

**Continental Casualty Company (CCC)**  
**Actuarial Memorandum for Preferred Solution**  
**July, 2017**  
**Maryland**

<b>Policy Form*</b>	<b>Name</b>	<b>Originally Issued</b>	<b>Closed to New Business</b>
P1-N0080-A19	Comprehensive Long Term Care	1998	2003
P1-N0081-A19	Comprehensive Long Term Care	1998	2003
P1-N0085-A19	Comprehensive Long Term Care	1998	2003
P1-N0086-A19	Comprehensive Long Term Care	1998	2003
P1-N0095-A19	Comprehensive Long Term Care	1998	2003
P1-N0096-A19	Comprehensive Long Term Care	1998	2003
P1-N0100-A19	Comprehensive Long Term Care	1998	2003
P1-N0101-A19	Comprehensive Long Term Care	1998	2003
P1-N0075-A19	Nursing Home Only	1998	2003
P1-N0076-A19	Nursing Home Only	1998	2003
P1-N0090-A19	Nursing Home Only	1998	2003
P1-N0091-A19	Nursing Home Only	1998	2003

\*Policies with compound automatic increase rider R1-N0088/R1-N0078 series or simple automatic increase rider R1-N0098/ R1-N0079 series only.

**1. Purpose and Justification of Filing**

The purpose of this memorandum is to provide actuarial information supporting CCC's request for a 32.25% rate increase for policies with an automatic increase benefit rider issued under the policy forms listed in the table above. The 32.25% rate increase will be phased in over a two year period with one rate increase of 15% this year and another 15% rate increase in the following year. Policies without an automatic increase benefit rider issued under the policy forms listed in the table above will not receive a rate increase. This rate filing is not intended to be used for other purposes. The rate revision is necessary due to a further deterioration in the lifetime loss ratios based on the current best estimate projections.

Upon approval of this rate revision, CCC will communicate to policyholders their options to reduce the impact of the rate increase. These options will include increasing the elimination period, reducing the lifetime maximum, reducing the daily benefit, eliminating optional riders, and a contingent non-forfeiture option that we will be offering to all policyholders regardless of their age or rate increase amount. Because the requested rate increase applies to policies with an automatic benefit increase rider, insureds with an automatic increase rider who choose to drop it will:

- not be subject to this rate increase,
- retain their inflated benefits as of the effective date of the plan change, and
- be charged an original issue age premium based on the original non-inflated benefits.

Please note:

- The requested rate increase amounts are significantly less than the amount CCC can justify in total.
- CCC will continue to monitor the experience of this block and will react according to the experience development.

## **2. Description of Benefits**

This rate increase applies only to policies with an optional automatic increase benefit rider.

All of the forms are guaranteed renewable individual long term care policies sold through non-captive agents. These tax qualified and non-tax qualified forms provide long-term care confinement and home health care benefits with lifetime limits. Benefits are limited to the policy's lifetime maximum which is equal to the following multipliers times the facility daily benefit amount: 365x, 730x, 1095x, 1460x, 1825x, or Unlimited. Benefit eligibility for the tax qualified forms requires inability to perform two or more activities of daily living or being cognitively impaired. Benefit eligibility for the non-tax qualified forms requires inability to perform two or more activities of daily living, being cognitively impaired, or medical necessity.

*Long-Term Care Benefits:* These policies pay the Long-Term Care Daily Benefit Amount, as shown on insured's policy schedule, for each day of Long-Term Care confinement in a nursing home or assisted living facility, limited to the Benefit Lifetime Maximum.

*Home Health Care Benefits:* For comprehensive policy forms, this policy pays 100% of the expenses incurred for each day of care for therapist or nurse, 100% or 80% (percentage varies by form) of the expenses incurred for each day of care for home health aide, medical social worker, or homemaker, and 100% or 80% (percentage varies by form) of expenses incurred for each day of care for Adult Day Care or Alternate Care Facility. The total benefits payable each day for Home Health Care benefits are limited to the daily benefit amount shown on the insured's application and are subject to the policy's Benefit Lifetime Maximum.

*Other Benefits:* The policies may include a bed reservation, waiver of premium, nonforfeiture, and alternate plan of care benefit.

*Optional Benefits:* Optional riders may include survivorship, shared benefit, dual waiver of premium, and restoration of benefits.

## **3. Renewability**

These forms provide the insured guaranteed renewable individual long-term care coverage.

## **4. Applicability**

This filing applies to in-force insureds only, as these forms are no longer being marketed. The premium change will apply to the base forms and all riders associated with the base forms for plans that include automatic benefit increase riders only.

## **5. Actuarial Assumptions**

In 2015, CCC adopted a first principles approach to project future premiums and claims. The actuarial assumptions used to project the future premiums and claims are described in this section. Attachment 3 provides further details of the experience studies conducted that were used to develop the actuarial assumptions. These current assumptions, developed in 2015, are CCC's best estimate expectations of future experience and do not include any provisions for adverse experience. The assumptions are consistent with the assumptions used in the company's 2015 internal cash flow testing.

The liability assumptions that are part of the annual best estimate experience studies are as follows:

- Frequency (incidence)
- Severity (recovery, disabled death, utilization)
- Persistency
- Shock lapse
- Expenses
- Interest

**Frequency**

The frequency of claim is the probability that a healthy policy will go into disabled status, also known as ‘claim incidence’. The final incidence rate that gets modeled is comprised of a base incidence table with various adjustments based on benefit features, policyholder demographic information, situs of care, etc.

*Base Incidence Rates*

The base incidence rates are developed as part of the annual experience study and are single-dimensional tables that vary by attained age. These base incidence tables vary by the following:

- Whether the policy covers comprehensive or facility only benefits
- The situs of the claim (Nursing Home, Home Health Care, Assisted Living Facility)
- Gender

A sample table is shown below:

**Plan Type:** Comprehensive

**Gender:** Male

**Situs:** Assisted Living Facility

Attained Age	Annual Incidence Rate (%)
44 and Prior	0.0030%
45	0.0031%
46	0.0034%
47	0.0038%
...	...
55	0.0063%
56	0.0069%
57	0.0076%
...	...
65	0.0172%
66	0.0193%
67	0.0221%
...	...
75	0.1503%
76	0.1894%
77	0.2309%
...	...
85	0.8603%
86	0.9778%

87	1.1392%
...	
95	2.2245%
96 to 120	2.4889%

*Incidence Rate Adjustment Factors*

There are a number of incidence rate adjustment factors that are utilized to adjust the base incidence tables for various policy features. Our annual experience study reviews these adjustment factors and provides updates as needed. A summary of the incidence adjustment factors are shown below:

- Risk Class Adjustments
- Elimination Period Adjustments
- Benefit Period Adjustments
- Tax Status Adjustment
- Comprehensive vs Facility Only Adjustment
- Spousal Discount Adjustment
- Expense Incurred vs. Indemnity Adjustment

*Policyholder Response to Rate Actions*

As part of the annual experience study, the relationship between premium rate actions and incidence rates were developed into an assumption set. When a rate increase is approved in a state, there is a subset of policyholders that already technically qualify for their LTC benefits, but have not utilized the policy. When a rate increase notification is received, the policyholders that qualify for benefits will go on claim to avoid paying the increased premium, since their premium rates will be waived. This phenomenon is known as ‘shock morbidity’.

