CITY OF NEWPORT BEACH
FINANCE COMMITTEE
STAFF REPORT

Agenda Item No. 5A
November 29, 2018

TO: HONORABLE CHAIR AND MEMBERS OF THE COMMITTEE

FROM: Finance Department
Dan Matusiewicz, Finance Director
949-644-3123 or danm@newportbeachca.gov

SUBJECT: **PRELIMINARY PENSION FUNDING RECOMMENDATION – FISCAL YEAR 2019/20**

SUMMARY:

Each year, staff analyzes the most recent California Public Employees' Retirement System (CalPERS) pension actuarial valuations and evaluates opportunities to more efficiently amortize the City's unfunded accrued liability (UAL) compared to the default minimum contribution schedules proposed by CalPERS.

Staff has evaluated the merits of pursuing the default payment option, three additional direct payment options to CalPERS, and considered the option of locally investing our discretionary payments into a Section 115 pension prefunding trust. Staff recommends Option 3A which consolidates all amortization bases, except the 2013 Fresh Start base, into a new 2018 partial Fresh Start base as is illustrated in Appendix A-1. Option 3A further contemplates a level dollar payment of $35 million annually for 14 years followed by a final payment of $22.8 million in the fifteenth year (see proposed payment schedule in Appendix C-4). Under this option the City is not committed to continue additional discretionary payments (ADPs) into the future. Option 3A represents a savings of $45 million over the default schedule realized over 15 years. See the proposed payment option comparison in Appendix B-1.

Staff considered the potential benefits of using Section 115 pension benefit trust to prefund CalPERS contributions, but ultimately concluded that it did not add value to the City's pension funding efforts because the General Fund Contingency Reserve already provides funding flexibility when needed, a Section 115 pension trust would have a higher cost of investing, would be subject to high market volatility risk, and would not likely outperform the $360 billion CalPERS pension trust.

RECOMMENDED ACTION:

Provide feedback to staff regarding recommendations.

DISCUSSION:

The City's pension obligations are and will continue to be one of the City's largest financial concerns for decades to come so it is important that it receives appropriate and regular attention. With its current participants and benefit levels, the City's accrued pension liability (AL) is approaching 1 billion dollars and has been growing at an annual rate of 6.5% per year for the last ten years. Meanwhile, General Fund revenue has only grown 3.7% annually for the same ten-year period (2007-2017). See Appendix D-1.

The City's current unfunded accrued pension liability (UAL) is significant at $320 million. The funded status is improving slowly, despite the 0.125% reduction in the discount rate, but the overall plan funded status of 66% is still significantly low by industry standards. The silver lining is that the City Council has been proactive and aggressive in addressing the ongoing pension crisis. By proactively managing the repayment of the unfunded pension liability and influencing CalPERS policies, the City is well positioned to weather the pension challenges known today.

The most recent actuarial report presents the results of the June 30, 2017, CalPERS valuation of both the Miscellaneous and the Public Safety Plans for the City of Newport Beach and sets the required contribution amounts and rates for Fiscal Year 2019/20. After adding in ADPs and deducting negotiated employee contributions, Fiscal Year (FY) 2019/20 pension costs are estimated as follows:

	Normal Cost Rate		Expected Normal Cost		Change	
	2018/19	2019/20	2018/19	2019/20	Dollars	Percent
Misc	16.2%	16.9%	7,205,087	7,712,921	507,834	7.0%
Safety	27.4%	28.1%	9,082,071	9,694,972	612,901	6.7%
Total Expected Normal Cost			16,287,158	17,407,893	1,120,735	6.9%

	Amortization of UAL		Change	
	2018/19	2019/20	Dollars	Percent
Minimum Payment of on UAL	25,698,507	26,469,557	771,050	3.0%
Additional Discretionary Payment (ADP)	8,801,493	8,530,443	(271,050)	-3.1%
Total Planned UAL Payment	34,500,000	35,000,000	500,000	1.4%

	Total Expected Pension Cost		Change	
	2018/19	2019/20	Dollars	Percent
Total Expected PERS Contribution	50,787,158	52,407,893	1,620,735	3.2%
Less: Expected Employee Contributions	10,324,540	11,017,800	693,260	6.7%
Net Employer Cost "Projected"	40,462,618	41,390,093	927,475	2.3%

Net of investment returns, annual contributions, benefit payments and changes in actuarial assumptions, the City's unfunded pension liability decreased $1.8 million from $321.5 million to $319.7 million. This resulted in an overall funded status of 66 percent. The components of the plan assets and liabilities are displayed in the following table:

	2017			2016
	Miscellaneous	Safety	Total	Total
Accrued Liability	396,834,941	542,668,920	939,503,861	887,481,877
Less: Market Value of Assets	278,869,980	340,964,919	619,834,899	566,016,065
Unfunded Accrued Liability (UAL)	117,964,961	201,704,001	319,668,962	321,465,812
Funded Status	70.3%	62.8%	66.0%	63.8%

While the City's combined plan funded ratio is slightly lower than the county-wide average of 70%, Newport Beach has one of the most aggressive repayment plans in the County which will result in an improved funded status over time. The actuarial valuations in their entirety for our miscellaneous and safety plans can be found at www.newportbeachca.gov/pensions under "CalPERS Valuations."

Funding Goals

Staff has and will continue to pursue the UAL pension funding goals indicated below. These goals form the basis of funding options and recommendations that follow later in the report.

- Consistent with the Government Finance Officers' Association (GFOA) and the California Actuarial Advisory Panel (CAAP), the staff believes it is financially advantageous to repay or amortize unfunded pension liabilities over a period of not-to-exceed 20 years, but a term closer to 15 years is preferred.
- Maintain prudent funded status levels or develop an aggressive repayment plan to ensure that funds are available in the long-run to meet City obligations.
- Preserve financial flexibility to meet or maintain City service obligations while funding post-employment benefit obligations.
- A short amortization period dramatically reduces taxpayer interest costs and better matches the average remaining work-life of plan participants.
- Manage amortization bases effectively to avoid negative amortization and repay unfunded liabilities in the most efficient manner possible, with an overall goal of reducing the interest costs to taxpayers.
- There is a high cost of waiting for actuarial valuation results that lag the contribution year by at least two years. Therefore, all known pending loss bases are considered when developing a payment plan recommendation. This minimizes negative amortization and interest cost to tax payers.
- Staff also believes that a level dollar repayment schedule improves the likelihood that funds will be available to meet future repayment schedules. A level dollar payment plan becomes a decreasing percentage of the annual budget over time, whereas an increasing dollar payment plan moves in commensurate manner with rising budgets.

Why is it Important to Manage Amortization Bases of the Unfunded Liability?

The unfunded liability balance is made up of a series of gain/loss bases each with their own methodology and term. It is important to proactively consolidate bases because:

1. Some bases contain a significant amount of negative amortization. Left as such, they are inefficient and are costly to our taxpayers.
2. Several bases are credit bases extending credits out 30 plus years. As illustrated in the default column of Appendix B1 (Summary of Payment Options) the payment schedule goes negative in years 19-31 where $31.3 million in credits will be underutilized starting in payment year 2038. This is because CalPERS does not write "credit" checks back to the City in the years when amortized credits exceed required contributions. Currently, there is an opportunity to bring the $31.3 million in underutilized credits forward to offset costs in the nearer term.
3. Each ADP payment must be applied against a specific base; therefore, it is administratively more efficient when bases are consolidated into a single base that can be identified for reduction/elimination.

