

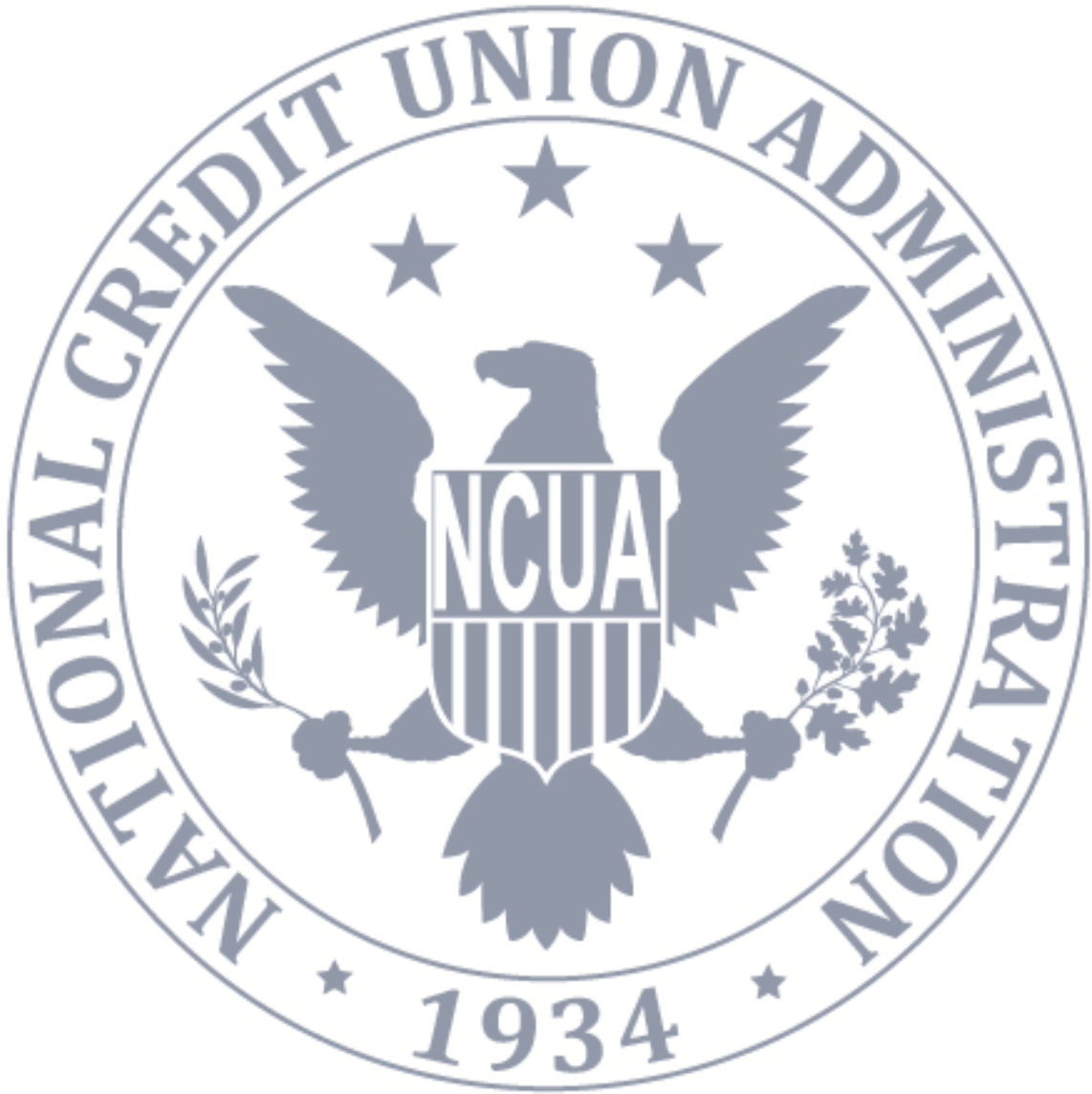


NCUA
National Credit Union Administration

Range of Practice – Capital Planning and Analysis

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Executive Summary

In 2014, the NCUA Board approved Part 702, Subpart E – Capital Planning and Stress Testing (the rule), for credit unions with total assets of \$10 billion or more. After each annual capital planning and stress testing cycle, the Office of National Examinations and Supervision (ONES) publishes a range of practice (ROP) paper identifying leading and lagging practices observed through its review of capital plans. The ROP document enhances transparency and supports the iterative improvement of credit union capital planning.