To account for the uptick in incidence observed in CCC’s experience during the years following a rate action, the following incidence adjustment was implemented:

<b>Years Since Rate Increase</b>	<b>Adjustment Factor</b>
0	100.00%
1	113.50%
2	112.00%
3	106.00%
4	101.50%
5+	100.00%

While this shock morbidity results is a temporary spike in incidence rates, there is also a permanent anti-selection impact to projected incurred claims due to premium rate actions:

<b>Rate Increase</b>	<b>Anti-Selection Factor</b>
0%	0.0%
5%	0.3%
10%	0.5%
15%	0.8%
20%	1.0%
25%	1.3%
30%	1.5%
35%	1.8%
40%	1.9%
45%	2.0%
50%	2.3%
55%	2.3%
60%	2.3%
65%	2.4%
70%	2.4%
75%	2.4%
80%+	2.6%

*Incidence Improvement*

An incidence improvement factor is applied to the incidence rates to reflect studies that examine the improvement of population morbidity over time. The incidence improvement factor is 1.3% per year for 15 years, beginning 1/1/2012.

## Severity

In the projection system, the severity of claim is the associated length and cost of a claim once a policy becomes disabled (or is already disabled). The severity of a claim is driven by three key assumptions:

- Recovery Rates
- Utilization Rates
- Disabled Life Mortality Rates

A further breakdown of these three components is described below.

### *Recovery Rates*

Once a policyholder is on claim, there is an associated probability that the policyholder will recover back in to a 'healthy' status prior to death or exhausting benefits. This is the recovery rate assumption in the projection model that is developed as part of the annual experience study. The recovery tables are two-dimensional that vary by age of disability and disability duration. The first five years of the tables contain monthly rates and are annual thereafter. The recovery tables vary by the following:

- Benefit period (lifetime vs non-lifetime)
- Whether or not there are restoration of benefits
- The situs of the claim (Nursing Home, Home Health Care, Assisted Living Facility)
- Diagnosis of the claim (for policies currently on claim)

Policies that are currently in claim status have a known situs of care, so the recovery rates will be different than a policy currently in healthy status, since the future claim situs is unknown.

A sample table is shown below for sample ages of disablement (rates shown are on a monthly basis):

**Policyholder Status:** Disabled

**Benefit Period:** Lifetime

**Restoration of Benefits:** No

**Situs:** Assisted Living Facility (current, since policy is disabled)

**Diagnosis:** Dementia & Parkinson's

Disability Month	Disablement Age			
	65	75	85	95
1	0.55%	0.34%	0.21%	0.22%
2	0.84%	0.53%	0.32%	0.33%
3	0.68%	0.43%	0.26%	0.27%
4	0.63%	0.40%	0.24%	0.25%
5	0.46%	0.29%	0.17%	0.18%
6	0.41%	0.25%	0.15%	0.16%
7	0.34%	0.21%	0.13%	0.13%
8	0.26%	0.16%	0.10%	0.10%
9	0.22%	0.14%	0.08%	0.09%
10	0.19%	0.12%	0.07%	0.08%
11	0.18%	0.11%	0.07%	0.07%
12	0.17%	0.10%	0.06%	0.07%
...	...	...	...	...

### *Utilization Rates*

Utilization rate tables are developed as part of the annual experience study and represent the anticipated percentage of the available daily benefit that gets used. For example, if a benefit of \$100 a day is available, and the utilization rate is 85%, then \$85 will be projected as the paid claim. The utilization tables are two-dimensional that vary by age of disability and disability duration. The first five years of the tables contain monthly rates and are annual thereafter. The utilization tables vary by the following:

- Benefit period (lifetime vs non-lifetime)
- The situs of the claim (Nursing Home, Home Health Care, Assisted Living Facility)
- Inflation type (simple, compound, none)
- Home health care percentage
- Diagnosis of the claim (for policies currently on claim)

Policies that are currently in claim status have a known situs of care, so the utilization rates will be different than a policy currently in healthy status, since the future claim situs is unknown.

A sample table is shown below for sample ages of disablement (rates shown are on a monthly basis):

**Policyholder Status:** Disabled

**Benefit Period:** Non-Lifetime

**Inflation Type:** Compound

**Home Health Care Percentage:** N/A (since policy is disabled)

**Situs:** Assisted Living Facility (current, since policy is disabled)

**Diagnosis:** Other

Disability Month	Disablement Age			
	65	75	85	95
1	50.64%	52.02%	53.32%	53.75%
2	50.82%	52.20%	53.51%	53.93%
3	50.99%	52.38%	53.69%	54.12%
4	51.17%	52.56%	53.88%	54.31%
5	51.34%	52.74%	54.06%	54.49%
6	51.52%	52.92%	54.25%	54.68%
7	51.70%	53.10%	54.44%	54.87%
8	51.87%	53.28%	54.62%	55.05%
9	52.05%	53.46%	54.81%	55.24%
10	52.22%	53.65%	54.99%	55.43%
11	52.40%	53.83%	55.18%	55.61%
12	52.57%	54.01%	55.36%	55.80%
...	...	...	...	...

#### *Disabled Life Mortality Rates*

Once a policyholder is on claim, there is an associated probability that the policyholder will decrement due to death, which influences the overall length of a claim. Generally, the probability of death from a currently disabled policyholder is greater than the probability associated with a currently healthy policyholder, so separate assumptions are developed and modeled. The disabled live mortality assumptions are developed as part of the annual experience study. The disabled life mortality rates are two-dimensional tables that vary by age of disability and disability duration. Similar to the other severity assumptions, the first five years of the tables contain monthly rates and are annual thereafter. The disabled life mortality tables vary by the following:

- Benefit period (lifetime vs non-lifetime)
- The situs of the claim (Nursing Home, Home Health Care, Assisted Living Facility)
- Gender
- Diagnosis of the claim (for policies currently on claim)

Policies that are currently in claim status have a known situs of care, so the disabled life mortality rates will be different than a policy currently in healthy status, since the future claim situs is unknown.

A sample table is shown below for sample ages of disablement (rates shown are on a monthly basis):

**Policyholder Status:** Disabled



**Benefit Period:** Lifetime

**Gender:** Male

**Situs:** Nursing Home (current, since policy is disabled)

**Diagnosis:** Dementia & Parkinson's

Disability Month	Disablement Age			
	65	75	85	95
1-12	1.71%	2.51%	2.85%	3.38%
13-24	1.75%	2.58%	2.97%	3.67%
25-36	1.81%	2.64%	3.08%	4.03%
37-48	1.87%	2.69%	3.17%	4.40%
49-60	1.96%	2.70%	3.22%	4.78%
...	...	...	...	...

### **Persistency**

In the projection system, the persistency assumptions are the probability that an individual will remain an inforce policyholder. The persistency of a claim is driven by three key assumptions:

- Voluntary Lapse Rates
- Healthy Life Mortality Rates
- Healthy Life Mortality Improvement

A further breakdown of these three components is described below.

