APPRAISAL OF PUBLIC SERVICE COMPANIES

LOUISIANA TAX COMMISSION

PERFORMANCE AUDIT SERVICES
ISSUED JUNE 7, 2017

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LOUISIANA LEGISLATIVE AUDITOR
DARYL G. PURPERA, CPA, CFE

June 7, 2017

The Honorable John A. Alario, Jr.,
President of the Senate
The Honorable Taylor F. Barras,
Speaker of the House of Representatives

Dear Senator Alario and Representative Barras:

This report provides the results of our performance audit on the Louisiana Tax Commission's (LTC) process of appraising public service companies. The report contains our findings, conclusions, and recommendations. Appendix A contains LTC's response to this report. I hope this report will benefit you in your legislative decision-making process.

We would like to express our appreciation to the management and staff of LTC for their assistance during this audit.

Sincerely,

Daryl G. Purpera, CPA, CFE
Legislative Auditor

DGP/aa

LTC APPRAISAL PSC

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Louisiana Legislative Auditor

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Appraisal of Public Service Companies
Louisiana Tax Commission

June 2017

Audit Control # 40150026

Introduction

We evaluated the Louisiana Tax Commission's (LTC) process of appraising public service companies. LTC is required by state law[1] to appraise each public service company by September 1 of each calendar year by determining their fair market value. From the fair market value, LTC then calculates the assessed value,[2] which determines how much companies owe in local taxes. All other properties, such as residential and commercial, are valued by the local assessors. For these types of properties, LTC is required to measure the accuracy of the valuations.

Public Service Companies
Utility, landline telephone, railroad, oil and gas pipelines, airlines, barge lines, and private railcar lines.

Exhibit 1
Statewide Public Service Company Assessments

Year	No. of Assessments	Assessed Amount	Tax Revenue to Local Governments
2011	695	$4.6 billion	$468 million
2012	727	$5.1 billion	$513 million
2013	702	$5.3 billion	$534 million
2014	712	$5.4 billion	$547 million
2015	716	$5.5 billion	$557 million

Source: Prepared by the legislative auditor's staff using information obtained from LTC's PSC database, PARTS, and annual reports.

During the 2015 assessment year[3] (fair market values as of December 31, 2014), LTC appraised 716 public service companies, resulting in a total assessed value of $5.5 billion and approximately $557 million in taxes paid to local governments. Exhibit 1 shows how much these companies were assessed over the past five years and how much was paid to local governments as a result of these assessments. Due to the large amount of tax revenue generated through these assessments, it is important that LTC utilize a strong, consistent appraisal process.

LTC appraises utility, landline telephone, railroad, and oil and gas pipeline public service companies based on unit valuation standards set by the National Conference of Unit Valuation States (NCUVS). These companies represented 219 (31%) of the 716 total public service companies for assessment year 2015. The assessments for the remaining 497 airline, barge, and private railcar companies only included the vehicles owned by these companies. The other property owned by these types of companies is not considered "public service property" and is therefore assessed locally.

[1] Louisiana Revised Statute (R.S.) 47:1853
[2] The assessed value is 25% of fair market value for most public service companies, except airlines, railroads, railcars, and electric cooperatives, which are assessed at 15% of fair market value, and land, which is assessed at 10% of fair market value.
[3] We used assessment year 2015 because the 2016 assessments were still in progress during this audit.

Unit valuation is used for utility, telephone, pipeline, and railroad companies because they span multiple parishes. The unit valuation approach values these properties as a single, combined unit, and each local taxing jurisdiction is then allocated a portion of the valuation based on the percentage of the company's business that is located in that jurisdiction. Exhibit 2 summarizes LTC's process of appraising public service companies.

Exhibit 2
LTC's Process of Appraising Public Service Companies

	Appraisal Step	Description
1.	Using the **unit valuation approach**, an LTC appraiser uses the income statement, balance sheet, and other financial data submitted by public service companies by April 1 of each year to calculate each company's fair market value (appraised value).	• LTC calculates fair market value by using the **income approach** and the **cost approach,**[4] as allowed by R.S. 47:1853(B) and recommended NCUVS standards. • The income approach is calculated using the company's operating income and the capitalization rate as determined by LTC. • The cost approach is calculated using the book value of the company's assets.
2.	LTC appraiser determines the **fair market value** of the company by taking the weighted average of the income and cost approaches.	• For example, if the cost approach is $80 million and the income approach is $50 million, LTC must assign a weight to each approach to determine the fair market value. • For companies that span across multiple states, an LTC appraiser then allocates the fair market value to Louisiana based on the percentage of the company's business located in Louisiana.
3.	LTC appraiser determines the **assessed value** for the company.	LTC appraiser subtracts out exempt properties and applies appropriate assessment ratios to determine **assessed value**, or the value on which the company is taxed.
4.	Appraisal is reviewed by LTC management and then the company has 30 days to review LTC's calculation.	• If necessary, LTC will negotiate with the company to derive the final fair market value. • Company can appeal LTC's calculation to the tax commission.
5.	LTC sends parish assessors the value of the company in their parish, and each company pays taxes to the local government on the assessed value based on the applicable local millage rate.	

Source: Prepared by legislative auditor's staff using information obtained from LTC.

This audit focuses primarily on LTC's actual fair market calculations, as summarized in steps 2 and 3 of the exhibit above. The objective of this audit was:

To evaluate LTC's process of appraising public service companies.

Our results are summarized on the following pages, along with recommendations to help LTC strengthen its appraisal process. Appendix A contains LTC's response[5] to the report, and Appendix B details our scope and methodology.

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[4] Although the same statute permits LTC to use the market (stock and debt) approach, LTC does not use it.
[5] LTC's response is based on an earlier draft of the audit report. As noted by LTC in the footnote on page A.2 of its response, "portions of this response may have been rendered moot by subsequent revisions and corrections."

Objective: To evaluate LTC's process of appraising public service companies.

Our evaluation of LTC's appraisals of public service companies identified the following:

- **If LTC used an alternative appraisal methodology that accounted for expected future income growth, as recommended by national standards, the assessed values of public service companies in Louisiana may increase by $2.4 billion and result in local governments receiving an additional $249 million in annual tax revenue.** In addition, LTC would collect an additional $964,000 in service fees from these companies during fiscal year 2018.

- **LTC has not developed rules and regulations defining how to appraise public service companies. As a result, LTC values different companies within the same industry inconsistently without any documented explanation.** A change in the weights LTC assigns to a company's valuation approach from year to year can impact the company's fair market value and ultimately the tax revenue for local governments.

- **LTC calculates the value of public service companies using self-reported information.** However, LTC does not conduct any audits to ensure the accuracy of the information companies submit.

- **Over assessment years 2011 through 2015, LTC assigned eight barge and railcar companies to the wrong parish.** As a result, some parishes received tax revenue that should have gone to another parish. Although these eight companies represent a small percentage of barge and rail car companies overall, the total assessed value of these misallocated companies was $2.4 million and impacted seven parishes.

- **The procedure LTC uses to allocate the value of nuclear power plants is not consistent with its procedure for other public service companies and effectively decreases the assessed value of the companies that own these plants by $50.5 million in St. Charles Parish and $67.5 million in West Feliciana Parish.** According to LTC management, state law does not provide LTC with specific procedures but does allow LTC to use discretion to adjust its allocation formula to reflect the fair market value of a particular company's property in a particular parish.

In addition, we identified an area for further study focusing on R.S. 47:1855(G)(2), which requires that tax revenue from any property owned by a company with no principal office, agent, or primary business connection in Louisiana be allocated to East Baton Rouge Parish.

These results are discussed in detail throughout the remainder of the report.

If LTC used an alternative appraisal methodology that accounted for expected future income growth, as recommended by national standards, the assessed values of public service companies in Louisiana may increase by $2.4 billion and result in local governments receiving an additional $249 million in annual tax revenue.

LTC's current income approach methodology when determining fair market value assumes that public service companies will see zero income growth in the long term. A company whose income is expected to grow every year will be worth more than a company whose income is stagnant. Although LTC's current methodology accounts for past growth in a company's income since its last annual appraisal, this methodology does not account for expected future income growth, which is an important factor in the income approach. Not accounting for expected future income growth may cause a company to be undervalued. R.S. 47:1853 requires LTC to determine the fair market value of public service companies by using nationally-recognized techniques when determining the fair market value of a company. Exhibit 3 shows three different national organizations that recommend accounting for expected future income growth when determining the fair market value of a company. Appendix C, page 2, provides further information about these national organizations and why we used them.

Exhibit 3
National Organizations that Recommend Accounting for Expected Future Income Growth

Organization	Standards	Summary of Standards
1. American Society of Appraisers (ASA)	Business Valuation Standards	ASA's Business Valuation Standards specifies that the income approach should consider expected growth and timing of the company's income, the risk profile of the income stream, and the time value of money.
2. The Appraisal Foundation	Uniform Standards for Professional Appraisal Practice (USPAP)	USPAP requires an appraiser valuing a business to consider "past results, current operations, and future prospects of the business enterprise." USPAP also "directs the appraiser to study the prospective [expected growth] and retrospective aspects of the business enterprise and to study it in terms of the economic and industry environment within which it operates."
3. The National Conference of Unit Valuation States (NCUVS)	Unit Valuation Standards	NCUVS standards state that the income approach methodology needs to account for the amount, shape (expected growth), and duration of the pertinent income stream.

Source: Prepared by legislative auditor's staff using information obtained from each organization.

According to LTC management, it is concerned that accounting for expected future income growth could cause companies to be overvalued because some of the income growth will be generated from assets (i.e., property, plant, and equipment) that the companies have not yet bought. However, as outlined in Exhibit 3 above and further detail in Appendix C, NCUVS Unit Valuation Standards and ASA Business Valuation Standards direct the appraiser to account for expected future growth in the income approach. In addition, the Western States Association of Tax

Administrators' *Appraisal Handbook for Unit Valuation of Centrally Assessed Properties* states that the expectation of future growth is an essential factor affecting the value of the property.

As explained in Appendix C, page 1, LTC uses a zero-growth income approach methodology developed by a private appraisal firm that provides appraisal services for public utilities and railroads for ad valorem tax purposes. This methodology tends to favor taxpayers because assuming zero growth results in lower values than the values obtained assuming positive growth. Exhibit 4 shows how expected future income growth affects the fair market value of a company as indicated by the income approach.

Exhibit 4
Effect of Expected Future Growth in the Income Approach to Value

Description	Formula	Fair Market Value
With Growth	$\frac{\text{Income (one year)}}{\text{Discount Rate} - \text{Growth}} = \text{Value}$	$\frac{\$5 \text{ million}}{9.5\% - 4\%} = \$90.9 \text{ million}$
Without Growth	$\frac{\text{Income (one year)}}{\text{Discount Rate}} = \text{Value}$	$\frac{\$5 \text{ million}}{9.5\%} = \$52.6 \text{ million*}$

***The lower the assessed amount, the lower the taxes the company has to pay.**
Source: Prepared by legislative auditor's staff using capitalization rates from LTC and eight states.

In addition, LTC assumes public service companies will experience zero income growth indefinitely even though public service companies have experienced growth and are projected to grow in the future. The U.S. Bureau of Economic Analysis reported that the average historical growth in public service industries from 1997 through 2015 was 4.2% annually (annual inflation alone was 1.9%). In addition, the investment research firms of Value Line, Zacks, and Thomson estimate future earnings growth in public service industries at 7.5%. Appendix C summarizes the methodology that could be used to account for expected growth.

