Note: This document constitutes the essential terms and conditions of pension system reform for the purpose of guiding the Parties in connection with preparing pension reform legislation, and other implementing legal documents as required, designed to provide a sustainable pension plan.

I. Summary of Transaction

Parties	
Plan Sponsor	City of Houston, Texas (the "City")
Plan Administrator	Houston Police Officers' Pension System ("HPOPS")
Proposed Effective Date	July 1, 2017

The summary that follows is subject to (1) appropriate validation by HPOPS' actuary of estimated impacts, (2) validation by the City's actuary, RHI, of estimated impacts utilizing data as provided in a mutually agreeable confidentiality agreement, (3) approval by the authorized governing bodies, and (4) legislation enacted by the Texas Legislature. These Terms and Conditions do not themselves modify any existing agreement or statutory obligation. The parties intend to present a mutually agreed pension reform solution in the form of legislation to the Legislature in November 2016 as provided in an amended Meet and Confer Agreement. Neither party will oppose the passage of agreed-upon legislation, and will assist in its passage where appropriate. The parties understand that changes to the Terms and Conditions may be reflected in the submitted legislation, and such agreed-to changes control. Both parties agree that the submission of agreed-upon legislation is not a breach under the terms of the Meet and Confer Agreement between the City and the Board of Trustees of HPOPS.

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II. Assumptions and Methodology of Calculations

Pension System Annual Report	June 30, 2015
Dated	
Pension System Actuarial	June 30, 2015
Valuation Report Dated	
Net Asset Values	Unaudited values as of June 30, 2016
Actuarial Method	Section III utilizes entry age normal actuarial cost method (per GASB
	68) and fair market value of assets.
	Section VII Risk Sharing Provision will utilize standard entry age
	normal.
Assumed Rate of Return	7.00%
	NOTE: The City of Houston, Texas Comprehensive Annual Financial Report
	dated June 30, 2015 assumes a rate of return of 7.08%
Amortization	Amortization of the unfunded liability over a 30-year closed period
City Funding Requirement	Pay the full City Contribution Rate as defined in Section VII
Pension Obligation Bonds	The City will issue Pension Obligation Bonds resulting in \$750,000,000
	of bond proceeds paid to HPOPS. The City will make best efforts to
	issue the bonds by July 1, 2017, but will issue the bonds no later than
	December 31, 2017.

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III. Estimated Financial Impacts

The pension system represents that the Proposed Revisions to Plan Provisions according to Section IV will result in the Estimated Financial Impacts presented here. All references to figures without issuance of POBs are for informational purposes only and do not remove the City's commitment to issue POBs as stated in Section II of these terms and conditions.

Net Pension Liability:	
- As of June 30, 2015 Comprehensive Annual Financial Report	\$2.69 Billion @ 7.08%
- Estimated Net Pension Liability as of June 30, 2016 - Section II Assumptions and Methodology	\$3.29 Billion @ 7.00%
 Estimated Net Pension Liability as of June 30, 2016 Section II Assumptions and Methodology Proposed Pension Reforms according to Section IV 	\$2.29 Billion @ 7.00% without issuance of POBs \$1.54 Billion @ 7.00% with issuance of POBs
Proposed Pension Reform Estimated Reduction to	\$1.00 Billion without issuance of POBs
the Net Pension Liability	\$1.75 Billion with issuance of POBs
Contribution Rates (% of payroll):	
FY 2017 Budgeted Rate	33.96%
FY 2017 City Contribution Rate @ 8.00%	40.10%
Estimated FY 2018 City Contribution Rate @ 7.00%	55.6%
Estimated FY 2018 City Contribution Rate @ 7.00% with	36.6% without issuance of POBs
Proposed Pension Reforms	24.90% with issuance of POBs
Proposed Pension Reform Estimated Reduction to	19.00% without issuance of POBs
the Contribution Rate	30.70% with issuance of POBs
Annual Contribution Amounts (\$millions):	
FY 2017 Budget	\$147.29 Million
FY 2017 Actuarially Determined Contribution @ 8.00%	\$173.92 Million
Estimated FY 2018 Actuarially Determined Contribution @ 7.00%	\$241.15 Million
Estimated FY 2018 Actuarially Determined Contribution	\$158.7 Million without issuance of POBs
@ 7.00% with Proposed Pension Reforms	\$108.0 Million with issuance of POBs
Proposed Pension Reform Estimated Cost	- \$82.4 Million without issuance of POBs
Avoidance	- \$133.2 Million with issuance of POBs (the
	increase in cost avoidance will need to be utilized for
	the debt service payment on the POBs)

