

October 22, 2010

Rep. Bette Grande, Chairman  
Employee Benefits Programs Committee  
c/o Jeff Nelson  
ND Legislative Council  
State Capitol  
600 East Boulevard  
Bismarck, ND 58505-0360

**Re: Technical and Actuarial Analysis of Bill 2 (Defined Contribution Plan)**

Dear Rep. Grande:

As requested, we have reviewed and analyzed Bill 2 (Version 10002.0200). This bill would fundamentally change the Teachers' Fund for Retirement (TFFR). It would close the current defined benefit (DB) plan to new members effective July 31, 2011, replacing this with a defined contribution (DC) plan for all future members.

For reference, a DC plan is one that provides benefits based on an individual account for each member, such as a 401(k) plan, a traditional profit sharing plan, an IRA, a 403(b) plan, or a governmental 457 plan. Members almost always contribute to the plan, and often the employer does as well. Employer contributions are determined under a formula, such as a fixed percentage of salary, a fixed dollar amount, or a multiple of the member's contribution. These contributions are invested, frequently with each member directing his/her own investments among a limited menu of choices. The member's benefit is based on the vested account balance. Distributions may be made as a lump-sum or a rollover to an IRA. Occasionally other forms of distribution are permitted, but only rarely do these include life annuities.

Traditional retirement plans are the most common type of DB plan. The benefit is defined by a formula, usually reflecting the member's service and average pay over the last few years. Payments are usually in the form of an annuity over the member's lifetime, and other annuity forms are usually available. Employers contribute to these plans. In governmental plans, members usually contribute as well. Contributions are pooled and professionally managed. Benefits are not affected by the investment earnings.

**Principal Actuarial Conclusions**

As discussed herein, our principal actuarial conclusions about the bill are:

- Without additional funding or other changes, the current DB plan is projected to eventually run out of funds. However, the DB plan is projected to run out of money sooner under Bill 2 (FY 2030) than under current law (FY 2040).

- Bill 2 leaves the DB plan with a projected shortfall of \$888 million with no funding source, more than double the \$423 million shortfall without a funding source under the current plan. The elimination of liabilities for future members in the DB plan is less than the reduction in contributions related to those future members, leaving the DB plan worse off.
- At the point the DB plan runs out of funds, the plan's liabilities would still have to be met, and the member-plus-employer contributions needed to pay the benefits in that year would spike to over 47% of total pay under Bill 2 (in FY 2031). In contrast, under current law, after the DB plan runs out of funds, the total contributions would jump to just over 30% of pay.
- It would require a larger increase in DB contribution rates to adequately prefund the DB plan under Bill 2 (37%) than it would under the current open-group structure (26%).
- One financial benefit the DC plan gives the State/employers is that it removes risk of employer contribution rate increases due to poor market performance or higher than expected salary increases or longer than anticipated life expectancies, but this bill does so only at a cost.
- DB plans tend to favor career employees more than DC plans, so a switch like this would be better for some employees and worse for others. In addition, the DB Plan provides meaningful death and disability benefits, while the only death or disability benefit available under the DC plan is a refund of the account balance.
- A switch to DC moves investment risk and longevity risk from the pooled DB plan, and by extension, the employers, to the individual members. The risk is not eliminated. TFFR would need to provide additional education to its members, both on choosing appropriate investments while working and on managing the distribution of the assets to last for their lifetime.

## **Provisions of Bill 2**

This bill only affects the Teachers' Fund for Retirement. First, the bill would close the DB plan to new members effective July 31, 2011. The DB plan would be closed to new participants, but the current members would continue to make contributions, they would continue to earn service in the future, they would receive all of their promised benefits, and their employers would continue to make contributions. On the other hand, teachers employed on or after August 1, 2011 would not be permitted to join the DB plan. Instead, they would be required to join the new DC plan that is established by the bill.

Teachers who were first employed by July 31, 2011 would remain DB plan members, even if they terminated service at some point, and later returned after that date.

One point worth noting about the closed DB plan is that there would be no change under the bill to the funding mechanism. The DB trust fund would continue to receive contributions from the DB plan members of 7.75% of salary, and it would receive 8.75% of their salary from their employers. The DB plan would not receive any funds from members hired after July 31, 2011, or from their

employers. The 8.75% employer contribution rate would revert to 7.75% at the point the DB plan becomes 90% funded. (However, without additional funding, this is unlikely to happen.)

The bill establishes, under new Chapter 15-39.3 of the North Dakota Century Code, a new DC plan to cover all teachers hired on or after August 1, 2011.

All teachers hired on or after August 1, 2011 would be required to join the DC plan. Note that some employees of the Department of Public Instruction and the Career and Technical Education Department participating in the DB plan have had the right to transfer to the North Dakota Public Employees Retirement System, but this option will not be open to employees hired on or after August 1, 2011. They will have to participate in the TFFR DC plan.

Members would contribute 7.75% of salary to the DC plan, which can be paid by their employers. Their employers would contribute 8.75% of salary. Note that these are the same contribution rates specified for the DB plan, but the 8.75% employer contribution rate in the DC plan would never sunset back to 7.75%.

Contributions would be invested at the direction of the members, in funds approved by the Board of Trustees. The member contributions and earnings on them would be 100% vested immediately. The employer contributions and earnings vest over the first four years of service as follows:

Years of Service	Vested Percentage
Less than 2.000	0%
2.000 – 2.999	50%
3.000 – 3.999	75%
4.000 or more	100%

The employer account also would become 100% vested when the member attains age 65, if that occurs before the completion of four years of service.

