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**NBOA SENIOR LEADERS SEMINAR:
CFI PRE-CONFERENCE SESSION**

SENIOR LEADERS SEMINAR

Strategic Financial Analysis and Communication Using the Composite Financial Index (CFI)

Executive Summary

NBOA hosted a pre-conference seminar prior to the 2018 NBOA Annual Meeting focused on the Composite Financial Index (CFI). Approximately 65 attendees (members and non-members) participated, representing 53 schools, including four from Canada and one from India. Participants learned how the CFI creates a common language to discuss the long-term financial health and sustainability of independent schools.

Co-creator of the CFI, Phil Tahey, CPA, discussed how to calculate a school's CFI using four underlying ratios and convert scores into action. Chuck McCullagh, CFO of Williston Northampton School, and Nancy Greene, CFO/COO of The Bolles School, discussed how their institutions are using the CFI to achieve strategic goals. During a working session, seminar participants reviewed CFI reports for their institutions and participated in a role-playing exercise focused on becoming more comfortable discussing the CFI with others.

Key themes in this seminar included:

- CFI is a communication tool that can align business officers, heads of school and boards of trustees around the actions needed to advance institutions' financial sustainability and well-being.
- Expendable Net Assets is an important element of CFI analysis. Institutions must become familiar with how to determine this.
- The CFI score is calculated based on four ratios: the Primary Reserve Ratio, the Viability Ratio, the Return on Net Assets Ratio, and the Net Operating Revenues Ratio.
- CFI scores are helpful for guiding strategic planning efforts and identifying ways to improve financial sustainability.

Next steps for institutions to explore include:

- Projecting CFI into the future using three- to five-year budgets
- Generating tolerable error ranges in budgets
- Analyzing liquidity at struggling schools
- Investigating leverage and debt
- Clarifying the business model and basic strategy

History of Ratio Analysis and the Composite Financial Index

The use of financial ratios for nonprofits and higher education institutions began in the early 1980s, as KPMG (Peat Marwick) explained fund accounting statements to boards and other stakeholders who were largely unfamiliar with fund accounting and nonprofit accounting rules. Accounting standards changed when FAS 116 and FAS 117 were issued in 1994. At that time, financial ratios evolved further. In 1980, "Ratio Analysis in Higher Education" was published and evolved into a series of publications called "Strategic Financial Analysis in Higher Education."

The Composite Financial Index was developed in the late 1990s to communicate financial information simply. It was part of the Balanced Scorecard work done by KPMG/Nolan Norton. To develop the CFI, KPMG ran longitudinal models on data from over 250 colleges. From this, the team developed a scoring scale, metric scale and weighting scale. The CFI combines four key ratios into one score, similar to a GPA for students.

Finances aren't the end goal. They are either an enabler or an inhibitor for attaining mission, vision, and strategic goals."

Phil Tahey, CPA

The CFI addresses only the financial health of an institution. It doesn't evaluate overall health or program success. It works best for long-range planning and evaluating the financial aspect of strategic plans. When developing the CFI, the goal isn't for the institution to attain a specific score. Instead, institutions must understand what the score says about their financial health, especially when considered over a number of years, and what actions may need to be taken.

The CFI Framework

The CFI was initially developed for higher education. However, independent K-12 schools are similar to private colleges in several ways:

- Revenue streams are primarily students and support-related.
- Expenditures are usually for people, facilities and technology.
- Facilities investments are needed to carry out programs and the mission.
- Many institutions have endowments and spending policies.

All of these characteristics suggest that the CFI is a useful metric for the independent K-12 education sector, as well.

The Composite Financial Index offers several benefits:

- It provides a single metric that is a holistic means of measuring institutional financial health.
- It enables institutions to monitor progress against targets over time.
- It supports concise communication of overall financial health to key stakeholders.
- It identifies which trends need more analysis and communication.

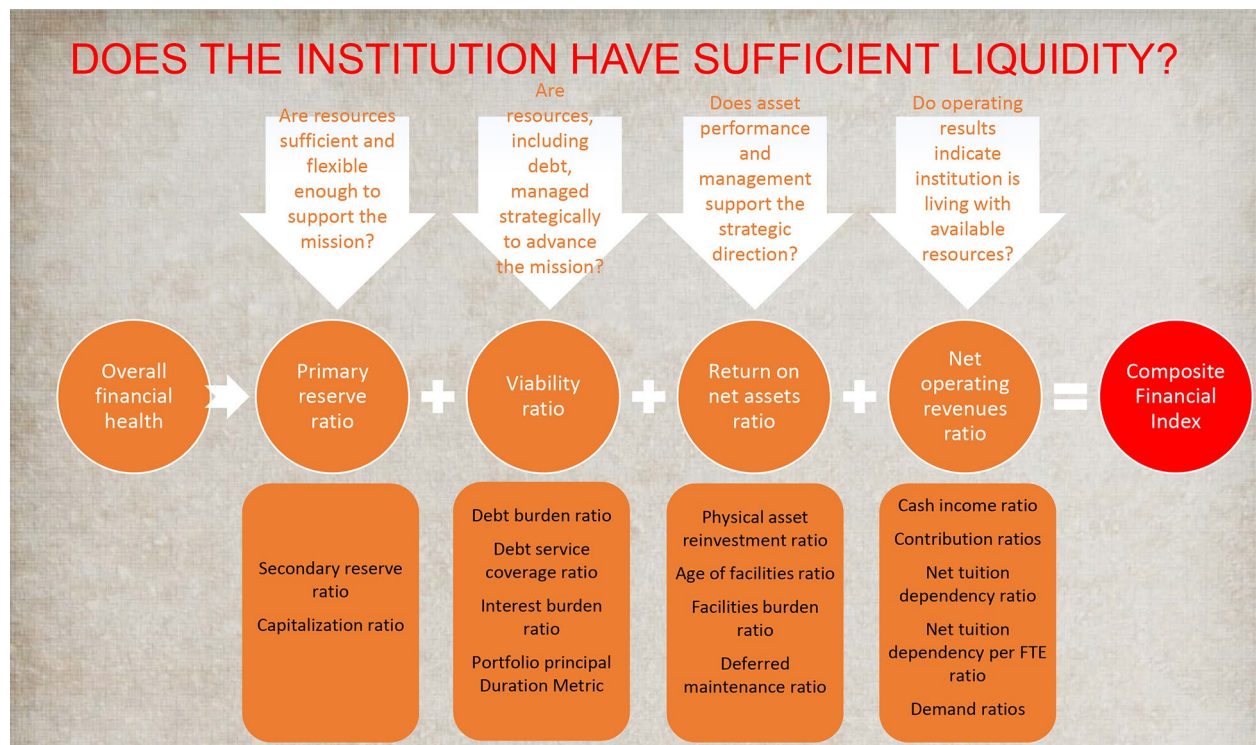
The CFI framework addresses one overarching question: Does the institution have sufficient liquidity? Without adequate liquidity, the overall financial health measured using GAAP is immaterial. Once the liquidity question has been answered, the CFI addresses four additional questions through financial ratios:

