INNOVEST

4643 S Ulster Street | Suite 1040 | Denver, CO 80237 303.694.1900 | innovestinc.com

City of Loveland Police Retirement Plan
Retirement Sufficiency Study

January 12, 2016

Gordon Tewell, CFA, CPC, Principal

INCOME REPLACEMENT RATIO PROJECTION

Utilized a study completed by the Employee Benefit Retirement Institute and the University of Georgia.

The study analyzes the replacement ratio employees need to maintain their pre-retirement standard of living after retirement. Changes in these expenditures, however, vary from person to person.

The EBRI/University of Georgia study provides a detailed methodology for calculated a targeted replacement ratio. The methodology includes the following factors:

PrRPG: Gross pre-retirement income
PrRT: Pre-retirement taxes
PrRS: Pre-retirement savings
NCCR: Change in age- and work-related expenditures
PoRT: Post-retirement taxes

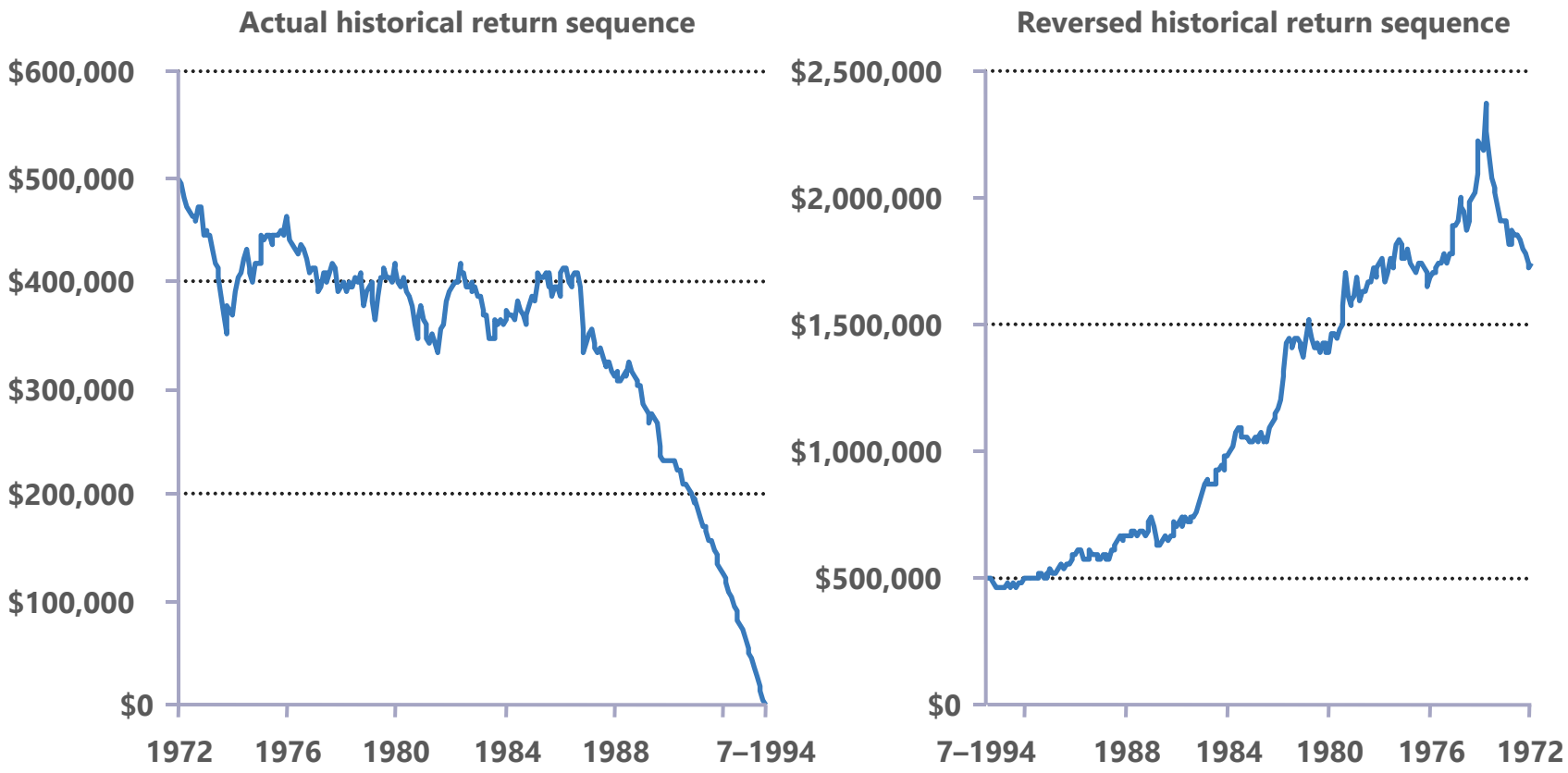
Based on the above, we concluded that the career members of the City of Loveland Police Plan would need a 75% replacement ratio.

