THE 6.6 PERCENT RETIREMENT INCOME SOLUTION™

The GRANGAARD Strategy®

Invest Right During Retirement

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Give yourself an hour, Google "retirement planning," enter the labyrinth through any one of nine million page hits, and prepare to be overwhelmed by a sense of bewilderment and anxiety. Good luck if you're sixty-two, thinking about retirement, and not sure how much you'll need. If you're looking for a general understanding of how to manage your money when you stop working, get ready to be frustrated. If you're trying to figure out how much income you can pull out of your retirement portfolio, brace yourself for a wide range of alternatives. The overwhelming assortment of calculators, strategies and techniques is mind boggling. However, with just a little effort, we can start clearing up the muddle and begin making better financial decisions. **Illustration 1** can help you understand where some of the confusion is coming from.

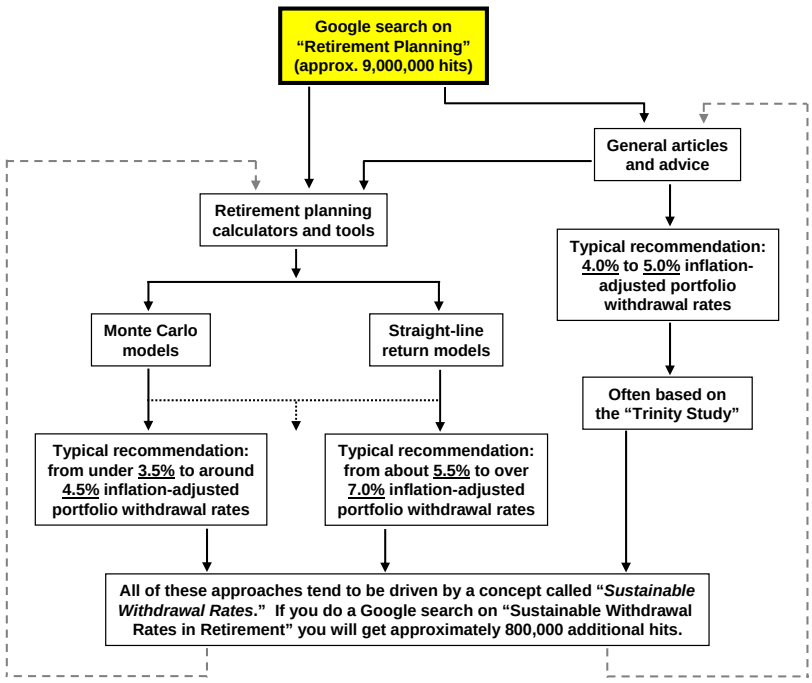
Most retirement websites fall into one of two categories—calculators or general information. The calculator sites provide tools that can help you estimate how much income you can get from your investments, and/or how much you may need to accumulate to get the income you want. Essentially, they let you "crunch your own numbers" based on individual goals and assumptions. The other sites are less specific. They tend to offer "rules of thumb" and general advice, and typically don't vary much from site to site. Of course, these criteria are not etched in stone, and there is a fair amount of overlap. Many calculator sites provide general planning information, and many general sites provide links to calculation tools. For our purposes, however, it can be helpful to evaluate the available resources along the lines suggested in **Illustration 1**.

SUSTAINABLE WITHDRAWAL RATES

The two most common questions in retirement planning are "how much income can I get from my retirement portfolio?" and "how much capital will I need to get the income I want?" The answers are almost always couched in terms of a ***sustainable withdrawal rate***, which is simply the percent of a portfolio that can be withdrawn on an annual basis over a specified period of time without an unacceptably high risk of running out of money. For example, if you retire with $1,000,000, plan to live thirty years, and assume a ***sustainable withdrawal rate*** of 5.0 percent, you would expect to get about $50,000 per year for the rest of your life.

When using ***sustainable withdrawal rates***, it's important to understand that we do this calculation only once. We multiply our portfolio value by our ***sustainable withdrawal rate*** to calculate the $50,000 per year, and then we're done with it. From that time on we focus on the $50,000—not the 5.0 percent. When using ***sustainable withdrawal rates*** you do not recalculate your income each year.

Illustration 1 – Results of "Google" Search (the "Circle of Confusion")



Another important factor is the cost of living. Assuming a 3.0 percent annual inflation rate, your ability to maintain a $50,000 lifestyle throughout retirement requires $51,500 in year two, $53,045 in year three, $54,636 in year four, etc.—so you have to be sure that your ***sustainable withdrawal rates***

include built-in inflation adjustments. Throughout this article we assume they do, but that isn't always the case.

In any event, most retirement planning websites use this concept of ***sustainable withdrawal rates*** to help you answer the two big questions. To estimate how much income you can get from your portfolio, you multiply the amount you expect to have available for retirement by your ***sustainable withdrawal rate***. Alternatively, to estimate how much you may need to accumulate to get the income you want, you divide your annual income expectation by the ***sustainable withdrawal rate***. For example, if you think you will have $750,000 saved for retirement, and are comfortable with a 4.5 percent ***sustainable withdrawal rate***, you would plan to take out about $33,750 of inflation-adjusted income per year—4.5 percent multiplied by $750,000. If, on the other hand, you want to plan for a $60,000 retirement lifestyle, you would need to accumulate about $1,500,000 if you used a ***sustainable withdrawal rate*** of 4.0 percent—$60,000 divided by 4.0 percent.

ESTIMATING SUSTAINABLE WITHDRAWAL RATES

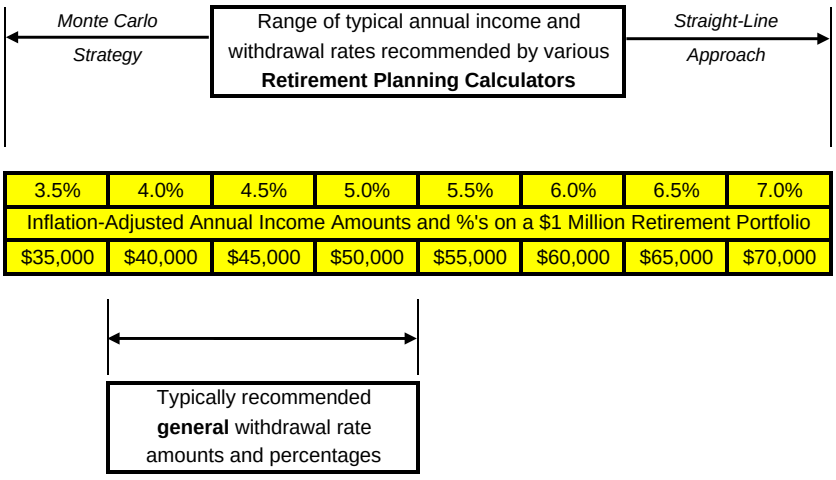
You might be wondering how you can actually come up with ***sustainable withdrawal rates*** to use in your own planning. And that's where the story gets interesting—because that's what most of these websites are all about. Unfortunately, the answers they provide are so broad and inconsistent that many people just throw up their hands in despair. Often, the harder you try to figure it out, the more confused you become.

Consider some common approaches to estimating ***sustainable withdrawal rates***. Most planning tools and calculators use either *straight-line* return assumptions or a statistical process known as *Monte Carlo* simulation. Most troubling from a practical standpoint is that they often lead to wildly differing outcomes. *Straight-line* models typically result in ***sustainable withdrawal rates*** from around 5.5 to over 7.0 percent, while *Monte Carlo* approaches often range from around 3.5 up to about 4.5 percent. Of course, different calculators use different assumptions, so there is plenty of room for overlap.

On the other hand, most of the general discussion sites recommend ***sustainable withdrawal rates*** from around 4.0 to 5.0 percent—based upon historical investment research that has come to be known as the "Trinity Study." Undertaken by three college professors at Trinity University in Austin, Texas, during the mid to late 90's, this research has played a significant role in the debate over ***sustainable withdrawal rates***. Despite the fact that many of these general sites offer links to other individual planning tools based upon *straight-line* and/or *Monte Carlo* strategies that often provide different recommendations—for the most part, they still advocate staying within the 4.0 to 5.0 percent limits.

If you really want to get a feel for how confusing it can be, Google "Sustainable Withdrawal Rates in Retirement." You'll get another 800,000 page hits. And guess what—most of them will take you right back to where you started. It's like getting caught up in a "circle

Illustration 2 - Range of Typically Recommended *Sustainable Withdrawal Rates* and Annual Retirement Income Amounts



of confusion." Once you're in the labyrinth, you can go around and around and around and around and never really get the answers you're looking for.

But of course, you need answers. The question is, what ***sustainable withdrawal rates*** should you use—3.5 percent, or 7.0 percent, or something in-between?

HOW MUCH TO EXPECT IN RETIREMENT

Illustration 2 translates this range of ***sustainable withdrawal rates*** into inflation-adjusted annual income amounts, based upon a $1,000,000 retirement portfolio. The amounts vary from a low of $35,000 to a high of $70,000—so we are talking about significant differences.

Even if you can figure out how much to take out, most of us will still have no idea about how to do it. Whether you plan for $35,000 to $45,000 based on a *Monte Carlo* analysis, or $40,000 to $50,000 based on the *Trinity Study*, or $55,000 to $70,000 based on a *straight-line* approach, you still need a methodology to make it happen. It's a critical part of the puzzle. You don't just need to pick a ***sustainable withdrawal rate***. You also need an overall strategy—and the tools to implement it.

Before we consider such a strategy, we have to take a slightly more critical look at all of these ***sustainable withdrawal rate*** approaches. Not only do they result in radically different retirement lifestyle recommendations, they also suffer from some other serious drawbacks.

PROBLEMS WITH *STRAIGHT-LINE* PLANNING MODELS

Despite the fact that *straight-line* planning approaches have been thoroughly refuted by the professional planning community, they still provide the underlying mathematical framework for a lot of the on-line retirement calculators. As a result, many retirees are unknowingly using a set of seriously flawed planning assumptions.

To understand the problem, let's consider a typical *straight-line* model. **Illustration 3** covers a generic thirty-year retirement period. Column 1 shows the value of the portfolio at the beginning of each year, and Column 2 shows how much income we plan to take out—starting at $50,000 and increasing annually at 3.0 percent inflation. With this information we can easily calculate the ***sustainable withdrawal rate*** implicit in this example. $50,000 of inflation-adjusted annual income divided by a beginning portfolio value of $742,158 yields a ***sustainable withdrawal rate*** of about 6.7 percent.

