OVERLAY SERVICES

SBCERA OVERLAY PROGRAM REVIEW

March 21st, 2025

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Discussion topics

What is the Russell Overlay and why do we have it?

- Review the structure of the Overlay Program (the "what")
- The three core components of the Overlay Program (the "why")
 - Systematic portfolio rebalancing
 - Periodic portfolio completion
 - Opportunistic risk management

The Overlay exists as an extension of the SBCERA Investment team and the Board

Exhibit A: Page 3 SBCERA OVERLAY PROGRAM

OVERLAY PRINCIPLES

Why use an Overlay?



RISK REDUCTION

Unintended exposures add risk, disciplined rebalancing can reduce this risk by approximately 75%¹



COST REDUCTION

Costs to trade futures is approximately 25%² of the cost to trade physical securities



RETURN ENHANCEMENT

Overlays allow for market risk premium or beta to be matched with derivatives



SIMPLIFICATION

Overlays make running multimanager portfolios easier and more efficient

¹Source: Russell Investments; Average annual tracking error calculated over Russell Investments' U.S. Overlay client universe from 1 Jan 2010 – 31 December 2023 is 73% ²Source: Russell Investments as of December 2022; S&P 500 physical trade cost is 5 bps; Costs of futures trading is 0 6 bps. MSCI World trading cost comparison of 10 bps vs 2 bps



SBCERA Program Overview Multiple channels of collaboration over our 18-year partnership

Program Component					
Systematic Rebalancing	Futures are held to bring the Plan's total exposure by asset class in line with policy targets and adjusted monthly against outputs of the Mcube (M³) model.				
Portfolio Completion	Larger futures positions are opened and closed to replace asset class exposure during rebalancing events or manager reallocations.				
Tactical Beta	Total return swaps Interest rate swaps Equity and Fixed Income futures				
Tactical Volatility	Equity and interest rate volatility (OTC options and swaptions) Systematic equity volatility Exotic volatility (variance swaps, volatility knock-outs, buffered accelerators)				
Strategic Collaboration	Market color and periodic macroeconomic updates. Proprietary risk signals (contrarian indicators, risk-on risk-off) Asset class specific positioning insight Strategist recommendations				
Access to RI "toolbox"	Total Return Swaps OTC Options Transition Management Commodity Futures and Swaps	Commodity Futures and Swaps FX Overlays (spots and forwards) Tactical trading Systematic strategies			

SYSTEMATIC **AND PERIODIC** RISK **REDUCTION**

OPPORTUNISTIC RISK **REDUCTION AND RETURN ENHANCEMENT**



Asset Summary Our view of Plan assets with the Russell Overlay

San Bernardino - San Bernardino

Asset Summary

Balance Date: 3/12/2025



Asset Class Total Market Value Cash Cash	Physical E 15,892.7 1,570.1 1,570.1	xposure 100.0% 9.9% 9.9%	Synthetic E 0.0 -2,041.4 -2,041.4	0.0% -12.8% -12.8%	Net Pos 15,892.7 471.3 -471.3	sition 100.0% -3.0% -3.0%	Policy T. 15,892.7 0.0 0.0	arget 100.00% 0.00% 0.00%
Equity Emerging Markets International Developed US Large Cap US Small Cap	2,935.4	18.5%	233.2	1.5%	3,168.7	19.9%	3,178.5	20.00%
	484.9	3.1%	148.5	0.9%	633.4	4.0%	635.7	4.00%
	596.9	3.8%	40.7	0.3%	637.6	4.0%	635.7	4.00%
	1,853.6	11.7%	-105.1	-0.7%	1,748.6	11.0%	1,748.2	11.00%
	0.0	0.0%	149.0	0.9%	149.0	0.9%	158.9	1.00%
Fixed	4,152.0	26.1%	1,808.2	11.4%	5,960.2	37.5%	5,610.1	35.30%
Global ex US Fixed Income	1,966.5	12.4%	1,323.8	8.3%	3,290.2	20.7%	3,273.9	20.60%
High Yield	1,839.4	11.6%	0.0	0.0%	1,839.4	11.6%	1,509.8	9.50%
US Fixed Income	346.1	2.2%	484.4	3.0%	830.5	5.2%	826.4	5.20%
Other Alternatives Commodities Infrastructure Private Equity Real Estate Tactical Cash	7,235.2 3.1 748.4 193.4 3,150.5 597.0 2,542.8	45.5% 0.0% 4.7% 1.2% 19.8% 3.8% 16.0%	0.0 0.0 0.0 0.0 0.0 0.0	0.0% 0.0% 0.0% 0.0% 0.0% 0.0%	7,235.2 3.1 748.4 193.4 3,150.5 597.0 2,542.8	45.5% 0.0% 4.7% 1.2% 19.8% 3.8% 16.0%	7,104.0 0.0 731.1 174.8 3,067.3 588.0 2,542.8	44.70% 0.00% 4.60% 1.10% 19.30% 3.70% 16.00%

