					Madisonville		
					Maynardville		
					McKenzie		
					Millersville		
					Mosheim		
					Puryear		
					Ramer		
					Ridgely		
					Ridgetop		
					Rockford		
					Sharon		
					South Carthage		
					Surgoinsville		
					Tazewell		
					Tiptonville		
					Troy		
					Walden		
					Wartrace		
					White Bluff		
					Woodbury		

Looking at the number of audit findings over time, **Figure 1** indicates the total number of audit findings decreased from 161 in 2007 to 90 in 2014. This is a decrease in the number of audit findings by 71 (about 44 percent) from 2007 through 2014. Fewer audit findings over time is a desirable outcome, but it raises the question: if the number of municipal audit findings were already exhibiting a pattern of decline since 2007, did the CMFO program have a significant impact on the quality financial practices and the number of audit findings?

Figure 1. Total Number of Audit Findings in Select Tennessee Cities 2007-2014



To answer this question and test the effectiveness of the CMFO program a paired t-test was used. The dependent variable in this study is the number of audit findings in each city³. **Table 2** shows the test results. The results indicate that there was a significant difference in the number of audit findings before a finance officer attained CMFO certification compared to after a finance officer attained CMFO certification. This suggests that the CMFO training program was effective and helped to improve the quality of financial practices and reduce the number of audit findings in Tennessee cities.

Table 2. Audit Findings Pre-CMFO and Post-CMFO completion

Average number of audit findings Pre-CMFO	6.5
Average number of audit findings Post-CMFO	5.2
Difference	1.28
t-value	2.54
p-value	0.013
Number of Observations	60

³ Municipal finance officers attained CMFO certification in different years. To standardize the number of audit violations included in the study across all cities, the number of audit violations were calculated for three years of pre-CMFO and three years of post-CMFO.

Even though the CMFO program has been shown to help improve financial practices and reduce the number of audit findings in municipalities, not all municipalities exhibited a decrease in the number of audit findings over time. From 2007 through 2014, 26 cities exhibited a decrease in the number of audit findings. Of the remaining 34 cities, in the study, 23 cities exhibited no change in the number of audit findings and 11 cities exhibited an increase in the number of audit findings from 2007 through 2014. (See Appendix A. for full list of average audit finding before and after CMFO certification.)

To understand the nature of municipal financial practices and audit findings further, MTAS staff created financial categories. The categories include: Governmental Environment, Internal Control and Audit, Municipal Budgeting, Government Accounting, Financial Reporting, Cash Management, Debt Management, Payroll, Personnel and Pension and Purchasing. (See Appendix B. for full list and description of each category.) Each audit finding was reviewed and placed in one of the nine categories. Over the entire study period (from 2007 through 2014) there were 957 total audit findings listed. **Table 3** shows that the number of audit finding in each of the nine financial categories decreased from 2007 through 2014. This is a promising trend, but there are still areas that need improvement. For instance, the number of audits findings categorized as internal control and audit, governmental accounting and cash management are consistently higher than the number of audit findings categorized as government environment, financial reporting, debt management, payroll, personnel and pensions, and purchasing. Further, audit findings categorized as internal control and audit account for the highest number of audit findings at 463. This means that internal control and audit reporting violations account for about 49 percent of the total number of audit findings from 2007 through 2014. Although the number of audit findings categorized as internal control and audit account for the highest number of total audit findings, there is still a decrease in the number of finding over time. In fact, from 2007 through 2014, the number of internal control and audit findings decreased by 19 (about 28 percent). This is a desirable trend that shows progress, but still emphasizes an area for improvement.

