

# CITY OF RICHMOND 457B DEFERRED

## Screens Summary (Data as of 12-31-2019)

⊖ Fund Removed from Approved List    ⚠ Fund on Watch List

Name	Ticker	Asset Class	Trailing Performance and Risk				Management			Style		Expense				
			1 Yr	3 Yr	5 Yr	10 Yr	Pass/ Fail	Std Dev 3 Yr %	Beta 3 Yr %	Tenure	Pass/ Fail	Style Box	Pass/ Fail	Exp Ratio	Pass/ Fail	
<b>US Stock</b>																
DFA US Core Equity 1 I <i>percentile rank</i> <i># of funds in category</i>	DFEOX	Large Blend	30.18 46 1,394	13.22 59 1,210	10.45 46 1,065	13.22 23 815	✔	13.32	1.09	7.84	✔	☒	✔	0.19	✔	
Vanguard FTSE Social Index Admiral <i>percentile rank</i> <i># of funds in category</i>	VFTAX	Large Blend Index	- - 1,394	- - 1,210	- - 1,065	- - 815	—	-	-	4.03	✔	☒	✖	0.14	✔	
American Funds Growth Fund of Amer R6 <i>percentile rank</i> <i># of funds in category</i>	RGAGX	Large Growth	28.54 80 1,363	16.57 67 1,230	12.75 44 1,098	13.31 56 822	✔	13.11	0.96	26.18	✔	☒	✔	0.32	✔	
State St Russell Lg Cp Val® Indx NL CI C <i>percentile rank</i> <i># of funds in category</i>		Large Value	26.56 35 1,215	9.70 57 1,097	8.31 45 951	11.79 28 697	✔	12.01	1.00	20.94	✔	☒	✔	-	—	
ClearBridge Mid Cap Growth IS <i>percentile rank</i> <i># of funds in category</i>	LCMIX	Mid-Cap Growth	30.95 62 619	14.98 61 566	9.31 71 502	- - 386	✔	15.20	1.06	9.34	✔	☒	✔	0.75	✔	
Vanguard Mid-Cap Value Index Admiral <i>percentile rank</i> <i># of funds in category</i>	VMVAX	Mid-Cap Value	27.99 32 422	9.47 18 377	8.23 25 342	- - 233	✔	13.39	1.02	13.38	✔	☒	✔	0.07	✔	
State St Russell Sm Cap® Gr Indx NL CI C <i>percentile rank</i> <i># of funds in category</i>		Small Growth	28.44 43 642	12.35 58 574	9.26 62 509	12.89 50 383	✔	16.58	1.00	10.41	✔	☒	✔	-	—	
State St Russell Sm Cp® Val Indx NL CI C <i>percentile rank</i> <i># of funds in category</i>		Small Value	22.24 46 419	4.79 35 387	6.93 26 346	10.53 38 237	✔	15.88	1.00	10.41	✔	☒	✔	-	—	
<b>Non-US Stock</b>																
Invesco Oppenheimer Developing Mkts R6 <i>percentile rank</i> <i># of funds in category</i>	ODVIX	Diversified Emerging Mkts	24.53 20 832	14.13 13 711	6.62 21 577	- - 243	✔	13.45	0.90	12.68	✔	☒	✔	0.83	✔	
American Funds Europacific Growth R6 <i>percentile rank</i> <i># of funds in category</i>	REGGX	Foreign Large Blend	27.40 59 469	12.45 47 405	7.41 44 338	6.73 55 249	✔	12.25	1.07	18.59	✔	☒	✔	0.49	✔	
Vanguard International Growth Adm <i>percentile rank</i> <i># of funds in category</i>	VWILX	Foreign Large Growth	31.48 22 469	18.06 4 405	10.76 5 338	8.84 11 249	✔	15.38	1.30	16.91	✔	☒	✔	0.32	✔	
DFA International Value I <i>percentile rank</i> <i># of funds in category</i>	DFIVX	Foreign Large Value	15.67 77 347	6.36 68 305	4.09 42 253	4.14 56 165	✔	13.59	1.19	9.84	✔	☒	✔	0.43	✔	
American Funds New Perspective R6 <i>percentile rank</i> <i># of funds in category</i>	RNPGX	World Stock	30.48 19 876	16.79 13 728	11.45 10 610	11.15 7 370	✔	11.96	0.96	19.09	✔	☒	✔	0.44	✔	