15,892,703,529 Total Market Value

Asset Class Name	<u>Physical</u>	<u>Overlay</u>	Physical + Overlay	Net Pct	<u>Target</u>	Target P	<u>ct</u>
Emerging Markets	484,916,553	148,522,860	633,439,413	3.99%	635,708,141.2	4.00%	Policy targets
International Developed	596,878,091	40,743,124	637,621,216	4.01%	635,708,141.2	4.00%	from M ³
US Large Cap	1,853,625,434	-105,055,150	1,748,570,284	11.00%	1,748,197,388.2	11.00%	110111111
US Small Cap	0	149,035,950	149,036,950	0.94%	158,927,035.3	1.00%	
Global ex US Fixed Income	1,966,473,657	1,323,763,856	3,290,237,513	20.70%	3,273,896,927.0	20.60%	
US Fixed Income	346,079,245	484,428,572	830,507,816	5.23%	826,420,583.5	5.20%	



CORE COMPONENTS OF THE RUSSELL OVERLAY

SYSTEMATIC PORTFOLIO REBALANCING



Systematic Portfolio Rebalancing

Total exposure by asset class adjusted to match informed policy targets



Portfolio rebalancing

On a monthly basis, the Russell Overlay is adjusted so that the Plan's total exposure by asset class is in line with the outputs of the M³ model.

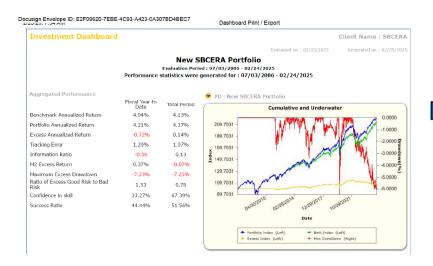
The use of M³ model and associated rebalancing guidelines are both Board approved frameworks. The Overlay is an *extension* of the Board in that it is used to enforce adherence to that model and those guidelines.

4. US Fixed 14.7%

a) Core US Fixed 5.2%



SBERA investment team runs M3 model





SBCERA team delivers informed policy targets to Russell



Japanese Yen Hedge Ratio 65%



Systematic Portfolio Rebalancing

Total exposure by asset class adjusted to match informed policy targets



Portfolio rebalancing

On a monthly basis, the Russell Overlay is adjusted so that the Plan's total exposure by asset class is in line with the outputs of the M³ model.



Rebalancing guidelines dictate that the Plan's exposure by asset class is brought in line with informed policy targets.

San Bernardino - San Bernardino

Asset Summary

Balance

e Date: 2/25/2025				Investme	nts
	<u>Physical</u>				
<u>Class</u>	<u>Exposure</u>	Synthetic Exposure	Net Position	Policy Target	Rebalancing
larket Value	16,003.2 100.00%	0.0 0.00%	16.003.2 100.00%	16.003.2 100.00%	

<u>Asset Class</u>	Exposure	Synthetic Exposure	Net Position	Policy Target	Rebalancing Trade
Total Market Value	16,003.2 100.00%	0.0 0.00%	16,003.2 100.00%	16,003.2 100.00%	
Equity International Developed	3,069.2 19.18% 599.8 3.75%	132.7 0.83% 59.9 0.37%	3,201.9 20.01% 659.6 4.12%	3,200.6 20.00% 640.1 4.00%	Total Trade -19.5 Sell

Total exposure – Policy Target = Indicated rebalance

659.6mm - 640.1mm **1**9.5 indicated sell

Systematic Portfolio Rebalancing

Total exposure by asset class adjusted to match informed policy targets



RISK REDUCTION The Overlay performs the Board-approved rebalancing function in a cost-effective and efficient manner.



