Executive Summary

Macroeconomic and Investment Environment
The New Mexico State Investment Council believes that the next 7-10 year period will be characterized by slower-than-average economic growth, modest interest rates, and stable rates of inflation. The previous 10-year period was one of low growth, low inflation, low volatility of economic conditions and lower than average returns on investment. The Council expects conditions and returns to improve in the forward-looking period—but perhaps by not very much. Overall, conditions are likely to continue to be less supportive of the Permanent Funds’ historically best-returning investments—those that are equity-based—than normal, and provide ample challenges in generating targeted long-run investment returns.

One of those challenges will be the resolution of what are widely considered as high valuations on many of the largest investment markets available to the Council. Nearly a decade now of falling interest rates and unprecedented monetary stimulus by the global central banks have driven risk markets to very high valuations relative to history, and today’s very low and fairly stable interest rates seem to be holding valuations at these lofty levels. All fiduciaries to the Permanent Funds must be ready for the challenge ahead.

Broad Investment Strategy
The Council’s broad investment strategy, as detailed in the pages to follow, is principally a continuation of the strategy in place for the last few years. In shorter periods, stock markets will go up and down, interest rates will rise and fall, inflation will threaten and wane, but these gyrations are not the foundation upon which to build investment strategy. Indeed, a sufficient view regarding the forward expected economic environment and financial market conditions for a reasonable period of time (the Council uses a 7-10 year forward period) in conjunction with the use of longer-term asset return and volatility forecasts (20-30 years, to remove economic and financial market cyclicality from the equation), is a proper base. The Council’s view is presented in these pages, and is the basis for a strategy of reduced exposure to equity risk, a focus on investments that produce income as a meaningful portion of their overall rate of return, and the structuring of “downside” mitigation into asset class portfolios. The strategy includes a strong focus on preparation for dislocations in financial markets. Generally, the belief is that now is not a time to chase returns but instead is a time to protect capital—in a manner consistent with generating adequate returns—and good preparation to manage and capitalize on dislocations that may occur as we work our way through this challenging environment.
Part I: Expected Economic & Investment Environment and Broad Investment Strategy

Macroeconomic Environment

The Council continues to believe that the next 7-10 year period will be characterized by slower-than-average economic growth, modest interest rates, and stable rates of inflation. We have held this basic view since our inaugural 2013 Annual Investment Plan (written in late calendar year 2012), and have generally been correct in our thinking since that time. Real GDP in the U.S. compounded at 1.95% over the five years ended in March 2017; lower than all but a few of the rolling quarterly five year periods back to 1929. Over the last five years interest rates have risen; the 10-year Treasury note yielded 1.60% near the end of 2012 and has risen to 2.25% of late, hitting 3.00% along the way. Inflation has been remarkably tame, however, surprising even the Federal Reserve. The Consumer Price Index (CPI) registered 1.75% back in 2012; it fell to just below zero in 2015 then bolted to a 2.75% annual rate over the next eighteen months. It has since eased to about a 1.60% rate. Importantly, the U.S. Federal Reserve felt sufficiently strong about the near-term prospect of the economy to have increased the Fed Funds rate three times in the last year, and are now targeting 1.00%-1.25%.

Growth—Economic growth will continue to be a challenge on the forward investment horizon. Historically, corporations (the predominate source of investments for the SIC) have needed roughly 5% or better nominal GDP growth to expand their top lines solidly and sustainably. International Monetary Fund (IMF) economic estimates for the next five years indicate that the U.S. economy will be an average performer among the advanced economies, and will struggle to produce even 4% annual nominal GDP growth rates (the IMF’s expectation is for 2.1% average real GDP and 1.7% average inflation). Macroeconomic Advisors’ base case forecast for the same period is roughly equivalent (1.95% average real GDP and 1.75% average inflation). Our view for the longer 7-10 year period is rosier. Using the midpoints of the ranges in the forecast table in the pages ahead, the Council is looking for 2.25% average annual real GDP and 2.25% average annual inflation, which gets us within shouting distance of the “magic 5%” nominal GDP that should be supportive of the majority of our investments. Based on long history, we can expect a recession over the next 7-10 years and our numbers account for a mild recession in the forecast period. It is important to note that there is little to no room in our numbers, however, for a deep or protracted recession or serious crisis during the forecast period.
Inflation—For the one year period ending in March 2017, inflation perked along at 2.4%—which is just below the long term (median) rate of 2.8%. Commodity prices generally rebounded in the last year—with oil up nearly 40%, copper up 25%, precious metals up a little under 10%. The cost of housing shot up at a 3.5% rate, as did medical care at 3.4%, transportation at 3.1% and recreation at a 3.2% rate. We have been optimistic over the past few years that the Fed and other global central banks would be successful in reflating economies. We are seeing this now, not only in the real economy through the aforementioned real asset and consumer price increases, but also in rising financial asset prices.

Rates – The U.S. Fed lifted short term rates off of zero in the fourth calendar quarter 2015, and then followed up three times in this last fiscal year with 0.25% hikes in December 2016, March 2017 and June 2017. The Fed Funds target is now 1.00%-1.25% and the Fed expects further rate increases. Our base case continues to be that rates on the longer end will resist rising as much relative to rising shorter rates over the investment horizon. We are leaving last year’s 10 year forward yield curve assumption unchanged for this year. Historically, the 10-year Treasury has provided a 2.40% yield premium over inflation on average; today that number is zero. We don’t see the yield premium improving much on average over the course of the 7-10 year investment horizon—perhaps to 1.00%. The chart above compares the current yield curve (in orange) compared to our assumption last year of the forward 10-year yield curve (black line with squares), which is also this year’s assumption. The chart also shows the market consensus last year at this time for the yield curve ten years from now (the plain blue line), and the current consensus (the olive green line). It is worth noting that market consensus during the past twelve months moved to almost exactly our assumption.
Consistent with the foregoing analysis, a quantification of past 10 year and the forward 7-10 year investment horizons is tabulated below:

### Historical Backdrop and Main Forecasts & Assumptions

The first set of columns in the table quantify the ten year period ending March 2017. This was a period of low growth, low inflation, low volatility of economic conditions, and lower than average returns on investment. The median return of public funds with $1 billion or more under management, as defined by our general consultant RVK, was just 5.41%, annually compounded. In comparison, the middle column includes the long run averages while the last two columns indicate what the Council expects for the next 7-10 years.

The environment the Council expects for the forward investment horizon is better than the last 10 years, but not by very much. We expect higher growth, modestly higher inflation, and slightly better returns by the median public fund.

