0001 1 2 3 NEW YORK CITY TEACHERS' RETIREMENT SYSTEM 4 BOARD MEETING 5 б 7 Held on Thursday, December 20, 2018, at 55 Water Street, New York, New York 8 9 10 ATTENDEES: 11 JOHN ADLER, Chairman, Trustee 12 DAVID KAZANSKY, Trustee 13 THOMAS BROWN, Trustee 14 DEBRA PENNY, Trustee 15 SUSANNAH VICKERS, Trustee 16 PATRICIA REILLY, Teachers' Retirement System 17 THAD McTIGUE, Teachers' Retirement System 18 RONALD SWINGLE, Teachers' Retirement System 19 VALERIE BUDZIK, Teachers' Retirement System 20 21 22 REPORTED BY: 23 YAFFA KAPLAN JOB NO. 2467346 24 25 0002 1 2 ATTENDEES (Continued): KAVITA KANWAR, Teachers' Retirement System 3 4 LIZ SANCHEZ, Teachers' Retirement System 5 ANNETTE HANHARAN, Teachers' Retirement System ANTHONY MEZZACAPPA, Teachers' Retirement System 6 7 ROBERT BETHELMY, Teachers' Retirement System 8 PAUL RAUCCI, Teachers' Retirement System 9 RENEE PEARCE, Teachers' Retirement System 10 MARTA ROSS, ESQ., Law Department SHERRY CHAN, Office of the Actuary 11 12 ANDREW BRADFORD, Teachers' Retirement System MELVYN AARONSON, Teachers' Retirement Sytem 13 MITCHELL FRUCHTER, Teachers' Retirement System 14 15 NATARAJAN KRISHNAMOORTHY, Teachers' Retirement 16 System 17 HOPE GOLDSTEIN, Marks Paneth 18 RYAN ZULLO, Marks Paneth 19 20 21 22 23 24 25

0003 1 Proceedings MR. ADLER: Good afternoon, everybody. 2 3 Welcome to the last Teachers' Retirement 4 System board meeting for 2018. December 20, 5 2018 to be precise. б Patricia, will you please call the roll? 7 MS. REILLY: John Adler? 8 MR. ADLER: I am here. 9 MS. REILLY: Thomas Brown? 10 MR. BROWN: Here. MS. REILLY: David Kazansky? 11 12 MR. KAZANSKY: Present. 13 MS. REILLY: Lindsey Oates? Debra 14 Penny? 15 MS. PENNY: Here. 16 MS. REILLY: John Dorsa? 17 MS. VICKERS: I know I look like him. 18 MS. REILLY: Susannah Vickers? 19 MS. VICKERS: Here. MR. ADLER: Great. 20 MS. REILLY: We have a quorum. 21 22 MR. ADLER: Thank you. 23 MS. REILLY: Okay. So the first item on 24 the agenda is an update on TRS operations, 25 which Kavita Kanwar is going to give to us. 0004 1 Proceedings 2 MS. KANWAR: 1099 forms for tax year 3 2018 will be mailed in January. TRS has been 4 working with FISA to complete the generation 5 of the 1099 forms for nonperiodic distributions such as withdrawals and refunds. б FISA will also generate 1099s on behalf of TRS 7 for approximately 91,900 retirees and 8 9 continuing beneficiaries who receive monthly 10 payments. As part of this effort, TRS will also send an informational brochure to just 11 12 about 3,580 new retirees who are receiving a 13 1099 form for the first time. 14 TRS is completing the processing of 15 required minimum distributions or RMDs for tax 16 year 2018. RMDs are paid to certain retirees who are maintaining their TDA accounts but 17 have reached age 70 and a half. About 15,700 18 retirees will receive their distribution in 19 20 December of this year. About two-thirds of 21 these are members who did not make a specific 22 choice about how to receive the distribution 23 but are required to receive a payment by year 24 end. About 460 beneficiaries who participate 25 in our TDA B program will also receive RMDs