If LTC used an alternative methodology recommended by national standards that accounted for expected future income growth, the assessed values of public service companies in Louisiana may increase by $2.4 billion. To obtain an accurate expected growth rate for each public service industry, we obtained the anticipated growth rate[6] in each industry from eight other states, including two of the five states[7] LTC uses as comparison states. On average, the anticipated annual growth rate was 5.1%. We recalculated the income approach values accounting for expected future income growth for the 169[8] public service companies that use unit valuation standards and found that the assessed values of these companies in Louisiana would potentially increase from $4.6 billion to $7.0 billion, or an overall increase of $2.4 billion (53%). Exhibit 5 shows the

[6] To obtain the growth rate from these states (Montana, Washington, Minnesota, Missouri, Oregon, Arkansas, California, and Oklahoma), we obtained each state's direct capitalization rates and subtracted these from LTC's yield capitalization rates to obtain an implied growth rate for companies in each industry.
[7] The other three states LTC uses do not provide sufficient information to derive expected income growth rates.
[8] We excluded the 50 telephone companies from this analysis because the other states we referenced do not distinguish between landline telephone, internet, and wireless service companies even though each of these services have different outlooks. However, Louisiana does not assess internet and wireless service companies as public service properties. This makes their calculations less useful for determining the expected growth of only landline telephone companies. In assessment year 2015, telephone companies in Louisiana were assessed at $379 million.

valuations for each public service industry if expected future income growth is accounted for in the calculation.

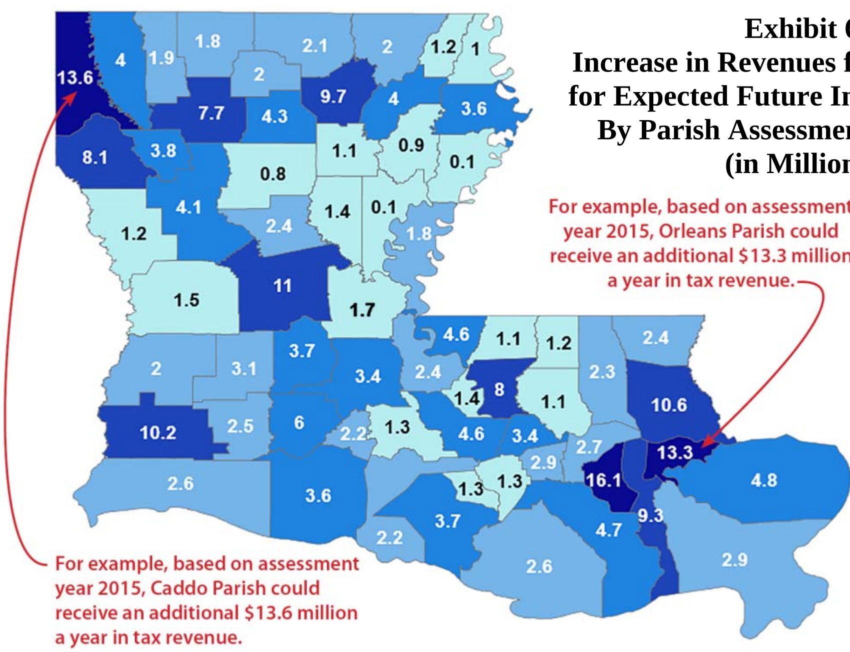
Exhibit 5
Public Service Company Values Accounting for Expected Future Income Growth
Assessment Year 2015

Industry	Number of Companies	LTC Assessed Value with Zero Growth (Millions)	Assessed Value with Expected Income Growth (Millions)	Change (Millions)
Electric/Co-op	31	$1,889	$2,885	$996
Water	33	49	55	6
Natural Gas	8	92	131	39
Pipeline	79	2,264	3,277	1,012
Class I Railroads	6	259	605	347
Class II & III Railroads	12	12	21	9
Total	**169***	**$4,565**	**$6,974**	**$2,409**

* This number is not 219 because 50 telephone companies were excluded from this analysis, as explained in footnote 7 on the previous page.
Source: Prepared by legislative auditor's staff using information obtained from LTC's appraisal system, PARTS, and other states (Montana, Washington, Minnesota, Missouri, Oregon, Arkansas, California, and Oklahoma). We did not use the projected rates of three states used by LTC—Wyoming, Utah, and Colorado—because these states do not provide sufficient information to derive expected growth rates.

Accounting for expected future income growth when valuing public service companies may also result in a $249 million increase in revenue to local governments. Exhibit 6 shows how much in additional tax revenue each parish would receive if LTC accounted for expected future income growth. Appendix D lists the increase in revenue by parish.

Exhibit 6
Increase in Revenues for Accounting for Expected Future Income Growth, By Parish Assessment Year 2015
(in Millions)

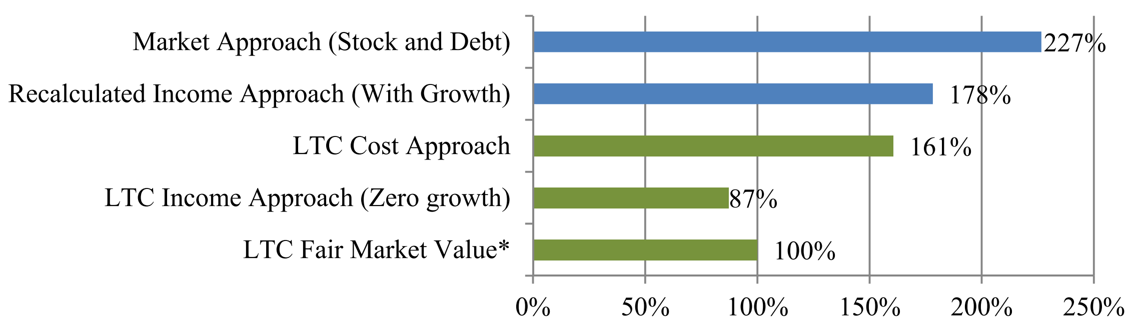


Source: Prepared by legislative auditor's staff using information from LTC.

Using an alternative methodology that accounts for expected future income growth is also supported by the cost and market approaches. Not accounting for expected future growth in the income approach may result in values that are far below cost and market approach values. However, accounting for expected future growth in the income approach indicates values that are in line with the cost and market approaches. To supplement this analysis, we reviewed LTC's cost approach calculations and calculated the stock and debt approach, which is a surrogate for the market approach, for public service companies that have publicly traded securities. LTC is permitted to use the market approach when valuing public service companies per R.S. 47:1853.

As shown in Exhibit 7 below, we calculated the market approach for 13 publicly-traded public service companies in Louisiana (comprising 36% of public service assessed value) and found that the market approach results in values that are 127% higher than LTC's fair market values. In addition, the cost approach calculations are 61% higher than LTC's fair market values. Although obsolescence[9] can cause a company's fair market value to be less than its cost-approach value, LTC obtains its cost-approach values for pipeline and electric companies from Federal Energy Regulatory Commission financial statements that are already required to account for obsolescence.[10] This corroborates our finding that LTC's assumption of zero growth results in assessed values that are low.

Exhibit 7: Comparison of Values from Each Approach
Average of 13 Largest Publicly Traded Public Service Companies
LTC's Correlated Value = 100%



***** LTC determines fair market value by selecting a point between the income and cost approach values.
Source: Prepared by legislative auditor's staff using information from LTC's appraisal system, eight states' capitalization rate studies, the U.S. Securities and Exchange Commission, the Surface Transportation Board, the Federal Energy Regulatory Commission, and Yahoo Finance.

According to LTC management, their valuations are in line with seven[11] other Southern Association of State Property Tax Administrators states. However, we found that accounting for expected future growth in the income approach produces results that are closer to the market values

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[9] Obsolescence is a reduction in value of a company's property because of its inability to adequately perform the function for which it is utilized, or because of external forces, such as changes in the supply/demand relationship, legislative enactments, and other external factors, including industry and local economic conditions.
[10] The Uniform System of Accounts Prescribed for Public Utility Companies (18 CFR§ 101) and Uniform System of Accounts Prescribed for Natural Gas Companies (18 CFR § 201) both require consideration of obsolescence in calculating depreciation.
[11] Alabama, Georgia, Kentucky, Mississippi, North Carolina, South Carolina, and Tennessee.

determined by actual investors and cost approach values, which reflect audited book values, as shown in the previous exhibit. We also found that one public service company rejected a merger offer, stating the offer was inadequate even though this offer would have valued them at approximately more than twice the fair market value that LTC assigned.

If LTC accounted for expected future income growth when valuing public service companies, they would receive an additional $964,000 in service fees from these companies during fiscal year 2018. According to Louisiana Administrative Code 61:V.3501, LTC is authorized to collect a fee of 0.04 percent of a public service company's assessed value from that company beginning July 1, 2016, through June 30, 2018.

Recommendation 1: LTC management should consider accounting for expected growth, as recommended by several national appraisal standards, in its income approach formula when valuing public service companies.

Summary of Management's Response: LTC neither agreed nor disagreed with this recommendation. See Appendix A for management's full response. LTC management responded to this recommendation with several statements, including the following:

1. The formula LTC uses, referred to as the "no growth model," is nationally recognized and recommended by appraisal standards and experts.

2. This model is used by the vast majority of states that value public service companies.

3. LTC has the benefit of re-appraising and re-valuing each public service company each year, allowing it to actually capture the growth and decline of a company without making assumptions about the future assets and income of that company.

4. LLA selected eight states that bear little resemblance to Louisiana and have low direct capitalization rates, which inflated the "lost revenue figure" for its analysis.

5. LLA did not perform a reappraisal of a public service company as an example using a different approach. Without performing a complete appraisal of a company based on a different approach methodology, it is unreliable to simply assume all other factors will remain stable when a single variable (i.e., accounting for growth) is modified.

6. The WSATA Handbook acknowledges and discusses the no growth model as a valid appraisal method.

7. For tax year 2015, using LLA's approach, BellSouth would have been valued at approximately $19,250,000,000 − $6.6 billion more than the average system value determined by other southeastern states.

8. Utilizing the stock and debt approach for some companies of a particular industry, and not others, would not only violate LLA's interpretation of R.S. 47:1853 but would also violate the correct interpretation articulated by Louisiana courts.

LLA Additional Comments: Despite multiple requests during the audit process, LTC would not explain its methodology for conducting appraisals of public service companies nor its reasoning behind using the no growth model. Nowhere in the report does LLA state that the methodology LTC uses is incorrect. Instead, the report describes an alternative appraisal methodology for LTC to consider when valuing public service companies; an alternative that may also benefit local governments in Louisiana. The comments below address some of the specific statements made by LTC in its response:

1. The alternative appraisal methodology presented in this report is not only supported by three different national organizations (as shown in Exhibit 3), but is also supported by both the cost and market approaches. While LTC cited an expert who supports the no growth model, it could not provide any national appraisal standards that support the use of this model.

2. While LTC states that the no growth model is used by the "vast majority" of states, it only listed seven. In contrast, national appraisal standards promulgated by national organizations that represent 27 states, including Louisiana, cite the need to consider expected future income growth when valuing public service companies. In addition, the seven states listed by LTC may have different laws that should be considered when comparing fair market values between states.

3. Although LTC captures the growth and decline of each company during each annual appraisal, this does not capture expected future income growth, as recommended by national appraisal standards.