Column 3 shows that we are expecting a 9.0 percent rate of return over this thirty-year period—so we will probably be invested substantially in equities, or stock market accounts, since they are the only asset class that has been shown historically to generate these higher rates of return over longer investment horizons. This is consistent with much current thinking about

Illustration 3 - *Straight-Line* Annual Returns
(6.7% Inflation-Adjusted Withdrawal Rate Sustained for Entire Thirty-Year Period)

	1	2	3	4	5	6	7	8
	Total Portfolio Values					Share and Per Share Information		
Years	Beginning Investment Balance	Income Taken	Investment Returns Percent	Investment Returns Amount	Ending Investment Balance	Number of Shares Sold	Beginning Value per Share	Number of Shares Owned
					$742,158			50,000.00
1	$742,158	$50,000	9.0%	$62,294	$754,452	3,368.56	14.84	46,631.44
2	$754,452	$51,500	9.0%	$63,266	$766,218	3,183.13	16.18	43,448.31
3	$766,218	$53,045	9.0%	$64,186	$777,358	3,007.91	17.64	40,440.40
4	$777,358	$54,636	9.0%	$65,045	$787,767	2,842.34	19.22	37,598.06
5	$787,767	$56,275	9.0%	$65,834	$797,326	2,685.88	20.95	34,912.18
6	$797,326	$57,964	9.0%	$66,543	$805,904	2,538.03	22.84	32,374.15
7	$805,904	$59,703	9.0%	$67,158	$813,360	2,398.33	24.89	29,975.82
8	$813,360	$61,494	9.0%	$67,668	$819,534	2,266.31	27.13	27,709.51
9	$819,534	$63,339	9.0%	$68,058	$824,253	2,141.56	29.58	25,567.96
10	$824,253	$65,239	9.0%	$68,311	$827,326	2,023.67	32.24	23,544.29
11	$827,326	$67,196	9.0%	$68,412	$828,542	1,912.28	35.14	21,632.01
12	$828,542	$69,212	9.0%	$68,340	$827,670	1,807.01	38.30	19,824.99
13	$827,670	$71,288	9.0%	$68,074	$824,456	1,707.55	41.75	18,117.45
14	$824,456	$73,427	9.0%	$67,593	$818,622	1,613.55	45.51	16,503.89
15	$818,622	$75,629	9.0%	$66,869	$809,862	1,524.73	49.60	14,979.16
16	$809,862	$77,898	9.0%	$65,877	$797,841	1,440.80	54.07	13,538.36
17	$797,841	$80,235	9.0%	$64,584	$782,190	1,361.49	58.93	12,176.86
18	$782,190	$82,642	9.0%	$62,959	$762,507	1,286.55	64.24	10,890.32
19	$762,507	$85,122	9.0%	$60,965	$738,350	1,215.73	70.02	9,674.59
20	$738,350	$87,675	9.0%	$58,561	$709,235	1,148.81	76.32	8,525.78
21	$709,235	$90,306	9.0%	$55,704	$674,633	1,085.57	83.19	7,440.21
22	$674,633	$93,015	9.0%	$52,346	$633,964	1,025.81	90.67	6,414.39
23	$633,964	$95,805	9.0%	$48,434	$586,593	969.35	98.83	5,445.04
24	$586,593	$98,679	9.0%	$43,912	$531,826	915.99	107.73	4,529.05
25	$531,826	$101,640	9.0%	$38,717	$468,903	865.57	117.43	3,663.49
26	$468,903	$104,689	9.0%	$32,779	$396,994	817.92	127.99	2,845.56
27	$396,994	$107,830	9.0%	$26,025	$315,189	772.90	139.51	2,072.67
28	$315,189	$111,064	9.0%	$18,371	$222,496	730.35	152.07	1,342.31
29	$222,496	$114,396	9.0%	$9,729	$117,828	690.15	165.76	652.16
30	$117,828	$117,828	9.0%	$0	$0	652.16	180.67	0.00
				Share value at the end of Year 30			196.93	

30 Year Average Annual Return	9.0%	50,000.00	Total Shares Sold

Results shown are hypothetical in nature and are not representative of an actual investment. Past performance is not a guarantee of future performance, and an investors results may vary.

retirement planning. Most experts agree that many of us will need to invest more aggressively to go after the higher rates of return that may be required to maintain our lifestyles over longer and longer retirement periods.

Ultimately, 9.0 percent is not an unrealistic assumption. By constructing a model portfolio of 50.0 percent large company stocks and 50.0 percent small company stocks, we can use historical market data to evaluate all thirty-year investment periods from 1926 to 2005—and not a single one of them failed to provide an average annual return of at least 9.0 percent. In other words, every thirty-year period in history—from 1926 to 1955, from 1927 to 1956, from 1970 to 1999, etc. generated an average annual return of at least 9.0 percent. So, at least from a historical perspective, a 9.0 percent rate of return seems totally acceptable.[1]

Column 4 converts the 9.0 percent return assumption into annual dollar amounts by subtracting each year's income distribution from that year's beginning balance, and multiplying the result by 9.0 percent. Adding these annual earnings back into the portfolio results in the ending yearly balances shown in Column 5. It's pretty simple, and it looks like this set of assumptions should allow us to glide easily to success. It appears that we should be able to get our $50,000 of inflation-adjusted annual income for thirty years, and not worry about running out of money until the end of the last year—which is exactly what we're hoping to do. In other words, a 6.7 percent ***sustainable withdrawal rate*** seems about right. So what, exactly, is the problem?

To answer that question, let's see why this example works in the first place. Column 7 presents the per share value of the investment at the beginning of each year. Because we expect a 9.0 percent annual return, it grows at a constant rate from $14.84 to about $196.93 over the entire thirty-year period. Then, Column 6 shows the number of shares we will have to sell each year to get the income we need—starting with 3,369 shares in year one, and dropping to 652 shares in year thirty. You'll notice that we sell fewer and fewer shares each year because they are worth more and more—and that's the trick. As long as we can expect consistent, *straight-line* increases in value, we can plan to sell a decreasing number of more and more valuable shares each year—and we shouldn't have to worry about running out too soon.

And, of course, we don't. As you can see in Column 8, we start with 50,000 shares valued at $14.84 per share, we maintain a ***sustainable withdrawal rate*** of 6.7 percent—or an inflation-adjusted income of $50,000 per year, and we don't run out of shares until the end of the thirtieth year.

But there is a serious problem with this analysis, and it is staring us right in the face—because one of the most incontrovertible facts upon which everyone agrees, is that the stock market does not provide consistent *straight-line* annual returns. Some years the markets go up, and some years the markets go down, and you can't predict the pattern in advance. No one disputes this. So why in the world would anyone suggest that we keep using *straight-line* planning assumptions—and what are the potential consequences if we do?

Illustration 4 can help us consider that question by making our example a bit more realistic. We'll use the same initial investment balance, the same annual income amounts, and the same thirty-year planning horizon—but we will also incorporate a little variability into the returns. Column 3 shows that rather than using 9.0 percent every year, we will substitute a typical assortment of ups and downs in the first ten years, and then add an additional 10.0 percent to every fourth year beyond that.

The crux of the problem shows up in Column 7. Although we start with the same share value of $14.84, you'll notice that it does not increase consistently over the next thirty years—because we're using variable returns. In the first decade it fluctuates up and down with changing market conditions, resulting in a value of $23.94 at the end of the tenth year, rather than $32.24 as seen in **Illustration 3**—which makes a big difference in how many shares we have to sell each year. For example, Column 6 shows that in year ten, we have to sell 2,725 shares, compared to only 2,024 shares in the *straight-line* example—and **this is the problem**. When annual returns fluctuate, so do annual share values, and when annual share values fluctuate, so does the number of shares you need to sell each year to get the in-

come you need. If you end up selling too many shares too soon, you can run out—which is exactly what happens in **Illustration 4**.

Look again at Column 6, and notice that in year seventeen we need to sell 1,944 shares. However, Column 8 shows that we have only 1,319 shares left at the end of year sixteen—so we're short 625 shares. In other words, we can get only part of the income we need for year seventeen, and then we have nothing left for years eighteen and beyond—because we're broke. We are out of shares and we are out of money. Our portfolio will have crashed because we experienced some typical fluctuations in annual returns during the first ten years—fluctuations that we would not have "anticipated" given the overly simplistic return assumptions built into typical *straight-line* planning models.

Illustration 4 - Variable Annual Returns
(6.7% Inflation-Adjusted Withdrawal Rate Sustained for Only Sixteen Years)

	1	2	3	4	5	6	7	8
	Total Portfolio Values					Share and Per Share Information		
Years	Beginning Investment Balance	Income Taken	Investment Returns Percent	Investment Returns Amount	Ending Investment Balance	Number of Shares Sold	Beginning Value per Share	Number of Shares Owned
					$742,158			50,000.00
1	$742,158	$50,000	-2.0%	-$13,843	$678,315	3,368.56	14.84	46,631.44
2	$678,315	$51,500	5.0%	$31,341	$658,155	3,540.42	14.55	43,091.02
3	$658,155	$53,045	-8.0%	-$48,409	$556,702	3,472.98	15.27	39,618.04
4	$556,702	$54,636	16.0%	$80,330	$582,396	3,888.23	14.05	35,729.81
5	$582,396	$56,275	9.0%	$47,351	$573,471	3,452.48	16.30	32,277.32
6	$573,471	$57,964	-3.0%	-$15,465	$500,042	3,262.44	17.77	29,014.89
7	$500,042	$59,703	12.0%	$52,841	$493,180	3,464.24	17.23	25,550.65
8	$493,180	$61,494	6.0%	$25,901	$457,588	3,185.86	19.30	22,364.79
9	$457,588	$63,339	17.0%	$67,022	$461,272	3,095.70	20.46	19,269.09
10	$461,272	$65,239	-6.0%	-$23,762	$372,271	2,725.27	23.94	16,543.82
11	$372,271	$67,196	9.0%	$27,579	$332,654	2,986.20	22.50	13,557.62
12	$332,654	$69,212	9.0%	$23,815	$287,257	2,820.79	24.54	10,736.83
13	$287,257	$71,288	9.0%	$19,524	$235,493	2,664.54	26.75	8,072.30
14	$235,493	$73,427	19.0%	$30,793	$192,859	2,516.94	29.17	5,555.36
15	$192,859	$75,629	9.0%	$10,598	$127,827	2,178.53	34.72	3,376.83
16	$127,827	$77,898	9.0%	$4,514	$54,442	2,057.85	37.85	1,318.97
17	$54,442	$80,235	9.0%		-$25,793	1,943.87	41.28	-624.89
18		$82,642	19.0%				45.01	
19		$85,122	9.0%				53.58	
20		$87,675	9.0%				58.42	
21		$90,306	9.0%				63.70	
22		$93,015	19.0%				69.46	
23		$95,805	9.0%				82.69	
24		$98,679	9.0%				90.16	
25		$101,640	9.0%				98.31	
26		$104,689	19.0%				107.20	
27		$107,830	9.0%				127.61	
28		$111,064	9.0%				139.14	
29		$114,396	9.0%				151.72	
30		$117,828	19.0%				165.44	
				Share value at the end of Year 30			196.93	
30 Year Average Annual Return			9.0%			50,624.89	Total Shares Sold	

Results shown are hypothetical in nature and are not representative of an actual investment. Past performance is not a guarantee of future performance, and an investors results may vary.