Table 3. Audit Findings Sorted by Financial Categories

YEAR	Total Number of Findings	Government Environment	Internal Control and Audit	Municipal Budgeting	Governmental Accounting	Financial Reporting	Cash Management	Debt Management	Payroll, Personnel and Pensions	Purchasing
2007	161	9	67	12	31	5	22	1	7	6
2008	148	4	66	10	31	6	19	2	6	3
2009	130	4	62	7	24	4	21	1	4	3
2010	116	4	56	9	20	5	18	2	1	1
2011	114	2	59	8	21	4	16	1	1	2
2012	107	1	57	6	18	4	14	1	1	5
2013	91	1	48	8	16	2	12	0	2	2
2014	90	1	48	7	15	2	15	0	1	1
Total	957	26	463	67	176	32	137	8	23	23

The t-test results suggests attaining CMFO certification leads to fewer audit findings and better financial practices. This is an important finding that indicates the impact of the program, but there is still another dimension of the training program that needs to be explored; the participant’s perspective and evaluation of the program. In any educational or training experience the perceptions of the participants are very important when determining the value and impact of the program. After all if the participants do not see the value of the training they may simply see it as another task to complete and not truly embrace what is being taught. To get an idea of the CMFO training program participants’ perspectives, MTAS, in conjunction with the Tennessee Comptroller of the Treasury Office, developed a survey to evaluate the CMFO program. The CMFO evaluation survey was designed to ascertain CMFO graduates’ thoughts about the program’s effectiveness and value. The survey was administered to 60 CMFO graduates and 47 responded. That is a response rate of 78.33%. Respondents were asked specific questions about job-related knowledge and performance as well as the overall value of the program. (See appendix C. for a full list the survey questions.)

The survey results were overwhelmingly positive. In every question the vast majority of respondents indicated that the program helped to increase their job-related knowledge and helped improve their job performance. For example, the respondents were asked to evaluate if the “CMFO training has improved my efficiency in my daily job performance.” **Table 4** shows that over 85% of survey respondents indicated that the CMFO training improved their effectiveness in their daily job performance.

Table 4. Survey question results

"CMFO training has improved my efficiency in my daily job performance."		
Response	Frequency	Percent Distribution
Strongly Agree	20	42.6%
Agree	20	42.6%
Neither Agree nor Disagree	5	10.6%
Disagree	2	4.3%
Strongly Disagree	0	0.0%
Total	47	100.0%

The survey also asked respondents to evaluate if the “CMFO training has improved my job-related knowledge.” **Table 5** shows that 89.4% of respondents felt that the CMFO training program improved their job-related knowledge.

Table 5. Survey question results

CMFO training has improved my job-related knowledge.		
Response	Frequency	Percent Distribution
Strongly Agree	18	38.3%
Agree	24	51.1%
Neither Agree nor Disagree	3	6.4%
Disagree	2	4.3%
Strongly Disagree	0	0.0%
Total	47	100.0%

These responses demonstrate the value and effectiveness of the CMFO training program for municipal finance officers. These are promising results, but perhaps the most telling question alluding to the value of the CMFO program was, “Would you recommend the CMFO training to other finance employees?” As seen in **Table 6**, 100% of respondents answered “yes” indicating that they would recommend the CMFO training to other finance employees. This suggests that those surveyed not only see the value in the program for their own professional growth and development, but they also see the value of the program for others in the finance profession.

Table 6. Survey Question Results

Would you recommend the CMFO training to other finance employees?		
Response	Frequency	Percent Distribution
Yes	45	100%
No	0	0%
Total	45	100%

Conclusion

The Municipal Finance Officer Certification and Education Act of 2007 requires all municipalities to have a chief financial officer, who is a Certified Municipal Finance Officer (CMFO), or qualified exempt individual per criteria set forth in the Act with an exception given to cities with \$500,000 or less in gross revenues from all funds and with debt of \$500,000 or less from all funds. Becoming a CMFO and maintaining certification through yearly continuing education requirements can be a daunting task for municipal finance officers. Although the process can be challenging it is rewarding for municipal finance officers as well as municipalities. This study suggests that the CMFO training program helps to improve job-related knowledge and skills and leads to better municipal financial practices. These findings express the value of the CMFO training program and are significant not only for the program but also for the local government community and the people they serve.

