Address: 1209 Orange Street, Wilmington, DE 19801

#### **Actuarial Memorandum for the LTC2 Comprehensive Product**

#### September 2017

Product or Rider
Long Term Care
Annual 5% Benefit Inflation Rider
Cost of Living (CPI) Benefit Rider

Form Number
H-LTC2J-30, et al.
H-5IR-1
H-CPIR-1

These policy forms are individual policy forms providing comprehensive long term care coverage. These forms were issued in Maryland from August 1990 through November 1994.

#### 1. Purpose of Filing

This actuarial memorandum has been prepared for the purpose of documenting the rates and demonstrating that the anticipated loss ratio of this product with those rates meets the minimum requirements in the statutes of Maryland. It may not be suitable for other purposes.

#### 2. Description of Benefits

These are individually underwritten policies which pay a daily benefit for nursing facilities, home health, adult day care, and respite care.

Reduced Benefit option pays 80% of expenses up to 50% of the daily benefit amount for Nursing Facility Care. Standard Benefit option pays 80% of expenses up to 100% of the daily benefit amount for Nursing Facility Care.

Elimination periods are generally 20, 60, and 100 days. In some states, a 365 day elimination period also exists. The elimination period applies to all types of care except respite care. The elimination period will start over if 6 months or more elapse without a covered expense.

Benefit periods are 3 years, 5 years, and unlimited. Benefit eligibility is defined as not being able to perform at least two of five ADLs (dressing, eating, toileting, transferring, and continence) or cognitive impairment.

Any uses of the benefits are accumulated toward this maximum. The most the company will pay for all services received on one day will be the daily benefit amount.

A 5% compound (either "to age 86" or "for life", depending on the state of issue) and a cost of living (CPI) inflation rider are available options.

#### 3. Renewability

These policy forms are guaranteed renewable for life.

#### 4. Applicability

This filing is applicable to in-force policies only as these policy forms are no longer being sold in the market. The premium changes will apply to the base form and all riders associated with the base form.

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#### 5. Actuarial Assumptions

a. Morbidity. In 2015 Genworth long-term care (LTC) actuaries undertook a project to develop a completely new and up-to-date set of claim costs to be used for this block of business. Genworth is the administrator and a reinsurer for these policies. The claim costs were derived from Genworth's 2014 best estimate morbidity assumptions used for older blocks of Genworth LTC business that correlate to the Brighthouse policy forms.

The Genworth best estimate claim cost assumptions were developed from first principles, using incidence rates, continuance rates, and utilization factors. These rates and factors were individually developed based upon experience from inception to fourth quarter of 2013. Incidence rates were developed by product, gender, attained age, and policy duration. Utilization factors were developed by product, situs, benefit inflation option, benefit period, claim age, diagnosis, and claim duration. Continuance was developed by situs, gender, claim age, and benefit period. The incidence rates, continuance, and utilization factors were then combined together to develop total life claim cost factors which can be applied to life years of LTC exposure adjusted for daily benefit amounts.

The Genworth LTC actuaries then customized the Genworth morbidity assumption for use with the Brighthouse policy forms based on the actual emerging experience of the Brighthouse policy forms. These claim costs provided by Genworth were used as the basis for the morbidity assumption in this filing.

The company reviewed emerging experience in 2016 and determined that no changes were needed to the morbidity assumption developed in 2015.

A cumulative 0.6% increase in morbidity is assumed due to adverse selection from the rate increase.

 Termination Rates. Historical termination rates are based on actual experience of these policy forms.

Future voluntary lapse rates vary by duration as developed from actual experience through December 31, 2015, including runout through June 30, 2016, and are shown in the following table:

**Voluntary Lapse Rates** 

Policy Duration	Lapse Rate
1	6.0%
2	4.0%
3	2.5%
4	1.5%
5	1.3%
6	1.1%
7	1.0%
8+	0.8%

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A benefit exhaustion rate assumption, varying by benefit period, is applied to policies with non-lifetime benefit periods additively in conjunction with the lapse assumption. Policies with benefit periods less than 4 years have been mapped to the 3-year benefit period assumption while all other non-lifetime policies have been mapped to the 5-year benefit period assumption. The benefit exhaustion assumption is not applicable to policies with a lifetime benefit period. Benefit exhaustion rates were developed from actual experience through December 31, 2015, including runout through June 30, 2016, and are shown in the following table:

#### **Assumed Benefit Exhaustion Rates**

Attained	3-year Assumed	5-year Assumed	Attained	3-year Assumed	5-year Assumed
Age	Rates	Rates	Age	Rates	Rates
< 67	0.000%	0.000%	84	0.912%	0.667%
67	0.013%	0.006%	85	1.109%	0.806%
68	0.016%	0.008%	86	1.346%	0.971%
69	0.020%	0.010%	87	1.632%	1.168%
70	0.025%	0.013%	88	1.980%	1.405%
71	0.031%	0.016%	89	2.405%	1.684%
72	0.039%	0.021%	90	2.928%	2.013%
73	0.049%	0.026%	91	3.533%	2.394%
74	0.062%	0.033%	92	4.221%	2.835%
75	0.077%	0.042%	93	4.996%	3.336%
76	0.097%	0.053%	94	5.859%	3.909%
77	0.123%	0.069%	95	6.814%	4.552%
78	0.199%	0.131%	96	7.862%	5.287%
79	0.282%	0.198%	97	9.003%	6.107%
80	0.376%	0.272%	98	10.202%	6.999%
81	0.482%	0.353%	99	11.503%	8.001%
82	0.603%	0.444%	100	12.907%	9.134%
83	0.745%	0.547%	101+	12.907%	9.134%

In the year of rate increase implementation, an additional 1.0% of in-force policyholders are assumed to lapse, and a 1.5% reduction in premium and claims is expected due to the election of reduced benefits.

Future mortality is based on 1983 IAM with selection factors consistent with experience through December 31, 2015, including runout through June 30, 2016, and shown in the following table:

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**Mortality Selection Factors** 

Policy Duration	Factor
1	30%
2	45%
3	51%
4	55%
5	59%
6	63%
7	66%
8	68%
9	69%
10	70%
11	71%
12	72%
13	73%
14	75%
15	77%
16	80%
17	84%
18	88%
19	91%
20	94%
21	96%
22	98%
23	100%
24	101%
25+	102%

c. <u>Expenses</u>. Expenses have not been explicitly projected. It is assumed that the originally filed expense assumptions remain appropriate.

The above assumptions are based on actual experience of the policies in-force under these policy forms and general experience of the reinsurer and are deemed reasonable for these particular policies. Exhibit I provides justification for the assumptions used in this filing.

Exhibit II provides an analysis of actual and projected nationwide experience with respect to changes in morbidity, mortality, lapse, and interest and how changing each assumption from original pricing to current impacts the projected lifetime loss ratio. Please note that Exhibit II uses total terminations (mortality and lapse combined) as mortality and lapse were not differentiated in the original pricing assumptions.

Exhibit III provides a comparison of the current and original pricing assumptions used to project the values in Exhibit II.

#### 6. Marketing Method

These policy forms were marketed by agents as well as through various subsidiaries of Citigroup.

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#### 7. Underwriting Description

These policy forms were fully underwritten with the use of various underwriting tools in addition to the application, which may have included medical records, an attending physician's statement, telephone interview and/or face-to-face assessment.

#### 8. Premiums

Premiums are unisex, level and payable for life. The premiums vary by issue age, elimination period, benefit period, initial daily benefit, level of community-based care benefits and inflation protection option.

#### 9. Issue Age Range

Elimination periods of 20, 60, 100, and in some states 365 days are available for issue ages 18 to 79. Only the 60 and 100 day elimination periods of the 3-year benefit period are available for issue ages 80 through 84.

#### 10. Area Factors

Area factors are not used for this product.

#### 11. Premium Modalization Rules

The following modal factors and nationwide percent distributions (based on in-force count as of 12/31/2016) are applied to the annual premium (AP):

Premium Mode	Modal Factors	Percent Distribution
Annual	1.00*AP	44.9%
Semi-Annual	0.51*AP	17.0%
Quarterly	0.26*AP	11.8%
Monthly	0.09*AP	26.3%

#### 12. Reserves

Active life reserves have not been used in this rate increase analysis. Claim reserves as of December 31, 2016 have been discounted to the incurred date of each respective claim and included in historical incurred claims. Incurred but not reported balances as of December 31, 2016 have been allocated to a calendar year of incurred and included in historic incurred claims.

#### 13. Trend Assumptions

As this is not medical insurance, we have not included any explicit medical cost trends in the projections.

#### 14. Past and Future Policy Experience

Nationwide experience for these policy forms is shown in Exhibit IV. The experience and projections in Exhibit IV have been restated to reflect the rate level approved in Maryland on a nationwide basis as described in Section 16. Maryland-specific experience for these policy forms is shown in Exhibit V.

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The company has chosen a credibility standard of a 90% confidence interval for the number of claims with an error of plus or minus 5%. Based on these parameters, 1,082 claims (over the entire historical period) is the criterion for full credibility. Using this standard, the nationwide experience provided with this filing is 100.0% credible; whereas Maryland-specific experience is only 45.4% credible. The credibility percentages shown in the following table are determined as (Number of Claims / 1,082)<sup>1/2</sup>.

Experience	Claim Count	Credibility
Maryland	223	45.4%
Nationwide	14,474	100.0%

Maryland-specific experience for the above-referenced forms is not considered fully credible, but is being provided as generally requested by the Administration.

Historical experience is shown by claim incurral year with the loss ratio for each loss year calculated by the following formula:

$$LR_{j} = \frac{\sum_{t=j}^{2016} Pmt_{t}^{j} * v^{t-j} + {}_{j}CR_{2016} * v^{2016-j+1/2} + {}_{j}IBNR_{2016} * v^{2016-j+1/2}}{EP_{j}}$$

 $LR_i = loss ratio for year j$ 

 $Pmt_{t}^{j}$  = claim payments in year t on claims incurred in year j, assumed to occur mid-year

 $_{j}$   $CR_{2016}$  = open claim reserve held on December 31, 2016 for claims incurred in year j

 $_{j}$   $IBNR_{2016}$  = incurred but not reported reserve as of December 31, 2016 attributable to claims

 $EP_{i}$  = earned premium in year j, assumed mid-year

incurred in year j

j = year of incurral

V= 1 / 1.045 = 0.956938

A future annual loss ratio is calculated, with and without interest, as anticipated incurred claims divided by earned premiums.

A lifetime loss ratio as of 12/31/2016 is calculated as the sum of accumulated past and discounted future claims divided by the sum of accumulated past and discounted future earned premium. Historical values are accumulated with interest using an interest rate of 4.5% from inception through 2014 and 4.0% for 2015 and 2016. Future values are discounted using an interest rate of 4.0%.

#### 15. Projected Earned Premiums and Incurred Claims

Exhibits IV and V contain lifetime projections of earned premium and incurred claims based on the current premiums and the filed premium rate schedule increase. Earned premiums and incurred

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claims for projection years 2017 through 2056 are developed from an asset share model representing actual contracts in-force as of December 31, 2016. The assumptions described above for morbidity, voluntary lapse and mortality are used to project life years, earned premiums and incurred claims. The projections reflecting the rate increase assume that the increase is effective on each policy's first anniversary on or after January 1, 2018, but no sooner than 12 months after the prior rate increase was effective.

A large and complex Excel-based and Access-integrated model was used to project the earned premium, incurred claim, and end of year life values. A description of how the model works to project these values on a seriatim basis is provided in Exhibit VI.

Enclosed with this actuarial memorandum is an Excel workbook of Exhibits IV and V. This workbook contains formulas for the projected earned premium, incurred claims, and life years using illustrative factors, which are retained in this workbook.

#### 16. History of Previous Rate Revisions

Five prior rate increases have been approved and implemented on these policy forms and associated riders. A 20.0% increase was approved on August 19, 2004 and implemented on each contract's next billing anniversary beginning December 4, 2004. A 15.0% increase was approved on October 12, 2010 and implemented on each contract's next billing anniversary beginning February 1, 2011. A 15.0% increase was approved on February 4, 2014 and implemented on each contract's next billing anniversary beginning September 27, 2014. A 15.0% increase was approved on June 16, 2015 and implemented on each contract's next billing anniversary beginning October 3, 2015. A 15.0% increase was approved on November 9, 2016 and implemented on each contract's next billing anniversary beginning February 4, 2017.

The experience and projections in Exhibit IV have been restated to reflect the rate level approved in Maryland on a nationwide basis. The restated nationwide projections assume the previously approved rate increases in Maryland were implemented on each policy's first anniversary on or after the effective dates of the prior rate increases in Maryland.

Exhibit VII provides a nationwide status listing of the current and all prior rate increase filings for each jurisdiction in which these policy forms are in force.

#### 17. Requested Rate Increase and Demonstration of Satisfaction of Loss Ratio Requirements

Emerging experience continues to show the need for significant rate relief. The company is requesting a premium rate increase of 15.0% at this time. Even though the company believes a larger increase is needed to alleviate the poor performance on this block of business, it is limiting the increase to 15.0% to comply with COMAR 31.14.01.04(5).