It's an easy mistake to make. Because remember, it is reasonable (at least historically) to expect a 9.0 percent average annual return over the entire thirty-year period—it just isn't reasonable to expect it every year. That's the fatal flaw of *straight-line* planning approaches.

In fact, you'll notice that the final per share values in Column 7 are the same in both illustrations. In other words, if we were able to stay invested over the entire thirty-year period, the variable returns in **Illustration 4** would get us to exactly the same ending share value as the *straight-line* returns in **Illustration 3**. Mathematically, the variable pattern of ups and downs is exactly the same as earning 9.0 percent each and every year. They both result in a 9.0 percent thirty-year average annual return, which, as we said earlier, is very realistic. The trouble highlighted in **Illustration 4**, however, is that because of the fluctuating returns in the first ten years, we end up selling too many shares too soon and we run out before we have a chance to catch up with the extra returns in the last thirteen years.

What all of this means from a practical standpoint is that even though *straight-line* planning assumptions appear to work just fine, in reality you probably shouldn't expect ***sustainable withdrawal rates*** anywhere close to the 6.7 percent initially suggested in this example. They just don't stand up to a real world analysis. In fact, the higher ***sustainable withdrawal rates*** typically associated with *straight-line* planning assumptions should be considered extremely risky at best.

To see just how risky they are, let's go one step further and determine the highest possible ***sustainable withdrawal rate*** that could be supported by the variable returns in **Illustration 4**—and the answer is 5.1 percent. As you can see in **Illustration 5**, we would have to reduce our inflation-adjusted annual income in Column 2 from $50,000 all the way down to $38,063 to be able to make this portfolio last for thirty years. By dividing that $38,063 by the beginning portfolio value of $742,158, we get a maximum ***sustainable withdrawal rate*** of 5.1 percent.

THE "*TRINITY STUDY*" RESPONSE

Recognizing the significant risks

associated with *straight-line* planning assumptions, researchers began looking for ways to develop ***sustainable withdrawal rates*** that would be able to survive the inevitable ups and downs. But they were not interested in simply testing a bunch of made-up investment returns. They were looking for ways to establish meaningful guidelines for real investors—and that's what the *Trinity Study* is all about.

ed—just as we did in **Illustration 5**. By considering each of these different historical periods, along with their related ***sustainable withdrawal rates***, we can gain a sense for what history shows is reasonable. In other words, the *Trinity Study* allows us to evaluate historical investment experience to develop realistic expectations for ***sustainable withdrawal rates*** that actually anticipate normal market fluctuations.

Illustration 5 - Variable Annual Returns
(5.1% Inflation-Adjusted Withdrawal Rate Sustained for Entire Thirty-Year Period)

	1	2	3	4	5	6	7	8
	Total Portfolio Values					Share and Per Share Information		
Years	Beginning Investment Balance	Income Taken	Investment Returns Percent	Investment Returns Amount	Ending Investment Balance	Number of Shares Sold	Beginning Value per Share	Number of Shares Owned
					$742,158			50,000.00
1	$742,158	$38,063	-2.0%	-$14,082	$690,013	2,564.35	14.84	47,435.65
2	$690,013	$39,205	5.0%	$32,540	$683,348	2,695.19	14.55	44,740.46
3	$683,348	$40,381	-8.0%	-$51,437	$591,530	2,643.85	15.27	42,096.60
4	$591,530	$41,593	16.0%	$87,990	$637,927	2,959.96	14.05	39,136.64
5	$637,927	$42,840	9.0%	$53,558	$648,644	2,628.24	16.30	36,508.40
6	$648,644	$44,126	-3.0%	-$18,136	$586,383	2,483.57	17.77	34,024.83
7	$586,383	$45,449	12.0%	$64,912	$605,846	2,637.19	17.23	31,387.63
8	$605,846	$46,813	6.0%	$33,542	$592,575	2,425.28	19.30	28,962.36
9	$592,575	$48,217	17.0%	$92,541	$636,899	2,356.64	20.46	26,605.72
10	$636,899	$49,664	-6.0%	-$35,234	$552,001	2,074.65	23.94	24,531.07
11	$552,001	$51,154	9.0%	$45,277	$546,124	2,273.28	22.50	22,257.79
12	$546,124	$52,688	9.0%	$44,607	$538,042	2,147.36	24.54	20,110.43
13	$538,042	$54,269	9.0%	$43,733	$527,506	2,028.41	26.75	18,082.02
14	$527,506	$55,897	19.0%	$89,606	$561,215	1,916.05	29.17	16,165.97
15	$561,215	$57,574	9.0%	$45,529	$549,171	1,658.43	34.72	14,507.54
16	$549,171	$59,301	9.0%	$44,284	$534,154	1,566.57	37.85	12,940.97
17	$534,154	$61,080	9.0%	$42,766	$515,839	1,479.79	41.28	11,461.18
18	$515,839	$62,913	19.0%	$86,237	$539,164	1,397.82	45.01	10,063.36
19	$539,164	$64,800	9.0%	$42,883	$517,247	1,209.47	53.58	8,853.88
20	$517,247	$66,744	9.0%	$40,725	$491,228	1,142.48	58.42	7,711.41
21	$491,228	$68,746	9.0%	$38,192	$460,675	1,079.19	63.70	6,632.21
22	$460,675	$70,809	19.0%	$74,230	$464,097	1,019.41	69.46	5,612.80
23	$464,097	$72,933	9.0%	$35,361	$426,525	882.05	82.69	4,730.75
24	$426,525	$75,121	9.0%	$31,767	$383,171	833.19	90.16	3,897.55
25	$383,171	$77,374	9.0%	$27,644	$333,440	787.04	98.31	3,110.51
26	$333,440	$79,696	19.0%	$48,313	$302,058	743.44	107.20	2,367.07
27	$302,058	$82,087	9.0%	$19,885	$239,857	643.27	127.61	1,723.80
28	$239,857	$84,549	9.0%	$14,040	$169,347	607.64	139.14	1,116.16
29	$169,347	$87,086	9.0%	$7,436	$89,698	573.98	151.72	542.18
30	$89,698	$89,698	19.0%	$0	$0	542.18	165.44	0.00
				Share value at the end of Year 30			196.93	
30 Year Average Annual Return			9.0%			50,000.00	Total Shares Sold	

Results shown are hypothetical in nature and are not representative of an actual investment. Past performance is not a guarantee of future performance, and an investors results may vary.

Essentially, the *Trinity Study* uses historical stock and bond market data to create a series of investment scenarios that can be substituted for Column 3 in **Illustration 5**. Then, each thirty-year period can be treated as a unique pattern of returns, for which a maximum ***sustainable withdrawal rate*** can be calculat-

The bottom line with the *Trinity Study*, however, is that to protect against market volatility, it generally recommends significantly lower ***sustainable withdrawal rates*** than *straight-line* models—depending on the composition of the portfolio and the level of historical success we're looking for. What this means in practical terms is that a 6.7 percent ***sustainable withdrawal rate*** will not work when tested against many of the historical thirty-year investment periods. The same holds true for 6.5 percent, 6.0 percent and 5.5 percent withdrawal rates. If we let history be our guide, the *Trinity Study* suggests that we should probably limit our ***sustainable withdrawal rates*** to a range of 4.0 to 5.0 percent if we want to have a reasonable chance (historically speaking) of maintaining our income for thirty-year retirement periods.

THE *MONTE CARLO* RESPONSE

Another approach to dealing with the consequences of variable investment returns is more statistical than historical in nature. Essentially, *Monte Carlo* approaches use random-number generators to create a series of hypothetical thirty-year investment scenarios that can be substituted for Column 3 in **Illustration 5**. Then, each of these hypothetical scenarios can be evaluated to determine a maximum ***sustainable withdrawal rate***, and the results can be used in much the same way as the *Trinity Study* to establish investment guidelines that take normal market fluctuations into account. In the case of *Monte Carlo* theory, the resulting ***sustainable withdrawal rates*** are more of a statistical projection than a statement about actual historical performance, but the overall thought process is very similar.

Without getting into all of the details, it's also important to know that *Monte Carlo* programs are not

as divorced from historical experience as many people think. In fact, *Monte Carlo* simulation models require a significant amount of historical investment information to make reasonable statistical inferences—and much of it comes from the same historical data used by the *Trinity Study*.

Generally speaking, *Monte Carlo* approaches simply replace the actual historical data used by *Trinity Study* models with historically reasonable, randomly generated data created by statistical software programs. One of the potential advantages of *Monte Carlo* simulation is that it is not limited to the actual number of historical thirty-year investment periods, so it can consider a larger number of hypothetical return scenarios. But when it's all said and done, *Monte Carlo* approaches do essentially the same thing as the *Trinity Study*. They compute maximum ***sustainable withdrawal rates*** for a variety of investment scenarios, and use them to determine a reasonable range of planning expectations—which can then be used as a guide for investing and spending behavior in retirement.