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			1 Yr	3 Yr	5 Yr	10 Yr	Pass/ Fail	Std Dev 3 Yr %	Beta 3 Yr %	Tenure	Pass/ Fail	Style Box	Pass/ Fail	Exp Ratio	Pass/ Fail	
<b>Alternative</b>																
PIMCO Commodity Real Ret Strat Instl <i>percentile rank</i> <i># of funds in category</i>	PCRIX	Commodities Broad Basket	12.27 10 131	-0.20 47 107	-3.29 47 97	-3.32 19 36	✔	9.75	1.11	5.00	✔	—	—	1.46	✖	
Vanguard Real Estate Index Admiral <i>percentile rank</i> <i># of funds in category</i>	VGSLX	Real Estate	28.94 29 259	8.37 46 224	7.17 38 200	11.97 29 138	✔	12.06	0.98	23.65	✔	—	✔	0.11	✔	
<b>Fixed Income</b>																
PIMCO High Yield Instl <i>percentile rank</i> <i># of funds in category</i>	PHIYX	High Yield Bond	14.93 22 713	6.25 15 618	5.81 15 543	7.03 24 340	✔	4.13	0.97	9.98	✔	—	—	0.59	✔	
BlackRock Inflation Protected Bond K <i>percentile rank</i> <i># of funds in category</i>	BPLBX	Inflation- Protected Bond	8.28 39 221	3.12 37 194	2.32 42 163	3.05 40 104	✔	2.92	0.96	2.88	✖	—	—	0.45	✔	
Baird Aggregate Bond Instl <i>percentile rank</i> <i># of funds in category</i>	BAGIX	Intermediate- Term Bond	9.48 15 431	4.38 10 383	3.43 8 328	4.65 8 252	✔	2.89	0.99	19.27	✔	☒	—	0.30	✔	
PIMCO Income Instl <i>percentile rank</i> <i># of funds in category</i>	PIMIX	Multisector Bond	8.05 78 302	5.68 20 265	5.66 6 223	8.76 1 120	✔	1.92	0.21	12.76	✔	—	—	1.05	✔	
Federated Government Ultrashrt Dur R6 <i>percentile rank</i> <i># of funds in category</i>	FGULX	Ultrashort Bond	2.16 93 201	1.71 85 161	— — 130	— — 62	✔	0.24	0.02	22.49	✔	—	—	0.24	✔	
Templeton Global Bond R6 <i>percentile rank</i> <i># of funds in category</i>	FBNRX	World Bond	1.01 94 316	1.79 82 283	1.59 83 236	— — 80	✔	6.28	-0.94	18.01	✔	—	—	0.49	✔	
<b>Target Date</b>																
Vanguard Target Retirement 2020 Inv <i>percentile rank</i> <i># of funds in category</i>	VTWXX	Target Date	17.63 28 234	8.72 17 199	6.42 16 157	8.03 9 93	✔	6.01	1.05	6.86	✔	—	✔	0.13	✔	
Vanguard Target Retirement 2025 Inv <i>percentile rank</i> <i># of funds in category</i>	VTTVX	Target Date	19.63 22 233	9.57 16 197	6.99 14 158	8.59 12 83	✔	7.05	1.07	6.86	✔	—	✔	0.13	✔	
Vanguard Target Retirement 2030 Inv <i>percentile rank</i> <i># of funds in category</i>	VTHRXX	Target Date	21.07 32 242	10.24 22 207	7.41 24 165	9.07 15 95	✔	7.93	1.03	6.86	✔	—	✔	0.14	✔	
Vanguard Target Retirement 2035 Inv <i>percentile rank</i> <i># of funds in category</i>	VTTXX	Target Date	22.44 42 230	10.86 30 194	7.81 28 155	9.54 15 80	✔	8.79	0.99	6.86	✔	—	✔	0.14	✔	