While we were successful in influencing the CalPERS policy to utilize level dollar amortization schedules not-to-exceed 20 years, this policy does not go into effect until the 2019 valuation. The 2019 valuation will be received in the fall of 2020 and it will set rates for FY 2021/22. All legacy bases will remain in effect until they mature or are consolidated through a fresh start. This is important because the 30-year amortization bases have an Amortization Efficiency (AE) ratio of 308% meaning that payments required to amortize a 30-year schedule are 308% of the original principal balance. The City's efforts to accelerate the amortization of the City's unfunded pension liability has resulted in the most efficient repayment schedule in the County.

County-wide CalPERS agencies are scheduled to pay approximately 200% of the principal UAL balance. Through a combination of previous "Fresh Starts" and previous "Additional Discretionary Payments" (ADPs) the City's default repayment schedule has led to a lower (AE) ratio of 167% of principal UAL balance which would result in approximately $100 million of interest savings compared to the average county-wide repayment schedule of 200% of principal.

Using a hypothetical UAL balance of $300 million, the comparative savings between a 200% AE ratio schedule and a 166.6% AE ratio schedule is illustrated as follows:

	County-wide AE Ratio	City Default AE Ratio
Hypothetical Unfunded Pension Liability	$ 300,000,000	$ 300,000,000
AE Ratio	200%	166.6%
Total Principal & Interest Payments	600,000,000	499,800,000
Interest savings relative to County-wide average		$ 100,200,000

See County-wide averages on Appendix D-1.

Funding Options

In order to achieve the aforementioned funding goals, staff considered three additional direct payment plans to CalPERS and considered the option of locally investing our discretionary payments into a Section 115 pension prefunding trust. Since all optional payment programs contemplate a directive to the CalPERS actuarial office to adjust the default payment schedule in the 2018 valuation, which sets the rates for the 2020/21 fiscal year, the minimum UAL contribution for FY 2019/20 would remain unchanged at $26.5 million. The City contemplates making an ADP of at least $8.5 million bringing the total UAL payment to $35 million for the FY 2019/20.

Default Payment Option: This option starts with the 2017 actuarial valuation (2013 Fresh Start Base plus gain loss bases between 2014 and 2017) but then considers the future impact of known 2018 gain/loss bases that do not require a minimum payment until Fiscal Year 2020/21. Specifically, the known 2018 gain/loss bases include the 0.25% reduction in discount rate from 7.25% to 7.0% ($28,888,079) amortized over 20 years, less the favorable investment gain base of ($8,953,515) amortized over 30 years. See Appendix A-1 for breakdown of amortization bases.

Together the net impact of the 2018 gain/loss bases total $19,934,564 which include interest accumulation of approximately $2 million between June 30, 2018 and July 1, 2019. However, if we wait until July 1, 2020, another $2.1 million of interest would compound on top of that. There is a high cost for waiting. Therefore, we do our best to estimate known losses and start paying on them as soon as is practical. The minimum required payment on the UAL for FY 2019/20 under the default option is $26,469,557. The annual amount under this option would escalate to a maximum of $44.9 million in FY 2033/34. See Appendices B-2 and C-1.

Assuming $35,000,000 is allocated and authorized to pay down the unfunded pension liability in the FY 2019/20 budget, this would leave $8,530,443 available for additional discretionary payments before considering any additional allocation from the FY 2017/18 surplus. In addition to unfavorable payment escalation, there are $31 million in underutilized credits in year 2038-2050 that can be brought forward to offset nearer term costs. See Appendices B-1 and B-2.

Option 1: proposes a full Fresh Start which would consolidate all gain/loss amortizations bases into one base amortized over a level dollar base for 15 years. This option would require a minimum annual contribution of approximately $34.5 million annually and would be irrevocable. See Appendix C-2. New credit bases or ADPs would be the only actions that could lower the minimum contribution level. This options represents a total payment savings of approximately $40 million over the default schedule over 15 years as demonstrated in Appendix B-1.

Option 2: This option converts the existing 2013 Fresh Start base to a level dollar payment plan over the original 15-year term and consolidates the remaining bases including the 2018 loss into a 20-year level dollar partial fresh start base. This election would require a minimum contribution of approximately $34.1 million annually for 15 years and then a payment of approximately $2 million thereafter for 5 additional years. See Appendix C-3. This payment election would be irrevocable but represents a total payment savings of approximately $35.5 million over 20 years as demonstrated in Appendix B-1.

Option 3A: The option leaves the 2013 Fresh Start base alone, consolidates all other bases into a new 2018 Fresh Start base (See Appendix A-1 for proposed consolidation of bases). This plan contemplates a level dollar payment of $35 million annually for 14 years followed by a final payment of $22.8 million in the 15th year. If this option is selected, the minimum payment would not increase initially over the default minimum requirement in FY 2019/20 but would increase approximately $1.7 million over the default minimum in FY 2020/21 but then would level off at $35 million if ADPs of approximately $5 million are maintained. This payment election does not commit the City to continued ADPs. See Appendix C-4. This option represents a total payment saving of approximately $45 million over 15 years as demonstrated in Appendix B-1.

Option 3B: This option is the same as Option 3A above but illustrates the consequence if ADPs are **not** utilized as contemplated in Option 3A. The minimum payments would range from $29.2 million to $42 million annually for 15 years with payments dropping to approximately $2.4 million per year for years 16 through 20. See Appendix C-5. This option represents a total payment savings of approximately $16 million over 20 years as demonstrated in Appendix B-1.

Staff Recommendation

After evaluating the City's current default repayment schedule and the three optional repayment schedules presented in Appendix B-1, staff's preliminary recommendation is to pursue Option 3A.

Option 3A accomplishes the following funding goals:

1. Amortizes the UAL over a level dollar payment plan over 15 years as opposed to the lengthier, and consequently costlier, term options.
2. Continues an aggressive funding plan to improve the plan's funded status and further increases repayment efficiency of the unfunded pension liability.
3. Preserves financial flexibility to continue ADPs or not.
4. Consolidates the number of amortization bases that range between 19-30 years down to a default 20-year repayment schedule. If ADPs are continued, this 20 year base would be reduced to 4 years. See Appendix C-5 then C-4 to see how the ADPs would reduce the term of the 2018 Fresh Start Base from 20 years to 4 years.
5. Starts paying on projected loss base that will be included in the 2018 actuarial valuation thereby avoiding one year's worth of negative amortization.

Option 3A represents a savings of $45 million over the default schedule realized over 15 years. By carefully managing our bases over several years, the payment efficiencies gained will save Newport Beach taxpayers between $100 and $126 million relative to the county-wide repayment schedule. In the example below, we illustrate the comparative savings of having efficient repayment schedules compared to the county-wide average of 200% on a hypothetical unfunded pension liability of $300 million.

