NEW YORK CITY TEACHERS' RETIREMENT SYSTEM BOARD MEETING Held on Thursday, January 19, 2023 via Videoconference 3:39 p.m. ATTENDEES: DEBRA PENNY, Chairperson, Trustee DAVID KAZANSKY, Trustee ALISON HIRSH, Trustee, Comptroller's Office THOMAS BROWN, Trustee BRYAN BERGE, Trustee, Mayor's Office RUSSELL BUCKLEY, Trustee VALERIE BUDZIK, Teachers' Retirement System THAD McTIGUE, Teachers' Retirement System LIZ SANCHEZ, Teachers' Retirement System ISAAC GLOVINSKY, Teachers' Retirement System KAVITA KANWAR, Teachers' Retirement System KATE CHEN, Teachers' Retirement System ANNETTE HANRAHAN, Teachers' Retirement System REPORTED BY: YAFFA KAPLAN JOB NO. 8936074 ATTENDEES (Continued): PAUL RAUCCI, Teachers' Retirement System RON SWINGLE, Teachers' Retirement System NATARAJAN KRISHNAMOORTHY, Teachers' Retirement System ANTHONY MEZZACAPPA, Teachers' Retirement System RENEE PEARCE, Teachers' Retirement System MAREK TYSZKIEWICZ, Office of the Actuary ROSA POLANCO, Teachers' Retirement System ISAAC GLOVINSKY, Teachers' Retirement System MARTA ROSS, New York City Law Department JOHN DORSA, Comptroller's Office 

1 Proceedings 2 MS. REILLY: Welcome to the Board 3 meeting of the Teachers' Retirement Board for 4 January 19, 2023. I will start by calling the 5 roll. Bryan Berge. 6 MR. BERGE: Bryan Berge representing 7 Mayor Eric Adams present. 8 MS. REILLY: Thomas Brown? 9 MR. BROWN: Present. Good afternoon. 10 MS. REILLY: Good afternoon. Russell 11 Buckley? 12 MR. BUCKLEY: Here for Educational 13 Policy Chair Dr. Angela Green and DOE Chief 14 Financial Officer Sarita Scotts. 15 MS. REILLY: Alison Hirsh? 16 MS. HIRSH: Here, representing 17 Comptroller Brad Lander. 18 MS. REILLY: David Kazansky? 19 MR. KAZANSKY: Present. 20 MS. REILLY: Debra Penny? 21 MS. PENNY: Present. MS. REILLY: We have a quorum. 22 So we 23 are going to start with an update on TRS 24 operations, and Kavita Kanwar is going to give 25 us that update. 0004 1 Proceedings 2 MS. KANWAR: Thank you, Patricia. Good 3 afternoon, everyone. The 1099 forms for tax 4 year 2022 are being mailed in January. As 5 part of this effort, TRS is also sending an informational brochure to approximately 4,200 6 7 new retirees who are receiving a 1099 form for 8 the first time. By early February, all 1099 9 forms will also be available for members to 10 review and download on the TRS website. On December 27th, TRS filed its 2022 11 12 Annual Comprehensive Financial Report with the 13 GFOA, the Government Finance Officers 14 Association. The report is also available for 15 viewing on the TRS website. Thank you. MS. REILLY: Thank you, Kavita. Next is 16 17 the executive director's report. And the 18 first item on that is the matter of the next 19 meeting, and it's been suggested that the next 20 regular meeting of the Teachers' Retirement Board be held on the second Thursday of the 21 22 month, February 9, 2023. Mark your calendars. 23 Next on the executive director's report 24 is the Board chair nomination. So the 25 position of chairperson will be vacant 0005 1 Proceedings 2 beginning February 1, 2023 because the

