ACTUARIAL RISK MANAGEMENT
Independent Member of the BDO Alliance USA

5914 W. Courtyard Drive, Suite 190
Austin, Texas 78730
Phone (512) 345-5200
Toll Free (866) 480-RISK (7475)
Fax (512) 346-1249
www.actrisk.com

PRIVATE & CONFIDENTIAL **DELIVERED VIA EMAIL**

DRAFT

December 30, 2015

James N. Hansen
CTO and Interim CFO
Longevity Capital Company
25260 SW Parkway Ave., Ste. G
Wilsonville, Oregon 97070-6627

RE: Preliminary Phase 1 Conclusions

Dear Mr. Hansen:

On November 17, 2015, Longevity Capital Company ("LongCap" or "Client") engaged Actuarial Risk Management, Ltd. ("ARM" or "we" or "us") to provide independent actuarial advisory services. This Letter addresses our *preliminary* findings resulting from our efforts to-date. These findings cover only Phase 1 of the multi-phased scope of service, detailed in the aforementioned engagement letter.

Background

Starting in 2014, the Client began the journey to design then sponsor a single life settlement-based debt securitization (hereafter the "Target Investment") that it hopes can be replicated for multiple such securitizations. Joining the Client has been a third party vendor, Life Settlements Financial, LLC ("LSF"), who under contract will perform various services, including the evaluation and due diligence of identifiable life settlement policies then management and valuation of those purchased life settlement assets serving as the collateral to the Target Investment. Since its formation almost a decade ago, LSF morphed into a multi-function company with the focus set around LSF's Longevity Cost Calculator ("LCC") - an underwriting tool used to assess and qualify the longevity risk exposure for a person completing a LCC questionnaire. The LCC is a rules-based algorithm, acquired by LSF in 2007, and built upon the original work of Mr. Eric Stallard and his study of mortality and morbidity trajectory for senior aged persons. Mr. Stallard's work has been well documented in various professional periodicals and not disputed under our review. One of the themes of Mr. Stallard's studies revolved around testing the hypothesis that a person's longevity was predictable using inquiries about a person's mobility and facilitative abilities. Under LSF's control, the LCC platform has seen refinements, including the setup of a web-based questionnaire, with an emphasis toward serving specific markets with heavy longevity risk exposures - reverse mortgages and life settlements – both economically influenced when persons live beyond expectation. LSF supplements the LCC with a comprehensive set of process flows and protocols that, collectively, work toward minimizing inconsistencies in the underwriting of the mortality risk, specifically found in life settlement policies. Under the LSF-Client contract, LSF will be bring its expertise, processes and the LCC tool to conduct: policy examination, accurately evaluate any fraud or insurable interest concerns, the aggregation of the portfolio of life settlement policies using underwriting criteria[1] defined to support the Target Investment. At this time, the Client is in the latter stages of the design phase.

[1] LSF developed underwriting criteria it hopes would meet or exceed the standard set forth in the white paper "Life Settlement Securitization, Best's Rating Methodology" from the A.M. Best Company, Inc., circa 2008/updated in 2014.

Preliminary Observations

As of the date of this letter, we reviewed a number of Client and LSF-supplied documents, conducted formal telephonic conversations with the Client's representatives and LSF's Mr. Peter Mazonas and Mr. Eric Ranson. At this juncture, we make the following observations:

(1) LSF's Processes – LSF has clearly worked over a number of years to transform the original Stallard work toward a platform suitable for supporting the life settlement market. The level of the LSF processes and procedures appears inclusive and well thought-out in order to apply consistent policy underwriting approaches. The rules-centric methodology and the LSF protocols include post-acquisition management, servicing and valuation. We note some similarities between the commercial life expectancy (LE) underwriters, like Fasano and TwentyFirst Services, and LSF's LCC; however, we clearly recognize the LSF platform is more comprehensive as it performs formal policy evaluations beyond the typical computation of a life expectancy. The commercial LE underwriters follow a debit/credit method that has underpinned the life insurance market for close to 100 years. LSF disconnects itself from the other LE underwriters as it follows a non-medical record evaluation path to formulate the grade of an insured's health, via its questionnaire of 76 inquiries, with the result being a Grade of Measurement (GoM) score after which accepted actuarial methods are used to derive a LE. The objective of this atypical underwriting approach is to identify, thus avoid, proverbial 'false positives', which we define as policies the commercial LE underwriters earmark with shorter life expectancies (based solely on a review of medical records) yet a GoM score indicates the insured's mobility and cognitive ability (assessed through the LCC process) implies a higher probability of lower mortality. On the flip-side, these same tools hope to identify policies where the medical records only suggest longer life expectancy while the LCC produces a grade of health with higher levels of mortality (i.e. shorter life expectancy).