The bottom line with *Monte Carlo* strategies is that they typically recommend ***sustainable withdrawal rates*** from under 3.5 percent up to about 4.5 percent—depending on the software, the investment allocation, and the degree of confidence required. From a practical standpoint, this means that most *Monte Carlo* simulation tools would suggest a very low statistical probability of being able to maintain a 6.7 percent ***sustainable withdrawal rate***. The same is true of 6.5 percent, 6.0 percent, 5.5 percent and even 5.0 percent withdrawal rates—none of which tend to hold up very well under *Monte Carlo* analysis. So, if you want to use a set of historically reasonable statistical projections as your guide to potential retirement investment success, you will probably want to stay within a range of ***sustainable withdrawal rates*** that are even lower than those suggested by the *Trinity Study*.

MISSING THE OBVIOUS

So where does all of this leave us? After discounting *straight-line* models which don't even account for normal market fluctuations, we have tended to adopt either *Trinity Study* or *Monte Carlo* approaches to retirement income planning—both of which address variable investment returns, but also force us to accept substantially lower ***sustainable withdrawal rates***. In other words, we may be giving up a lot of potential income to manage the risks associated with spending out of fluctuating retirement accounts. But what if there is another way? What if we can manage these risks without giving up so much income?

As background for that discussion, we need to consider a very significant problem with all of the ***sustainable withdrawal rate*** models. In each of them—*straight-line*, *Trinity Study*, and *Monte Carlo* approaches, there is a built-in assumption that has gone largely unacknowledged and which is of fundamental importance. In each case, these models assume that we will be selling some of our investments each year to get the money we need to live on. But you would never really want to do that. You would never want to put yourself in the position of having to sell investments every year, when you know that they will be going up and down in value. It just doesn't make sense.

In my book, **The Grangaard Strategy®—Invest Right During Retirement** (Penguin Putnam/Perigee), I call this dollar-price-erosion. Some authors refer to it as reverse-dollar-cost-averaging, others call it dollar-cost-ravaging—but no matter what you call it, it always amounts to the same thing. If you have to sell investments every year to maintain your income, you will be selling more shares when the markets are down and fewer shares when the markets are up—which is the opposite of what you want to do in retirement. In retirement, you should be selling more shares in the good years, and fewer, or preferably none at all, in the bad. But if you plan to generate income by selling something every year—which all three of these models assume, you will be setting yourself up for the potentially devastating consequences of dollar-price-erosion.

In fact, this is exactly the problem we ran into with *straight-line* approaches to ***sustainable withdrawal rates*** in **Illustration 4**. This is the issue that led to the search for better models in the first place. But then, instead of solving the problem, and developing an approach that doesn't require us to sell investments every year, we fell headlong into the *Trinity Study* and *Monte Carlo* strategies, both of which assume we will. Essentially, we embraced the problem rather than solving it—and we're being forced

to deal with the consequences by reducing our ***sustainable withdrawal rates***. This is just another way of saying that you are being asked to accept considerably less income in retirement to offset the significant risks associated with selling too frequently out of fluctuating investment accounts—which you shouldn't be doing in the first place.

THE FOUNDATION FOR A BETTER APPROACH

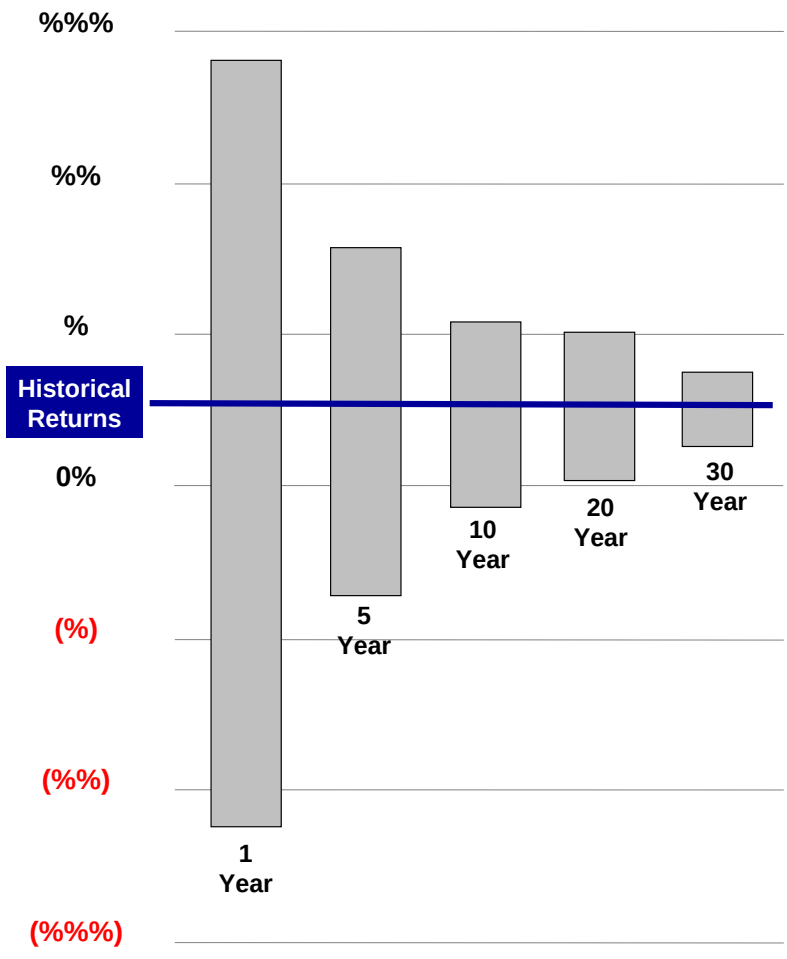
The key to actually solving this problem rather than just accepting it, is understanding that longer investment horizons can help you reduce these risks without requiring you to accept lower ***sustainable withdrawal rates***. In **Illustration 3** we assumed a 9.0 percent rate of return—and concluded that it was reasonable based upon long-term historical stock market data. Ultimately, you need to make similar assumptions for all of your retirement accounts, and **Illustration 6** shows in a general way how the variability, or riskiness, of those returns, will tend to decrease over longer and longer investment horizons—or what I like to call "holding periods."

A holding period is simply the amount of time you have available to ride out the inevitable ups and downs in the market before deciding when to sell an investment. Longer holding periods can give you the confidence you may need to go after higher rates of return in the stock market by reducing the overall variability in those returns. Generally, the longer your holding period, the more likely you will be to achieve the rates of return you are expecting. So, if you base your return assumptions on long-run historical averages, your odds of achieving those returns will tend to improve as you increase your holding periods.

For example, the range of returns for all one-year investment periods is usually fairly broad for most investments. In other words, on a yearly basis, stock market returns are likely to jump around all over the place, just as you would expect. So, although the long-run average might be a good estimate for overall planning purposes, it generally isn't a very good predictor of what will happen next week, next month, or next year. One-year holding periods are very unpredictable, or very risky—because the markets tend to fluctuate so much from year to year.

On the other hand, longer holding periods can lead to more predictability and a better chance of meeting your expectations. It works this way because over time, annual returns tend to average out, and ultimately track toward their long-run performance. Five-year returns

Illustration 6 – Reducing the Variability of Market Returns with Holding Periods



are more predictable than one-year returns, ten-year returns are more predictable than five-year returns, and longer holding periods tend to provide even more predictability. So essentially, the longer you can stay invested, the smaller the range of returns is likely to be around the long-run averages, and the more confidence you may have in getting the historically reasonable returns you are expecting and building into your retirement plans.

ANNUAL RETURNS VERSUS AVERAGE ANNUAL RETURNS

You have to keep in mind that there are no crystal balls when it comes to projecting investment returns, because the past can never infallibly predict the future. But when it comes to retirement planning, you have little choice but to develop expectations about future results—and, as imperfect as it may be, historical experience is generally the best guide you have in deciding what to expect in the future. However, you can't really appreciate the predictive value of historical investment information, and the risk-reduction value of holding periods, unless you understand a fundamental underlying concept known as "average annual returns."

Illustration 7 – Annual Returns vs Average Annual Returns

10-Year Hypothetical Investment Example

Expecting a 9.0% rate of return

	(A)		(B)	
Year	Hypo. Return %	Hypo. Balance	Average Return %	Average Balance
Balance		$1,000		$1,000
1	13%	$1,130	9.0%	$1,090
2	(6%)	$1,062	9.0%	$1,188
3	22%	$1,296	9.0%	$1,295
4	17%	$1,516	9.0%	$1,412
5	(1%)	$1,501	9.0%	$1,539
6	15%	$1,726	9.0%	$1,677
7	(4%)	$1,657	9.0%	$1,828
8	16%	$1,922	9.0%	$1,993
9	8%	$2,076	9.0%	$2,172
10	14%	$2,367	9.0%	$2,367

To understand average annual returns, let's take a quick look at **Illustration 7**. Assume that we invest $1,000 for ten years and expect a 9.0 percent rate of return. Column (A) represents a fairly typical pattern of hypothetical annual returns—and you'll notice that we never get the 9.0 percent we're expecting. Some years are good, some years are bad, and many years are in between—but we never even once get the 9.0 percent we're looking for. However, you can also see that overall, this ten-year period is pretty good. The $1,000 will have grown to $2,367.

But how good was it? It's difficult to tell by looking at the annual returns or considering the absolute growth in value. But we would certainly want to know. And in fact, although we never get the 9.0 percent we're expecting in any given year, overall, that's exactly what we earn over the entire ten-year period—because $1,000 growing at 9.0 percent per year, as shown in Column (B), gets us to exactly the same ending value of $2,367. So, in terms of the overall growth of the investment, the hypothetical pattern of ups and downs is essentially the same as earning a consistent average annual return of 9.0 percent.

That's why we tend to use historical average annual returns for planning purposes—because there is generally a fair amount of predictability in the market if we have enough time to ride out the fluctuations.