4. The eight states LLA used in its direct capitalization rates analysis included two of the five states LTC uses when conducting its appraisals. The other three states did not provide sufficient information for LLA's analysis. In addition, none of the five states LTC uses are in the Southeast (California, Utah, Colorado, Wyoming, and Oklahoma).

5. Performing a reappraisal of a public service company would not provide any new information and was unnecessary to illustrate and support the recommendation that LTC consider accounting for expected future income growth.

6. The WSATA Handbook acknowledges the no growth model, but notes that it requires strong assumptions that must be verified with market data. As described in the report, the market data contradicts those assumptions made by LTC.

7. The LLA analysis excludes all telephone companies because the growth rates we obtained from other states were developed for general telecommunication companies, not landline telephone subsidiaries such as BellSouth.

8. LLA makes no recommendation to use the stock and debt approach. LLA used the stock and debt approach only to corroborate the recommendation that LTC should consider accounting for expected future income growth when valuing public service companies.

LTC has not developed rules and regulations defining how to appraise public service companies. As a result, LTC values different companies within the same industry inconsistently without any documented explanation.

According to R.S. 47:1853, all public service companies of the "same nature and kind shall be appraised in the same manner" by LTC in accordance with "nationally recognized techniques of appraisal, where applicable, to best determine the fair market value." LTC's current regulations restate the statute but do not define a methodology to ensure properties of the same nature and kind are assessed in the same manner. We found that LTC appraisers value public service companies inconsistently within the same industry, such as the electric utility industry, without any documented explanation. This increases the risk that LTC could appraise the same kind of public service companies in a different manner and therefore violate state law.

The inconsistency arises when LTC appraisers reconcile the cost and income approaches to value. To calculate the fair market value using both the cost and income approaches (as summarized in Exhibit 2 on page 2 of this report), LTC appraisers must reconcile these approaches to arrive at the overall fair market value for the company. To do so, the appraiser decides how much weight to assign to each approach. The weight LTC assigns is based on the opinion of the appraiser, as recommended by NCUVS and the Uniform Standards of Professional Appraisal Practice (USPAP)[12] standards, which state that the weights should reflect the quality and quantity of the data used for each approach. For example, if a company's income is volatile, the income approach would be less reliable. As such, the appraiser may choose to increase the weight on the cost approach, particularly if the company's property and other equipment have been recently acquired, which would make the cost approach more reliable. The weight assigned to each approach determines the fair market value of the company.

A change in the weights given to a company's income and cost approach values from year to year can greatly impact the company's fair market value and ultimately the tax revenue for local governments. Exhibit 8 shows how the weights an appraiser assigns for an appraisal will impact the fair market value of a hypothetical company. For example, the company's assessed value decreased by $10.7 million because of the change in weights assigned to each approach from 2014 to 2015.

[12] USPAP provides nationally-recognized guidelines for appraisers, and R.S. 47:1907 requires local assessors to take courses covering USPAP to maintain certification.

Exhibit 8 Example of How Change in Weights Affects Fair Market Value					
	Value		**Weight**		**Weighted Value**
	Assessment Year 2014 Weights				
Income Approach	$299,854,719	×	20%	=	$59,970,944
Cost Approach	$181,481,482	×	80%	=	$145,185,185
				Fair Market Value	**$205,156,129**
	Assessment Year 2015 Weights				
Income Approach	$299,854,719	×	11%	=	$32,984,019
Cost Approach	$181,481,482	×	89%	=	$161,518,518
				Fair Market Value	**$194,502,538**
				Difference in Fair Market Values	**($-10,653,591)**
Source: Prepared by legislative auditor's staff using example income and cost approach values for a company for the 2014 and 2015 assessment years and formulas from LTC's appraisal system, PARTS.					

LTC management could not provide any documented explanation, as required USPAP, for how they assign weights for companies within the same industry. LTC management does not require its appraisers to explain and document variation in the weighting of valuation approaches between companies within the same industry. We found that LTC appraisers assigned varying weights to companies in the same industry for the cost and income approaches and could not provide an explanation for the varying weights in 204 (93%) of the 219 unit-value appraisals completed for assessment year 2015. USPAP requires appraisers to document their reason for choosing certain weights for each valuation approach. In addition, even though R.S. 47:1853(B)(1)(b) gives LTC the discretion to assign weights that are appropriate for each company, the courts have ruled[13] that LTC does not have "unfettered discretion" to assign different weights to value the same kind of companies.

To show how assessed values are affected by LTC's use of different weights to value public service companies in the same industry, we recalculated what each company's assessed value would have been if LTC had used the same weights for all companies within a given industry. In assessment year 2015, 112 companies would have been assessed $450 million more, and 51 companies would have been assessed $96 million less. Overall, assessed values were $354 million less than they would have been if LTC had used the same weights for all companies within a given industry.

Without documenting their reasons for giving more weight to one approach than another, LTC management cannot ensure appraisers value companies consistently within the same industry. Requiring appraisers to document their reasons for choosing a particular set of weights would align LTC's procedures for assigning weights with USPAP standards, enable LTC management to ensure that differences between appraisals are based on appropriate considerations, and support LTC's ability to defend their appraisals in the event of litigation.

[13] *Kansas City Southern Railway Company vs. Louisiana Tax Commission*. 676 So.2d 812, 95-2319 (La. App. 1 Cir. 6/28/96).

Recommendation 2: LTC management should develop rules and regulations that define appraisal practices that ensure the same kinds of companies are assessed in the same manner in accordance with nationally-recognized appraisal techniques, as required by state law.

Summary of Management's Response: LTC disagrees with this recommendation and states there is little, if any, benefit to formally promulgating rules and regulations for internal policies and procedures. See Appendix A for management's full response.

Recommendation 3: LTC management should ensure appraisers document their reasons for giving more weight to one approach than another, as required by national standards.

Summary of Management's Response: LTC agrees with this recommendation and states some additional notes by LTC appraisers may be somewhat helpful to verify that companies are being correctly appraised. LTC will train and instruct staff on the appropriate and correct process and procedure for appraising companies, including making notes in the appraisal report where and when necessary. LTC will also instruct its appraisers to include an explanation when there is a significant deviation in correlation from the industry-wide average. See Appendix A for management's full response.

LTC calculates the value of public service companies using self-reported information. However, LTC does not conduct any audits to ensure the accuracy of the information companies submit.

According to NCUVS, all states are encouraged to develop audit programs that generally focus on items in the state's reporting requirements that are "not already audited by outside parties." In addition, LTC's strategic plan states that LTC should maintain an audit program that ensures that all public service companies report property accurately. Currently, when performing a public service company appraisal, appraisers use the information each company self-reports to the LTC. However, LTC did not audit any information submitted by companies from tax years 2013 through 2015.

Auditing the information companies submit is important because there is a risk a company may submit incorrect information to reduce their state allocation factor and tax burden. While some of the financial information (i.e., Securities and Exchange Commission Form 10-K, Surface Transportation Board R-1 Report, and the Federal Energy Regulatory Commission Form 1) LTC receives from federally-regulated companies such as pipelines, electric utilities, and railroads are audited by a third-party auditor, the information not relevant to federal regulators would not be audited.

For example, the state allocation factor, which is the percentage of the whole company's value allocated to Louisiana for companies that span across multiple states, is not typically included in the audited financial statements that companies include in the materials provided to LTC. The state allocation of a company that spans multiple states impacts how much local governments receive from each company. Specifically, for a company that operates in other states in addition to Louisiana, LTC relies on the company to self-report its assets and income in Louisiana. LTC uses this to calculate a state allocation factor. The allocation factor has a large impact on local government revenues, as even a 0.1% aggregate decrease in the Louisiana allocation factor would cause local governments to receive $3.6 million less in revenue annually. Of the 219 unit-value public service companies, 110 have property in other states besides Louisiana.

According to LTC, it does not have sufficient staff to conduct audits to verify the accuracy of information submitted by companies. To help address this issue, LTC could develop and use a risk-based approach such as taking a sample of companies that have the largest disparities between their valuations in their cost and income approaches. For example, we found one company that had a state allocation factor of 1 (or 100% operations in Louisiana) in 2013; however, by 2015, their state allocation factor reduced to 0.63. Although this state allocation decrease may be valid, LTC could use changes in the state allocation as a risk factor in determining which companies to audit. In addition, LTC could verify some information without having to travel to a company's headquarters, which could help LTC save resources. One state told us that a company incorrectly included goodwill in calculating its out-of-state assets but not in calculating its in-state assets. This kind of incorrect reporting could be detected through a desk audit by requesting an itemized list of the accounts that were included in each category.

Recommendation 4: LTC management should develop an audit program to verify the accuracy of self-reported information in accordance with its strategic plan as well as NCUVS standards.

Recommendation 5: LTC management should use a risk-based approach in determining which companies to audit and what to audit from these companies.

Summary of Management's Response: LTC agrees with these recommendations but states they are largely unnecessary. Because the majority of self-reported information received by LTC is independently audited, performing a traditional audit of a company like Entergy would drain LTC's resources and time and is unlikely to uncover any misreported information. In addition, LTC states that from 2013 through 2015 LTC conducted 36 discovery audits. LTC also states that it will develop a risk-based audit program to verify that 100% of a company's cost is being reported to all states. See Appendix A for management's full response.

LLA Additional Comments: NCUVS encourages all states to develop audit programs that generally focus on items in the state's reporting requirements that are "not already audited by outside parties." Although LTC conducted 36 discovery audits, these audits only identify non-filers and do not verify actual information submitted by companies.

Over assessment years 2011 through 2015, LTC assigned eight barge and railcar companies to the wrong parish. As a result, some parishes received tax revenue that should have gone to another parish.

LTC appraises barge and railcar[14] companies as public service companies. LTC determines the assessed value of each barge and railcar company based on the historical cost, less depreciation, of each company's vehicles. For a company that operates in other states, LTC multiplies the depreciated value of the company's vehicles by the miles traveled in Louisiana divided by the miles traveled everywhere. The resulting assessed value is then allocated to one or more parishes based on the requirements of R.S. 47:1855(G) and (H). This law states that any company that does not have agent or office in Louisiana shall be allocated for the purpose of ad valorem taxation to the local taxing unit in which the company has its primary business connections. However, we found that LTC does not always correctly allocate a company to the local taxing district where its agent or office is located.

We identified eight (1.5%) of the 546 barge and railcar companies (or 30 of the 2,515 assessments completed on barge and railcar companies) that LTC allocated to the wrong parish over assessment years 2011 through 2015. While this is a small percentage of the total barge and railcar companies, the total assessed value of these misallocated companies during assessment year 2015 alone was $2.4 million. As a result, some parishes will have received tax revenue that should have gone to another parish. The impacted parishes were Calcasieu, East Baton Rouge, East Feliciana, Iberville, Jefferson, Orleans, and Plaquemines.

Recommendation 6: LTC management should develop a method to ensure that staff appraisers assign public service companies to the correct parish as required by R.S. 47:1855.

Summary of Management's Response: LTC states this recommendation is in place and being implemented with 99% success. The Commission will correct the allocations of the eight companies for future tax years and will work to ensure that 100% of future allocations are accurate. See Appendix A for management's full response.

The procedure LTC uses to allocate the value of nuclear power plants is not consistent with its procedure for other public service companies.

