Ryan ALM
Asset/Liability Management

FELRA UFCW Pension Plan

PRESENTED BY
RONALD J. RYAN, CFA
(CEO)
RUSSELL D. KAMP
(MANAGING DIRECTOR)

Pension Objective

***SECURE BENEFITS* in a cost-efficient manner**

There are mainly two ways to secure benefits:

1. **Insurance Annuities**
2. **Cash flow matching (CDI) with bonds**

Ultimate cost of a DB plan is the cost of future benefits … and future expenses

What is CDI?

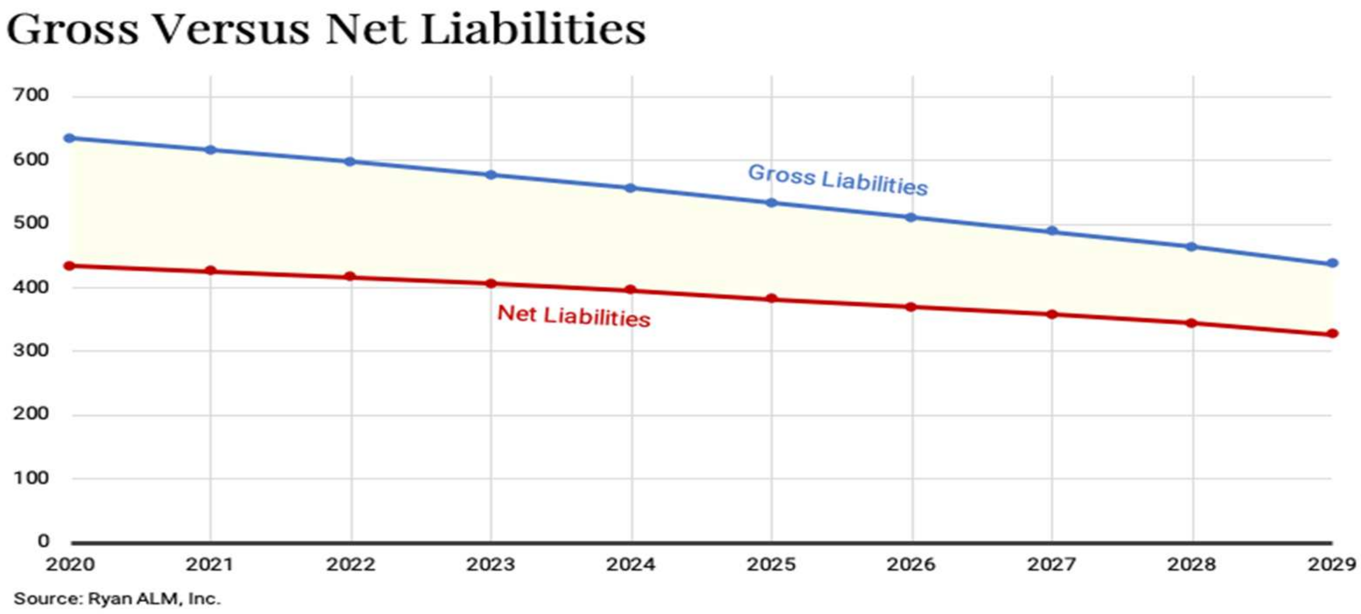
A cash flow driven investment (CDI) is a structured bond portfolio whose **cash flows match + fund** the projected benefits *chronologically* (i.e. 1-10 years of Retired Lives).
The benefits are numerous:

- **Secures benefits**
- **Mitigates interest rate risk**
- **Enhances funded ratio/status**
- **Improves liquidity management**
- **Reduces funding cost (Benefits cost – CDI cost)**
- **Buys time for non-CDI assets to grow unencumbered**