The company is seeking approximately equal cumulative premium rate increases across all jurisdictions (except where limited by regulatory restrictions) and as such, is requesting a 21.0% increase in all jurisdictions plus the difference between past requests and prior approvals in each jurisdiction.

As mentioned above, the rate increase request is limited to 15.0% in Maryland in order to comply with COMAR 31.14.01.04(5). Absent this restriction, the company would be requesting a 53.3% rate increase in Maryland at this time. Exhibit VIII shows projected nationwide experience with a 53.3% rate increase. Similar to Exhibit IV, the experience and projections in Exhibit VIII have been restated to reflect the rate level approved in Maryland on a nationwide basis.

As shown in Exhibit VIII, the projected lifetime loss ratio would be 132.9% if the company were able to request a 53.3% rate increase. The company agrees to establish this as a target loss ratio for this product going forward. This means that any future rate increase requests will result in a

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lifetime loss ratio exceeding 132.9%. As the current 15.0% rate increase request does not achieve the target loss ratio of 132.9%, future rate increase requests are likely.

Projected experience assuming the requested increase is implemented is shown in Exhibits IV and V. As shown in Exhibits IV and V, the expected lifetime loss ratio with and without the requested rate increase exceeds the minimum loss ratio of 60.0%.

Corresponding rate tables are included with this memorandum in Exhibit IX. The actual rates implemented may vary slightly from those in Exhibit IX due to rounding in the implementation algorithm.

#### 18. Maryland Average Annual Premium (Annual Premium Based on 2016 In-force)

Before increase: \$4,000 After increase: \$4,600

#### 19. Proposed Effective Date

The rate increase will apply to policies on their billing anniversary date following at least a 60-day policyholder notification period following approval, but no sooner than 12 months after the prior rate increase was effective.

#### 20. Nationwide Distribution of Business as of 12/31/2016 (based on in-force count)

#### By Issue Age:

Issue Ages	Percent Distribution
< 48	4.3%
48 - 52	7.9%
53 - 57	18.1%
58 - 62	27.5%
63 - 67	27.4%
68 - 72	12.5%
73 +	2.3%

#### By Elimination Period:

Elimination Period	Percent Distribution
20-day	43.9%
60-day	14.2%
100-day	41.5%
365-day	0.4%

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#### By Benefit Period:

Benefit Period	Percent Distribution
3-Year	14.8%
5-Year	30.8%
Unlimited	54.4%

#### By Inflation Protection Option:

Inflation Option	Percent Distribution
None	13.4%
Compound to Age 86	19.0%
Compound for Life	17.5%
CPI	50.1%

#### By Home Care (HC) Daily Benefit:

HC Benefit Option	Percent Distribution
Reduced	15.0%
Standard	85.0%

#### 21. Number of Policyholders

As of 12/31/2016, the number of policies in-force and annualized premium in the state and nationwide are:

	Number of Insured	Annual Premium* based on 2016 In-force
Maryland	131	\$524,032
Nationwide	14,256	\$52,026,920

<sup>\*</sup>Annualized premiums reflect all prior rate increases approved prior to March 21, 2017.

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#### 22. Actuarial Certification

I am a Principal and Consulting Actuary for Milliman, Inc. and have been retained by GNA Corporation (Genworth), a reinsurer of this business, to prepare this memorandum on behalf of Brighthouse Life Insurance Company. I am a Fellow of the Society of Actuaries and a member of the American Academy of Actuaries. I meet the Academy's qualification standards to render this actuarial opinion and am familiar with the requirements for filing long-term care insurance premium and rate increases. This memorandum has been prepared for the sole purpose stated, and it may not be appropriate for other purposes.

I believe this rate filing is in compliance with the applicable laws of the State of Maryland and with the rules of the Administration. This memorandum has been prepared in conformity with all applicable Actuarial Standards of Practice, including ASOP No. 8 and 18.

I hereby certify that, to the best of my knowledge and judgment, this rate submission is in compliance with the applicable laws and regulations of the state where it is filed. In my opinion, the actuarial assumptions are appropriate and the rates are not excessive or unfairly discriminatory. Furthermore, the gross premiums bear reasonable relationship to the benefits, based on the lifetime loss ratio exceeding the minimum loss ratio requirement.

In preparing this actuarial memorandum, I relied on data and assumptions provided to me by Union Fidelity Life Insurance Company, the retrocessionaire on this business, and Genworth. I did not audit this information but did review it for reasonableness and for consistency with the intended purpose. To the extent that this information is incomplete or inaccurate the contents of this memorandum may be materially affected.

Mike Bergerson, FSA, MAAA

Principal and Consulting Actuary, Milliman, Inc.

Michael Bergeson

Date: September 18, 2017

#### **Voluntary Lapse**

The voluntary lapse assumption for this policy form was developed from experience on all of Brighthouse's individual long-term care (LTC) policy forms combined.

Table 1 below provides a comparison of the actual voluntary lapse rates for all individual LTC policy forms combined through December 2015, including runout through June 2016, and the currently assumed voluntary lapse rates for this policy form.

Table 1
Actual and Assumed Voluntary Lapse Rates
Using Experience through December 2015

Duration	Actual Lapse Rates	Currently Assumed Lapse Rates
1	6.0%	6.0%
2	4.1%	4.0%
3	2.4%	2.5%
4	1.6%	1.5%
5	1.2%	1.3%
6	1.0%	1.1%
7	0.9%	1.0%
8 +	0.8%	0.8%

Table 2 below provides the benefit exhaustion rate assumption. This assumption which was embedded in the voluntary lapse assumption prior to 2014 is now split out as a separate assumption. This assumption, varying by benefit period, is applied to policies with non-lifetime benefit periods additively in conjunction with the lapse assumption. Policies with benefit periods less than 4 years have been mapped to the 3-year benefit period assumption while all other non-lifetime policies have been mapped to the 5-year benefit period assumption. The benefit exhaustion assumption is not applicable to policies with a lifetime benefit period. The assumption is based on actual benefit exhaustion experience for all individual LTC policy forms combined through December 2015, including runout through June 2016.

Table 2
Assumed Benefit Exhaustion Rates
Using Experience through December 2015

Attained Age	3-year Assumed Rates	5-year Assumed Rates	Attained Age	3-year Assumed Rates	5-year Assumed Rates
< 67	0.000%	0.000%	84	0.912%	0.667%
67	0.013%	0.006%	85	1.109%	0.806%
68	0.016%	0.008%	86	1.346%	0.971%
69	0.020%	0.010%	87	1.632%	1.168%
70	0.025%	0.013%	88	1.980%	1.405%
71	0.031%	0.016%	89	2.405%	1.684%
72	0.039%	0.021%	90	2.928%	2.013%
73	0.049%	0.026%	91	3.533%	2.394%
74	0.062%	0.033%	92	4.221%	2.835%
75	0.077%	0.042%	93	4.996%	3.336%
76	0.097%	0.053%	94	5.859%	3.909%
77	0.123%	0.069%	95	6.814%	4.552%
78	0.199%	0.131%	96	7.862%	5.287%
79	0.282%	0.198%	97	9.003%	6.107%
80	0.376%	0.272%	98	10.202%	6.999%
81	0.482%	0.353%	99	11.503%	8.001%
82	0.603%	0.444%	100	12.907%	9.134%
83	0.745%	0.547%	101+	12.907%	9.134%

In the year of rate increase implementation, an additional 1.0% of in-force policyholders are assumed to lapse, and a 1.5% reduction in premium and claims is expected due to the election of reduced benefits. These assumptions are loosely based on data from prior rate increase requests as well as actuarial judgment.

#### **Mortality**

The mortality assumption for this policy form was developed from experience on all of Brighthouse's individual LTC policy forms combined.

Future mortality is based on the 1983 Individual Annuitant Mortality Table with selection consistent with experience. Table 3 below provides a comparison of the actual selection experienced through December 2015, including runout through June 2016, and the currently assumed selection factors.

Table 3
Actual and Assumed Mortality Selection Factors
Using Experience through December 2015

Jemig	Actual Selection	Currently Assumed
Duration	Factors	Selection Factors
<u> </u>		
1	29%	30%
2	48%	45%
3	51%	51%
4	56%	55%
5	57%	59%
6	64%	63%
7	66%	66%
8	68%	68%
9	69%	69%
10	69%	70%
11	70%	71%
12	73%	72%
13	75%	73%
14	75%	75%
15	75%	77%
16	81%	80%
17	81%	84%
18	89%	88%
19	90%	91%
20	93%	94%
21	93%	96%
22	98%	98%
23	105%	100%
24	114%	101%
25+	100%	102%

#### Morbidity

In 2015 Genworth LTC actuaries undertook a project to develop a completely new and up-to-date set of claim costs to be used for this block of business. Genworth is the administrator and a reinsurer for these policies. The claim costs were derived from Genworth's 2014 best estimate morbidity assumptions used for older blocks of Genworth LTC business that correlate to the Brighthouse policy forms.

The Genworth best estimate claim cost assumptions were developed from first principles, using incidence rates, continuance rates, and utilization factors. These rates and factors were individually developed based upon experience from inception to fourth quarter of 2013. Incidence rates were developed by product, gender, attained age, and policy duration. Utilization factors were developed by product, situs, benefit inflation option, benefit period, claim age, diagnosis, and claim duration. Continuance was developed by situs, gender, claim age, and benefit period. The incidence rates, continuance, and utilization factors were then combined together to develop total life claim cost factors which can be applied to life years of LTC exposure adjusted for daily benefit amounts.

The Genworth LTC actuaries then customized the Genworth morbidity assumption for use with the Brighthouse policy forms based on the actual emerging experience of the Brighthouse policy forms. These claim costs provided by Genworth were used as the basis for the morbidity assumption in this filing.

The company reviewed emerging experience in 2016 and determined that no changes were needed to the morbidity assumption developed in 2015.

Table 4 below provides a projection of historical experience using the current morbidity assumption compared to actual historical experience for this policy form and other similar policy forms sold during the same issue era. As seen in this table, the assumption validates reasonably well to emerging experience.

Table 4
Nationwide Historical Actual-to-Model Incurred Claim Projection Results (in 000's)

				Cumulative	Cumulative	Cumulative
	Actual	Model	Actual	Actual	Model	Actual
Policy	Incurred	Incurred	To	Incurred	Incurred	То
Duration	Claims	Claims	Model	Claims	Claims	Model
1	\$9,724	\$19,398	50%	\$9,724	\$19,398	50%
2	13,599	21,826	62%	23,322	41,224	57%
3	23,291	25,304	92%	46,613	66,528	70%
4	33,202	29,788	111%	79,815	96,317	83%
5	31,638	35,341	90%	111,453	131,658	85%
6	41,628	41,761	100%	153,082	173,418	88%
7	54,652	49,158	111%	207,734	222,576	93%
8	61,341	57,562	107%	269,075	280,139	96%
9	69,261	66,854	104%	338,336	346,992	98%
10	82,077	77,328	106%	420,413	424,320	99%
11	96,539	88,766	109%	516,952	513,086	101%
12	110,919	101,179	110%	627,871	614,265	102%
13	117,280	113,944	103%	745,151	728,209	102%
14	131,079	127,337	103%	876,230	855,547	102%
15	164,961	141,245	117%	1,041,191	996,791	104%
16	164,244	155,697	105%	1,205,435	1,152,488	105%
17	175,277	170,181	103%	1,380,712	1,322,669	104%
18	204,489	184,431	111%	1,585,201	1,507,100	105%
19	210,266	193,522	109%	1,795,467	1,700,622	106%
20	198,269	176,624	112%	1,993,737	1,877,247	106%
21	137,036	143,447	96%	2,130,772	2,020,694	105%
22	127,399	118,654	107%	2,258,171	2,139,348	106%
23	96,709	96,572	100%	2,354,880	2,235,920	105%
24	69,574	69,517	100%	2,424,454	2,305,437	105%
25	45,069	39,770	113%	2,469,523	2,345,208	105%
26	11,739	13,531	87%	2,481,262	2,358,739	105%
27	105	285	37%	2,481,367	2,359,023	105%
28	94	25	376%	2,481,461	2,359,049	105%

Exhibit I-a provides an analysis of the loss ratios using three-year groupings of the before increase values with experience restated to the originally filed rate level. The use of three-year groupings and restating of earned premium to the original rate level smooths the historical and projected loss ratios and aids in identifying the trend in claim experience. As seen in Exhibit I-a, the annualized trend in loss ratios is reasonably consistent from the historical to projection periods.

#### **Interest Rate**

The company has provided actual historical earned rates on the assets backing its LTC products in Table 5 below. Actual earned rates are unavailable prior to 2004. The historical earned rates are net of investment expenses and default risk and are provided on both a pre-tax and post-tax basis.