1 Proceedings 2 this month. 3 On January 1, 2019, a new plan year goes 4 into effect for Tier VI members, which means 5 that pension contribution rate may change. б Based on the rules governing Tier VI, TRS has 7 reviewed and updated salary and wage information for almost all Tier VI members, 8 9 and approximately 15,300 members will have a 10 new rate starting in January. 11 Earlier in December, TRS conducted an 12 e-mail campaign to members about our TDA 13 120,000 members received messages program. 14 encouraging participation and mentioning the 15 new contribution limit for 2019. Over 3,000 16 of those contacted have enrolled or elected a 17 new contribution rate after receiving our 18 e-mails. That means the total number of 19 members contributing to TDA as of January will 20 be nearly 91,000, which we believe to be an all-time high. Thank you. 21 22 MS. REILLY: Thanks, Kavita. 23 MR. BROWN: Can we have it 24 electronically? Thank you. 25 MS. REILLY: Next on the agenda is the 0006 1 Proceedings 2 executive director's report. And the first 3 item on that report is a matter of the next 4 meeting, and it's been suggested that the next 5 regular meeting of the Teachers' Retirement б Board be held on the fourth Thursday of the month, January 24, 2019. 7 8 And the second item on the executive 9 director's report is the authorization to the 10 Comptroller of the City of New York to invest 11 certain QPP funds. 12 MR. KAZANSKY: Please waive the reading. 13 MR. ADLER: Okay. So we have the every 14 three-month authorization to the Comptroller 15 of the City to invest certain QPP funds. Is 16 there a motion to adopt this resolution? 17 MR. BROWN: So moved. 18 Thank you, Mr. Brown. MR. ADLER: Is 19 there a second? 20 MS. PENNY: Second. 21 MR. ADLER: Thank you, Ms. Penny. Any 22 discussion? 23 All in favor of the motion to authorize 24 the Comptroller to invest certain QPP funds, please say aye. Aye. 25

1 Proceedings MS. VICKERS: Aye. 2 3 MR. BROWN: Aye. 4 MR. KAZANSKY: Aye. 5 MS. PENNY: Aye. б MR. ADLER: I believe it's unanimous. 7 Motion carries. MS. REILLY: Okay. Next is the 8 9 authorization to the Comptroller of the City 10 of New York to invest certain tax-deferred 11 annuity funds. 12 MR. KAZANSKY: Again, please waive the 13 reading. 14 MR. ADLER: So is there a motion to 15 approve the every three-month authorization to 16 the Comptroller to invest certain tax-deferred 17 annuity funds? 18 MS. PENNY: So moved. 19 MR. ADLER: Thank you, Ms. Penny. Is 20 there a second? 21 MR. BROWN: Second. 22 MR. ADLER: Thank you, Mr. Brown. Any 23 discussion? 24 All in favor of the motion to authorize 25 the Comptroller to invest certain tax-deferred 8000 1 Proceedings 2 annuity funds, please say aye. Aye. 3 MS. VICKERS: Aye. 4 MR. BROWN: Aye. 5 MR. KAZANSKY: Aye. б MS. PENNY: Aye. 7 MR. ADLER: All opposed, please say nay. 8 Any abstentions? This one is also unanimous. 9 MS. REILLY: Next is the ratification 10 for the resolution adopted by voice vote for 11 managerial increases and District Council 37 12 union increases for TRS employees. 13 MR. KAZANSKY: Please skip to the 14 resolved. 15 MS. REILLY: Resolved, that the Trustees 16 of the Teachers' Retirement Board hereby 17 approve a modification of the Fiscal Year 2019 18 Budget by increasing such budget in the amount 19 of 1,950,000 dollars to provide for pay 20 increases for all eligible staff, including 21 the agency head, in accordance with the 22 Mayor's Personnel Orders 2018/2 and 2018/3, as 23 well as all eligible staff under the DC37 24 collective bargaining agreement. 25 MR. ADLER: Great. Is there a motion to