#### *Voluntary Lapse Rates*

The voluntary lapse assumption is developed as part of the annual experience study and reflects the probability associated with a policyholder voluntarily canceling their policy. The voluntary lapse rates differ from shock lapse rates in that the policy cancelation is not due to a rate increase notification. Further details on shock lapse are provided below. The voluntary lapse assumption is a one-dimensional table that varies by policy duration. The lapse table is shown below:

Policy Duration	Lapse Rate
1	6.00%
2	4.00%
3	3.00%
4	2.50%
5	2.00%
6	1.75%
7	1.50%
8	1.25%
9	1.00%
10+	0.75%

#### *Healthy Life Mortality Rates*

The healthy life mortality assumption is the probability of death associated with currently healthy policyholders and is developed as part of the annual experience study. The base healthy life mortality tables are one-dimensional tables based on the 2012 IAM tables, which vary based on gender and attained age. There are additional multipliers to these base tables based on CCC's experience, which vary by gender.

Gender	Adjustment Factors
Male	79.0%
Female	65.0%

#### *Healthy Life Mortality Improvement*

A healthy life mortality improvement factor is applied to the base healthy mortality table to reflect studies that examine the improvement of population mortality over time. The healthy life mortality improvement factor is 0.8% per year for 15 years, beginning 1/1/2012.

#### **Shock Lapse**

The shock lapse assumption is based on internal experience studies. These rates are to appropriately increase policyholder lapse behavior following a premium rate increase. The impact of a policyholder electing a reduced benefit option (RBO) is considered in addition to a full shock lapse.

Rate Increase	Shock Lapse Rate	Reduced Benefit Option (RBO)	Impact on Premium
0%	0.00%	0.00%	0.00%
5%	1.00%	0.00%	1.00%
10%	1.50%	0.00%	1.50%
15%	2.00%	0.00%	2.00%
20%	3.00%	4.00%	6.88%
25%	4.00%	4.83%	8.64%
30%	5.00%	5.67%	10.38%
35%	6.00%	6.50%	12.11%
40%	7.00%	7.33%	13.82%
45%	7.50%	8.17%	15.05%
50%	8.00%	9.00%	16.28%
55%	8.00%	9.83%	17.05%
60%	8.00%	10.67%	17.81%
65%	8.25%	11.50%	18.80%
70%	8.25%	12.33%	19.57%
75%	8.25%	13.17%	20.33%
80%	8.50%	14.00%	21.31%
85%	8.50%	14.00%	21.31%
90%	8.50%	14.00%	21.31%
95%	8.50%	14.00%	21.31%
100%+	8.50%	15.00%	22.23%

#### **Expenses**

This filing is based on loss ratios and expense levels have not been considered.

**Interest**

The inforce premium-weighted average maximum statutory valuation interest rate for contract reserves is used to accumulate past actual experience and discount future experience.

**6. Marketing Method**

These policies were sold through non-captive agents.

**7. Underwriting Description**

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

**8. Premiums**

Premiums are unisex, level, and payable for life unless the insured selected a limited pay option. The premiums may vary by issue age, elimination period, benefit period / lifetime maximum, initial daily benefit amount, level of home health care coverage, inflation protection option, premium mode, underwriting class, marital status, and the selection of any other options or riders.

**9. Modal Premium Factors**

The following modal factors remain unchanged and are applied to the annual premium to obtain the modal premium.

Payment Mode	Modal Factor	Nationwide Distribution at 12/31/2015
Annual	1.00	61.6%
Semi-Annual	0.52	7.7%
Quarterly	0.27	10.9%
Monthly	0.09	19.8%

**10. Issue Age Range**

Issue ages range from 18 to 81.

**11. Area Factors**

Area factors are not used for these products.

**12. Average Annual Premium**

The average annual premium for the policy forms subject to the rate increase request both prior to the impact of the requested rate increase, and after, are provided in Attachment 1 to this memorandum.

**13. Number of Policyholders**

The current number of policyholders as of December 31, 2015 can be found in Attachment 1.

#### **14. Distribution of Business**

The historical experience reflects the actual distribution of policies during the experience period. We used the current distribution of business as of December 31, 2015 to project future experience. Attachment 2 contains the distribution of the inforce policies by key demographic and benefit characteristics.

#### **15. Claim Liability and Reserves**

Active life reserves have not been used in this rate increase analysis. Claim reserves as of December 31, 2015 have been discounted to the incurral date of each respective claim and included in historical incurred claims. Incurred but not reported and terminated but not reported reserve balances as of December 31, 2015 have been allocated to a calendar year of incurral and included in historical incurred claims.

#### **16. Trend Assumptions**

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

#### **17. Experience - Past and Future**

Earned premiums and incurred claims projected through 2075 are developed from a first principles actuarial model representing actual contracts in-force as of December 31, 2015. The assumptions described in Section 5 above are used to project life years, earned premiums and incurred claims.

Historical results reflect earned premium by calendar year with claims captured by incurral year. That is, incurred claims for a calendar represent all payments through December 31, 2015 for a claim incurred in a particular calendar year plus any claim reserve held as of December 31, 2015. Incurred claims also include IBNR and TBNR held as of December 31, 2015.

Attachment 4 presents nationwide experience through December 31, 2015 for all forms affected by this rate increase to ensure maximum credibility.

Annual loss ratios are calculated, with and without interest, as incurred claims divided by earned premiums.

A lifetime loss ratio as of December 31, 2015 is calculated as the sum of accumulated past experience and discounted future experience where accumulation and discounting occur at the inforce premium-weighted average maximum statutory valuation interest rate for contract reserves, which is 4.5%.

#### **Definition of Approved Rate Increases**

Prior nationwide rate action programs were not fully approved and/or fully implemented in all states as of December 31, 2015. We believe projecting a mixture of rate increases nationwide, some approved, some disapproved, some partially implemented, and some fully implemented would not accurately demonstrate whether or not a rate increase is justified. For clarity, the earned premium from rate increases presented in Attachment 4 reflects prior premium rate increase(s) approved by your state with the rate increases applied to all policies nationwide. Attachment 4 includes separate exhibits for projections with and without the requested rate increase.

## **18. History of Rate Adjustments**

See Attachment 1 for a history of rate increases on inforce policyholders with this policy form in your state.

## **19. Ensuring No Cross-Subsidization Between States**

We have ensured no state's rate increase approvals will subsidize other states' experience. Rate increases will vary by state, but only to reflect the timing and amount of prior rate increases approved by that state. This is accomplished by first backing-out all prior rate increases from our nationwide premium data. We then reintroduce prior rate increases with the amount and timing based on your state's prior approvals (as referenced in Section 18). The current proposed rate increase(s) are then determined.

Although some states may have capped our previous inforce rate increase filings, in each case this was done with the understanding that CCC would be refiling for the remainder at a later date. In instances where the remainder remains unapproved, the company will continue to refile until the difference has been approved.

## **20. Analysis Performed to Consider a Rate Increase**

The initial premium schedules were based on pricing assumptions believed to be appropriate, given industry experience available when the initial rate schedules were developed.

As noted in Section 5 above, in 2015, CCC adopted a first principles approach to project future premiums and claims. Using the original claim cost pricing documentation, outside consultants performed an original pricing exercise to recreate the original pricing assumptions under a first principles approach.

Attachment 3 contains comparisons of the pricing assumptions (expected) to actual experience. Further comparisons of our new assumptions to actual experience are also provided.

## **21. Requested Rate Increase and Demonstration of Satisfaction of Requirements**

CCC is requesting a 32.25% increase for all policies with an automatic increase benefit rider issued under the policy forms included in this rate increase request. Corresponding rate schedules reflecting the 32.25% increase are included with this filing. Although this request is significantly less than CCC can justify, we are limiting our rate increase request at this time. CCC will continue to monitor the experience of this block.