In accordance with rebalancing guidelines, the investment team needs to reduce International Developed exposure by selling \$19.5mm

With the Overlay

 Confirm indicated rebalance trade with Russell and execute immediately (1 global trading day)

Without the Overlay

- Adherence to policy targets either isn't enforced or is enforced using cash rebalances among managers.
- Select asset manager for target redemption.
- Navigate asset manager's redemption policies.
- Submit Letters of Direction (LODs).
- Determine trade and settlement cadence.
- Ongoing communication with source manager.
- Sweep proceeds to cash account.
- Coordinate contributions to target managers.

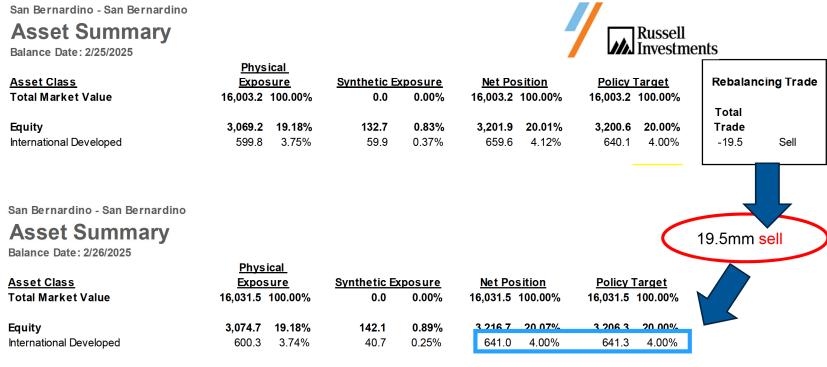


Systematic Portfolio Rebalancing

Total exposure by asset class adjusted to informed policy targets

The Policymakers
Perspective

The Plan holds futures in the Russell Overlay to ensure total exposure at the asset class level is in line with M³ policy targets. Futures positions are rebalanced monthly as M³ policy targets change and total asset class exposure drifts.



Total Plan exposure to International Developed = M³ target

CORE COMPONENTS OF THE RUSSELL OVERLAY

PERIODIC PORTFOLIO COMPLETION



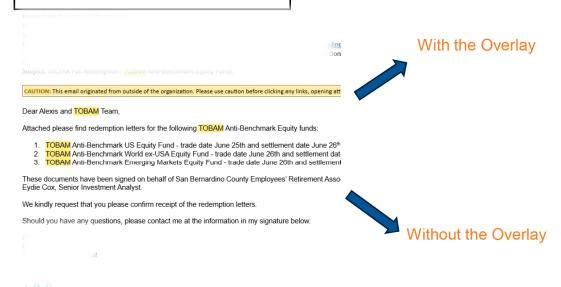
Periodic Portfolio Completion

Helping manage SAA updates or large redemptions/contributions



Portfolio Completion Periodically, the Overlay is used to passively adjust asset class exposure given a new SAA or reallocations between asset managers.

SBERA investment team instructs full redemption from manager



- Manager exposure can be passively replicated until an appropriate replacement vehicle has been identified and funded.
- Investment staff need to simultaneously evaluate manager terminations and consider how the market exposure of the terminated manager will be replaced.
- Asset class exposure must be carried in a temporary investment vehicle
 - OR -
- The Plan experiences asset allocation drift until the Investment team makes an informed investment decision and funds are redeployed



Periodic Portfolio Completion

Helping manage SAA updates or large redemptions/contributions



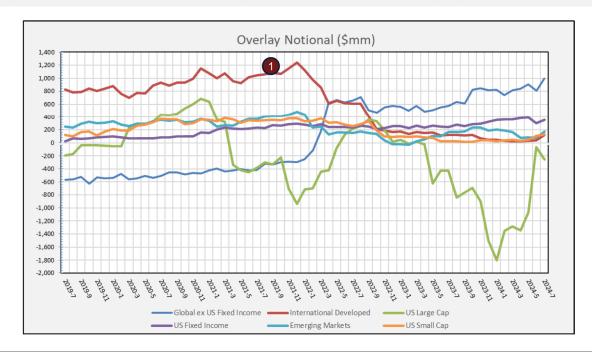
Portfolio Completion Periodically, the Overlay is used to adjust passively replace the exposure of managers that have been terminated or introduce exposure in advance of manager selection.