0009 1 Proceedings 2 approve this budget modification to provide 3 for pay increases? 4 MS. VICKERS: So moved. 5 MR. ADLER: Thank you, Ms. Vickers. Is б there a second? 7 MR. KAZANSKY: Second. 8 MR. ADLER: Thank you, Mr. Kazansky. Any discussion? Let's just note that budget 9 10 approvals and budget modifications require the 11 approval of the Comptroller or the Mayor, so 12 with the Comptroller making the motion that 13 condition has been satisfied. Therefore, all 14 in favor of the motion, please say aye. Aye. 15 MS. VICKERS: Aye. 16 MR. BROWN: Aye. 17 MR. KAZANSKY: Aye. 18 MS. PENNY: Aye. 19 MR. ADLER: All opposed? Any 20 abstentions? Motion carries unanimously. 21 MS. REILLY: Next is the ratification: 22 Resolution adopted by Finance Committee: 23 Extension of participation in the Common 24 Investment Meeting. 25 MR. KAZANSKY: Please skip to the 0010 1 Proceedings 2 resolved. 3 MS. REILLY: Resolved, the Teachers' 4 Retirement Board extends for a one-year period 5 its participation in the Common Investment б Meeting, as described and subject to the 7 conditions of the Board's 2015 and 2016 CIM 8 resolutions; and be it further resolved, 9 nothing in this resolution shall abrogate any 10 rights or waive any responsibilities reserved 11 to the Board of Trustees under applicable law. 12 MR. ADLER: Is there a motion to approve 13 the resolution extending TRS's participation 14 in the CIM? So moved. 15 MR. BROWN: 16 Thank you, Mr. Brown. MR. ADLER: Is 17 there a second? 18 MS. PENNY: Second. 19 MR. ADLER: Thank you, Ms. Penny. Any 20 discussion? All in favor of the resolution 21 extending our participation in the CIM, please 22 say aye. Aye. 23 MS. VICKERS: Aye. 24 MR. BROWN: Aye. 25 MR. KAZANSKY: Aye.

0011 1 Proceedings 2 MS. PENNY: Aye. 3 MR. ADLER: All opposed, please say nay. 4 Any abstentions? Motion carries. 5 Unanimously. MS. REILLY: Next is the calendar and б 7 you all should have received an electronic version of the calendar and the first item on 8 9 the calendar is the matter for the approval 10 for all minutes for the month of November 1st 11 investment meeting, November 15, 2018 board 12 meeting, and November 19th CIM meeting 13 minutes. 14 MR. ADLER: Thank you. Is there a 15 motion to approve the minutes for these three 16 TRS meetings in the month of November? 17 MR. KAZANSKY: So moved. 18 MR. ADLER: Thank you, Mr. Kazansky. Is 19 there a second? 20 MR. BROWN: Second. 21 MR. ADLER: Thank you, Mr. Brown. Anv 22 discussion? Very well. All in favor of the motion to approve the November meeting 23 24 minutes, please say aye. Aye. 25 MS. VICKERS: Aye. 0012 1 Proceedings MR. BROWN: Aye. 2 3 MR. KAZANSKY: Aye. 4 MS. PENNY: Aye. 5 MR. ADLER: All opposed, please say nay. б Any abstentions? Motion carries. 7 MS. REILLY: Okay. So --8 MR. ADLER: Now we have the calendar. 9 MS. REILLY: Now we have the items on 10 the calendar. MR. KAZANSKY: Please waive the reading 11 12 of the calendar. 13 MR. ADLER: Thank you. So is there a 14 motion to adopt the calendar items for 15 December 20, 2018? 16 MS. VICKERS: So moved. 17 MR. ADLER: Thank you, Ms. Vickers. Is 18 there a second? MS. PENNY: 19 Second. 20 MR. ADLER: Thank you, Ms. Penny. 21 Discussion of the calendar? 22 All in favor of approving the calendar for December 20, 2018, please say aye. Aye. 23 24 MS. VICKERS: Aye. 25 MR. BROWN: Aye.