CDI Focus: Net not Gross Liabilities

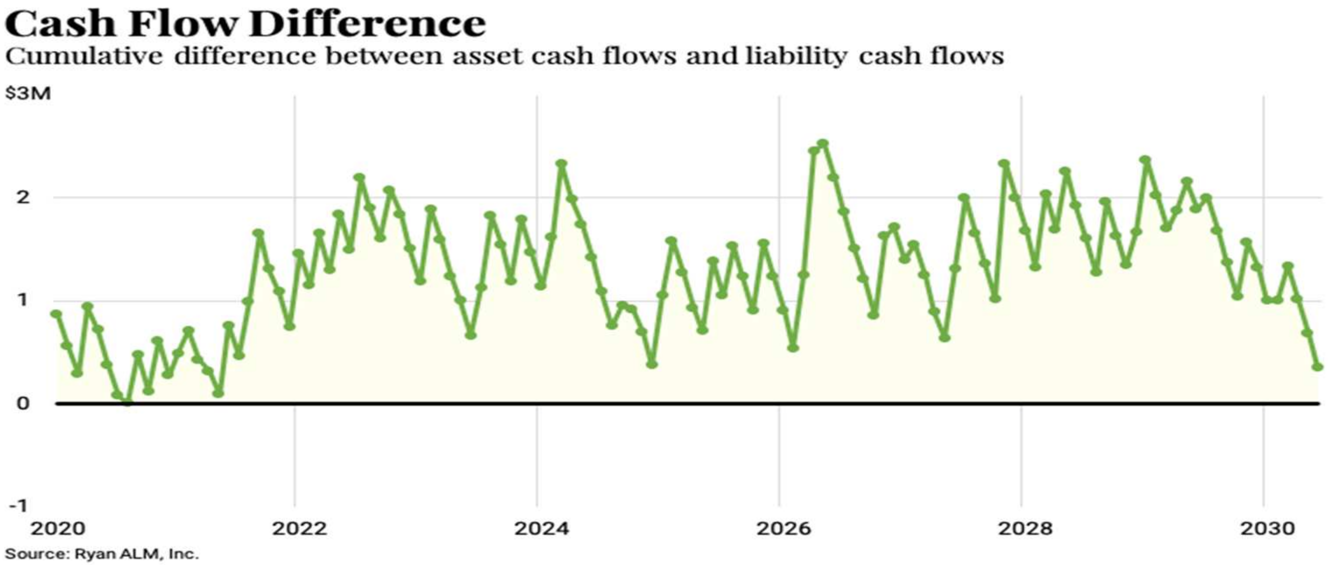
Contributions are the initial source to fund benefits

CDI funds Net Liabilities (projected benefits – contributions)



CDI funds Monthly Benefits

Asset cash flows fund net monthly benefits
Cumulative difference of cash flows = no deficits!



partnership overview

LOOMIS AND RYAN ALM WORKS SYNERGISTICALLY FOR A SEAMLESS IMPLEMENTATION

INITIAL PORTFOLIO CONSTRUCTION	EXECUTION	PORTFOLIO MONITORING AND REBALANCING	CLIENT REPORTING
Loomis Sayles portfolio construction engine and security selection Ryan ALM Advisers Liability beta portfolio Seven(7) iterations to arrive at consensus portfolio	Loomis Sayles responsible for trading and execution Ryan ALM Advisers receives execution update on a regular basis	Loomis Sayles monitors and rebalance portfolio Ryan ALM Advisers monitors portfolio and recommend potential actions due to Calls, Mergers, Tenders and Investment policy	Loomis Sayles monthly portfolio client report Ryan ALM Advisers Custom Liability Index report, Performance attribution report

LOOMIS | SAYLES®

The Ryan ALM Process

1. Install *Custom Liability Index* (CLI)

calculate/monitor Liabilities (Net Retired Lives):

- Net Liabilities Future Value (benefits – contributions)
- Statistical Summary (YTM, Duration, term structure)
- Based on PBGC discount rates (1.62%/1.40%)
- Present Value (PV) of net liabilities
- Interest rate sensitivity analysis
- Liability growth rate
- Monthly reports
- Benchmark

Ryan ALM, Inc.

Custom Liability Index

09/30/2021

CLI for Net Liabilities = (Benefits + Estimated Cash Expenses – Contributions) through Feb. 2025