NOTE: Any changes made to benefit reductions stated herein will be offset so that the amount of total proposed pension reform estimated reduction to the NPL remains \$1.00 Billion without issuance of POBs.

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IV. Proposed Revisions to Plan Provisions

Age of Retirement	Current	t - 20 years of service if sworn in prior to 10/9/2004	
Eligibility		- Age 55 with 10 years of service if sworn in on or after 10/9/2004	
	Future	- 20 years of service if sworn in prior to 10/9/2004	
		- Rule of 70 if sworn in on or after 10/9/2004	
Average Salary	Future	- Restrict pay calculation to only "classified" pay, which does not	
,		include executive level pays.	
		Average of the last three years of <u>classified</u> pay (excluding exempt	
		time, overtime, and strategic officer staffing pay).	
Benefit Accrual Rate Current - If sworn in before 10/9/2004:		- If sworn in before 10/9/2004:	
		Service years 1-20: 2.75% per year	
		Service years 20+: 2.00% per year	
		- If sworn in on or after 10/9/2004:	
		Service years 1-20: 2.25% per year	
		Service years 20+ : 2.00% per year	
		80% max	
	Future	- If sworn in before 10/9/2004:	
		Service years 1-20: 2.25% per year, prospectively	
		Service years 20+: 2.00% per year	
		- If sworn in on or after 10/9/2004:	
		Service years 1-20: 2.25% per year	
		Service years 20+ : 2.00% per year	
		80% max	
Average Salary for	Future	Post DROP entry, there will be no recalculation of average salary to be	
DROP Participants		the greater of (i) current monthly benefit, or (ii) monthly benefit	
2014		based on service at DROP entry and salary at retirement date.	
COLA	Current	80% of CPI-U; not less than 2.4% or greater than 8%, compounded	
	Future	Three year COLA freeze for retirees less than 70 years old, thereafter	
		COLA based on the most recent COLA granted by Social Security	
		capped at 2.5% compounded, beginning at age 55	
Member	Current	Members sworn in prior to 10/9/2004 contribute 9.0%; members	
Contributions		sworn in on or after 10/9/2004 contribute 10.25%	
	Future	Contributions for all members of 10.5%	
DROP Eligibility	Current	20 years of service and sworn in prior to 10/9/2004	
	Future	20 years of service, sworn in prior to 10/9/2004, and DROP entry on or before June 30, 2027	

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DROP Length of	Current	t May elect to participate until they leave active service	
Participation	Future	10 years for new DROP entrants;	
		15 years if in DROP for less than 5 years as of June 30, 2017;	
		18 years if in DROP between 5 and 10 years as of June 30, 2017;	
		20 years if in DROP for more than 10 years as of June 30, 2017	
DROP Base Credit	Current Monthly benefit and member contributions		
	Future	Monthly benefit only	
DROP COLA Credit	Future	COLA will not be credited to DROP accounts	
DROP Interest Credit	Current	Five (5) year average return, not less than 3% or greater than 7%	
	Future	65% of 5 year compound average return, otherwise not less than 2.5%	
PROP Eligibility	Current	Retired from DROP and sworn in prior to 10/9/2004	
	Future	No future annuities post DROP eligibility shall be credited	

Note: This document constitutes the essential terms and conditions of pension system reform for the purpose of guiding the Parties in connection with preparing pension reform legislation, and other implementing legal documents as required, designed to provide a sustainable pension plan.

V. Proposed Revisions to Governance Structure

NOTE: The pension system may already be in compliance with one or more of the provisions below, with these revisions serving as formalization of standard practice.