	County-wide AE Ratio	City Default AE Ratio	City Payment Option 3A AE Ratio
Hypothetical Unfunded Pension Liability	$ 300,000,000	$ 300,000,000	$ 300,000,000
AE Ratio	200%	166.6%	157.7%
Total Principal & Interest Payments	600,000,000	499,800,000	473,100,000
Interest savings relative to County-wide average		$ 100,200,000	$ 126,900,000

Consistent with Council Policy F-5, General Fund Surplus utilization, should there be additional surplus available that is not otherwise allocated to long-term obligations, City Council should further consider increasing the ADP contribution to hasten the pay-down of the 2018 partial fresh-start base. See Appendix C-4.

SECTION 115 PREFUNDING PENSION TRUST

Section 115 plans have become popular in recent years due to their perceived flexibility. Without considering investment horizon and market risk, funds in the trust can be used to meet a pension plan's minimum contribution thus freeing up budget to be spent elsewhere. Staff considered the potential benefits of using Section 115 pension benefit trust to prefund CalPERS contributions, but ultimately concluded it did not add value to the City's pension funding efforts for the following reasons:

- The City is already retaining budget flexibility by maintaining a $50 million contingency reserve and has options to apply ADPs in a discretionary manner.
- Unlike other post-employment benefits like retiree healthcare, a pension plan, by its very nature, is already a prefunding trust. This trust can only be used for the intended purpose of providing pension benefits. Funding a Section 115 pension trust would be redundant and increase the cost of administration.
- The cost of investing would undoubtedly be more expensive and would not likely outperform a $360 billion pension trust over time.
- Due to the limited scale of Section 115 plans, these plans could not likely avail the City to the private equity asset class of investments that have been an important driver of investment return over time.
- Funded solely by additional discretionary payments, the fund would not have any measurable impact on diversification.
- The potentially short investment horizon could subject the trust assets to undue market volatility risk since assets cannot be simply transferred between plans. Trust assets would have to be sold at then market prices at potentially below their original acquisition cost.
- If the locally directed trust does not perform well, public officials may be subjected to additional headline risk.
- Due to the inherent flexibility of this a Section 115 plan, the Governmental Accounting Standards Board (GASB) no longer allows funds in a Section 115

pension prefunding trust to reduce the net pension obligation on the City's balance sheet.

Since the Public Employer's Pension Reform Act (PEPRA) eliminated "contribution holidays" there is a risk that plans could someday become overfunded without a mechanism to cease employer contributions. When the funded status of our pension plans approach 85-90% funded, it may be prudent to utilize a Section 115 plan at that time.

Risks

Discount Rate
It is still possible that due to Risk Mitigation policies currently in place or due to future reviews of capital market assumptions, CalPERS may reduce discount rates further. This will increase normal costs on a go-forward basis as well as create some level of new unfunded liability. Given staff is already prepared for the reduction to 7% staff believes there is ample time and resources to plan for further reduction in discount rates.

Market Volatility
Recessions and market volatility are unavoidable and the plan will most likely experience turbulence in the future. Staff has recently analyzed the risk of revenue decline due to likely recessionary scenarios and the secondary impact of low investment returns on the plan. Considering the risk of market volatility on a mature pension plan, it is deliberately recommended to leave contingency reserve levels higher than might otherwise be necessary, approximating at 25% of operating expenditures. This policy currently equates to a $50 million General Fund contingency reserve. Given the two-year lag between actual results and a five-year direct smoothing policy (five-year phase-into contribution rates), staff believes the City has ample time and flexibility to withstand temporary volatility without impacting service levels. If market returns are persistently below expected results, staff believes there will be ample time to react accordingly, depending on the magnitude and duration of the market losses incurred.

Prepared and Submitted by:

/s/ Dan Matusiewicz
Dan Matusiewicz
Finance Director

Attachments:

Appendix A-1: Projected Amortization Bases of 6/30/18 and Rolled Forward to 6/30/19
Appendix B-1: Payment Options
Appendix B-2: Line Graph of All Payment Options

Appendix B-3: Line Graph of Options 3a and 3b
Appendix C-1: Default Payment Option
Appendix C-2: Option 1 – Full Fresh Start 15 Years
Appendix C-3: Option 2 – Partial Fresh Start 15 & 20 Years
Appendix C-4: Option 3a – Partial Fresh Start with ADP
Appendix C-5: Option 3b – Partial Fresh Start without ADP
Appendix D-1: County-Wide Comparison of Pension Funding Progress Table

APPENDIX A-1

PROJECTED AMORTIZATION BASES OF 6/30/18 AND ROLLED FORWARD TO 6/30/19

Appendix A-1

Projected Amortization Bases as of 6/30/18 and rolled forward to 6/30/19

Miscellaneous and Safety Plan Combined

Proposed consolidation of amortization bases in payment option 3A

			Yrs	Est. UAL Balance 6/30/19*	Total Pmts*	Amort. Efficiency No ADPs	Amort. Efficiency With ADPs
1	6/30/2013	Fresh Start Base	15	304,262,134	500,960,084	165%	161%
2	6/30/2014 (Gain)	Investment Return 18.6%	27	(76,596,032)	(175,892,383)	230%	
3	6/30/2015 Loss	Investment Return 2.4%	28	31,847,317	76,537,056	240%	
4	6/30/2016 Loss	Discount Rate Change 7.5 %to 7.375%	19	16,814,230	30,846,769	183%	
5	6/30/2016 Loss	Investment Return .6%	29	31,111,035	78,779,656	253%	
6	6/30/2017 Loss	Discount Rate Change 7.375% to 7.25%	20	19,880,007	38,694,483	195%	
7	6/30/17 (Gain)	Investment Return 11.2%	30	(22,066,767)	(59,307,662)	269%	
	Net Other (2-9) Bases Prior to 6/30/18		Mixed	989,790	(10,342,080)	N/A	
8	6/30/2018 Loss	Discount Rate Change 7.25% to 7.0%	20	28,888,079	60,201,260	208%	
9	6/30/2018 Gain	Investment Return 8.6%	30	(8,953,515)	(25,752,005)	288%	
	Net 2018 (8 &9) (Gain) Loss Bases			19,934,564	34,449,256	N/A	
10	Proposed 2018 Partial Fresh Start		20	20,924,354	40,535,310	194%	112%
	TOTAL			325,186,488	589,709,745	172%	158%

* Balance and payments reflect projected balances and phased-in discount rates not yet reflected in the 6/30/17 valuation.