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Strategic Allocation to TOBAM-EM

As the Plan increased its allocation to TOBAM Emerging Markets in 2021, the distance between the Plan's policy targets and its funded exposure decreased, and the beta Overlay was downsized in turn.

The beta Overlay needed to do less "work" to help the Plan achieve its policy exposure.



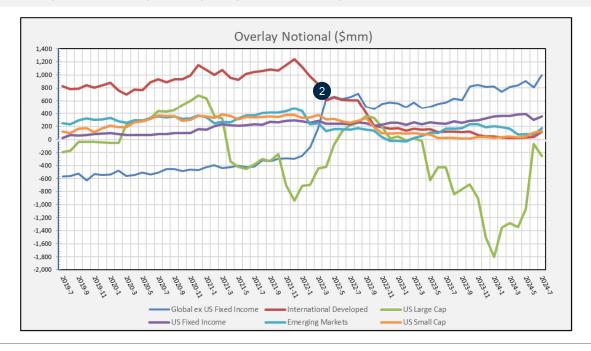
Periodic Portfolio Completion

Helping manage SAA updates or large redemptions/contributions

² Global High Yield Ex-US Policy Targets Shift

	Jan	'22	Feb	'22	Mar	'22	Apr	'22
	Policy	Target	Policy	Target	Policy 1	Target	Policy 1	Target
Fixed EM High Yield CDX Global ex US Fixed Income High Yield US Fixed Income	4,463.7 0.0 2,390.0 1,335.6 738.1	31.75 % 0.00 % 17.00 % 9.50 % 5.25 %	4,743.9 0.0 2,670.6 1,335.3 737.9	33.75 % 0.00 % 19.00 % 9.50 % 5.25 %	4,740.5 0.0 2,669.7 1,334.4 737.4	0.00%	3,301,6 1,306.9	38.50 % 0.00 % 24.00 % 9.50 % 5.00 %

As policy targets were increased for Global Ex-US fixed income in 2022, the beta Overlay acted as "first mover". Additional Global Fixed Income exposure was opened quickly and efficiently via futures.



Periodic Portfolio Completion

Helping manage SAA updates or large redemptions/contributions

The Policymakers
Perspective

With the Overlay in place, changes to the Plan's SAA and/or manager terminations/fundings do not have to come at the sacrifice of a rigorous investment selection process.

The Overlay acts as a "first mover", functioning as a temporary investment vehicle while conviction investment recommendations are developed.

- Board approved updates to the Plan's SAA can be quickly and efficiently implemented with the Overlay acting as intermediary exposure between the legacy and target asset classes.
- With the Overlay in place, SAA implementation is not conditional on manager selection.
- A rigorous investment selection process can persist when the Overlay can step in to provide temporary passive market exposure in transition periods between asset managers

CORE COMPONENTS OF THE RUSSELL OVERLAY

OPPORTUNISTIC RISK MANAGEMENT



Opportunistic risk management

The Policymakers
Perspective

Derivatives are be used to shape to Plan's risk position, from a total portfolio perspective. Hedging positions deployed in one asset class influence Plan's risk appetite in other asset classes.

Opportunistic positions are used to "fine tune" the Plan's risk position from a total portfolio perspective.

Selected Tactical positions

Underlying Benchmark		Benchmark	Period Instrument (s)		Investment Expression
	MSCI EM ETF	Equity Replacement	2015-2016	Buffered Accelerators (short put, long call, short put) Risk Reversals (short put, long call)	Long emerging markets equity
	S&P 500 Russell 2000 Equity Replacement		2020	Call spreads (long call, short call)	Long US equity
	US rates	Interest rate hedging	2013-2016	Payer swaptions	Hedge against rates moving off zero lower bound.

¹ Sample period: 8/1/2015-present



Exhibit A: Page 19 CONCLUSION Russell Investments / 19

Discussion topics

What is the Russell Overlay and why do we have it?

- The three core components of the Overlay Program (the "why")
 - Systematic portfolio rebalancing

The Overlay is a tool used to bring total Plan exposure in line with M³ informed rebalancing targets. Systematic rebalancing using the Overlay is optically no different than buying assets to which the Plan is underweight vs. target or selling assets to which the Plan is overweight vs. target.