Appendix A. Average number of audit findings for each city in the study 2007-2014⁴

Cities with Lower Average Audit Findings after CMFO Program Completion

City	CMFO Year	Average Number of Audit Findings Before CMFO	Average Number of Audit Findings After CMFO
A	2012	5.40	5.00
B	2012	2.00	1.00
C	2012	1.20	1.00
D	2012	1.60	0.00
E	2012	6.00	4.67
F	2012	1.20	1.00
G	2010	8.00	6.40
H	2012	3.20	2.33
I	2012	1.40	1.00
J	2012	4.00	2.00
K	2010	4.33	1.40
L	2010	4.00	1.80
M	2012	5.80	2.67
N	2010	15.33	7.60
O	2012	5.20	0.00
P	2012	1.20	0.00
Q	2010	3.30	0.40
R	2012	4.20	3.00
S	2012	4.40	2.67
T	2012	4.00	2.67
U	2012	2.00	1.33
V	2012	2.20	1.00
W	2010	2.33	0.80
X	2012	2.20	1.33
Y	2012	1.20	1.00
Z	2012	2.40	1.00

⁴ This program evaluation analyzed the overall impact of the CMFO program. Identifying city specific performance was not the focus of this analysis and, as such, cities were not identified in this table.

Cities with the Same Average Audit Findings before and after CMFO Program Completion

City	CMFO Year	Average Number of Audit Findings Before CMFO	Average Number of Audit Findings After CMFO
AA	2012	0.00	0.00
AB	2010	0.00	0.00
AC	2012	1.00	1.00
AD	2012	1.00	1.00
AE	2012	1.00	1.00
AF	2012	1.00	1.00
AG	2010	1.00	1.00
AH	2012	1.00	1.00
AI	2010	0.00	0.00
AJ	2012	1.00	1.00
AK	2010	0.00	0.00
AL	2012	0.00	0.00
AM	2012	1.00	1.00
AN	2012	0.00	0.00
AO	2012	1.00	1.00
AP	2010	1.00	1.00
AQ	2010	0.00	0.00
AR	2012	1.00	1.00
AS	2012	1.00	1.00
AT	2012	0.00	0.00
AU	2012	1.00	1.00
AV	2012	0.00	0.00
AW	2012	0.00	0.00

Cities with Higher Average Audit Findings after CMFO Program Completion

City	CMFO Year	Average Number of Audit Findings Before CMFO	Average Number of Audit Findings After CMFO
AX	2010	0.33	0.40
AY	2012	2.60	2.67
AZ	2012	1.60	1.67
BA	2012	1.40	2.00
BB	2012	2.20	2.67
BC	2010	0.00	0.20
BD	2010	0.00	0.20
BE	2010	0.00	0.80
BF	2012	2.40	3.00
BG	2012	15.40	17.67
BH	2010	0.67	1.20

Appendix B. Financial Categories

GOVERNMENT ENVIRONMENT

- CONFLICT OF INTEREST OR RELATED PARTY TRANSACTIONS
- ETHICAL ISSUES
- OPEN RECORDS, OPEN MEETINGS AND RESTRICTED ACCESS RECORDS

INTERNAL CONTROL AND AUDIT

- ABSENCE OR BREAKDOWN OF POLICIES AND PROCEDURES
- ISSUES THAT CANNOT BE ASSOCIATED WITH A MORE DETAILED TOPIC
- EXCESS WATER LOSS OR INADEQUATE WATER SCORE

MUNICIPAL BUDGETING

- EXCESS EXPENDITURES OVER APPROPRIATIONS
- LACK OF BUDGET

GOVERNMENT ACCOUNTING

- FAILURE TO RECONCILE BANK ACCOUNTS
- FAILURE TO RECORD FINANCIAL TRANSACTIONS
- FAILURE TO RECONCILE LEDGERS (ACCOUNTS REC, ACCOUNTS PAYABLE, UTILITY BILLING, PROPERTY TAX, ETC) TO THE GENERAL LEDGER.