Frequency of	Annual financial audit and valuation
Reporting	
Investment	The pension system shall conduct an outside investment review and publish a report
Audit	 at least once every three (3) years or demonstrate in the published annual financial report that the following items have been reviewed by an outside investment professional. Investment Policy Statement (which can include review or creation of policies on Gifts, Ethics, Personal Trading) Asset Allocation, including a discussion of the various risks, objectives, and expected future cash flows Portfolio Structure, including need for liquidity, cash income, real return, inflation protection, and active/passive/index approaches for different portions of the portfolio Manager Performance Review and the processes used to retain and evaluate managers Benchmarks used for asset classes and/or particular managers Fees, Trading Costs Any Leverage, FX hedging, or other hedging
Investment	 Investment-Related Disclosures in retirement system annual reports General consultant required
Consultant	General Consultant required
Consultant	

Note: This document constitutes the essential terms and conditions of pension system reform for the purpose of guiding the Parties in connection with preparing pension reform legislation, and other implementing legal documents as required, designed to provide a sustainable pension plan.

VI. Information Sharing

Subject to a separate confidentiality agreement between the pension system and the City's retained actuary ("Confidentiality Agreement"), the pension system agrees to provide access to the same census data that is routinely used by the pension system's actuary for the pension system's valuation studies which is reasonably necessary in connection with the Risk Sharing provisions agreed to by the parties. Such census data shall not include identifying information, as established in the Confidentiality Agreement.

The census data shall be protected from disclosure and may not be obtained by open records request through Texas Government Chapter 552, the governing statute of the pension system, the Freedom of Information Act, or any other applicable statutes.

Subject to the Confidentiality Agreement, the census data shall be supplied by the pension system only to the City's retained actuary acting as the City's representative or agent. At no time will the census data be shared directly with the City or its representatives or agents other than the City's retained actuary, except that the City's retained actuary acting as the City's representative or agent may perform analyses and create reports based on the census data for the City and its representatives or agents in connection with the Risk Sharing provisions agreed to by the parties solely to the extent such analyses and reports contain no information in a form identifiable to a specific individual. Further, in no way will such analyses or reports provide sensitive data for individuals or be grouped in such a way that sensitive data about individuals (or groups of individuals) could be discerned from the report. The scope and duration of use of the census data shall be determined in the Confidentiality Agreement.

VII. Proposed Risk-Sharing Provision

Attachment A

ATTACHMENT A

RISK SHARING PROVISION

I. RISK SHARING OBJECTIVES

- a. The goal is to codify a formal risk-sharing plan.
- b. To give greater certainty to all stakeholders of the circumstances under which changes may occur to plan design.
- c. To recognize that a defined benefit model requires a framework of regulation over time to ensure that it remains sustainable given changes that may occur to the overall economic environment.

II. RISK SHARING STRUCTURE

- a. Effective July 1, 2017 and in each fiscal year thereafter, the City shall pay the City Contribution Rate. Based on the assumptions and methods contained within this Risk Sharing Provision, no new unfunded liability is projected to accumulate. The parties acknowledge that the Risk Sharing Valuation Study ("RSVS") (as described in Section IV of this Risk Sharing Provision) is based on a single set of assumptions and that actual results are expected to differ in the future resulting in an increase or decrease in the pension liabilities. These future deviations shall be amortized and treated as a component of the City Contribution Rate.
- b. The Initial RSVS shall be marked to market, thus there shall be no unrecognized gain or loss in the value of assets in the Initial RSVS. Future RSVS shall employ asset smoothing as described in Section IV.b of this Risk Sharing Provision.
- c. The RSVS shall employ actuarial methods as described in Section IV and is intended to serve as the funding valuation.
- d. Each RSVS will be completed annually within 180 days of the end of HPOPS' fiscal year.
- e. The City Contribution Rate shall not go above the Maximum Contribution Rate or below the Minimum Contribution Rate.
- f. HPOPS and the City may mutually agree in writing to benefit and/or plan changes outside of those required by this Risk Sharing Provision to the extent permitted by all applicable law.
- g. In any written agreement between the City and HPOPS, the parties shall not fundamentally alter this Risk Sharing Provision, increase the Discount Rate to more than The Public Fund Survey's (or other reference point as mutually agreed upon by the City and HPOPS if The Public Fund Survey is unavailable or the data provided by The Public Fund Survey is unusable) median return assumption minus 150 basis points, extend the amortization of a Liability Layer to more than 30 years from the creation of the Liability Layer, or to allow a City Contribution Rate in any year that is less than the calculated City Contribution Rate as determined pursuant to the RSVS for that year.
- h. Should any legislative or regulatory change materially affecting the pension plan occur at any point in time that is not mutually agreed to by the City and HPOPS, the parties shall mutually