REQUIRED TOTAL CONTRIBUTION LEVELS TO MEET PROJECTED INCOME REPLACEMENT

Income replacement ratios and retirement age	Average annual rate of return		
	5%	7%	9%
Age 50			
80%	45.0%	27.1%	18.0%
90%	50.5%	30.5%	19.0%
100%	56.1%	33.9%	21.2%
Age 55			
80%	33.7%	19.5%	18.0%
90%	37.9%	21.9%	18.0%
100%	42.1%	24.3%	18.0%
Age 60			
80%	25.7%	18.0%	18.0%
90%	29.0%	18.0%	18.0%
100%	32.2%	18.0%	18.0%

WHY DIFFERENT OUTCOMES OCCUR

Sequence of returns matters



Hypothetical value of $500,000 invested at year-end 1972 and July 1994. Assumes inflation-adjusted withdrawal rate of 5%. Portfolio: 50% large company stocks/50% intermediate-term bonds. Assumes reinvestment of income and no transaction costs or taxes.

SCOPE OF WORK COMPLETED

Income Replacement

An analysis of the projected retirement plan income replacement of the current plan option versus two new options

Fiscal Impact

An analysis of the fiscal impact of contributions for the City of Loveland

An analysis of the fiscal impact of contributions for the participants in the plan

INCOME REPLACEMENT ASSUMPTIONS

The analysis Innovest provided is based on specific assumptions provided to Innovest by the City.

This retirement analysis assumes retirement at age 55 for participants, after having worked 25 years;

Retiring officers need to achieve a replacement rate of 75% of their last year's pay, adjusted upward by 2% per year in retirement;

The analysis goes until the age of 80;

Report Assumptions

- Officer salary after Year 7: adjusted upward by 2.5% per year
- Expected investment returns of 7% per year
- Final year salary: $114,479 (25 years in from time of study)
- 75% of final year salary: $85,859
- Blended Colorado and Federal tax rate in retirement: 18.5%
- Net income for participants in first year of retirement: $70,000

INCOME REPLACEMENT

Scenario 1: Current Structure
The current contribution structure of 401(a) defined contribution plan:

- Employee Contribution of 7% of base pay
- City Contribution of 11% of base pay

Scenario 2: Tiered Structure (not recommended)
A scenario with 10% employee contributions and a rising scale of employer contributions based on officer tenure