Ryan ALM, Inc
FELRA-UFCW
10/31/2021

Liability Year	Benefits plus Expenses Future Value	Cumulative	Contributions	Cumulative	Net Future Value	Cumulative
01/01/2022	153,300,000	153,300,000	56,000,000	56,000,000	97,300,000	97,300,000
01/01/2023	156,600,000	309,900,000	56,000,000	112,000,000	100,600,000	197,900,000
01/01/2024	157,100,000	467,000,000	56,000,000	168,000,000	101,100,000	299,000,000
01/01/2025	156,500,000	623,500,000	56,000,000	224,000,000	100,500,000	399,500,000
01/01/2026	155,000,000	778,500,000	56,000,000	280,000,000	99,000,000	498,500,000
01/01/2027	152,600,000	931,100,000	56,000,000	336,000,000	96,600,000	595,100,000
01/01/2028	149,500,000	1,080,600,000	56,000,000	392,000,000	93,500,000	688,600,000
01/01/2029	146,200,000	1,226,800,000	56,000,000	448,000,000	90,200,000	778,800,000
01/01/2030	142,500,000	1,369,300,000	56,000,000	504,000,000	86,500,000	865,300,000
01/01/2031	138,500,000	1,507,800,000	56,000,000	560,000,000	82,500,000	947,800,000
01/01/2032	134,400,000	1,642,200,000	56,000,000	616,000,000	78,400,000	1,026,200,000
01/01/2033	130,100,000	1,772,300,000	56,000,000	672,000,000	74,100,000	1,100,300,000
01/01/2034	125,700,000	1,898,000,000	56,000,000	728,000,000	69,700,000	1,170,000,000
01/01/2035	121,200,000	2,019,200,000	56,000,000	784,000,000	65,200,000	1,235,200,000
01/01/2036	116,700,000	2,135,900,000	56,000,000	840,000,000	60,700,000	1,295,900,000
01/01/2037	112,200,000	2,248,100,000	56,000,000	896,000,000	56,200,000	1,352,100,000
01/01/2038	107,500,000	2,355,600,000	56,000,000	952,000,000	51,500,000	1,403,600,000
01/01/2039	102,800,000	2,458,400,000	56,000,000	1,008,000,000	46,800,000	1,450,400,000
01/01/2040	97,900,000	2,556,300,000	56,000,000	1,064,000,000	41,900,000	1,492,300,000
01/01/2041	93,100,000	2,649,400,000	56,000,000	1,120,000,000	37,100,000	1,529,400,000
01/01/2042	88,200,000	2,737,600,000	56,000,000	1,176,000,000	32,200,000	1,561,600,000
01/01/2043	82,900,000	2,820,500,000	56,000,000	1,232,000,000	26,900,000	1,588,500,000
01/01/2044	77,800,000	2,898,300,000	56,000,000	1,288,000,000	21,800,000	1,610,300,000
01/01/2045	72,700,000	2,971,000,000	56,000,000	1,344,000,000	16,700,000	1,627,000,000
01/01/2046	67,900,000	3,038,900,000	0	1,344,000,000	67,900,000	1,694,900,000
01/01/2047	63,100,000	3,102,000,000	0	1,344,000,000	63,100,000	1,758,000,000
01/01/2048	58,700,000	3,160,700,000	0	1,344,000,000	58,700,000	1,816,700,000
01/01/2049	54,500,000	3,215,200,000	0	1,344,000,000	54,500,000	1,871,200,000
01/01/2050	50,400,000	3,265,600,000	0	1,344,000,000	50,400,000	1,921,600,000
01/01/2051	46,500,000	3,312,100,000	0	1,344,000,000	46,500,000	1,968,100,000
01/01/2052	42,900,000	3,355,000,000	0	1,344,000,000	42,900,000	2,011,000,000

Ryan ALM
Asset/Liability Management

Ryan ALM, Inc.
FELRA-UFCW
October 31, 2021

	Total Liabilities	Net Liabilities
Future Value	$3,769,700,000	$2,425,700,000
Present Value	$3,052,619,669	$1,924,857,155
YTM	1.57%	1.56%
Discount Rate	1.51%	1.48%
Duration	13.31	14.68

Contribution reflects arrangement with PBGC to contribute $56.0 million per year ($4.7 million per month) effective January 2021 for 25 years.

Discount Rate = 1.62% for first 20 years then 1.40% thereafter.

Ryan ALM Process

2. Install *Liability Beta Portfolio*™ (LBP)

… to cash flow match Retired Lives net liabilities:

- ***SECURES BENEFITS***
- Reduces funding costs by 1% per year
- Funds NET Retired Lives (after contributions)
- Cash Flow match Net Retired Lives *chronologically*
- Reduces volatility of funded ratio and funded status
- Out-yields CLI creating Alpha, which enhances funded status
- Matches benefits (future values), which have no interest rate risk
- BUYS TIME for Alpha assets to perform by pushing deficit out longer

Ryan ALM, Inc.