Our bonds return expectation is consistent with the interest rate expectations presented earlier and reflects a bond portfolio constructed similar to the Bloomberg Barclay’s Universal Index. Most public funds will likely earn more with their bond portfolios due to higher allocations to credit than the index, which is what we expect of the Council’s fixed income investments.

There is some risk with the stock market expectation – and not particularly “upside risk”. The 6.00% return expectation seems low at first glance, particularly when compared to long run historical returns. As we will discuss below the stock market has been living the past few years on speculation and momentum, and at present finds itself at exceptionally high valuation. Future valuation change is usually very difficult to estimate, even in longer periods, but when valuations are at extremes (either high or low), valuation change probabilities become quite skewed. Lowly-valued markets get more expensive and produce higher returns; highly-valued markets cheapen and produce lower returns.

More generally, over the past three or four years, the State Investment Office has consistently discussed with the Council our perception of an economic and financial market environment poised to produce forward returns lower than average historical investment returns. The outlook above expresses conditions that reflect a “low return environment” over the next 7-10 year period, and the details are presented next.
There are a number of important factors relative to this base case but there are two in particular that we address in detail: the unwind of the unconventional monetary policy put in place by the U.S. Federal Reserve and other global central banks, and as we’ve previewed, historically high valuations on stocks—and most other investment assets.

**Unwind of Unconventional Monetary Policy**—In broad terms, during the investment horizon, we expect to see increases in the Fed Funds rate, and a reduction to the Fed’s massive balance sheet of over $4.5 trillion of debt assets.

Since the 1970s, the Fed Funds target rate has approximated inflation plus 1.00% (76% correlation, 1.02% median premium to inflation). In lower inflation environments (inflation less than median) the median premium of Fed Funds over inflation drops to 0.41%. In lower inflation environments combined with lower growth environments—and we’ll use our ranges above for U.S. real GDP and U.S. CPI inflation to define that—the Fed Funds rate has historically been at a -0.69% discount to inflation at median. We think that is our future—a Fed Funds rate that gravitates toward our expected average inflation rate of 2.25%, but probably does not structurally exceed it, during the forward investment horizon.

The reduction of the Fed’s balance sheet is a little trickier to consider, and it’s trickier still to assess the potential impacts. A significant portion of the Fed’s balance sheet was built with QE II and QE III, after the Great Financial Crisis (GFC) was over. This was an attempt to boost economic growth, and in particular to aid the jobs market. The Fed can rationalize its quantitative easing during the GFC—the liquidity facilities and asset purchases the Fed engaged in helped end the GFC and pull the economy out of a deep recession. However, the Fed’s active asset purchase programs after the economy and financial markets returned to normal and seemed to do little to stimulate growth beyond what likely normally would have occurred.

The major part of the Fed’s balance sheet is Treasury securities ($2.5 trillion out of $4.5 trillion); much of the rest is mortgage-backed securities (MBS). The Treasury maturities mostly will occur in the next ten years; the MBS maturities are 25-30 years out. The Fed announced a plan last month to work up to selling $30 billion per month of Treasury securities. If the Treasury assets were simply allowed to mature and the proceeds were not reinvested over the next ten years and instead removed from the system, it would represent about $1.825 trillion of liquidity draining from the U.S. financial system, a significant reduction to system liquidity.
High Asset Valuations—Following the GFC, the U.S. equity market regained its 2007 highs in the second quarter of 2013. Though annual earnings had rebounded to 115% of their 2006 high, the Shiller PE-10 ratio stood at 22x, making the stock market—once again—expensive relative to long term history. Historically, a Shiller of 20x has been a bit of a “Maginot Line” for the stock market. As shown in the table to the left, valuations above Shiller 20x (roughly, the highest 20% of observations) have usually been followed by low real rates of return in ensuing 10 year periods. The table to the left summarizes the data back to 1929. Above a Shiller 20x, the median annualized, compounded return from stocks over the forward ten years has been 2.9% real/5.9% nominal.

Despite high valuation, the stock market has powered ahead over the past four years, and today we find ourselves at Shiller 29.7x, which is essentially where we were in 1929. Historically, when valuation is above Shiller 30x, there has been no question about stock market returns over the ensuing ten years; they are low. The best ten year period following a Shiller 30x-plus reading back to 1929 ended in the second quarter 2007 with a 7.1% return, well below the long-run range of 9-11% and just before the GFC. At median, stocks return around the rate of inflation over the forward ten years when the Shiller PE-10 ratio exceeds 30x, and almost half of the time, the stock market loses money on a nominal, annual compound basis over the forward ten years. Other valuation models such as Tobin’s Q and one of Warren Buffett’s said favorite valuation metrics—market capitalization / GDP—seem to show similarly high valuation of stocks.

Based on this information, our assumption for U.S. equity and a 65%/35% mix of stocks and bonds in the Main Forecasts and Assumptions table could be aggressive. Our assumption that U.S. stocks will return 5.75% and U.S. bonds will return at 2.60% makes the return of a 65%/35% mix blend to 4.65%. But if U.S. stocks provide only the rate of inflation (~2.25% is assumed) as the Shiller level of 29.7x implies, the expected return from a 65%/35% mix of stocks and bonds falls from 4.85% to 2.30% compounded annually. The median public fund, in that environment, would likely post returns of around 3.00%-3.50% compounded annually for the next 10 years rather than the 5.50% assumed. A stock market return expectation model based on the Shiller ratio was developed which supports a 5.75% expectation from U.S. stocks over the investment horizon, but based upon this information, there is a risk that results could be skewed to the downside.

The Council keeps firmly in mind that these assumptions are based upon traditional investment fundamentals. U.S. stocks in particular and risk asset generally seem highly valued today, but if interest rates remain low and steady, these high valuations could be “sticky” and returns could be better than we assume. On the downside, our assumptions do not include a “crisis” market in stocks (-35% or more drop in prices) occurring over the next ten years. Should that occur we could get returns more like the Shiller valuation model foreshadows—or even less.
Compounding the two issues discussed in this section (normalization of monetary policy, and current asset valuations) are our thoughts regarding economic conditions likely to prevail over the coming 7-10 year investment horizon. We address these in the next section.
Economic Regimes

The Economic Regimes analysis asserts that in terms of investment environments, underlying economic conditions can be parsed into one of three states: one that is supportive of equity investments (average to above average growth with low or falling inflation), one that is more supportive of fixed income investments (poor to negative growth with low inflation—recessionary), and one that sits between the two and generally favors “real return” investment characteristics (an environment of rising or high inflation and weak to moderate GDP growth). The interplay of GDP growth and inflation is used to define “economic conditions”, and the annualized compounded growth rate of GDP and inflation over 12-quarter moving periods is used to dampen the volatility of the data series. We have produced numerous reports that go into great detail regarding the Economic Regimes framework.