Table 5
Historical Earned Investment Rates
Net of Investment Expenses and Default Risk

	terre Experience a	
Calendar Year	Pre-Tax Rates	Post-Tax Rates
2004	6.19%	4.17%
2005	6.17%	4.16%
2006	6.38%	4.30%
2007	6.02%	4.06%
2008	5.14%	4.04%
2009	5.12%	4.03%
2010	5.92%	4.04%
2011	5.93%	4.05%
2012	5.77%	3.95%
2013	5.68%	3.89%
2014	5.56%	3.81%
2015	5.26%	3.61%
2016	5.22%	3.57%

A 4.5% interest rate assumption had been used for this block of business. However, based on the continued low interest rate environment, the company has revised its interest rate assumption to be 4.5% for historical years through 2014 and 4.0% for years 2015 and later (including all projection years). This assumption, like all assumptions, will continue to be monitored and updates will be made as the interest rate environment changes.

#### **Expenses**

Expenses have not been reflected in the projections for this filing. It is assumed that the originally filed expense assumptions remain appropriate.

#### Exhibit I-a

#### Brighthouse Life Insurance Company

#### Nationwide Three-Year Average Experience Projections Restated to the Original Rate Level with No Increase LTC2 Comprehensive Policy Form

		C-1-			stration with Inte		1	A1	veie
	Calendar	Earned	ndar Year Value Incurred	Loss	Earned	3-Year Totals Incurred	Loss	3-Year	Annualized
	Year	Premium	Claims	Ratio	Premium	Claims	Ratio	Trend	Trend
	1990	310,822	0	0.0%	1 Territain	Oldinio	rano	Helia	Hona
	1991	26,748,140	5,443,527	20.4%	101,993,442	17,383,631	17.0%		
	1992	74,934,480	11,940,104	15.9%	,,	,,			
	1993	112,895,141	16,486,227	14.6%					
	1994	123,118,564	37,688,052	30.6%	366,571,418	95,257,781	26.0%	1.52	1.1
	1995	130,557,712	41,083,502	31.5%					
	1996	142,498,645	37,788,795	26.5%					
	1997	150,586,826	49,316,236	32.7%	434,216,552	146,517,318	33.7%	1.30	1.0
	1998	141,131,081	59,412,286	42.1%	,,				
Historical	1999	132,327,918	72,805,485	55.0%					
Experience	2000	124,164,610	76,753,533	61.8%	373,442,258	233,102,285	62.4%	1.85	1.2
ZAPONONOO	2001	116,949,729	83,543,268	71.4%	0.0, 1.12,200	200,102,200	02.170		
	2002	110,105,704	107,069,136	97.2%					
	2003	102,832,645	115,706,255	112.5%	308,764,852	338,099,248	109.5%	1.75	1.2
	2004	95,826,504	115,323,857	120.3%	000,704,002	000,000,240	100.070	1.70	1.2
	2005	88,578,619	109,562,524	123.7%					
	2006	82,102,171	135,773,914	165.4%	247,444,222	375,882,906	151.9%	1.39	1.1
	2007	76,763,432	130,546,468	170.1%	247,444,222	373,002,900	131.370	1.55	1.1
	2007	71,072,931	141,837,900	199.6%					
					106 729 254	465 102 442	226 50/	1.56	1.1
	2009 2010	65,648,734	161,637,269	246.2%	196,728,354	465,193,442	236.5%	1.56	1.1
	2010	60,006,689 53,444,790	161,718,272 164,147,633	269.5%			+		
				307.1%	444 770 500	405 000 047	224 00/	4.00	4.4
	2012	48,042,182	154,359,330	321.3%	144,779,532	465,866,317	321.8%	1.36	1.1
	2013	43,292,560	147,359,353	340.4%					
	2014	38,468,125	146,984,665	382.1%		=			
	2015	33,830,814	159,719,143	472.1%	101,882,246	448,724,001	440.4%	1.37	1.1
	2016	29,583,307	142,020,193	480.1%					
	2017	25,879,248	133,295,791	515.1%					
	2018	22,232,893	126,264,010	567.9%	67,082,435	378,168,879	563.7%	1.28	1.0
	2019	18,970,294	118,609,078	625.2%					
Projected	2020	16,079,123	110,533,794	687.4%					
Future	2021	13,540,637	102,073,761	753.8%	40,951,155	306,059,460	747.4%	1.33	1.1
Experience	2022	11,331,394	93,451,905	824.7%					
	2023	9,424,332	84,819,743	900.0%					
	2024	7,790,445	76,366,788	980.3%	23,615,766	229,417,795	971.5%	1.30	1.0
	2025	6,400,990	68,231,264	1065.9%					
	2026	5,228,048	60,537,309	1157.9%					
	2027	4,245,004	53,331,096	1256.3%	12,899,933	160,527,282	1244.4%	1.28	1.0
	2028	3,426,881	46,658,877	1361.6%					
	2029	2,750,678	40,529,311	1473.4%					
	2030	2,195,507	34,975,326	1593.0%	6,688,870	105,490,942	1577.1%	1.27	1.0
	2031	1,742,685	29,986,305	1720.7%					
	2032	1,375,698	25,522,732	1855.3%					
	2033	1,080,133	21,568,404	1996.8%	3,299,375	65,177,013	1975.4%	1.25	1.0
	2034	843,544	18,085,877	2144.0%					
	2035	655,287	15,049,713	2296.7%					
	2036	506,354	12,426,974	2454.2%	1,550,841	37,650,657	2427.8%	1.23	1.0
	2037	389,201	10,173,970	2614.1%	•	-			
	2038	297,560	8,263,829	2777.2%					
	2039	226,266	6,647,566	2937.9%	694,925	20,209,165	2908.1%	1.20	1.0
	2040	171,099	5,297,770	3096.3%	,	,	• • • • • •		• • • • • • • • • • • • • • • • • • • •
	2041	128,641	4,185,298	3253.5%					
	2042	96,140	3,278,308	3409.9%	296,180	10,012,369	3380.5%	1.16	1.0
	2043	71,399	2,548,763	3569.7%	,	.,,,			•••
	2044	52,675	1,967,349	3734.9%					
	2045	38,591	1,508,552	3909.0%	119,333	4,623,389	3874.4%	1.15	1.0
	2046	28,066	1,147,488	4088.5%	710,000	.,520,000	551 4.470	1.13	1.0
	2047	20,255	867,103	4281.0%			+		
	2047	14,499	649,600	4480.4%	45,044	1,998,464	4436.7%	1.15	1.0
	2048	10,290	481,761	4681.7%	40,044	1,000,404	+150.7 /6	1.13	1.0
	2049	7,238	353,657	4885.8%			-		
	2050	7,236 5,044	256,018	5075.6%	15,763	792,545	5027.9%	1.13	1.0
	2051			5254.4%	15,763	192,045	5021.9%	1.13	1.0
		3,480	182,871	F			+		
	2053	2,376	128,549	5409.8%	E 0E0	270 575	5E16 10/	1 10	4.4
	2054	1,604	89,190	5559.8%	5,050	278,575	5516.1%	1.10	1.0
	2055	1,070	60,836	5686.6%					
	2056	704	40,946	5817.0%					
	Doot	2 275 000 070	2 596 020 022	440.004					
	Past	2,275,822,876	2,586,026,929	113.6%					
	Future	157,265,373	1,320,447,481	839.6%					
	Lifetime	2,433,088,249	3,906,474,410	160.6%					

# Exhibit II Brighthouse Life Insurance Company Nationwide Experience

#### Impact on the Lifetime Loss Ratio of Changing from Original Pricing to Current Assumptions

The following table provides the isolated impact of each changed assumption (current versus original pricing) on the projected lifetime loss ratio when actual historical experience and rate history is reflected and only the projection assumptions vary. All of the lifetime loss ratios in the table below reflect actual historical experience, except for the loss ratio calculated using the original pricing assumptions from inception.

This table also shows the rate increase needed to produce a lifetime loss ratio of 98.3%. This lifetime loss ratio represents the maximum of the lifetime loss ratio based on (a) original pricing assumptions from inception and (b) historical experience and projections with original pricing assumptions.

Please note that the lifetime loss ratio for each changed assumption does not reflect any synergy of the assumptions. As a result, the total impact of all current assumptions on the lifetime loss ratio (e.g. 45.4%) is not equal to the sum of each changed assumptions' impact on the lifetime loss ratio (e.g. 37.7% = 13.0% + -1.5% + 26.2%).

#### LTC2 Comprehensive Policy Form

		Impact of Each	Increase Needed to
Scenario	Lifetime Loss Ratio	Assumption on the	Produce a Lifetime
		Lifetime Loss Ratio	Loss Ratio of 98.3%*
Original Pricing Assumptions	44.8%	N/A	N/A
Historical Experience & Projections			
with Original Pricing Assumptions	98.3%	N/A	0.0%
Historical Experience & Projections			
with Original Pricing Assumptions			
except for Current:			
Morbidity	111.3%	13.0%	259.7%
Total Termination	96.8%	-1.5%	-32.6%
Interest	124.5%	26.2%	266.6%
Historical Experience & Projections			
with All Current Assumptions	143.7%	45.4%	517.3%

<sup>\*</sup> Calculations ignore the effects of shock lapse, reduced benefit option election, and adverse selection due to the needed rate increase. Calculations do not include the effects of rate increases implemented after March 21, 2017 and assume that the needed rate increase is fully implemented on January 1, 2018.

## Exhibit III Brighthouse Life Insurance Company Original Pricing & Current Assumptions Comparison

Policy Form: LTC2 Comprehensive Policy Form

#### **Original Pricing Assumptions**

**Total Termination:** 

			Issue Age		
Duration	<57	57-66	67-71	72-76	77+
1	22%	20%	22%	23%	25%
2	15%	14%	16%	17%	20%
3	12%	12%	14%	15%	18%
4	10%	11%	12%	14%	16%
5	8%	9%	11%	12%	15%
6	8%	9%	11%	12%	15%
7	8%	9%	11%	12%	15%
8	8%	9%	11%	12%	15%
9	8%	9%	11%	12%	15%
10	5%	6%	8%	11%	15%
11	5%	6%	8%	11%	15%
12	5%	6%	8%	11%	15%
13	5%	6%	8%	11%	15%
14	5%	6%	8%	11%	15%
15	5%	6%	8%	11%	15%
16	5%	6%	8%	11%	15%
17	5%	6%	8%	11%	15%
18	5%	6%	8%	11%	15%
19	5%	6%	8%	11%	15%
20+	5%	8%	15%	20%	27%

Morbidity: Data published by the National Center for Health Statistics ("NCHS") in 1977 and 1985,

the NCHS Advance data publications #92 and #133, and the 1985 National Nursing

Home Survey conducted by the NCHS.

Interest Rate: 8.0%

## Exhibit III Brighthouse Life Insurance Company Original Pricing & Current Assumptions Comparison

Policy Form: LTC2 Comprehensive Policy Form

**Current Assumptions** 

**Mortality:** 1983 Individual Annuitant Mortality Basic Table with selection.

Duration	Factor
1	30%
2	45%
3	51%
4	55%
5	59%
6	63%
7	66%
8	68%
9	69%
10	70%
11	71%
12	72%
13	73%
14	75%
15	77%
16	80%
17	84%
18	88%
19	91%
20	94%
21	96%
22	98%
23	100%
24	101%
25+	102%

Voluntary Lapse Rates:

Duration	Rate
1	6.0%
2	4.0%
3	2.5%
4	1.5%
5	1.3%
6	1.1%
7	1.0%
8+	0.8%

### Exhibit III Brighthouse Life Insurance Company Original Pricing & Current Assumptions Comparison

Policy Form: LTC2 Comprehensive Policy Form

**Current Assumptions** 

#### Voluntary Lapse Rates (Continued):

A benefit exhaustion rate assumption, varying by benefit period, is applied to policies with non-lifetime benefit periods additively in conjunction with the lapse assumption. Policies with benefit periods less than 4 years have been mapped to the 3-year benefit period assumption while all other non-lifetime policies have been mapped to the 5-year benefit period assumption. The benefit exhaustion assumption is not applicable to policies with a lifetime benefit period.

	3-year	5-year		3-year	5-year
Attained	Assumed	Assumed	Attained	Assumed	Assumed
Age	Rates	Rates	Age	Rates	Rates
< 67	0.000%	0.000%	84	0.912%	0.667%
67	0.013%	0.006%	85	1.109%	0.806%
68	0.016%	0.008%	86	1.346%	0.971%
69	0.020%	0.010%	87	1.632%	1.168%
70	0.025%	0.013%	88	1.980%	1.405%
71	0.031%	0.016%	89	2.405%	1.684%
72	0.039%	0.021%	90	2.928%	2.013%
73	0.049%	0.026%	91	3.533%	2.394%
74	0.062%	0.033%	92	4.221%	2.835%
75	0.077%	0.042%	93	4.996%	3.336%
76	0.097%	0.053%	94	5.859%	3.909%
77	0.123%	0.069%	95	6.814%	4.552%
78	0.199%	0.131%	96	7.862%	5.287%
79	0.282%	0.198%	97	9.003%	6.107%
80	0.376%	0.272%	98	10.202%	6.999%
81	0.482%	0.353%	99	11.503%	8.001%
82	0.603%	0.444%	100	12.907%	9.134%
83	0.745%	0.547%	101+	12.907%	9.134%

Morbidity:

In 2015 Genworth long-term care (LTC) actuaries undertook a project to develop a completely new and up-to-date set of claim costs to be used for this block of business. Genworth is the administrator and a reinsurer for these policies. The claim costs were derived from Genworth's 2014 best estimate morbidity assumptions used for older blocks of Genworth LTC business that correlate to the Brighthouse policy forms.