R.S. 47:1855(B)(1) requires that the location of immovable and other movable property shall determine the local taxing unit to which the assessed value of this property is assigned. After an LTC appraiser determines the overall assessed value using the fair market value of a company, the appraiser then must determine how to allocate the company's assessed value to each of the parishes that the company operates in. LTC has a general formula for allocating assessed value to each parish. In general, each parish receives a percentage of the company's assessed value, and

[14] Railcar companies are businesses other than railroads that own train cars.

each parish's percentage is based on the percentage of the company's property, valued at original cost, located in that parish. We describe this formula in further detail in Appendix E.

However, the nuclear power plants in St. Charles Parish and West Feliciana Parish are allocated using a different procedure. The usual procedure would be to give each parish a percentage of the company's overall assessed value, but each nuclear power plant is valued at a specific dollar amount instead of a percentage of the overall assessed value. Under the usual procedure, each parish's percentage allocation is not affected by depreciation, but the value of the nuclear power plants is reduced each year for depreciation. This procedure effectively decreases the assessed value of the companies that own these plants by $50.5 million in St. Charles Parish and $67.5 million in West Feliciana Parish. This is offset by a combined $118 ($50.5 + $67.5) million increase in the companies' assessed values in the other 60 parishes that these companies operate in. Although the use of this procedure has no effect on the overall assessed value of the companies that own these plants, St. Charles Parish and West Feliciana Parish see a decrease in the assessed value allocated to them for these plants every year, and the amount allocated to other parishes increases.

When we asked LTC management about the deviation from standard valuation procedures when allocating the nuclear power plants in St. Charles and West Feliciana parishes differently, they stated that the modified procedure is necessary to ensure that these assessments accurately reflect the fair market value of the companies' properties in each parish. In addition, management stated that R.S. 47:1855 does not provide LTC with specific procedures, but does allow LTC to use discretion to adjust its allocation formula to reflect the fair market value of a particular company's property in a particular parish.

Area for Further Study Regarding R.S. 47:1855(G)(2)

R.S. 47:1855(G)(2), enacted in 1990, provides that any property owned by a company with no principal office, agent, or primary business connection in Louisiana shall be allocated to East Baton Rouge Parish. In assessment year 2015, East Baton Rouge Parish was allocated $63 million in assessed value and $7.3 million in additional tax revenue from barge and railcar companies that supplied no information about their primary business connection in Louisiana. However, the Legislature may wish to amend R.S. 47:1855 to direct LTC to allocate each barge and railcar company's assessed value based on miles traveled in each parish instead of directly allocating the assessed values for these companies solely to East Baton Rouge Parish. Modern tracking technology enables tax administrators to calculate how many miles a railcar or barge has traveled in each parish in any given year.

Officials at the Mississippi Department of Revenue stated that Mississippi has moved to a new system that allocates railcar companies' assessed values automatically based on miles traveled. Companies self-report information about their cars and miles traveled in an electronic format, and the Department then computes assessed values and allocates revenue to each county based on miles of track in each county. Such a system could be adapted for LTC's needs so that taxes levied on private railcar or barge companies would be allocated to parishes based on their share of the state's overall barge and rail traffic. Tracking this information would be easy for LTC to implement because it already uses this type of technology to identify barge companies that did business in Louisiana but failed to file an annual report. One advantage of allocating railcar and barge companies based on miles traveled or miles of track is that the additional public safety and infrastructural costs associated with barge and railcar activity are typically highest in the parishes where the railcars and barges physically travel, as opposed to the parishes where the owner's offices or agents are located.

APPENDIX A: MANAGEMENT’S RESPONSE

Louisiana Tax Commission
State of Louisiana

JOHN BEL EDWARDS
GOVERNOR

LAWRENCE E. CHEHARDY
CHAIRMAN

Mr. Daryl G. Purpera, CPA, CFE
Louisiana Legislative Auditor
1600 North Third Street
Baton Rouge, LA 70804-9397

RE: Louisiana Tax Commission Response to Performance Audit

Dear Mr. Purpera:

As requested, enclosed is the Louisiana Tax Commission Management's Response to your recent Performance Audit Report on the "Appraisal of Public Service Companies."

Our staff stands by to assist with any additional information needed.

Sincerely,

Lawrence E. Chehardy
Louisiana Tax Commission Chairman

Enclosure

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LOUISIANA TAX COMMISSION

MANAGEMENT'S RESPONSE TO

PERFORMANCE AUDIT OF APPRAISAL OF PUBLIC SERVICE[1]

At the outset, the Commission is concerned that the Report appears to be largely premised on a misunderstanding of unit valuation and appraisal methodology, as well as confusion as to the role/purpose of the Louisiana Tax Commission. Importantly, the majority of the findings and recommendations focus on "lost" tax revenue – i.e. because of the methodology the Legislative Auditor believes the Commission is utilizing, companies are being undervalued – however, rather than actually addressing the valuations themselves, the findings and recommendations concentrate on a perceived "unequal" treatment and/or the Legislative Auditor's opinion that the Commission should be using a different methodology.

It is critically important to restate that the Tax Commission is not a tax collector, nor is it the Commission's purpose to appraise/assess property at an arbitrarily high value. Rather, the Commission's role, with regard to public service properties, is to determine the *fair market* value of public service properties/companies, to assess them accordingly, and to fairly allocate the value among the parishes. The appraisal process is not a mathematical calculation or a mechanical process where one simply adds arbitrary numbers together. The appraisal process leans heavily on the skill, experience, and expertise of the appraiser.

Further, and before addressing the specific recommendations in the Legislative Auditor's report, the Tax Commission believes it is important to provide an accurate description of the Commission's process in appraising public service companies. The Tax Commission annually appraises and assesses nearly 700 public service companies that have property in Louisiana. Approximately a third of these companies are appraised using a methodology known as 'unit valuation.' Unit valuation is utilized for companies that operate and have property in multiple states and parishes. The other public service companies are valued using the cost approach. In performing a unit valuation, the Tax Commission receives reported financial data from each company, the vast majority of which is independently audited. The Tax Commission utilizes this information to calculate the value of each public service company using the three approaches to value: income, cost, and market.

The income approach is calculated by capitalizing the company's income. There are several different sub-methodologies within the income approach which an appraiser may utilize in calculating value based on the income approach; these include the direct capitalization and yield capitalization method, which includes the discounted cash flow model, the constant growth model, and the no growth model. Each of these methods require the appraiser to make certain assumptions about the company and they each are nationally recognized methodologies for determining the fair market value of public service companies based on the income approach to value. The cost approach is calculated using the book value of the public service company's assets. The market

[1] Note that this document was prepared in response to a previous version of the Auditor's report. It is the Commission's understanding that the Auditor has subsequently made revisions and corrections to the report, and as such, portions of this response may have been rendered moot by these subsequent revisions and corrections.

approach is calculated using market data, such as the sales data approach, or a proxy such as the stock and debt approach, to determine the company's value. Once a value based on each approach is calculated, the appraiser reconciles the results by assigning general weights to each value based on information from the company and the industry as a whole.

Once weighted, the appraiser is able to calculate a system value for each public service company. The appraiser then determines the value attributable to Louisiana based on data from the company. This is also called the state allocation. The appraiser then calculates the assessed value for each company by removing any exempt property and applying the correct assessment ratio. This is the value on which the company will be taxed. This assessment is then sent to the company, who has thirty days to review the assessment. The company can also appeal the assessment to the Tax Commission, and then to district court.

After the value is final, the Tax Commission calculates each parish's allocation of the assessed value. Generally this is done using the investment/cost in each parish, and the assessed value is allocated proportionally. Louisiana law provides some specific guidelines in how the assessed value is allocated, and grants the Tax Commission some discretion.

The Tax Commission's goal is to fully capture and appraise all public service companies at their fair market value, annually, on the lien date of January 1 of each year established by Louisiana law, and to fairly allocate that value to each parish that the company has property, all while complying with constitutional and statutory guidelines and restrictions.

By way of specifically addressing the Legislative Auditor's recommendations, the Tax Commission submits the following:

> **LAA Recommendation 1:** LTC management should consider accounting for expected growth, as recommended by several national appraisal standards, in its income approach formula when valuing public service companies.

<u>LTC Response to Recommendation 1:</u> The formula utilized by the Tax Commission is referred to as the "no growth model," and is nationally recognized and recommended by appraisal standards and experts. This model is also utilized by the vast majority of states that value public service companies. This model makes the assumption that the income estimated and used (the income attributable to the property subject to assessment) for conversion to value will remain constant. The Tax Commission has the benefit of re-appraising and re-valuing each public service company each year, allowing the Commission to actually capture growth and decline of each company without making assumptions about the future assets and income of the company, and avoids the risk of valuing future assets and property, which may violate Louisiana law. The Tax Commission disagrees to the extent the report recommends different formulas as the Legislative Auditor simply lacks the specialized education, training, and expertise to recommend that one appraisal methodology is better than the other. Further, the findings by the Legislative Auditor fail to accurately identify any deficiencies in the Tax Commission's application of the no growth model. The Legislative Auditor's suggestion that the tax Commission is undervaluing public service companies by $2.4 billion, annually, is wrong. There is no evidence that the Tax Commission is undervaluing any public service properties aside from the Legislative Auditor's utilization of a methodology which arbitrarily manipulates a single variable in a complicated process.

a. The Legislative Auditor's speculative and misleading $2.4 billion figure

In arriving at the $2.4 billion figure,[2] the Legislative Auditor simply, and incorrectly, applied a lower, direct capitalization rate to the projected net operating incomes the Tax Commission utilized in calculating the income approach to value through a yield capitalization formula. The Legislative Auditor's figure is unreliable. It is undisputed that arbitrarily lowering the capitalization rate will increase the income approach to value; however, the Legislative Auditors' speculation is heavily flawed for a number of reasons.

First, the Tax Commission projects a net operating income for each public service company and capitalizes that figure with a yield rate. The Legislative Auditor's calculation simply lowers the yield rate by replacing it with a direct capitalization rate. The Auditor asserts that he "recalculated the income approach values" by subtracting an average of eight other state's direct capitalization rates from the yield capitalization rate used by the Commission. The Auditor classified the difference between the two capitalization rates as "an implied growth rate." Aside from the flawed methodology this represents, an analysis of the eight states selected by the Auditor reveals that states with low direct capitalization rates were selected inflated the "lost revenue figure."[3] Further, the Auditor selected states that bear little resemblance to Louisiana. In fact, with the exception of Arkansas, the Auditor ignored the capitalization rates used by states in close proximity to Louisiana. Notably missing from the Auditor's list of selected states are Alabama, Georgia, Mississippi, North Carolina, South Carolina, and Tennessee (i.e. southeastern states). Notably included are states in the northwest like Washington and Oregon. To the extent the Legislative Auditor is attempting to "recalculate" the Commission's income approach to value by including a growth factor in the yield capitalization formula, using the difference between a yield and a direct capitalization rate is an incorrect and unreliable method. Rather than accurately calculate "lost revenue" (assuming any exists) by actually reappraising all 219 public service companies, the Auditor relies on false assumptions and a flawed methodology. Arbitrarily lowing the capitalization rate is completely unhelpful in determining fair market value. Of course if a company's income was capitalized at 2% as opposed to 12%, its income approach to value would increase dramatically. The result is not a fair market value.

Second, the Tax Commission correlates and considers the three approaches to value based on the appraiser's expertise, opinion, and based on information provided by the company. The Legislative Auditor's calculation assumes, incorrectly, that the appraiser would correlate the approaches the same at the arbitrarily lower capitalization rate. Without preforming a complete appraisal of a company based on a different income approach methodology, it is unreliable to simply assume all other factors will remain stable when a single variable is modified. Similarly,

[2] This figure has fluctuated down during the audit.