This year, we add a fourth regime—Stagflation. Previously, we recognized stagflation environments but considered them an anomaly of the 1970s inflation era. The Regimes data set has been extended back to 1929 and a result have observed that stagflation periods are more numerous than anomalous. We explored this in more depth in a recent report updating our Regimes work. For the purposes of Economic Regimes, we define stagflation as periods when inflation is above average, real growth is below average, and inflation is two-thirds or more of nominal GDP.

Below is a familiar graph plotting Economic Regimes back to 1929:
The data behind the Economic Regimes chart above, is presented below:

### Economic Regimes Data Summary

<table>
<thead>
<tr>
<th>Observations</th>
<th>Percentages</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Equity</strong></td>
<td><strong>Fixed Income</strong></td>
</tr>
<tr>
<td>Last 40 Qtrs</td>
<td>0%</td>
</tr>
<tr>
<td>Since 1929</td>
<td>37%</td>
</tr>
<tr>
<td>SG Base Case</td>
<td>33%</td>
</tr>
</tbody>
</table>

Observing from the table above and the graphic on the previous page, the preponderance of time the economy is in an equity-supportive regime. About 50% of the time the economy offers conditions that are favorable to equity investments, which represent the majority of SIC investments. One year in five (20% of the time) we face recessionary conditions. Real Return environments existed in roughly one year out of six years. Real Return environments provide conditions supportive of investments that possess characteristics such as some positive correlation to inflation and the production of income as the predominant factor in the total rate of return. Core real estate investments are a classic asset which fits into this category. Rents are very important to the value of a core real estate property and are to a degree tied to inflation. The “replacement value” of a property is also tied to inflation. Income from rents or leasing in core real estate during normal market environments contributes 80% or more to the total realized rate of return from the investment. Lastly, our new regime “stagflation”, which we’ve previously described, occurred roughly one in eight years. Few investments fare particularly well in stagflationary environments.

The last ten year period exhibited little in variability of GDP and CPI on a quarterly-moving triennial basis. In fact, the standard deviation of GDP plus the standard deviation of CPI over the last ten years ranked in the bottom 20% of ten year periods going back to the 1930s. We expect more variability of economic conditions over the forward 7-10 year period, given our base case scenario of rising rates and more normal inflation combined with a fairly high probability of a recession during the period. Observing the chart on the previous page, the economic results over the last ten years fall within the orange box; our expectations for the next 7-10 year period are within the black box. Our base case GDP and CPI expectations imply the economy will be in an equity-supportive environment about one-third of the time, compared to about 50% of the time over the long-term. Weak or recessionary environments are expected to be more prevalent—almost half the time versus 20% historically. Real return regimes, we expect, will be roughly as prevalent as history. Stagflation could occur at about two-thirds of its historical prevalence.

As we warn every time we discuss Economic Regimes, the economic environment in no way guarantees any particular outcome for any asset type or investment strategy. The regimes observations mainly helps us to “keep the wind at our back” and have economic conditions be a source of strength for our portfolio to the degree that we can position the investments, rather than working against it.
Asset Allocation Overview

The State Investment Council reviewed the asset allocation for the LGPF and the STPF in the spring of 2011 and made significant changes. The allocation at the time was heavily growth-oriented, and largely dependent on publicly-traded equity for return generation.

The LGPF and the STPF—sovereign wealth funds which are structured to provide an annual distribution related to the size of the funds’ corpus—carry three objectives which impact the structuring of the asset allocation: to make the annual distribution; to protect the purchasing power of the corpus; and to provide some “real” growth to the annual distribution over time.

As aforementioned, the previous asset allocation was highly growth-oriented. The return target was very aggressive and the asset allocation was heavily weighted toward publicly-traded equity. In addition, the asset classes were aggressively implemented with high-beta managers in the publicly-traded equity portfolio; high risk credit structured into the fixed income portfolio; smaller, higher risk funds in the private equity portfolio; and a real estate portfolio dominated by risky “opportunistic” strategies. Little to no consideration was given to purchasing power protection-related assets or strategies.

The State Investment Council adopted a new approach, including an asset allocation strategy, which diversified the sources of investment return and brought greater balance to growth objectives and the protection of the purchasing power of the corpus. The targeted real estate allocation was doubled, a “real return” allocation was created with a target of 10%, and private equity was boosted slightly. These allocations were “funded” by a reduction to domestic equity. A follow-on asset allocation review was accomplished in 2014 which moved the sovereign wealth funds further in the initiated direction. Per its Investment Policy, the Council is reviewing asset allocation again, and considering a small further move in the direction of return diversification / real return generation. In addition, the Council believes that the considered changes may be a better fit for the economic environment and financial market conditions foreseen for the coming decade.
**Broad Investment Strategy**

As reviewed, the upcoming investment environment is expected to be one of lower returns than earned in both recent and longer term history. Our starting point is defined by very low interest rates, rich asset valuations, below average economic activity, and high levels of public debt. The traditional tools of policy-makers to fight poor economic conditions or financial market crisis are limited at present as they have been in great part exhausted trying to pull the global economy out of the GFC and get it back on a growth track over the last nine years. Significant amounts of the financial liquidity and the “easy” money provided by the Fed and global central banks during and after the GFC have found their way into the financial markets driving most asset prices to near record levels. The reverse including rising rates, tightening financial conditions, rising inflation and tempering asset valuations—can reasonably be expected to restrain investment returns earned by NMSIC’s investments.

As if a tough starting point weren’t challenge enough, our outlook for the economic environment for the forward 7-10 year period is not as supportive as usual for the single largest allocation and the best-returning asset in our portfolio—equities. If we could expect above-average real economic growth and reasonable inflation to drive above-average earnings growth, our weak starting position would be more manageable. But as detailed earlier, this doesn’t look like the case under most conceivable scenarios.

In our view, the main strategy followed for the past few years while restructuring the investment portfolio remains a sensible way to approach the economic environment and the direction and trends of the major fundamentals that drive investment returns that we foresee. In summary:

1. **Diversify equity exposure**—As shown in the chart on the previous page, the Council is very close to its long term target for publicly-traded equity, and the implementation of this strategy.