(2) The LCC - The LCC undoubtedly is a sophisticated tool built upon a theoretical foundation to evaluate longevity risk. Based on our review, we see the merits that the LCC tool may provide a competitive advantage for assessing longevity risk in the life settlement space. However, we must note that while the LCC appears to have proven well for understanding (measuring) longevity risk of certain populations (from the Stallard studies), we must add caution that there is not complete reliance on the LCC until enough time has elapsed to gauge LCC's predictive power in the life settlement market. Just as in 'false positives', any simple extrapolation of the results found in one study group to that of another population could well be its Achilles' heel. Based on our conversations, it appears both the Client and LSF agree with this matter of fact which is why LSF continues to look for ways to enhance its protocols. These refinements include but not limited to: additional questions beyond the initial set of 76 to include the likes of wealth-related questions, their own review of the medical records, and the purchase of a LE from the commercial LE underwriters. The LCC, like any other LE underwriter, creates a vector of mortality rates then used to derive a life expectancy. The biggest difference is that the set of mortality rates produced by the LCC appear more tailored to like policies segregated as a result of the answers derived from the LCC questionnaire and the underpinning algorithm. This means the LCC produces a probability distribution, like other LE underwriters, to estimate the life expectancy – the point in time in which 50% of the cohort of like policies is expected to have died. We want to make it clear that the LCC, akin to the other commercial LE underwriters, is not offering the exact date that a specific insured shall die rather it is using the 'law-of-large numbers' concept to evaluate the statistical average date of death of a pool of like policies. The LCC approach is likened to the development of GoM-segregated mortality tables.

(3) LSF Valuation Methodology:

a. We concur with LSF's notion that the valuation of a life settlement is a Level 3 asset type[2] while also believing that US-GAAP allows for a valuator to reflect its own experience if it's supportable and credible. This latter point is furthered by stating that ARM agrees and accepts the LSF valuation plan to use a statistical Bayesian Inference method. In effect the Bayesian method automatically, over time, converging the mortality assumptions toward the LE underwriter (including LCC) who exhibits the highest precision. We note the LSF valuation assumes from the onset that the LCC's LE is on par with three outside commercial LE underwriter's life expectancy (i.e. equal weighting across the 4 underwriters). LSF anticipates that over a relatively short 24-36 months (from the acquisition of the portfolio supporting the Target Investment) the LCC will elevate to the more accurate "LE underwriter" (versus the other commercial LE underwriters) by shifting the weights toward the LCC. However, we do feel that such premonitions are more likely optimistic, even in light of our understanding of the anticipated portfolio size, with at least 5 years needing to elapse to determine the direction of the accuracy of a LE underwriter's prediction. Over time, this Bayesian method no doubt aids in compiling credible support that one LE underwriter is in fact better than another.

b. At this date, we have <u>not</u> completed our review of the valuation discount rate position taken by LSF and the Client. We will amend this letter at such time we complete this aspect of our review.

Preliminary Conclusions

We completed a major portion of the Phase 1 scope of service as of the date of this Letter. Even though there remain a few open Phase 1 items to review and detail, we can offer some sense of our findings as follows:

- The Client should benefit from its engagement of LSF for acquisition and management of the life settlement portfolio underpinning the Target Investment. The LSF staff, its protocols and the LCC underwriting tool appears to enable LSF to holistically perform the policy aggregation, policy underwriting, life expectancy estimation and the post-purchasing management roles all of which serves the Client well by creating some efficiencies and conceivably improve the life settlement portfolio performance.
- We applaud the use of supplementary data points and insight of an insured's health as opposed to the typical approaches taken by most life settlement participants, that being their sole reliance on the assessments from the commercial LE underwriters who clearly look at estimating the life expectancy by only reviewing the insured's, sometimes dated, medical records.
- In our opinion, the LCC approach befits a new century view versus the antiquated underwriting methods continuing to be used in today's life (settlement) insurance market. Assuming that LSF can garner an accurately completed LCC questionnaire in an efficient manner then accurately synthetize the data points, we believe the LCC's inclusion of activities of daily living (ADLs), cognitive functionalities and other factors along with traditional medical models could only enhance the LCC's life expectancy predictability prowess.