In October 2021, the NCUA released [*Updated Principles of Capital Planning*](#) to complement the NCUA’s original guidance [*Principles of Capital Policy and Planning*](#). The enhanced guidance memorialized many of the capital planning practices observed before the COVID-19 pandemic. The ROP documents from 2015 to 2019 contain examples of credit union practices represented in the *Updated Principles of Capital Planning*.

The unprecedented economic stress and uncertainty arising from the COVID-19 pandemic provided credit unions and the NCUA a unique opportunity to invoke and evaluate the strength and usefulness of covered credit union capital planning and assessment practices. Accordingly, this year’s ROP document carries forward the 2020 special edition focus on capital planning and assessment tools to respond to the pandemic and related economic disruptions.

Similar to all past NCUA guidance and white papers related to capital planning, we arranged observations in this paper in alignment with the NCUA’s core principles of capital planning:

- Sound risk management fundamentals,
- Effective capital policy and governance, and
- Comprehensive capital planning and analysis.



Sound Risk Management Fundamentals

As detailed in prior years' ROP analyses, a foundational risk management framework and practices are fundamental to support sound capital planning and analysis. Specifically, the external economic and operational stresses associated with the pandemic elevated the importance of model risk management and timely risk identification as crucial risk management fundamentals supporting and informing capital analysis during the last two years.

Model Risk Management

The existence and use of a sound model risk management (MRM) framework supporting capital analysis has been the standout risk oversight activity during the pandemic capital planning cycles. The uncertainty and severity of pandemic circumstances continue to create unique challenges for financial models and capital analysis techniques, which deserve the attention of both front-line model developers/owners as well as independent second-line model reviewers. Two areas of MRM oversight continue to require additional attention due to pandemic:

- Re-evaluation of model conceptual design and development data
- Review and critical challenge of model approaches and performance

Economic conditions at the outset of the pandemic produced employment-related economic variables outside the span of historical data used to develop credit loss and capital adequacy models. Active and involved MRM functions assessed model suitability given current variable inputs and projected variable values used in forward-looking risk assessments. These functions were more transparent in their evaluations and communications regarding model suitability under the circumstances and effectively identified or approved approaches to mitigate heightened model risk in capital analysis.

All credit unions in the analyses applied some form of management overlays to model output during the pandemic. Leading MRM functions assessed the suitability and application of management overlays and provided an unfettered critical challenge to the approaches to mitigate pandemic-related model risk. Leading functions also conducted an enhanced sensitivity and model performance analysis to understand where model outcomes may have demonstrated significant volatility and sensitivity to historically unprecedented economic conditions and governmental and institutional responses initiated during the pandemic. Sound MRM functions continuously assessed, challenged, and opined on the sensitivity analysis to mitigate model risk and enhance transparency to capital plan stakeholders.

Lagging MRM functions provided less oversight, independent critical challenge, and guidance to pandemic-related model use and capital assessment. In some cases, MRM did not



assess model suitability or heightened model risk due to data outside the bounds of developmental data sets. These observations of lagging practice demonstrate less suitable model risk identification and support to produce sound and conservative capital assessment and planning.

Risk Identification and Assessment

Active risk identification and assessment is another enterprise function that supports sound pandemic capital assessment. Leading risk identification functions maintained current quantitative or qualitative risk assessments in the rapidly changing pandemic environment. Sound capital planning frameworks used these updated risk assessments to identify needs for contemporaneous capital management and trigger-refreshed capital assessments. Another strong practice is the use of non-traditional indicators of risk. Non-traditional indicators included looking for previously unseen correlations between environmental factors and member behaviors, which further informed growth, origination, and loss forecasts used in the capital assessment. This also includes seeking new data sources or data elements to forecast risk under adverse conditions. During the pandemic, risk positions evolved in ways not seen in the past decade. Exploring for risk indicators to better understand how risks changed during the pandemic may lead to more robust forward-looking risk assessments.