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- agree upon an appropriate Meet and Confer response within 120 days of the passage of the legislative or regulatory change to address the impacts of the legislative or regulatory change.
- i. The Parties recognize that the purpose of this Agreement is to establish a method for future years to regulate the sustainability of pension costs so that except as provided herein, the City Contribution Rate for that year is less than or equal to the Maximum Contribution Rate and greater than or equal to the Minimum Contribution Rate, and that if actual results fail to meet that purpose, pursuant to a written agreement between the City and HPOPS, the Parties will adjust the language herein as necessary to achieve such purpose.
- j. [PENDING INVESTMENT CONTINGENT COLA ADJUSTMENT TO DAMPEN VOLATILITY]
- k. [PENDING MUTUAL APPLICABLE ENFORCEMENT ACTIONS]

III. RISK SHARING

a. FALLING COST

- 1. If the Funded Ratio is less than 90% and the City Contribution Rate is less than the Corridor Midpoint for the corresponding year, but equal to or greater than the Minimum Contribution Rate, then the City shall pay the Corridor Midpoint.
- If the Funded Ratio is greater than or equal to 90% and the City Contribution Rate is less than the Corridor Midpoint for the corresponding year, but equal to or greater than the Minimum Contribution Rate, then the City shall pay the calculated City Contribution Rate.
- 3. If the City Contribution Rate is less than the Minimum Contribution Rate for the corresponding year, then the City shall contribute a rate equal to the Minimum Contribution Rate, unless stated otherwise, and make adjustments as follows:
 - 1. First, prospectively restore all or part of benefit cuts that may have been made subsequent to this agreement as a result of this Risk Sharing Provision pursuant to a written agreement between the City and HPOPS, and then,
 - 2.Second, accelerate the Payoff Year of existing Liability Layers, including the Legacy Liability, oldest layers first, and then,
 - 3. Third, consider and, if mutually agreed upon by the City and HPOPS, reduce the Discount Rate, and then,
 - 4. Fourth, if the Funded Ratio is less than 90%, the City shall pay the amount required by the Corridor Midpoint, and the payment will be applied to increase the Funded Ratio, and then,
 - 5. Fifth, if the Funded Ratio is between 90% and 100%, the City shall pay the amount required by the Minimum Contribution Rate, and the payment will be applied to increase the Funded Ratio, and then,
 - 6. Sixth, if the Funded Ratio is at least 100%, all existing Amortization Bases, including the Legacy Liability, will be considered fully amortized and eliminated, and changes to other plan assumptions may be mutually agreed upon, and then,

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- 7. Eighth, reduce employee contributions and increase other pension benefits pursuant to a written agreement between the City and HPOPS.
 - If an agreement has not been reached within 120 days of the release of the RSVS, then HPOPS shall reduce member contributions and increase COLAs such that the City Contribution Rate is increased to the Minimum Contribution Rate.