0013 1 Proceedings 2 MR. KAZANSKY: Aye. 3 MS. PENNY: Aye. 4 MR. ADLER: That's unanimous. The 5 motion carries. б MS. REILLY: Next is other business, and 7 we have a presentation by Marks Paneth. I believe Hope Goldstein is going to be giving 8 9 us the presentation. 10 You can sit at the table with Ms. Chan 11 and Ms. Vickers. The seat of honor. MS. GOLDSTEIN: Good afternoon, 12 13 everyone. I am Hope Goldstein. This is Ryan 14 Zullo. I am the partner overseeing the 15 retirement fund. I don't think I had the pleasure of seeing everybody last year and 16 17 Ryan who handles our IT portion of the audit 18 process. So you have a presentation that goes 19 through required communications as your 20 auditors were supposed to communicate with the 21 Board for your understanding of your 22 responsibility overseeing the financial 23 reporting process. And we have included that 24 in tab 2. 25 Tab 1 of our presentation -- I don't 0014 1 Proceedings 2 know who is handling -- but you have it in 3 front of you. So there is five tabs there, 4 but Tab 1 is just some information about who 5 we are. Some pictures, it takes several people to make all of this happen. I am just б 7 one of those, as Ryan is as well. But we do 8 all of the City's pensions. So it takes a lot 9 of people to get through this audit. We do Teachers, Board of Ed, NYCERS, Police, Fire, 10 11 and the OPED as well. 12 So it's two partners and we split it 13 myself and Joe and then we have an investment 14 team. We work with Sherry's group, the Office 15 of the Actuary and obviously the Comptroller's 16 Office who are an integral part of all of 17 this. We are your auditors now for -- this is our third year working with Teachers. We have 18 19 watched tremendously the shift between the 20 reliance on the Comptroller's Office and 21 really moving to management at the individual 22 system's level. So they really are working in 23 autonomy in many ways and less dependent on 24 the Comptroller's Office handling the 25 financial information. So it's been a nice

1 Proceedings 2 shift that we have seen. 3 Okay. So I am responsible for moving 4 That's just some PR information. This this. 5 is really our required communication. It's б very templated in accordance with the auditing 7 standards. Really those general accounting 8 office, GAGAS, but generally accepted 9 government auditing standards, and that's what 10 we abide by in order to do our audit of the 11 systems and Teachers' Retirement System. So as your auditors, we are required to 12 13 issue an opinion on the financial statements. 14 You should understand those are combining 15 financial statements that includes the QPP and 16 TDA, which is the deferred annuity plan. And 17 we are -- this is just a timeline. We get in 18 front of the City's audit committee early on. 19 We are actually presenting to them in March 20 about our plans. We send out our communications to the management of the 21 22 retirement system on the scope of the work 23 that we will be doing, and the majority of our 24 work happens between the -- pardon me, the May 25 through July time. When everybody would like 0016 1 Proceedings 2 to be off taking vacation, the auditors are 3 there doing the work, but you should know we 4 are meeting on a weekly basis with the 5 Comptroller's Office, receiving full б cooperation. You should have some sense of 7 quote, unquote, the heavy lifting. I mean, the information comes from BAM, the Bureau of 8 9 Asset Management, Sherry's office that she 10 oversees. There is so much that goes on plus 11 what goes on at the Comptroller's Office. 12 Then, of course, what Mitch and his team does 13 to get us all the work. 14 Obviously we have a deadline of October 15 31st to get the financial statements 16 completed. We got that earlier than 17 anticipated in the prior years because this 18 all goes into the City's financials and rolls 19 up at least at the footnote level and as part 20 of the funds, but we got our opinion out end 21 of October. October 26th is when we actually 22 issued the opinion and met with the City --23 the audit committee of the City just a few 24 days before that. You should know we are 25 sitting in front of the City's audit committee