Note that the actual rates implemented may vary slightly from those filed due to implementation rounding algorithms.

Satisfaction of minimum required loss ratio requirements is demonstrated in Attachment 1. This approach shows that with the requested rate increase the expected lifetime loss ratio exceeds the minimum loss ratio requirement.

Attachment 5 included with this memorandum provides a demonstration that the requested rate increase meets the 58/85 test required by Rate Stability Regulation.

The historical and future projected incurred claims in the 58/85 test were increased by 10% from the best estimate projections to reflect assumptions that include moderately adverse conditions (equates to a 10% deterioration in the lifetime loss ratio). Present and accumulated

values in the demonstration are determined at the average maximum valuation interest rate for contract reserves over the issue period, which is 4.50%.

Because the company is limiting the rate increase request we cannot certify that the rates with the full requested rate increase will be sufficient under moderately adverse conditions.

## **22. Proposed Effective Date**

The rate increase will apply to policies on their next premium due date following a notification period at least as long as required by your state following approval.

## **23. Relationship of Renewal Premium to New Business Premium.**

CCC is no longer selling any new long-term care business. Therefore, the comparison of renewal premium rates after the rate increase to the Company's current new business premium rate schedule is not applicable.

## **24. Actuarial Certification**

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 filing requirements for long-term care insurance premium and rate increases.

This memorandum has been prepared in conformity with all applicable Actuarial Standards of Practice including Actuarial Standard of Practice No. 8, "Regulatory Filings for Health Benefits, Accident and Health Insurance, and Entities Providing Health Benefits" and Actuarial Standard of Practice No. 18, "Long-Term Care Insurance".

I have reviewed and considered the policy design and benefits, as well as the company's underwriting and claims adjudication processes, when developing the filed rates.

I certify that, to the best of my knowledge, this rate filing is in compliance with the applicable laws and rules of your state. In my opinion, the rates are not unfairly discriminatory and the gross premiums are not excessive and bear reasonable relationship to the benefits. This rate increase will enhance rate adequacy but is not sufficient to certify the rates as required.



\_\_\_\_\_  
Erik Wenzel, FSA, MAAA

July 21, 2017/21/2017

Date

## **25. Attachment Listing**

- Attachment 1: State Specific Information
- Attachment 2: Distribution of the Inforce Policies
- Attachment 3: Experience Analysis and Assumption Setting

Attachment 4: Nationwide Experience Projections  
Attachment 5: Nationwide 58/85 Test

Attachment 1  
Continental Casualty Company  
Maryland

**12 Average Annual Premium**

	Maryland	Nationwide
Without Increase	2,139	2,166
With Increase	2,828	2,865

**13 Number of Policyholders**

	No of Policies	2015 Annualized Premium
Nationwide	68,516	148,433,550
Maryland	3,984	8,520,618

**18 History of Rate Adjustments**

SERFF Number	Rate Increase Request	Approval Date	Rate Increase Approved
MILL-128840937	80.0%	6/26/2013	15.0%
MILL-129652548	15.0%	3/25/2015	15.0%
MILL-130118407	15.0%	1/28/2016	15.0%

**21 Satisfaction of Minimum Loss Ratio Requirements**

- |   |      |
|---|------|
| 1) Expected Lifetime Loss Ratio with Increase | 100% |
| 2) Minimum Required Loss Ratio                | 60%  |
| Is 1 greater than 2?                          | Yes  |



Attachment 2  
Continental Casualty Company  
Maryland

Issue Year	Nationwide				Maryland			
	Count	% of Count	Premium	% of Premium	Count	% of Count	Premium	% of Premium
1998	126	0.2%	269,941	0.2%	39	1.0%	72,897	0.9%
1999	8,418	12.3%	17,698,686	11.9%	653	16.4%	1,344,441	15.8%
2000	14,358	21.0%	30,249,288	20.4%	876	22.0%	1,759,345	20.6%
2001	17,936	26.2%	38,867,451	26.2%	1,001	25.1%	2,159,453	25.3%
2002	21,399	31.2%	47,633,796	32.1%	1,138	28.6%	2,578,917	30.3%
2003	6,279	9.2%	13,714,388	9.2%	277	7.0%	605,564	7.1%
<b>Total</b>	<b>68,516</b>		<b>148,433,550</b>		<b>3,984</b>		<b>8,520,618</b>	

Issue Age	Count	% of Count	Premium	% of Premium	Count	% of Count	Premium	% of Premium
<45	2,171	3.2%	3,026,821	2.0%	145	3.6%	205,431	2.4%
45-49	5,346	7.8%	8,184,804	5.5%	373	9.4%	577,850	6.8%
50-54	13,077	19.1%	22,559,733	15.2%	865	21.7%	1,500,690	17.6%
55-59	19,580	28.6%	39,051,504	26.3%	1,252	31.4%	2,521,241	29.6%
60-64	16,577	24.2%	39,248,885	26.4%	823	20.7%	2,028,017	23.8%
65-69	8,852	12.9%	25,049,354	16.9%	388	9.7%	1,116,075	13.1%
70-74	2,554	3.7%	9,475,487	6.4%	120	3.0%	467,354	5.5%
75-79	338	0.5%	1,732,627	1.2%	17	0.4%	97,685	1.1%
80+	21	0.0%	104,334	0.1%	1	0.0%	6,276	0.1%
<b>Total</b>	<b>68,516</b>		<b>148,433,550</b>		<b>3,984</b>		<b>8,520,618</b>	

Attained Age	Count	% of Count	Premium	% of Premium	Count	% of Count	Premium	% of Premium
<60	2,592	3.8%	3,759,623	2.5%	168	4.2%	243,343	2.9%
60-64	5,776	8.4%	9,202,271	6.2%	375	9.4%	596,315	7.0%
65-69	14,122	20.6%	24,793,565	16.7%	913	22.9%	1,639,672	19.2%
70-74	19,125	27.9%	38,640,005	26.0%	1,196	30.0%	2,405,454	28.2%
75-79	15,596	22.8%	37,447,888	25.2%	813	20.4%	1,997,510	23.4%
80-84	8,456	12.3%	23,797,121	16.0%	381	9.6%	1,079,564	12.7%
85-89	2,504	3.7%	9,102,314	6.1%	120	3.0%	468,099	5.5%
90+	345	0.5%	1,690,764	1.1%	18	0.5%	90,661	1.1%
<b>Total</b>	<b>68,516</b>		<b>148,433,550</b>		<b>3,984</b>		<b>8,520,618</b>	

Gender	Count	% of Count	Premium	% of Premium	Count	% of Count	Premium	% of Premium
Male	28,755	42.0%	63,381,053	42.7%	1,711	42.9%	3,756,752	44.1%
Female	39,761	58.0%	85,052,497	57.3%	2,273	57.1%	4,763,867	55.9%
<b>Total</b>	<b>68,516</b>		<b>148,433,550</b>		<b>3,984</b>		<b>8,520,618</b>	

Inflation Option	Count	% of Count	Premium	% of Premium	Count	% of Count	Premium	% of Premium
None	-	0.0%	-	0.0%	-	0.0%	-	0.0%
5% Simple	23,224	33.9%	50,485,726	34.0%	1,192	29.9%	2,578,882	30.3%
5% Compound	45,292	66.1%	97,947,824	66.0%	2,792	70.1%	5,941,736	69.7%
<b>Total</b>	<b>68,516</b>		<b>148,433,550</b>		<b>3,984</b>		<b>8,520,618</b>	