Periodic portfolio completion

The Overlay acts as an extension of the Board in that it allows material SAA changes or manager redemptions/subscriptions to be effected without compromising the Plan staff's ability to perform through investment selection.

The Overlay acts as a "first-mover", increasing or decreasing market exposure in line with the target SAA.

Opportunistic risk management

The Overlay can be deployed to opportunistically migrate risk between different part of the Plan's portfolio.



Long-term Value Add

The Overlay has been accretive to Plan returns over time

Client Performance

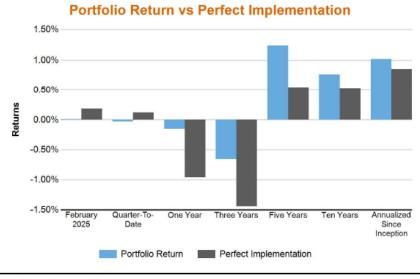
San Bernardino - San Bernardino

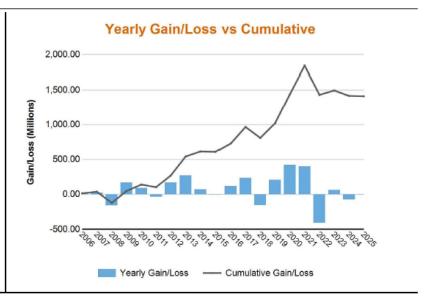
As of 28-Feb-2025

Time Period	Gain/Loss	Portfolio Return*
February 2025	1,341,402.89	0.01%
Quarter-To-Date	-4,989,782.21	-0.03%
One Year	-23,881,474.74	-0.15%
Three Years	-281,286,040.59	-0.66%
Five Years	592,573,789.42	1.23%
Ten Years	714,407,057.41	0.76%
Annualized Since Inception	75,733,964.32	1.02%
Cumulative Since Inception	1,413,424,013.53	20.92%

Because the Plan holds Cash, Overlay positions are structurally biased towards being net long.

Russell Investments





Inception Date: 06-Jul-2006



Developments in Risk Reporting

Additional reporting will include a view of opportunistic risk management positions

OTC Positions

All values denominated in base currency

Exposure Date	Clientplan	Туре	Trade Date	Maturity Date	Counterparty	Underlying	Local Currency	FXRate	Market Value	Current Notional
							<u> </u>			
7/13/2022	San Bernardino	Option	7/30/2021	7/29/2022	Goldman Sachs	Euro Stoxx Opt Pxy	EUR	1.0109496	-3,697,908	50,194,475
7/13/2022	San Bernardino	Option	9/28/2021	9/30/2022	Goldman Sachs	Euro Stoxx Opt Pxy	EUR	1.0109496	-5,065,488	62,572,869
7/13/2022	San Bernardino	Option	10/29/2021	10/31/2022	Goldman Sachs	Euro Stoxx Opt Pxy	EUR	1.0109496	-6,799,606	56,863,793
7/13/2022	San Bernardino	Option	9/28/2021	9/30/2022	Goldman Sachs	FTSE Opt Strat	GBP	1.1948502	341,789	13,424,740
7/13/2022	San Bernardino	Option	7/30/2021	7/29/2022	Morgan Stanley	FTSE Opt Strat	GBP	1.1948502	591,543	26,097,011
7/13/2022	San Bernardino	Option	10/29/2021	10/31/2022	Morgan Stanley	FTSE Opt Strat	GBP	1.1948502	80,991	17,264,045
7/13/2022	San Bernardino Options	Swaption	4/3/2013	4/6/2023	Barclays	SBCERA Swaption Proxy	USD	1	493,152	-24,506,848
7/13/2022	San Bernardino Options	Swaption	5/20/2013	5/24/2023	Barclays	SBCERA Swaption Proxy	USD	1	446,844	-24,553,156
7/13/2022	San Bernardino Options	Swaption	5/2/2013	5/3/2023	BNP Paribas	SBCERA Swaption Proxy	USD	1	583,430	-24,416,570
7/13/2022	San Bernardino Options	Swaption	12/19/2013	12/19/2023	BNP Paribas	SBCERA Swaption Proxy	USD	1	1,585,233	-148,414,767
7/13/2022	San Bernardino Options	Swaption	4/4/2013	4/5/2023	Goldman Sachs	SBCERA Swaption Proxy	USD	1	717,002	-24,282,998
7/13/2022	San Bernardino Options	Swaption	3/27/2013	3/27/2023	Morgan Stanley	SBCERA Swaption Proxy	USD	1	429,218	-24,570,782
7/13/2022	San Bernardino Options	Swaption	1/18/2017	1/19/2027	Morgan Stanley	SBCERA Swaption Proxy	USD	1	8,819,334	-91,180,667