Most enterprise risk functions have reassessed risk multiple times each year since the pandemic. As the severity with which the pandemic progressed throughout the year, leading credit unions continually reassessed both financial and operational risk indicators and updated risk assessments as well as strategic and capital plans. This more systematic and proactive approach to re-assessment aligns with the requirement of §702.503(b)(8) of the rule. This section of the rule requires credit unions to update capital plans with changes in market conditions, risk exposures, and industry practices.

From the outset of the NCUA's capital planning experience, the development and implementation of capital planning frameworks have outpaced other enterprise functions. For example, at most credit unions, MRM is limited to validation exercises of a small set of financial risk models, usually an asset-liability management model. Credit unions typically implement more encompassing MRM functions to develop capital planning frameworks, and MRM initially supports capital analysis models. The NCUA observes the same pattern with other enterprise functions such as data governance.

This pattern of incremental development and implementation fits the NCUA's approach of iterative, continuous improvement. The process enables credit unions to develop and try out enterprise functions suitable for their size and complexity and then implement them throughout the organization. Newly developed enterprise functions reach maturity at leading credit unions once the role operates with a gap assessment and remediation process to keep the function updated. The lagging practice is to approach the development and implementation of enterprise functions as a one-time event driven by a regulatory



requirement. As a credit union's size, complexity, and financial condition change, enterprise functions, and the organizational culture supporting them, need to expand and maintain agility to remain effective.

Effective Capital Policies and Governance

Credit unions with well-established governance structures and risk cultures responded more immediately and effectively to the pandemic-related uncertainties. In addition, cultures stressing the importance of critical challenge and transparency demonstrated sound approaches to capital re-assessment, which affected the timely re-evaluation of strategic plans and capital contingency actions.

Forward-Looking Policy

Leading credit unions had established capital policies with forward-looking and actionable triggers enabling rapid response to pandemic conditions. For example, leading credit union policies required the board and management to invoke contingency actions given specific environmental changes or forward-looking capital analysis results produced by management. This proactive approach limited capital sensitivity to risk and, in some cases, established additional capital buffers to account for the ongoing uncertainty caused by the pandemic and associated public policy response.

Conversely, credit union policies relying on balance sheet positions to trigger capital actions required by policy reacted more slowly to pandemic conditions. This reactive policy approach left credit unions more vulnerable at the onset of the pandemic and diminished the value of forward-looking analysis.

Culture and Critical Challenge

As noted above, critical review and challenge of policies, models, techniques, and results are essential elements of sound governance and risk management fundamentals supporting the capital assessment and planning process. A governance culture, which fosters independent critical challenge:

- Improves the reliability of analysis results,
- Aids in an understanding of analytical limitations,
- Identifies areas for improvement in the capital analysis framework, and
- Ensures the use of results is consistent with the framework's objectives.

Such reviews should provide coverage of all aspects of the capital analysis framework and ensure regular maintenance and updates of the structure.



The pandemic provided a unique opportunity to observe the strength, consistency, and efficiency of the critical challenge of capital and strategic forecasts. The pandemic presented real-time economic and organizational stresses requiring re-assessment and revision to capital assessment techniques, estimates, and contingency actions. The ability of a credit union's governance framework to efficiently oversee and foster credible challenges of these revisions serves to strengthen the conservatism and transparency of the capital assessment process.

Credit unions have used various approaches in establishing governing frameworks over capital planning to support critical challenges. Some institutions developed independent risk management departments overseeing the development and use of the capital analysis, while others do this through a committee-based process. Our review of pandemic-related capital assessments found that cultures open to challenge and transparency consistently applied beneficial questioning regardless of the organizational chart. Cultures open to challenge and transparency promote ownership and accountability throughout the capital planning framework and demonstrate more diverse, effective, and transparent critical review. Lagging credit unions rely on layered hierarchal vetting and approval structures which often results in more narrowly focused capital planning discussions.

Lapses in Governance

The pandemic also put credit union governance practices to the test. The economic and business environment in 2020 and 2021 included a lot of uncertainty and conditions not seen since the NCUA implemented capital planning and stress testing. Under these circumstances, many credit unions breached policy limits. As a result, the NCUA observed instances of compromised governance, mainly policy breaches within capital adequacy assessments.