At termination, the vested account balance could be paid, at the member's discretion, as a lump sum, or rolled over to another plan or IRA, or left on deposit with periodic payments to be made to the member based on the vested account balance.

The nonvested employer account balance of members who terminate before becoming 100% vested would be forfeited and used to offset the administrative expenses of the plan.

In the event the member dies, the balance of the account may be distributed to the member's beneficiary in the same manner as already described. The account becomes 100% vested on the member's death.

If the member becomes totally and permanently disabled, the member's vested account balance may be distributed in a lump-sum, or in periodic payments based on the remaining account balance while the member is disabled.

## Actuarial Analysis

### *When Will DB Plan Assets be Exhausted?*

This bill is projected to lead to the DB plan running out of funds during FY 2030. This compares with a projected asset exhaustion in FY 2040 if no changes are made to the current benefit and funding provisions. Charts 1 and 2, attached, illustrate this. Chart 1 shows the projected market values of assets under the current plan and Bill 2. Chart 2 shows the projected funded ratios (the actuarial value of assets ÷ the actuarial accrued liability) under each scenario.

Closing the DB plan to new members reduces the plan's liabilities but it also removes an important funding source. These do not counterbalance each other. Partly this is a matter of timing. The fund begins to receive contributions from new members and their employers when they are hired, while benefits, other than refunds, are not paid until many years later.

But timing is not the only issue. The loss of future funds is much larger than the savings on the liability side, because the contributions being received (16.50% of future salaries for future members, the sum of the 7.75% member rate and the 8.75% employer rate) is greater than the plan's normal cost, 10.57%. The normal cost is the average cost of a new member's benefit. The excess that is lost, 5.93% of the salaries for all future new members, is being used to fund the plan's unfunded liability. This is just lost to the closed DB plan under Bill 2.

### *Liability with No Funding Source (Shortfall) under Bill 2*

Another way to look at this is to determine the liability without a funding source under the bill. In other words, even though the current, open DB plan is expected to exhaust its assets, Bill 2 increases the liability with no funding source. This can be seen in the following table and in Chart 3.

Liabilities and Funding Sources as of June 30, 2010		
Item	Current Plan (Open DB)	Bill 2 (Closed DB & New DC)
APV of future benefits – DB	\$3,808.9	\$3,123.4
APV of future benefits - DC	0.0	1,151.0
APV of future benefits - total	\$3,808.9	\$4,274.4
Less: Assets at market – DB	(1,437.9)	(1,437.9)
Less: APV of member contributions - DB	(915.0)	(374.4)
Less: APV of member contributions – DC	(0.0)	(540.6)
Less: APV of employer contributions - DB	(1,033.1)	(422.7)
Less: APV of employer contributions - DC	(0.0)	(610.4)
DB Shortfall	\$422.9	\$888.4

APV: Actuarial present value

Amounts in \$ millions

Under the current, open DB plan, the \$3,808.9 million actuarial present value of future benefits is the actuarial present value, as of June 30, 2010, for all members, including current annuitants, current active members, current inactive, vested members, and members who are expected to be hired in the future. There are, under the statutes, three funding sources that are available to meet this liability:

- Assets in the trust fund as of June 30, 2010 of \$1,437.9 million (market value)
- Future 7.75% of salary member contributions, with an actuarial present value of \$915.0 million. This includes the actuarial present value of members to be hired in the future.
- Future 8.75% of salary employer contributions, with an actuarial present value of \$1,033.1 million. Again, this figure includes contributions to be made on behalf of members to be hired in the future.

This leaves a current DB plan shortfall of \$422.9 million.

When the DB plan is closed by Bill 2, the actuarial liability for future DB benefits is reduced by \$685.5 million. This is the DB liability for future members hired after July 31, 2011. At the same time, an actuarial present value of \$540.6 million in member contributions is shifted from the DB plan to the new DC plan. Similarly, \$610.4 million in employer contributions is shifted from the DB plan to the DC plan. Therefore, the net DB liability increases by \$465.5 million, the difference between (a) the \$1,151.0 million loss in contributions (\$540.6 million employee plus \$610.4 million employer), and (b) the \$685.5 reduction in benefit liability.

While the DB plan currently has a liability of \$422.9 million in excess of its funding sources, this increases by \$465.5 million to \$888.4 million under Bill 2.

### ***Contribution Patterns***

Next, we can look at the contribution patterns. We have projected the contributions under both scenarios: the current DB plan with no changes, and Bill 2. We projected both the DB and DC total contributions (member plus employer), added them together, and converted the total to a percentage of total member salary in each year. Although we are not attorneys, we assume that when the trust funds are exhausted, the liability for future benefits remains and is the responsibility of the employers or the State of North Dakota. That is, the benefit payments not covered by the regular member (7.75%) and employer (8.75%) contributions received during the year would be covered by the employers on a pay-as-you-go basis. Therefore, we have included these employer contributions (called shortfall contributions here) in the total. The results are illustrated on Chart 4.

As you can see, initially both have the same cost. As long as funds remain in the trust, the fund receives a total of 16.50% of all salaries under both scenarios. However, once the trust fund is exhausted, the contribution requirement spikes upward. This projection for Bill 2 shows a total contribution requirement of over 47% of salaries in FY 2031. The timing of this first spike reflects the fact that under Plan 2, the trust fund runs out of money in FY 2030. The spike under the Current

Plan line in FY 2040 does not rise as high— about 30% of payroll—because the DB plan would be receiving a larger amount from the 16.50% combined member/employer contributions.

Let me explain the need for a total contribution of 47% of salary in FY 2031 under Bill 2 in more detail.