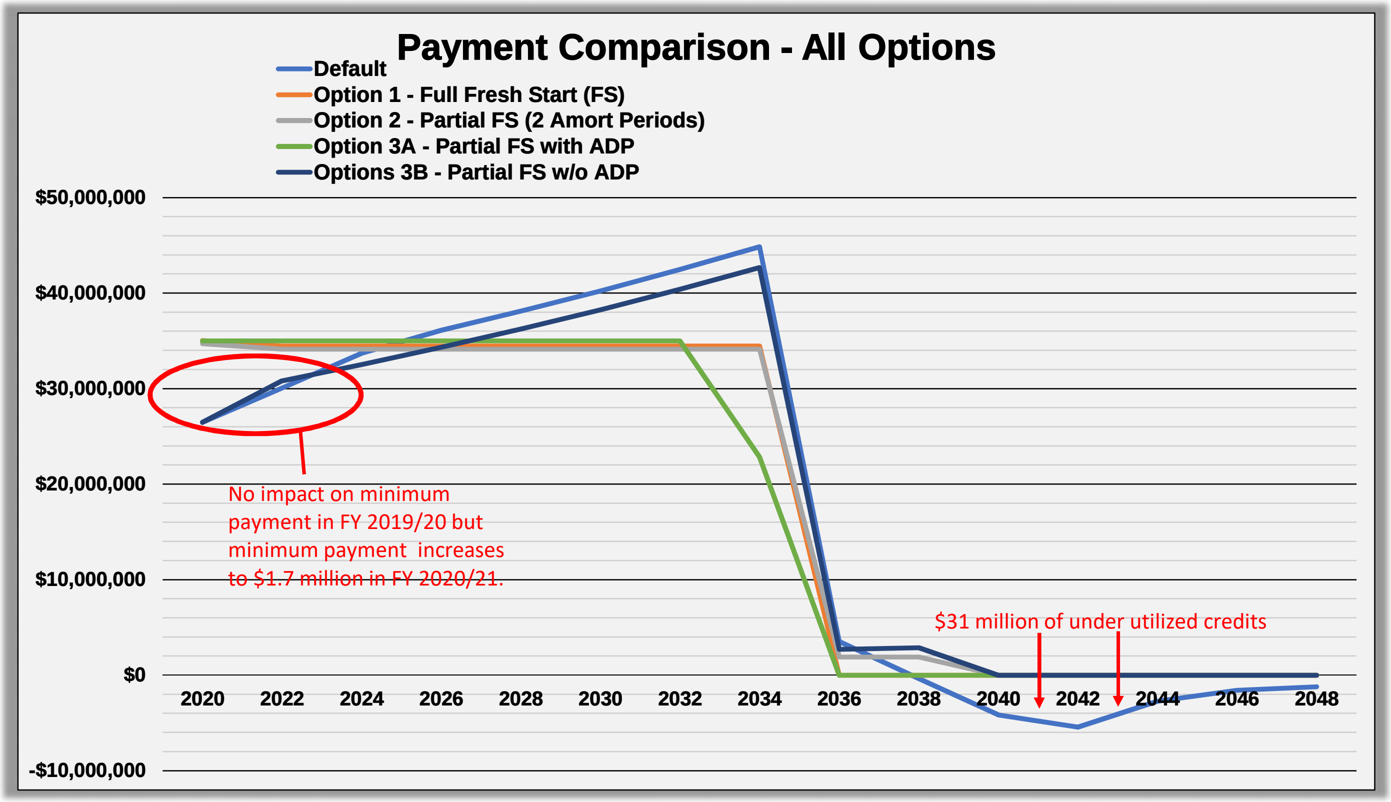
APPENDIX B-1
PAYMENT OPTIONS

APPENDIX B-1

			PAYMENT COMPARISON						
				Option 1	Option 2	Option 3A - Partial Fresh Start with ADP			Option 3B
Year	Val Year	Pmt Yr	Default	Full Fresh Start	Partial Fresh Start	Required Pmt	ADP	Total Pmt	Partial Fresh Start No ADP
1	2017	2020	$ 26,469,557	$ 35,022,218	$ 34,713,090	$ 26,469,557	$ 8,530,443	$ 35,000,000	$ 26,469,557
2	2018	2021	$ 27,561,712	$ 34,458,224	$ 34,147,012	$ 29,306,494	$ 5,693,506	$ 35,000,000	$ 29,981,598
3	2019	2022	$ 30,065,625	$ 34,458,224	$ 34,147,012	$ 29,645,174	$ 5,354,826	$ 35,000,000	$ 30,806,092
4	2020	2023	$ 32,234,127	$ 34,458,224	$ 34,147,012	$ 30,003,361	$ 4,996,639	$ 35,000,000	$ 31,653,260
5	2021	2024	$ 33,696,917	$ 34,458,224	$ 34,147,012	$ 30,326,744	$ 4,673,256	$ 35,000,000	$ 32,523,725
6	2022	2025	$ 35,136,470	$ 34,458,224	$ 34,147,012	$ 30,564,692	$ 4,435,308	$ 35,000,000	$ 33,418,127
7	2023	2026	$ 36,102,723	$ 34,458,224	$ 34,147,012	$ 30,788,488	$ 4,211,512	$ 35,000,000	$ 34,337,126
8	2024	2027	$ 37,095,548	$ 34,458,224	$ 34,147,012	$ 30,988,822	$ 4,011,178	$ 35,000,000	$ 35,281,396
9	2025	2028	$ 38,115,676	$ 34,458,224	$ 34,147,012	$ 31,150,874	$ 3,849,126	$ 35,000,000	$ 36,251,635
10	2026	2029	$ 39,163,857	$ 34,458,224	$ 34,147,012	$ 31,249,714	$ 3,750,286	$ 35,000,000	$ 37,248,555
11	2027	2030	$ 40,240,863	$ 34,458,224	$ 34,147,012	$ 31,240,183	$ 3,759,817	$ 35,000,000	$ 38,272,890
12	2028	2031	$ 41,347,486	$ 34,458,224	$ 34,147,012	$ 31,031,591	$ 3,968,409	$ 35,000,000	$ 39,325,395
13	2029	2032	$ 42,484,542	$ 34,458,224	$ 34,147,012	$ 30,411,823	$ 4,588,177	$ 35,000,000	$ 40,406,843
14	2030	2033	$ 43,652,867	$ 34,458,224	$ 34,147,012	$ 28,743,737	$ 6,256,263	$ 35,000,000	$ 41,518,031
15	2031	2034	$ 44,853,321	$ 34,458,224	$ 34,147,012	$ 22,839,988	$ -	$ 22,839,988	$ 42,659,777
16	2032	2035	$ 4,444,209	$ -	$ 1,906,027	$ -	$ -	$ -	$ 2,650,665
17	2033	2036	$ 3,521,472	$ -	$ 1,906,027	$ -	$ -	$ -	$ 2,723,558
18	2034	2037	$ 1,632,422	$ -	$ 1,906,027	$ -	$ -	$ -	$ 2,798,456
19	2035	2038	$ (363,189)	$ -	$ 1,906,027	$ -	$ -	$ -	$ 2,875,413
20	2036	2039	$ (2,469,794)	$ -	$ 1,906,027	$ -	$ -	$ -	$ 2,954,487
21	2037	2040	$ (4,164,792)	$ -	$ -	$ -	$ -	$ -	$ -
22	2038	2041	$ (5,296,082)	$ -	$ -	$ -	$ -	$ -	$ -
23	2039	2042	$ (5,441,724)	$	$ -	$ -	$ -	$ -	$ -
24	2040	2043	$ (3,723,617)	$	$ -	$ -	$ -	$ -	$ -
25	2041	2044	$ (2,706,415)	$	$ -	$ -	$ -	$ -	$ -
26	2042	2045	$ (2,444,828)	$	$ -	$ -	$ -	$ -	$ -
27	2043	2046	$ (1,556,781)	$	$ -	$ -	$ -	$ -	$ -
28	2044	2047	$ (353,140)	$ -	$ -	$ -	$ -	$ -	$ -
29	2045	2048	$ (1,221,211)	$ -	$ -	$ -	$ -	$ -	$ -
30	2046	2049	$ (1,221,095)	$ -	$ -	$ -	$ -	$ -	$ -
31	2047	2050	$ (287,364)	$ -	$ -	$ -	$ -	$ -	$ -
		Totals	**$ 557,819,393**	**$ 517,437,361**	**$ 522,301,394**	**$ 444,761,242**	**$ 68,078,746**	**$ 512,839,988**	**$ 544,156,586**
	Savings over default			**$ 40,382,033**	**$ 35,517,999**			**$ 44,979,405**	**$ 13,662,807**
		NPV@3%	**$ 445,220,316**	**$ 424,264,842**	**$ 426,211,164**	**$ 364,822,975**	**$ 57,500,385**	**$ 422,323,359**	**$ 436,084,773**
		NPV@4%	**$ 415,729,645**	**$ 399,008,679**	**$ 400,312,223**	**$ 343,084,264**	**$ 54,602,935**	**$ 397,687,199**	**$ 407,188,179**
		Efficiency	**172%**	**159%**	**161%**	**NA**	**NA**	**158%**	**167%**