0017 1 Proceedings in January this year. That has moved from 2 3 April when we have typically gone in front of 4 them on the final financials and they have 5 moved that a couple of months. б So the next couple of pages are really 7 again templated information about the required 8 disclosure or disclosures we make to this 9 board. The first one is our responsibility, 10 so I repeat myself. We are ready to issue an 11 unmodified opinion, which is a clean opinion. 12 We say in our profession that's the best you 13 can get, and the financial statements are 14 actually in Tab 5, the draft financial 15 statements. 16 Management has signed a representation 17 letter. We share with you that letter which 18 is in the back of Tab 2. There is nothing 19 unusual there. You should also know we do an 20 agreed-upon procedures on the securities vault 21 as well as GASB 67 and 68 because your plan is 22 part of the multiemployer plan. So that is 23 required of us as well. 24 Management's responsibility is here 25 outlined for you. They have met their 0018 1 Proceedings 2 responsibility establishing and maintaining 3 controls not only around the financial 4 information but also for the design and 5 implementation of programs and controls to б both prevent and detect fraud. Our 7 responsibilities as auditors is to detect 8 fraud, and we do design certain tests like 9 that. 10 All accounting policies are in note 2 of 11 the financial statements, again in Tab 5, and 12 there were no changes or significant changes I 13 should say in any accounting matters. 14 Significant judgments and accounting estimates 15 are part of the financial statements. Two of 16 the most significant estimates has to do with 17 the actuarial assumptions, and those are all in note 5 to the combining financial 18 statements. The fair value of investments is 19 20 also an estimate and that's all in note --21 note 3 footnotes of the combining financial 22 statements and those really have to do with 23 alternative investments where there is no 24 ready market for those, whereas if we all own 25 the same stock -- I always use Exxon as an

0019 1 Proceedings 2 example -- we can all go the same exchange and 3 actually get the same price. On alternative 4 investments you can't necessarily all go to the same exchange. Maybe I shouldn't say 5 Exxon today. б 7 MR. ADLER: Let's say Facebook -- oh, 8 no. 9 MS. GOLDSTEIN: Like GE. Nothing is 10 good anymore. Or not even Google. Or Amazon 11 is bad too, at least here in New York. 12 Anyway, you get the understanding that we all 13 can go to that same exchange and get the same 14 value. When it comes to alternative 15 investments, we can't and we rely upon a set 16 of financial statements that are audited by 17 other auditing firms to get those. I will say 18 in terms of risk and alternative investments, 19 now it's much more minimized than it had been about 15 years ago where investment managers 20 21 were not sharing how they were investing in 22 these alternative investments or what they were made of. I often use a joke that they 23 were like the Mrs. Fields' cookie recipe. No 24 25 one can get their hands on it. So now there 0020 1 Proceedings 2 is much more transparency around this. 3 Unfortunately, it takes something to happen to 4 cause a disaster for regulations to get put in 5 place in order so there is more transparency. б So there is a different -- it's a 7 different world around these alternative 8 investments than it was before, and I say that 9 from an audit partner who is signing an 10 opinion to a set of financial statements where 11 valuation is such a key on these. At least 12 now we can see those underlying investments 13 that we weren't able to see many years ago, 14 and you should feel comfortable as well. 15 There were no audit adjustments that we 16 needed to bring forth to you. All adjustments 17 had been booked prior to us getting the trial 18 balances. We have received the full 19 cooperation by management, and now that they 20 are used to us, I will say, and understand the 21 way in which we audit, our audit is much 22 smoother than it has been or was that first 23 year of what I would consider growing pains. 24 Three years in working with the systems, it 25 definitely has gotten a lot easier. We have

1 Proceedings 2 no material weaknesses to speak to or 3 significant deficiencies around the internal 4 control environment, so we are able to issue a 5 on-page no-material-weakness letter, which is б in Tab 3. 7 Tab 4 has our observations and 8 recommendations, which are really enhancements 9 around control practices, and there were no 10 new comments this year that we need to bring 11 forth. Only some lingering ones from last 12 year. The one that affected -- and I say 13 audit versus technology. The one that really 14 affected the audit is really around the 15 mapping and grouping of financial information, 16 so management has helped us quite a bit in 17 terms of their Excel spreadsheets that maps 18 the general ledger into the financial 19 statements and it continues to get tweaks, so 20 we are in a lot better position than we had 21 been in prior years, so it's still a lingering 22 comment as management speaks to consultants 23 and trying to work ways that that process is a 24 little bit easier. And Ryan will take us 25 through -- I believe there is three 0022 1 Proceedings 2 observations that are left over from last 3 year. 4 We are independent, so the work that we 5 perform to complete our audit and the agreed upon procedures that I spoke about earlier in б 7 the GASB 67/68 report that we issue and do the 8 work on in no way tarnishes our independence. 9 Again, this is template information I need to 10 speak to you about. There is some new 11 accounting and auditing standards on the 12 Those -- we provide all of them for horizon. 13 your reading. The ones that are not 14 applicable are not applicable, and the ones 15 that will be applicable, management is still 16 working through to see how those will affect 17 -- if, at all, have material effect on the 18 financial statements. So we will keep you 19 abreast on all of those as we move forward. 20 As I mention, Tab 3 is 21 no-material-weakness letter. And that is just 22 clean and then we have our observations and 23 recommendations, which really is an informal 24 communication to the Board about the 25 enhancement on control practices. So as I had