chairperson is retiring. In accordance with 3 4 Section 13-509 of the Administrative Code of 5 the City of New York and Article 3 of the bylaws, in the event of a vacancy, the 6 7 Teachers' Retirement Board shall elect a 8 chairperson to serve the remainder of the 9 annual term ending in May. We therefore open 10 the floor for nominations. MS. PENNY: I would like to nominate Tom 11 12 Brown, the most senior trustee and an amazing 13 person. 14 MS. REILLY: Do we have a second? 15 MR. KAZANSKY: Second. 16 MS. PENNY: In accordance with Article 6 17 of the TRS bylaws, I make a motion to suspend 18 the requirement in Article 3 of the bylaws to 19 wait until the next regular board meeting to 20 vote on Mr. Brown's nomination and that we 21 instead vote today. I have made the motion. 22 Do I have a second? 23 MS. HIRSH: Second. 24 MS. PENNY: Thank you, Ms. Hirsh. All 25 those in favor, please say aye. 0006 1 Proceedings 2 Aye. 3 MR. BERGE: Aye. 4 MR. BROWN: Aye. 5 MR. BUCKLEY: Aye. 6 MR. KAZANSKY: Aye. 7 MS. HIRSH: Aye. 8 MS. PENNY: Any opposed? Any 9 abstentions? Okay. That motion carries. We 10 have a unanimous consent to suspend the bylaws 11 to allow the vote today on Mr. Brown's 12 nomination to fill the TRS Board vacancy. 13 All in favor of Mr. Brown to serve as 14 Board chair as of February and for the 15 remainder of the annual term ending in May, 16 please say aye. 17 Aye. MR. BERGE: Aye. 18 19 MR. BROWN: Aye. 20 MR. BUCKLEY: Aye. 21 MR. KAZANSKY: Aye. 22 MS. HIRSH: Aye. 23 MS. PENNY: Any opposed? Any 24 abstentions? Okay. Point of personal 25 privilege, if I may. I have been a member of 0007 1 Proceedings 2 TRS since -- since 1982. I had a wonderful 3 career as an educator, wonderful second career on the Board. I thank all of you. 4

5 I think the members should know how hard 6 TRS works for their members. Everything they 7 do is for the members to try to help them 8 navigate the system and take care of their 9 money. And for most of our members, all the 10 money they have is with TRS and it couldn't be 11 in a better place and I thank you all. 12 (Applause.) 13 MS. REILLY: Next on the agenda on the 14 EDR is the attendance at a conference. The 15 final resolution is presented for 16 consideration and possible adoption. 17 "Resolved, that the Trustees of the Teachers' 18 Retirement Board hereby approve the attendance 19 and participation of the Executive Director 20 and/or her designees and any interested Trustee at the National Institute on 21 22 Retirement Security's 14th annual retirement 23 policy conference from February 27th to 24 February 28, 2023." 25 MS. PENNY: Do I hear a motion to 8000 1 Proceedings 2 approve the attendance at that conference? 3 MR. KAZANSKY: So moved. 4 MS. PENNY: Thank you. Do I hear a 5 second? 6 MS. HIRSH: Second. 7 MS. PENNY: Thank you, Ms. Hirsh. Any 8 questions? All those in favor, please say 9 aye. 10 Aye. 11 MR. BERGE: Aye. 12 MR. BROWN: Aye. 13 MR. BUCKLEY: Aye. 14 MR. KAZANSKY: Aye. 15 MS. HIRSH: Aye. 16 MS. PENNY: Any opposed, any 17 abstentions. Motion carries. 18 MS. REILLY: Next on the agenda for the 19 EDR, we are adding a resolution. Thad is 20 going to pass that out. 21 MR. KAZANSKY: This is one resolution 22 where I will make you read the whole thing. 23 MS. REILLY: So we have a resolution on 24 Debra Penny. "Whereas, Debra Penny, Trustee 25 of the Teachers' Retirement Board since 2016 0009 1 Proceedings and Chair of the Board since 2019, is retiring 2 3 from City service after 40 years of 4 distinguished service to the people of the 5 City of New York and the members of the 6 Teachers' Retirement System; and