The Genworth best estimate claim cost assumptions were developed from first principles, using incidence rates, continuance rates, and utilization factors. These rates and factors were individually developed based upon experience from inception to fourth quarter of 2013. Incidence rates were developed by product, gender, attained age, and policy duration. Utilization factors were developed by product, situs, benefit inflation option, benefit period, claim age, diagnosis, and claim duration. Continuance was developed by situs, gender, claim age, and benefit period. The incidence rates, continuance, and utilization factors were then combined together to develop total life claim cost factors which can be applied to life years of LTC exposure adjusted for daily benefit amounts.

The Genworth LTC actuaries then customized the Genworth morbidity assumption for use with the Brighthouse policy forms based on the actual emerging experience of the Brighthouse policy forms. These claim costs provided by Genworth were used as the basis for the morbidity assumption in this filing.

The company reviewed emerging experience in 2016 and determined that no changes were needed to the morbidity assumption developed in 2015.

Interest Rate:

4.5% from inception through 2014 and 4.0% for 2015 and beyond.

## Exhibit IV Brighthouse Life Insurance Company Nationwide Experience Projections with No Increase LTC2 Comprehensive Policy Form

						ation			Interest Rate Factors		
	Orleader		Vithout Interest		Life	Familia	With Interest		Calendar Year	Mid-Year	
	Calendar	Earned	Incurred	Loss		Earned	Incurred	Loss	Effective	Disc / Accum	
	Year 1990	Premium 97,745	Claims	Ratio 0.0%	Years 495	Premium 310,822	Claims	Ratio 0.0%	Int Rate 4.5%	Factor 3.179	
	1990	8,790,105	1,788,879	20.4%		26,748,140	5,443,527	20.4%	4.5%	3.043	
	1992	25.733.478	4,100,388	15.9%	20,991	74,934,480	11,940,104	15.9%	4.5%	2.911	
	1993	40,514,299	5,916,357	14.6%	27,528	112,895,141	16,486,227	14.6%	4.5%	2.786	
	1994	46,171,386	14,133,608	30.6%	28,793	123,118,564	37,688,052	30.6%	4.5%	2.666	
	1995	51,164,436	16,100,268	31.5%	31,684	130,557,712	41,083,502	31.5%	4.5%	2.551	
	1996	58,356,963	15,475,511	26.5%	36,497	142,498,645	37,788,795	26.5%	4.5%	2.441	
	1997	64,444,405	21,105,136	32.7%	35,418	150,586,826	49,316,236	32.7%	4.4%	2.336	
	1998	63,115,670	26,569,953	42.1%	34,500	141,131,081	59,412,286	42.1%	4.4%	2.236	
Historical	1999	61,841,825	34,024,748	55.0%	33,684	132,327,919	72,805,485	55.0%	4.4%	2.139	
Experience	2000	60,638,010	37,483,962	61.8%	32,855	124,164,610	76,753,533	61.8%	4.4%	2.047	
	2001	59,684,646	42,635,843	71.4%	31,951	116,949,729	83,543,268	71.4%	4.4%	1.959	
	2002	58,720,468	57,101,036	97.2%	31,059	110,105,704	107,069,136	97.2%	4.4%	1.875	
	2003	57,309,548	64,484,126	112.5%	30,103	102,832,645	115,706,255	112.5%	4.4%	1.794	
	2004	55,849,171	67,163,208	120.3%	29,106	95,896,876	115,323,857	120.3%	4.4%	1.717	
	2005	60,262,065	66,679,232	110.6%	27,912	99,018,295	109,562,524	110.6%	4.4%	1.643	
	2006	62,658,608	86,349,771	137.8%	26,842	98,522,606	135,773,914	137.8%	4.4%	1.572	
	2007	61,220,485	86,761,344	141.7%	25,776	92,116,117	130,546,468	141.7%	4.4%	1.504	
	2008	59,232,570	98,507,597	166.3%	24,598	85,287,059	141,837,900	166.3%	4.4%	1.439	
	2009	57,174,361	117,310,053	205.2%	23,367	78,778,480	161,637,269	205.2%	4.4%	1.377	
	2010	54,612,357	122,650,439	224.6%	22,103	72,008,026	161,718,272	224.6%	4.3%	1.318	
	2011	53,880,178	130,095,097	241.5%	20,730	67,983,374	164,147,633	241.5%	4.3%	1.261	
	2012	54,891,856	127,842,566	232.9%	19,391	66,277,378	154,359,330	232.9%	4.3%	1.207	
	2013	51,706,095	127,537,116	246.7%	18,142	59,742,427	147,359,353	246.7%	4.2%	1.155	
	2014	48,254,278	132,937,407	275.5%	16,758	53,353,221	146,984,665	275.5%	4.1%	1.105	
	2015 2016	49,134,536 51.051.901	150,593,755 139,262,256	306.5% 272.8%	15,393 14,256	52,111,895 52,062,928	159,719,143 142.020.193	306.5% 272.8%	4.0% 4.0%	1.060 1.019	
	2016	50.817.302	135,935,568	267.5%	12,953	49.830.464	133,295,791	267.5%	4.0%	0.980	
	2017	49,419,716	133,915,112	267.5% 271.0%	11,699	46,596,171	126,264,010	271.0%	4.0%	0.942	
	2019	43,875,570	130.828.173	298.2%	10,507	39,777,678	118.609.078	298.2%	4.0%	0.942	
Projected	2019	38,676,405	126,797,814	327.8%	9,382	33,715,485	110,533,794	327.8%	4.0%	0.906	
Future	2020	33,873,377	121,776,683	359.5%	8,333	28,392,816	102,073,761	359.5%	4.0%	0.838	
Experience	2021	29,480,797	115,950,206	393.3%	7,361	23,760,515	93,451,905	393.3%	4.0%	0.806	
Experience	2022	25,500,212	109,449,469	429.2%	6,467	19,761,827	84,819,743	429.2%	4.0%	0.775	
	2023	21,922,684	102,483,646	467.5%	5,653	16,335,923	76,366,788	467.5%	4.0%	0.745	
	2025	18,733,454	95,228,469	508.3%	4,915	13,422,533	68,231,264	508.3%	4.0%	0.716	
	2026	15,912,945	87,869,840	552.2%	4,251	10,963,111	60,537,309	552.2%	4.0%	0.688	
	2027	13,437,871	80.506.431	599.1%	3,657	8,901,853	53,331,096	599.1%	4.0%	0.662	
	2028	11.282.203	73.251.696	649.3%	3,130	7.186.386	46,658,877	649.3%	4.0%	0.637	
	2029	9,418,422	66,173,782	702.6%	2,665	5,768,480	40,529,311	702.6%	4.0%	0.612	
	2030	7,818,401	59,389,799	759.6%	2,258	4,604,345	34,975,326	759.6%	4.0%	0.588	
	2031	6,454,278	52,954,928	820.5%	1,903	3,654,805	29,986,305	820.5%	4.0%	0.566	
	2032	5,299,058	46,875,284	884.6%	1,595	2,885,240	25,522,732	884.6%	4.0%	0.544	
	2033	4,327,136	41,197,239	952.1%	1,330	2,265,429	21,568,404	952.1%	4.0%	0.523	
	2034	3,514,630	35,927,170	1022.2%	1,103	1,769,278	18,085,877	1022.2%	4.0%	0.503	
	2035	2,839,572	31,091,738	1094.9%	910	1,374,473	15,049,713	1094.9%	4.0%	0.484	
	2036	2,282,053	26,700,261	1170.0%	746	1,062,125	12,426,974	1170.0%	4.0%	0.465	
	2037	1,824,299	22,733,899	1246.2%	609	816,418	10,173,970	1246.2%	4.0%	0.447	
	2038	1,450,601	19,204,285	1323.9%	493	624,210	8,263,829	1323.9%	4.0%	0.430	
	2039	1,147,212	16,066,186	1400.5%	398	474,672	6,647,566	1400.5%	4.0%	0.413	
	2040	902,245	13,316,084	1475.9%	318	358,956	5,297,770	1475.9%	4.0%	0.397	
	2041	705,515	10,940,652	1550.7%	253	269,892	4,185,298	1550.7%	4.0%	0.382	
	2042	548,379	8,912,507	1625.2%	200	201,711	3,278,308	1625.2%	4.0%	0.367	
	2043	423,566	7,206,310	1701.3%	157	149,809	2,548,763	1701.3%	4.0%	0.353	
	2044	324,999	5,784,932	1780.0%	122	110,526	1,967,349	1780.0%	4.0%	0.340	
	2045	247,637	4,613,286	1862.9%	94	80,978	1,508,552	1862.9%	4.0%	0.327	
	2046	187,308	3,649,487	1948.4%	72	58,894	1,147,488	1948.4%	4.0%	0.314	
	2047	140,585	2,868,056	2040.1%	55	42,503	867,103	2040.1%	4.0%	0.302	
	2048	104,662	2,234,581	2135.1%	41	30,425	649,600	2135.1%	4.0%	0.290	
	2049	77,256	1,723,515	2230.9%	30	21,595	481,761	2230.9%	4.0%	0.279	
	2050	56,518	1,315,828	2328.2%	22	15,190	353,657	2328.2%	4.0%	0.268	
	2051	40,960	990,650	2418.6%	16	10,586	256,018	2418.6%	4.0%	0.258	
	2052	29,393	735,915	2503.7%	12	7,304	182,871	2503.7%	4.0%	0.248	
	2053	20,871	538,002	2577.7%	8	4,987	128,549	2577.7%	4.0%	0.238	
	2054	14,654	388,209	2649.2%	6	3,367	89,190	2649.2%	4.0%	0.229	
	2055	10,164	275,389	2709.6%	4	2,245	60,836	2709.6%	4.0%	0.220	
	2056	6,955	192,764	2771.7%	3	1,477	40,946	2771.7%	4.0%	0.212	
	Past	1,376,511,445	1,794,609,658	130.4%	670,852	2,462,320,701	2,586,026,929	105.0%			
		403,149,862	1,794,609,656	446.0%	103,730	325,314,682	1,320,447,481	405.9%			
	Future										

#### Exhibit IV Brighthouse Life Insurance Company Nationwide Experience Projections with 15.0% Increase LTC2 Comprehensive Policy Form