Liability Beta Portfolio™ (LBP™)

September 30, 2021

LBP for Net Liabilities = (Benefits + Estimated Cash Expense – Contributions) through Feb. 2026

LBP™ = Trademark SN 87502649 registered July 17, 2018

Ryan ALM, Inc.

FELRA-UFCW

October 31, 2021

LBP Summary

	Segment Rates	LBP Model	Cost Savings ($ and %) *	
Future Value	$1,100,300,000	$1,100,300,000		
Present Value	$1,003,626,400	$965,093,890	$135,206,110	12.288%
YTM	1.620%	1.930%		
Discount Rate	1.620%	2.334%		
MDuration	5.541	5.290		
LBP Model Efficiency		100.000%		
Total Assets		$965,093,887		

Segment Rates = 1.62% for first 20 years then 1.40% thereafter.

Ryan ALM, Inc.
FELRA-UFCW
LBP™ - Cash Flow Summary
October 31, 2021

Payment Year	Cashflow		Reinvestment		Total Cash Flow	Benefit Payment	Difference	Present Value
	Principal	Coupon	Principal	Coupon				
12/01/2033	6,097,260	77,740	0	0	6,175,000	6,175,000	0	
11/01/2033	5,990,660	179,720	4,486	135	6,175,000	6,175,000	0	
10/01/2033	5,979,313	191,338	4,214	135	6,175,000	6,175,000	0	
09/01/2033	5,972,539	197,840	4,472	148	6,175,000	6,175,000	0	
08/01/2033	6,098,765	76,235	0	0	6,175,000	6,175,000	0	
07/01/2033	5,923,491	218,429	31,903	1,176	6,175,000	6,175,000	0	
06/01/2033	5,938,408	236,592	0	0	6,175,000	6,175,000	0	
05/01/2033	5,867,535	307,339	0	127	6,175,000	6,175,000	0	
04/01/2033	5,916,953	257,904	0	143	6,175,000	6,175,000	0	
03/01/2033	5,766,084	408,794	0	122	6,175,000	6,175,000	0	
02/01/2033	6,042,121	132,879	0	0	6,175,000	6,175,000	0	
01/01/2033	5,979,449	186,858	8,430	263	6,175,000	6,175,000	0	
12/01/2032	6,105,931	427,403	0	0	6,533,333	6,533,333	0	
11/01/2032	6,034,272	498,927	0	135	6,533,333	6,533,333	0	
10/01/2032	6,094,442	438,756	0	135	6,533,333	6,533,333	0	
09/01/2032	5,786,744	706,791	39,113	686	6,533,333	6,533,333	0	
08/01/2032	6,333,947	199,386	0	0	6,533,333	6,533,333	0	
07/01/2032	6,412,348	78,551	41,920	514	6,533,333	6,533,333	0	
06/01/2032	5,797,321	736,004	0	8	6,533,333	6,533,333	0	
05/01/2032	5,938,464	571,673	22,791	406	6,533,333	6,533,333	0	
04/01/2032	6,011,772	521,418	0	143	6,533,333	6,533,333	0	
03/01/2032	5,841,721	691,482	0	131	6,533,333	6,533,333	0	
02/01/2032	6,263,483	269,850	0	0	6,533,333	6,533,333	0	
01/01/2032	6,366,149	127,323	39,079	782	6,533,333	6,533,333	0	
12/01/2031	6,070,692	804,300	0	8	6,875,000	6,875,000	0	
11/01/2031	6,175,243	699,622	0	135	6,875,000	6,875,000	0	
10/01/2031	6,200,251	674,614	0	135	6,875,000	6,875,000	0	
09/01/2031	5,975,122	899,543	0	335	6,875,000	6,875,000	0	
08/01/2031	6,520,385	354,615	0	0	6,875,000	6,875,000	0	
07/01/2031	6,790,123	84,877	0	0	6,875,000	6,875,000	0	
06/01/2031	5,994,265	880,726	0	8	6,875,000	6,875,000	0	
05/01/2031	6,102,027	772,847	0	127	6,875,000	6,875,000	0	
04/01/2031	6,135,817	739,040	0	143	6,875,000	6,875,000	0	
03/01/2031	5,767,028	1,107,604	0	367	6,875,000	6,875,000	0	