[3] Further, there is no evidence that the selected states (1) assign any, much less 100% weight, to the direct capitalization method, (2) correlate the values in the same or similar manner as the Tax Commission, or (3) grant less or more obsolescence as the Tax Commission. For example, although Arkansas publishes a direct capitalization rate, they rarely assign it more than 5% weight; the other 95% being assigned to as no growth yield value. In other words, simply manipulating a single variable of the appraisal process is an unreliable way to compare ultimate values.

the appraiser may use a different operating income to be capitalized or may grant more, or less, obsolescence. The appraisal process is not a mathematical calculation or a mechanical process where one simply adds arbitrary numbers together. The appraisal process leans heavily on the skill, experience, and expertise of the appraiser.

In other words, the Legislative Auditor's speculative $2.4 billion figure ignores or fails to consider the appraisal process. Rather than even attempting to accurately calculate additional value that a different income approach may yield (if any), such as the discounted cash flow model, the Legislative Auditor simply lowers the capitalization rate in the Tax Commission's formula. A complete reappraisal of each public service company must be performed to accurately compare system values. Although the Tax Commission requested that the Legislative Auditor perform a reappraisal of a single public service company as an example using a different approach, such as the discounted cash flow model, the Legislative Auditor could not.

The Commission attempted to show and explain to the Legislative Auditor that the Commission's system values are in line with similarly situated and surrounding states. As an example, the Commission obtained and relayed to the Legislative Auditor the system value for BellSouth, a telephone company, for tax year 2015. The data revealed that the southeastern states (excluding Louisiana) used an average yield capitalization rate of 10.79%, and arrived at an average system value of $12,639,000,000. The Tax Commission was also provided with an independent appraisal of Bellsouth for tax 2015, arriving at a value of $12,150,000,000. The Commission, for tax year 2015, used a yield capitalization rate of 11.00%, and arrived at a system value of 12,600,000,000. Using the Auditor's approach, BellSouth would have been valued at approximately $19,250,000,000 – $6.6 billion more than the average system value determined by other southeastern states. The Legislative Auditor responded that he believed that all of these states were incorrectly undervaluing public service companies. In other words, the Legislative Auditor believes that at least seven other states are undervaluing companies by 52%, or $6.6 billion in BellSouth's case.

The Tax Commission has a constitutional and statutory obligation to appraise and assess public service companies at their fair market value. The Tax Commission cannot legally manipulate variables in the appraisal process to arbitrarily arrive at a higher appraised value. That is simply not the way appraisal works.

b. The Tax Commission's income approach to value is sound, reliable, and nationally recognized

In earlier discussions with the Legislative Auditor, it was incorrectly asserted or presumed that the Tax Commission was using an income approach to value that was not nationally recognized. Despite numerous explanations regarding the Tax Commission's methodology, this erroneous assumption persisted until only near the end of the audit. The audit report now focuses on "growth," and the Legislative Auditor's assertion that "LTC's appraisal methodology does not account for growth, as recommended by nationally recognized appraisal standards." This assertion is misleading. The Auditor may be confused by the name of the methodology utilized by the Tax Commission, which is called the "no growth model."

Contrary to the Auditor's assumption that growth is not considered, growth (or decline) is captured through the annual reappraisal process through the projection of the company's net operating income. The "no growth model" simply assumes that the income estimated and used for conversion to value will remain constant. Growth and/or decline in the company's income is then factored/considered during the annual reappraisal process. It is important to understand the Tax Commission's process in appraising a public service company based on the income approach to value. First, the Tax Commission analyzes the company's previous five years of net operating income and property levels to determine trends in the company's trajectory. The Commission then projects a net operating income for the following year based on this analysis. If the Commission's analysis suggests the company is growing, the company's net operating income will be reflective of this growth. Conversely, if the Commission's analysis suggests the company is declining, the company's net operating income will be reflective of this decline. Rather than speculating and attempting to predict long-term growth, the Commission utilizes actual income data. Because companies are appraised annually, growth or decline, is captured. Further, construction works in process" or "CWIP" are considered when projecting the company's net operating income and are also included in the cost approach.

As acknowledged by the Legislative Auditor, the Commission has expressed concern that valuing a company based on future predicted income streams would violate the prohibition in valuing future property. This concern was relayed to the Legislative Auditor during a discussion of what is generally known as the "stock and debt approach," where a company's stock (and debt) is used to value the company. Specifically, the Commission expressed concern in the volatility in the stock market and its response to announced, future income. For example, the Commission pointed out that an announcement by Company A of a new plant that will produce new revenue for the company would likely cause Company A's stock to rise. This stock price increase would not be tied to any actual new property, rather, it would only be attributable to plans for a plant announced by the Company. The Auditor argues that the Tax Commission can include the future value of future assets not yet under construction under Louisiana law. The Commission disagrees with this interpretation. Regardless, the Commission has not evaluated or analyzed whether using a growth model would violate the Louisiana Constitution.[4]

The "no growth model" approach is widely recognized and utilized by surrounding states, including Arkansas, Mississippi, Alabama, Georgia, North Carolina, South Carolina, Tennessee, Oklahoma, Kentucky, Missouri, Kansas, and West Virginia, to name a few. Further, and contrary to the Legislative Auditor's assertion, the "no growth model" was not "developed by a private appraisal firm that provides appraisal services for public utilities and railroads for ad valorem tax purpose." This model is based on long-standing financial theory, not a creation of a hired appraiser. Further, and curiously, despite the Legislative Auditor's suggestion that this approach is not a nationally recognized appraisal standard, the Western States Association of Tax Administrators' Appraisal Handbook for Unit Valuation of Centrally Assessed Properties, cited

[4] The problems with including a growth factor extend much further than possibility running afoul of Louisiana law. Utilization of a growth factor requires an appraiser to project and assume growth of a particular company and, to ensure equal treatment, of an entire industry. These assumptions and projects are particularly challenging for rate-restricted and regulated public utilities. In other words, aside from legal considerations, there are compelling practical considerations to using a "no growth" model to determine fair market value.

approvingly by the Legislative Auditor on page 2 of Appendix C, acknowledges and discusses the "no growth model" as a valid appraisal method.

Not only is the no growth model recognized, as discussed above, it is also recommended by leading authorities in unit valuation and appraisal, including Thomas K. Tegarden, MAI, CAE. Despite the Legislative Auditor's characterization of Tegarden as "just an industry guy" who "wrote a book," Thomas Tegarden is a Member of the Appraisal Institute, which is widely considered the highest appraisal designation offered in the field of appraisal, and is a Certified Assessment Evaluator of the International Association of Assessing Officers, which is the highest designation offered by that organization. He has more than 35 years of appraisal and consulting experience on behalf of taxpayers and numerous state and local revenue departments. He also has 15 years of experience with the Tennessee Public Service Commission, which at the time was responsible for the tax valuation of public utilities and railroads. A copy of Tegarden's curriculum vitae was provided to the Legislative Auditor. Thomas Tegarden has written, spoken, and testified extensively about unit valuation and the utilization of the no growth model with regard to public utilities. Specifically, without getting into the technical details of the reasoning, Tegarden recommends that the no growth yield capitalization approach be used for public utilities.

c. The Tax Commission does not value companies on the basis of the collecting additional fees from public service companies

It is wholly inappropriate to suggest that the Tax Commission values, or should value, companies on the expectation that the Commission will collect "an additional $964 thousand in service fees from these companies during fiscal year 2018."[5] The Tax Commission does not value or assess any company on the basis of the collection of more fees. Fair market value is whatever fair market value is. The fee generated is on the basis of that value.

> **LLA Recommendation 2:** LTC management should develop rules and regulations that define appraisal practices that ensure the same kinds of companies are assessed in the same manner in accordance with nationally recognized appraisal techniques, as required by state law.
>
> **LLA Recommendation 3:** LTC management should ensure appraisers document their reasons for giving more weight to one approach than another, as required by national standards.

<u>**LTC Response to Recommendation 2 and 3:**</u> These recommendations are based on a misinterpretation of La. R.S. 47:1853, and incorrectly assumes that companies of the "same nature and kind" should be correlated exactly the same. Further, the Legislative Auditor erroneously believes that USPAP and/or NCUVS require appraisers to correlate companies of the same nature and kind exactly the same and explain any deviation in notes. In other words, the Auditor asserts that a correlation should be selected for an entire industry and applied uniformly across that entire industry. This interpretation of La. R.S. 47:1853 is incorrect. With regard to documenting reasoning for assigning different weights to different companies within the same industry, the Commission agrees that some additional notes by Commission appraisers may be somewhat

[5] This number has likewise fluctuated down during the audit.

helpful to verify that companies are being correctly appraised; however, the Commission believes that there is little, if any, benefit to formally promulgating rules and regulations for internal policies and procedures. The Commission will train and instruct staff on the appropriate and correct process and procedure for appraising companies, including making notes in the appraisal report where and when necessary.

The Legislative Auditor's findings and recommendation regarding correlation (or more broadly the alleged unequal treatment of properties of the same nature and kind) are incorrect and further reveals the Auditors' misunderstanding of appraisal methodology. Further, the Auditors' erroneous attempt to interpret La. R.S. 47:1853 without any basis in law is concerning. The Legislative Auditor asserts that because La. R.S. 47:1853 provides that "all public service properties of the same nature and kind shall be appraised in the same manner" then all public service properties of the same nature and kind should be correlated the exact same way. Fortunately, a cursory review of cases interpreting La. R.S. 47:1853 resolve this misunderstanding. Contrary to the Legislative Auditor's interpretation, La. R.S. 47:1853 does not mean that all public service properties of the same nature and kind must be correlated the same (i.e. same weights applied), rather it means that properties of the same nature and kind should have the same general methodology applied. In other words, the Tax Commission cannot value one company using all three approaches to value (income, cost, and market), and value another company (of the same kind and nature) using only two of the approaches. For example, the Commission cannot appraise Railroad A using all three approaches, correlated 10% income, 20% cost, 70% market, and then appraise Railroad B using only two approaches, correlated 40% income, 60% cost. *See Kansas City S. Ry. Co. v. Louisiana Tax Comm'n*, 95-2319, p. 6 (La. App. 1 Cir. 6/28/96), 676 So.2d 812, 817. It does not mean, however, that if Railroad B is correlated 40% income, 60% cost, that all other railroads must also be correlated 40% income, 60% cost. Correlation is a fact specific process – it is not a mechanical process that applies arbitrary weights. The appraiser must consider all factors and conditions pertinent to each approach to value. Those factors and conditions will vary from company to company, even within the same industry.

The Commission's weighting, or correlating, of each approach is likewise supported by the Legislature's amendment to La. R.S. 47:1853 in 1992, in response to *MidLouisiana Rail Corp. v. Louisiana Tax Comm'n*, 588 So.2d 1163, 1171 (La. App. 1 Cir. 1991), *writ denied*, 594 So.2d 895 (La. 1992). The court in *MidLouisiana Rail* determined that the previous version of La. R.S. 47:1853, as well as the Louisiana Constitution, required that the Commission give equal weight to each approach used. The Legislature effectively overruled this erroneous interpretation with the amendment of La R.S. 47:1853, adding section (B)(1)(b). The purpose of the amendment adding section (B)(1)(b) was to confirm that general notion that correlation is not a mechanical process that applies arbitrary weights to the three approaches to value, rather, it is a process by which the appraiser considers all factors and conditions pertinent to each approach – some of these factors and conditions may be common across an industry, but generally each company will have specific factors and conditions that must be considered in correlating the values approaches to value. Any attempt to outline a specific method, factors, or conditions in correlating the approaches to value would not only handicap the Commission's appraisers but would generally violate nationally recognized appraisal technique and methodology.