$31.25 Million Unused

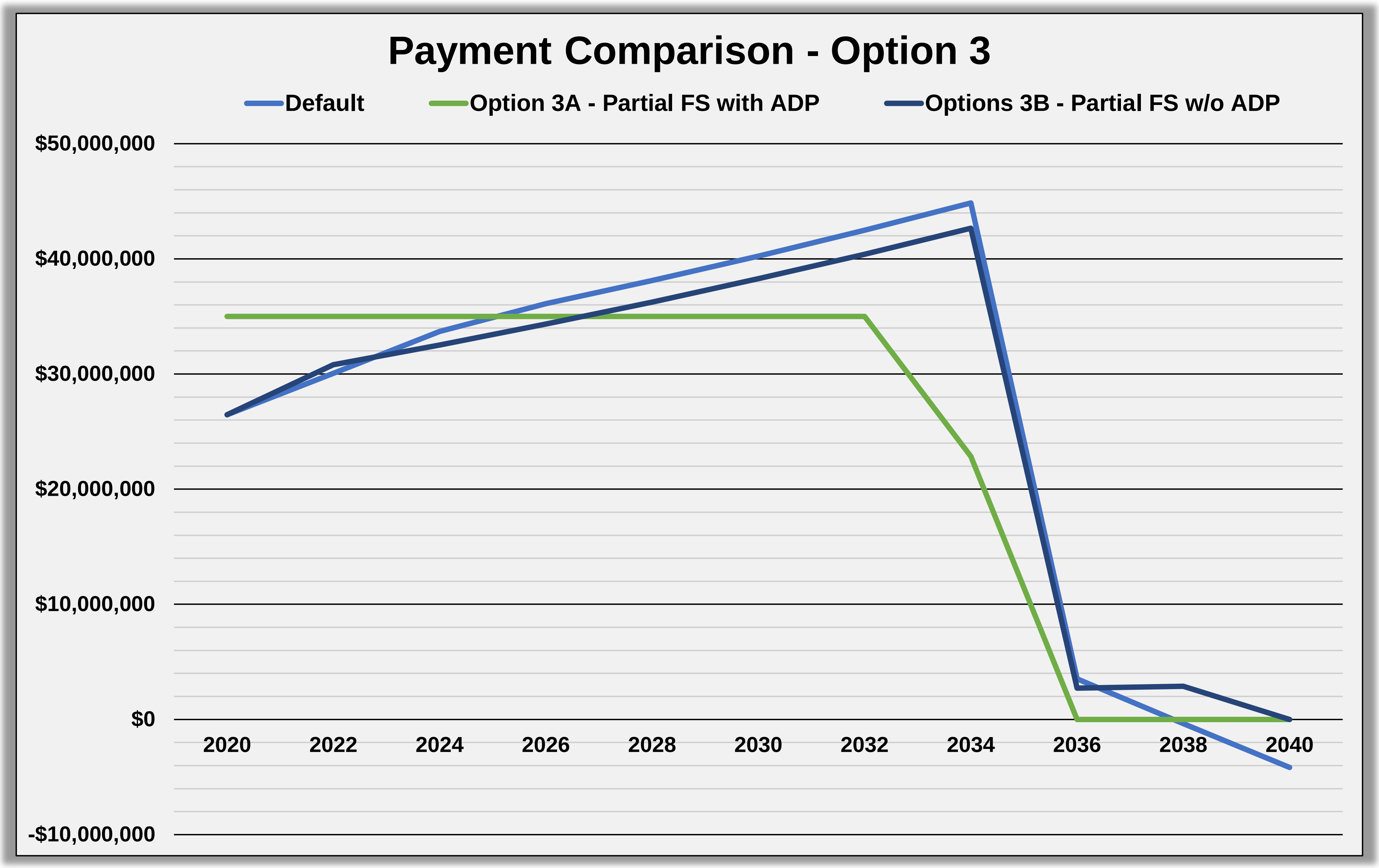
APPENDIX B-2
LINE GRAPH OF ALL PAYMENT OPTIONS


Payment Comparison - All Options
Default
Option 1 - Full Fresh Start (FS)
Option 2 - Partial FS (2 Amort Periods)
Option 3A - Partial FS with ADP
Options 3B - Partial FS w/o ADP
$50,000,000
$40,000,000
$30,000,000
$20,000,000
$10,000,000
$0
-$10,000,000
2020
2022
2024
2026
2028
2030
2032
2034
2036
2038
2040
2042
2044
2046
2048
No impact on minimum payment in FY 2019/20 but minimum payment increases to $1.7 million in FY 2020/21.
$31 million of under utilized credits

APPENDIX B-3

LINE GRAPH OF OPTIONS 3A AND 3B

APPENDIX B-3



Payment Comparison - Option 3
Default
Option 3A - Partial FS with ADP
Options 3B - Partial FS w/o ADP
$50,000,000
$40,000,000
$30,000,000
$20,000,000
$10,000,000
$0
-$10,000,000
2020
2022
2024
2026
2028
2030
2032
2034
2036
2038
2040

APPENDIX C-1

DEFAULT PAYMENT OPTION

APPENDIX C-1

Default - Minimum Payment Options (Inclusive of Projected 2018 Net Gain\Loss Bases)