LBP Summary

	Segment Rates	LBP Model
Future Value Benefits/LBP Cash Flow	$1,100,300,000	$1,100,300,003
Present Value/Market Value of Assets	$1,003,626,399	$965,093,887
YTM	1.620%	1.930%
MDuration	5.541	5.290
Average Rating	AA	BBB+
Total Return (mo.)	0.000%	0.000%
Total Return (ytd)		
Total Return (Inception)	0.000%	0.000%

LBP Holdings (% of LBP):

Largest Sectors

P&C	8.82%
Technology	7.57%
Banking	6.78%

Largest Issuers

VERIZON COMMUNICATIONS	1.66%
BROOKFIELD ASSET MAN INC	1.63%
HORACE MANN EDUCATORS CO	1.57%

Largest Issues

BAMACN 7.375% 03/01/2033	1.63%
HMN 4.500% 12/01/2025	1.57%
OKE 3.400% 09/01/2029	1.41%

LBP Rating Distribution *

AAA	0.02%
AA+	0.00%
AA	0.86%
AA-	0.00%
A+	1.62%
A	3.79%
A-	7.47%
BBB+	26.48%
BBB	59.75%
BBB-	0.00%

* Composite (Moody, SP, Fitch)

LBP Maturity Distribution

0.0 - 1.0	5.78%
1.0 - 2.0	7.33%
2.0 - 3.0	8.83%
3.0 - 4.0	9.99%
4.0 - 5.0	6.98%
5.0 - 6.0	10.40%
6.0 - 7.0	8.32%
7.0 - 8.0	9.28%
8.0 - 9.0	7.04%
9.0 - 10.0	7.93%
10.0 - 11.0	7.32%
11.0 - 12.0	10.18%
12.0 - 13.0	0.62%

Total Benefit Payments Paid

$0

Ryan ALM
Asset/Liability Management

Ryan ALM, Inc
Performance Attribution Report (PAR)

Horizon : 6/30/2017 to 9/30/2021		[redacted] Ryan LBP™	[redacted] Ryan CLI (Benchmark)	Difference
RISK				
1. Annualized Standard Deviation	%	4.25	1.11	3.14
2. Volatility to Benchmark (Beta)		1.85		
3. R-Square	%	23.14		
4. Correlation	%	23.14		
5. STD of Differential Return	bp	112		
6. Tracking Deviation	bp	51		
7. Shortfall Frequency	%	31.37		
8. Average Shortfall	bp	67		
REWARD				
9. Annualized Total Return	%	3.53	2.56	0.97
10. Cumulative Total Return	%	15.92	11.35	4.57
11. Excess Return Frequency	%	68.63		
12. Average Excess Return	bp	43		
RISK ADJUSTED RETURNS				
13. Sharpe's Ratio (old)		0.52	1.10	-0.59
14. Information Ratio		0.25		

All Calculations are based on Monthly returns

Ryan ALM's Value-Added

The Ryan ALM process best fits client objective by:

Securing benefits (net Retired Lives)
Reducing funded status volatility
Mitigating interest rate risk
Reducing funding costs
Buying Time

The Ryan ALM Team

Asset Management Team – 163 years of combined experience

Ron Ryan
Steve DeVito
Russell Kamp
Martha Monteagudo

Awards ***William Sharpe Index Lifetime Achievement Award***
Money Management Letter Lifetime Achievement
Book "U.S. Pension Crisis" – IP Gold Award
Bernstein Fabozzi Award of Excellence

Books ***The U.S. Pension Crisis by Ronald J. Ryan, CFA***
Fabozzi Handbook of Fixed Income Securities
(Chapter 51 – Cash Flow Matching)

Ryan ALM Research

Please visit our web site **RyanALM.com/Insights/White Papers** to view the numerous research papers that we have on pension solutions. We suggest the following:

- Maximize the Efficiency of Asset Allocation
- Pension Solutions: $ Duration Matching + CDI
- The Flaws of Bond Indexes
- Pension Discount Rates: ASC 715
- Best Way to Hedge Pension Inflation
- Chapter in Handbook of Fixed Income Securities: Cash Flow Matching
- Cash Flow is King!
- Buy Time!


Ryan ALM
Asset/Liability Management
Ryan ALM
The Solutions Company
CONTACT:
RUSS KAMP
201/675-8797
RKAMP@RYANALM.COM