1. **Are resources sufficient and flexible enough to support the mission?** This is answered through the Primary Reserve Ratio.
2. **Are resources, including debt, managed strategically to advance the mission?** This is answered through the Viability Ratio.
3. **Does asset performance and management support the strategic direction?** This is answered through the Return on Net Assets Ratio.
4. **Do operating results indicate the institution is living with available resources?** This is answered through the Net Operating Revenues Ratio.

The ratios and the CFI are scalable and not absolute. They compare:

- An institution's expendable net assets to expenses and debt invested in plant.
- Annual performance amounts (returns) to equity and revenues.

Figure 1: The CFI Framework



Although the CFI is a powerful tool, it also has some limitations that institutions must be aware of:

- It is less useful in peer group analysis than for analyzing a single institution since very different schools may reach similar scores with different inputs.
- It only measures success components related to financial activities.
- Single-year computation of CFI is much less useful than calculating a trend line. Institutions that go back five to ten years get a much better picture of what is happening than those that calculate the CFI for a single point in time.
- Before combining the underlying data and ratios to create the CFI, it is important to understand changes in these numbers, especially those in expendable net assets.

Expendable Net Assets: A Key Component of CFI

Expendable Net Assets is the portion of equity (i.e., fund balances or net assets) that may be expended for operating purposes and debt obligations, rather than all equity including those funds that have to be maintained in perpetuity or used for capital asset purposes. Expendable Net Assets aren't composed solely of cash and investments. As a result, there isn't a 1:1 relationship between Expendable Net Assets and Liquid Investments.

In contrast, non-expendable funds generally reside in bricks and mortar as plant assets (Net Investment in Plant or NIP) or in perpetuity for the benefit of the institution (true endowment funds). Restricted funds held for capital acquisition purposes are classified as non-expendable.

The following tables show how Unrestricted, Temporarily Restricted and Permanently Restricted Net Assets map to Expendable Net Assets, Non-Expendable Net Assets and Net Investment in Plant.

Figure 2: Mapping Unrestricted Net Assets

	Expendable Net Assets	Non-Expendable Net Assets	Net Investment in Plant
Undesignated	XX		
Designated	XX		
Board Designated Endowment	XX		
Net Investment in Plant			XX
Unexpended Appreciation, Payout	XX		

Figure 3: Mapping Temporarily Restricted Net Assets

	Expendable Net Assets	Non-Expendable Net Assets	Net Investment in Plant
Unexpended Appreciation, Payout	XX		
Program Restricted	XX		
Related to Plant			XX
Board Designated Endowment	XX		
Annuity Funds for Program	XX		

Figure 4: Mapping Permanently Restricted Net Assets

	Expendable Net Assets	Non-Expendable Net Assets	Net Investment in Plant
True Endowment		XX	
Annuity Funds for Endowment		XX	
Permanent Loan Funds		XX	

Expendable Net Assets is an important component of the CFI because it is used in the Primary Reserve and Viability Ratios. Expendable Net Assets is generally calculated by deducting Net Investment in Plant from Unrestricted Net Assets and excluding plant-related Temporarily Restricted Net Assets (TRNA). Donor-related gifts (cash or pledges) for plant are not Expendable Net Assets.

NIP represents the cash the institution has invested in its physical plant. It is the difference between property, plant and equipment assets net of depreciation and amortization (PP&E), and physical plant-related liabilities (such as debt invested in plant, capital leases, plant-related accounts payable and asset retirement obligations). The following charts provide examples of how to calculate Expendable Net Assets under different circumstances:

Figure 5: Calculating Expendable Net Assets — Base Case

Expendable Net Assets	
Unrestricted Net Assets	20,000,000
Temporarily Restricted Net Assets	70,000,000
Less Net Investment In Plant (See Below)	(12,000,000) FROM BELOW
Less Temporarily Restricted Net Assets For Plant Purposes	(6,000,000)
Total Expendable Net Assets	72,000,000

Calculation Of Net Investment In Plant	
Property, Plant And Equipment Assets	120,000,000
Less Debt And Liabilities Related To Plant Assets	(108,000,000) FROM BELOW
Net Investment In Plant	12,000,000 TO ABOVE
Total Debt	110,000,000
Less Debt Not Invested In Plant Assets (Credit Lines, Taxable Debt For Operations, Etc.)	(10,000,000)
Add Capital Lease Payable	3,000,000
Add Asset Retirement Obligations	5,000,000
Total Debt And Liabilities Related To Plant Assets*	108,000,000 TO ABOVE

*Note- Amount of Debt to be used in the Denominator of the Viability Ratio is \$103 000,000 (\$100,000,000 project debt at par +\$3,000,000 Capital Lease Payable)

Example 1 - Base Case

A private institution has the following assets, liabilities and net assets:

- Property, plant and equipment, net - \$120,000,000
- Debt at par - \$110,000,000
 - \$100,000,000 is plant related
 - \$10,000,000 is a credit line for operations
- Asset Retirement Obligations - \$5,000,000
- Capital Lease Obligation - \$3,000,000
- Unrestricted Net Assets - \$20,000,000
- Temporarily Restricted Net Assets - \$70,000,000
 - Plant related TRNA - \$6,000,000

Figure 6: Calculating Expendable Net Assets — Base Case + Additional Considerations