Further, and remarkably, the Legislative Auditor's interpretation of La. R.S. 47:1853 here contradicts his reliance/inclusion of the stock and debt approach under Finding #1. Specifically, despite only a limited number of public service companies being publicly traded, and therefore having public stock information, the Legislative Auditor asserts that using the stock and debt approach is a legal and authorized method (see fn 4). Curiously, utilizing the stock and debt approach for some companies of a particular industry, and not others, would not only violate the Legislative Auditor's interpretation of La. R.S. 47:1853, but it would also violate the correct interpretation articulated by Louisiana courts. *See Kansas City S. Ry. Co. v. Louisiana Tax Comm'n*, 95-2319 (La. App. 1 Cir. 6/28/96), 676 So.2d 812.

With regard to appraisal notes, the Tax Commission agrees that notes may be somewhat helpful to auditors who are reviewing the appraisals several years in the future. As explained to the Legislative Auditor, once an assessment is final (i.e. the company does not file an appeal within the time prescribed by law), the appraisal, and the information in the appraisal, is of little value except in offering some guidance for the next annual re-appraisal. Lastly, the public service division of the Commission is currently made up of four individuals, who are responsible for valuing, assessing, and allocating nearly 700 public service companies each year, as well as preforming personal property and public service audits. Any additional burden placed on them (such as a requirement they include extensive notes or explanations in their appraisals) hinders them from accomplishing their constitutional and statutory obligations. Significantly, the Auditors' initial findings fail to show any situations where an incorrect or erroneous correlation was applied; rather, the initial findings make broad generalizations and assumptions.

The Tax Commission will instruct its appraisers to include an explanation when there is a significant deviation in correlation from the industry-wide average. For example, if the vast majority of telephone companies are correlated between 70% income and 30% cost, but one company is correlated 90% cost and 10% income, the appraiser will include some explanation for this difference.

> **LLA Recommendation 4:** LTC management should develop an audit program to verify the accuracy of self-reported information, in accordance with its strategic plan as well as NCUVS standards.
>
> **LLA Recommendation 5:** LTC management should use a risk-based approach in determining which companies to audit and what to audit from these companies.

<u>LTC Response to Recommendation 4 and 5:</u> The Tax Commission has no general objection to these recommendations, however they are largely unnecessary and will drain Commission staff's time and resources. The vast majority of the self-reported information received by the Commission is independently audited. Therefore, preforming a traditional audit of a company like Entergy would not only drain Commission resources and time, it is unlikely to uncover any misreported information. Rather than focus on traditional audits, the Commission focuses on finding non-reporting companies, also called "discovery audits," for which the Tax Commission does have a written procedure. With regard to auditing self-reported information on state allocation, the Tax Commission expressed willingness to explore these options and requested that the Legislative Auditor provide additional guidance and more specific recommendations. Unfortunately no further information has been received. Regardless, the Tax Commission will develop a risk-based audit program to verify that 100% of a company's cost is being reported to all states.

The Legislative Auditor incorrectly implies that the Tax Commission did not audit any public service companies from 2013-2015. The Auditor is correct that the Tax Commission did not conduct any traditional audits of any public service companies, largely for the reasons outlined below. However, from 2013-2015, the Tax Commission did conduct 36 discovery audits. These were on companies who had not reported any information to the Tax Commission, but the Commission obtained information that suggested that the company had property in Louisiana. The purpose of these audits is to find non-reporting companies and get them on the tax rolls.

La. R.S. 47:1852 requires that all public service companies, whose property is subject to taxation in Louisiana, prepare and submit an annual report to the Commission. In doing so, the report must contain information regarding the company's property in Louisiana and any other information necessary to determine the company's fair market value for purposes of valuation. The failure to do so may result in the imposition of criminal and/or civil fines in accordance with La. R.S. 47:1852. The Commission has no official or formal audit procedure for traditional audits, as these would serve little purpose as the vast majority of the information reported by the companies is independently audited, and would otherwise place an impossible burden on the appraisers and the Commission's limited resources. As a result, the Commission's goal and focus with regard to audits is to find non-reporting companies through discovery audits, for which the Commission does have written procedures. Regarding companies who do not submit regulatory reports (i.e. independently audited), the Commission's appraisers can, and have, asked for additional information and/or backup data to support the company's financial statements.

The Legislative Auditor suggests that the Commission should audit company's reported state and/or parish allocations, because this information is unregulated and may be misreported. While this may be true, companies have little motivation to misreport their cost information for each parish as the allocation would not change their overall assessment. The burden simply outweighs the benefit. Attempting to audit a public service company's reported cost information for parish allocation purposes would place an insurmountable burden on the appraisers and would not result in an increase of assessed value. As explained to the Auditors numerous times, the public service division of the Tax Commission is made of four individuals, who are responsible for not only valuing, assessing, and allocating all public service properties in Louisiana, but also responsible for conducting personal property audits (which became an issue during the LLA's inventory tax credit audit). Any additional burden placed on Commission staff would severely limit their ability to fulfill their constitutional and statutory obligations.

With regard to the state allocation factor, the Commission is willing to develop and implement a risk-based program to verify that 100% of a company's cost is being reported to all states.

> **LLA Recommendation 6:** LTC management should develop a method to ensure that staff appraisers assign public service companies to the correct parish as required by R.S. 47:1855.

<u>LTC Response to Recommendation 6:</u> The suggested recommendation is already in place and being implemented with 99% success. Although the Commission strives to ensure that 100% of companies are allocated to the correct Parish, the Commission is unaware of additional methods that could be implemented. The Commission is certainly open to suggestions and requested that the Legislative Auditor provide specific guidance on methods to implement; unfortunately however, no such specifics were provided. Although the Commission allocated 99% of companies between 2011 and 2015 correctly, the Commission strives to ensure that 100% of all assessments are allocated to the correct parish. The Commission will correct the allocations of the eight companies identified by the Legislative Auditor for future tax years and will work to ensure that 100% of future allocations are accurate.

<u>LTC Response to LLA's findings with regard to the allocation of nuclear power plants</u>

Although the Legislative Auditor makes no recommendations to the Tax Commission with regard to the allocation of nuclear power plants, the Commission feels that it is important to respond to ensure that accurate information is being reported to the Legislature. In that regard, it is important to address the Legislative Auditor's statement that "[the Tax Commission] stated that the usual procedure would be unfair and would give too much assessed value to St. Charles and West Feliciana Parishes." This is simply false. The Tax Commission explained to the Auditor that La. R.S. 47:1855 gives the Commission discretion to deviate from cost/investment allocation formula if the result would not reflect the fair market value attributable to each parish. The Tax Commission will allocate the nuclear power plants by whatever method the Legislature dictates. Presently, La. R.S. 47:1855 grants the Commission the authority to deviate from the standard investment cost method if it would result in an allocation that does not represent the proportional fair market value of a particular company in a particular parish.

<u>LTC Response to LLA's "Area for Further Study Regarding R.S. 47:1855(G)(2)"</u>

Again, although the Legislative Auditor makes no recommendations to the Tax Commission with regard to La. R.S. 47:1855(G)(2), the Commission feels that it is important to respond to ensure that accurate information is being reported to the Legislature. Specifically, the Legislative Auditor asserts that "Modern tracking technology enables tax administrators to calculate how many miles a railcar or barge has traveled in each parish in any given year" and that it "… would be easy for LTC to implement because it already uses this type of technology to identify barge companies…." Presumably, the Legislative Auditor is referring to PortVison, which the Tax Commission currently utilizes to help find non-reporting companies operating in Louisiana. Although the Tax Commission would certainly attempt to implement any new legislation passed by the Legislature with regard to the allocation of barge lines, PortVison does not provide the data the Legislative Auditor suggests.

Further, the Tax Commission has contacted the Mississippi Department of Revenue for confirmation and clarification regarding their "new system that allocates railcar companies' assessed values to counties automatically based on miles traveled." Based on information from the Mississippi Department of Revenue, this system operates somewhat differently than reflected in the Legislative Auditor's report. Specifically, for allocation purposes, the Mississippi Department of Revenue does not use the miles traveled. Rather, the Mississippi Department of

Revenue divides the total miles of track in each county by the total miles in Mississippi. A similar allocation method could likely be developed for Louisiana if La. R.S. 47:1855 is revised by Legislative action.

APPENDIX B: SCOPE AND METHODOLOGY

We conducted this performance audit under the provisions of Title 24 of the Louisiana Revised Statutes of 1950, as amended. The audit evaluated the Louisiana Tax Commission's (LTC) process for conducting public service company appraisals for assessment year 2015. The audit objective was:

To evaluate LTC's process of appraising public service companies.

We conducted this performance audit in accordance with generally accepted *Government Auditing Standards* issued by the Comptroller General of the United States. Those standards require that we plan and perform the audit to obtain sufficient, appropriate evidence to provide reasonable basis for our findings and conclusions based on our audit objectives. We believe the evidence obtained provides a reasonable basis for our findings and conclusions based on our audit objective. To answer our objective, we reviewed internal controls relevant to the audit objective and performed the following audit steps:

- Researched state laws relating to public service company appraisals (appraisals) and obtained and reviewed LTC's procedures for conducting appraisals.

- Interviewed LTC staff and reviewed LTC's procedures to determine their actual process and methodology for conducting appraisals. This included gaining an understanding of LTC's zero-growth income approach methodology developed by a private appraisal firm and its audit process of information used in each appraisal.

- Obtained and reviewed the Uniform Standards of Professional Appraisal Practice (USPAP), the National Conference of Unit Valuation States (NCUVS), and the American Society of Appraisers' Business Valuation Standards to determine the industry standards for conducting appraisals.

- Obtained growth rates from capitalization rate studies for eight states, which we corroborated with historical growth rates from the U.S. Bureau of Economic Analysis, and growth rate forecasts from investment research firms Value Line, Zacks, and Thomson.

- Obtained from PARTS, the system LTC uses to calculate appraisals, all appraisals for assessments years 2007 through 2015. We performed reliability testing on this system and found it to be sufficiently reliable.

- Using the information in PARTS, we performed the income approach calculation accounting for expected future growth.

- Analyzed the weights used by LTC appraisers to reconcile the income and cost approach values to arrive at an overall fair market value for the company, known as a correlated value. Reviewed the notes in LTC's appraisal database for explanations of the weights used, and inspected documents in annual assessment dossiers for selected companies with large increases and decreases to look for additional explanations.

- Analyzed LTC's assessment fees in LAC 61:3501 and determined that a $2.4 billion increase in assessed values, multiplied by the applicable 0.04% assessment fee, would result in a $964,000 increase in self-generated revenue.

- Analyzed private barge and railcar company assessments in PARTS to determine what factors LTC used to assign these companies to local taxing units. Identified eight exceptions, as noted in the report, and identified an area for further study concerning the allocation process.

- Interviewed LTC's appraisers to understand LTC's audit process and analyzed the sources of information used in LTC's assessed value calculations to identify unaudited figures.