2. **Generate income**—In an environment where returns from equity are expected to be muted, increased exposure to assets which produce a higher component of their total rate of return from income is a logical strategy.

Over time, stocks have produced about 40% of their total rate of return in dividend yield. Bond portfolios have produced nearly all of their total return from interest through coupon payments. Based on these historical income generating trends we would expect a 65%/35% mix of stocks and bonds—which roughly approximates the investment risk tolerance of many public funds—to produce around 60% of its total rate of return in income, over time.

A 65%/35% mix of stocks and bonds however, using current return, risk, and correlation assumptions by consultant RVK, are expected to produce an average return of just 5.7% annually over the longer run from today. That expected return of 5.7% is well below long term averages, and is below the Council’s 7.00% return target for the LGPF. It also looks materially higher than what we might reasonably expect over the next (shorter) investment horizon of 7-10 years (4.375% is our estimate). So the question becomes, are there other asset types that can produce better rates of return in the expected economic and financial market environment, but with a similar risk level and with similar income-generating ability?

We think so, and we believe we are finding these investments in the real estate and “real asset” areas of the investment universe. We expect a blend of core and value-add real estate can produce a 7.9% rate of return annually over a longer period of time, with a 15.8% annual volatility and with 70% of the return coming from income. Our custom mix of Real Return assets...
has an expected rate of return of 7.7%, volatility of 11.7% and could produce 75% or more of that return in income. These types of assets reduce the Council’s dependency on capital gains to generate return, thus reducing dependency on low-yielding equity investments and the low-yielding fixed income investments needed to offset the equity volatility.

<table>
<thead>
<tr>
<th>Asset Class</th>
<th>_Return**</th>
<th>Volatility</th>
<th>Capital Gain</th>
<th>Income</th>
</tr>
</thead>
<tbody>
<tr>
<td>65% U.S. Stocks / 35% U.S. Bonds</td>
<td>5.80%</td>
<td>17.80%</td>
<td>40%</td>
<td>60%</td>
</tr>
<tr>
<td>NMSIC Custom Real Estate</td>
<td>7.60%</td>
<td>16.02%</td>
<td>30%</td>
<td>70%</td>
</tr>
<tr>
<td>NMSIC Custom Real Return</td>
<td>7.23%</td>
<td>10.99%</td>
<td>25%</td>
<td>75%</td>
</tr>
</tbody>
</table>

*RVK 2017 Assumptions  **Return is ‘Arithmetic’ ***SG Approximations

3. **Downside protection/”crisis” mitigation**—Where practical, the Council looks for strategies that mitigate downside volatility and losses. Some of these strategies include favoring investments that produce income over capital gains in generating the total rate of return; using active management (including “smart beta”) in the publicly-traded equity portfolio to “trade” outperformance in up markets for greater outperformance in down markets; shortening the duration in the fixed income portfolio, diversifying geographically in the private equity, real return and real estate portfolios, and acting cautiously in the highest-risk areas such as venture capital private equity, highly-levered non-core and/or opportunistic real estate, and “greenfield”, commodity-exposed, or “emerging markets” real asset investments. Generally, the belief is that now is not a time to chase returns but instead is a time to protect capital—in a manner consistent with generating adequate returns—and good preparation to manage and capitalize on dislocations that may occur as we work our way through this challenging environment.

Recently, a “Liquidity Study” was produced which detailed the liquidity that the LGPF and the STPF would need in the event of a 35% or more downturn in the stock market. While we are not forecasting such an event over the next 7-10 year investment horizon, we are not ignoring that it could happen, particularly in light of what looks like a relatively tough investment environment combined with period-starting high risk asset prices. The study was done as a way to build in better preparedness, and the structure of the fixed income portfolio may be modified to reflect some of the conclusions of the liquidity study when that portfolio’s structure is reviewed in coming months.
Part II: Outlook for the Land Grant and Severance Tax Permanent Funds

The Land Grant Permanent Fund

Portfolio Value
The financial model developed by the Council and consultant RVK for the Land Grant Permanent Fund (LGPF) projects the LGPF will grow to roughly $23.14 billion over the 7-10 year investment horizon, an annualized increase of 4.6%. This projection is based upon the long-term assumptions for investment return, New Mexico State Land Office contributions and the distribution policy used in the 50-year Intergenerational Equity model for the LGPF.

We believe economic and financial market performance will most likely underperform our long-term base case over the shorter 7-10 year investment horizon and cause the LGPF value to fall short of the projected value. It seems more likely to us that the LGPF will find itself somewhere between the $23.41 billion base case figure and the $18.3 billion pessimistic case figure. At $18.3 billion, annualized fund growth falls to 1.6%.
Distributions
Using the same long-term (50-year Intergenerational Equity model) assumptions, annual distributions from the LGPF are expected to rise to just over one billion dollars by the end of the 7-10 year investment horizon. This equates to an annualized growth rate of just under 4.2%. Again, we expect that performance over this investment horizon will underperform our longer-term assumptions, causing distributions to likely fall more toward the pessimistic case of $890 million, for a roughly 1.7% per year growth rate. It should be noted here that our expectations for inflation over the investment horizon are modest relative to longer term history, on the order of 2.25% per year on average. This means that LGPF distributions under a more pessimistic scenario will struggle to keep pace with inflation.
The Severance Tax Permanent Fund (STPF) is also modeled in this manner, but the results are less encouraging. The STPF is projected to grow to roughly $5.9 billion over the investment horizon, an annualized increase of 2.75%. This projection is based upon the long-term assumptions for investment return, inflows from severance tax receipts, and the distribution policy used in the 50-year Intergenerational Equity model for the STPF.

Like the LGPF, we believe that economic and financial market performance could underperform our long-term base case in the shorter 7-10 year investment horizon and cause the STPF value to fall short of the projected value. It seems more likely that the STPF will find itself somewhere between the $5.9 billion base case figure and the $4.5 billion pessimistic case figure. At $4.5 billion, annualized fund growth falls to 0.3% in nominal terms, which in a 2.25% inflation environment, means that the STPF would shrink in economic value.
Distributions

Using the same long-term (50-year Intergenerational Equity model) assumptions, distributions from the STPF are expected to rise to just over $270 million by the end of the 7-10 year investment horizon. This equates to an annualized growth rate of 2.3%, or right in line with the 2.25% expected rate of inflation. Again, we expect that performance during this investment horizon will likely underperform our long-term assumptions, causing distributions to fall more toward the pessimistic case of $220 million, for essentially no growth. Our inflation assumptions well exceeds that growth rate, meaning distributions could lose economic value over the period.
Part III: Asset Class Plans

Public Markets: Equity

Asset Class Summary—The publicly-traded Equity portfolio is the cornerstone of the Permanent Funds (Funds) and it is the largest and most liquid of the major allocations within the Funds. The role of portfolio is to generate meaningful returns. Returns are generated by long-term capital appreciation (driven primarily by capitalization of a growing earnings stream) and dividend income.