EXPENDABLE NET ASSETS	
UNRESTRICTED NET ASSETS	20,000,000
TEMPORARILY RESTRICTED NET ASSETS	70,000,000
LESS NET INVESTMENT IN PLANT (SEE BELOW)	(24,800,000) FROM BELOW
LESS TEMPORARILY RESTRICTED NET ASSETS FOR PLANT PURPOSES	(6,000,000)
TOTAL EXPENDABLE NET ASSETS	59,200,000
CALCULATION OF NET INVESTMENT IN PLANT	
PROPERTY, PLANT AND EQUIPMENT ASSETS	120,000,000
LESS DEBT AND LIABILITIES RELATED TO PLANT ASSETS	(95,200,000) FROM BELOW
NET INVESTMENT IN PLANT	24,800,000 TO ABOVE
TOTAL DEBT, NET OF DISCOUNT	107,000,000
LESS DEBT NOT INVESTED IN PLANT ASSETS (CREDIT LINES, TAXABLE DEBT FOR OPERATIONS, ETC.)	(10,000,000)
LESS ASSETS RESTRICTED FOR DEBT (CONSTRUCTION FUNDS HELD BY TRUSTEES)	(9,000,000)
LESS UNAMORTIZED BOND ISSUANCE COSTS	(800,000)
ADD CAPITAL LEASE PAYABLE	3,000,000
ADD ASSET RETIREMENT OBLIGATIONS	5,000,000
TOTAL DEBT AND LIABILITIES RELATED TO PLANT ASSETS	95,200,000 TO ABOVE

Base Case Scenario Plus Debt Discount, Bond Issuance Costs and Debt Funds Held by Trustees, and Losses on Interest-Rate Swap Derivative

Same as Example 1, plus

A private institution has the following assets, liabilities and net assets:

- Debt Discount of \$3,000,000
- Unamortized Bond Issuance Costs of \$800,000, regardless if costs were paid by debt proceeds or institutional funds
- Debt Service Funds Held By Trustees - total of \$9,000,000
 - If detail is known, only use the portion related to unexpended construction funds from debt issuance.
 - If details are not known, then use the entire amount
- There are two options on accounting for losses /gains on interest rate swaps related to plant debt
 - Mark to market loss (liability on balance sheet) is \$3,500,000
 - Under example 5A, ignore the amount of loss or gain
 - Under example 5B, treat the gain/loss similar to debt discount

Figure 7: Calculating Expendable Net Assets — Negative Net Investment in Plant

EXPENDABLE NET ASSETS		Example 2 - Negative Net Investment in Plant A private institution has the following assets, liabilities and net assets: ➤ Property, plant and equipment, net - \$105,000,000 ➤ Debt at par - \$110,000,000 ➤ \$100,000,000 is plant related ➤ \$10,000,000 is a credit line for operations ➤ Asset Retirement Obligations - \$5,000,000 ➤ Capital Lease Obligation - \$3,000,000 ➤ Unrestricted Net Assets - \$20,000,000 ➤ Temporarily Restricted Net Assets - \$70,000,000 ➤ Plant related TRNA - \$6,000,000
UNRESTRICTED NET ASSETS	20,000,000	
TEMPORARILY RESTRICTED NET ASSETS	70,000,000	
LESS NET INVESTMENT IN PLANT (SEE BELOW)	-0- FROM BELOW	
LESS TEMPORARILY RESTRICTED NET ASSETS FOR PLANT PURPOSES	(6,000,000)	
TOTAL EXPENDABLE NET ASSETS	84,000,000	
CALCULATION OF NET INVESTMENT IN PLANT		
PROPERTY, PLANT AND EQUIPMENT ASSETS	105,000,000	
LESS DEBT AND LIABILITIES RELATED TO PLANT ASSETS	(108,000,000) FROM BELOW	
NET INVESTMENT IN PLANT - cannot be below -0-	(3,000,000) BUT -0- TO ABOVE	
TOTAL DEBT	110,000,000	
LESS DEBT NOT INVESTED IN PLANT ASSETS (CREDIT LINES, TAXABLE DEBT FOR OPERATIONS, ETC.)	(10,000,000)	
ADD CAPITAL LEASE PAYABLE	3,000,000	
ADD ASSET RETIREMENT OBLIGATIONS	5,000,000	
TOTAL DEBT AND LIABILITIES RELATED TO PLANT ASSETS *	108,000,000 TO ABOVE	

*Note- Amount of Debt to be used in the Denominator of the Viability Ratio is \$103 000,000 (\$100,000,000 project debt at par +\$3,000,000 Capital Lease Payable)

The Four-Step Methodology for Calculating CFI

To calculate the Composite Financial Index, institutions must follow four steps:

1. Calculate the value of the four core ratios.

- *Primary Reserve Ratio*. This ratio identifies the amounts that an institution must have in retained wealth to realize its strategic objectives. It highlights whether the institution should re-evaluate its mission and priorities.
- *Viability Ratio*. This ratio governs an institution's ability to issue new debt. It measures the availability of resources to settle debt as of the balance sheet date. Only plant-related debt is used.
- *Return on Net Assets Ratio*. This ratio measures whether the institution's returns are keeping pace with increases in overall institutional size. Stewardship responsibility requires return on all assets under management.
- *Net Operating Revenues Ratio*. This ratio evaluates whether an institution's operating results indicate that it is living with available resources. A balance between return and achievement of mission is critical to assessment of success.

Figure 8: Calculating the Primary Reserve Ratio

Numerator — Expendable net assets		Factors to Consider: ➢ Conditional asset retirement obligation ➢ Deposits with bond trustee ➢ Definition of long-term debt
+ Unrestricted net assets	86,014	
+ Temporarily restricted net assets	2,954	
- Property, plant and equipment, net	(77,900)	
+ Long-term debt	39,476	
Numerator — Expendable net assets	50,544	Ratio threshold value is .40
Denominator — Total expenses	68,469	
Value of ratio	.74x	
➢ Expendable net assets are readily accessible to meet operating and capital needs ➢ Total expenses represent operating size and changes in expenses reflect the impact of inflation and programmatic changes ➢ Threshold value provides 5 months of expenses		

Figure 9: Calculating the Viability Ratio

Numerator — Expendable net assets		Factors to Consider:
+ Unrestricted net assets	86,014	
+ Temporarily restricted net assets	2,954	➤ Only amount to be repaid is included in this ratio – bonds at par, mortgage balance, etc. ➤ Will likely differ from debt used to calculate NIP due to issue costs, discount, premium
- Property, plant and equipment, net	(77,900)	
+ Plant-related debt	39,476	
Numerator — Expendable net assets	50,544	
Denominator — Plant-related debt	39,476	
Value of ratio	1.28x	

Ratio threshold value is 1.25x

- An indication of possible debt capacity
- Measures availability of resources to settle debt as of the balance sheet date – only plant-related debt is used
- Governs institution's ability to issue new debt
- Need to look below this ratio to assess affordability of debt, issued and proposed
- Full look at creditworthiness adds other factors, such as management quality

Figure 10: Calculating the Return on Net Assets Ratio

Numerator-Change in net assets		Factors to Consider:
	4,590	
Denominator -Total net assets (beginning of year)	96,030	➤ This is assessed better over a long period of time. ➤ Expect annual volatility. ➤ May wish to use rolling averages.
Value of ratio	4.78%	

Ratio threshold value is 6%

- Measures whether the institution's returns are keeping pace with the increases in overall institutional size
- Stewardship responsibility requires return on all assets under management
- Threshold value is nominal return including inflation.