[2] FASB ASC §820.10 (superseding FAS 157 and 159) lays out the framework for the fair value hierarchy and prioritizes the inputs to valuation techniques. The measurement inputs (variables, assumptions, and methods used) are classified according to a three level hierarchy that distinguishes (1) readily observable inputs from (2) less readily observable inputs and (3) unobservable inputs (like the death of the insured), with the overall level of the measurement (Levels 1 through 3) determined by the lowest level (i.e., highest numbered) input.

- While we have yet to complete the review of all aspects of the valuation methodology, we do agree with the LSF planned approach to use the Bayesian Inference to converge mortality assumptions toward actual results.

In summary, LSF's comprehensive processes and underwriting standards (and the collective experience of their team) should aid the Client in consistently identifying more attractive risks to acquire (and possibly at opportunistic price points) and manage both of which could invariably improve the economic viability of the Target Investment.

Closing Remarks

Note that ARM has not performed any audit or reasonableness check of the material sent to us. The scope of service was completed by qualified actuaries: Corwin (Cory) Zass, ASA, MAAA, FCA, Lloyd Foster, FSA, MAAA [ARM Network senior actuarial consultant] and Brian Forman, FSA, MAAA; ARM's Managing Director, Harry Silverman, also contributed to the review.

NOTE: Our findings relating to the LCC <u>exclude</u> any inspection of the LCC algorithms rather are based on our interpretations of the supplied materials and our inquiries with the Client and LSF. Furthermore, we have not evaluated the derivation of the mortality rates produced from the LCC process. Our engagement letter does <u>not</u> include any phases in which ARM will deconstruct the LCC algorithms underpinning the formulation of the GoM scores or the LCC computed life expectancy from the LCC constructed set of mortality rates. We note that in a subsequent phase, ARM will review the developed underwriting criteria to assess the likelihood the policy characteristics could reasonably underpin the Target Investment. This phase has not begun as of the date of this Letter.

We refer to the Appendix that covers our Standards of Practice, Distribution and Use, Disclaimers, Limitations and Caveats. Actuarial Risk Management makes no representation or warranty to the accuracy of the information received from any third parties. The opinions expressed and conclusions reached by the authors in this Letter are their own and do not represent any official position or opinion of BDO or BDO member firms.

Please contact us if you have any questions on this letter.

Best Regards,

Corwin Zass
Principal & Consulting Actuary

Copy to: Harry Silverman, Lloyd Foster

APPENDIX

STANDARDS OF PRACTICE

This review was conducted in a manner consistent with the Code of Professional Conduct and the Qualification Standards of the American Academy of Actuaries and the Standards of Practice adopted by the Actuarial Standards Board.

DISTRIBUTION AND USE

This Letter is intended solely for the use of Actuarial Risk Management Ltd., and the Client. With the exception of the Client and its authorized representatives, any further distribution is prohibited without the prior written consent of Actuarial Risk Management Ltd. Distribution of this Letter must be in its entirety, including any Appendices.

This Letter may contain certain nonpublic information, and, accordingly, recipients shall treat this Letter, and any nonpublic information made available hereunder, as confidential.

DISCLAIMERS

Statements contained in this Letter that are prefaced with the words “may”, “will”, “expect”, “anticipate”, “continue”, “estimate”, “project”, “forecast”, “intend”, “designed” and similar expressions, are intended as forward-looking statements regarding events, conditions and financial trends that may affect the Client’s future plans of operations, business strategy, results of operations and financial position. Further, any forward-looking statement speaks only as of the date on which such statement is made, and ARM undertakes no obligation to update any forward-looking statement to reflect events or circumstances after the date on which such statement is made. As it is not possible to predict every new factor that may emerge, forward-looking statements should not be relied upon as a prediction of actual future financial condition or results. These forward-looking statements, like any forward-looking statements, involve risks and uncertainties that could cause actual results to differ materially from those projected or anticipated.

Nothing included in this Letter is to be included in any filing with the Securities and Exchange Commission.

LIMITATIONS AND CAVEATS

The validity of the comments and conclusions discussed herein of this Letter were made as part of completing this engagement and thus depends on the accuracy of the data and representations given by the data sources. In the event that the information provided to ARM is <u>not</u> correct, the results of our review might change from that outlined herein of this Letter.

This Letter may contain some information, as obtained by ARM from the Client or its representatives, authorized or not, in which ARM makes no representation or warranty, expressed or implied, as to the accuracy or completeness of such information.

Any reader of this Letter must possess a substantial level of expertise in areas relevant to this analysis to appreciate the significance of the observations found herein.