All credit unions use scenario analysis to assess capital adequacy. Scenario analysis projects expected losses over the testing horizon with quarterly and cumulative results reported. As capital protects against unexpected losses, sound governance requires the credit union to address the anticipated breach. Good governance frameworks proactively acknowledged limit breaches with supplemental analysis, action plans when merited, and follow-up reporting. However, NCUA frequently observes credit unions merely recognizing the expected breach and listing actions management may take when an actual breach occurs. This practice results in a reactive position when circumstances become a reality. In response to capital dilution caused by unexpected growth, some credit union boards responded by reducing limits without first considering ways to manage or mitigate capital at risk. This reactive response to risks outside of the credit union's control is contrary to forward-looking risk management and conservative capital management.

Emerging Practices



During the pandemic, the NCUA observed a couple of emerging capital policy practices. One observation is that more credit unions established ranges for capital adequacy within policy and set policy or management targets within the span. This change appears to be a natural evolution from the board’s practice of setting capital policy limits and management setting more conservative “management limits” for day-to-day use.

The practice of setting a capital range and the target has several benefits:

- It promotes conservative capital management, acknowledging the need to build capital during good times to buffer eventual losses.
- It increases accountability for and transparency to credit union capital adequacy.

For example, the credit union can build capital within the range during good business conditions in anticipation of capital depletion when conditions deteriorate. Similarly, analysis and reporting on actual capital variance to the target can help the credit union understand current capital accumulation, depletion, and dilution trends. Credit unions monitoring these trends during the pandemic produced concise reporting and implemented timely business and strategic changes.

Another emerging policy practice observed by the NCUA is the segmentation of capital and attribution of changes in capital to one or more segments. This practice promotes proactive capital management and enhances transparency.

Below are two stylized examples of capital segmentation.

Capital %	Example 1: Risk Segments	Example 2: Purpose Segments
8%	Board Minimum	Core Capital
1%	Credit Risk	Strategic Buffer
1%	Strategic Risk	New Business Buffer
1%	New Business	Environmental Buffer
11%	Capital Target	

The first example takes a more traditional approach to capital adequacy. First, the board sets a minimum capital amount and adds risk-based layers to determine a capital target. The second example uses an alternate approach beginning with a core amount of capital representing the board’s risk appetite and current balance sheet positions, then adds buffers for categorized uncertainties.

Comprehensive Capital Analysis



A sound capital analysis is a crucial component of the capital planning process and is a critical element of risk management for credit unions. The capital analysis informs the board and senior management of the credit union's viability through uncertain times, helps establish enterprise risk appetites and associated risk limits, and provides an opportunity to assess strategic and business decisions on a forward-looking basis.

The fundamentals of capital analysis below are not new for credit unions. However, in this paper, we are detailing the specific application of certain principles of sound capital analysis in terms of strength of practice observed when applied against the backdrop of adverse operating conditions and uncertainty arising out of the pandemic. We acknowledge credit unions may approach and apply the principles in different ways, depending on the unique circumstances of each credit union as it responds to the immediate and sustained stress induced by the pandemic.

Specific fundamentals of sound capital analysis and the strength with which credit unions deployed them in the face of the pandemic-related stress are as follows:

- Scenario Design and Variable Selection
- Conservatism and Transparency of Approaches, Assumptions, and Estimates
- Model Performance and Sensitivity Testing
- Integration and Use of the Analysis in Ongoing Risk Management and Strategic Planning

Scenario Design and Variable Selection

The COVID-19 pandemic emerged as a nationwide threat that elicited varying degrees of governmental response and personal behaviors. As a result, there is a large degree of uncertainty about how the pandemic response and corresponding economic fallout will unfold. Credit unions will need to be responsive as national policy and economic responses to the pandemic continue to evolve. At the same time, the regional and local impact affecting credit unions may be more or less pronounced. All credit unions generally relied upon pandemic-related scenarios developed by outside parties. Many credit unions used these scenarios to augment previously produced capital analysis and compare the output to limits. Credit unions with solid capital analysis practices also incorporated regional or local adjustments to the pandemic scenarios relevant to their unique circumstance to gain more insight into potential outcomes. Another leading approach was enhanced sensitivity analysis to broaden strategic foresight due to unprecedented actions and uncertainties embedded within the scenarios.