Elimination Period	Count	% of Count	Premium	% of Premium	Count	% of Count	Premium	% of Premium
0-Day	6,291	9.2%	15,570,567	10.5%	617	15.5%	1,535,262	18.0%
30-Day	26,105	38.1%	57,307,431	38.6%	1,427	35.8%	3,027,157	35.5%
60-Day	619	0.9%	1,168,681	0.8%	-	0.0%	-	0.0%
90-Day	33,527	48.9%	70,278,097	47.3%	1,865	46.8%	3,794,857	44.5%
180-Day	1,636	2.4%	3,407,842	2.3%	61	1.5%	139,401	1.6%
365-Day	338	0.5%	700,932	0.5%	14	0.4%	23,942	0.3%
<b>Total</b>	<b>68,516</b>		<b>148,433,550</b>		<b>3,984</b>		<b>8,520,618</b>	

Benefit Period	Count	% of Count	Premium	% of Premium	Count	% of Count	Premium	% of Premium
365x	66	0.1%	89,037	0.1%	-	0.0%	-	0.0%
730x	3,301	4.8%	5,498,645	3.7%	150	3.8%	240,412	2.8%
913x	2	0.0%	5,040	0.0%	-	0.0%	-	0.0%
1095x	14,434	21.1%	26,317,663	17.7%	611	15.3%	1,032,389	12.1%
1460x	9,959	14.5%	19,316,184	13.0%	552	13.9%	1,018,461	12.0%
1825x	14,981	21.9%	31,613,563	21.3%	970	24.3%	1,984,800	23.3%
Lifetime	25,773	37.6%	65,593,418	44.2%	1,701	42.7%	4,244,557	49.8%
<b>Total</b>	<b>68,516</b>		<b>148,433,550</b>		<b>3,984</b>		<b>8,520,618</b>	

Home Health Care Reimbursement Level	Count	% of Count	Premium	% of Premium	Count	% of Count	Premium	% of Premium
0%	2,595	3.8%	4,586,113	3.1%	92	2.3%	174,031	2.0%
50%	7,474	10.9%	13,729,949	9.2%	221	5.5%	394,620	4.6%
75%	4,379	6.4%	8,810,654	5.9%	120	3.0%	242,615	2.8%
100%	54,068	78.9%	121,306,834	81.7%	3,551	89.1%	7,709,353	90.5%
<b>Total</b>	<b>68,516</b>		<b>148,433,550</b>		<b>3,984</b>		<b>8,520,618</b>	

**Continental Casualty Company (CCC)**  
**Attachment 3 – Description of Experience Analysis and Assumption Setting**

**Background**

CCC performs an annual experience study to develop new best estimate assumptions that are primarily used for the company's GAAP and statutory reserve adequacy analysis. These assumptions are also used to determine the rate increases requested in this filing.

In 2015 CCC's modeling platform was converted from a total claims cost model to a first principles model. To support this effort, new and more granular assumptions were developed. For the 2015 experience study, a traditional actual to expected (A/E) experience study was performed using nationwide data from 2008 to 2014. Adjustment factors were developed to produce A/E ratios close to 100% by iteratively calibrating multiple variables.

The experience study is performed using the combined experience of CCC's entire individual long-term care insurance block—not just the product included in this filing. Product-level adjustments are subsequently applied to align the best estimate assumptions for individual products with actual experience to smooth the progression from actual to projected claims.

Each section below describes unique elements of the experience study for each assumption.

**Frequency (Incidence)**

*Incidence*

A/E experience studies demonstrated increased incidence beginning in 2012, which coincided with the implementation of premium rate actions. Because of this, experience was bifurcated into pre-rate increase era (2011 and prior) and post-rate increase era (2012 and later). Base incidence assumptions were developed using pre-rate increase era experience to ensure the impact of rate increases are not included as base incidence but isolated as shock morbidity (described below).

Exhibit 1 compares the actual historical, current best estimate, and original first principles based pricing claim counts, incidence rates, and actual-to-expected (A/E) ratios for all of CCC's individual long-term care (ILTC) business. Exhibit 2 shows the same analysis, but just for the policy forms included in this filing. Since the best estimate assumptions reasonably match the historical actual experience, the assumptions are appropriate to use for inforce projections.

*Incidence Improvement*

The incidence improvement assumption is based on the National Long-Term Care Survey results presented at the Society of Actuaries 2004 Spring Meeting, "Morbidity Improvement and Its Impact on LTC Insurance Pricing and Valuation". Progress updates of the research presented at the 2011 and 2014 Intercompany Long-Term Care Insurance Conferences further confirm the appropriateness of including incidence improvement.

### *Shock Morbidity*

The shock morbidity assumption was developed from the observed spike in incidence actual-to-expected ratios during the post-rate increase era.

### *Anti-Selection*

The anti-selection assumption is equal to 50% of the shock lapse assumption and is based on actuarial judgment. It assumes that half of the reduction of claims due to shock lapse will be offset by the increased likelihood of inforce policyholders going on claim.

### **Severity Assumptions**

Severity assumptions include disabled mortality, claim recovery and benefit utilization rates, which were developed by fitting actual-to-expected ratios to 100% for the variables on which the assumption is based.

### **Persistency**

In developing persistency assumptions, because there was no precise method to distinguish lapses from unreported deaths, the following steps were taken:

- A base lapse assumption with an ultimate rate of 0.75% starting at policy year 10 was chosen. This is consistent with the general range of ultimate lapse rates of 0.5% to 1.0% observed in the industry.
- The 2012 IAM mortality table was used as the healthy-life base mortality assumption.
- Shock lapse and unreported deaths were estimated.
- Adjustment factors were applied to healthy-life mortality to calibrate total termination A/E ratios.

The healthy-life mortality improvement assumption was developed based on various actuarial studies and company experience observed during the pre-rate increase era.

Exhibit 3 compares the actual historical, current best estimate, and original pricing termination counts, termination rates, and actual-to-expected (A/E) ratios of all of CCC's ILTC business.

Exhibit 4 shows the same analysis, but just for the policy forms included in this filing. Since the best estimate assumptions reasonably match the historical actual experience, the assumptions are appropriate to use for inforce projections.

### **Exhibits**

The exhibits below illustrate how the current best estimate assumptions provide a better fit to historical experience than the original pricing assumptions. Exhibit 5 compares actual historical, current best estimate projected, and original pricing projected incurred claims to further illustrate this point.