Figure 11: Calculating the Net Operating Revenues Ratio

Numerator — Change in unrestricted net assets		Factors to Consider:
	2,290	
+ Total unrestricted revenues and gains	86,014	➤ Ratio is best assessed as a trend line ➤ Unless it is an expense, everything else is included in denominator
+ Net assets released from restriction	2,049	
+ Unrestricted investment return in excess of spending rate	693	
Denominator — Total unrestricted revenues	70,759	
Value of ratio	3.24%	

Threshold value is 4%

- Ratio uses the alternative threshold value when no operating measure is provided.
- Unrestricted Gains and Losses as well as non operating activities are included in revenues
- Investment losses are netted against gains
- Structural deficits need to be distinguished from investments in mission

Numerator - Excess (deficiency) of unrestricted operating income over unrestricted operating expenses		Factors to Consider:
	1,597	
Denominator -Total unrestricted operating revenues		➤ Ratio is best assessed as a trend line
+ Total unrestricted revenues and gains	68,017	
+ Net assets released from restrictions	2,049	
Denominator -Total unrestricted operating revenues	70,066	
Value of ratio	2.28%	

Threshold value is 2%

- Ratio is based on an operating indicator. Alternative threshold value provided if no operating measure.
- Gains and Losses as well as non operating activities are excluded
- Structural deficits need to be distinguished from investments in mission
- Balance between return and achievement of mission is critical to assessment of success

2. Convert the computed values to a common scale using strength factors. The strength factors are key to allowing ratios computed on different bases to be combined in creating the CFI. Threshold values translate into a strength factor of 3. The range of strength factors is -4 to 10 for each individual ratio. Strength factors outside this range are capped at 10 and floored at -4.

Figure 12: Converting the Ratio Values to Strength Factors

Scoring Scale	1	3	10
Primary Reserve Ratio	.133x	.4x	1.33x
Net Operating Revenues Ratio:			
Using an operating indicator	0.7%	2%	7.0%
Using change in unrestricted net assets	1.3%	4%	13%
Return on Net Assets Ratio	2.0%	6%	20%
Viability Ratio	.417x	1.25x	4.16x

3. Multiply the strength factors by specific weighting factors. For institutions with long-term debt, the Primary Reserve Ratio and the Viability Ratio are both weighted at 35 percent. This means that 70 percent of the CFI score is built around Expendable Net Assets. The remaining 30 percent of the weighting is focused on the two return ratios that are related to annual performance (i.e., Net Operating Revenues and Return on Net Assets).

Figure 13: Weighting Schema

Ratio	INSTITUTION WITH LONG-TERM DEBT	INSTITUTION WITH NO (OR MINIMAL) LONG-TERM DEBT
Primary Reserve	35%	55%
Net Operating Revenues	10%	15%
Return on Net Assets	20%	30%
Viability	35%	--

Note the heavier weighting, or emphasis on Balance Sheet driven ratios.
White Paper forthcoming on No Debt Alternative Approach

The weighting schema reflects the belief that each ratio does not impact the institution equally.
Each Ratio maximum score is 10 X weighting factor & minimum score is -4 X weighting factor (threshold of 3 +-7)

4. Total the resulting four weighted factors to compute the single CFI score. Developing a single measure simplifies the monitoring of financial health, while still creating a holistic view of the institution.

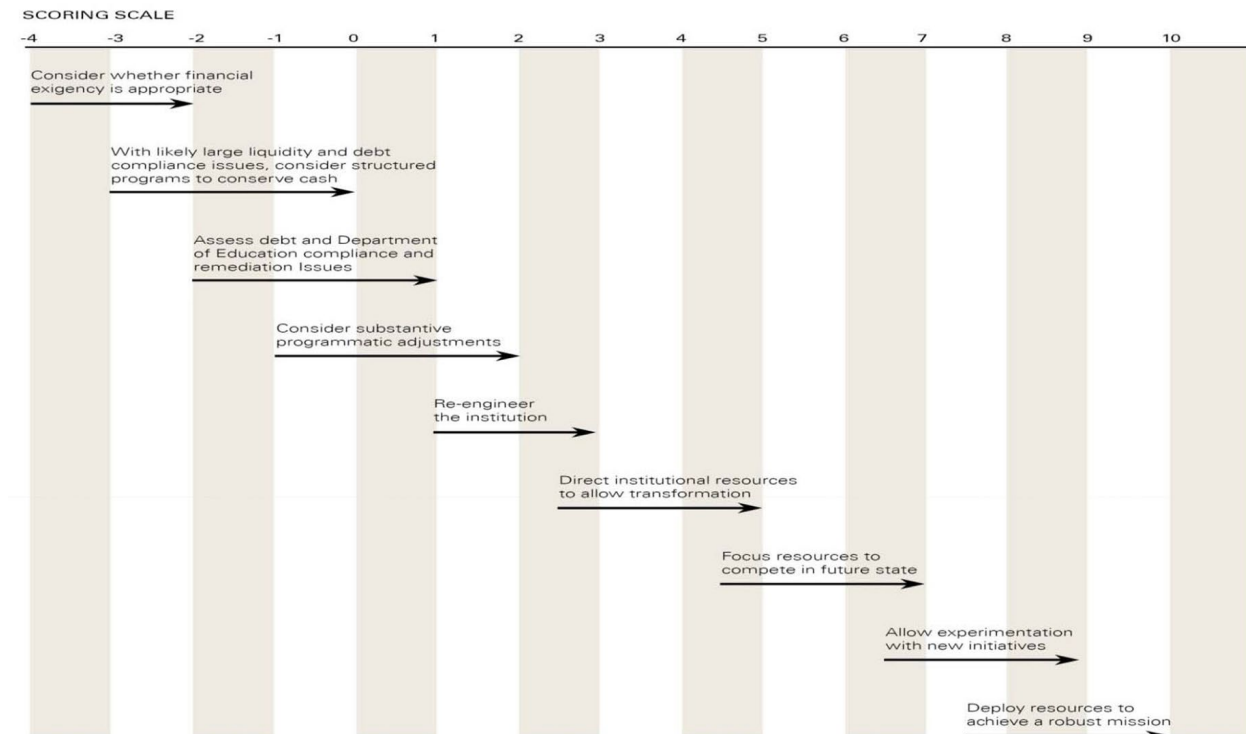
Figure 14: Calculating the Composite Financial Index