The component limiting utility of idiosyncratic scenarios is the magnitude of stressful events. Some scenarios do not apply enough stress to illustrate the exposure's potential impact on capital, while others apply an extreme change, which some stakeholders consider unrealistic. For example, a credit union uses the home price index (HPI) as a scenario analysis variable.



If a credit union applies a 10 percent HPI decline during normal conditions when HPI has been increasing 5 percent a year for several years, the impact on capital may not be sufficient to demonstrate potential capital at risk to HPI. Alternatively, if a credit union applies a 20 percent HPI decline immediately after experiencing a 50 percent HPI decline in the marketplace, the scenario may be perceived as too extreme and unrealistic. Each of these weaknesses impairs the credibility of capital analysis and limits use within the credit union. The ideal magnitude of scenario stress may vary based on credit union circumstances. Ideally, the scenario will apply sufficient stress resulting in plausible capital loss and be supplemented by sensitivity testing and reverse stress testing to further inform stakeholders of the potential range of loss for the credit unions' unique risk exposures.

Conservatism and Transparency of Approaches, Assumptions, and Estimates

Due to elevated levels of uncertainty regarding the severity and duration of pandemic conditions, the conservatism of approaches used in producing capital analysis during the pandemic remains essential to understanding a broad array of potential outcomes. However, applying conservatism within capital analysis does not mean the credit union must take a “the sky is falling” approach. Instead, conservatism requires thorough and transparent vetting of data biases, analytical limitations, current and future reporting and consumer compliance policies, and the potential impact, availability, and unintended consequences of proposed mitigating actions.

Examples of frequently observed modeling and forecasting approaches lacking conservatism include:

- Loss forecasts not bifurcating the risk-mitigating impact of management and government intervention embedded within developmental data foundational to various credit loss model designs; and
- Credit unions estimating the mitigating impact of management and government intervention by using a model overlay without adequate explanation, transparency, and support.

The abundance of risk mitigation actions (past management actions and pandemic related public policy) embedded in model development data, and forecasting approaches led to residual risk perspectives for credit losses instead of an inherent risk perspective. As a result, credit loss estimates were counterintuitive in the cases observed compared to the severity of the economic stress applied. This was particularly evident when compared to prior year stress test and independent challenge model results. We also noted breakdowns in the challenge of counterintuitive results as these results were not sufficiently vetted and questioned by internal reviewers of the model or by the reviews of the results of the capital analysis.



Conversely, leading approaches applied management intervention assumptions to capital analysis sparingly to ensure conservatism in the face of mounting uncertainty. Where adjustments were used, leading credit unions only applied overlays when specific circumstances could be identified and adequately supported. Further, leading approaches evaluated and presented the impact of the forecast results independent of any proposed intervention strategies. The risk-mitigating effect of governmental and management intervention strategies to assist members affected by the pandemic were then independently applied as adjustments or overlays to the model results. This approach provides users of the capital plan and assessment with both an inherent and residual risk perspective of capital adequacy and additional transparency on how estimates are derived. This approach also enhances the value and usefulness of capital analysis as an ongoing risk management and strategic planning tool. Presenting the inherent and residual risk perspectives in a bifurcated manner provides the board and other decision-makers with additional transparency into the loss forecasts utilized in the capital analysis. The bifurcated approach provides valuable information regarding the sensitivity of various loan types and characteristics to multiple stressors applied. Bifurcation also separately identifies the estimated loss mitigating impact of intervention and contingency available for consideration.

Model Performance and Sensitivity Testing

Most credit unions conduct model performance testing as part of initial model development before use in capital planning and analysis. In addition, leading credit union MRM policies require periodic model performance testing annually or at any time model variables and coefficients are changed or underlying developmental data sets are refreshed or expanded.

Given the unprecedented impact of and response to the pandemic, it is crucial to test the performance of models used for capital analysis. Leading credit unions utilized performance testing to identify anomalies in model outcomes due to actual variable values outside of data sets used for model development. Leading credit unions reviewed model output for unintuitive results and used existing governance frameworks to vet adjustments and overlays. Lagging credit unions merely used pandemic scenarios without adequate performance and back testing to understand the reasonableness of results.