**Attachment 3 - Exhibit 1**

**Incidence Actual-to-Expected Experience Analysis**

**Nationwide CCC Total Individual LTC**

<b>Attained Age</b>	<b>Exposures (Years)</b>	<b>Actual Claim Count</b>	<b>Expected Claim Count - Best Estimate</b>	<b>Expected Claim Count - Original Pricing</b>	<b>Actual Incidence Rate</b>	<b>Expected Incidence Rate - Best Estimate</b>	<b>Expected Incidence Rate - Original Pricing</b>	<b>A/E - Best Estimate</b>	<b>A/E - Original Pricing</b>
Under 50	7,940	7	3	3	0.09%	0.04%	0.04%	221%	228%
50-54	18,734	14	11	11	0.07%	0.06%	0.06%	125%	129%
55-59	53,405	46	45	44	0.09%	0.08%	0.08%	102%	104%
60-64	123,275	129	160	164	0.10%	0.13%	0.13%	80%	79%
65-69	173,038	418	428	456	0.24%	0.25%	0.26%	98%	92%
70-74	196,747	1,267	1,178	1,273	0.64%	0.60%	0.65%	108%	100%
75-79	198,090	3,203	3,097	3,388	1.62%	1.56%	1.71%	103%	95%
80-84	142,032	5,251	5,184	5,982	3.70%	3.65%	4.21%	101%	88%
85-89	63,370	4,558	4,622	5,220	7.19%	7.29%	8.24%	99%	87%
90+	15,778	1,933	1,913	2,137	12.25%	12.12%	13.55%	101%	90%
<b>Total</b>	<b>992,408</b>	<b>16,826</b>	<b>16,642</b>	<b>18,678</b>	<b>1.70%</b>	<b>1.68%</b>	<b>1.88%</b>	<b>101%</b>	<b>90%</b>

**Notes:**

1. Based on the "pre-rate increase" experience study period of 2008 to 2011
2. Best estimate claim counts developed by applying current best estimate assumptions to historical exposures
3. Incidence rates are claim counts divided by exposures
4. A/E ratios are actual claim counts divided by expected claim counts
5. Total A/E ratio of 101% shows how the assumption was determined at the aggregate individual LTC level

Attachment 3 - Exhibit 2									
Incidence Actual-to-Expected Experience Analysis									
Nationwide "Preferred Solution" Simple and Compound Inflation Policies									
Attained Age	Exposures (Years)	Actual Claim Count	Expected Claim Count - Best Estimate	Expected Claim Count - Original Pricing	Actual Incidence Rate	Expected Incidence Rate - Best Estimate	Expected Incidence Rate - Original Pricing	A/E - Best Estimate	A/E - Original Pricing
Under 50	5,983	1	2	2	0.02%	0.04%	0.04%	42%	44%
50-54	13,754	13	8	8	0.09%	0.06%	0.06%	160%	167%
55-59	37,331	29	31	29	0.08%	0.08%	0.08%	95%	99%
60-64	77,620	71	96	92	0.09%	0.12%	0.12%	74%	77%
65-69	86,029	152	195	188	0.18%	0.23%	0.22%	78%	81%
70-74	65,715	341	345	334	0.52%	0.53%	0.51%	99%	102%
75-79	32,500	459	418	404	1.41%	1.29%	1.24%	110%	113%
80-84	8,567	300	252	245	3.50%	2.94%	2.87%	119%	122%
85-89	1,286	108	76	75	8.40%	5.92%	5.86%	142%	143%
90+	55	6	5	5	10.86%	9.51%	9.30%	114%	117%
Total	328,839	1,480	1,428	1,383	0.45%	0.43%	0.42%	104%	107%

Notes:

1. Based on the "pre-rate increase" experience study period of 2008 to 2011
2. Best estimate claim counts developed by applying current best estimate assumptions to historical exposures
3. Incidence rates are claim counts divided by exposures
4. A/E ratios are actual claim counts divided by expected claim counts
5. "Original Pricing" refers to a first-principles pricing reproduction of the original claims-cost assumptions used to initially price the business
6. This table shows experience analysis for just the policy forms included in this nationwide rate action program

Attachment 3 - Exhibit 3									
Policy Terminations Actual-to-Expected Experience Analysis									
Nationwide Total CCC Individual ILTC									
Year	Exposures (Years)	Actual Terminations	Expected Terminations - Best Estimate	Expected Terminations - Original Pricing	Actual Termination Rate	Expected Termination Rate - Best Estimate	Expected Termination Rate - Original Pricing	Actual to Expected - Best Estimate	Actual to Expected - Original Pricing
2008	263,949	7,245	6,827	19,896	2.74%	2.59%	7.54%	106%	36%
2009	253,134	7,054	6,520	19,366	2.79%	2.58%	7.65%	108%	36%
2010	242,520	6,622	6,292	18,842	2.73%	2.59%	7.77%	105%	35%
2011	232,087	6,075	6,129	18,325	2.62%	2.64%	7.90%	99%	33%
2012	220,360	5,749	5,961	17,735	2.61%	2.71%	8.05%	96%	32%
2013	207,841	5,711	5,883	16,937	2.75%	2.83%	8.15%	97%	34%
2014	195,864	5,476	5,813	16,260	2.80%	2.97%	8.30%	94%	34%
Total	1,615,755	43,931	43,426	127,362	2.72%	2.69%	7.88%	101%	34%

Notes:

1. Based on experience study period of 2008 to 2014
2. Terminations refer to policy base lapses and healthy-life mortality. Shock lapse is excluded.
3. Expected terminations were developed by applying assumptions to historical exposures
4. Termination rates are total terminations divided by exposures
5. A/E ratios are actual terminations divided by expected terminations
6. "Original Pricing" refers to a first-principles pricing reproduction of the original claims-cost assumptions used to initially price the business
7. Total A/E ratio of 101% shows how the assumption was determined at the aggregate individual LTC level

**Attachment 3 - Exhibit 4**

**Policy Terminations Actual-to-Expected Experience Analysis**

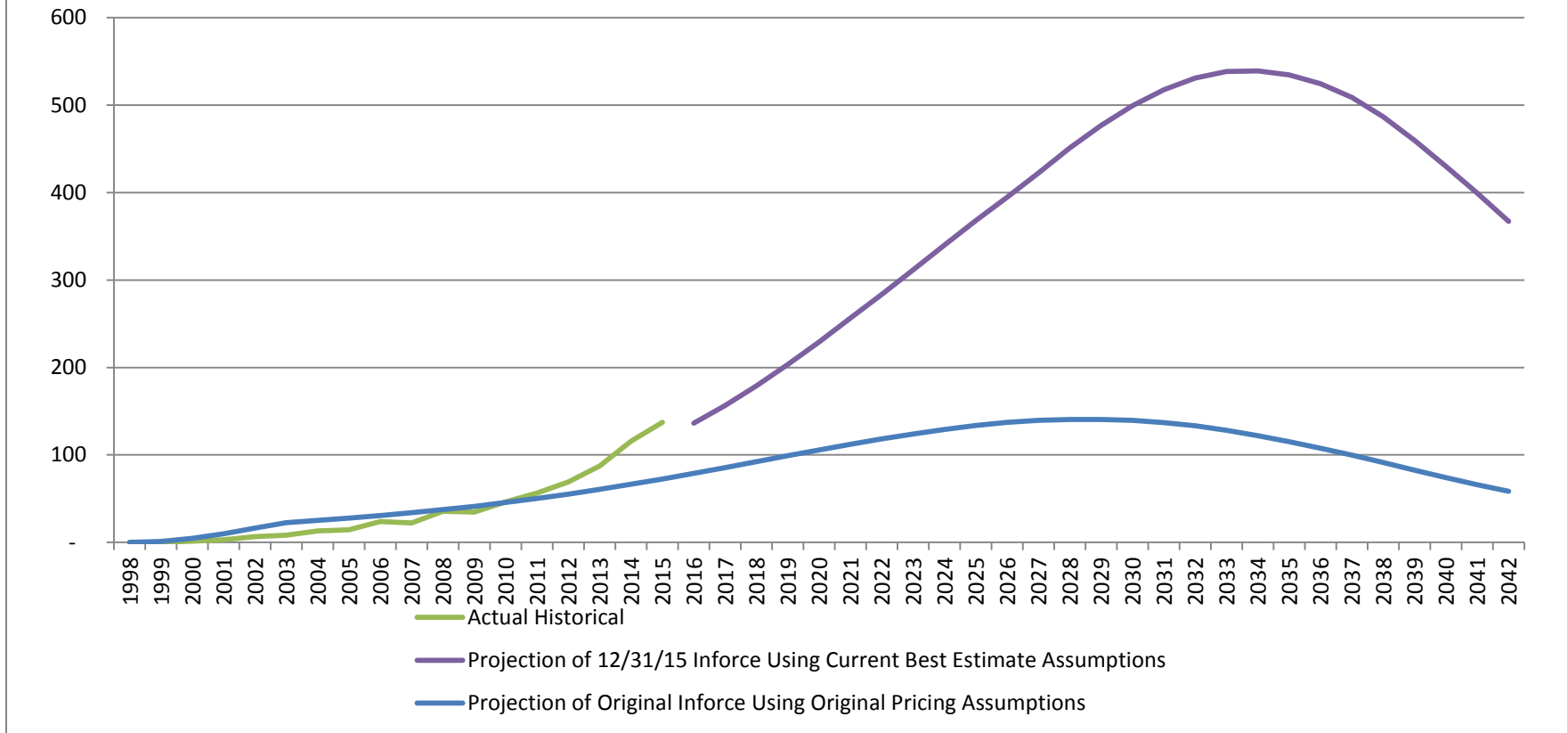
**Nationwide "Preferred Solution" Simple and Compound Inflation Policies**