APPENDIX C: SUPPLEMENTAL INFORMATION ON THE INCOME APPROACH

LTC's Zero-Growth Income Approach Methodology

- First, to understand how LTC calculates the income approach, we reviewed the calculations in LTC's appraisal system, PARTS, and gained an understanding of the specific steps a LTC appraiser performs when conducting an appraisal. We found that each LTC appraiser reviews documents submitted by the company to determine the company's net operating income less taxes. The net income calculation comes from Federal Energy Regulatory Commission or Surface Transportation Board filings where available, but for other companies the income number is self-reported by the company.

- LTC then uses the following procedure to calculate what it refers to as "Projected NOI." The calculation is shown below, using the time periods pertaining to assessment year 2017[15] for illustrative purposes:

$$\text{Projected NOI}_{2017} = \frac{\text{NOI}_{2012} + \text{NOI}_{2013} + \text{NOI}_{2014} + \text{NOI}_{2015} + \text{NOI}_{2016}}{5}$$

Alternatively, LTC's appraiser can also use a weighted average formula:

$$\text{Projected NOI}_{2017} = \frac{\text{NOI}_{2012} + 2 \times \text{NOI}_{2013} + 3 \times \text{NOI}_{2014} + 4 \times \text{NOI}_{2015} + 5 \times \text{NOI}_{2016}}{15}$$

Generally, LTC appraisers use one of these two projected NOI formulas; in rare cases, appraisers use a different technique to calculate projected NOI. LTC assigns discount rates based on a review of capitalization rate studies performed by other states. LTC's income approach value is given by the projected NOI divided by the discount rate:

$$\text{Value} = \frac{\text{Projected NOI}}{\text{Discount Rate}}$$

[15] Assessment year 2017 refers to a valuation date of December 31, 2016. Assessments for assessment year 2017 must be completed by September 1, 2017.

Nationally Recognized Income Approach Methodology with Growth Component

Exhibit C.1 National Organizations that Recommend Accounting for Growth	
Organization	**Organization Description**
1. American Society of Appraisers (ASA)	Founded in 1936 and is the oldest multi-discipline organization representing appraisers. ASA is a founding member and sponsor of the Appraisal Foundation, which is charged with developing standards for appraisals and qualifications for appraisers under the Financial Institutions Reform, Recovery, and Enforcement Act of 1989.
2. Uniform Standards for Professional Appraisal Practice Standards (USPAP)	Adopted by Congress in 1989, USPAP contains standards for all types of appraisal services, including real estate, personal property, business, and mass appraisal. Compliance is required for state-licensed and state-certified appraisers involved in federally-related real estate transactions. USPAP is updated every two years so that appraisers have the information they need to deliver unbiased and thoughtful opinions of value.
3. National Conference of Unit Valuation States (NCUVS)	Founded in 1984 and consisting of 18 member states, NCUVS operates as a national organization specializing in the ad valorem taxation of centrally-assessed properties. NCUVS established uniform standards for the valuation and taxation of public utility, railroad, telecommunication, transportation, and other centrally-assessed properties.
Source: Prepared by legislative auditor's staff using information obtained from each organization.	

- The problem with LTC's formula for calculating the income approach is that it calculates the present value of an income stream that will see zero nominal growth indefinitely. Three nationally-recognized appraisal organizations have issued guidelines stating that appraisers should account for growth in the income approach to value, as shown in Exhibit C.1 and Exhibit 3 on page 4 of the report.

  In addition, **The Western States Association of Tax Administrators'** *Appraisal Handbook for Unit Valuation of Centrally Assessed Properties* states that the expectation of future growth is an essential factor affecting the value of the property.

- **Yield capitalization** values a company by totaling the present value of the income or cash flows[16] generated by the company. The formula to calculate the present value of an income stream using a discount rate r is as follows:

$$\begin{aligned}\text{Value} &= NOI_0 + (1-r)NOI_1 + (1-r)^2 NOI_2 + \ldots \\ &= \sum_{t=0}^{\infty}(1-r)^t NOI_t\end{aligned}$$

[16] A common practice (and one that LTC uses) is to assume that net cash flows from operations equal net income from operations.

If the company is growing at a steady rate g, then we can substitute $NOI_t = NOI_0(1+g)^t$, where NOI_0 is the company's stabilized income in the current period.

$$\begin{aligned}\text{Value} &= NOI_0 + (1-r)(1+g)NOI_0 + (1-r)^2(1+g)^2 NOI_0 + \ldots \\ &= NOI_0 \sum_t^{\infty} (1-r)^t(1+g)^t\end{aligned}$$

Using the linear approximation $(1-r)(1+g) \approx (1-r+g)$, and the geometric formula $\sum_{i=0}^{\infty} a\rho^i = \frac{a}{1-\rho}$, the income approach value can be written as:

$$\text{Value} = \frac{NOI_0}{r-g}$$

The important difference between this formula and the formula that LTC uses is that LTC's formula omits growth, or, equivalently, assumes zero growth. Modifying the formula to account for expected growth would increase the indicated value.

- **Direct capitalization is another acceptable method for calculating the income approach that accounts for income growth.** This approach is also known as valuation by multiples. Under this approach, the income approach value is calculated as a stabilized net operating income divided by a direct capitalization rate, denoted by R:

$$\text{Value} = \frac{\text{NOI}_0}{R}$$

NCUVS Unit Valuation Standards state that the direct and yield capitalization approaches should produce similar results if applied properly. By equating both approaches, some algebra can be used to show that $R = r - g$. In words, the direct capitalization rate is the yield capitalization rate minus the growth rate. In addition, the NCUVS President added some clarifying remarks:

> Unit Valuation Standard III(A)(6): "It is improper to use a yield rate in a direct capitalization formula" is a basic principle of valuation, but is also important for unitary valuation because a direct capitalization model can be confused with the mathematically identical no-growth yield capitalization model which is popular with certain private appraisal firms representing taxpayers. It should be noted that many states do utilize a no-growth yield capitalization model for central assessment, at least as a starting point in the income approach. Using a yield rate in a direct capitalization model is a mismatch and is improper. Using a direct rate in a direct capitalization model is proper, so is using a yield rate in a yield capitalization model. However, the other assumptions in a yield capitalization model, whether explicit or implicit, regarding the amount, shape, and duration of

> the income streams need to be considered for propriety for the subject property. A yield capitalization model relies on forecasts of income streams and these forecasts should be based on the best available information as of the assessment date and reasonable assumptions when necessary. Relying on unreasonable or inappropriate forecasts in a yield capitalization model would result in a flawed indicator of market value.

Under the income approach, the value of an income-generating asset, such as a public service company, depends primarily upon the amount of income it generates, the growth potential for this income stream, and the risk that the asset will not produce income as expected.[17]

LTC's Objection to Accounting for Growth

LTC is concerned that accounting for projected income growth in the income approach could cause companies to be overvalued because some of the income growth will be generated from assets that the companies do not yet own. However, national standards do not direct the appraiser to exclude income generated by assets that the company has not yet purchased. The yield capitalization method is based off of net future cash flows, so this approach already deducts the cost of future capital expenditures. Subtracting future capital expenditures from future income while also subtracting the income generated by the future capital expenditures could cause the appraiser to subtract the value of these assets twice. Furthermore, the direct capitalization method expresses a company's value based on ratios observed in financial markets, so the direct capitalization approach already captures market expectations about future capital expenditures.

Public service assessments follow unit valuation and differ significantly from the approach used by local assessors to value other types of business property. One important difference is that the exemption for incorporeal movables in La. Const. Art. VII Sec. 21(C)(4) does not apply to public service companies, and R.S. 47:1851 specifically defines public service properties to include all corporeal and incorporeal property (i.e., tangible and intangible property) used by an electric, natural gas, water, regulated pipeline, railroad, or landline telephone company. As noted in NCUVS Unit Valuation Standards, "The unit value concept values the business as a going concern which includes tangible assets and may include intangible assets." A going concern is defined to include "an intangible enhancement of the value of the operating business enterprise, which is produced by the assemblage of land, buildings, labor, equipment, and the marketing operation. This assemblage creates an economically viable business that is expected to continue."

[17] According to LTC management, LTC's income approach calculations implement a yield capitalization procedure, also known as a discounted cash flow valuation. A discussion of growth in discounted cash flow valuation is described in *Corporate Valuation: Measuring the Value of Companies in Turbulent Times,* Mario Massari, Gianfranco Gianfrate, and Laura Zanette, 2016. The constant-growth model is discussed in detail in Chapter 10.

Supplemental Information Concerning Direct and Yield Capitalization Rates

The first section of this appendix discusses the relationship between direct and yield capitalization rates, $R = r - g$, which means that the direct rate equals the yield rate (discount rate) minus the growth rate. Although a direct rate can be derived implicitly if the yield rate and growth rate are known, there are actually separate procedures for computing growth rates. The Western States Association of Tax Administrators (WSATA) and the National Conference of Unit Valuation States (NCUVS) explain how to derive the yield and direct capitalization rates. As shown above, each method has its own formula, and each organization provides procedures for calculating appropriate

- **Yield Capitalization.** NCUVS standards describe the yield capitalization rate as synonymous with a discount rate or opportunity cost of capital, but different from a direct capitalization rate. The overall discount rate is a weighted average of the equity rate and the debt rate, weighted by each component's share of the capital structure for a particular company or industry.
    - **Equity rate**. Derived using the Capital Asset Pricing Model and the Dividend Growth Model, with the final rate being a weighted average of the two.
    - **Debt rate**. Derived by calculating the average yield to maturity on comparable bonds.
    - **Preferred rate**. Derived by calculating the dividend yield on comparable preferred stock.
- **Direct Capitalization.** The theory behind this approach is that the company's value is proportional to the amount of income that it generates, and that the growth rate of cash flows and the risk level are constant. This proportion is derived from an analysis of actual sales prices, which can come either from sales of entire businesses (i.e., merges and acquisitions) or from quoted prices of publicly-traded securities. The basic intuition is that, if similar companies are trading for, say, 15 times earnings before interest and taxes (EBIT), then the value of a particular company can be estimated to be fifteen times its EBIT. NCUVS standards provide the following methodology for calculating a direct capitalization rate:
    - **Equity rate**. Derived by an analysis of earning/price ratios from the stock market or from an analysis of the income and price from sales of public utility or railroad properties.
    - **Preferred rate**. Expresses the relationship of dividends divided by the market value of preferred stock.

- **Debt rate**. Expresses the relationship of interest divided by the market value of debt.

Exhibit C.2 below gives a summary of capitalization rate calculations performed by the Minnesota Department of Revenue for its assessments of electric companies using the same procedures recommended by NCUVS. As seen in the exhibit, the direct capitalization rate is much lower than the yield capitalization rate. NCUVS standards note that it is improper to use a yield capitalization rate in a direct capitalization formula.

Exhibit C.2
Comparison of Yield and Direct Capitalization Rate Calculations
Electric Industry

Component	Calculation	Value
Direct Capitalization		
Common Equity	Earnings/Price Ratio	6.2%
Preferred Equity	Dividend/Price Ratio	N/A*
Debt	Interest/Debt Ratio	5.0%
Overall Direct Rate	**Weighted by 60%/40% capital structure**	**5.7%**
Yield Capitalization		
Common Equity	Capital Asset Pricing Model Dividend Growth Model Overall Common Equity Rate (weighted average)	7.7% 9.4% 8.6%
Preferred Equity	Dividend/Price Ratio	N/A*
Debt	Yield to maturity on long-term debt	5.0%
Overall Yield Rate	**Weighted by 60%/40% capital structure**	**7.2%**

*The Minnesota Department of Revenue does not calculate preferred stock components for its capitalization rates because preferred stock makes up an insignificant percentage of the capital structure for the industries in its study.
Source: Prepared by legislative auditor's staff using the Minnesota Department of Revenue's 2016 Capitalization Rate Study.