HISTORICAL VALIDITY OF HOLDING PERIODS

Illustration 8 provides actual historical data showing the value of holding periods in estimating rates of return for planning purposes. You can see that in 79.0 percent of all five-year holding periods from 1936 to 2005, a portfolio consisting of 50.0 percent large company stocks and 50.0 percent small company stocks would have met or exceeded a 9.0 percent average annual return—while only 56.0 percent of the individual years did that well. As you might expect, ten-year holding periods were even better—hitting 9.0 percent or more 92.0 percent of the time. Of course, the success percentages continue to improve as you move out to twenty, twenty-five, and thirty-year holding periods—each of which was successful 100 percent of the time. So, the historical data shows quite clearly that as you increase the length of time you can stay invested, you improve your chances of earning the reasonable historical rates of return you may be expecting.

THE GRANGAARD STRATEGY®

Times are changing, and today's retirees need a much more dynamic approach to retirement planning. It's time for a strategy that has the potential to deliver higher ***sustainable withdrawals rates*** by taking advantage of the tremendous pow-

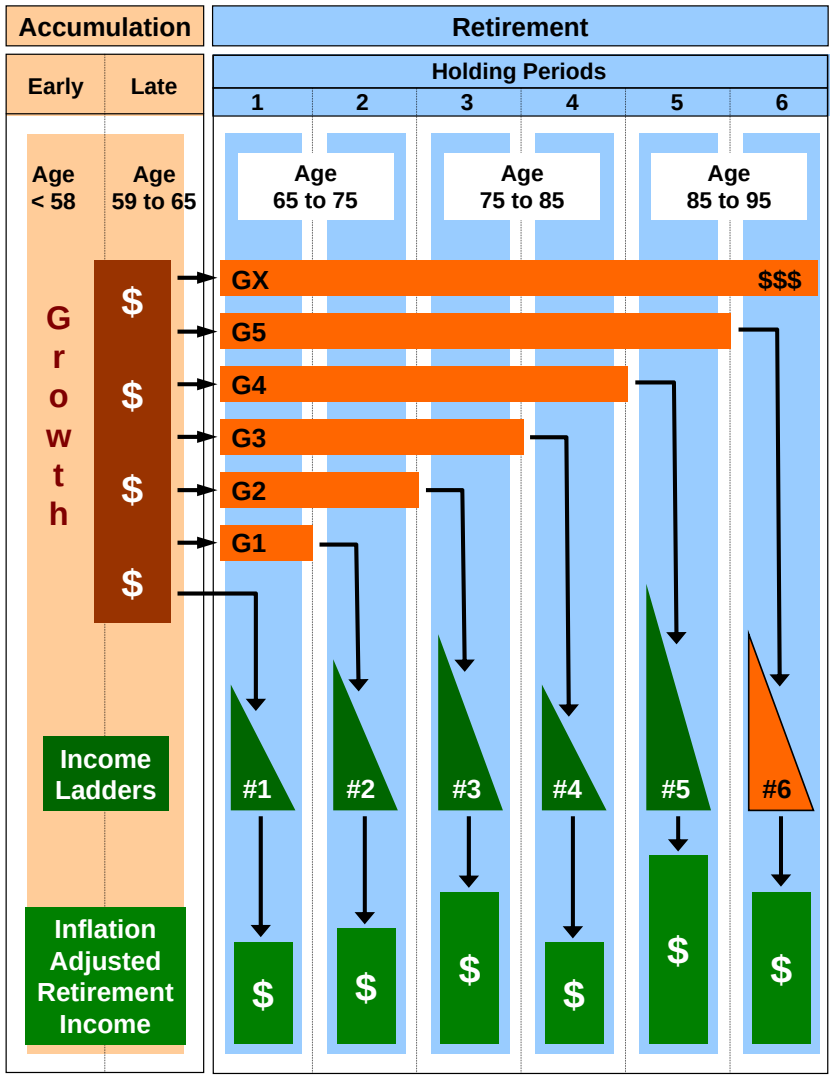
Illustration 8 - Holding Periods
(Percent of times a 9.0% average annual return was achieved over different-length holding periods, assuming a 50/50 mix of large company and small company stocks)

For the Seventy-Year Period From 1936 to 2005:

All 70 ***1-Year*** Holding Periods	56%
All 66 Overlapping ***5-Year*** Holding Periods	79%
All 61 Overlapping ***10-Year*** Holding Periods	92%
All 56 Overlapping ***15-Year*** Holding Periods	98%
All 51 Overlapping ***20-Year*** Holding Periods	100%
All 46 Overlapping ***25-Year*** Holding Periods	100%
All 41 Overlapping ***30-Year*** Holding Periods	100%

Source: Calculated by author using data from Ibbotson Associates Stocks, Bonds, Bills, and Inflation© 2006 Yearbook. For illustration purposes only. Not representative of an actual investment. Past performance is not a guarantee of future results. An investment cannot be made directly in an index.

Illustration 9 – The Grangaard Strategy® - General Overview



er of holding periods to reduce investment risks. **Illustration 9** presents just such a strategy.

Many people assume that you can simply break your life into two parts for retirement planning—the accumulation years, when you're trying to build up a nest egg, and the retirement years, when you actually spend your nest egg. However, it isn't quite that simple. First of all, the accumulation phase consists of two parts—an "early" accumulation period and a "late" accumulation period. The early period relates to the majority of your working years when you're focused primarily on accumulating assets for retirement. The late period covers the years just prior to retirement when you have to start thinking about repositioning your assets to generate the safe, steady, dependable income you'll need for the rest of your life. The early period starts the day you get your first job and ends about five to seven years before retirement. The late period is made up of those last five to seven years, and it's a critical time, because you have to decide when to change your overall investment approach from a growth strategy to a growth-and-income strategy.

Your retirement period also has to be broken down into different time frames—allowing you to create the holding periods we have been talking so much about. In a typical thirty-year retirement scenario, you might decide to use six five-year planning periods—leading to a variety of holding periods ranging from five to twenty-five or even thirty years. As we have already discussed, a holding period can provide the time you need to stay invested in riskier assets to go after potentially higher rates of return, while reducing the variability of those returns around their long-run averages. The question is—within this overall framework, how would you actually go about managing your retirement assets?

And it goes something like this. Throughout your working life, you accumulate assets for retirement. Then, as you approach age 59 or 60, you move into the later period of the accumulation phase, in which you ultimately have to decide when to start reconfiguring your portfolio to provide the inflation-adjusted income you'll need for the rest of your life. In other words, sometime within this five to seven-year period, you'll have to decide when to sell some of your investments to create your first "income ladder"—because you'll need to have it ready to go as soon as you stop receiving a paycheck.

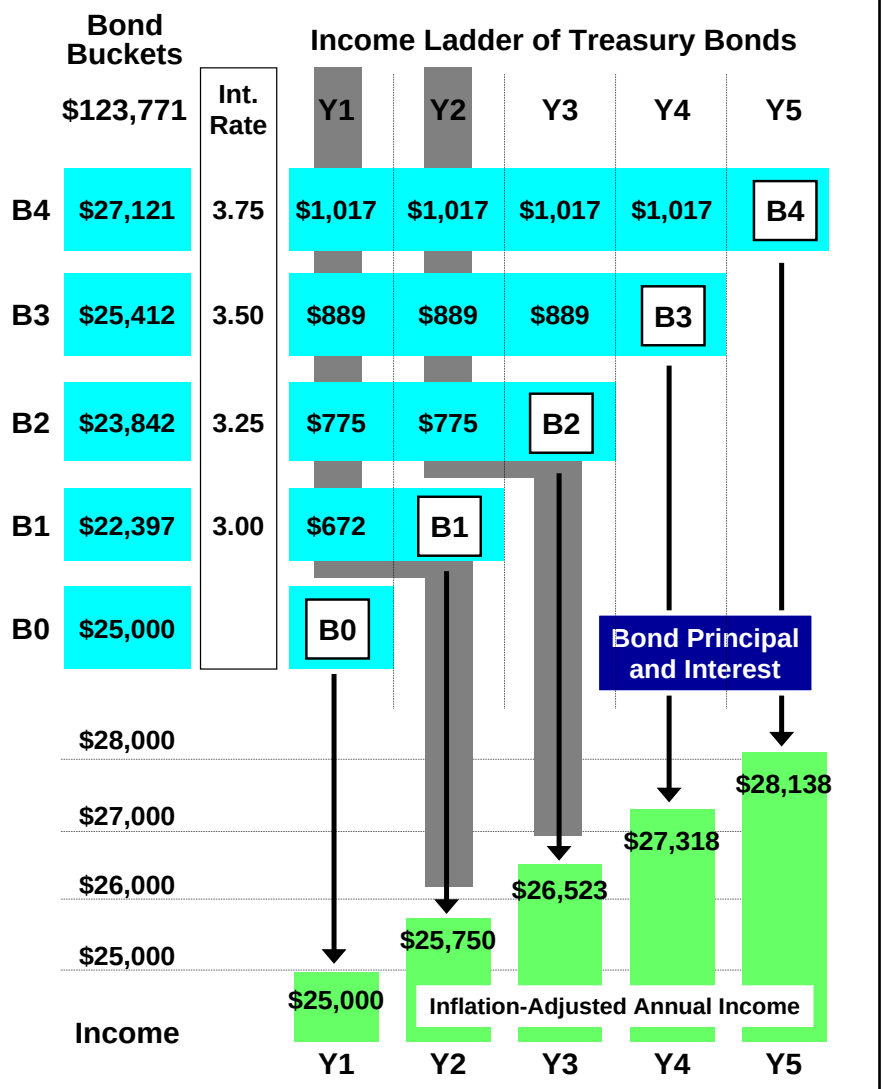
Income ladders are the lower-risk, lower-return part of your portfolio that provides the safe, steady, dependable income you need during retirement, and they're usually created with the money you get from selling some of your stock market or growth investments. They are uniquely designed to spend both principal and interest on a scheduled basis, and they can be constructed in a variety of ways—but they almost always rely on fixed-income investments like bonds, CDs, or immediate annuities to provide the financial resources you need to pay the bills and enjoy yourself when you stop working.

INCOME LADDERS

It may be helpful to take a quick look at how income ladders work. As you can see in **Illustration 10**, you start by establishing a retirement income budget—and we'll assume that you need about $25,000 per year, adjusted for a 3.0 percent annual inflation rate. One way to provide that lifestyle is to build an income ladder with U.S. Treasury Securities. To do that, you can invest in a series of "bond buckets," each of which contains a different number of bonds that will mature in the same year. For example, the bonds in Bucket #1 (B1) mature at the end of the first year, those in Bucket #2 (B2) mature at the end of the second year, and those in Bucket #5 (B5) mature at the end of the fifth year. You'll notice, however, that the first bucket is called Bucket #0 (B0), because it really isn't invested in bonds at all. Since you need $25,000 in the first year, you'll probably just keep that much out in a money market fund or checking account.