- The projected payroll for TFFR members in FY 2031 is \$974.3 million.
- Of this amount, the payroll for the remaining members in the closed DB Plan is projected as \$282.8 million and the rest is the payroll for members in the DC plan, or \$691.5 million.
- A total contribution from members and employers of 16.50% would be required for the DC plan, or \$114.1 million (\$691.5 million x 16.50%).
- Members in the closed DB plan and their employers would contribute 16.50% of the DB payroll of \$228.3 million, or \$46.6 million.
- Projected benefit payments and refunds from the DB plan for FY 2031 amount to \$344.1 million.
- Therefore, an additional shortfall contribution of \$297.5 million (\$344.1 million - \$46.6 million) would have to be made to cover the DB benefits. Since the trust fund would be empty at this point, there is no other source to pay the benefits.
- Therefore, in FY 2031, a total of \$458.2 million in contributions would be required, as follows:
  - Regular contributions of \$114.1 million for the DC plan
  - Regular contributions of \$46.6 million for the closed DB plan
  - Shortfall contribution of \$297.5 million for the closed DB plan
- This total contribution of \$458.2 million for FY 2031 represents about 47% of the total payroll of \$974.3 million.

Then over time as the shortfall decreases, this total contribution rate also decreases. Under Bill 2, once the shortfall contribution disappears after all of the current DB participants have been paid and have died, the combined member and employer contribution rate returns to 16.50%. Under the current DB plan, the rate trends down, but not as far. It eventually is projected to reach a stable rate of about 28% of salary.

### ***Prefunding Contributions***

However, we believe that is unlikely that the trust will be allowed to run out of funds, or that the legislature would permit the contribution rates to rise as high as shown on Chart 4. Therefore, we

have also examined what would happen if the plans were adequately prefunded under either scenario.

For the current DB plan, with no changes, a total member-plus-employer contribution rate of 26% is projected to produce a 100% funded plan in 30 years from the July 1, 2011 effective date of the bill, i.e., by June 30, 2041. (This assumes that this contribution rate is left in place for the entire 30-year period, with no sunset when the plan becomes 90% funded.) After that, it would only require a total contribution from the members and employers of the normal cost (10.57%) to keep the plan 100% funded.

Under Bill 2, projections show that a total contribution rate of about 37% would be needed for the DB plan. (This contribution would only be made on behalf of DB participants; 16.50% would be contributed to the DC plan.) Given this, the DB plan is projected to have enough funds to meet the promised benefit payments. We've assumed in either case that the contribution increase goes into effect at July 1, 2011. For Bill 2, the 37% total contribution rate would have to remain in effect as long as there were active members in the DB plan.

This 37% contribution rate may seem an unbelievably high rate, but readers should recognize that it would be paid only on the pay of the members in the DB plan, which would be declining over time. Employers and members would be paying a total of 16.50% on the payroll of members in the DC plan. By FY 2020, the average member-plus-employer contribution rate being paid would be about 30%, and by FY 2030, the average rate would be about 23%.

That 37% of salaries would be required reflects that fact that the Fund would need to have enough assets by the time the last member left active service, expected to occur in around FY 2062, to last until the last annuitant dies, expected to be after FY 2100. That is, the contribution has to be large enough so that the assets will reach a high enough level by FY 2062 so that the trust can pay the benefit payments for the remaining DB plan annuitants over a period of about 40 years.

Chart 5 compares these two situations. Here, the total member-plus-employer contribution rates both jump immediately at July 1, 2011. Under Bill 2, the rate starts to fall back as more and more of the members are covered in the DC plan. In FY 2027, the Bill 2 rate drops below the current plan rate, but in FY 2042, the current plan rate would only need to be 10.57% (the normal cost), and would remain less than the 16.50% rate under Bill 2 from then on.

### ***Negative Cash Flow and 8.00% Assumed Investment Return***

All of the projections above assume the fund will earn 8.00% net of administrative and investment expenses each year in the future. While we believe this assumption is reasonable for an open DB plan, it may be difficult to achieve this return once the plan is closed. In a typical, mature open plan, most of the benefits are paid out of contributions received, and the plan only draws a small amount from investment earnings to pay benefits. This amount usually is somewhere close to the cash earnings of the fund (interest and dividends). In a closed DB plan, however, as contribution receipts disappear, the plan experiences more pressure to find the funds to pay benefits. It may be necessary to shift more investments to cash, fixed income or high dividend-paying stocks, all of which have lower expected returns. Finally, the plan will have to sell investments each year to free up the necessary funds to pay benefits. This will require selling even when the equity markets are

depressed. All of these factors lead most investment professionals to believe that closed retirement funds cannot expect returns as high as open funds. This would force contributions to rise even above the 37% figure above, or it could cause employers/the State to have to make special contributions after the point when no active members remain in the DB plan.

### ***Reporting***

Another effect of the bill worth noting deals with reporting.

Governmental Accounting Standards Board Statement No. 25 (GASB 25) requires the determination of an Annual Required Contribution (ARC). Despite its name, this contribution is not actually required; the required contribution is the 8.75% set by the statutes. However, TFFR is required to disclose in a supplemental schedule to its financial statement the actual amount of employer contributions received and what percentage of the ARC this represents.