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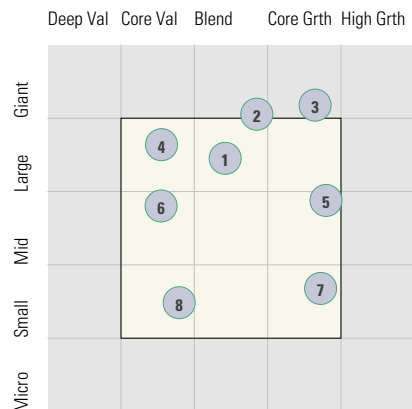
Name	Ticker	Asset Class	Trailing Performance and Risk				Management			Style		Expense				
			1 Yr	3 Yr	5 Yr	10 Yr	Pass/ Fail	Std Dev 3 Yr %	Beta 3 Yr %	Tenure	Pass/ Fail	Style Box	Pass/ Fail	Exp Ratio	Pass/ Fail	
Vanguard Target Retirement 2040 Inv <i>percentile rank</i> <i># of funds in category</i>	VFORX	Target Date	23.86 43 242	11.48 29 207	8.20 25 165	9.87 17 95	✔	9.69	0.99	6.86	✔	—	✔	0.14	✔	
Vanguard Target Retirement 2045 Inv <i>percentile rank</i> <i># of funds in category</i>	VTIVX	Target Date	24.94 43 230	11.80 26 194	8.41 22 155	9.98 15 79	✔	10.32	1.00	6.86	✔	—	✔	0.15	✔	
Vanguard Target Retirement 2050 Inv <i>percentile rank</i> <i># of funds in category</i>	VFIFX	Target Date	24.98 47 242	11.80 32 207	8.41 26 165	9.98 18 77	✔	10.34	0.99	6.86	✔	—	✔	0.15	✔	
Vanguard Target Retirement 2055 Inv <i>percentile rank</i> <i># of funds in category</i>	VFFVX	Target Date	24.98 51 230	11.80 39 192	8.38 33 150	— — 15	✔	10.32	0.98	6.86	✔	—	✔	0.15	✔	
Vanguard Target Retirement 2060 Inv <i>percentile rank</i> <i># of funds in category</i>	VTTSX	Target Date	24.96 66 216	11.79 43 147	8.38 60 34	— — —	✔	10.33	0.99	6.86	✔	—	✔	0.15	✔	
Vanguard Target Retirement 2065 Inv <i>percentile rank</i> <i># of funds in category</i>	VLVX	Target Date	24.96 64 216	— — 147	— — 34	— — —	—	—	—	2.47	✖	—	✔	0.15	✔	
Vanguard Target Retirement Income Inv <i>percentile rank</i> <i># of funds in category</i>	VTINX	Target Date	13.16 49 184	6.36 36 158	4.80 28 132	5.82 23 88	✔	3.55	0.84	6.86	✔	—	✔	0.12	✔	
<b>Balanced</b>																
Vanguard LifeStrategy Cnsvr Gr Inv <i>percentile rank</i> <i># of funds in category</i>	VSCGX	Target Risk	15.68 36 562	7.59 16 509	5.67 18 419	6.62 29 270	✔	4.58	0.98	25.27	✔	—	✔	0.12	✔	
Vanguard LifeStrategy Growth Inv <i>percentile rank</i> <i># of funds in category</i>	VASGX	Target Risk	23.13 32 334	10.97 19 304	7.91 19 274	9.35 23 193	✔	9.15	1.01	25.27	✔	—	✔	0.14	✔	
Vanguard LifeStrategy Income Inv <i>percentile rank</i> <i># of funds in category</i>	VASIX	Target Risk	12.05 35 200	5.85 18 183	4.45 18 158	5.18 43 91	✔	2.82	0.32	25.27	✔	—	✔	0.11	✔	
Vanguard LifeStrategy Moderate Gr Inv <i>percentile rank</i> <i># of funds in category</i>	VSMGX	Target Risk	19.37 53 699	9.30 37 644	6.82 34 571	8.08 44 420	✔	6.81	1.00	25.27	✔	—	✔	0.13	✔	