FINANCIAL REPORTING

- FAILURE TO RECORD YEAR END ADJUSTING JOURNAL ENTRIES
- FAILURE TO RECORD AUDITOR ADJUSTMENTS
- FAILURE TO WRITE THE MANAGEMENT'S DISCUSSION AND ANALYSIS

CASH MANAGEMENT

- FAILURE TO ISSUE PRENUMBERED RECEIPTS
- FAILURE TO MAKE TIMELY DEPOSITS
- FAILURE TO PREVENT DEFICIT FUND BALANCES, NET ASSETS OR NET POSITION.
- FAILURE TO PREVENT OPERATIONAL LOSSES

DEBT MANAGEMENT

- FAILURE TO OBTAIN APPROVAL FROM THE STATE PRIOR TO INCURRING DEBT
- BORROWING MONEY FROM OTHER FUNDS WITHOUT STATE APPROVAL

PAYROLL, PERSONNEL AND PENSIONS

- FAILURE TO PROPERLY CALCULATE PAYROLL
- FAILURE TO PAY REQUIRED PAYROLL TAXES
- FAILURE TO PAY PROPER PENSION COSTS

PURCHASING

- FAILURE TO USE PURCHASE ORDERS
- FAILURE TO ADOPT PURCHASING PROCEDURES
- FAILURE TO FOLLOW ADOPTED PURCHASING POLICIES

Appendix C. CMFO Evaluation Survey

CMFO Graduate Survey

Your assistance with this information is appreciated and will be used to guide further training and research related to the Certified Municipal Finance Officer (CMFO) program.

Q1 Are you the designated CMFO for your city?

- Yes (1)
- No (2)
- Not sure (3)

Q2 If you are not the designated CMFO for your city, please enter the name of the person who is:

Q3 CMFO training has improved my efficiency in my daily job performance.

- Strongly Agree (1)
- Agree (2)
- Neither Agree nor Disagree (3)
- Disagree (4)
- Strongly Disagree (5)

Q4 CMFO training has improved my confidence in my daily job performance.

- Strongly Agree (1)
- Agree (2)
- Neither Agree nor Disagree (3)
- Disagree (4)
- Strongly Disagree (5)

Q5 CMFO training has improved my understanding of my job.

- Strongly Agree (1)
- Agree (2)
- Neither Agree nor Disagree (3)
- Disagree (4)
- Strongly Disagree (5)

Q6 CMFO training has improved my job-related knowledge.

- Strongly Agree (1)
- Agree (2)
- Neither Agree nor Disagree (3)
- Disagree (4)
- Strongly Disagree (5)

Q7 CMFO training has improved my accuracy in my daily job performance.

- Strongly Agree (1)
- Agree (2)
- Neither Agree nor Disagree (3)
- Disagree (4)
- Strongly Disagree (5)

Q8 Please rate your job-related knowledge after completing the CMFO training for each of the class modules below:

	No increase (1)	Some increase (2)	Significant increase (3)
Government Environment (1)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Municipal Budgeting (2)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Governmental Accounting I & II (3)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Financial Reporting I & II (4)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Cash Management (5)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Debt Management (6)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Payroll, Benefits, Pensions (7)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Purchasing, Risk Management, ERP (8)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Q9 Have you personally benefited from becoming a CMFO? Check all that apply to your experience.

- No benefit (1)
- Received a promotion (2)
- Received a raise (3)
- Other benefit (s) Please describe the other benefits here: (5) _____

Q11 Have you been able to obtain the appropriate continuing professional education (CPE) credits to maintain your CMFO Certification?

- Yes (1)
- No (2)

Q12 Would you recommend the CMFO training to other finance employees?

- Yes (1)
- No (2)

Q13 Are there any additional comments you would like to make on your experience in the CMFO training program or as a CMFO? Your input is appreciated and will be used to guide further training and research.

Acknowledgements

I would like to thank the members of the MTAS staff that assisted in the program analysis: Frances Adams-O’Brien, Doug Brown, Macel Ely, Kay Stegall, Jim Thomas and Rick Whitehead. I would also like to thank the Tennessee Comptroller of the Treasury Office for their participation in this effort. They all provided extraordinarily useful comments and suggestions which have made this finished product much better than it would have been otherwise.

For more information on the Certified Municipal Finance Officer Program, contact Kay Stegall, MTAS Finance and Accounting Consultant at kay.stegall@tennessee.edu. For questions related to this program analysis, contact the author at chris.shults@tennesseer.edu.

Also visit the MTAS website at www.mtas.tennessee.edu for information on all MTAS services available to the cities and towns of Tennessee.