GASB 25 sets certain parameters to be used in calculating the ARC. Generally, the ARC must include the normal cost (reduced for the share paid by member contributions) and an additional charge to amortize the unfunded actuarial accrued liability (UAAL). The amortization period may not exceed 30 years. A plan open to new members may determine the amortization charge as a level percentage of payroll, which is assumed to increase. TFFR currently does this. When a plan is closed to future members, though, GASB 25 requires that the amortization charge be computed as either a flat dollar amount or a decreasing amount in line with expected decreases in covered payroll. Changing the calculation of the ARC to reflect a level dollar amortization, rather than amortization charges that increase at 3.25% each year (3.25% is the current assumed rate of payroll growth), will increase the reported ARC. For FY 2012, we project this would cause the reported ARC to increase from 14.96% to 19.57%. Instead of reporting that TFFR received 58.5% of the ARC in FY 2012 ( $8.75\% \div 14.96\%$ ), it would have to report that it only received 44.7% of the ARC ( $8.75\% \div 19.57\%$ ).

### **Technical Comments**

#### ***Distribution of Benefits***

Compared with DC plans, DB plans generally provide larger benefits to career employees, and they provide smaller benefits to employees who terminate after working just a few years.

#### ***“Leakage”***

A significant portion of DC plan distributions are not saved for retirement. Distributions that are not used for retirement savings are said to have “leaked” from the nation’s retirement savings. Some lump-sum distributions are spent on current consumption, despite the existence of a 10% federal penalty tax intended to encourage plan participants to save their distribution for retirement. A Note published last year by the Employee Benefit Research Institute shows that less than 50% of people receiving a recent lump-sum distribution saved any part of their distribution in a tax-favored vehicle (IRA, other employer’s plan, etc.).

### ***Investment Returns***

In side-by-side comparisons, individuals making their own investment decisions managing their DC accounts perform worse than professionals managing DB money. Both benefit consulting firms (e.g., Towers Watson, Vanguard) and academics (e.g., the Center for Retirement Research at Boston College) have confirmed this fact. When a company maintains both a DB plan and a DC plan with individual investment direction, over long periods the professionally managed DB plans tend to outperform the individually managed DC plans by somewhere around 1% per year. There are at least three factors that contribute to this difference:

- *Fees:* the fees charged on investments in DC plans are often higher than the fees paid to institutional DB money managers
- *Expertise:* the institutional managers' may have greater discipline and knowledge of investment markets
- *Available investments:* DB plans may make use of asset classes, such as private equity, that are unavailable in most DC plans

Therefore, it may be overly optimistic to assume that the DC accounts could earn the same average return as the DB plan.

### ***Payment Forms and Risk***

Most DC plans make lump-sum distributions available to the members. Although members could choose to purchase an annuity from an insurance company, in practice very few do. As a result, most members find themselves having to manage a very large amount of money once they retire. This exposes them to some risks they do not face in the traditional DB plan, which pays benefits as an annuity.

- Some members can run out of money. They may misjudge how much they can spend each year, and as a result they may wind up late in life with nothing left but their Social Security benefit.
- In order to avoid the possibility of running out of money, some members may manage their funds in an ultra-conservative manner—either in the way they invest or in the amount they withdraw each year or both, giving them less to spend each year.
- Throughout this distribution period, they will be investing in “retail” investment funds which carry higher fees than TFFR pays.
- Even retirees who are financially astute can become incapacitated by the conditions associated with aging, such as Alzheimer's, leaving them unable to manage their funds. Or the more financially capable member of the marriage may die, leaving the unprepared spouse with investments to manage.

- Retirees are especially attractive targets for the fraudsters of the world.

These risks are minimized when plans pay annuities. It is worth noting that, because States take some responsibility for the segment of their population that is impoverished, there is the possibility that the State could end up with additional liability for items like food stamps if TFFR members who took a lump-sum distribution from the DC plan ended up running out of funds.

### ***Risk from the Sponsor's Perspective***

Because they shift most risk to the members, DC plans reduce risk to the employers. If investments perform poorly, the members receive less, but the employers do not pay more. Under a DC plan, there is no risk that contribution rates will have to increase in the future because of adverse experience. In the DB plan, as we have seen, a decade of poor investment results can trigger the need for higher contribution rates. By shifting to a DC plan, the State could begin diminishing this risk. However, this elimination of risk comes at a substantial cost.

### ***Recruitment and Retention***

The proposed change may negatively affect recruiting and retention of teachers, since they generally have a strong preference for DB plans. Also, by its operation, a DB plan makes moving to a different state unappealing, because the employee would lose the large increase in value that occurs later in the career of a DB plan member. Leaving with too little service would mean benefits would not be available until age 65, since the member wouldn't have enough service to qualify for the Rule of 90. Leaving early would also mean forgoing the retirement benefit increases based on future pay increases. These factors serve as "golden handcuffs," and make moving to another state unattractive. That would no longer be the case under a DC plan.

### ***Death & Disability Benefits***

By replacing the DB plan with a DC plan for future hires, most members receive smaller death and disability benefits. The value of the death and disability benefits in the DB plan would in most cases be much larger than the member's account balance. Therefore, if employers want to continue to provide these benefits, they will have to secure additional insurance coverage.

### ***COLAs***

This may be a moot issue, due to the funded condition of TFFR, but in the past the legislature has from time to time granted benefit increases (cost of living adjustments or COLAs) to retirees. There is no mechanism to provide COLAs to members under a DC plan. Therefore, future members will be responsible for dealing with the effects of inflation during their retirement years.

### ***Multiple Benefit Structures***

Bill 2 would increase complexity for employers because they could have employees under one of four different sets of benefits:

- TFFR DB plan, Tier 1 benefit structure for teachers first employed before June 30, 2008;

- TFFR DB plan, Tier 2 benefit structure for teachers first employed between July 1, 2008 and July 31, 2011;
- TFFR DC plan for teachers first employed after July 31, 2011;
- PERS DB benefit structure for current and future support personnel. (Note: Bill 80 which requires new state employees to participate in the PERS DC plan does not apply to political subdivision employees, therefore new support personnel would still participate in PERS DB plan.)