Ratio	Ratio Value/Score of 1	Strength Factor	Weighting Factor	Score
Primary Reserve	.74X / .133	= 5.56	x 35%	= 1.95
Net Operating Revenues	4.23% / 1.33%	= 3.18	x 10%	= .32
Return on Net Assets	4.78% / 2.0%	= 2.39	x 20%	= .48
Viability	1.28X / .417	= 3.07	x 35%	= 1.07
Composite Financial Index				3.8*

Converting the CFI Score to Action

CFI scores can range from -4 to 10. Institutions with a CFI of 3 are considered to be financially healthy. The chart below outlines recommended actions that institutions might take, based on their CFI scores.

Figure 15: Scale for Charting CFI Performance



Other Matters of Interest

As independent schools work to adopt the CFI, they should be aware of three matters of interest:

1. **Alternative Presentation of Operating Statement.** A structural deficit occurs when recurring revenues are less than recurring operating expenses. The financial statement format may be a key communication tool. It is important to highlight differences between revenues and support. Board members often don't understand the differences and nature of support since they don't exist in for-profit organizations. Business officers must communicate the dependency on operating contributions and endowment payout. The charts below show two different presentations of the Statement of Activities: the first is the normal format, while the second segregates support from revenues.

Figure 16: Two Alternative Presentations of Statement of Activities

Statement of Activities – Normal Format		
NORMAL FORMAT	2006	2010
REVENUES AND SUPPORT:		
TUITION & FEES, NET	25,200	31,400
AUXILIARY ENTERPRISES	10,900	13,000
CONTRIBUTIONS	4,000	2,200
ENDOWMENT PAYOUT	8,500	7,500
OTHER	4,200	4,600
TOTAL REVENUES & SUPPORT	52,800	58,700
EXPENSES		
INSTRUCTION	24,200	28,000
STUDENT SERVICES	5,500	5,800
AUXILIARY ENTERPRISES	12,000	13,500
LIBRARY	2,000	2,600
ADMINISTRATION	9,000	11,400
TOTAL EXPENSES	52,700	61,300
NET OPERATING SURPLUS (DEFICIT)	100	(2,600)

Revised Format to Segregate Support from Revenues		
	2006	2010
OPERATING REVENUES:		
TUITION & FEES, NET	25,200	31,400
AUXILIARY ENTERPRISES	10,900	13,000
OTHER	4,200	4,600
TOTAL REVENUES	40,300	49,000
EXPENSES		
INSTRUCTION	24,200	28,000
STUDENT SERVICES	5,500	5,800
AUXILIARY ENTERPRISES	12,000	13,500
LIBRARY	2,000	2,600
ADMINISTRATION	9,000	11,400
TOTAL EXPENSES	52,700	61,300
DEFICIT BEFORE SUPPORT	(12,400)	(12,300)
SUPPORT:		
CONTRIBUTIONS	4,000	2,200
ENDOWMENT PAYOUT	8,500	7,500
SUPPORT	12,500	9,700
NET OPERATING SURPLUS (DEFICIT)	100	(2,600)

2. **The Need for an Operating Measure.** Many K-12 private schools don't use an Operating Measure in their financial statements and budget reports, but they should. NACUBO is a good source of information on this topic.
3. **Reconciliation of Budget Actual Results to GAAP Financial Statements.** This is a critical financial process, since Audit is a validation process.

Practitioner Experience: NBOA Board Members' Use of CFI

Williston Northampton

Background: Williston Northampton is a boarding school with day students in Western Massachusetts. Historically, the school has had enrollment of 540 students, comprising 280 boarding students, 180 day students, and 90 middle school students. The financial aid discount rate represents 27 percent to 28 percent of gross tuition.

Challenge and Response: After the financial crisis hit in 2009, net tuition revenue was challenged. Financial aid spiked and enrollment was more competitive. These issues persisted until 2013. In the 2013 and 2014 timeframe, the CFO (Chuck McCullagh), the head of school and board of trustees realized that Williston Northampton's strategic plan needed to be updated. A new plan was created that will take five to six years to implement. Its goals include:

- Establishing a stable net tuition model which would deliver predictable, adequate profit. The goal is to lower enrollment and financial aid, while increasing net tuition revenue.
- Reorganizing the Advancement Office and starting a campaign.
- Increasing operations investment to physical plant.

To make these goals a reality quickly, the board approved aggressive spending from the endowment. Over a five- to six-year period, however, increases to net tuition revenue are expected to eliminate the need for continued endowment spending. Currently, the new net tuition model is delivering around \$1 million per year in improved net tuition revenue. The institution is now three to four years into the plan and there are two more years to go.

Measuring Financial Sustainability with CFI: Historically, Williston Northampton has evaluated its financial health using metrics including the liquidity ratio, debt service coverage ratio, investment against depreciation, net tuition revenue trends, and discount rate trends. When Chuck McCullagh learned about CFI, he discussed it with the finance committee chairs, since the institution needed a measure of financial sustainability. They had a positive response.

Williston Northampton calculated CFI data for 20 years of historical information. This effort revealed several things:

- A five-year rolling average gives a truer picture of the institution than the CFI for one year. The CFI score for a single year can be volatile and misleading, especially if the institution has done something unusual in that year. Williston Northampton found that a five-year rolling average CFI score provided more insights and should be used in conjunction with the one-year measure.
- The CFI model reflects the “ebb and flow” of what is happening in the environment, as well as the actions that the institution takes. Before 2009, the institution's CFI score had been in the five to six range. This would suggest that Williston Northampton was a very healthy school. However, under the surface, there were issues that emerged more clearly when the financial crisis hit. After Williston Northampton invested in the physical plant, the CFI scores went down again since the school was spending from endowment and adding expenses.