Equity exposure is achieved through low-cost passive index exposure, factor-driven strategies, and targeted active management. In the most efficient markets, such as U.S. large-cap stocks, the focus is on capturing market returns through the increased use of low-cost index or factor-driven strategies. In less efficient markets, such as emerging markets and small-cap stocks, the focus is on identifying skilled active managers to achieve greater than benchmark returns.

The public equity asset class has an allocation of 44% of the Land Grant and Severance Tax Permanent Funds total fund with long-term U.S. and non-U.S. target allocations of 55% and 45%, respectively. As of March 31, 2017, the current allocation was roughly 64% U.S. and 36% non-U.S, a material overweight to domestic stocks compared to the widely-followed global equity benchmark MSCI ACWI IM Index of 51% U.S. and 49% foreign stocks. On an annual return basis, since 2010, the overweight to the domestic stocks has benefitted the total public Equity portfolio. Going forward, high U.S. equity valuations relative to non-U.S. equity make the planned rebalancing noted above (and below in tabular form) warranted.

The table below shows the current and expected allocations of the public equity portfolio.

<table>
<thead>
<tr>
<th>Sub-Asset Class</th>
<th>Public Equity Asset Class (3/30/2017)</th>
<th>Public Equity Asset Class (7/1/2017 est)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Target (%)</td>
<td>Actual (%)</td>
</tr>
<tr>
<td>US</td>
<td>55%</td>
<td>63.8%</td>
</tr>
<tr>
<td>Traditional Active</td>
<td>43.2%</td>
<td>2,715</td>
</tr>
<tr>
<td>Smart Beta</td>
<td>21.5%</td>
<td>1,352</td>
</tr>
<tr>
<td>Market-cap Passive</td>
<td>35.3%</td>
<td>2,222</td>
</tr>
<tr>
<td>Non-US</td>
<td>45%</td>
<td>36.2%</td>
</tr>
<tr>
<td>Traditional Active</td>
<td>62.3%</td>
<td>2,220</td>
</tr>
<tr>
<td>Smart Beta</td>
<td>19.9%</td>
<td>709</td>
</tr>
<tr>
<td>Market-cap Passive</td>
<td>17.8%</td>
<td>633</td>
</tr>
</tbody>
</table>

Portfolio strategy, markets, and recent performance—In simple terms, the primary strategy employed in the publicly-traded Equity portfolio is “keep up on the upside and protect on the downside”. Downside protection is constructed into the portfolio by allocating to strategies with performance track records designed and proven to perform relatively better when equity markets are weaker or exhibit downside volatility. These strategies are quantitatively paired with strategies selected to bring more “upside capture” to the portfolio, primarily through more concentrated investments.

More specifically, portfolio strategy is aimed at the following:
1. Relatively low tracking error;
2. Relatively lower volatility, particularly in down markets;
3. Relatively low fees;
4. Generation of excess return over the passive benchmark, targeting 2x-3x fees;
5. Perform well against peer equity portfolios.

At present, portfolio volatility and fees are in-line with the Council’s goals, and the tracking error is slightly below the target range (more like the index than we’d expected that we would need to be in order to produce the desired portfolio characteristics). The low tracking error was corrected in the July 2017 transition. Excess returns of the portfolio, however, have been slightly negative as stock markets were uncharacteristically strong for the one year ended in March, 2017. Broad U.S. market returns were up 18.07%, with small-cap stocks returning 26.2%. Broad foreign markets were up 13.01%, with the more volatile emerging markets up 17.2%. The U.S. equity portfolio fell short of its index by 22 bps and the non-U.S. equity portfolio missed the index by 9bps.

Against peers, the Council’s domestic equity portfolio has consistently performed in the second quartile over the past five years. The non-U.S. portfolio has demonstrated weaker performance relative to peers over the last five years, but the recent changes made to that portfolio have put it above par for the last few quarters.

**Portfolio activity and forward-looking strategy**—In 2015, following several years of research, “Smart Beta” (factor-driven) strategies were added to both the US and non-US public equity portfolios. During fiscal year 2017, this transition continued by further restructuring the domestic equity portfolio to increase exposures to factors shown to outperform a market-cap weighted index over time. As shown in the table above, allocation to Smart Beta strategies increased from 16.5% to 46.5% while market-cap passive and active management allocations were reduced by 15% each to 26% and 27.5%, respectively. The decrease in active management resulted in the termination of two active managers from the U.S. large-cap manager roster.

Portfolio construction will remain a key factor in generating returns from the publicly-traded equity markets. Over the next 7-10 year investment horizon, the economic environment is expected to be less favorable to equities than usual. When combined with high valuations, equities are expected to produce lower returns than their long-term historical averages. Factor-based strategies with proven long-term excess-return generating capabilities will be critical; and traditional active management strategies will remain an important component, particularly managers that have higher stock-specific risk and a long-term track record of outperforming benchmarks.
Public Markets: Fixed Income and Absolute Return

Asset Class Summary—The Council’s fixed income portfolio invests in a variety of government, supranational, and corporate securities. The primary objectives of the portfolio are to preserve capital, produce income, and protect against the volatility of equity investments.

The fixed income portfolio has a long-term allocation of 19% for the LGPF and a long-term allocation of 18% for the STPF. Below is a table showing past and current allocations to the various strategies within the fixed income allocation:

<table>
<thead>
<tr>
<th>Sub-Sector</th>
<th>Allocation 3.31.2016</th>
<th>Allocation 3.31.2017</th>
<th>Target Allocation FY2018</th>
<th>Primary Purpose</th>
</tr>
</thead>
<tbody>
<tr>
<td>Short Duration Pool</td>
<td>0.0%</td>
<td>7.9%</td>
<td>7%</td>
<td>Liquidity, duration mgmt</td>
</tr>
<tr>
<td>Core Bonds Pool</td>
<td>22.0%</td>
<td>17.9%</td>
<td>18%</td>
<td>Interest rate exposure</td>
</tr>
<tr>
<td>Core Bonds Plus Pool</td>
<td>42.0%</td>
<td>41.4%</td>
<td>45%</td>
<td>Int rate &amp; credit exposure</td>
</tr>
<tr>
<td>Unconstrained Fixed Income Pool</td>
<td>16.4%</td>
<td>14.7%</td>
<td>15%</td>
<td>Active mgmt/alpha exposure</td>
</tr>
<tr>
<td>Credit &amp; Structured Finance Pool</td>
<td>19.6%</td>
<td>18.1%</td>
<td>15%</td>
<td>Credit exposure</td>
</tr>
</tbody>
</table>