- We reviewed LTC's appraisal system and determined that its income approach calculations use a direct capitalization formula, which LTC initially confirmed. However, LTC subsequently characterized their income approach calculations as using a zero-growth yield capitalization formula. We identified problems with LTC's calculations that may result in erroneous value indications, regardless of whether the calculations are described as a direct or yield capitalization:

    - If LTC is using a yield capitalization calculation, LTC's system would need to have a field for the applicable income growth rate and should subtract this growth rate from the denominator, as in the formula $\frac{NOI}{r-g}$ described above.

    - If LTC is using a direct capitalization calculation, LTC appraisers should obtain applicable direct capitalization rates and use these in place of yield capitalization rates. Using a yield capitalization rate in a direct capitalization formula may fail to account for growth, and NCUVS standards describe this practice as improper.

- Exhibit C.3 contains a summary of long-term growth rate forecasts from financial analytics firms excerpted in the California Board of Equalization's Capitalization Rate Study for 2015, along with historical growth rates in value added for each industry as measured by the U.S. Bureau of Economic Analysis.

Exhibit C.3
Comparison of LTC's Capitalization Rate with External Benchmarks

Industry*	LTC Yield Rate	Other States Yield Rate	Other States Direct Rate	BEA Historical Growth	Analyst Projected Future Growth
Electric	9.57%	7.31%	5.30%	2.83%	4.86%
Water	8.73%	7.69%	4.89%	2.83%	5.89%
Natural Gas	9.07%	8.53%	5.11%	2.83%	5.33%
Pipeline	10.72%	9.89%	5.97%	7.83%	8.37%
Class I Railroads	12.30%	10.87%	5.34%	4.71%	10.80%
Class II & III Railroads	12.00%	11.42%	5.60%	4.71%	10.80%
Telephone	10.91%	9.25%	5.33%	3.37%	6.67%
Average	**10.47%**	**9.28%**	**5.36%**	**4.16%**	**7.53%**

* Excludes electric cooperative companies since other states do not prepare separate capitalization rates for these companies.
Source: Prepared by legislative auditor's staff using information from LTC, eight states, the U.S. Bureau of Economic Analysis, and three financial analytics firms (Zacks, Thomson, and Value Line) excerpted in the California Board of Equalization's Capitalization Rate Study.

APPENDIX D: INCREASE IN REVENUES FOR ACCOUNTING FOR EXPECTED INCOME GROWTH, BY PARISH ASSESSMENT YEAR 2015 (IN MILLIONS)

Parish	Increase in Assessed Value	Increase in Tax Revenue
1. Acadia	$84,161,618	$6,009,140
2. Allen	19,713,544	3,075,313
3. Ascension	31,361,760	3,409,023
4. Assumption	13,098,027	1,317,661
5. Avoyelles	23,351,346	1,671,956
6. Beauregard	17,477,831	1,997,716
7. Bienville	71,990,503	7,659,790
8. Bossier	37,342,703	3,995,669
9. Caddo	99,212,353	13,552,407
10. Calcasieu	92,177,660	10,176,414
11. Caldwell	8,033,219	1,143,930
12. Cameron	18,938,116	2,615,354
13. Catahoula	1,218,114	110,483
14. Claiborne	24,150,275	1,806,441
15. Concordia	17,281,382	1,835,283
16. DeSoto	71,923,833	8,055,469
17. East Baton Rouge	69,548,036	7,963,250
18. East Carroll	7,966,152	1,046,752
19. East Feliciana	21,254,515	1,056,349
20. Evangeline	51,580,060	3,734,396
21. Franklin	8,203,014	862,957
22. Grant	14,105,127	2,434,545
23. Iberia	31,652,403	2,218,833
24. Iberville	44,624,590	4,645,420
25. Jackson	41,852,614	4,323,375
26. Jefferson	89,909,476	9,323,613
27. Jefferson Davis	25,899,344	2,488,927
28. Lafayette	25,937,109	2,186,498
29. Lafourche	37,703,246	4,739,298
30. LaSalle	8,629,927	1,386,829
31. Lincoln	23,387,836	1,994,982
32. Livingston	9,700,978	1,089,420
33. Madison	32,858,211	3,551,973
34. Morehouse	23,407,618	2,029,441
35. Natchitoches	45,246,585	4,094,816
36. Orleans (all districts)	87,838,658	13,333,908
37. Ouachita	102,255,565	9,673,376
38. Plaquemines	44,689,269	2,927,147

Parish	Increase in Assessed Value	Increase in Tax Revenue
39. Pointe Coupee	$43,947,165	$2,377,542
40. Rapides	94,164,556	10,970,171
41. Red River	41,262,465	3,845,662
42. Richland	55,931,433	3,982,318
43. Sabine	13,559,976	1,243,450
44. St. Bernard	34,421,939	4,843,167
45. St. Charles	137,111,890	16,083,225
46. St. Helena	7,984,477	1,168,129
47. St. James	26,787,061	2,866,216
48. St. John The Baptist	23,226,737	2,733,787
49. St. Landry	57,374,678	3,436,743
50. St. Martin	12,734,655	1,292,567
51. St. Mary	37,949,099	3,692,447
52. St. Tammany	70,041,177	10,646,259
53. Tangipahoa	26,138,056	2,323,673
54. Tensas	1,005,823	115,368
55. Terrebonne	29,002,651	2,627,640
56. Union	24,513,494	2,051,779
57. Vermilion	38,368,109	3,587,418
58. Vernon	12,399,011	1,494,081
59. Washington	21,497,490	2,412,018
60. Webster	19,704,216	1,911,309
61. West Baton Rouge	16,852,342	1,447,616
62. West Carroll	17,855,485	1,233,814
63. West Feliciana	58,214,801	4,639,720
64. Winn	7,751,961	787,599
Total	**$2,409,483,364**	**$249,351,874**

Source: Prepared by legislative auditor’s staff using information obtained from LTC.

APPENDIX E: ALLOCATION OF ASSESSED VALUE TO PARISHES

LTC allocates a company's total assessed value by first carving out the value of certain identifiable items such as land, stored oil and gas, and nuclear power plants as "non-spread" items, and the company's remaining properties are allocated as "spread" items. A company's total assessed value is therefore equal to its total spread assessed value plus its total non-spread assessed value. Exhibits E.1 and E.2 show how LTC's allocation process works and what would happen if LTC changed how it allocates the value of power plants to parishes. The difference between Exhibits E.1 and E.2 is that the hypothetical power plant is shown as a "non-spread" item in E.1 and as a "spread" item in E.2. The calculation follows this procedure:

1. LTC determines the assessed value of the company in Louisiana (shown in the last row of column E).

2. LTC determines the assessed value of the company's non-spread items by taking the applicable percentage (10%, 15%, or 25%) of the item's fair market value (column A).

    - The power plant is shown as a non-spread item in exhibit E.1 and as a spread item in E.2.

3. LTC obtains the cost of all types of spread property in each parish (column B).

4. LTC calculates the value of each parish-item as a percentage of the company's statewide spread property by dividing the cost of each type of spread property in each parish by the total cost of the company's spread property statewide.

5. LTC calculates the assessed value of the spread property. LTC first subtracts the total non-spread assessed value from the total assessed value to find the total spread assessed value. This gives the total for column D. LTC then allocates the spread assessed value to each type of property in each parish using the percentage in column C.

6. The total assessed value in each parish is given by adding up the assessed value of the spread and non-spread property in that parish. If this procedure is done correctly, the sum of the assessed values in all parishes for a particular company should add up to the company's total assessed value.

As shown in Exhibits E.1 and E.2, the effect of reallocating the power plant as a spread item instead of as a non-spread item is that Parish X's assessed value increases by $813,000, and Parish Y's assessed value decreases by the same amount.

Exhibit E.1
Example* Allocation Of Property To Parishes
Scenario A: Power Plant Allocated As "Non-Spread" (Current Practice)

Parish	Item Description	(A) Non-spread assessed value	(B) Cost value of spread property	(C) Percent of total spread property		(D) Spread Assessed Value		(E) Total Assessed Value
		Determined by LTC	*Reported by company*	*Column B divided by Column B total*		*Column E total minus Column A total, times Column C*		
Parish X	Land	$100						**$100**
Parish X	Machinery & Equipment		$1,000	$1,000/7,500 =	13%	($10,000-3,200) x 13% =	$907	**907**
Parish X	Improvements		2,000	2,000/7,500 =	27%	(10,000-3,200) x 27% =	1,813	**1,813**
Parish X	Power Plant	**3,000**						**3,000**
Parish X Subtotal		**$3,100**	**$3,000**		**40%**		**$2,720**	**$5,820**
Parish Y	Land	$100						**$100**
Parish Y	Machinery & Equipment		$3,000	$3,000/7,500 =	40%	($10,000-3,200) x 40% =	$2,720	**2,720**
Parish Y	Improvements		1,500	1,500/7,500 =	20%	(10,000-3,200) x 20% =	1,360	**1,360**
Parish Y Subtotal		**$100**	**$4,500**		**60%**		**$4,080**	**$4,180**
Total		**$3,200**	**$7,500**		**100%**		**$6,800**	**$10,000**

* The amounts chosen are purely hypothetical, but they can be thought of as representing thousands. Cells may not sum to totals due to rounding.
Source: Prepared by legislative auditor's staff using hypothetical data and formulas obtained by analyzing LTC's appraisal system.

Exhibit E.2:
Example* Allocation Of Property To Parishes
Scenario B: Power Plant Allocated As "Spread" (Alternative Practice)

Parish	Item Description	(A) Non-spread assessed value	(B) Cost value of spread property	(C) Percent of total spread property		(D) Spread Assessed Value		(E) Total Assessed Value
		Determined by LTC	*Reported by company*	*Column B divided by Column B total*		*Column E total minus Column A total, times Column C*		
Parish X	Land	$100						**$100**
Parish X	Machinery & Equipment		$1,000	$1,000/13,500 =	7%	($10,000-200) x 7% =	$726	**726**
Parish X	Improvements		2,000	2,000/13,500 =	15%	(10,000-200) x 15% =	1,452	**1,452**
Parish X	Power Plant		**6,000**	6,000/13,500 =	44%	(10,000-200) x 44% =	4,356	**4,356**
Parish X Subtotal		**$100**	**$9,000**		**67%**		**$6,533**	**$6,633**
Parish Y	Land	$100						**$100**
Parish Y	Machinery & Equipment		$3,000	$3,000/13,500 =	22%	($10,000-200) x 22% =	$2,178	**2,178**
Parish Y	Improvements		1,500	1,500/13,500 =	11%	(10,000-200) x 11% =	1,089	**1,089**
Parish Y Subtotal		**$100**	**$4,500**		**33%**		**$3,267**	**$3,367**
Total		**$200**	**$13,500**		**100%**		**$9,800**	**$10,000**

* The amounts chosen are purely hypothetical, but they can be thought of as representing thousands. Cells may not sum to totals due to rounding.
Source: Prepared by legislative auditor's staff using hypothetical data and formulas obtained by analyzing LTC's appraisal system.