 Regular reporting will be produced to give policymakers a view into the composition of the opportunistic risk management sleeve at any point in time.



Developments in Risk Reporting

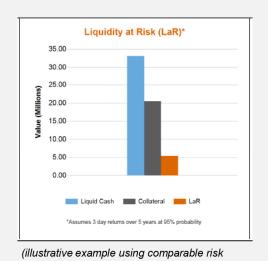
Future reporting frameworks for Overlay specific and total portfolio risk lenses

Risk reporting enhancements in development:

Value At Risk (VaR)

Point in time estimates of market value at risk using historical returns and static assumptions.

A simple evaluation view of Overlay exposure in isolation.



Total Portfolio Risk

The SBCERA investment team is actively developing a total portfolio risk framework using StateStreet's holdings-based risk analytics platform **truView**.

truView will allow the Investment team to wholistically evaluate the Plan's risk position inclusive of the Russell Overlay and all portfolio assets.

Market risk platform

Our proprietary ex-ante risk platform, truView®, supports all asset types, including public and private market investments, bringing together firm-wide exposure and transparency for internally and externally managed funds into one easy-to-use platform.

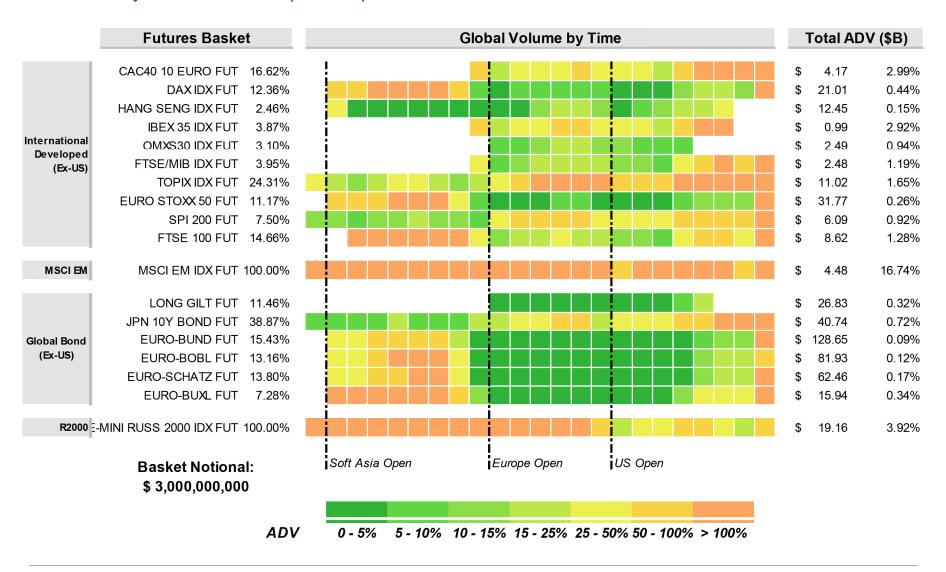
- Analytics: These include the calculation of security-level market exposures, sensitivity, liquidity measurements, ESG
 metrics, and risk including value-at-risk, stress testing, backtesting, benchmark correlations, standard deviation, risk
 contribution, tracking error and style analysis.
- Reporting: Analytics are delivered within our dynamic user interface, providing easy to use tools, extensive range of
 measures and aggregations that allow for interactive management and flexible reporting capabilities. Analytics can be
 configured within online dashboards and exported directly into Excel, PDF or CSV formats. Results are also available
 through file-based delivery and APIs.

measure)

Exhibit A: Page 24 **APPENDIX** Russell Investments *l* 24

Global Futures Liquidity

Beta overlays transact in deep and liquid markets



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ANY QUESTIONS?