Recent performance, markets and portfolio strategy—Fixed income markets rebounded during the trailing one year ended in March 2017, driven primarily by improving credit spreads. The Bloomberg Barclays U.S. Universal bond index produced a 1.92% rate of return in the year, with the Council’s primary credit index gaining 13.27%. U.S. Treasury yields increased over the year, with the yield on the 10 Year Treasury increasing 62 basis points. The Federal Reserve tightened monetary policy three times over the one year period, with two 25 basis point increases in December and March and a third in June. Market participants are unsure about further increases this year, and the Fed has started discussing how it might start to reduce its balance sheet holdings of U.S. Treasuries and Agency Mortgages in the future. Most of the move in interest rates came after the Trump victory in November, as his platform of aggressive tax cuts, increased military spending and expected increases in infrastructure spending would most likely lead to higher government deficits in the future. Investors drove credit spreads, especially high yield spreads, tighter as they continue to search for yield amid fairly benign economic growth. With most corporate balance sheets fairly healthy, corporate default rates are expected to remain low. Structured credit and direct lending strategies also performed well during the year, with most of those managers returning low-teens net performance for the year ended in March 2017.

In this environment, the Council’s Fixed Income portfolios, especially its active managers, performed well. The Fixed Income Composite portfolio outperformed the custom index by 177 bps. Among the active strategies, Core Plus bonds exceeded its benchmark by 325 bps and the Unconstrained Bonds portfolio outperformed by 503 bps. The Credit portfolio produced an 11.78% return but underperformed the custom credit index by 149 bps.

Following the Council’s restructuring of the Absolute Return portfolio in late 2015, performance has improved considerably. The portfolio now has 15 core fund managers with another 43 legacy fund managers.
positions currently in redemption or liquidation. 35 of these legacy funds have NAV values of less than $1 million. The Absolute Return portfolio returned 2.66% on the year and outperformed the Council’s benchmark by 140 bps.

Recent activity and forward-looking strategy—There were no changes over the last year in the Fixed Income portfolio. The short duration mandate was funded in May 2016.

The upcoming 2017 Asset Allocation Study will split the Fixed Income portfolio into two separate allocations. The “Core” allocation will be a highly liquid, highly-rated portfolio with the primary objective of serving the traditional role of a fixed income portfolio while providing liquidity to the overall portfolio in the event of a severe market disruption. The “Non-Core” allocation’s primary objective will be to produce yield and generate returns utilizing strategies that fall within the range of traditional fixed income or credit strategies. Many of these strategies will not be liquid allowing the Council to take advantage of illiquidity premiums available in these markets.

In addition to the changes to the Fixed Income portfolio, the Absolute Return portfolio will be re-categorized from an asset class to a strategy. The Asset Allocation Study will consolidate hedge funds into the Non-Core fixed income allocation.
Private Markets: Real Estate

Asset Class Summary— The Council’s Real Estate portfolio has a target allocation of 12% of the Fund and is well diversified by property type, risk characteristics, and geography. Relative to property type diversification, the portfolio is guided by the diversification of the National Association of Real Estate Investment Fiduciaries (NCREIF) Fund Index for Open-ended, Diversified, Core Equity (NFI-ODCE), but with a 15% plus or minus allocation relative to that index. The property type composition of the Real Estate portfolio is summarized in the table above.

<table>
<thead>
<tr>
<th>Real Estate Sectors</th>
<th>% of Real Estate Portfolio</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>NFI-ODCE *</td>
<td>Actual</td>
</tr>
<tr>
<td>Apartment</td>
<td>24.30%</td>
<td>27.0%</td>
</tr>
<tr>
<td>Office</td>
<td>36.90%</td>
<td>22.5%</td>
</tr>
<tr>
<td>Industrial</td>
<td>14.70%</td>
<td>17.5%</td>
</tr>
<tr>
<td>Retail</td>
<td>20.20%</td>
<td>16.4%</td>
</tr>
<tr>
<td>Hotel</td>
<td>0.70%</td>
<td>3.6%</td>
</tr>
<tr>
<td>Other</td>
<td>3.20%</td>
<td>13.0%</td>
</tr>
<tr>
<td>Total Real Estate</td>
<td>100%</td>
<td>100%</td>
</tr>
</tbody>
</table>

Note: NMSIC Real Estate Sector Range is +/- 15% of the NFI-ODCE Index. By example, the range for Office is 21.9% to 51.9%.

Recent performance, markets and portfolio strategy— The Real Estate portfolio turned in another strong year both in absolute and relative performance. For the calendar year ending December 2016, the total Real Estate portfolio generated an 8.2% net time weighted return, exceeding the NCREIF/Townsend Index by 40 bps. Legacy investments continue to weigh on performance numbers, but their negative impact continues to diminish as the legacy portfolio now represents less than 8% of the total Real Estate NAV.

Valuations are at historical highs in the U.S. real estate markets, particularly in the core real estate space. Townsend sees continued favorable investment performance, but not the double-digit rates of return enjoyed over the last few years. During 2016, capitalization (“cap”) rates compressed slightly, but this phenomenon, which has driven significant capital appreciation returns in recent years, appears to be stabilizing and possibly reversing in response to expectations of higher interest rates. However, yield spreads (the difference between Core cap rates and 10 year treasuries) remain within normal ranges and there is evidence that significant foreign and domestic capital continues to compete for real estate acquisitions. These factors provide something of a cushion against the possibility of cap rate expansion. Accordingly, expectations for U.S. Core total returns in the near future are in the 6% to 8% range.

In the year ending December 31, 2016, the NAV of the Real Estate portfolio increased by $131 MM. Two new commitments were made: a $100 MM commitment to PreCap VI, a European junior debt strategy and a $75 MM commitment to Asana Partners, a street front retail strategy. With the Strategic (Core/Core Plus) component of the Real Estate portfolio largely built-out, the focus for new commitments is in the Tactical space (Value Add and Opportunistic).