			2013 Fresh Start Base		2014 - 2018 Bases		Default Option Total	
			Level % of Pay No Ramp Up/Down		% of Pay 5 Yr Ramp Up/Down			
				15		Various		
Yr	Val Yr	Pmt Yr	Balance	Payment	Balance	Payment	Balance	Min Pmt
1	2017	2020	$ 304,262,134	$ 27,734,444	$ 20,924,353	$ (1,264,887)	$ 325,186,486	$ 26,469,557
2	2018	2021	$ 296,871,751	$ 28,168,551	$ 24,484,898	$ (606,839)	$ 321,356,649	$ 27,561,712
3	2019	2022	$ 288,514,998	$ 28,943,186	$ 26,826,560	$ 1,122,438	$ 315,341,557	$ 30,065,625
4	2020	2023	$ 278,771,983	$ 29,739,124	$ 27,543,359	$ 2,495,004	$ 306,315,343	$ 32,234,127
5	2021	2024	$ 267,523,633	$ 30,556,950	$ 26,890,543	$ 3,139,967	$ 294,414,176	$ 33,696,917
6	2022	2025	$ 254,641,933	$ 31,397,266	$ 25,524,874	$ 3,739,204	$ 280,166,807	$ 35,136,470
7	2023	2026	$ 239,989,284	$ 32,260,691	$ 23,443,752	$ 3,842,033	$ 263,433,036	$ 36,102,723
8	2024	2027	$ 223,417,816	$ 33,147,860	$ 21,110,585	$ 3,947,688	$ 244,528,401	$ 37,095,548
9	2025	2028	$ 204,768,651	$ 34,059,426	$ 18,504,805	$ 4,056,250	$ 223,273,456	$ 38,115,676
10	2026	2029	$ 183,871,112	$ 34,996,060	$ 15,604,324	$ 4,167,797	$ 199,475,436	$ 39,163,857
11	2027	2030	$ 160,541,884	$ 35,958,452	$ 12,385,424	$ 4,282,411	$ 172,927,309	$ 40,240,863
12	2028	2031	$ 134,584,105	$ 36,947,309	$ 8,822,643	$ 4,400,177	$ 143,406,748	$ 41,347,486
13	2029	2032	$ 105,786,398	$ 37,963,360	$ 4,888,650	$ 4,521,182	$ 110,675,048	$ 42,484,542
14	2030	2033	$ 73,921,841	$ 39,007,352	$ 554,108	$ 4,645,515	$ 74,475,949	$ 43,652,867
15	2031	2034	$ 38,746,851	$ 40,080,055	$ (4,212,463)	$ 4,773,267	$ 34,534,388	$ 44,853,321
16	2032	2035			$ (9,444,840)	$ 4,444,209	$ (9,444,840)	$ 4,444,209
17	2033	2036			$ (14,703,105)	$ 3,521,472	$ (14,703,105)	$ 3,521,472
18	2034	2037			$ (19,374,961)	$ 1,632,422	$ (19,374,961)	$ 1,632,422
19	2035	2038			$ (22,419,798)	$ (363,189)	$ (22,419,798)	$ (363,189)
20	2036	2039			$ (23,613,498)	$ (2,469,794)	$ (23,613,498)	$ (2,469,794)
21	2037	2040			$ (22,711,669)	$ (4,164,792)	$ (22,711,669)	$ (4,164,792)
22	2038	2041			$ (19,993,392)	$ (5,296,082)	$ (19,993,392)	$ (5,296,082)
23	2039	2042			$ (15,914,619)	$ (5,441,724)	$ (15,914,619)	$ (5,441,724)
24	2040	2043			$ (11,399,679)	$ (3,723,617)	$ (11,399,679)	$ (3,723,617)
25	2041	2044			$ (8,345,917)	$ (2,706,415)	$ (8,345,917)	$ (2,706,415)
26	2042	2045			$ (6,130,594)	$ (2,444,828)	$ (6,130,594)	$ (2,444,828)
27	2043	2046			$ (4,030,787)	$ (1,556,781)	$ (4,030,787)	$ (1,556,781)
28	2044	2047			$ (2,702,595)	$ (353,140)	$ (2,702,595)	$ (353,140)
29	2045	2048			$ (2,526,485)	$ (1,221,211)	$ (2,526,485)	$ (1,221,211)
30	2046	2049			$ (1,440,108)	$ (1,221,095)	$ (1,440,108)	$ (1,221,095)
31	2047	2050			$ (277,805)	$ (287,364)	$ (277,805)	$ (287,364)
Total Payments				**$ 500,960,084**		**$ 25,609,278**		**$ 557,819,393**
						Amortization Efficiency (AE) Ratio		**172%**

APPENDIX C-2

OPTION 1 – FULL FRESH START 15 YEARS

Appendix C-2

Option 1 - Full Fresh Start 15 Years

			2013 Fresh Start		Consolidate 2014-2018 Bases -Level $ Payment		Option 1 Total	
			Reset to Level $ No Ramp Up/Down		Reset to Level $ No Ramp Up/Down			
				15		15		
Yr	Val Yr	Pmt Yr	Balance	Payment	Balance	Payment	Balance	Payment
1	2017	2020	$ 304,262,134	$ 32,768,689	$ 20,924,353	$ 2,253,529	$ 325,186,486	$ 35,022,218
2	2018	2021	$ 291,664,287	$ 32,240,986	$ 20,057,989	$ 2,217,239	$ 311,722,276	$ 34,458,224
3	2019	2022	$ 278,730,452	$ 32,240,986	$ 19,168,519	$ 2,217,239	$ 297,898,971	$ 34,458,224
4	2020	2023	$ 264,891,249	$ 32,240,986	$ 18,216,785	$ 2,217,239	$ 283,108,034	$ 34,458,224
5	2021	2024	$ 250,083,301	$ 32,240,986	$ 17,198,431	$ 2,217,239	$ 267,281,732	$ 34,458,224
6	2022	2025	$ 234,238,797	$ 32,240,986	$ 16,108,792	$ 2,217,239	$ 250,347,589	$ 34,458,224
7	2023	2026	$ 217,285,178	$ 32,240,986	$ 14,942,877	$ 2,217,239	$ 232,228,056	$ 34,458,224
8	2024	2027	$ 199,144,806	$ 32,240,986	$ 13,695,349	$ 2,217,239	$ 212,840,155	$ 34,458,224
9	2025	2028	$ 179,734,607	$ 32,240,986	$ 12,360,494	$ 2,217,239	$ 192,095,101	$ 34,458,224
10	2026	2029	$ 158,965,695	$ 32,240,986	$ 10,932,199	$ 2,217,239	$ 169,897,894	$ 34,458,224
11	2027	2030	$ 136,742,958	$ 32,240,986	$ 9,403,924	$ 2,217,239	$ 146,146,882	$ 34,458,224
12	2028	2031	$ 112,964,630	$ 32,240,986	$ 7,768,669	$ 2,217,239	$ 120,733,299	$ 34,458,224
13	2029	2032	$ 87,521,819	$ 32,240,986	$ 6,018,946	$ 2,217,239	$ 93,540,766	$ 34,458,224
14	2030	2033	$ 60,298,012	$ 32,240,986	$ 4,146,743	$ 2,217,239	$ 64,444,755	$ 34,458,224
15	2031	2034	$ 31,168,537	$ 32,240,986	$ 2,143,486	$ 2,217,239	$ 33,312,023	$ 34,458,224
16	2032	2035			$ -			
17	2033	2036						
18	2034	2037						
19	2035	2038						
20	2036	2039						
21	2037	2040						
22	2038	2041						
23	2039	2042						
24	2040	2043						
25	2041	2044						
26	2042	2045						
27	2043	2046						
28	2044	2047						
29	2045	2048						
30	2046	2049						
31	2047	2050						
Total Payments				**$ 484,142,490**		**$ 33,294,871**		**$ 517,437,361**
						Amortization Efficiency (AE) Ratio		**159%**