b. RISING COST

- 1. If the City Contribution Rate is greater than the Maximum City Contribution Rate for the corresponding year, then the City shall make adjustments as follows:
 - 1. First, reduce the City Contribution Rate to no less than the Corridor Midpoint by extending the Payoff Year of existing Liability Layers, including the Legacy Liability, but to no more than the original 30-year Payoff Year, newest layers first, and then,
 - 2.Second, if the City Contribution Rate is greater than the Third Quarter Line, reduce the City Contribution Rate to the Third Quarter Line, pursuant to a written agreement between the City and HPOPS, by increasing employee contributions and make any other benefit changes permissible by all applicable law. Consider other plan changes as necessary.
 - If an agreement has not been reached within 120 days of the final release of the RSVS for the corresponding year, then HPOPS shall increase member contributions, suspend COLAs, and/or increase retirement age such that the City Contribution Rate is decreased to the Corridor Midpoint.
 - 3. Third, if the City Contribution Rate in the third year after adjustments were required per Section III.b.1 is greater than the Corridor Midpoint, then, the City Contribution Rate shall be reduced to the Corridor Midpoint, pursuant to a written agreement between the City and HPOPS, by increasing employee contributions and make any other benefit changes. Consider other plan changes as necessary.
 - If an agreement has not been reached within 120 days of the final release of the RSVS for the corresponding year, then HPOPS shall increase member contributions, suspend COLAs, and/or increase retirement age such that the City Contribution Rate is decreased to the Corridor Midpoint.

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IV. RISK SHARING VALUATION STUDY ("RSVS")

This study shall be included in the pension system's standard valuation study, shall be conducted annually by both HPOPS' retained actuary and the City's actuary within 180 days of the end of each HPOPS' fiscal year, shall detail the City Contribution Rate before and after any adjustments required by this Risk Sharing Provision, and shall include the following assumptions and methods. All other assumptions and methods not listed below are set by the Fund consistent with Actuarial Standards of Practice:

- a. Standard Entry Age Normal,
- b. A smoothing method of actuarial losses and gains for no more than 5 years that is selected by the Fund, that treats actuarial losses and gains in the same fashion, and is consistent with Actuarial Standards of Practice, applied prospectively with the actuarial value of assets marked to mark as of June 30, 2016.
- c. Closed amortization matching the Amortization Period,
- d. The Discount Rate,
- e. The Price Inflation Assumption, and
- f. Salary increases and pensionable payroll growth rates set in consultation with the City's Finance Director.

This RSVS will be performed by both HPOPS and the City's actuary. HPOPS will provide the necessary census data and assumptions to the City's actuary under a confidentiality agreement, as well as any other data used by the plans' actuary, within 90 days of the end of HPOPS' fiscal year for independent replication of the Risk Sharing Valuation Study. If the City Contribution Rate measurement performed by each party is within 2% of pensionable payroll, the results from the pension system's study will be used. If the independently measured results have a variance that is greater than 2% of pensionable payroll, then the actuaries for the two parties will have two weeks to work together in an attempt to reconcile the difference. If after such attempts, there remains a variance of greater than 2% of pensionable payroll, the arithmetic average of the two sets of results determined by the HPOPS actuary and the City's actuary, respectively, will be used. If, for any year, the City does not perform a RSVS then the results from the RSVS performed by HPOPS will be used.

The Initial RSVS, which will serve as the basis for the Corridor Midpoint, performed by each party must be within 2% of pensionable payroll in each year. The actuaries of the two parties shall work together to reconcile differences greater than 2% of pensionable payroll. If after such attempts, there remains a variance of greater than 2% of pensionable payroll, the arithmetic average of the two sets of results determined by the HPOPS actuary and the City's actuary, respectively, will be used.

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V. DEFINITIONS

Amortization Base – Means the Legacy Liability and, as determined pursuant to each annual RSVS following the Initial RSVS, an amount equal to the unanticipated change in the unfunded actuarial accrued liability (UAAL) from the prior year. These bases could be due to demographic experience, investment experience, assumption changes, City contributions in excess of the City Contribution Rate, etc.

Amortization Period – The length of time it will take to fully pay an Amortization Base. Each Amortization Base will be layered and have its own Amortization Period. This initial amortization for each Amortization Base will set a Payoff Year for that Liability Layer. This closed Amortization Period shall initially be 30 years from the creation of the Liability Layer for each "Loss Base." The Amortization Period for each "Gain Base" shall be equal to the remaining Amortization Period on the largest remaining "Loss Base,".