Governance frameworks at leading credit unions produced transparent and well-supported analytics to capital planning decision-makers. Lagging credit unions conducted model performance testing within the front-line unit responsible for model use. The front-line recorded the testing results in model documents that did not go forward with the analysis. As a result, this approach impaired transparency and reasonable critical challenge of the results brought to independent reviewers and higher-level board committees using the information for decision-making purposes.

While all credit unions conduct and present some form of sensitivity analysis as part of their annual capital assessment and plan, again, the range of practices observed varied widely. In



selecting what type and degree of sensitivity analysis to conduct, MRM and capital planning committees in leading credit unions performed additional financial and model risk assessment to identify key model variables, coefficients, and economic variables to test. This practice assisted in isolating models and modeling variables and assumptions having the most impact on forecast estimates affecting capital assessments.

Lagging credit unions merely applied sensitivity testing as additional stress tests by varying certain stress variables, such as interest rate shocks or changes in unemployment rates used in the model. Other lagging approaches merely applied multipliers to forecasts without understanding the relative sensitivity of the results to the risk drivers. These approaches disregard aspects of the model's conceptual design, inputs and assumptions, and computational soundness that could break down when using the model for specific purposes.

Leading credit unions were also much more proactive in reviewing, interpreting, and using sensitivity analysis results to inform strategic financial forecasts and capital assessments. ONES observed lagging approaches where meaningful sensitivity analysis indicated significant limitations in the use of the model in the pandemic scenarios. Still, the results were not effectively vetted and communicated to users of the forecasts. The lack of transparency resulted in significant model limitations not being adequately expressed, vetted, or addressed, severely limiting the usefulness of the capital assessment completed. Conversely, leading credit unions utilized sensitivity analysis to better understand model risks and alternative outcomes in a very uncertain environment. Leading credit unions communicated a broad array of potential outcomes to decision-makers along with recommendations for the creation of various earnings and capital action triggers to invoke contingency responses and preserve capital if conditions worsened.

Integration and Use of the Analysis in Ongoing Risk Management and Strategic Planning

The pandemic provided NCUA unique insight into the maturity of credit unions' use of capital planning and analysis as a tool to inform ongoing strategic and risk management decisions.

A commonly observed lagging approach to capital assessment was to use scenario analysis, its deterministic path, and the resulting forecast to predict future capital. If a limit is breached, management reacts by documenting potential mitigating actions. The pandemic-related capital analysis incorporated into some 2020 capital plan submissions continued to demonstrate this reactive approach. This approach implies capital actions are merely stop-loss measures that do not align with forward-looking strategic planning and risk management. This reactive practice reduces the effective use of capital analysis as a risk management tool.

Conversely, leading approaches to capital planning provide strategic foresight. Scenario analysis and other techniques enable the consideration of adverse events and help frame a



range of potential outcomes. This proactive approach to scenario analysis helps identify inflection points before losses occur and the development of new triggers for action in response to degradation in actual performance and scenario-based forecasts. Additionally, insight gained by understanding the range of potential outcomes helps the board articulate risk appetite statements and set relevant policy limits. The proactive approach aligns well with the primary goal of capital planning being a forward-looking input to credit union strategic planning and risk management.

Many credit unions use capital planning frameworks and analysis tools to assess uncertainty and make business and strategic decisions. Credit unions that produce comprehensive and concise capital adequacy reporting make timelier and fewer corrections, resulting in more effective crisis management. Conversely, credit unions that do not comprehensively and concisely articulate capital adequacy assessments often struggle to formulate cohesive action plans and track mitigation activities.

For example, at the outset of the pandemic, a credit union using concise and comprehensive capital assessment reporting implemented cohesive business and strategic plans to address uncertainty and produced periodic reporting on mitigation results. On the other hand, capital adequacy reporting at many credit unions contained wide-ranging content requiring more significant collective effort to formulate cohesive plans and lacked timely reporting on the effectiveness of mitigation activities.

Conclusions

As the pandemic and associated governmental and institutional responses continue to play out, NCUA expects credit unions to continue utilizing and adapting their capital analysis and assessment practices. Credit unions should leverage core enterprise functions and oversight to ensure useful, conservative, and transparent capital stress testing and financial forecasting to inform ongoing strategic and risk management action plans. The principles and practices detailed in this whitepaper will assist credit unions in deploying progressively more useful capital assessment and planning activities moving forward.