Recent activity and forward-looking strategy— At year-end 2016, the total NAV of the Real Estate portfolio represented 8.8% of total fund assets. Including NAV plus unfunded commitments, the Real Estate portfolio represented 12.1% of total fund assets, however, it is worth noting that this level of over-commitment is within ranges recommended by Townsend and takes into consideration that the average NAV outstanding for a particular closed-end fund is less than 2/3 of the total commitment to that fund. As part of an overall portfolio allocation study, the Real Estate allocation was increased from 10% to 12% in
mid-2017. Even with the increased allocation, the focus of new commitments in the near term will be towards Tactical investments, as shown in the Townsend pacing model on the next page.

The Council’s Real Estate portfolio is designed to have a significant income return component. We expect the Strategic (Core/Core Plus) portfolio to generate income in the 4% to 6% range in the medium term. In addition, components of the Tactical (Value Add/Opportunistic) portfolio will also have an income focus by including mezzanine debt strategies.
Private Markets: Real Return

Asset Class Summary—The Council’s Real Return portfolio is a multi-asset, multi-market portfolio constructed to generate return based on factors different than those that drive returns of publicly-traded Equity and traditional fixed income investments. Total return is focused on income generation. These assets are expected to be advantaged over equities and bonds in an economic and financial market environment where growth is a little slower than average and inflation and interest rates are rising.

The Real Return asset class has an allocation of 12% within the broad LGPF and STPF portfolios. The asset class targets 75% of investments in “real” assets and 25% in financial assets. Starting from scratch in 2011, the Council began building investments in “real” assets of timberland, energy, farmland and infrastructure; and in financial assets of floating rate debt (primarily bank loans) and Master Limited Partnerships (MLPs). MLPs are companies that invest in oil and gas pipelines and related energy infrastructure, and are similar to REITs in structure. The table below shows the current allocations of the Real Return portfolio:

<table>
<thead>
<tr>
<th>Category Sub-Sector</th>
<th>% of Real Asset Class</th>
<th>% of Category</th>
<th>Value</th>
<th># of Commitments</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Target</td>
<td>Actual</td>
<td>Target</td>
<td>Actual</td>
</tr>
<tr>
<td>Floating Rate Debt</td>
<td>N/A</td>
<td>51.5%</td>
<td>439.3</td>
<td>439.3</td>
</tr>
<tr>
<td>MLP’s</td>
<td>N/A</td>
<td>48.5%</td>
<td>413.5</td>
<td>413.5</td>
</tr>
<tr>
<td>Real Assets</td>
<td>75%</td>
<td>55.5%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Agriculture</td>
<td>5.6%</td>
<td>0-15</td>
<td>19.2%</td>
<td></td>
</tr>
<tr>
<td>Commodities</td>
<td>0.0%</td>
<td>0-10</td>
<td>0.0%</td>
<td></td>
</tr>
<tr>
<td>Energy</td>
<td>14.3%</td>
<td>0-40</td>
<td>30.7%</td>
<td></td>
</tr>
<tr>
<td>Infrastructure</td>
<td>20.9%</td>
<td>0-40</td>
<td>26.3%</td>
<td></td>
</tr>
<tr>
<td>Timberland</td>
<td>12.4%</td>
<td>0-40</td>
<td>19.2%</td>
<td></td>
</tr>
<tr>
<td>Other</td>
<td>2.2%</td>
<td>0-15</td>
<td>2.5%</td>
<td></td>
</tr>
</tbody>
</table>

Notes: Invested Value (NAV) is based on year end 2016 numbers as provided by RVK for Financial Assets and Townsend for Real Assets. % of Category means the percent of the total Financial Asset NAV (3%) or the percent of the total Real Asset NAV (9%), as

Recent performance, markets and portfolio strategy—During 2016, the Financial Assets component of the Real Return portfolio generated a 13.34% net return, driven by 19.55% net return on the Harvest MLP portfolio, but also including strong absolute returns in the other financial assets. Relative to the Real Asset component of the Real Return portfolio, Townsend reports that the portfolio generated a net 12.5% time-weighted return led by strong performance from the energy and infrastructure portfolios.

Since year end 2015, the NAV of the Real Asset portfolio increased by $466.7 MM to finish 2016 at $1,062 MM. Total commitments at year end 2016 stood at $1,914.8 MM. New commitments were made to RMS Evergreen Fund (open ended timber fund - $125 MM); Carlyle Power Partners II (energy - $100 MM) and Brookfield Infrastructure Fund II (infrastructure - $75 MM).

Recent activity and forward-looking strategy-- The Real Return pacing model incorporates just the real assets component, which is 9% of the broad portfolio (12% x 75% = 9%). As shown below, the pacing model shows approximately $300 MM of commitments in 2017, followed by roughly $175 MM per year thereafter in order to continue to push the invested NAV of the Real Return portfolio toward the long term target allocation.
There will be some spikes in commitment levels relative to the pacing model based on the timing of new offerings. For instance, in 2017, Townsend has incorporated recent commitments to ACM (permanent crop strategy - $50 MM) and Macquarie Infrastructure Partners IV (diversified infrastructure - $100 MM) as well as expected commitments of $50 MM each to BlackRock Renewables (global renewables strategy); EnCap Flatrock IV (midstream oil and gas infrastructure); and NGP XII (oil and gas exploration and development).

Commitments within the Real Asset space are carefully chosen so as to manage risk, as well as to provide diversification by strategy and geography. With the agriculture and timber portfolios fully built-out, the focus for the near term will be to make commitments in the energy and infrastructure sectors.
Private Markets: Private Equity

Asset Class Summary—The Private Equity portfolio, which consists of four categories – Buyout, Growth, Special Situations and Venture Capital, continues to serve an important role in enhancing overall portfolio diversification. This asset class, although correlated to public equity markets, often benefits as private equity managers are afforded additional flexibility to pursue operational excellence and improvement in their investment companies without the harsh spotlight of public market scrutiny. In addition, private equity adds exposure to the long-term growth potential of private companies, which will likely result in an illiquidity premium in this asset class.

Recent performance, markets and portfolio strategy—Private equity investments have one of the highest return expectations of all the asset classes and for the 12 months through March 2017 (one quarter lagged), the Private Equity portfolio gained over 11%. This performance was slightly better than median, compared to our peer fund private equity portfolios, but behind the 13.25% increase in the Cambridge US Private Equity Index. Poor performance of the non-core funds (most of which are pre-2011 legacies) was the main reason for underperformance vs. the Cambridge Index, as poor manager/fund selection was likely impacted by previous pay-to-play considerations. Since 2011, the Private Equity portfolio has targeted larger fund commitments of $75-$100 million, compared to the previous $20-$50 million, so the performance drag from all of the non-core funds will continue to diminish.