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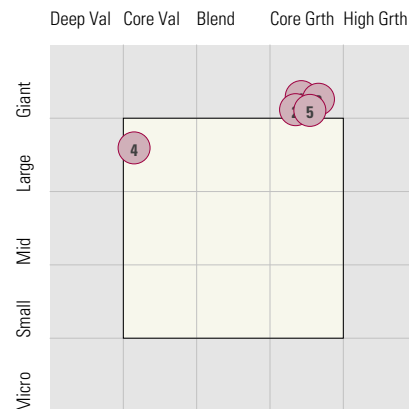
## Style Analysis (Data as of 12-31-2019)

### Style Analysis

Morningstar Style Box US Stock



Morningstar Style Box Non-US Stock



#### US Stock Funds

Fund	Category	Super Sectors %			Asset Allocation %			Avg Mkt Cap M\$
		Cyclical	Defensive	Sensitive	Cash	US Stock	Foreign	
1 DFA US Core Equity 1 I	Large Blend	32.80	21.58	45.61	0.64	98.26	1.10	23.70
2 Vanguard FTSE Social Index Admiral	Large Blend Index	33.03	23.56	43.41	0.26	97.98	1.74	—
3 American Funds Growth Fund of Amer R6	Large Growth	27.01	21.37	51.63	4.69	82.96	11.39	50.19
4 State St Russell Lg Cp Val® Indx NL CI C	Large Value	38.68	28.77	32.54	1.20	97.06	1.67	51.12
5 ClearBridge Mid Cap Growth IS	Mid-Cap Growth	28.17	20.57	51.26	0.33	95.25	4.42	7.51
6 Vanguard Mid-Cap Value Index Admiral	Mid-Cap Value	47.80	23.91	28.29	0.21	97.32	2.47	9.97
7 State St Russell Sm Cap® Gr Indx NL CI C	Small Growth	24.12	36.29	39.58	0.98	97.89	1.12	1.57
8 State St Russell Sm Cp® Val Indx NL CI C	Small Value	54.33	14.52	31.15	0.69	98.22	1.09	1.32

#### Non-US Stock Funds

Fund	Category	Super Sectors %			Regional Exposure %			Market Maturity %		
		Cyclical	Defensive	Sensitive	Americas	Greater Asia	Greater Europe	Developed	EM%	Avg Mkt Cap M\$
1 Invesco Oppenheimer Developing Mkts R6	Diversified Emerging Mkts	62.18	12.38	25.44	18.25	59.19	22.56	27.27	72.73	18.22
2 American Funds Europacific Growth R6	Foreign Large Blend	40.93	20.70	38.37	11.55	47.62	40.81	71.76	28.24	39.57
3 Vanguard International Growth Adm	Foreign Large Growth	44.59	20.93	34.49	13.68	38.62	47.71	75.72	24.28	31.23
4 DFA International Value I	Foreign Large Value	61.00	9.70	29.29	9.19	32.49	58.33	99.57	0.43	28.46
5 American Funds New Perspective R6	World Stock	35.92	22.64	41.44	58.10	14.02	27.87	94.81	5.19	55.05