This will be much more complicated for school districts, since each class of employees will have a different set of benefits or contributions. Negotiations could be impacted. The Committee may wish to consider whether it is equitable that there will be a large disparity between the benefits provided to newer teachers, and whether it is equitable that support personnel in the schools will retain a DB plan while newer teachers will not have this benefit.

### ***Drafting Issues***

Already noted above is the fact that the bill would allow anyone who was hired before August 1, 2011 to be in the DB plan, even if that member terminated and took a refund and then rejoined TFFR after August 1, 2011. This is inconsistent with how members are assigned to Tier 1 and Tier 2 currently. A Tier I member who did this would be required to come back as a Tier II member. The sponsor may wish to consider modifying the bill so that only members with credit for service prior to August 1, 2011 would be allowed to return to the DB plan.

There may also be a need to clarify what happens when a teacher who has retired under the DB plan returns to work after July 31, 2011. We assume that the intent is that such a teacher would be treated as under the current plan, and would not be allowed to join the DC plan at that point. This means that, as long as the teacher stayed under the hours limit or returned to a critical shortage area, the teacher would continue to draw his/her pension and would not reenter either the DB or DC plan. Otherwise the teacher would rejoin the DB plan. If you allowed the teacher to join the DC plan at that point, it might create an inducement to retire early.

### ***Administrative Expenses and Timing***

In our view, too little time has been allotted between the time the bill is enacted and the date it would become effective. It could be enacted in the spring of 2011, possibly as late as May 2011, and it would become effective on August 1, 2011. Between these dates, the Retirement and Investment Office (RIO) would have to issue an RFP for a manager of the DC plan, allowing vendors several weeks to prepare their proposals. Then RIO and/or the TFFR Board of Trustees would need to review and grade the proposals. In all probability, vendors would then need to make an oral presentation to the Board. This process could take the entire period between enactment and the effective date.

This process could be even longer. The TFFR Board might wish to employ a consultant to assist with the process described above. (The PERS Board did this when their DC plan was created.) There would need to be time for the Board to select the consultant, and this process would likely

also require issuing an RFP, waiting for proposals, grading them and selecting the consultant. This would need to be done before RFPs could be sent to vendors to manage the DC plan.

Once a DC manager is selected, new processes would need to be prepared for employer reporting, and communication materials would need to be prepared for members and employers. Systems would need to be modified. We believe that the DC consultant, the DC manager and/or RIO staff would require several more months to prepare the necessary policies, procedures and communication materials, and to educate the employers on their new responsibilities.

During this period, the Board would also have to determine what investments would be offered to members in the DC plan. This would require due diligence procedures that could involve issuing RFPs and reviewing proposals, and would likely take several months to complete.

This is likely to take a minimum of 9 - 12 months. Therefore we believe the effective date should be delayed until July 1, 2012, which coincides with the beginning of the fiscal year. In another State that has just created a new DC plan for future hires, the retirement system was given over a year between enactment and the effective date of the new DC plan.

The expenses of the DC plan will generally be paid from the DC plan itself, using the employer contribution accounts forfeited when nonvested members terminate. However, while that source may work for ongoing administration costs, it will not be available to cover the costs incurred immediately after the plan is established.

Further, we believe RIO staffing will need to be increased to handle the DC plan due to the additional time required to manage two plans and due to the fact that RIO does not currently have anyone with experience with DC plans. Further, members will need education dealing with investments. This level of education will be much greater than is needed now for the DB plan.

## **Basis of Calculations**

All calculations are based on the member data and plan provisions used to prepare the July 1, 2010 actuarial valuation report. For all years beginning with FY 2011, we have assumed a market return of 8.00%. In addition, the projections assume that the total number of active members (DB and DC combined) will remain constant, and that a sufficient number of new members will replace members projected to terminate, retire or die each year. The assumed age-sex-pay distribution of the new hires is based on the distribution of new hires during the five year period from July 1, 2005 through June 30, 2009. The starting salaries for each cohort of new entrants are assumed to increase by 4.00% over the salaries for the prior year's new entrant cohort.

## **General Comments**

This letter is intended to describe the financial and actuarial effect of Bill 2 on the retirement plan only.

Rep. Bette Grande, Chairman

October 22, 2010

Page 13

Our calculations are based upon assumptions regarding future events, which may or may not materialize. Please bear in mind that actual results could deviate significantly from our projections, depending on actual plan experience.

In the event that more than one plan change is being considered, it is very important to remember that the results of separate actuarial valuations cannot generally be added together to produce a correct estimate of the combined effect of all of the changes. The total can be considerably greater than the sum of the parts due to the interaction of various plan provisions with each other, and with the assumptions that must be used.

The undersigned is a member of the American Academy of Actuaries and meets the Qualification Standards of the American Academy of Actuaries to render the actuarial opinion contained herein.

This communication shall not be construed to provide tax advice, legal advice or investment advice.

If you have any questions, or require any additional or clarifying information, please do not hesitate to contact me.

Sincerely,

A handwritten signature in cursive script that reads "J. Christian Conradi".