				Loss	Ratio Demonstr	ation	_	Interest Rate Factors			
			Vithout Interest				With Interest		Calendar Year	Mid-Year	
	Calendar Year	Earned Premium	Incurred Claims	Loss Ratio	Life Years	Earned Premium	Incurred Claims	Loss Ratio	Effective Int Rate	Disc / Accum Factor	
	1990	97,745	0	0.0%	495	310,822	0	0.0%	4.5%	3.179	
	1991	8,790,105	1,788,879	20.4%	10,920	26,748,140	5,443,527	20.4%	4.5%	3.043	
	1992	25,733,478	4,100,388	15.9%	20,991	74,934,480	11,940,104	15.9%	4.5%	2.911	
	1993	40,514,299	5,916,357	14.6%	27,528	112,895,141	16,486,227	14.6%	4.5%	2.786	
	1994	46,171,386	14,133,608	30.6%	28,793	123,118,564	37,688,052	30.6%	4.5%	2.666	
	1995	51,164,436	16,100,268	31.5%	31,684	130,557,712	41,083,502	31.5%	4.5%	2.551	
	1996	58,356,963	15,475,511	26.5%	36,497	142,498,645	37,788,795	26.5%	4.5%	2.441	
	1997	64,444,405	21,105,136	32.7%	35,418	150,586,826	49,316,236	32.7%	4.4%	2.336	
	1998	63,115,670	26,569,953	42.1%	34,500	141,131,081	59,412,286	42.1%	4.4%	2.236	
Historical	1999	61,841,825	34,024,748	55.0%	33,684	132,327,919	72,805,485	55.0%	4.4%	2.139	
Experience	2000	60,638,010	37,483,962	61.8%	32,855	124,164,610	76,753,533	61.8%	4.4%	2.047	
	2001	59,684,646	42,635,843	71.4%	31,951	116,949,729	83,543,268	71.4%	4.4% 4.4%	1.959	
	2002 2003	58,720,468 57,309,548	57,101,036 64,484,126	97.2% 112.5%	31,059 30,103	110,105,704 102,832,645	107,069,136 115,706,255	97.2% 112.5%	4.4%	1.875 1.794	
	2003	55,849,171	67,163,208	120.3%	29,106	95,896,876	115,323,857	120.3%	4.4%	1.794	
	2004	60,262,065	66,679,232	110.6%	27,912	99,018,295	109,562,524	110.6%	4.4%	1.643	
	2006	62,658,608	86,349,771	137.8%	26,842	98,522,606	135,773,914	137.8%	4.4%	1.572	
	2007	61,220,485	86,761,344	141.7%	25,776	92,116,117	130,546,468	141.7%	4.4%	1.504	
	2008	59,232,570	98,507,597	166.3%	24.598	85,287,059	141,837,900	166.3%	4.4%	1.439	
	2009	57,174,361	117,310,053	205.2%	23,367	78,778,480	161,637,269	205.2%	4.4%	1.377	
	2010	54.612.357	122,650,439	224.6%	22,103	72.008.026	161,718,272	224.6%	4.3%	1.318	
	2011	53,880,178	130,095,097	241.5%	20,730	67,983,374	164,147,633	241.5%	4.3%	1.26	
	2012	54,891,856	127,842,566	232.9%	19,391	66,277,378	154,359,330	232.9%	4.3%	1.207	
	2013	51,706,095	127,537,116	246.7%	18,142	59,742,427	147,359,353	246.7%	4.2%	1.15	
	2014	48,254,278	132,937,407	275.5%	16,758	53,353,221	146,984,665	275.5%	4.1%	1.105	
	2015	49,134,536	150,593,755	306.5%	15,393	52,111,895	159,719,143	306.5%	4.0%	1.060	
	2016	51,051,901	139,262,256	272.8%	14,256	52,062,928	142,020,193	272.8%	4.0%	1.019	
	2017	50,817,302	135,935,568	267.5%	12,953	49,830,464	133,295,791	267.5%	4.0%	0.980	
	2018	52,042,126	132,765,130	255.1%	11,582	49,068,753	125,179,732	255.1%	4.0%	0.942	
	2019	49,203,054	128,379,465	260.9%	10,401	44,607,585	116,389,074	260.9%	4.0%	0.90	
Projected	2020	43,372,594	124,424,542	286.9%	9,289	37,809,306	108,464,935	286.9%	4.0%	0.871	
Future	2021	37,986,370	119,497,392	314.6%	8,249	31,840,345	100,163,248	314.6%	4.0%	0.838	
Experience	2022	33,060,431	113,779,968	344.2%	7,287	26,645,578	91,702,767	344.2%	4.0%	0.806	
	2023 2024	28,596,513 24,584,592	107,400,905 100,565,462	375.6% 409.1%	6,403 5,596	22,161,358 18,319,473	83,232,174 74,937,432	375.6% 409.1%	4.0% 4.0%	0.775 0.745	
	2025	21,008,118	93,446,079	444.8%		15,052,331	66,954,181	444.8%	4.0%	0.740	
	2026	17,845,135	86,225,182	483.2%	4,208	12,294,281	59,404,233	483.2%	4.0%	0.710	
	2027	15,069,532	78.999.593	524.2%	3,621	9.982.739	52,332,899	524.2%	4.0%	0.662	
	2028	12,652,117	71,880,645	568.1%	3,099	8.058.975	45,785,564	568.1%	4.0%	0.637	
	2029	10,562,031	64,935,209	614.8%	2,639	6,468,904	39,770,724	614.8%	4.0%	0.612	
	2030	8,767,731	58,278,201	664.7%	2,235	5,163,417	34,320,694	664.7%	4.0%	0.58	
	2031	7.237.973	51,963,771	717.9%	1.884	4.098.581	29,425,052	717.9%	4.0%	0.56	
	2032	5,942,483	45,997,920	774.1%	1,579	3,235,573	25,045,023	774.1%	4.0%	0.54	
	2033	4,852,548	40,426,151	833.1%	1,317	2,540,503	21,164,709	833.1%	4.0%	0.52	
	2034	3,941,385	35,254,722	894.5%	1,092	1,984,109	17,747,364	894.5%	4.0%	0.50	
	2035	3,184,361	30,509,794	958.1%	901	1,541,365	14,768,028	958.1%	4.0%	0.48	
	2036	2,559,146	26,200,512	1023.8%	739	1,191,091	12,194,378	1023.8%	4.0%	0.46	
	2037	2,045,810	22,308,389	1090.4%	603	915,550	9,983,544	1090.4%	4.0%	0.44	
	2038	1,626,736	18,844,838	1158.4%	489	700,004	8,109,155	1158.4%	4.0%	0.43	
	2039	1,286,510	15,765,476	1225.4%		532,308	6,523,144	1225.4%	4.0%	0.41	
	2040	1,011,797	13,066,848	1291.4%		402,541	5,198,611	1291.4%	4.0%	0.39	
	2041	791,180	10,735,876	1356.9%	251	302,663	4,106,962	1356.9%	4.0%	0.38	
	2042	614,964	8,745,692	1422.1%	198	226,204	3,216,948	1422.1%	4.0%	0.36	
	2043	474,996	7,071,430	1488.7%	155	167,999	2,501,058	1488.7%	4.0%	0.35	
	2044	364,462	5,676,655	1557.5%	121 93	123,947	1,930,526	1557.5%	4.0%	0.34	
	2045 2046	277,705 210,052	4,526,939	1630.1%	93 71	90,810 66,045	1,480,316	1630.1%	4.0% 4.0%	0.32	
	2046	210,052 157,655	3,581,180 2,814,375	1704.9% 1785.1%	71 54	47,664	1,126,011 850,874	1704.9% 1785.1%	4.0%	0.31 0.30	
	2047	157,655	2,814,375	1785.1%	54 41	34,120	637,441	1868.2%	4.0%	0.30	
	2049	86.636	1,691,256	1952.1%	30	24,217	472,744	1952.1%	4.0%	0.29	
	2049	63,380	1,091,250	2037.2%	22	17,035	347,037	2037.2%	4.0%	0.27	
	2051	45,934	972,108	2116.3%	16	11,871	251,226	2116.3%	4.0%	0.25	
	2052	32,962	722,141	2190.9%	12	8,191	179,448	2190.9%	4.0%	0.23	
	2053	23,405	527,933	2255.6%	8	5,592	126,143	2255.6%	4.0%	0.23	
	2054	16,433	380,943	2318.1%	6	3,775	87,520	2318.1%	4.0%	0.23	
	2055	11,398	270,235	2371.0%	4	2,518	59,698	2371.0%	4.0%	0.22	
	2056	7,799	189,156	2425.3%	3	1,657	40,179	2425.3%	4.0%	0.21	
	2000	.,,,,,	100,100	2 120.070		.,507	.0,170	2 .23.070	070	V.Z.12	
	Past	1,376,511,445	1,794,609,658	130.4%		2,462,320,701	2,586,026,929	105.0%			
	Future	442,552,728	1,768,241,636	399.6%	102,823	355,579,439	1,299,506,588	365.5%			
	Lifetime	1,819,064,173	3,562,851,295	195.9%	773,675	2,817,900,139	3,885,533,517	137.9%			

## Exhibit V Brighthouse Life Insurance Company Maryland-Specific Experience Projections with No Increase LTC2 Comprehensive Policy Form

				Interest Ra						
			ithout Interest				With Interest		Calendar Year	Mid-Year
	Calendar	Earned	Incurred	Loss	Life	Earned	Incurred	Loss	Effective	Disc / Accum
	Year 1990	Premium 2,089	Claims 0	Ratio 0.0%	Years 17	Premium 6,642	Claims 0	Ratio 0.0%	Int Rate 4.5%	Factor 3,1799
	1990	2,089 265,613	0	0.0%		808,255	0	0.0%	4.5% 4.5%	3.1799
	1991	265,613 650,245	15,263	2.3%		1,893,478	44,445	2.3%	4.5% 4.5%	2.9119
	1993	893,730	29,025	3.2%		2,490,424	80,880	3.2%	4.5%	2.7866
	1994	883,912	323,460	36.6%		2,357,001	862,525	36.6%	4.5%	2.6666
	1995	859,054	574,155	66.8%		2,192,072	1,465,088	66.8%	4.5%	2.551
	1996	837,832	523,770	62.5%	451	2,045,856	1,278,965	62.5%	4.5%	2,4418
	1997	816,213	829,593	101.6%		1,907,240	1,938,505	101.6%	4.4%	2.336
	1998	794,351	191,341	24.1%		1,776,224	427,852	24.1%	4.4%	2.236
Historical	1999	775,080	333,877	43.1%	409	1,658,501	714,423	43.1%	4.4%	2.1398
Experience	2000	744,263	22,985	3.1%	391	1,523,979	47,065	3.1%	4.4%	2.0476
	2001	724,000	1,041,478	143.9%	379	1,418,650	2,040,736	143.9%	4.4%	1.959
	2002	713,105	883,243	123.9%	371	1,337,130	1,656,153	123.9%	4.4%	1.875
	2003	704,806	661,186	93.8%		1,264,659	1,186,391	93.8%	4.4%	1.7943
	2004	680,407	808,228	118.8%		1,168,305	1,387,783	118.8%	4.4%	1.717
	2005	715,603	495,970	69.3%		1,175,827	814,942	69.3%	4.4%	1.643
	2006	742,802	314,344	42.3%		1,167,961	494,265	42.3%	4.4%	1.572
	2007	712,684	2,629,239	368.9%		1,072,348	3,956,114	368.9%	4.4%	1.5047
	2008	676,734	3,438,386	508.1%		974,408	4,950,821	508.1%	4.4%	1.439
	2009	653,173 610,536	1,905,302 1,535,424	291.7%		899,983 805,010	2,625,246 2.024.503	291.7%	4.4%	1.3779
	2010 2011	610,536 611,780	1,535,424 1,029,842	251.5% 168.3%		805,010 771,915	2,024,503 1,299,404	251.5% 168.3%	4.3% 4.3%	1.318 1.261
	2011	620,809	1,029,842 808,559	130.2%		7/1,915 749,576	976,268	130.2%	4.3%	1.207
	2012	586,751	2,204,139	375.7%	200	677,946	2,546,713	375.7%	4.2%	1.155
	2014	524,361	417,180	79.6%		579,769	461,263	79.6%	4.1%	1.105
	2015	490,061	1,521,454	310.5%		519,757	1,613,648	310.5%	4.0%	1.060
	2016	468,641	1,860,453	397.0%	131	477,922	1,897,297	397.0%	4.0%	1.019
	2017	458,318	1,305,829	284.9%	118	449,418	1,280,471	284.9%	4.0%	0.980
	2018	433,616	1,260,493	290.7%	105	408,842	1,188,476	290.7%	4.0%	0.942
	2019	379,391	1,201,880	316.8%	94	343,957	1,089,627	316.8%	4.0%	0.906
Projected	2020	329,810	1,132,622	343.4%	83	287,506	987,343	343.4%	4.0%	0.871
Future	2021	284,837	1,057,101	371.1%	73	238,752	886,067	371.1%	4.0%	0.838
Experience	2022	244,346	975,842	399.4%		196,934	786,495	399.4%	4.0%	0.8060
	2023	208,184	890,144	427.6%	56	161,336	689,832	427.6%	4.0%	0.7750
	2024	176,168	803,291	456.0%		131,273	598,581	456.0%	4.0%	0.745
	2025	148,067	718,459	485.2%		106,090	514,777	485.2%	4.0%	0.716
	2026	123,616	637,460	515.7%	35	85,164	439,174	515.7%	4.0%	0.688
	2027	102,523	560,290	546.5%		67,916	371,161	546.5%	4.0%	0.662
	2028	84,484	489,642	579.6%		53,814	311,886	579.6%	4.0%	0.637
	2029	69,193	425,845	615.4%		42,379	260,816	615.4%	4.0%	0.612
	2030	56,343 45,631	369,185 318.308	655.3%		33,181 25,839	217,418 180,245	655.3% 697.6%	4.0% 4.0%	0.588
	2031 2032	45,631 36,772	273,252	697.6% 743.1%		25,839	180,245	743.1%	4.0% 4.0%	0.566 0.544
	2032	29,504	233,871	792.7%		15,447	122,441	743.1% 792.7%	4.0%	0.544
	2034	23,584	199,815	847.2%		11,873	100,588	847.2%	4.0%	0.523
	2034	18,794	171,249	911.2%		9,097	82,892	911.2%	4.0%	0.303
	2036	14,940	147,801	989.3%		6,954	68,790	989.3%	4.0%	0.465
	2037	11,852	128,438	1083.7%		5,304	57,479	1083.7%	4.0%	0.447
	2038	9,385	111,495	1188.0%		4,038	47,978	1188.0%	4.0%	0.430
	2039	7,417	96,204	1297.1%		3,069	39,805	1297.1%	4.0%	0.413
	2040	5,849	82,512	1410.6%		2,327	32,827	1410.6%	4.0%	0.397
	2041	4,601	69,969	1520.6%		1,760	26,766	1520.6%	4.0%	0.382
	2042	3,608	58,881	1631.8%		1,327	21,658	1631.8%	4.0%	0.367
	2043	2,819	49,204	1745.4%		997	17,403	1745.4%	4.0%	0.353
	2044	2,192	40,938	1867.3%		746	13,922	1867.3%	4.0%	0.340
	2045	1,696	33,945	2001.8%		555	11,100	2001.8%	4.0%	0.327
	2046	1,303	27,989	2147.8%		410	8,800	2147.8%	4.0%	0.314
	2047	994	22,901	2303.9%		301	6,924	2303.9%	4.0%	0.302
	2048	752	18,308	2434.5%		219	5,322	2434.5%	4.0%	0.290
	2049	564	14,229	2523.8%		158	3,977	2523.8%	4.0%	0.279
	2050	419	10,683	2552.1%		113	2,871	2552.1%	4.0%	0.268
	2051	308	7,741	2517.2%	0	79	2,000	2517.2%	4.0%	0.258
	2052	223	5,468	2448.4%	0	55	1,359	2448.4%	4.0%	0.248
	2053	160	3,775	2357.8%		38	902	2357.8%	4.0%	0.238
	2054	113	2,536	2244.3%		26	583	2244.3%	4.0%	0.229
	2055	78	1,652	2109.3%	0	17	365	2109.3%	4.0%	0.220
	2056	53	1,036	1956.0%	0	11	220	1956.0%	4.0%	0.212
	Past	17,758,634	24,397,896	137.4%	8,577	33,720,837	36,791,296	109.1%		
			13.960.284	420.2%	6,577 891	2,717,342	10.628.123	391.1%		
	Future	3.322.509								