Figure 17: Williston Northampton Historical CFI Data

	05/06	06/07	07/08	08/09	09/10	10/11	11/12	12/13	13/14	14/15	15/16	16/17
Primary Reserve Ratio	1.65	1.57	1.35	.84	.96	1.08	.84	1.03	1.07	.85	.65	.78
Viability Ratio	1.41	1.47	.98	.64	.73	.83	.68	.84	.99	.86	.65	.82
Return on Net assets Ratio %	8.95	14.76	-6.07	-22.88	5.76	3.91	-10.24	8.87	12.24	-6.41	-11.68	14.62
Net Operating Revenues Ratio %	14.44	16.48	-18.62	-23.73	15.12	11.54	-20.40	4.54	7.84	-13.15	-20.24	9.73
CFI 1 year	6.57	7.22	3.61	1.85	4.72	4.82	1.88	4.65	5.47	1.31	-0.47	4.95
CFI 5 year average	5.65	6.45	5.90	4.84	4.79	4.44	3.38	3.58	4.31	3.63	2.57	3.18

Pre-2009: Investments & Net Tuition Revenue strong

	05/06	06/07	07/08	08/09	09/10	10/11	11/12	12/13	13/14	14/15	15/16	16/17
Primary Reserve Ratio	1.65	1.57	1.35	.84	.96	1.08	.84	1.03	1.07	.85	.65	.78
Viability Ratio	1.41	1.47	.98	.64	.73	.83	.68	.84	.99	.86	.65	.82
Return on Net assets Ratio %	8.95	14.76	-6.07	-22.88	5.76	3.91	-10.24	8.87	12.24	-6.41	-11.68	14.62
Net Operating Revenues Ratio %	14.44	16.48	-18.62	-23.73	15.12	11.54	-20.40	4.54	7.84	-13.15	-20.24	9.73
CFI 1 year	6.57	7.22	3.61	1.85	4.72	4.82	1.88	4.65	5.47	1.31	-0.47	4.95
CFI 5 year average	5.65	6.45	5.90	4.84	4.79	4.44	3.38	3.58	4.31	3.63	2.57	3.18

Impact of
Financial Crisis

	05/06	06/07	07/08	08/09	09/10	10/11	11/12	12/13	13/14	14/15	15/16	16/17
Primary Reserve Ratio	1.65	1.57	1.35	.84	.96	1.08	.84	1.03	1.07	.85	.65	.78
Viability Ratio	1.41	1.47	.98	.64	.73	.83	.68	.84	.99	.86	.65	.82
Return on Net assets Ratio %	8.95	14.76	-6.07	-22.88	5.76	3.91	-10.24	8.87	12.24	-6.41	-11.68	14.62
Net Operating Revenues Ratio %	14.44	16.48	-18.62	-23.73	15.12	11.54	-20.40	4.54	7.84	-13.15	-20.24	9.73
CFI 1 year	6.57	7.22	3.61	1.85	4.72	4.82	1.88	4.65	5.47	1.31	-0.47	4.95
CFI 5 year average	5.65	6.45	5.90	4.84	4.79	4.44	3.38	3.58	4.31	3.63	2.57	3.18

- Recognize need to re-engineer Financial Model
- Size of School & Net Tuition Rev.
- Fund Raising

	05/06	06/07	07/08	08/09	09/10	10/11	11/12	12/13	13/14	14/15	15/16	16/17
Primary Reserve Ratio	1.65	1.57	1.35	.84	.96	1.08	.84	1.03	1.07	.85	.65	.78
Viability Ratio	1.41	1.47	.98	.64	.73	.83	.68	.84	.99	.86	.65	.82
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CFI 5 year average	5.65	6.45	5.90	4.84	4.79	4.44	3.38	3.58	4.31	3.63	2.57	3.18

Lower CFI's show use of internal funds to
re-engineer the financial model

	05/06	06/07	07/08	08/09	09/10	10/11	11/12	12/13	13/14	14/15	15/16	16/17
Primary Reserve Ratio	1.65	1.57	1.35	.84	.96	1.08	.84	1.03	1.07	.85	.65	.78
Viability Ratio	1.41	1.47	.98	.64	.73	.83	.68	.84	.99	.86	.65	.82
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CFI 1 year	6.57	7.22	3.61	1.85	4.72	4.82	1.88	4.65	5.47	1.31	-0.47	4.95
CFI 5 year average	5.65	6.45	5.90	4.84	4.79	4.44	3.38	3.58	4.31	3.63	2.57	3.18

CFI showing the positive trend from changes, moving in good direction

- CFI is a good reporting tool for the board of trustees to show performance. It has affirmed Williston Northampton's effort to re-engineer the financial model. Recent measures reflect the positive results of the changes.

We have tested CFI with historical data, and it's pretty accurate with regard to what we've been seeing at our school. We are talking about embedding it into the metrics that we use moving forward.

Chuck McCullagh, Williston Northampton

The Bolles School

Background: The Bolles School is a day school with boarding students located in Jacksonville, Florida. Current enrollment is 1,650 and 65 students board. Prior to the financial crisis, enrollment was 1,740 and 95 students boarded. Financial aid is well managed, representing about 11 percent of gross tuition. Approximately 15 percent of the student body receive financial aid. The institution has four campuses. In 2010, deferred maintenance was \$12 million and in 2016, it had been reduced to \$3 million. The Facility Condition Index (FCI) moved from 0.14 (poor) to 0.04 (excellent).

Challenge and Response: Before the financial crisis, the Bolles School was operating at a profit. After the financial crisis hit, however, net tuition revenue was challenged. Financial aid increased and enrollment became more competitive. Fortunately, the large student body gave the institution some leverage.

The leadership team developed a plan with several key components:

- Stabilizing enrollment to a new "normal."
- Refinancing its debt and increasing debt slightly to provide cash toward deferred maintenance, while decreasing debt service.
- Increasing marketing and retention efforts.
- Re-organizing the Advancement Office and starting a campaign.
- Increasing operations investment to physical plant to compete and remain relevant.