City's Actuary - The City will select an actuary from a professional service firm to perform the RSVS. The principal actuary may not already be providing actuarial services to any of the City's retirement systems, must have a minimum of 10 years of professional actuarial experience, and must be a member of the American Academy of Actuaries or a Fellow of the Society of Actuaries who has met the requirements to issue Statements of Actuarial Opinion.

City Contribution Rate – A percent of pensionable payroll sufficient to pay Employer Normal Cost plus the amortization of Liability Layers, including the Legacy Liability.

Corridor – The range of City Contribution Rates that are greater than or equal to the Minimum Contribution Rate and less than the Maximum Contribution Rate.

Corridor Margin – Set at five (5) percent of pensionable payroll.

Corridor Midpoint –The Corridor Midpoint in any given year shall equal the City Contribution Rate, rounded to XX.XX%, as projected out for 31 years according to the Initial RSVS. Two years prior to the Payoff Year of the Legacy Liability, pursuant to a written agreement between the City and HPOPS, the Parties shall agree upon a transition plan such that the Corridor Midpoint will be reset within no more than three years from the Payoff Year of the Legacy Liability to the projected City Contribution Rate of the 31st year as determined pursuant to the Initial RSVS.

Discount Rate – The assumed rate of return on investments, initially 7%, but subject to reduction according to Section III of this Risk Sharing Provision. The discount rate shall never be reduced below The Public Fund Survey's median return assumption minus 150 basis points (Summary of Findings for FY 2014 dated March 2016 reports a median of 7.75% making the initial minimum assumed discount rate 6.25%). The reference point may be modified by mutual agreement between the City and HPOPS if The Public Fund Survey becomes unavailable or if the data is provided in such a way as to be unusable.

Employer Normal Cost – The portion of the actuarial present value of additional member contributions different from the year of the RSVS.

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Funded Ratio - The ratio of the pension plan's actuarial value of assets available for paying benefits divided by the Actuarial Accrued Liability.

Gain Base – Each Amortization Base resulting from an unanticipated change decreasing the UAAL.

Initial RSVS – The Risk Sharing Valuation Study as of June 30, 2016 which will set the Corridor Midpoint in each year for 31 years.

Legacy Liability – The Unfunded Actuarial Accrued Liability (UAAL) as of June 30, 2016 reduced by the final agreement on pension plan design reform and the amount of any Pension Obligation Bonds issued by the City to HPOPS and paid down over time. The Legacy Liability may be reduced further by any other City contributions made in excess of these those required by this Risk Sharing Provision and the Payoff Year of the Legacy Liability shall be accelerated such that the updated City Contribution Rate equals the City Contribution Rate calculated without such excess contributions.

Level Percent of Payroll Method – Amortization method which defines the amount recognized each year as a level percent of pensionable payroll (actual dollar amount recognized increases each year).

Liability Layer – Amortization Base established in each RSVS.

Loss Base – The Legacy Liability and each other Amortization Base resulting from an unanticipated change increasing the UAAL.

Maximum Contribution Rate – The sum of the Corridor Midpoint and the Corridor Margin.

Minimum Contribution Rate – The difference between the Corridor Midpoint and the Corridor Margin.

Payoff Year – The payoff year of an amortization is the year set when a base is fully amortized according to the Amortization Period. According to Section III, this Payoff Year may move forward or backwards in time, but to no more than 30 years or less than 20 years from the original year of the Liability Layer. If a "Gain Base" has the same Payoff Year as a "Loss Base," the acceleration of the Payoff Year must be applied to both.

Price Inflation Assumption – As set with each experience study conducted by HPOPS, but no less than every five years, the most recent Fed's Survey of Professional Forecasters current Headline CPI ten year forecast; (currently 2.15%) (https://www.philadelphiafed.org/research-and-data/real-time-center/survey-of-professional-forecasters) plus or minus up to 50 basis points. The reference point may be modified by mutual agreement between the City and HPOPS if the Fed's Survey of Professional Forecasters Headline CPI ten year forecast becomes unavailable.

Third Quarter Line – The Corridor Midpoint plus half of the Corridor Margin.

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