APPENDIX C-3

OPTION 2 – PARTIAL FRESH START 15 & 20 YEARS

APPENDIX C-3

Option 2 -Partial Fresh Start 15 & 20 Years

			2013 Fresh Start		**2018 Partial Fresh Start**			
			Reset to Level $ Payment		**Consolidate 2014-2018 Bases - 20 Yr Level $**			
			Level $ No Ramp Up/Down		**Level $ No Ramp Up/Down**			
				15		**20**	**Option 2 Total**	
Yr	Val Yr	Pmt Yr	Balance	Payment	Balance	Payment	Balance	Payment
				$ -		$ -		
				$ -	$ -	$ -		
1	2017	2020	$ 304,262,134	$ 32,768,689	$ 20,924,353	$ 1,944,400	$ 325,186,486	$ 34,713,090
2	2018	2021	$ 291,664,287	$ 32,240,986	$ 20,377,754	$ 1,906,027	$ 312,042,041	$ 34,147,012
3	2019	2022	$ 278,730,452	$ 32,240,986	$ 19,832,588	$ 1,906,027	$ 298,563,040	$ 34,147,012
4	2020	2023	$ 264,891,249	$ 32,240,986	$ 19,249,260	$ 1,906,027	$ 284,140,509	$ 34,147,012
5	2021	2024	$ 250,083,301	$ 32,240,986	$ 18,625,099	$ 1,906,027	$ 268,708,400	$ 34,147,012
6	2022	2025	$ 234,238,797	$ 32,240,986	$ 17,957,247	$ 1,906,027	$ 252,196,044	$ 34,147,012
7	2023	2026	$ 217,285,178	$ 32,240,986	$ 17,242,645	$ 1,906,027	$ 234,527,823	$ 34,147,012
8	2024	2027	$ 199,144,806	$ 32,240,986	$ 16,478,021	$ 1,906,027	$ 215,622,826	$ 34,147,012
9	2025	2028	$ 179,734,607	$ 32,240,986	$ 15,659,873	$ 1,906,027	$ 195,394,480	$ 34,147,012
10	2026	2029	$ 158,965,695	$ 32,240,986	$ 14,784,455	$ 1,906,027	$ 173,750,150	$ 34,147,012
11	2027	2030	$ 136,742,958	$ 32,240,986	$ 13,847,758	$ 1,906,027	$ 150,590,716	$ 34,147,012
12	2028	2031	$ 112,964,630	$ 32,240,986	$ 12,845,492	$ 1,906,027	$ 125,810,122	$ 34,147,012
13	2029	2032	$ 87,521,819	$ 32,240,986	$ 11,773,067	$ 1,906,027	$ 99,294,886	$ 34,147,012
14	2030	2033	$ 60,298,012	$ 32,240,986	$ 10,625,572	$ 1,906,027	$ 70,923,584	$ 34,147,012
15	2031	2034	$ 31,168,537	$ 32,240,986	$ 9,397,753	$ 1,906,027	$ 40,566,291	$ 34,147,012
16	2032	2035			$ 8,083,987	$ 1,906,027	$ 8,083,987	$ 1,906,027
17	2033	2036			$ 6,678,257	$ 1,906,027	$ 6,678,257	$ 1,906,027
18	2034	2037			$ 5,174,126	$ 1,906,027	$ 5,174,126	$ 1,906,027
19	2035	2038			$ 3,564,705	$ 1,906,027	$ 3,564,705	$ 1,906,027
20	2036	2039			$ 1,842,625	$ 1,906,027	$ 1,842,625	$ 1,906,027
21	2037	2040						
22	2038	2041						
23	2039	2042						
24	2040	2043						
25	2041	2044						
26	2042	2045						
27	2043	2046						
28	2044	2047						
29	2045	2048						
30	2046	2049						
31	2047	2050						
Total Payments				**$ 484,142,490**		**$ 38,158,904**		**$ 522,301,394**
							Amortization Efficiency (AE) Ratio	**161%**

APPENDIX C-4

OPTION 3A – PARTIAL FRESH START WITH ADP

APPENDIX C-4

Option 3A - Partial Fresh Start With ADP

			Original 2013 Fresh Start Level % of Pay With ADP	15		Partial Fresh Start - All Other Bases Level % of Pay With ADP	20		Option 3A Total	
Yr	Val Yr	Pmt Yr	Balance	Required Pmt.	ADP	Balance	Payment	ADP	Balance	Payment
				$ -			$ -			
				$ -			$ -			
1	2017	2020	$ 304,262,134	$ 27,734,444		$ 20,924,353	$ (1,264,887)	$ 8,530,443	$ 325,186,486	$ 35,000,000
2	2018	2021	$ 296,871,751	$ 28,168,551		$ 14,873,508	$ 1,137,943	$ 5,693,506	$ 311,745,259	$ 35,000,000
3	2019	2022	$ 288,514,998	$ 28,943,186		$ 8,848,148	$ 701,988	$ 5,354,826	$ 297,363,146	$ 35,000,000
4	2020	2023	$ 278,771,983	$ 29,739,124	$ 1,948,390	$ 3,202,301	$ 264,237	$ 3,048,249	$ 281,974,284	$ 35,000,000
5	2021	2024	$ 265,508,203	$ 30,326,744	$ 4,673,256	$ -	$ -		$ 265,508,203	$ 35,000,000
6	2022	2025	$ 247,889,495	$ 30,564,692	$ 4,435,308				$ 247,889,495	$ 35,000,000
7	2023	2026	$ 229,037,479	$ 30,788,488	$ 4,211,512				$ 229,037,479	$ 35,000,000
8	2024	2027	$ 208,865,821	$ 30,988,822	$ 4,011,178				$ 208,865,821	$ 35,000,000
9	2025	2028	$ 187,282,146	$ 31,150,874	$ 3,849,126				$ 187,282,146	$ 35,000,000
10	2026	2029	$ 164,187,615	$ 31,249,714	$ 3,750,286				$ 164,187,615	$ 35,000,000
11	2027	2030	$ 139,476,467	$ 31,240,183	$ 3,759,817				$ 139,476,467	$ 35,000,000
12	2028	2031	$ 113,035,538	$ 31,031,591	$ 3,968,409				$ 113,035,538	$ 35,000,000
13	2029	2032	$ 84,743,744	$ 30,411,823	$ 4,588,177				$ 84,743,744	$ 35,000,000
14	2030	2033	$ 54,471,525	$ 28,743,737	$ 6,256,263				$ 54,471,525	$ 35,000,000
15	2031	2034	$ 22,080,250	$ 22,839,988					$ 22,080,250	$ 22,839,988
16	2032	2035	$ -						$ -	$ -
17	2033	2036	$ -						$ -	$ -
18	2034	2037	$ -						$ -	$ -
19	2035	2038	$ -						$ -	$ -
20	2036	2039	$ -						$ -	$ -
21	2037	2040							$ -	$ -
22	2038	2041							$ -	$ -
23	2039	2042							$ -	$ -
24	2040	2043							$ -	$ -
25	2041	2044							$ -	$ -
26	2042	2045							$ -	$ -
27	2043	2046							$ -	$ -
28	2044	2047							$ -	$ -
29	2045	2048							$ -	$ -
30	2046	2049							$ -	$ -
31	2047	2050								
Total Payments				**$ 443,921,961**	**$ 45,451,722**		**$ 839,281**	**$ 22,627,024**		**$ 512,839,988**
Net Savings									**Amortization Efficiency (AE) Ratio**	**158%**