0023 1 Proceedings 2 mentioned, the first one around financial 3 statement groupings really is lingering from 4 the prior year, and again management continues 5 to enhance that and to help that process run б smoother. 7 So I am going to turn it over to Ryan to just speak to the three outstanding comments 8 9 from the prior year. 10 So if you are looking MR. ZULLO: Sure. 11 at page 1 towards the bottom, the first 12 observation deals with cyber insurance. This 13 has been an ongoing observation since 2017, so 14 it's only been open for two years at this point. So the firm's stance on cyber 15 16 insurance is -- again, we are not insurance 17 brokers so we can't legally opine on the 18 validity of it for your financial statements, 19 but we do recommend to all of our clients to look into sourcing cyber insurance and 20 21 determine whether or not it's something worth 22 having to mitigate any risk in the event of a 23 cyber attack. 24 So we said this year you recently issued 25 an RFP to source that and in response you 0024 1 Proceedings 2 heard back from some brokers and you are 3 working to get that in place. So depending on 4 how long it takes when we come in here next 5 year, if that's been acquired at that point, б this should easily be dropped off the list. So the risk for that really isn't too great. 7 8 Nothing super to worry about. 9 The next one deals with -- so bottom of 10 the page, the pension management system. So 11 that's been an ongoing effort and it's going 12 to continue to be an ongoing effort. You are 13 currently in Stage 4 out of 7 of your 14 multiyear plan. I think from our discussion 15 you are slated to begin the next phase of 16 implementation in January. So again, this 17 will remain open throughout the next year and 18 likely the year afterwards, so once the system 19 is fully up and running, we will be able to 20 drop this down the list. The reason we even 21 have this open is with the old system, there 22 are inherent risks in a custom developed 23 system so we just like to communicate that on 24 an ongoing basis, but again, you are making 25 clear work on it from everything we have seen

0025 1 Proceedings both from hard discussion with Mitchell as 2 3 well as the documentation we received. There 4 weren't any major red flags or anything that 5 would cause immediate alarm, so that's good to б know. 7 The last observation deals with the transportation of checks. In the past we saw 8 9 you were using messenger services, which again 10 has a risk in and of itself. If a package is 11 lost or stolen in transport, people can read 12 This has been going for two years, so you it. 13 are aware of that. As of this year when we 14 talked at the IT department, it looks like you 15 are now sourcing a MICR-cutting check machine, 16 which you will be able to print and issue your 17 own checks and eliminating the messenger 18 service over the coming year. So once that is 19 fully implemented and up and running in 2019, 20 when we come back next year, we should be able 21 to drop that off. 22 And aside from here that we retired two 23 observations this year, so again, you continue 24 to improve. We didn't open any new 25 observations, so overall continue doing what 0026 1 Proceedings 2 you are doing. In standing with the other 3 pension systems, which we looked at in terms 4 of IT, you guys are ahead of the curve on 5 that, which is something to be proud of. б So outside of that, if there are any 7 specific questions or concerns with the 8 observations in and of themselves, I can try 9 to answer them. 10 MR. ADLER: I just have one question 11 about something that you said about the 12 pension management system. I believe I heard 13 you say there is risk with any custom 14 developed system? 15 MR. ZULLO: Right. 16 MR. ADLER: So I believe our new system, 17 the ASPEN system is also custom developed. So how is that different? 18 19 MR. ZULLO: So the issue -- when you 20 have a homegrown internally developed system, 21 again, you have to follow proper SDLC 22 processes. 23 MR. ADLER: Proper what? 24 MR. ZULLO: Software System Development 25 Life Cycle. So it's basically a structured