## Exhibit V Brighthouse Life Insurance Company Maryland-Specific Experience Projections with 15.0% Increase LTC2 Comprehensive Policy Form

			Uth and but and i	Loss	Ratio Demonstr	ation	With but and	1	Interest Ra	
	Calendar	Earned	Incurred	Loss	Life	Earned	With Interest Incurred	Loss	Calendar Year Effective	Mid-Year Disc / Accum
	Year	Premium	Claims	Ratio	Years	Premium	Claims	Ratio	Int Rate	Factor
	1990	2,089	0	0.0%	17	6,642	0	0.0%	4.5%	3.1799
	1991	265,613	0	0.0%	258	808,255	0	0.0%	4.5%	3.0430
	1992	650,245	15,263	2.3%	468 503	1,893,478	44,445 80.880	2.3%	4.5% 4.5%	2.9119
	1993 1994	893,730 883,912	29,025 323,460	3.2% 36.6%	503 481	2,490,424 2,357,001	862,525	3.2% 36.6%	4.5% 4.5%	2.7866 2.6666
	1994	859,054	574,155	66.8%	469	2,357,001	1,465,088	66.8%	4.5%	2.551
	1996	837,832	523,770	62.5%	451	2,045,856	1,278,965	62.5%	4.5%	2.441
	1997	816,213	829,593	101.6%	433	1,907,240	1,938,505	101.6%	4.4%	2.336
	1998	794,351	191,341	24.1%	420	1,776,224	427,852	24.1%	4.4%	2.236
Historical	1999	775,080	333,877	43.1%	409	1,658,501	714,423	43.1%	4.4%	2.139
Experience	2000	744,263	22,985	3.1%	391	1,523,979	47,065	3.1%	4.4%	2.047
	2001	724,000	1,041,478	143.9%	379	1,418,650	2,040,736	143.9%	4.4%	1.959
	2002	713,105	883,243	123.9%	371	1,337,130	1,656,153	123.9%	4.4%	1.875
	2003	704,806	661,186	93.8%	360	1,264,659	1,186,391	93.8%	4.4%	1.794
	2004	680,407	808,228	118.8%	346	1,168,305	1,387,783	118.8%	4.4%	1.717
	2005	715,603 742,802	495,970	69.3% 42.3%	330 313	1,175,827	814,942 494,265	69.3% 42.3%	4.4% 4.4%	1.643
	2006 2007	742,602	314,344 2,629,239	42.3% 368.9%	292	1,167,961 1,072,348	3,956,114	368.9%	4.4%	1.572 1.504
	2008	676,734	3,438,386	508.1%	279	974,408	4,950,821	508.1%	4.4%	1.439
	2009	653,173	1,905,302	291.7%	264	899,983	2,625,246	291.7%	4.4%	1.377
	2010	610,536	1,535,424	251.5%	243	805,010	2,024,503	251.5%	4.3%	1.318
	2011	611,780	1,029,842	168.3%	229	771,915	1,299,404	168.3%	4.3%	1.261
	2012	620,809	808,559	130.2%	216	749,576	976,268	130.2%	4.3%	1.207
	2013	586,751	2,204,139	375.7%	200	677,946	2,546,713	375.7%	4.2%	1.155
	2014	524,361	417,180	79.6%	173	579,769	461,263	79.6%	4.1%	1.105
	2015	490,061	1,521,454	310.5%	151	519,757	1,613,648	310.5%	4.0%	1.060
	2016	468,641	1,860,453	397.0%	131	477,922	1,897,297	397.0%	4.0%	1.019
	2017	458,318	1,305,829	284.9%	118	449,418	1,280,471	284.9%	4.0%	0.980
	2018 2019	459,802 425,458	1,248,590 1,179,384	271.5% 277.2%	104 93	433,532 385,721	1,177,253 1,069,232	271.5% 277.2%	4.0% 4.0%	0.9429
Projected	2019	369,856	1,179,364	300.5%	93 82	322,416	968,863	300.5%	4.0%	0.8717
Future	2021	319,423	1,037,315	324.7%	72	267,742	869,482	324.7%	4.0%	0.8382
Experience	2022	274,015	957,577	349.5%	63	220,846	771,775	349.5%	4.0%	0.8060
Едрополос	2023	233,463	873,483	374.1%	55	180,926	676,921	374.1%	4.0%	0.7750
	2024	197,558	788,256	399.0%	48	147,213	587,378	399.0%	4.0%	0.7452
	2025	166,045	705,012	424.6%	41	118,972	505,142	424.6%	4.0%	0.716
	2026	138,625	625,529	451.2%	35	95,505	430,954	451.2%	4.0%	0.6889
	2027	114,971	549,803	478.2%	30	76,162	364,214	478.2%	4.0%	0.662
	2028	94,743	480,478	507.1%	25	60,348	306,048	507.1%	4.0%	0.6370
	2029	77,595	417,874	538.5%	21	47,524	255,935	538.5%	4.0%	0.612
	2030	63,184	362,275	573.4%	18	37,210	213,348	573.4%	4.0%	0.5889
	2031	51,171	312,350	610.4%	15 12	28,976 22,453	176,872	610.4%	4.0%	0.5663
	2032 2033	41,237 33,087	268,138 229,494	650.2% 693.6%	10	17,322	145,996 120,149	650.2% 693.6%	4.0% 4.0%	0.544 0.523
	2034	26,448	196,075	741.4%	8	13,314	98,705	741.4%	4.0%	0.5034
	2035	21,076	168,044	797.3%	7	10,202	81,340	797.3%	4.0%	0.4840
	2036	16,754	145,034	865.7%	5	7,798	67,503	865.7%	4.0%	0.4654
	2037	13,291	126.034	948.2%	4	5.948	56,403	948.2%	4.0%	0.447
	2038	10,524	109,408	1039.6%	4	4,529	47,080	1039.6%	4.0%	0.430
	2039	8,317	94,403	1135.0%	3	3,441	39,060	1135.0%	4.0%	0.413
	2040	6,560	80,968	1234.3%	2 2 2	2,610	32,213	1234.3%	4.0%	0.397
	2041	5,160	68,659	1330.6%	2	1,974	26,265	1330.6%	4.0%	0.382
	2042	4,047	57,779	1427.9%		1,488	21,253	1427.9%	4.0%	0.367
	2043	3,161	48,283	1527.3%	1	1,118	17,077	1527.3%	4.0%	0.353
	2044 2045	2,459 1,902	40,172 33,309	1633.9% 1751.6%	1	836 622	13,662 10,892	1633.9% 1751.6%	4.0% 4.0%	0.340 0.327
	2045	1,902	27,465	1879.4%	1	622 459	8,636	1879.4%	4.0%	0.327
	2046	1,461	22,473	2016.0%	0	337	6,794	2016.0%	4.0%	0.314
	2047	843	17,965	2130.2%	0	245	5,223	2130.2%	4.0%	0.302
	2049	632	13,963	2208.4%	Ö	177	3,903	2208.4%	4.0%	0.279
	2050	469	10,483	2233.2%	Ö	126	2,817	2233.2%	4.0%	0.268
	2051	345	7,596	2202.6%	0	89	1,963	2202.6%	4.0%	0.258
	2052	250	5,366	2142.4%	0	62	1,333	2142.4%	4.0%	0.248
	2053	180	3,704	2063.2%	0	43	885	2063.2%	4.0%	0.238
	2054	127	2,489	1963.8%	0	29	572	1963.8%	4.0%	0.229
	2055	88	1,621	1845.7%	0	19	358	1845.7%	4.0%	0.220
	2056	59	1,017	1711.5%	0	13	216	1711.5%	4.0%	0.212
	Past	17,758,634	24,397,896	137.4%	8,577	33,720,837	36,791,296	109.1%		
	Future	3,643,821	13,735,121	376.9%	883	2,967,766	10,464,185	352.6%		
	· acuro	21,402,455	38,133,017	178.2%	9,460	36,688,602	47,255,481	128.8%		

# Exhibit VI Brighthouse Life Insurance Company Projection Model Description

A large and complex Excel-based and Access-integrated model was used to project the earned premium, incurred claim, and end of year life values. A description of how the model works to project these values on a seriatim basis is provided below.

Enclosed with this actuarial memorandum is an Excel workbook of Exhibits IV and V. This workbook contains formulas for the projected earned premium, incurred claims, and life years using the illustrative factors, which are retained in this workbook.

The projection system performs calculations at a policy level.

Projection of Earned Premium – the following steps are performed in relation to the projection of earned premium:

- a) A lifetime policy year projection of earned premium is performed from issue for each policy, where each projection year's earned premium is developed based on the annualized premium issued for the policy and the current assumptions for lapse and mortality. The policy year projection is then converted to a calendar year projection based on the policy's issue date. From this calendar year projection, a set of calendar year "expected premium persistency factors" are calculated as the ratio of earned premium from one calendar year to the next. These "expected premium persistency factors" are later used to develop future calendar year earned premium projected from the actual earned premium amount in the last historical calendar year of experience for the policy (see b below).
- b) Beginning with the actual in-force premium earned for each policy as of the last historical calendar year of experience, a 40-year projection of earned premium on a calendar year basis is performed for each policy by multiplying the prior calendar year earned premium for in-force business on that policy by the "expected premium persistency factor" for the current calendar projection year (see a above).
- c) Total projected earned premium for each future calendar year for a policy form is then determined by adding the earned premium by calendar year from each policy.

Projection of Incurred Claims – the following steps are performed in relation to the projection of incurred claims:

- a) A lifetime policy year projection of incurred claims is performed from issue for each policy, where each projection year's incurred claims are developed based on the daily benefit issued for the policy and the current assumptions for lapse, mortality, and morbidity. The policy year projection for the policy is then converted to a calendar year projection based on the policy's issue date. From this projection of incurred claims and the earned premiums from step a above, a set of calendar year "current expected loss ratios" are developed based on the relationship of expected incurred claims to expected earned premium for each calendar year. These "current expected loss ratios" are later used to develop the future projected calendar year incurred claims based on the future projected calendar year earned premiums for the policy (see b below).
- b) A 40-year projection of incurred claims on a calendar year basis is developed for each policy by multiplying each future calendar year's projected earned premium (calculated as explained above) by the "current expected loss ratio" for the projection calendar year.
- c) Total projected incurred claims for each future calendar year for a policy form are then determined by adding the incurred claims by calendar year from each policy.

Projected Life Years – the following steps are performed in relation to the projection of life years:

a) A lifetime policy year projection of life years is performed from issue for each policy, where each projection life year is developed based on the current assumptions for lapse and mortality. The policy year projection for the policy is then converted to a calendar year projection based on the policy's issue date. From this calendar year projection, a set of calendar year "expected life year persistency factors" are calculated as the ratio of the life years from one calendar year to the next. These "expected life year persistency factors" are later used to develop future calendar year life years projected from the actual life years amount in the last historical calendar year of experience for the policy (see b below).

# Exhibit VI Brighthouse Life Insurance Company Projection Model Description

- b) Beginning with the actual in-force life years for each policy as of the last historical calendar year of experience, a 40-year projection of life years on a calendar year basis is performed for each policy by multiplying the prior calendar year life years for in-force business within that cell by the "expected life year persistency factor" for the current calendar projection year (see a above).
- c) Total projected life years for each future calendar year for a policy form are then determined by adding the life years by calendar year from each policy.