Implementing CFI: The Bolles School calculates a five-year average for CFI. The Bolles School also creates a cumulative score. The Bolles School's work with CFI revealed several insights:

- To derive value from the CFI, it is essential to study the ratios and their components. With this information, it is possible to shape good financial planning and not just focus on the total "score." Institutions must recognize that the CFI can't be used for benchmarking against other schools. It is intended for "self-improvement" efforts.
- Different activities affect CFI. Items that impacted Bolles' CFI included fundraising, changes in the market, changes to the value of interest rate swaps, investment in property plant and equipment and changes to depreciation, release and amounts of restricted funds.
- The Board recognized that the institution was financially fragile. Although the Bolles School was generating reserves and timing of bills ensured that the school was "cash rich" most of the year, the finance committee took a closer look at the two balance sheet ratios that are indicators for long-term financial health. The Viability Ratio was strong; the Bolles School has around \$9 million in debt and a debt capacity for around \$20 million. On the other hand, the Primary Reserve Ratio which measures financial strength and flexibility was below threshold.
- CFI has allowed the Bolles School to dive deeply into the strategic measures and to discuss important financial issues. These include the timing of construction and levels of funding raised, new debt and debt capacity, establishment of goals for cash reserves, and long-term and short-term thresholds for building the endowment. Currently, the Bolles School's CFI is almost to financial stability, but the goal is to be financially strong.
- The Bolles School has incorporated the CFI into its dashboard. This contains a snapshot of the financial ratios that the institution tracks. Leaders use a "heat sheet" (see example below) to identify areas of concern.

Figure 18: The Bolles School's Financial Reporting Dashboard

The Bolles School Financial Sustainability - Heat Map	Goal	2017	2016	2015	2014	2013	2012	2011	2010	2009
EQUITY TO DEBT										
Total Equity/Total Liabilities less Unearned Tuition	≥ 2.00	4.79	3.89	4.32	4.17	3.32	2.97	2.95	3.19	2.86
BALANCED STATEMENT OF ACTIVITY										
Total revenue/total expenses	≥ 1.05	1.13	0.99	1.01	1.14	1.08	0.98	1.06	1.03	0.99
Are we balancing the budget?										
BALANCE SHEET GROWTH										
% growth in net assets	≥ 3.0%	10.1%	-1.0%	0.7%	10.7%	6.1%	-1.8%	4.3%	2.2%	-1.1%
Are we an advancing institution?										
DEBT COVERAGE RATIO										
Cash Available for debt service/interest, principal (Includes Swap)	≥ 1.30	12.89	5.80	4.61	16.97	11.82	5.24	0.58	3.05	2.58
Are we meeting our bank-required debt covenant?										
SUSTAINABILITY RATIO										
Net assets/expenses	≥ 1.00	1.47	1.31	1.35	1.41	1.32	1.28	1.36	1.31	1.30
Do we have financial flexibility?										
DEFERRED REVENUE COVERAGE										
Cash/deferred revenue	≥ 1.00	1.28	1.24	1.11	1.11	1.24	1.24	1.18	1.16	1.15
Do we rely on next year's tuition to fund current expenses?										
TUITION COVERAGE										
Gross tuition/total expense including discounts	≥ 85.0%	85.7%	83.5%	84.5%	85.8%	84.8%	85.2%	86.6%	84.9%	85.2%
How much does tuition cover expenses?										
LIQUIDITY RATIO										
Cash/monthly expenses	≥ 4.00	2.10	1.63	0.77	0.82	1.86	1.83	1.37	1.27	1.18
Do we have financial flexibility?										
AGE OF FACILITY										
Accumulated depreciation/depreciation expense	≤ 10.00	12.77	12.03	11.34	11.71	10.94	10.90	10.71	9.91	9.35
Are our physical assets being adequately maintained?										
ENDOWMENT FLEXIBILITY RATIO										
Total endowment FMV/permanent restrictions	≥ 2.00	1.43	1.77	1.95	1.98	1.51	1.41	1.49	1.42	1.29
Are we good stewards of our permanent funds?										
ENDOWMENT SUPPORT RATIO										
FMV of endowment/total expenses	≥ 1.00	0.48	0.40	0.45	0.48	0.38	0.36	0.39	0.35	0.32
Are we an advancing institution?										
CFI RATIO	≥ 3.00	2.05	1.75	2.05	3.49	2.31	1.05	2.41	1.55	1.75
5 year average		2.33	2.13	2.26	2.16	1.81	2.22			

CFI is an accurate measure of sustainability. Since it presents institutions with brutal reality, they may not like what they see initially. Business officers must explain the dynamics of the calculations, educate the board, and explain why things vary.

Nancy Greene, The Bolles School

Working Session

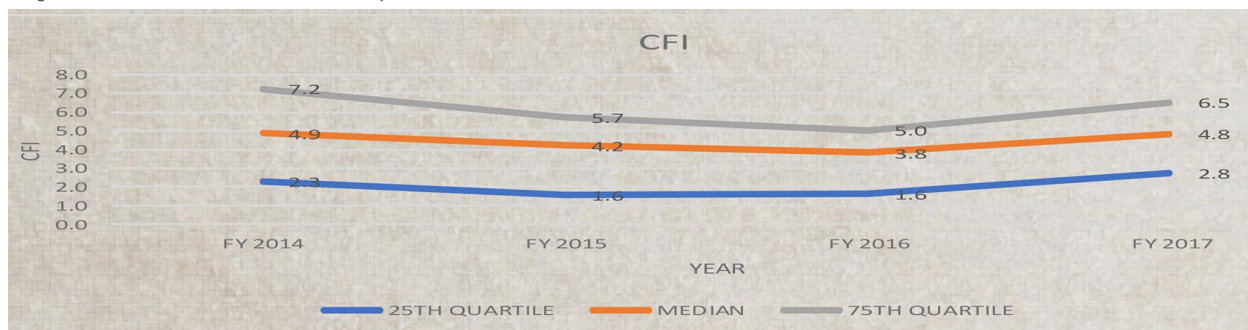
All seminar participants were given a package containing the CFI, ratio computations and ratio trend charts for their institutions. Participants formed pairs and engaged in a role-playing exercise in which they practiced explaining their CFI and ratio information.