APPENDIX C-5
OPTION 3B – PARTIAL FRESH START WITHOUT ADP

APPENDIX C-5

Option 3B - Partial Fresh Start Without ADP

Yr	Val Yr	Pmt Yr	Original 2013 Fresh Start Level % of Pay Without ADP			Partial Fresh Start - All Other Bases Level % of Pay Without ADP			Option 3B Total	
				15			20			
Yr	Val Yr	Pmt Yr	Balance	Required Pmt.	ADP	Balance	Payment	ADP	Balance	Payment
				$ -			$ -			
				$ -			$ -			
1	2017	2020	$ 304,262,134	$ 27,734,444		$ 20,924,353	$ (1,264,887)		$ 325,186,486	$ 26,469,557
2	2018	2021	$ 296,871,751	$ 28,168,551		$ 23,697,467	$ 1,813,047		$ 320,569,218	$ 29,981,598
3	2019	2022	$ 288,514,998	$ 28,943,186		$ 23,480,859	$ 1,862,906		$ 311,995,857	$ 30,806,092
4	2020	2023	$ 278,771,983	$ 29,739,124		$ 23,197,514	$ 1,914,136		$ 301,969,497	$ 31,653,260
5	2021	2024	$ 267,523,633	$ 30,556,950		$ 22,841,342	$ 1,966,775		$ 290,364,975	$ 32,523,725
6	2022	2025	$ 254,641,933	$ 31,397,266		$ 22,405,788	$ 2,020,861		$ 277,047,721	$ 33,418,127
7	2023	2026	$ 239,989,284	$ 32,260,691		$ 21,883,798	$ 2,076,435		$ 261,873,082	$ 34,337,126
8	2024	2027	$ 223,417,816	$ 33,147,860		$ 21,267,783	$ 2,133,537		$ 244,685,599	$ 35,281,396
9	2025	2028	$ 204,768,651	$ 34,059,426		$ 20,549,580	$ 2,192,209		$ 225,318,230	$ 36,251,635
10	2026	2029	$ 183,871,112	$ 34,996,060		$ 19,720,412	$ 2,252,495		$ 203,591,524	$ 37,248,555
11	2027	2030	$ 160,541,884	$ 35,958,452		$ 18,770,841	$ 2,314,439		$ 179,312,726	$ 38,272,890
12	2028	2031	$ 134,584,105	$ 36,947,309		$ 17,690,727	$ 2,378,086		$ 152,274,831	$ 39,325,395
13	2029	2032	$ 105,786,398	$ 37,963,360		$ 16,469,167	$ 2,443,483		$ 122,255,565	$ 40,406,843
14	2030	2033	$ 73,921,841	$ 39,007,352		$ 15,094,450	$ 2,510,679		$ 89,016,291	$ 41,518,031
15	2031	2034	$ 38,746,851	$ 40,080,055		$ 13,553,995	$ 2,579,722		$ 52,300,846	$ 42,659,777
16	2032	2035	$ -			$ 11,834,289	$ 2,650,665		$ 11,834,289	$ 2,650,665
17	2033	2036				$ 9,920,820	$ 2,723,558		$ 9,920,820	$ 2,723,558
18	2034	2037				$ 7,798,008	$ 2,798,456		$ 7,798,008	$ 2,798,456
19	2035	2038				$ 5,449,123	$ 2,875,413		$ 5,449,123	$ 2,875,413
20	2036	2039				$ 2,856,211	$ 2,954,487		$ 2,856,211	$ 2,954,487
21	2037	2040				$ -			$ -	$ -
22	2038	2041							$ -	$ -
23	2039	2042							$ -	$ -
24	2040	2043							$ -	$ -
25	2041	2044							$ -	$ -
26	2042	2045							$ -	$ -
27	2043	2046							$ -	$ -
28	2044	2047							$ -	$ -
29	2045	2048							$ -	$ -
30	2046	2049							$ -	$ -
31	2047	2050								
Total Payments				**$ 500,960,084**	**$ -**		**$ 43,196,503**	**$ -**		**$ 544,156,586**
Net Savings									**Amortization Efficiency (AE) Ratio**	**167%**

APPENDIX D-1

COUNTY-WIDE COMPARISON OF PENSION FUNDING PROGRESS TABLE

APPENDIX D -1

	2017 Valuation			2019 Rollforward			Annualized growth 2007 - 2017 (10 Years)	
Agency	**AL**	**UAL**	**FS**	**UAL**	**Total Pmts**	**Pmt Efficiency**	**AL**	**GF Rev**
City of Anaheim Total	2,534,550,976	741,068,980	70.8%	765,071,137	1,514,945,993	198%	5.7%	2.6%
City of Brea Total	384,756,109	121,252,581	68.5%	125,739,198	257,714,835	205%	10.4%	1.6%
City of Buena Park Total	135,767,673	39,221,940	71.1%	40,454,441	78,190,765	193%	5.4%	1.7%
City of Costa Mesa Total	561,805,186	212,923,672	62.1%	218,582,780	448,749,985	205%	6.4%	1.6%
City of Cypress* Total	77,989,853	18,663,147	76.1%	19,428,798	38,181,448	197%	6.0%	-0.4%
City of Fullerton Total	759,201,771	234,893,103	69.1%	245,308,269	513,852,707	209%	5.3%	2.7%
City of Garden Grove Total	810,370,322	268,412,094	66.9%	277,299,537	568,946,411	205%	6.1%	2.9%
City of Huntington Beach Total	1,267,782,797	403,394,647	68.2%	415,378,946	840,702,143	202%	6.0%	2.4%
City of Irvine Total	648,190,242	154,634,662	76.1%	143,436,013	265,164,006	185%	9.5%	0.0%
City of La Habra Total	109,736,831	26,498,700	75.9%	27,862,230	56,060,884	201%	6.7%	1.5%
City of Laguna Beach Total	110,341,091	27,243,435	75.3%	26,964,768	50,220,994	186%	8.4%	3.0%
City of Mission Viejo Total	82,812,124	19,596,811	76.3%	19,947,678	35,963,154	180%	10.9%	1.0%
City of Newport Beach Total	939,503,861	319,668,962	66.0%	305,994,956	509,864,150	167%	6.5%	3.2%
City of Orange Total	851,746,500	256,020,262	69.9%	265,870,894	548,323,701	206%	5.8%	2.4%
City of Santa Ana Total	1,955,454,608	613,781,439	68.6%	635,622,920	1,280,054,051	201%	5.6%	1.1%
City of Tustin Total	112,720,267	26,806,151	76.2%	28,340,198	56,922,580	201%	7.7%	27.5%
City of Westminster Total	127,883,624	39,342,203	69.2%	40,431,030	79,306,054	196%	6.2%	1.7%
City of Yorba Linda Total	69,845,408	21,183,584	69.7%	21,466,831	43,314,830	202%	6.7%	1.2%
Irvine Ranch Water District Total	260,190,689	62,900,429	75.8%	63,953,833	111,870,935	175%	8.9%	6.1%
Santa Margarita Water District Total	94,619,320	29,770,735	68.5%	30,545,326	59,643,437	195%	9.8%	3.5%
Grand Total	**11,895,269,252**	**3,637,277,537**	**69.4%**	**3,717,699,783**	**7,357,993,063**	**198%**	**6.3%**	**2.4%**