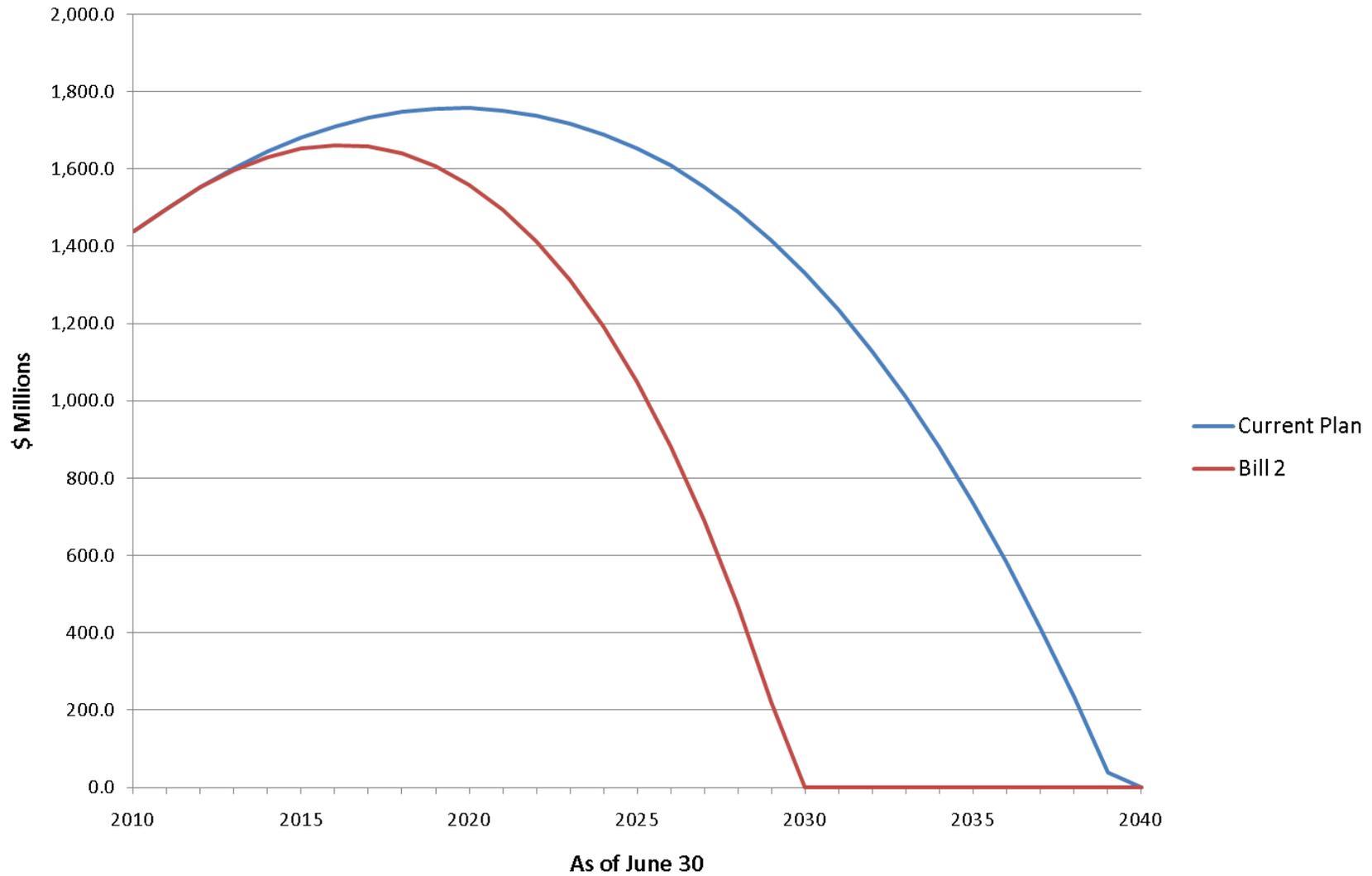
J. Christian Conradi  
Senior Consultant