Of the 53 schools that were analyzed, 16 had interest rate swaps, seven had no debt and one had a significant post-retirement liability. The analyses showed that the group fell into three tiers:

- Very well-resourced schools
- Very under-resourced schools
- Those in the middle

Institutions must pay attention to the three legs of the “Enrollment Stool.” This means developing strategies for recruitment, retention and pricing.

Figure 19: CFI Scores for Seminar Participants’ Institutions



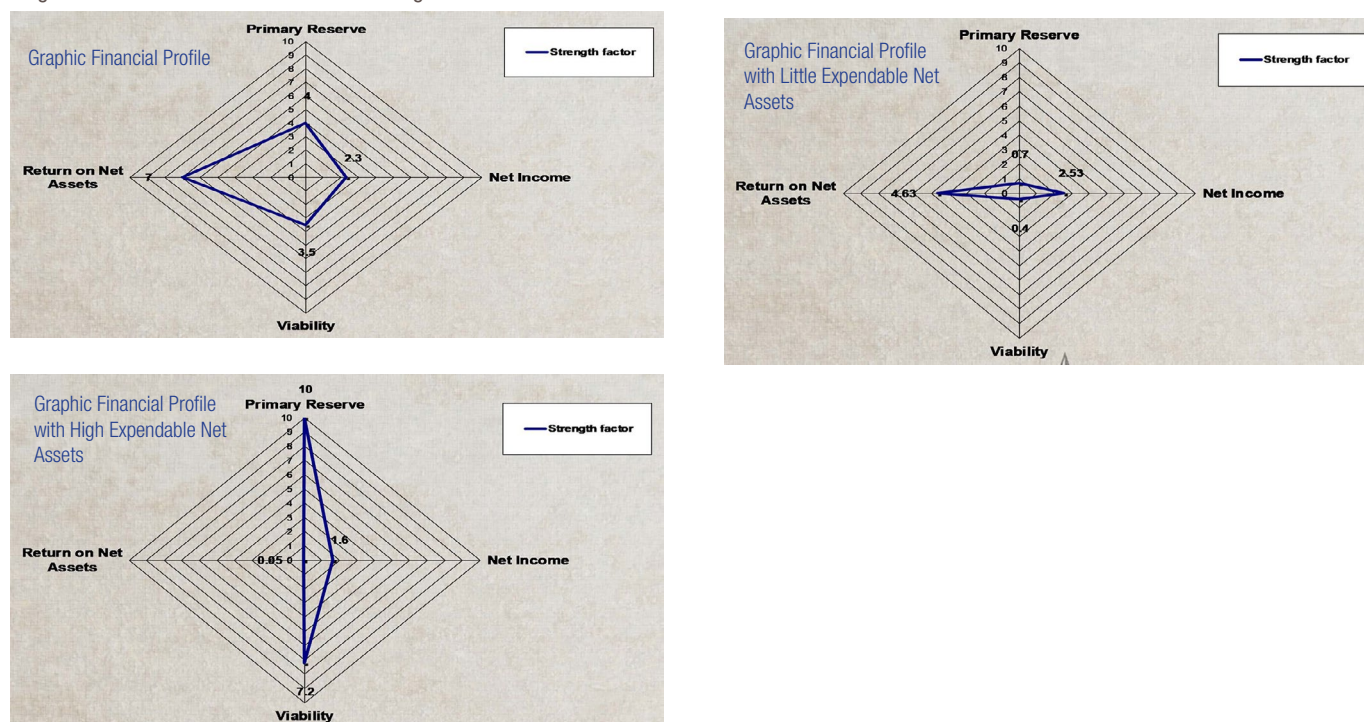
Phil Tahey reviewed common issues encountered when the schools’ analyses were performed:

- **Many institutions had re-statements.** Some had multiple restated financials and many were immaterial. Tahey recommended pushing back on auditors who suggest making immaterial re-statements.
- **Almost all CFI calculations were adjusted.** Most were related to debt balances for Viability Ratio and unrestricted revenues and gains for Net Operating Revenues Ratio.
- **Many schools had issues with plant-related TRNA.** Disclosures must include the nature and purpose. Only disclosing that it is a pledge is inadequate.
- **Swings in CFI may be due to various reasons.** These include changes in investment return, low Expendable Net Assets balances which result in a greater effect from performance ratios on CFI variances, or lack of an Operating Indicator which results in more gains and losses in the Net Operating Revenues Ratio.
- **Schools with no debt must make adjustments to the CFI calculation process.** The SFA suggests reweighting the remaining ratios, but this may give a nonsensical answer when debt is fully paid off since the CFI most likely will decrease. An alternative approach is to assign a score of 3.50 to the Viability Ratio, since that may be the score before debt was fully repaid. However, that will overstate CFI for schools with low Expendable Net Assets. The best solution is a range between the Maximum Viability Score approach and the Reweighting approach. One caveat is that schools with low Expendable Net Assets (lower than 0.4) should use the Reweighting approach. They may not be able to borrow funds due to the inability to repay.
- **Age of Plant is a critical issue.** Age of Plant is a simple estimation of plant assets age. Divide depreciation expense into the accumulated depreciation.

Phil Tahey offered recommendations for communicating CFI information effectively:

- **Present the CFI, consistently applied.** Consider showing a series of years, such as three to five years back and five years forward.
- **Concise explanations of events are critical to keeping the board and senior leadership engaged.** Keep discussions about the causes of changes to core ratios and CFI concise. Report sources and restrictions on expendable net assets.
- **Incorporate CFI into multi-year budget projections.** On forward-looking data, provide sensitivity analysis to create options and identify risks.
- **Radar charts can be a useful way to present information in a graphical format.** These charts create a visual representation of an organization's strength for the Primary Reserve, Viability, Net Income and Return on Net Assets ratios. The "shape" of the chart can reveal characteristics about the institution, as shown in the examples below.

Figure 20: Radar Charts with CFI Ratio Strength Data



Where to Go from Here?

With the CFI framework, Phil Tahey recommended that institutions explore several "next steps" including:

- Projecting CFI into the future using three to five-year budgets.
- Generating tolerable error ranges in budgets.
- Analyzing liquidity at struggling schools.
- Investigating leverage and debt.
- Clarifying the business model and basic strategy.

Enrollment projections are the key to everything else. It is essential to analyze enrollment and capacity by program. The goal is to identify net margin by program.



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