The projection system performs all calculations on a seriatim basis. The factors displayed in Exhibits IV and V are derived from the already-projected values and are displayed for illustrative purposes only. These factors do not influence the projection results, but can be used to reproduce them.

The before-increase projected values for earned premium, incurred claims, and life years can be reproduced using the factors that were displayed for illustrative purposes. The formulas are provided below.

- (Earned Premium) $_t$  = (Earned Premium) $_{t-1}$  x (Premium Persistency) $_t$ x (Premium Rate Increase Factor) $_t$
- (Incurred Claims)<sub>t-1</sub> x (Claim Factor)<sub>t</sub> x (Policy Persistency)<sub>t</sub> x
   [(Adverse Selection)<sub>t-1</sub> ]
- (Life Years)<sub>t</sub> = (Life Years)<sub>t-1</sub> x (Policy Persistency)<sub>t</sub>
- *t* = any calendar year in the projection period (2017+)

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## Exhibit VII Brighthouse Life Insurance Company Status of Filings as of September 12, 2017 All Jurisdictions in which these Forms are Active LTC2 Comprehensive Policy Form

	First Round Second Round				Second Round	d	Third Round Third Round Follow-Up <sup>[2]</sup>						Second Third Round Follow-Up <sup>[3]</sup>					Fourth Round						
				Date				Amount		Date Amou			Date	Date Amount			Date	Amount	Cumulative	Date Amount				
Jurisdiction	Requested Increase	Approved or Filed	Approved or Filed	Requested Increase	Approved or Filed	Approved or Filed	Requested Increase	Approved or Filed	Approved or Filed	Requested Increase	Approved or Filed	Approved or Filed	Requested Increase	Date of Submission	Approved or Filed	Approved or Filed	Approved Increase	Requested Increase	Date of Submission	Approved or Filed	Approved or Filed	2016 Annualized Premium <sup>[4]</sup>	Proportion of Nationwide	
Alaska <sup>[1]</sup>	39.0%	5/14/2004	39.0%	30.0%	N/A	30.0%	50.0%	N/A	50.0%	Not Filing			Not Filing				171.1%	21.0%	N/A	N/A	21.0%	18.617	0.04	
Alabama	39.0%	6/15/2004	30.0%	30.0%	6/23/2010	30.0%	61.7%	1/14/2014	20.0%	34.8%	2/16/2016	20.0%	Not Filing				143.4%	35.9%	12/14/2016	6/7/2017	20.0%	78,381	0.15	
Arkansas	39.0%	8/16/2004	39.0%	30.0%	5/5/2010	10.0%	77.8%	1/29/2015	25.0%	42.2%	11/19/2015	25.0%	Not Filing				138.9%	37.7%	1/24/2017	Disapproved	0.0%	27,941	0.05	
vrizona	39.0%	2/7/2005	25.0%	30.0%	7/12/2010	20.0%	80.7%	4/8/2014	36.8%	Not Filing			Not Filing				105.2%	59.8%	12/7/2016			210,689	0.40	
California	39.0%	6/2/2004	30.0%	30.0%	10/24/2012	18.0%	77.3%			Not Filing			Not Filing				53.4%	TBD				2,842,247	5.46	
Colorado	39.0%	8/31/2004	39.0%	30.0%	11/22/2010	10.0%	77.8%	1/12/2015	35.0%	31.7%	Disapproved	0.0%	Not Filing				106.4%	TBD				225,162		
Connecticut District of Columbia	39.0%	Disapproved Withdrawn	0.0%	39.0%	9/3/2010	39.0% 0.0%	91.7%	3/28/2014	20.0%	59.8%	3/20/2015	10.0%	45.3%	4/27/2016	10/13/2016 8/31/2016	35.7% 10.0%	148.9%	29.5%	9/5/2017			3,286,729		
District or Columbia Delaware	39.0% 39.0%	9/8/2004	0.0% 20.0%	39.0% 30.8%	Disapproved 7/12/2010	25.0%	10.0% 25.0%	4/18/2014 2/25/2014	10.0% 25.0%	10.0% 25.0%	5/13/2015 11/18/2015	10.0% 25.0%	10.0% Not Filing	8/18/2016	8/31/2016	10.0%	33.1% 134.4%	10.0% 25.0%	12/21/2016	2/23/2017	25.0%	41,795 120.859	0.08	
Florida	39.0%	12/6/2004	12.0%	30.0%	11/13/2012	17.0%	75.4%	5/22/2015	9.8%	9.8%	7/8/2016	11.0%	Not Filing				59.8%	88.6%	8/15/2017	2/23/2017	23.0%	1,709,287	3.29	
Georgia	39.0%	2/4/2005	24.0%	30.0%	5/13/2012	15.0%	88.1%	7/16/2014	15.0%	63.6%	8/3/2015	13.0%	44.8%	6/9/2016	9/22/2016	15.0%	113.1%	52.3%	8/28/2017			251,978	0.489	
-lawaii	39.0%	12/21/2004	25.0%	30.0%	10/10/2011	30.0%	68.2%	7/7/2017	35.6%	Not Filing	0/3/2013	15.070	Not Filing	0/3/2010	3/22/2010	13.076	120.4%	50.1%	0/20/2017			210.534	0.409	
owa	39.0%	6/23/2004	32.0%	30.0%	7/12/2010	15.4%	78.4%	4/7/2014	17.0%	52.5%	8/18/2015	17.5%	57.0%	8/24/2016	10/19/2016	17.5%	146.1%	33.6%				276,297	0.53	
daho	39.0%	9/3/2004	39.0%	30.0%	7/28/2010	7.0%	82.0%	10/31/2014	30.0%	40.0%	Disapproved	0.0%	Not Filing				93.3%	69.4%				25,993	0.059	
Ilinois	39.0%	7/28/2004	39.0%	30.0%	8/2/2010	30.0%	50.0%	1/8/2015	50.0%	Not Filing			Not Filing				171.1%	21.0%	11/10/2016	6/30/2017	21.0%	1,239,190	2.38	
ndiana	39.0%	8/24/2004	35.0%	30.0%	6/24/2010	25.0%	62.0%	2/24/2015	11.1%	45.8%	5/9/2016	9.5%	Not Filing				105.3%	61.1%	3/3/2017	8/29/2017	10.0%	340,132	0.659	
Kansas	39.0%	7/15/2004	25.0%	30.0%	8/5/2010	10.0%	93.2%	5/21/2014	28.3%	Not Filing			Not Filing				76.4%	TBD				332,256	0.649	
Kentucky	39.0%	9/20/2004	30.0%	30.0%	5/12/2010	7.0%	91.6%	3/4/2014	20.4%	47.4%	11/10/2015	13.5%	Not Filing				90.1%	69.7%	1/12/2017	4/18/2017	19.2%	172,709		
_ouisiana	39.0%	6/9/2004	39.0%	30.0%	Disapproved	0.0%	91.7%	1/14/2015	25.0%	53.4%	Disapproved	0.0%	Not Filing				73.8%	85.6%	2/16/2017	7/11/2017	25.0%	41,555	0.089	
Massachusetts	39.0%	9/27/2004	39.0%	30.0%	12/5/2012	10.0%	63.0%	1/20/2017	40.0%	Not Filing			Not Filing				114.1%	Not Filing				2,676,223	5.149	
Maryland	39.0%	8/19/2004	20.0%	15.0%	10/12/2010	15.0%	15.0%	2/4/2014	15.0%	15.0%	6/16/2015	15.0%	15.0%	6/23/2016	11/9/2016	15.0%	109.9%	15.0%				524,032		
Maine	39.0%	6/22/2004	39.0%	12.0%	10/19/2010	12.0%	15.1%	12/8/2014	15.1%	Not Filing			Not Filing				79.2%	TBD				170,174	0.339	
Michigan Minnesota	39.0%	9/1/2004	39.0%	30.0%	3/19/2010	30.0%	50.0% Not Filing	12/2/2013	50.0%	Not Filing Not Filing			Not Filing Not Filing				171.1% 75.8%	21.0% 87.4%	11/11/2016	11/28/2016	21.0%	306,324 301,022	0.59% 0.58%	
viinnesota Viissouri	39.0% 39.0%	7/26/2004 7/15/2004	39.0% 39.0%	30.0% 30.0%	3/3/2015 8/8/2012	26.5% 16.1%	13.9%	1/30/2014	13.9%	48.6%	3/27/2015	25.0%	18.9%	6/24/2016	6/29/2016	18.9%	173.2%	21.0%	12/12/2016	1/18/2017	21.0%	349,524	0.58%	
Mississippi	39.0%	8/19/2004	25.0%	30.8%	5/6/2010	30.8%	25.0%	5/20/2014	25.0%	25.0%	10/28/2015	25.0%	Not Filing	0/24/2010	0/29/2010	10.9%	155.5%	25.0%	1/25/2017	4/17/2017	25.0%	25,144	0.05%	
Montana	39.0%	7/9/2004	39.0%	30.0%	5/11/2010	30.0%	50.0%	2/6/2014	20.0%	25.0%	Withdrawn	Withdrawn	Not Filing				116.8%	51.3%	3/2/2017	Disapproved	0.0%	34,105	0.07%	
North Carolina	39.0%	6/9/2004	39.0%	30.0%	7/2/2010	30.0%	50.0%	2/6/2014	24.0%	Not Filing	William	**************************************	Not Filing				124.1%	46.4%	12/6/2016	5/18/2017	12.4%	811,457	1.56%	
North Dakota	39.0%	6/23/2004	20.0%	30.0%	7/21/2010	17.0%	90.3%	1/21/2014	15.0%	65.5%	3/20/2015	15.0%	43.9%	6/29/2016	7/20/2016	15.0%	113.5%	51.4%	8/29/2017			12,140	0.02%	
Vebraska	39.0%	7/21/2004	39.0%	30.0%	12/14/2010	14.0%	72.2%	9/29/2014	25.0%	37.8%	11/13/2015	37.8%	Not Filing				172.9%	21.0%				194,144	0.37%	
New Hampshire	39.0%	7/9/2004	39.0%	30.0%	8/26/2010	14.0%	72.2%	Disapproved	0.0%	Not Filing			Not Filing				58.5%	13.5%				80,277	0.15%	
New Jersey	39.0%	4/4/2005	20.0%	30.0%	7/16/2010	30.0%	74.7%	7/3/2014	52.1%	Not Filing			Not Filing				137.3%	39.0%	2/17/2017	6/15/2017	22.5%	3,036,597	5.84%	
New Mexico	39.0%	6/23/2004	39.0%	30.0%	8/10/2010	30.0%	50.0%	5/21/2014	15.0%	30.4%	7/31/2015	15.0%	Not Filing				139.0%	37.2%	2/1/2017	4/19/2017	15.0%	63,316	0.12%	
Nevada	39.0%	6/21/2004	39.0%	30.0%	11/30/2010	10.0%	77.8%	10/16/2014	35.0%	Not Filing			Not Filing				106.4%	59.4%	3/2/2017	7/12/2017	59.4%	10,726	0.02%	
New York	39.0%	8/2/2005	8.0%	30.0%	1/28/2011	15.0%	100.0%	7/21/2015	15.0%	73.9%	11/29/2016	15.0%	Not Filing				64.3%	88.9%	3/6/2017			25,562,899		
Ohio	39.0%	6/10/2004	25.0%	34.6%	6/1/2010	34.6%	68.2%	3/31/2015	15.0%	46.3%	3/11/2016	15.0%	Not Filing				122.5%	15.0%	12/9/2016	3/20/2017	15.0%	729,479	1.409	
Oklahoma	39.0% 39.0%	8/25/2004 7/15/2004	25.0% 25.0%	30.0% 30.0%	11/15/2010 6/4/2010	10.0% 15.0%	93.2% 87.0%	3/17/2014 4/21/2014	25.0% 30.0%	54.6% 43.8%	1/29/2016 4/7/2016	10.0% 43.8%	Not Filing Not Filing				89.1% 168.7%	70.0% 21.0%	12/27/2016	2/9/2017	10.0%	44,554 168,496	0.09%	
Oregon Pennsylvania	39.0%	8/10/2004	39.0%	30.0%	7/28/2010	14.9%	71.0%	2/28/2014	15.0%	48.7%	7/21/2015	43.8% 15.0%	56.5%	8/17/2016	12/13/2016	15.0%	142.9%	36.0%				1,457,944	2.80%	
Puerto Rico	39.0%	10/15/2004	39.0%	30.0%	4/7/2010	30.0%	50.0%	4/22/2014	50.0%	Not Filing	1/21/2015	13.0%	Not Filing	0/1//2010	12/13/2010	13.0%	171.1%	21.0%	1/26/2017	5/4/2017	21.0%	6,915		
Rhode Island	39.0%	10/15/2004	39.0%	30.0%	9/19/2011	25.0%	57.0%	2/16/2017	57.0%	Not Filing			Not Filing				172.8%	21.0%	1/20/2017	3/4/2017	21.070	325,561	0.63%	
South Carolina	39.0%	7/12/2004	39.0%	30.0%	11/12/2010	20.0%	63.9%	2/4/2014	20.0%	36.6%	5/4/2015	20.0%	Not Filing				140.2%	37.7%	11/10/2016	2/3/2017	20.0%	1,045,059	2.019	
South Dakota	39.0%	7/30/2004	33.7%	30.0%	4/9/2010	30.0%	56.9%	3/5/2014	56.9%	Not Filing			Not Filing				172.7%	21.0%	1/24/2017	2/8/2017	21.0%	4.547	0.01%	
Γennessee	39.0%	6/25/2004	39.0%	30.0%	6/24/2010	10.0%	77.8%	4/14/2014	77.8%	Not Filing			Not Filing				171.9%	21.0%	11/16/2016	9/11/2017	12.0%	196,983	0.389	
Гexas	39.0%	9/15/2004	30.0%	30.0%	7/16/2010	23.0%	70.8%	4/28/2014	22.0%	69.4%	12/14/2016	38.0%	Not Filing				169.2%	22.8%				749,537	1.44%	
Jtah	39.0%	10/28/2004	39.0%	30.0%	Disapproved	0.0%	91.7%	11/5/2014	30.0%	47.5%	Disapproved	0.0%	Not Filing				80.7%	78.4%	2/27/2017	5/1/2017	35.0%	30,955	0.069	
/irginia	39.0%	Disapproved	0.0%	39.0%	2/25/2011	39.0%	91.7%	1/20/2016	43.8%	Not Filing			Not Filing				99.9%	61.3%				916,212	1.769	
/irgin Islands	39.0%	10/15/2004	39.0%	30.0%	Disapproved	0.0%	91.7%	Disapproved	0.0%	Not Filing			Not Filing				39.0%	132.0%	2/28/2017	5/30/2017	60.0%	2,193		
/ermont	39.0%	7/19/2005	25.0%	30.0%	Disapproved	0.0%	100.0%	Disapproved	0.0%	Not Filing			Not Filing				25.0%	148.9%	12/12/2016		l	45,765		
Washington	39.0%	7/7/2004	39.0%	30.0%	3/22/2010	30.0%	Not Filing			Not Filing			Not Filing				80.7%	20.4%	12/30/2016	3/3/2017	20.4%	313,593		
Visconsin	39.0%	5/21/2004	39.0%	30.0%	4/14/2010	30.0%	50.0%	2/27/2014	50.0%	Not Filing	1		Not Filing				171.1%	21.0%	12/8/2016	6/28/2017	21.0%	283,481	0.549	
Nest Virginia	39.0%	7/20/2004	39.0%	30.0%	5/24/2010	30.0%	50.0%	9/11/2014	50.0%	Not Filing	1		Not Filing				171.1%	21.0%	2/22/2017	Disapproved	0.0%	87,004	0.17%	
Nyoming	39.0%	5/6/2004	39.0% e filed before us	30.0%	6/4/2010	30.0%	50.0%	2/7/2014	50.0%	Not Filing			Not Filing				171.1%	21.0%	2/28/2017	3/1/2017	21.0%	8,183 <b>52,026,920</b>		