Bucket #1, however, will be invested in about $22,397 worth of bonds, all of which mature at the end of the first year—so you can plan on having that money available to support your lifestyle in the second year. Bucket #2 consists of $23,842 worth of bonds that mature at the end of the second year, and which will therefore be available to provide income in year three. Each of the buckets is invested in bonds that mature within the same year, so they should all be available for income in the following year. You can see in this example that you will have about $123,771 invested in all of the buckets comprising the first income ladder.

Illustration 10– Income Ladder of Treasury Bonds



Of course, prior to maturity, all of the bonds in each of the buckets earn interest. Generally, and for a variety of reasons, the shorter a bond's maturity, the lower will be its interest rate. Although this isn't a hard and fast rule, it's fairly typical, and works well for illustration purposes—so you'll notice that as the maturities of the bond buckets increase, so do the expected interest rates. Ultimately, you can see that the 3.0 percent bonds in Bucket #1 are expected to earn about $672 of interest prior to maturing at the end of the first year. At 3.25 percent, the bonds in Bucket #2 should earn about $775 per year prior to maturing at the end of the second year, while the bonds in Bucket #3 should earn about $889 per year for the three years they remain outstanding. Each bucket earns a different amount of interest each year until it's bonds mature—and of course, all that interest makes up a very important part of your income after you stop working.

For example, you can see that the $22,397 worth of bonds in Bucket #1 can't provide all of the income you need for the second year of retirement. But when you add to the value of the maturing bonds in Bucket #1, the interest earned in the first year on all the bonds, you can see that you're able to come up with the rest of the $25,750 you need to maintain your lifestyle in year two. In fact, the idea is to build your income ladders to work in exactly this way. You set them up so the interest earned on the outstanding bonds, plus the principal amount of the bonds maturing each year, provides the income you need for the next year.

The income ladders work this way throughout retirement to help you maintain the lifestyle you're looking for. One of the most important things to remember is that they always use both principal and interest to generate the income you need—so, by the end of the five-year period in this example, you will have spent the entire $123,771 investment, along with all of the interest it earned, to provide $25,000 of annual inflation-protected purchasing power.

There are many ways to create income ladders, and many products that can help. One of the most important alternatives to individual bonds are single premium immediate annuities, or SPIAs, which in essence are pre-built income ladders that you can purchase from an insurance company. There are no hard and fast rules about which method to use, and a number of considerations have to be taken into account. Ulti-

mately, however, you use these income ladders to create the holding periods you will be relying on throughout retirement.

GROWTH ACCOUNTS

Now that you have a better understanding of income ladders, you can turn back to The Grangaard Strategy® overview in **Illustration 9**, to see that after selling part of your portfolio to create your first ladder, you may then be able to let the rest of your assets stay invested in a diversified portfolio of stock market accounts to continue growing at higher potential rates of return. These stock market, or growth assets, can be separated into a variety of different investment accounts—including individual stocks, mutual funds and/or variable annuity contracts, each of which can be invested over different length holding periods and then used to fund future retirement income needs.

For example, over the initial five-year period, during which you are spending your first income ladder, the first growth account (G1) will have a chance to increase over a five-year holding period, and will hopefully grow sufficiently to fund your next income ladder, which will in turn be used to provide retirement income for the next five-year period. Of course, while you are spending both of the first two income ladders, the second growth account (G2) will have a ten-year holding period, and will hopefully grow enough to fund the third income ladder. The same process continues on and on, with each growth account having a longer and longer holding period during which it will hopefully increase enough to fund a future income ladder. And, as was mentioned earlier, the longer the holding period, the more likely you will be to achieve the rates of return you are expecting.

You will also notice that the final income ladder is highlighted, to point out the fact that it is different from the others. The difference is that the final income ladder will not simply be structured to provide income for five years, but will instead be constructed to provide income for the rest of your life. This can be accomplished using a variety of investment tools such as variable or single premium immediate annuities, both of which offer a variety of payout options, including lifetime income. By taking advantage of life-certain annuity options, you will no longer have to worry about creating additional income ladders—since your income will now be taken care of for the rest of your life. Then, any additional funds you may have available in your portfolio can be invested in an "extra growth" account (GX), which can ultimately be used for wealth transfer, legacy, or stewardship objectives.

This strategy is based on the idea that you can create holding periods with income ladders—which provide dependable annual income while protecting you from having to sell other investments too frequently. Through the systematic use of income ladders, you are able to create multiple holding periods ranging from five to twenty-five or even thirty years. As the holding periods get longer and longer, you can typically invest more and more aggressively to go after higher and higher rates of return—because longer holding periods give you the time you need to ride out the more exaggerated patterns of ups and downs. Being able to assume higher rates of return while managing the associated risks with longer holding periods can ultimately help you achieve substantially higher ***sustainable withdrawal rates***.

ADDITIONAL BENEFITS OF THE GRANGAARD STRATEGY®

There are at least four other important benefits to this approach. First, it allows you to plan for fluctuating income needs. A key assumption in all of the other models is that you are willing to plan for the same amount of inflation-adjusted income each year. But in reality, it seldom works this way.

One of the issues that often comes up in discussions about retirement planning is the idea that you may need less income in later years—because as you age, so the theory goes, you will tend to spend less. For example, you might plan for a base income of $50,000 per year in the first decade, $40,000 per year in the second decade, and $30,000 per year after that. Of course, there is always the opposite concern about increasing costs like health care, prescription drugs, long-term care insurance, and so on—but these can be taken into account as well.

Other things can also affect your need for income. Perhaps you plan to travel more in the first ten years.

Maybe you want to help a child or grandchild with college related expenses. You might want to build something in for periodic auto purchases or home repair expenses. Who knows—it will be different for everyone. And that's the point. Most people need to create a more realistic retirement budget, and then develop a plan and a strategy to meet their changing income needs. The notion of using one ***sustainable withdrawal rate*** to establish a single fixed annual income amount just isn't good enough anymore.

The second important benefit of managing money this way is that it allows you to "navigate" your portfolio. In other words, it takes into account the fact that we are not robots, and that you can exercise judgment throughout retirement. ***Sustainable withdrawal rate*** approaches simply tell you to liquidate enough of your portfolio each year to get the income you need—and that's it. It's simple, it's mechanical, and there isn't a lot of room for ongoing decision-making. You just compute an annual income amount and stay the course—no matter what. But in reality, given changing market conditions and fluctuating account values, you may actually want to sell sooner, or later, or not at all. Why would you want to lock yourself into an approach that doesn't provide any flexibility? You shouldn't, and you don't have to.

You need a dynamic, not a static approach—especially since most people will tend to be net sellers of stock market investments during retirement. You use them to accumulate assets for retirement, but you use them to generate income during retirement. In other words, you typically buy stocks for growth while you're working, and sell them to create income in retirement. Consequently, it's important to have a good "selling discipline" after you stop working. You need a strategy that will help you determine if you've met your growth objectives and if it's time to take some money off the table and set it aside for future income—and that's not what you get with ***sustainable withdrawal rate*** approaches. You have to be able to manage your growth investments very strategically during retirement, based upon carefully developed goals and expectations—and then you have to be prepared to act when you've met those expectations.

For example, if you have a stock market account invested over a fifteen-year holding period, and you meet your growth objectives in year eleven, you might decide to sell, rather than waiting around to see what happens in the next four years—because you never know what the future will bring. The proceeds could then be invested in safer, fixed-income accounts until you needed them to create your next income ladder. This is true for all of your growth accounts. Unlike ***sustainable withdrawal rate*** models that lump everything together, The Grangaard Strategy® approach creates a multi-tiered investment program that is flexible enough to adjust to changing circumstance on a real-time, case-by-case basis.

Another advantage of this technique is that it provides more control over the fundamental trade-off between retirement income and ultimate portfolio values. By recommending lower ***sustainable withdrawal rates***, *Trinity Study* and *Monte Carlo* approaches make it much more likely that there will be a lot of money left at the end of your life—and you don't really have much of a choice in the matter. Obviously, if you're taking out less income every year, your account values are likely to grow—which is fine if you want a lot of money to go to your heirs or your favorite charity, but not so great if you need more income in retirement. And of course, more income in retirement is exactly what many of us do need. Unfortunately, ***sustainable withdrawal rate*** strategies that are heavily biased toward capital accumulation are unlikely to provide it. Without an alternative approach, most people will never even know they had a choice in the matter.

And finally, the fourth significant advantage of this approach is that it does not assume that it's okay to be out of money at the end of thirty years. Thirty-year retirement scenarios can make sense from a planning perspective, but the idea that you will be "successful" if your money lasts thirty years is rather dubious if you actually live for thirty-five. The problem is, you don't know how long you are going to live, so you need a plan to reduce the risk that you will ever run out. Using life-certain annuities for the last income ladder can help you do that. You don't just want to rely on a theory about the "odds" of having your money last—you need a strategy and a plan to make it happen.

THE 6.6 PERCENT SOLUTION

We can now take advantage of The Grangaard Strategy® to reconsider the two big questions in retirement planning. If you are willing to assume a fixed amount of inflation-adjusted income for comparison purposes, we can use it to compute an alternative ***sustainable withdrawal rate***. In other words, you can reassess how much income you might be able to get from your retirement assets and/or how much capital may be required to get the income you want, in light of a much more robust investment strategy. By simplifying your income assumptions, we can work through The Grangaard Strategy® to make an apples-to-apples comparison with the other ***sustainable withdrawal rate*** approaches.