Enclosures

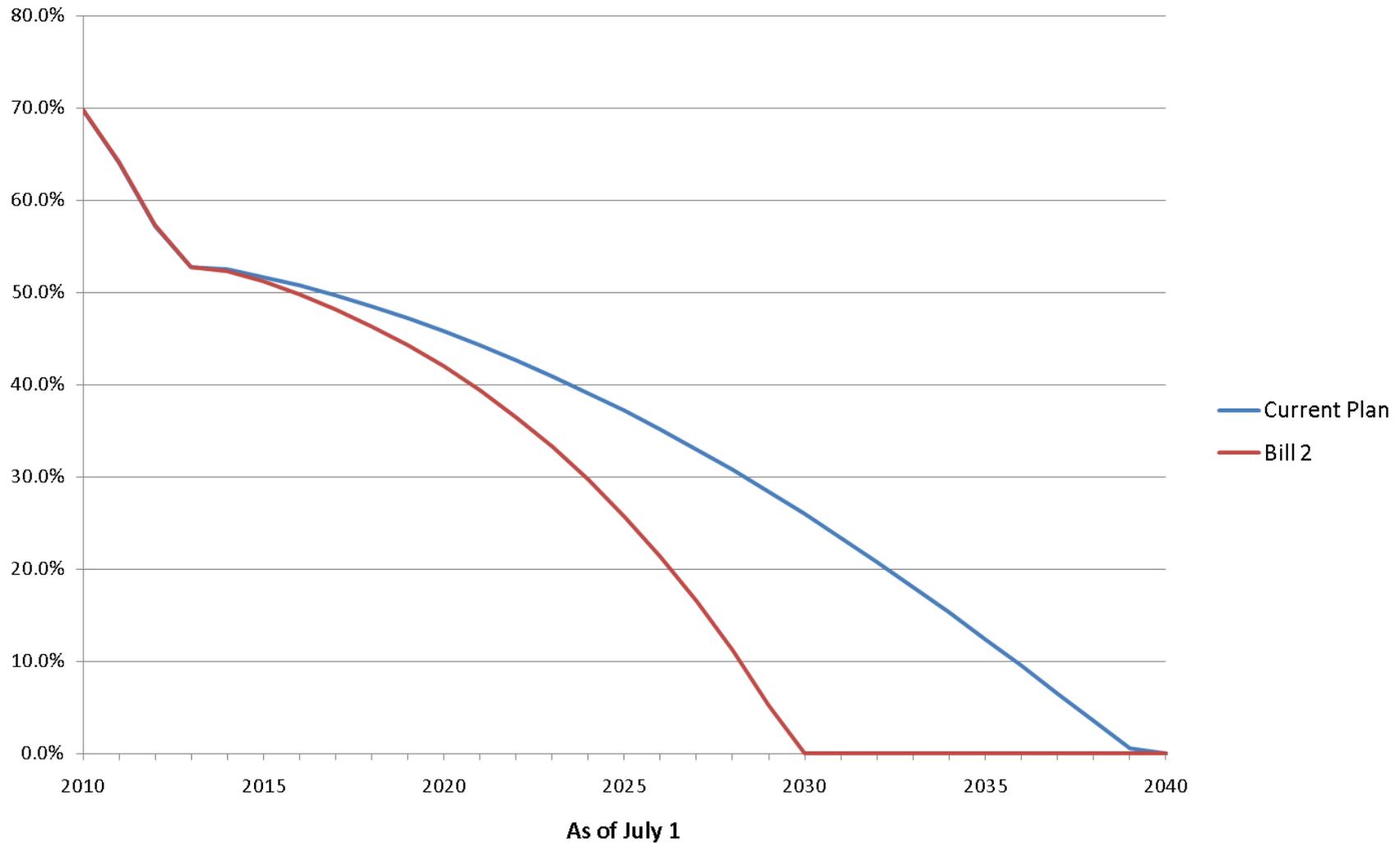
cc: Ms. Fay Kopp, Deputy Executive Director, ND Retirement and Investment Office

*j:\2039\2010\LEG\Study Bill 2 (DC)\Analysis\_StudyBill2.0200\_Draft6.00.docx*

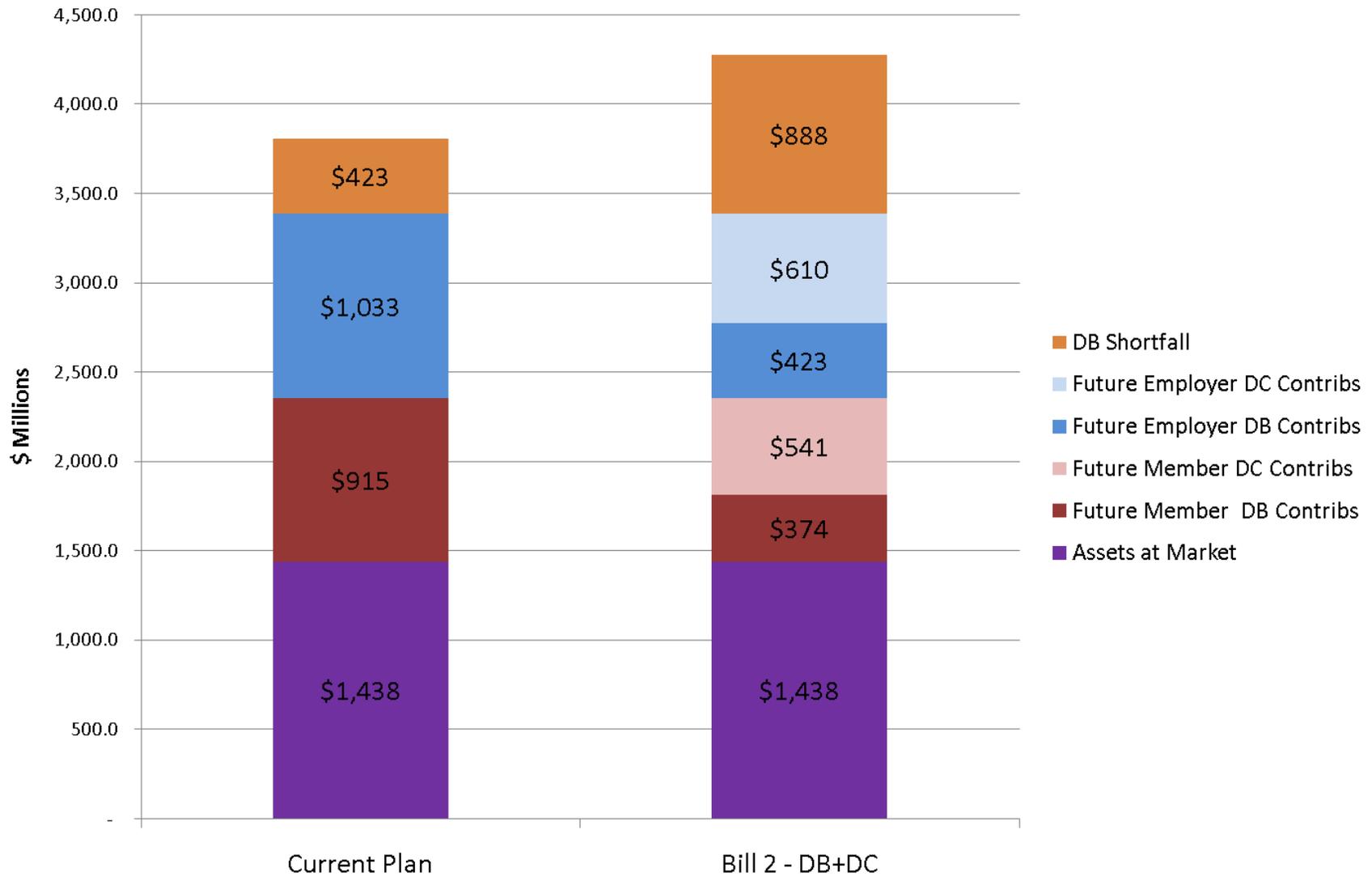
**Chart 1 - ND TFFR - Projected Market Value of DB Trust Assets  
(Estimated Market Return of 13.20% for FY 2010; 8.00% Thereafter)**