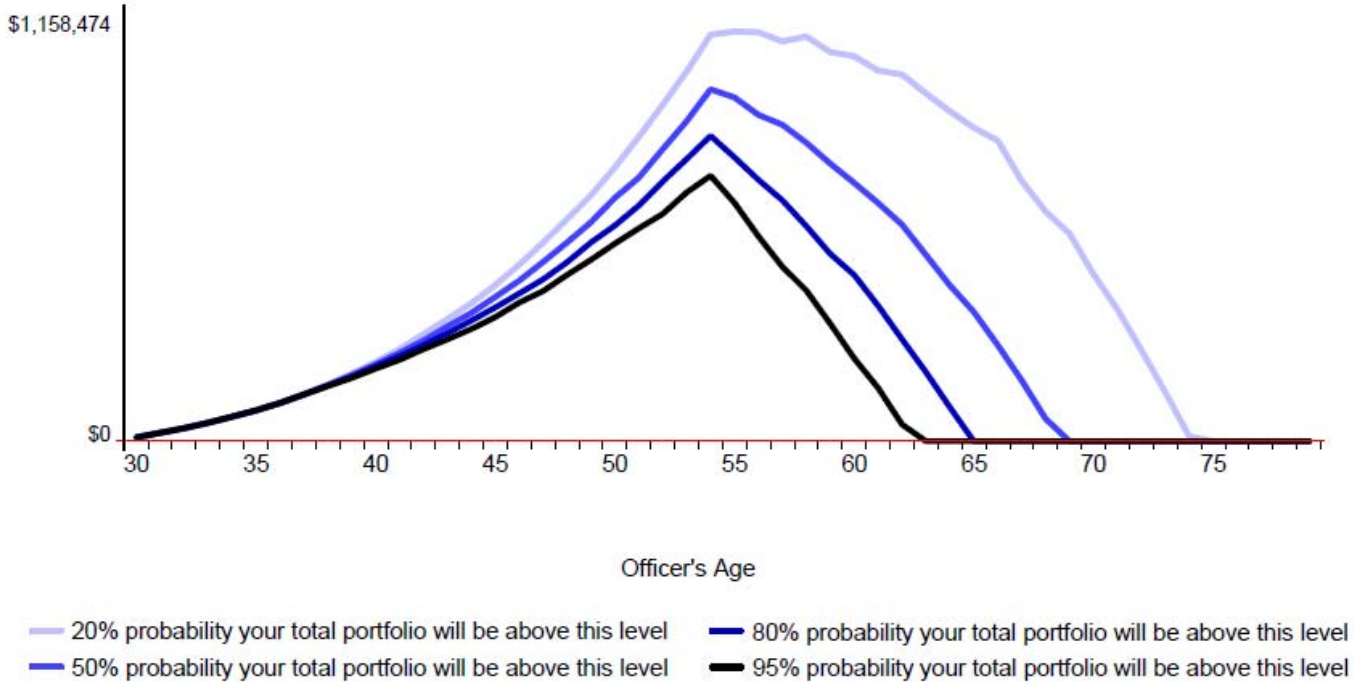
Years of Service	Proposed Employer Contribution
• 0 – 7 years	11.2% (5% plus SS replacement of 6.2%)
• 8 – 10 years	12.2% (6% plus SS replacement of 6.2%)
• 11 – 15 years	13.2% (7% plus SS replacement of 6.2%)
• 16 – 20 years	14.2% (8% plus SS replacement of 6.2%)
• 21 + years	15.2% (9% plus SS replacement of 6.2%)

Scenario 3: Match Structure (proposed)
A scenario with 10% employee and employer contributions and an option for voluntary employee contributions which would be matched by an employer contribution

- Employee Contribution of 10% of base pay
- City Contribution of 10% of base pay
- City match of voluntary contribution at a rate of 100% of the first 5% contributed by the participant

SCENARIO 1: CURRENT STRUCTURE

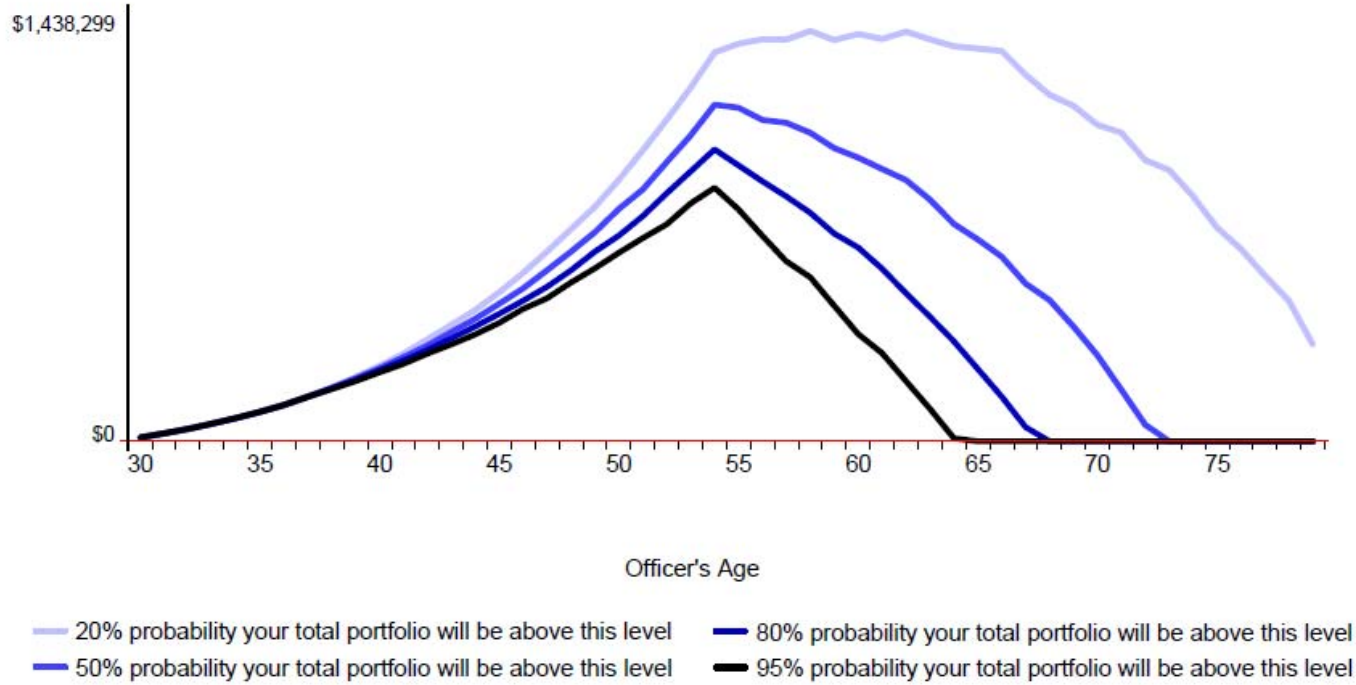
Expected Participant Outcome through Retirement
Expected City Financial Impact: No change to current expenditures