<b>Year</b>	<b>Exposures (Years)</b>	<b>Actual Terminations</b>	<b>Expected Terminations - Best Estimate</b>	<b>Expected Terminations - Original Pricing</b>	<b>Actual Termination Rate</b>	<b>Expected Termination Rate - Best Estimate</b>	<b>Expected Termination Rate - Original Pricing</b>	<b>Actual to Expected - Best Estimate</b>	<b>Actual to Expected - Original Pricing</b>
2008	85,143	1,447	1,841	4,564	1.70%	2.16%	5.36%	79%	32%
2009	83,301	1,578	1,649	4,575	1.89%	1.98%	5.49%	96%	35%
2010	81,393	1,368	1,497	4,584	1.68%	1.84%	5.63%	91%	30%
2011	79,633	1,176	1,400	4,603	1.48%	1.76%	5.78%	84%	26%
2012	78,013	1,063	1,365	4,633	1.36%	1.75%	5.94%	78%	23%
2013	76,205	1,515	1,395	4,671	1.99%	1.83%	6.13%	109%	32%
2014	73,024	1,387	1,407	4,608	1.90%	1.93%	6.31%	99%	30%
<b>Total</b>	<b>556,712</b>	<b>9,534</b>	<b>10,554</b>	<b>32,237</b>	<b>1.71%</b>	<b>1.90%</b>	<b>5.79%</b>	<b>90%</b>	<b>30%</b>

**Notes:**

1. Based on experience study period of 2008 to 2014
2. Terminations refer to policy base lapses and healthy-life mortality. Shock lapse is excluded
3. Expected terminations were developed by applying assumptions to historical exposures
4. Termination rates are total terminations divided by exposures
5. A/E ratios are actual terminations divided by expected terminations
6. "Original Pricing" refers to a first-principles pricing reproduction of the original claims-cost assumptions used to initially price the business
7. This table shows experience analysis for just the policy forms included in this nationwide rate action program

**Attachment 3 - Exhibit 5  
 Nationwide "Preferred Solution" Simple and Compound Inflation Policies  
 Incurred Claims (\$Millions)**



**Notes:**

1. "Original Pricing" refers to a first principles pricing reproduction of the original claims-cost assumptions used to initially price the business
2. Original pricing projection is as of 12/31/1997, utilizes inforce data that contains actual sales, and assumes all lives are initially active
3. Best estimate and historical incurred claims are consistent with those in *Attachment 4*



**Attachment 4**  
**Continental Casualty Company**  
**Preferred Solution Simple and Compound Inflation Policy Forms**  
**Nationwide Historical and Projected Experience Restated with Maryland Rate Increases Approved Prior to 12/31/15**