Portfolio strategy continues to focus on identifying a set of “core managers” to build longer term relationships for our Private Equity program. Larger commitments to successful core managers will eventually result in a decrease in the number of GP relationships/fund commitments and will be very beneficial in terms of 1) portfolio monitoring and 2) reducing the administrative burden of a large number of relationships. A material reduction in the number of private equity funds (currently 117), in the absence of a secondary sales option, will take a considerable amount of time. But as the portfolio continues to grow and approach the 12% target, the overall effect of the non-core relationships will recede.

Recent activity and forward-looking strategy—Private equity consultant Pavilion Alternatives Group (formerly LP Capital) utilizes a pacing model to help the staff and Council guide the target range of annual commitments for our Private Equity program. The pacing model serves two main functions: 1) it ensures adequate vintage year diversification and 2) it models a 3-5 year time frame, given its assumptions, to reach our long-term target of 12% of total assets. At this time the pacing model projects annual commitments of approximately $600 million would be adequate to reach our target in that time frame and the model is reevaluated annually for potential enhancements.

Progress towards the 12% target has been hampered by a number of factors. The continued strength of the public equity markets has resulted in total plan assets increasing at a faster rate than the pacing model assumption. In addition, this market resilience has resulted in an accelerated pace of investment realizations and cash distributions from the funds, which has most directly pressured net contributed capital. In fact, the private equity program experienced about $700 million in net distributions (distributions exceeding contributions) from 2011 to 2014. Despite continued strength in distributions, the last two years have seen a bit of a reversal, as net contributions have gradually turned positive. Although favorable exit markets have lengthened the original time frame to reach the 12% target, markets that make it easier for managers to successfully and profitably exit their private company investments will always be welcome.
Commitments and Allocation Forecast

Each year’s private equity commitments are based on a predetermined amount. Model assumes overall portfolio returns of 3.5% (net of all contributions and distributions) and private equity returns of 12%. Different return assumptions may result in a different pacing target. Pacing targets should be evaluated on a regular basis.

Aggregate vintage year performance can differ by year and increasing commitments during a low-performing vintage year could lead to lower portfolio performance.

* Note: Vintage year is defined by the calendar year capital is called. 2016 does not include approximately $260 million of commitments that have been approved, but have not yet drawn capital. Private equity allocation for 2016 reflects as of 12/31/15 while 2017 and thereafter reflect end-of-fiscal year on June 30 of each year.

Source: Pavilion
Special Topic—Conflicting Economic Trends

An interesting convergence of economic forces is occurring in the U.S. economy. Previously, we have documented long-term trends that were likely to restrain growth going forward, and also hold interest rates and inflation at lower levels than we were accustomed. In contrast to these longer-term trends, there are cyclical, shorter-term trends that could put upward pressure on inflation and interest rates. Going forward, the accuracy of economic forecasts will be determined by the interplay of these forces. Will the longer-term forces dominate to create an environment of lower growth potential, or will the short-term forces build to put upward pressure on inflation?

Previous Special Topic White Papers have discussed the demographic trends of the U.S. and the rest of the developed world and how this will restrain growth, such that it is unlikely we will see the 3.3% real GDP growth rates the U.S. experienced from 1950-2000. The study cited (Arnott and Chavez 2012) suggested that the aging of the population would restrain productivity growth, and thus potential GDP growth. We have also discussed other economic forces that have come to be known under the heading of Secular Stagnation that would restrain interest rate levels. Former Treasury Secretary and economist Larry Summers, who has been associated with this theory, describes it as a state in which, “changes in the structure of the economy have led to a significant shift in the natural balance between savings and investment causing a decline in the equilibrium or normal rate of interest” (Summers 2014). These forces have an effect on potential returns for our portfolio going forward.

To the right is a graph of Real Interest Rates (RIR), currently at 38 basis points, well below levels of 300-400 basis points seen in the recent past. The RIR is the initial building block upon which Asset Class expected returns can be built. For example, adding the RIR to the Equity Risk Premium and forecasted inflation will provide an estimate of the expected return for Equities. Thus a lower RIR leads to lower expected asset class and portfolio returns. This corroborates the lower returns assumptions found in Part I of the Annual Plan in the Table entitled “Main Forecasts and Assumptions.”

In contrast to the secular trends discussed above, the U.S. economy is experiencing some shorter-term, cyclical positive trends that theoretically could lead to increasing inflation and interest rates. The Bloomberg Consensus Economic Forecast expects GDP growth to be above trend for the next couple of years. Profit growth also looks strong, with the First Call estimate of S&P EPS expected to grow in double digits in 2017 and 2018.
We are now into the eighth year in the current economic recovery, with consistent declines in unemployment throughout this period, as seen in the graphs below. The U.S. Unemployment rate has now reached levels thought to be at or beyond full-employment or NAIRU. The CBO currently estimates NAIRU (Non Accelerating Inflation Rate of Unemployment) at 4.8% (Shown as the orange dashed-line in the graph). The most recent household survey reflected unemployment at 4.3%, meaningfully below the NAIRU estimate. Also, U6 (the underemployment rate), which had been lagging, is down to its pre-crisis norm. In theory, Unemployment rates below NAIRU should lead to higher inflation rates as wages increase to compensate for labor scarcity. Higher inflation rates would lead to higher nominal interest rates.

Thus far, these inflationary pressures are not reflected in the data. The graph below shows the long-term relationship between Average Hourly Earnings (AHE) and the Unemployment Rate (inverted). In the past, low levels of Unemployment lead to higher gains in AHE. If the relationship was behaving similar to the past, we should be seeing AHE gains above 4%, rather than the 2-2.5% gains that have been reported recently. Also, there has been no pressure to overall inflation rates, as Core PCE (the Fed’s preferred inflation measure) still remains below the Fed’s target of 2%.

The Council’s 7-10 year forecast of 2.25% GDP growth and 2.25% inflation rate reflects a case where the U.S. economy is not dominated by one of the economic forces described above, but is able to remain in a more balanced, near equilibrium state. Evidence that this is already occurring would be an explanation of why we are not seeing the normal inflationary pressures at the current level of unemployment. It will be interesting to watch the economic data to determine how this plays out going forward. The data to watch are Labor Productivity report which comes out quarterly, with the 2nd Quarter results being released in
early August, and the AHE data which is released monthly. The level of Productivity growth will determine the ability for the economy to grow long-term, and the level of AHE growth is an important factor in determining the inflation rate.