Officer's Age	*The Chances Are...*		
	50%	*80%*	*95%*
	That Your Total Portfolio Will be Greater Than...		
30	$10,883	$10,883	$10,883
55	$971,734	$802,517	$673,732
79	$0	$0	$0

SCENARIO 2: TIERED STRUCTURE (NOT RECOMMENDED)

Expected Participant Outcome through Retirement
Expected City Financial Impact: $144,209.27



Officer's Age	*The Chances Are...*		
	50%	*80%*	*95%*
	That Your Total Portfolio Will be Greater Than...		
30	$12,817	$12,817	$12,817
55	$1,169,914	$967,916	$813,608
79	$0	$0	$0

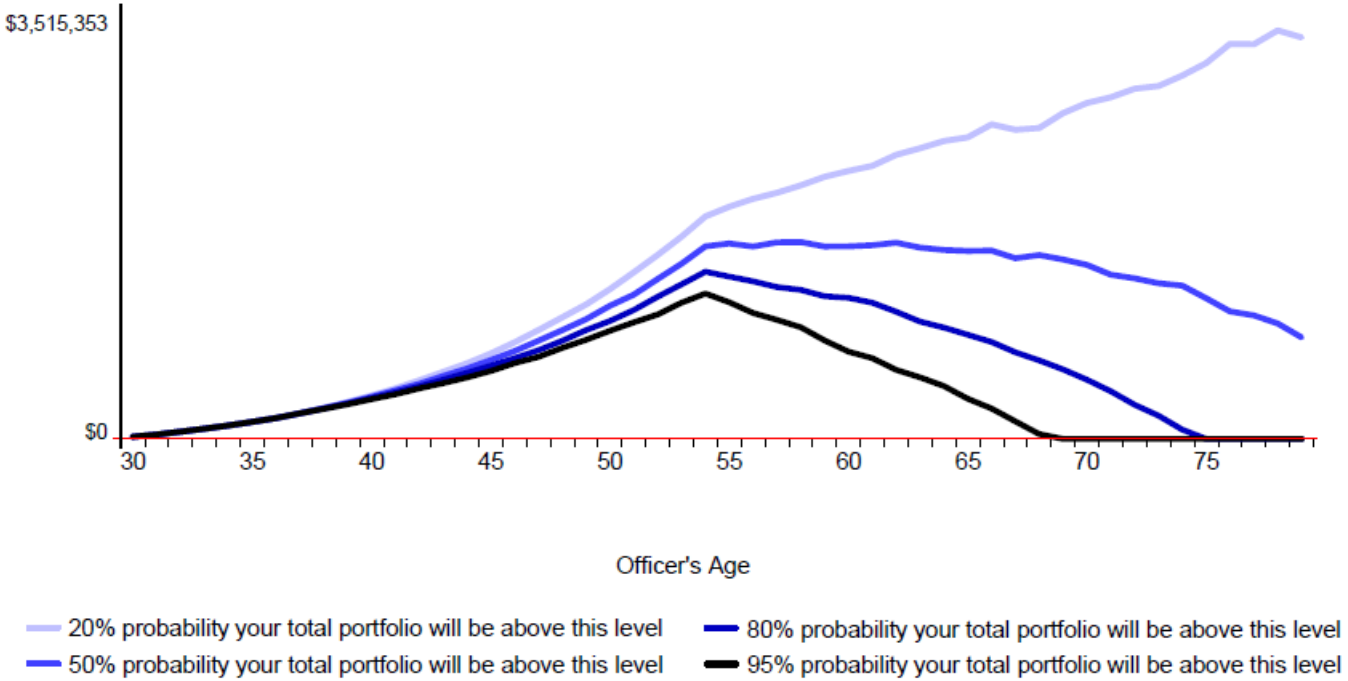
SCENARIO 3: MATCH STRUCTURE (PROPOSED)