#### Fixed Income Funds

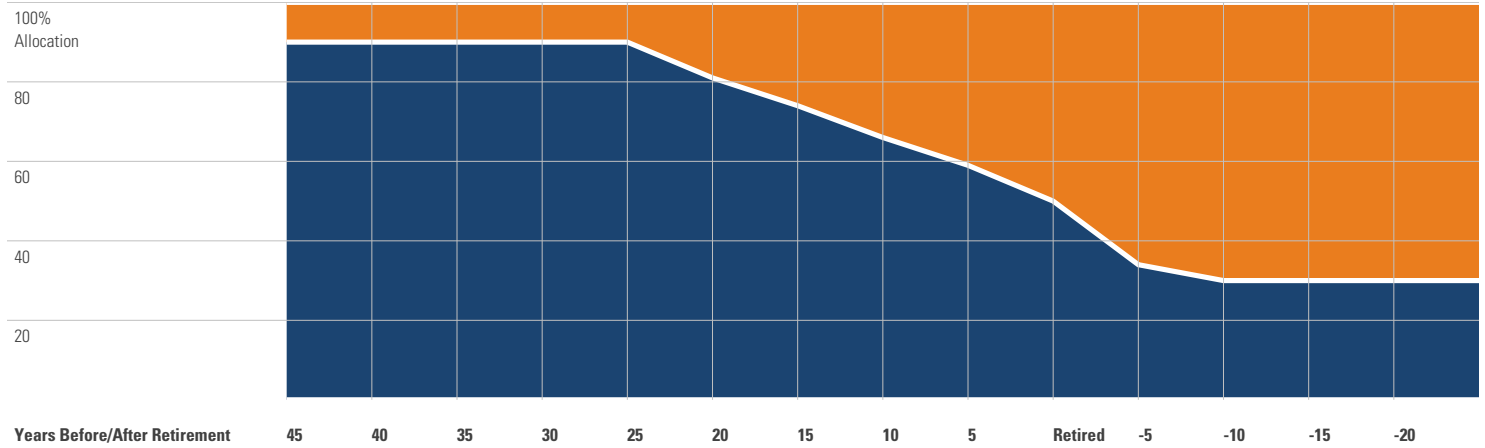
Fund	Category	Super Sectors %				Other Stats	Credit Quality %		
		US Govt Debt	Mtg	US Credit	Non US		Avg Eff Duration	Inv Grade	Below Inv Grade
1 PIMCO High Yield Instl	High Yield Bond	5.06	0.00	79.17	0.00	2.85	13.00	87.00	0.00
2 BlackRock Inflation Protected Bond K	Inflation-Protected Bond	92.27	3.09	0.17	0.00	7.74	99.78	0.22	0.00
3 Baird Aggregate Bond Inst	Intermediate-Term Bond	24.33	25.13	41.86	0.00	5.87	99.70	0.30	0.00
4 PIMCO Income Instl	Multisector Bond	23.47	13.75	18.66	0.00	0.41	81.00	19.00	0.00
5 Federated Government Ultrashrt Dur R6	Ultrashort Bond	15.26	56.99	0.00	0.00	0.38	100.00	0.00	0.00
6 Templeton Global Bond R6	World Bond	76.93	0.00	0.06	0.00	-1.39	85.16	17.29	-2.44

# CITY OF RICHMOND 457B DEFERRED

## Target Date Analysis (Data as of 12-31-2019)

### Target Date Allocation

● Stocks ● Cash ● Bonds ● Other



### Target Date Portfolio Data

#### Asset Allocation %

	Total Stock	US Stock	Non-US Stock	Total Bond	Infl Prot Bond	HY Bond	Cash	Other	Avg Mkt Cap \$M
Vanguard Target Retirement 2020 Inv	50.40	30.13	20.27	47.34	14.46	0.00	2.01	0.23	33.09
Vanguard Target Retirement 2025 Inv	60.17	36.03	24.14	37.80	0.00	0.00	1.79	0.23	33.17
Vanguard Target Retirement 2030 Inv	67.57	40.46	27.11	30.56	0.00	0.00	1.68	0.19	33.19
Vanguard Target Retirement 2035 Inv	74.98	44.91	30.07	23.31	0.00	0.00	1.56	0.16	33.13
Vanguard Target Retirement 2040 Inv	82.25	49.42	32.83	16.21	0.00	0.00	1.43	0.13	33.06
Vanguard Target Retirement 2045 Inv	88.93	53.47	35.46	9.66	0.00	0.00	1.32	0.09	33.07
Vanguard Target Retirement 2050 Inv	88.93	53.47	35.46	9.65	0.00	0.00	1.32	0.09	33.08
Vanguard Target Retirement 2055 Inv	88.95	53.49	35.46	9.63	0.00	0.00	1.33	0.09	33.04
Vanguard Target Retirement 2060 Inv	88.89	53.45	35.44	9.65	0.00	0.00	1.36	0.09	33.03
Vanguard Target Retirement 2065 Inv	88.88	53.45	35.43	9.70	0.00	0.00	1.33	0.09	—
Vanguard Target Retirement Income Inv	30.17	17.99	12.18	67.09	23.02	0.00	2.46	0.28	33.08