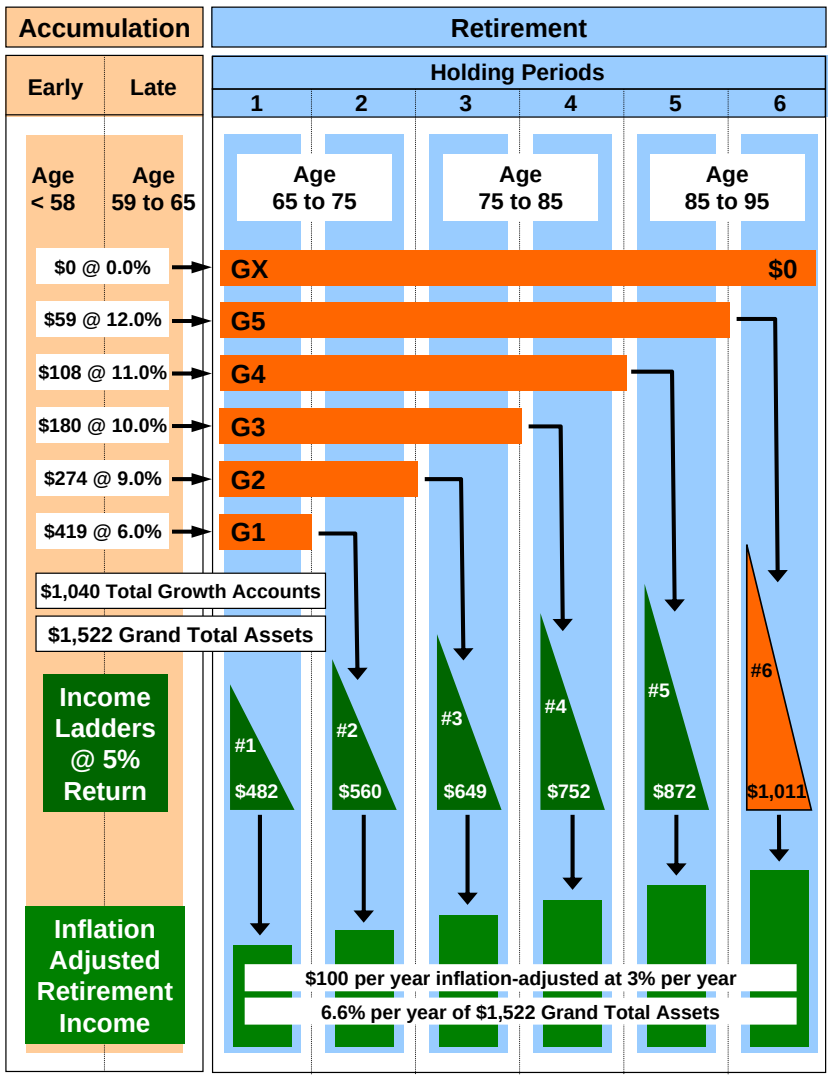
By making a few key assumptions we can use **Illustration 11** to demonstrate how you can achieve much more acceptable ***sustainable withdrawal rates***. The first step in retirement planning is to develop a realistic income plan. Although in most circumstances your income needs will fluctuate, for comparison purposes we will simply assume that you want to maintain $100,000 of inflation-adjusted annual income.

Next, we have to make some assumptions about rates of return for all of the investments. As you can see, we will plan on 5.0 percent for the income ladders, and different but increasing returns for each of the growth accounts. For example, we will assume 6.0 percent for Growth Account #1 (G1)—since we have only a five-year holding period. Although investment risks can be substantially reduced over five-year investment periods, you may still want to be more conservative, knowing that you will need the money in five years.

Then, as we increase our holding periods up to ten years for Growth Account #2 (G2), fifteen years for Growth Account #3 (G3), twenty years for Growth Account #4 (G4), and twenty-five years for Growth Account #5 (G5), we steadily increase our rate of return assumptions. Remember, longer holding periods can take much of the fear out of investing in higher-risk, higher-return assets, because you have more time to ride out the inevitable ups and downs—and hopefully more opportunities to find a good time to sell.

This simple set of assumptions will allow us to calculate how much capital will be needed for each of the income ladders, and how much will have to be invested in each of the growth accounts—at the specified rates of return, and over the given

Illustration 11 – The Grangaard Strategy® - 6.6% Solution (in $1,000's)



holding periods, for them to be able to grow sufficiently to provide that capital. Ultimately, if we add the value of the first income ladder to the initial growth account balances, we will get a pretty good estimate of how much capital will be needed for retirement—which in this case is about $1,522,000. Then, we can simply divide the $100,000 of annual income by the $1,522,000 of beginning capital to compute a new ***sustainable withdrawal rate***—which equals 6.6 percent!

Consider what it means to be able to generate a 6.6 percent ***sustainable withdrawal rate*** in a world that says you shouldn't take out more than about 4.0 to 4.5 percent. On a one million dollar portfolio, the difference is $66,000 per year of inflation-adjusted annual income, compared to $40,000 or $45,000. In other words, we're talking about 45.0 to 65.0 percent more income from the same amount of retirement assets using The Grangaard Strategy®—and, since we are assuming that your last income ladder will consist of a life-certain annuity, you should never have to worry about running out.

You will also notice that there isn't anything left at the end, because we didn't allocate any assets to the extra growth account. But that's the point. You're not being forced to leave a lot of extra capital behind if that isn't your objective. You can allocate something to the Extra Growth Account (GX) if you want to, but it's not a built-in assumption. In other words, you have a choice in the matter—and it can obviously make a big difference in your income.

SUPPORTING THE 6.6 PERCENT SOLUTION

One of the most important aspects of financial planning is making your rate of return assumptions. Some of us will be more conservative and some of us will be more aggressive, but we all have to decide what to use in our own plans—which is why historical investment data can be so helpful. Keeping in mind that there are never any crystal balls when it comes to estimating future investment returns, historical experience can at least provide some overall guidance as to what you might reasonably expect. In an actual planning situation you will normally consider a variety of different return scenarios to see what combinations might work best in your own circumstances. In **Illustration 11**, however, we had to make some general assumptions in order to evaluate the possibility of getting higher ***sustainable withdrawal rates*** with The Grangaard Strategy®—and we need to be clear about where these assumptions came from.

Illustration 12 provides a summary of the historical information used to estimate the rates of return used in **Illustration 11**. Data is provided for all five growth accounts—each of which relates to a different holding period. Column 1 shows the returns in each case, and Column 2 indicates the percentage of large and small company stocks making up each account. You will notice that as holding periods increase, the portfolios are skewed toward smaller company stocks, as they have historically provided higher rates of return and because we can manage the incremental risks through longer and longer investment horizons.

But the key to the analysis in **Illustration 11** is to be sure that we are using defensible rates of return. To use The Grangaard Strategy® to develop credible ***sustainable withdrawal rates***, we don't want to be too aggressive and we don't want to be too conservative. We need to use justifiable assumptions that will help us realistically evaluate how much income we might be

Illustration 12 - Growth Account Historical Rates of Return
(Historical ability to hit account value targets based upon various average annual returns over various length holding periods)

Historical Large Company (LC) Stock Average Annual Return — 70 Years from 1936 to 2005 = 11.0%
Historical Small Company (SC) Stock Average Annual Return — 70 Years from 1936 to 2005 = 14.5%

Growth Account	Holding Periods	(1) Expected Return	(2) Portfolio Mix	(3a) 100% Target Value %	(3b) 100% Target Value Ave #	(4a) 95% Target Value %	(4b) 95% Target Value Ave #	(5a) 90% Target Value %	(5b) 90% Target Value Ave #
Growth Account 1	(66) ***5-Year*** Holding Periods from 1936 to 2005	6.0%	50% LC 50% SC	91%	3.2	94%	3.5	95%	3.7
Growth Account 2	(61) ***10-Year*** Holding Periods from 1936 to 2005	9.0%	50% LC 50% SC	92%	4.3	93%	4.6	95%	4.9
Growth Account 3	(56) ***15-Year*** Holding Periods from 1936 to 2005	10.0%	40% LC 60% SC	95%	5.1	98%	5.3	98%	5.9
Growth Account 4	(51) ***20-Year*** Holding Periods from 1936 to 2005	11.0%	30% LC 70% SC	94%	5.4	98%	5.6	100%	5.9
Growth Account 5	(46) ***25-Year*** Holding Periods from 1936 to 2005	12.0%	30% LC 70% SC	93%	4.9	98%	5.1	100%	5.3

Source: Calculated by author using data from Ibbotson Associates Stocks, Bonds, Bills, and Inflation© 2006 Yearbook.
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able to squeeze out of a retirement portfolio with a high probability of success—just like the *Trinity Study* and/or *Monte Carlo* approaches.

Ultimately, this means that we need to be confident in our ability to fund our income ladders—because that's where our lifestyles will be coming from. Of course, your ability to support your income ladders is directly related to your ability to get the appreciation you need in your growth accounts. An easy way to understand this is to consider Growth Account #3 (G3) in **Illustration 11**, where we have $180,000 invested at an average annual return of 10.0 percent over a fifteen-year holding period. The plan is for this $180,000 to grow to the $752,000 we need to fund Income Ladder #4. The same is true for all of the other growth accounts. In each case we have a starting balance, a rate of return, a holding period, a terminal value expectation, and the assumption that we will use the proceeds to create the next income ladder. The big issue is whether or not you actually hit the terminal values you are expecting—and that's where the historical data comes in.

Let's focus on Growth Account #3 in **Illustration 12**. The idea is to consider all fifty-six fifteen-year holding periods between 1936 and 2005 to assess the historical likelihood of actually hitting a terminal value target of $752,000 over a fifteen-year investment horizon. In other words, we want to determine how often a portfolio allocated 40.0 percent to large company stocks and 60.0 percent to small company stocks would have earned the equivalent of an average annual return of 10.0 percent per year for fifteen years.

As you can see, the odds are pretty good. Column 3a shows that in 95.0 percent of all fifteen-year holding periods, our $180,000 would have made it to $752,000 at least once. To provide even more comfort, Column 3b shows that in all of those successful fifteen-year periods, you would have hit the target value, on average, in at least five separate years. In other words, you might have hit $752,000 in year eight, then dropped below it in year nine, than been at or above it again in years ten, eleven and twelve, then slid back down in year thirteen, back up in year fourteen, and ultimately back down again in year fifteen. Remember, you can use history as a guide to long-term investment behavior, but it can't tell us anything about what will happen from one year to the next.