Calendar Year	Without Rate Increase				With 32.25% Rate Increase			
	Earned Premium	Incurred Claims	Annual Loss Ratio	Cumulative Loss Ratio	Earned Premium	Incurred Claims	Annual Loss Ratio	Cumulative Loss Ratio
<b>Historical</b>								
1998	38,179	-	0%	0%	38,179	-	0%	0%
1999	8,079,747	5,088	0%	0%	8,079,747	5,088	0%	0%
2000	41,203,290	1,320,397	3%	3%	41,203,290	1,320,397	3%	3%
2001	80,446,133	2,986,443	4%	3%	80,446,133	2,986,443	4%	3%
2002	127,554,429	6,469,388	5%	4%	127,554,429	6,469,388	5%	4%
2003	162,343,556	8,147,899	5%	5%	162,343,556	8,147,899	5%	5%
2004	154,979,324	13,017,272	8%	6%	154,979,324	13,017,272	8%	6%
2005	152,436,042	14,486,532	10%	6%	152,436,042	14,486,532	10%	6%
2006	140,389,742	23,748,806	17%	8%	140,389,742	23,748,806	17%	8%
2007	141,765,038	22,309,493	16%	9%	141,765,038	22,309,493	16%	9%
2008	138,668,229	35,594,883	26%	11%	138,668,229	35,594,883	26%	11%
2009	134,899,665	34,473,888	26%	13%	134,899,665	34,473,888	26%	13%
2010	132,976,481	46,329,872	35%	15%	132,976,481	46,329,872	35%	15%
2011	129,127,308	56,568,246	44%	17%	129,127,308	56,568,246	44%	17%
2012	123,280,356	69,130,824	56%	20%	123,280,356	69,130,824	56%	20%
2013	119,153,393	87,486,389	73%	24%	119,153,393	87,486,389	73%	24%
2014	130,970,145	115,629,691	88%	28%	130,970,145	115,629,691	88%	28%
2015	129,278,986	137,406,519	106%	33%	129,278,986	137,406,519	106%	33%
<b>Total Actual</b>	<b>2,047,590,043</b>	<b>675,111,630</b>	<b>33%</b>	<b>33%</b>	<b>2,047,590,043</b>	<b>675,111,630</b>	<b>33%</b>	<b>33%</b>
<b>Projected</b>								
2016	144,087,553	136,966,502	95%	37%	144,087,553	136,966,502	95%	37%
2017	151,860,646	157,235,035	104%	41%	156,767,643	156,843,933	100%	41%
2018	145,726,179	179,591,332	123%	46%	164,848,505	177,794,250	108%	46%
2019	139,385,251	203,894,186	146%	51%	172,138,093	200,313,243	116%	50%
2020	132,871,172	229,709,473	173%	57%	168,763,529	225,092,315	133%	55%
2021	126,223,769	256,829,873	203%	64%	160,320,470	251,667,595	157%	61%
2022	119,455,061	283,851,704	238%	71%	151,723,337	278,146,288	183%	66%
2023	112,590,069	311,844,806	277%	78%	143,003,911	305,576,729	214%	73%
2024	105,685,535	340,237,356	322%	86%	134,234,263	333,398,588	248%	80%
2025	98,771,853	368,253,749	373%	95%	125,452,995	360,851,853	288%	87%
2026	91,890,408	395,071,468	430%	104%	116,712,672	387,130,535	332%	95%
2027	85,082,667	422,818,861	497%	113%	108,065,963	414,320,206	383%	103%
2028	78,349,357	451,288,400	576%	123%	99,513,790	442,217,508	444%	112%
2029	71,714,880	477,218,937	665%	134%	91,087,148	467,626,842	513%	121%
2030	65,232,012	499,589,562	766%	145%	82,853,070	489,547,816	591%	130%
2031	58,950,113	517,859,346	878%	156%	74,874,248	507,450,378	678%	140%
2032	52,911,989	531,168,984	1004%	168%	67,205,051	520,492,493	774%	150%
2033	47,159,278	538,558,479	1142%	180%	59,898,366	527,733,460	881%	161%
2034	41,731,737	539,436,438	1293%	192%	53,004,690	528,593,771	997%	171%
2035	36,661,345	534,666,154	1458%	204%	46,564,637	523,919,370	1125%	181%
2036	31,969,192	524,767,303	1641%	215%	40,604,998	514,219,485	1266%	191%
2037	27,662,979	508,850,405	1839%	226%	35,135,551	498,622,517	1419%	201%
2038	23,749,825	486,673,700	2049%	237%	30,165,342	476,891,563	1581%	210%
2039	20,233,178	459,869,584	2273%	247%	25,698,747	450,626,210	1753%	219%
2040	17,106,040	430,203,760	2515%	257%	21,726,877	421,556,668	1940%	227%
2041	14,352,068	399,372,113	2783%	266%	18,228,978	391,344,738	2147%	235%
2042	11,946,786	367,110,080	3073%	274%	15,173,959	359,731,171	2371%	242%
2043	9,865,631	332,916,681	3375%	281%	12,530,623	326,225,060	2603%	248%
2044	8,083,846	297,743,659	3683%	288%	10,267,527	291,759,014	2842%	254%
2045	6,574,846	263,095,204	4002%	294%	8,350,902	257,806,993	3087%	259%
2046	5,311,538	230,632,019	4342%	299%	6,746,339	225,996,318	3350%	264%
2047	4,263,743	200,743,529	4708%	304%	5,415,504	196,708,586	3632%	268%
2048	3,401,115	173,272,298	5095%	308%	4,319,855	169,789,527	3930%	271%
2049	2,693,950	148,107,291	5498%	311%	3,421,664	145,130,336	4242%	274%
2050	2,119,902	125,458,201	5918%	314%	2,692,549	122,936,493	4566%	277%
2051	1,660,245	105,409,314	6349%	316%	2,108,726	103,290,587	4898%	279%
2052	1,295,135	88,009,564	6795%	318%	1,644,988	86,240,573	5243%	281%
2053	1,007,013	73,089,799	7258%	320%	1,279,036	71,620,695	5600%	282%
2054	780,534	60,293,639	7725%	321%	991,379	59,081,737	5960%	283%
2055	602,946	49,467,418	8204%	322%	765,820	48,473,123	6330%	284%
2056	464,642	40,376,053	8690%	323%	590,155	39,564,494	6704%	285%
2057	357,618	32,845,402	9184%	324%	454,221	32,185,210	7086%	286%
2058	275,129	26,673,484	9695%	325%	349,450	26,137,347	7480%	286%
2059	211,668	21,545,839	10179%	325%	268,846	21,112,768	7853%	287%
2060	162,931	17,389,278	10673%	326%	206,943	17,039,754	8234%	287%
2061	125,509	14,030,996	11179%	326%	159,412	13,748,973	8625%	288%
2062	96,828	11,334,194	11705%	326%	122,984	11,106,377	9031%	288%
2063	74,792	9,164,563	12253%	326%	94,996	8,980,355	9453%	288%
2064	57,871	7,406,423	12798%	327%	73,503	7,257,554	9874%	288%
2065	44,854	5,993,219	13362%	327%	56,970	5,872,755	10308%	288%
2066	34,803	4,880,793	14024%	327%	44,204	4,782,689	10819%	288%
2067	27,011	3,966,337	14684%	327%	34,307	3,886,614	11329%	288%
2068	20,965	3,249,308	15499%	327%	26,628	3,183,997	11957%	288%
2069	16,249	2,636,078	16223%	327%	20,639	2,583,093	12516%	289%
2070	12,577	2,139,007	17007%	327%	15,974	2,096,013	13121%	289%
2071	9,681	1,726,860	17837%	327%	12,297	1,692,150	13761%	289%
2072	7,420	1,403,308	18913%	327%	9,424	1,375,102	14591%	289%
2073	5,656	1,138,432	20129%	327%	7,183	1,115,550	15530%	289%
2074	4,269	916,334	21466%	327%	5,422	897,916	16561%	289%
2075	3,187	724,240	22723%	327%	4,048	709,683	17530%	289%
<b>Total Projected</b>	<b>2,103,035,046</b>	<b>12,910,716,355</b>	<b>614%</b>	<b>327%</b>	<b>2,570,946,909</b>	<b>12,659,063,465</b>	<b>492%</b>	<b>289%</b>
<b>Total Lifetime</b>	<b>4,150,625,089</b>	<b>13,585,827,985</b>	<b>327%</b>	<b>327%</b>	<b>4,618,536,952</b>	<b>13,334,175,096</b>	<b>289%</b>	<b>289%</b>
<b>Values Accumulated/Discounted to 12/31/15 at Maximum Statutory Valuation Interest Rates</b>								
Past	2,929,786,113	774,711,283	26%	26%	2,929,786,113	774,711,283	26%	26%
Future	1,455,909,041	6,163,641,615	423%	423%	1,754,976,994	6,047,105,237	345%	345%
Lifetime	4,385,695,154	6,938,352,898	158%	158%	4,684,763,107	6,821,816,520	146%	146%

**Attachment 5  
Continental Casualty Company  
Nationwide 58/85 Test with Increase  
Preferred Solution Simple and Compound Inflation Policy Forms**

1 Accumulated value of initial earned premium	2,887,184,925	x	58% =	1,674,567,256
2a Accumulated value of earned premium	2,929,786,113			
2b Accumulated value of prior premium rate schedule increases (2a - 1)	42,601,189	x	85% =	36,211,010
3 Present value of future projected initial earned premium	966,110,266	x	58% =	560,343,954
4a Present value of future projected premium	1,754,976,994			
4b Present value of future projected premium in excess of the projected initial earned premiums (4a - 3)	788,866,728	x	85% =	670,536,718
<b>5 Lifetime Earned Premium Times Prescribed Factors: Sum of 1, 2b, 3, and 4b</b>				<b>2,941,658,939</b>
6a Accumulated value of incurred claims without the inclusion of active life reserves				852,182,412
6b Present value of future projected incurred claims without the inclusion of active life reserves				6,651,815,760
<b>7 Lifetime Incurred Claims with Rate Increase: Sum of 6a and 6b</b>				<b>7,503,998,172</b>
8 Test: 7 is not less than 5				TRUE
All values are accumulated or discounted at the average maximum valuation interest rate for contract reserves which is a constant 4.5%. The incurred claims (items 6a and 6b) were increased by 10% to reflect moderately adverse experience.				