1 Proceedings methodology of planning implementation testing 2 3 before you push to a live environment. The 4 issue with the system that was homegrown is 5 it's based on an older software, which in and б of itself is a risk. So the new system is 7 based on a currently supported software from the vendor itself, so that eliminates that 8 9 risk because you don't have to worry about 10 patching and security updating the system. 11 That's what the risks are. MS. GOLDSTEIN: I would say I am not the 12 13 IT person, but generally any system will end 14 up needing some sort of customization so I 15 think there is always --MR. ZULLO: There is always going to be 16 17 that customization, but when you source it 18 from the vendor itself, then you rely on them 19 for new software patching, constant system 20 updates like Microsoft and Apple updates as 21 opposed to having to do that yourself. And 22 cyber security packages, new malware, new 23 viruses, stuff like that. 24 MR. ADLER: Thank you for clarifying. 25 MS. GOLDSTEIN: I appreciate you asking 0028 1 Proceedings 2 the question to define what the definition 3 was. 4 MR. ADLER: Everybody here knows I have 5 no bones asking questions about stuff that I б don't understand, which comes up almost every 7 meeting because there is a lot I don't 8 understand. 9 MS. GOLDSTEIN: So these are the draft 10 financial statements. Really the driving factor on your financial statements this year 11 12 -- well, let me first say that's our opinion. 13 That's really what Marks Paneth does is issue 14 an opinion on the financial statements. And 15 typical auditor's opinion is one page. The 16 reason why there is so much supplemental 17 information particularly on a government 18 entity with the MD and A and the other 19 additional supplemental information so hence 20 another paragraph. The financial statements 21 walking through the MD and A, which management 22 actually prepares information over a 23 three-year period. My intent is really not to 24 go through the financial statements in any 25 detail. Of course, if there is questions, we

1 Proceedings 2 are here to answer them. 3 Overall, the driving factor that moves 4 these numbers each year is investments and 5 benefits paid, and that is your driving б factor. So if you were to look at the bottom 7 line, you still have an extremely healthy 8 plan. In comparison to prior years, you are 9 seeing a dip and that's because of market 10 conditions. 11 So again, unless there is questions, and 12 management is here also to answer details of 13 the financial statements, I am happy to 14 address what we can and in conjunction with management as well. 15 MR. ADLER: Questions for Marks Paneth 16 17 or for TRS management about the audit report? 18 Okay. All right. I did have a question 19 actually. I think I am going to address it to 20 you and to Ms. Chan. 21 So on page 48 where it says the QPP net 22 pension liability, so the fiduciary net 23 position as a percentage of the total pension 24 liability improved from 68.3 percent to 74.5 25 percent. That's under number 5 at the top of 0030 1 Proceedings page 48. That is not our funding -- that's 2 3 not the same as our actuarial funding ratio? 4 MS. CHAN: It's the same as the 5 actuarial funding ratio in the sense this is market value of assets. So basically this б 7 percentage is basically assets over liability. The assets that we are using here are market 8 9 value of assets. 10 MR. ADLER: Not actuarial value? MS. CHAN: Actuarial value would be 11 12 actuarial value of assets. 13 MR. ADLER: So that's the smooth --14 okay. MS. CHAN: Right. 15 16 MR. ADLER: Which does not appear in 17 this report. That just appears in your 18 report. 19 MS. CHAN: The actuarial report. 20 MR. ADLER: Thank you for clarifying. 21 Anybody else have any questions for Marks 22 Paneth or for anybody else at the table based 23 on the auditor report? Okay. Thanks very 24 much. 25 MS. GOLDSTEIN: Thank you, everybody.