That's why your ability to "navigate" your retirement portfolio is so important—because you want to be able to take advantage of these fluctuations when they occur. If you hit a value target earlier than expected, you will probably want to harvest your gains ahead of schedule, because you never know what will happen next. In this example, you would have had plenty of opportunities to sell before the end of the fifteenth year—and had you not taken advantage of them, the downdraft in the final year would have taken you below what you needed for your next income ladder. Although the patterns will always be different, it should be comforting to know that on average, over fifteen-year holding periods, you will usually have plenty of opportunities to harvest your anticipated investment gains and meet your overall growth objectives.

Columns 4a and 4b provide the same information, except that the target values are reduced to 95.0 percent of what will be needed for the next income ladder—so success in this case would mean hitting about $715,000 (95.0 percent of $752,000) at least once. You can see that the likelihood of hitting this lower target increases to 98 percent of all fifteen-year holding periods, and that on average you would have met or exceeded it more than five times. This means that in most instances you would have had multiple opportunities to sell ahead of schedule. Taking advantage of these opportunities would have allowed you to reinvest the proceeds in safer, fixed-income investments. Then, if you were able to earn an income-ladder rate of return of only 5.0 percent, you would have made it back to 100.0 percent of your target value in just one year. This is very important, because it shows how much your odds of success can be improved by factoring in your ability to "navigate" your investment accounts.

And it's actually even better than that—because you can always fudge a bit on your target values. Say, for example, that you get to $700,000 in year fourteen. If you sell, and invest the proceeds at 5.0 percent for one more year, you will have about $735,000 for your next income ladder—rather than the $750,000 you were shooting for. But $15,000 is not going to make

much of a difference in your lifestyle over the next five years. As a result, many of us would probably choose to sell rather than waiting around to see what happens in the final year. You can add a tremendous amount of value and flexibility with this kind of real-time decision-making—and none of it is captured in the success percentages shown in **Illustration 12**.

And finally, Columns 5a and 5b present data for historical success levels at 90 percent of the target values. In the case of fifteen-year holding periods the overall success rate doesn't change, but the average number of years in which we hit the target does—so we gain yet another perspective on how comfortable we might be with our overall expectations.

Ultimately, if you consider all of the data for fifteen-year holding periods, you will find that you could probably be very comfortable with a 10.0 percent return expectation, and pretty confident that you would have multiple opportunities to lock in your gains along the way. This does not mean that you would actually use a 10.0 percent return assumption in your own planning, because this is always an individual decision—but it does show that it would be reasonable from a general historical perspective.

The same can be said of all the other growth accounts. **Illustration 12** provides similar data for each of the different holding periods. You can see that the success ratios exceed 90 percent in every case, and that in most instances they are 95 percent or better, with a substantial number of opportunities to "navigate" the portfolio. Obviously, there are no guarantees, but the data clearly shows that we have not strayed outside of reasonable historical investment norms when coming up with our rate of return assumptions in **Illustration 11**. Consequently, we can also conclude with confidence that the ***6.6 Percent Grangaard Strategy® Solution*** offers meaningful guidance about how much income we might actually be able take out of a well-managed retirement portfolio.

CONCLUSIONS

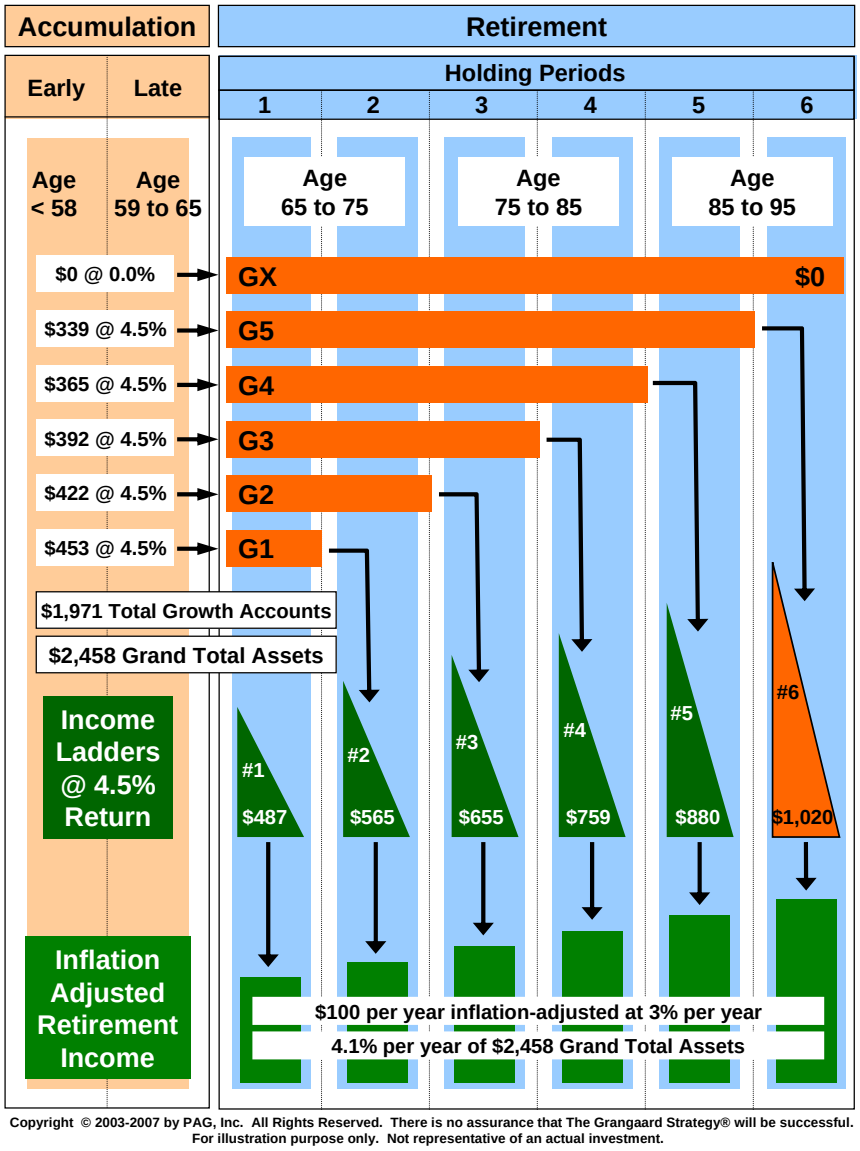
Understanding how to invest during retirement was not such a big deal in the past when most people lived on pensions and Social Security. Today, not only will we be living longer in retirement, but we will also be managing more and more of our own money. Traditional company-managed pension plans are becoming a thing of the past. Social Security is questionable and many people have a lot of money invested in self-directed retirement accounts like 401(k) plans, IRAs and annuities. Often, the key to living better in retirement is your ability to generate higher ***sustainable withdrawal rates*** on these assets. The Grangaard Strategy® approach can help you do that.

Until now, after dismissing the overly simplistic *straight-line* models, we have essentially been left with *Trinity Study* and *Monte Carlo* approaches to this critical issue—but the reality is that 3.5 to 4.5 percent ***sustainable withdrawal rates*** just might not be good enough, unless your biggest concern is leaving a lot of money to your heirs. In fact, the only other thing these strategies have going for them is that they're so easy to implement—but at what cost? Do you really want to give up 45.0 to 60.0 percent of your retirement lifestyle to make the process a little easier and/or leave a lot of money behind?

The fact is—if you want to live on 4.0 to 4.5 percent ***sustainable withdrawal rates***, there are easier and safer ways to do it than using a *Trinity Study* or *Monte Carlo* approach. **Illustration 13** shows that you could easily generate a 4.1 percent ***sustainable withdrawal rate*** using The Grangaard Strategy®, if you simply assumed a 4.5 percent rate of return for all of the income ladders and growth accounts. You could use risk-free, interest-bearing US Treasury obligations for the income ladders, and zero-risk, zero-coupon US Treasury Securities for the growth accounts, and still be able to provide a ***sustainable withdrawal rate*** of over 4.0 percent—and you wouldn't have to own any risky assets at all. In other words, you could have an extremely low maintenance, risk-free retirement portfolio without any of the investment risks associated with *Trinity Study* or *Monte Carlo* approaches. So why would you put any of your retirement assets at risk in the stock market if you could be happy with a 4.0 percent ***sustainable withdrawal rate***. It just doesn't make sense—unless you don't understand your options or you want to leave a big pot of money behind.

There is an old proverb that says, "it's not what you know that

Illustration 13 – The Grangaard Strategy® - 4.1% "No Risk" Solution (in $1,000's)



will hurt you, and it's not what you know you don't know that will hurt you—it's what you don't know you don't know that will get you into trouble." The sad reality is that many retirees don't know what they don't know about managing assets in retirement, and, as a result, they end up settling for lower ***sustainable withdrawal rates*** and lower lifestyles than they would have to—while continuing to invest in riskier assets that should be able to generate more income.

I believe we have moved into the second phase of the retirement crisis in America. The first challenge was to get the message out. We've done that. People understand that this is a big issue and that everyone has to take it seriously. Phase two is a winnowing-out process. We have already started to focus more on solutions than problems—and this trend will continue. But it's not just about developing new investment products—as important as that may be. What today's retirees need more than ever are creative new strategies that will help them design better retirement plans and provide a more comprehensive framework within which they can determine how these new products can help them meet their overall goals and objectives.

It isn't that difficult to do a better job managing your assets in retirement. You really only need to keep five things in mind. You have to have realistic income budgets; you have to take advantage of longer holding periods; you have to have reasonable return expectations; you need a plan that will enable you to "navigate" your investment accounts; and you need the discipline to take action when opportunities arise. A planning framework that brings these five elements together can provide a lot of flexibility and control—along with significantly enhanced retirement lifestyles. ■

FOOTNOTES:

1 Calculated by author using data from Ibbotson Associates Stocks, Bonds, Bills, and Inflation© 2006 Yearbook. For illustrative purposes only. Not representative of an actual investment. Past performance is not a guarantee of future results. An investment cannot be made directly in an index.

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DISCLAIMER:

The Grangaard Strategy® approach to retirement planning is based upon the application of a particular methodology of managing investments in retirement. Other methodologies and theoretical models for investing exist in the investment world, and some of these may be more suitable for some people under certain circumstances. The ideas and methodologies discussed in this article must therefore be seen as one of a number of ways for analyzing individual situations, and not as a guarantee of any particular investment strategy or result.

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