Wyoming 30.9% 676/2004 39.0% 30.0% 64/2010 30.0% 50.00 277/2014

[1] Alaska does not require Long Term Care rates to be filed before used in the company is generally filing in jurisdictions where the requested third round rate increase was not achieved.

[2] The company is generally filing in jurisdictions where the requested third round rate increase was not achieved.

[3] The company is generally filing in jurisdictions where the requested third round and third round rate increase was phased-in over multiple years.

[3] The company is generally filing in jurisdictions where the requested third round and third round follow-up rate increases were not achieved.

In some instances filings are not being pursued due to requisitory restrictions or because the third round rate increase was phased-in over multiple years.

[4] Annualized premiums reflect all prior rate increases approved prior to March 21, 2017.

## Exhibit VIII Brighthouse Life Insurance Company Nationwide Experience Projections with 53.3% Increase LTC2 Comprehensive Policy Form

			Loss Ratio Demonstration Without Interest									
	Colorates		Vithout Interest	Leci	1.16-	Farr-1	With Interest	Lace	Calendar Year	Mid-Year		
	Calendar Year	Earned Premium	Incurred Claims	Loss Ratio	Life Years	Earned Premium	Incurred Claims	Loss Ratio	Effective Int Rate	Disc / Accur Factor		
	1990	97,745	0	0.0%	495	310,822	0	0.0%	4.5%	3.179		
	1991	8,790,105	1,788,879	20.4%	10,920	26,748,140	5,443,527	20.4%	4.5%	3.043		
	1992	25,733,478	4,100,388	15.9%	20,991	74,934,480	11,940,104	15.9%	4.5%	2.91		
	1993	40,514,299	5,916,357	14.6%	27,528	112,895,141	16,486,227	14.6%	4.5%	2.786		
	1994	46,171,386	14,133,608	30.6%	28,793	123,118,564	37,688,052	30.6%	4.5%	2.666		
	1995 1996	51,164,436 58,356,963	16,100,268 15,475,511	31.5% 26.5%	31,684 36,497	130,557,712 142,498,645	41,083,502 37,788,795	31.5% 26.5%	4.5% 4.5%	2.55° 2.44°		
	1997	64,444,405	21,105,136	32.7%	35,418	150,586,826	49,316,236	32.7%	4.4%	2.336		
	1998	63,115,670	26,569,953	42.1%	34,500	141,131,081	59,412,286	42.1%	4.4%	2.236		
Historical	1999	61.841.825	34.024.748	55.0%	33,684	132,327,919	72.805.485	55.0%	4.4%	2.13		
Experience	2000	60,638,010	37,483,962	61.8%	32,855	124,164,610	76,753,533	61.8%	4.4%	2.04		
•	2001	59,684,646	42,635,843	71.4%	31,951	116,949,729	83,543,268	71.4%	4.4%	1.95		
	2002	58,720,468	57,101,036	97.2%	31,059	110,105,704	107,069,136	97.2%	4.4%	1.87		
	2003	57,309,548	64,484,126	112.5%	30,103	102,832,645	115,706,255	112.5%	4.4%	1.79		
	2004	55,849,171	67,163,208	120.3%	29,106	95,896,876	115,323,857	120.3%	4.4%	1.71		
	2005	60,262,065	66,679,232	110.6%	27,912	99,018,295	109,562,524	110.6%	4.4%	1.64		
	2006	62,658,608	86,349,771	137.8%	26,842	98,522,606	135,773,914	137.8%	4.4%	1.57		
	2007 2008	61,220,485 59,232,570	86,761,344 98,507,597	141.7% 166.3%	25,776 24,598	92,116,117 85,287,059	130,546,468 141,837,900	141.7% 166.3%	4.4% 4.4%	1.50 1.43		
	2009	57,174,361	117,310,053	205.2%	23,367	78,778,480	161,637,269	205.2%	4.4%	1.43		
	2010	54.612.357	122.650.439	224.6%	22,103	72.008.026	161,718,272	224.6%	4.3%	1.31		
	2011	53,880,178	130,095,097	241.5%	20,730	67,983,374	164,147,633	241.5%	4.3%	1.26		
	2012	54,891,856	127,842,566	232.9%	19,391	66,277,378	154,359,330	232.9%	4.3%	1.20		
	2013	51,706,095	127,537,116	246.7%	18,142	59,742,427	147,359,353	246.7%	4.2%	1.15		
	2014	48,254,278	132,937,407	275.5%	16,758	53,353,221	146,984,665	275.5%	4.1%	1.10		
	2015	49,134,536	150,593,755	306.5%	15,393	52,111,895	159,719,143	306.5%	4.0%	1.06		
	2016	51,051,901	139,262,256	272.8%	14,256	52,062,928	142,020,193	272.8%	4.0%	1.01		
	2017	50,817,302	135,935,568	267.5%	12,953	49,830,464	133,295,791	267.5%	4.0%	0.98		
	2018 2019	58,498,169	130,482,372	223.1% 198.2%	11,450 10,283	55,155,937	123,027,397	223.1% 198.2%	4.0% 4.0%	0.94 0.90		
Projected	2019	62,318,647 54,934,016	123,518,683 119,713,504	217.9%	9.182	56,498,207 47.887.775	111,982,280 104.358,170	198.2% 217.9%	4.0%	0.90		
Future	2020	48,112,037	114,972,909	239.0%	8,155	40,327,724	96,370,806	239.0%	4.0%	0.83		
Experience	2022	41,873,037	109,471,962	261.4%	7,204	33,748,237	88,230,661	261.4%	4.0%	0.80		
Σπροποποσ	2023	36,219,215	103,334,427	285.3%	6,330	28,068,702	80,080,787	285.3%	4.0%	0.77		
	2024	31,137,875	96,757,791	310.7%	5,532	23,202,721	72,100,106	310.7%	4.0%	0.74		
	2025	26,608,053	89,907,967	337.9%	4,810	19,064,689	64,419,121	337.9%	4.0%	0.71		
	2026	22,601,944	82,960,472	367.1%	4,160	15,571,450	57,155,034	367.1%	4.0%	0.68		
	2027	19,086,474	76,008,463	398.2%	3,579	12,643,743	50,351,439	398.2%	4.0%	0.66		
	2028	16,024,672	69,159,057	431.6%	3,064	10,207,180	44,052,003	431.6%	4.0%	0.63		
	2029	13,377,451	62,476,592	467.0%	2,609	8,193,258	38,264,901	467.0%	4.0%	0.61		
	2030 2031	11,104,863 9.167.331	56,071,636 49,996,287	504.9% 545.4%	2,210 1,862	6,539,780 5.191,101	33,021,223 28,310,943	504.9% 545.4%	4.0% 4.0%	0.58 0.56		
	2032	7,526,515	44,256,319	545.4% 588.0%	1,561	4,098,049	24,096,753	545.4% 588.0%	4.0%	0.54		
	2032	6,146,046	38,895,512	632.9%	1,302	3,217,701	20,363,358	632.9%	4.0%	0.52		
	2034	4,992,003	33,919,886	679.5%	1,079	2,512,994	17,075,403	679.5%	4.0%	0.50		
	2035	4,033,185	29,354,614	727.8%	890	1,952,232	14,208,872	727.8%	4.0%	0.48		
	2036	3,241,313	25,208,493	777.7%	730	1,508,589	11,732,667	777.7%	4.0%	0.46		
	2037	2,591,143	21,463,735	828.4%	596	1,159,599	9,605,541	828.4%	4.0%	0.44		
	2038	2,060,360	18,131,324	880.0%	483	886,597	7,802,122	880.0%	4.0%	0.43		
	2039	1,629,442	15,168,554	930.9%	389	674,200	6,276,160	930.9%	4.0%	0.41		
	2040	1,281,503	12,572,103	981.0%	312	509,842	5,001,778	981.0%	4.0%	0.39		
	2041	1,002,078	10,329,388	1030.8%	248	383,340	3,951,462	1030.8%	4.0%	0.38		
	2042	778,889	8,414,557	1080.3%	196	286,501	3,095,146	1080.3%	4.0%	0.36		
	2043 2044	601,612 461,613	6,803,687	1130.9% 1183.2%	154	212,781	2,406,361	1130.9% 1183.2%	4.0% 4.0%	0.35		
	2044	351,731	5,461,722 4,355,537	1183.2%	119 92	156,986 115,016	1,857,431 1,424,267	1183.2%	4.0%	0.34 0.32		
	2045	266,043	3,445,587	1295.1%	70	83,650	1,083,377	1295.1%	4.0%	0.3		
	2047	199,680	2,707,815	1356.1%	53	60,369	818,657	1356.1%	4.0%	0.3		
	2048	148,656	2,109,733	1419.2%	40	43,215	613,306	1419.2%	4.0%	0.29		
	2049	109,730	1,627,221	1482.9%	30	30,672	454,845	1482.9%	4.0%	0.27		
	2050	80,275	1,242,311	1547.6%	22	21,576	333,898	1547.6%	4.0%	0.26		
	2051	58,178	935,301	1607.7%	16	15,035	241,714	1607.7%	4.0%	0.25		
	2052	41,748	694,799	1664.3%	11	10,374	172,654	1664.3%	4.0%	0.24		
	2053	29,644	507,944	1713.5%	8	7,083	121,366	1713.5%	4.0%	0.23		
	2054	20,813	366,519	1761.0%	6	4,782	84,207	1761.0%	4.0%	0.22		
	2055	14,436	260,003	1801.1%	4	3,189	57,437	1801.1%	4.0%	0.22		
	2056	9,878	181,995	1842.4%	3	2,098	38,658	1842.4%	4.0%	0.21		
	Past	1,376,511,445	1,794,609,658	130.4%	670,852	2,462,320,701	2,586,026,929	105.0%				
	Future	539,557,598	1,709,182,346	316.8%	101,795	430,087,440	1,257,938,101	292.5%				
						UPP, 100,00F	1,201,300,101	132.9%				