Expected Participant Outcome through Retirement

Expected City Financial Impact: 100% participation in maximum match: $142,567.82

0% participation in maximum match: ($71,694.27)

50% participation in maximum match: $107,541.41



Officer's Age	*The Chances Are...*		
	50%	*80%*	*95%*
	That Your Total Portfolio Will be Greater Than...		
30	$18,138	$18,138	$18,138
55	$1,681,319	$1,396,288	$1,175,993
79	$873,681	$0	$0

FISCAL IMPACT

	Total Participant Costs	Average Participant Cost	Total Employer Costs	Change in Employer Cost	Employer Cost Per Participant
Scenario 1 - Current Structure	$501,859.90	$5,455.00	$788,636.99	N/A	$8,572.14
Scenario 2 - Tiered Structure	$716,942.72	$7,792.86	$932,846.26	$144,209.27	$10,139.63
Scenario 3 - Match Structure - 100% participation in match	$1,075,414.08	$11,689.28	$1,075,414.08	$142,567.82	$11,689.28
Scenario 3 - Match Structure - 0% participation in match	$716,942.72	$7,792.86	$716,942.72	($71,694.27)	$7,792.86
Scenario 3 - Match Structure - 50% participation in match	$896,178.40	$9,741.07	$896,178.40	$107,541.41	$9,741.07

ADDITIONAL IMPACTS ON THE CITY OF LOVELAND

- Employee recruitment and retention
- Orderly transition of members out of the workforce
- Social impact of an unsuccessful retirement

GORDON TEWELL, CFA, CPC | PRINCIPAL

Gordon is a Principal, Consultant and member of Innovest's Investment Committee, which makes decisions on investment related research and due diligence. He is also a member of the Capital Markets Research Group, responsible for asset allocation studies and portfolio construction and Innovest's Due Diligence Group, responsible for both qualitative and quantitative manager and retirement plan vendor due diligence. Gordon has more than 18 years of retirement plan industry experience.

Gordon's consulting relationships are focused on retirement plans, due mainly to Gordon's experience with providing services to and directly managing a variety of retirement plans and in-depth understanding of IRS and DOL rules and regulations concerning retirement plans. Gordon's other responsibilities at Innovest include retirement plan benchmarking and vendor search analysis activity providing fiduciary oversight and significant cost saving opportunities to Innovest clients. His views on plan design and industry trends have been published in Pensions & Investments and Plan Sponsor, among others.

Prior to joining Innovest, Gordon was a plan sponsor, managing multiple retirement plans for the City of Westminster in Colorado. Before his time as a plan sponsor, he was an Assistant Vice President with The Retirement Group at Merrill Lynch. Most of his time at Merrill was spent in a client relationship role overseeing all aspects of plan management, but included time spent in investment consulting, and plan conversion and implementation.

Gordon is a graduate of Colorado State University, graduating with a Bachelors of Science degree in Economics and a minor in mathematics. Gordon is a Chartered Financial Analyst (CFA) and is a member of the CFA Institute and the CFA Society of Colorado. Additionally, Gordon has received the Certified Pension Consultant (CPC) designation from the American Society of Pension Professionals and Actuaries (ASPPA). CPCs work alongside employers to formulate, implement, administer, and maintain qualified retirement plans. Gordon is a certified Behavioral Finance Analyst, educating plan sponsors to apply proven behavioral finance solutions to improve plans and participant outcomes. He is a member of ASPPA, the Denver Chapter of the Western Pension and Benefits Conference and a Board member of the Colorado Public Plan Coalition.

Gordon and his wife Deb spend their free time traveling throughout the U.S., much of this time spent on their bicycles. Gordon and Deb are members of a Colorado-based volunteer bicycle touring group that organizes week-long bicycle tours throughout the world. When not bicycling or hiking in the Colorado Mountains, Gordon and Deb volunteer at their local YMCA, assisting with programs that promote healthy spirit, mind, and body.