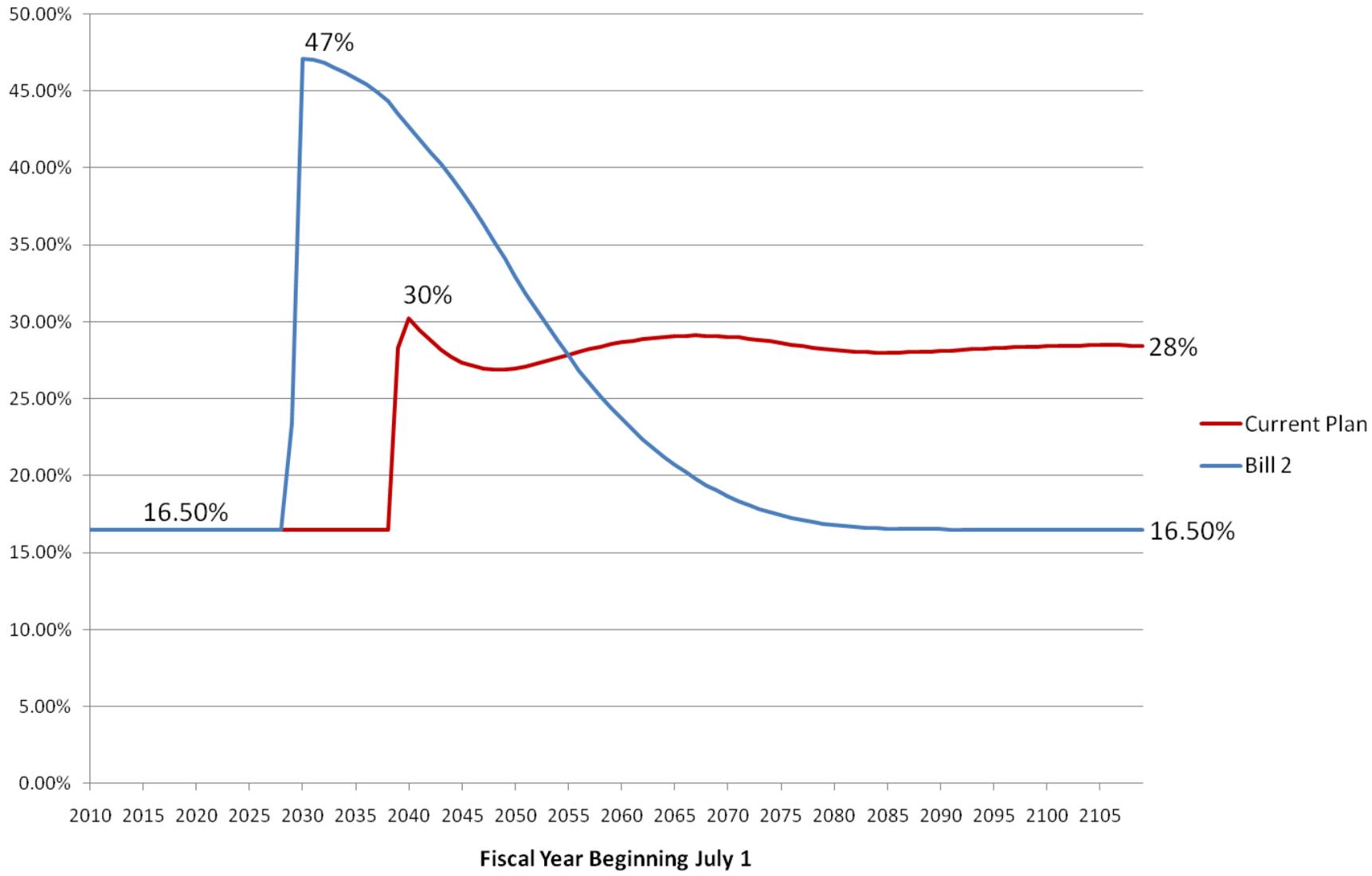
**Chart 2 - ND TFFR - Projected AVA Funded Ratios**  
**Actuarial Value of Assets ÷ Actuarial Accrued Liability**  
**(Market Return 13.20% for FY 2010 and 8.00% Thereafter)**



**Chart 3 - ND TFFR - Actuarial Present Value of Future Benefits by Funding Source, Determined as of June 30, 2010**



**Chart 4 - ND TFFR - Combined DB & DC Contribution Rates (ER + EE)  
(Includes Shortfall DB Contribution Once Trust is Exhausted)**



**Chart 5 - ND TFFR - Compare Level Prefunding Contribution Rates  
 Combined DB and DC Total (ER +EE) Contributions as % of Total Payroll  
 DB Rate Required to Achieve 100% Funded Ratio by 2041 (30 Years)**