0031 1 Proceedings Have a happy, healthy holiday. Enjoy time off 2 3 if you are taking time off. 4 MR. ADLER: So I think we are up to 5 questions and comments from the public. Are б there any questions or comments from the 7 public? 8 MS. BUDZIK: We just want to confirm 9 that the January 3rd investment meeting will 10 start at 11 rather than 10 for scheduling. We 11 will post it on the website. 12 MR. ADLER: Okay. So unless there is 13 anything else that anyone has to add, I think 14 that concludes our public agenda for today, 15 and a motion will be in order to enter 16 executive session. 17 MR. BROWN: Before we go out, I just 18 wanted to wish everyone a happy holiday and to thank the TRS staff for everything that you do 19 20 for our members. We certainly do appreciate 21 Our members love TRS. Based on the fact it. that 95,000 members have a voluntary TDA 22 program, they love their TDA, love the staff 23 24 at TRS, and we love you. 25 MR. ADLER: Okay. Thank you, Mr. Brown. 0032 1 Proceedings 2 I think a motion at this point would be in 3 order, Ms. Penny. 4 MS. PENNY: Sure. I move pursuant to 5 Public Officers Law Section 105 to go into executive session for discussion on specific б 7 investment and contract matters. 8 MR. ADLER: Thank you. Is there a 9 second? 10 MS. VICKERS: Second. 11 MR. ADLER: Thank you, Ms. Vickers. Anv 12 discussion? 13 All in favor of the motion to exit 14 public session and enter executive, please say 15 aye. Aye. 16 MS. VICKERS: Aye. 17 MR. BROWN: Aye. 18 MR. KAZANSKY: Aye. 19 MS. PENNY: Aye. 20 MR. ADLER: That's unanimous. Motion 21 passes. 22 (Whereupon, the meeting went into Executive Session.) 23 MR. ADLER: We have to exit executive, 24 qo into public. 25 So that concludes our executive agenda

0033 1 Proceedings 2 for today. Is there a motion to exit 3 executive session and go back into public? MR. BROWN: So moved. 4 5 MR. ADLER: Is there a second? б MS. PENNY: Second. 7 MR. ADLER: Thank you, Ms. Penny. Any 8 discussion? 9 All in favor of the motion to exit 10 executive session and go back into public 11 session, please say aye. Aye. 12 MS. VICKERS: Aye. 13 MR. BROWN: Aye. 14 MR. KAZANSKY: Aye. 15 MS. PENNY: Aye. 16 MR. ADLER: Opposed, please say nay. Any 17 Okay. Motion carries. abstentions? 18 Okay. We are back in public session. 19 Ron, will you please report out of executive 20 session? 21 MR. SWINGLE: Certainly. In executive 22 session there was a discussion of a real estate investment. Consensus was reached and 23 24 will be announced at the appropriate time. 25 There was also a discussion on a contract 0034 1 Proceedings 2 renewal. Approval was reached, which will be 3 announced at the appropriate time. There were 4 several investment discussions related to the 5 Passport Funds. б MR. ADLER: Thank you very much. Ι believe that concludes our business for today. 7 A motion to adjourn will be in order. Is 8 there such a motion? 9 10 MS. VICKERS: So moved. 11 MR. ADLER: Thank you, Ms. Vickers. Ts 12 there a second? 13 MR. BROWN: Second. MR. ADLER: I think I heard Mr. Brown 14 15 first. We will give it to Mr. Brown. Any 16 discussion? 17 All in favor of the motion to adjourn, 18 please say aye. Aye. 19 MS. VICKERS: Aye. 20 MR. BROWN: Aye. 21 MS. PENNY: Aye. 22 MR. ADLER: All opposed, please say nay. 23 MR. KAZANSKY: Nay. 24 MR. ADLER: Any abstentions? The motion 25 carries but not unanimously. Meeting adjourned. (Time noted: 4:19 p.m.)

0035 1 Proceedings 2 CERTIFICATE 3 STATE OF NEW YORK ) 4 : ss. 5 COUNTY OF QUEENS ) б 7 I, YAFFA KAPLAN, a Notary Public 8 within and for the State of New York, do hereby certify that the foregoing record of 9 10 proceedings is a full and correct 11 transcript of the stenographic notes taken 12 by me therein. IN WITNESS WHEREOF, I have hereunto 13 14 set my hand this 2nd day of January, 15 2019. 16 17 18 YAFFA KAPLAN 19 20 21 22 23 24