7 whereas, Debra Penny taught for decades at 8 P.S. 32 in Staten Island, becoming chapter 9 leader at the school, and then taking on 10 greater roles with the United Federation of 11 Teachers, including Staten Island borough 12 representative and her current role of UFT 13 Treasurer; and whereas, Debra Penny 14 distinguished herself through advocacy and 15 leadership in several national organizations 16 that promote and protect public pensions, 17 including the American Federation of 18 Teachers Trustee Council, the New York State 19 United Teachers Board, the National Council on 20 Teacher Retirement, and the National Conference on Public Employee Retirement 21 22 Systems; and whereas, Debra Penny, while 23 consistently upholding high fiduciary 24 standards, has tirelessly advocated for 25 members of the Teachers' Retirement System, 0010 1 Proceedings 2 most recently helping to establish automatic 3 enrollment in TRS for paraprofessionals, and 4 an accidental death benefit provision for 5 members lost to COVID-19; and 6 whereas, Debra Penny, in her role as Chair of 7 the Teachers' Retirement Board, has provided 8 valuable guidance, effective partnership, and 9 principled leadership to TRS executives and 10 staff; and whereas, Debra Penny has always 11 coupled her tremendous professional skills 12 with kindness, compassion, and good nature 13 that she showed to everyone she encountered; 14 and whereas, Debra Penny has been blessed to draw on the love and support of her family, 15 16 including her husband John, her sons Justin, 17 Christian, and Brandon, daughter-in-law Kelly, 18 and the newest addition, her granddaughter 19 Camryn; therefore, be it 20 resolved, that the Trustees of the Teachers' 21 Retirement Board and the staff of TRS express 22 their deep appreciation and gratitude to Debra 23 Penny. We will miss her leadership and 24 dedication; and with great respect and 25 affection, we extend to Debra our best wishes 0011 1 Proceedings 2 for the fulfilling and joyous retirement that 3 she deserves." MR. BUCKLEY: So moved. 4 5 MS. REILLY: Do I have a second? 6 MR. KAZANSKY: Second. 7 MS. REILLY: All those in favor? 8 MR. BERGE: Aye.

9 MR. BROWN: Aye. 10 MR. BUCKLEY: Aye. 11 MR. KAZANSKY: Aye. 12 MS. HIRSH: Aye. 13 MS. REILLY: Congratulations. 14 (Applause.) 15 (Standing ovation.) 16 MS. REILLY: Now Alison Hirsh has 17 something she would like to present on behalf 18 of the Comptroller. 19 MS. HIRSH: Yes, so the Comptroller was 20 not able to be here this afternoon and we are 21 required to keep our commendations to 150 22 words or less so it will be a little short, 23 but this is for Debra and I am going to read 24 it off my phone. It's hard for me to read 25 this. 0012 1 Proceedings 2 "For over 37 years of service to the City of New York, her dedication to public 3 4 service is exemplified through her role of 5 treasurer of the United Federation of 6 Teachers, for inspiring generations of 7 children as an active New York City teacher 8 for outstanding contributions to the lives of 9 teacher members and retirees of the City of 10 New York. Through diligent oversight of the 11 assets of the Teachers' Retirement System of 12 the City of New York. For the intelligence, 13 wit, and candor she brought to her role as 14 chair, for her devotion for both her work and 15 colleagues that has earned her the respect and 16 admiration of her peers. For her calming nature and kind demeanor. For gaining the 17 18 trust, appreciation, and gratitude of her 19 colleagues, and for her tremendous 20 contribution to the City of New York, we give 21 you this commendation from Comptroller Brad 22 Lander. 23 (Applause.) 24 MS. PENNY: Oh, my gosh. A little 25 overwhelming. 0013 1 Proceedings 2 MR. BROWN: Point of personal privilege 3 as well. Deb, on behalf of ail the members, 4 the retirees, beneficiaries, the inservice 5 members, we thank you for all your devotion 6 and compassion, your expertise, your 7 knowledge, your wonderful people skills, your 8 patience with us, your guidance and most 9 importantly your friendship. We will miss you, but you will be here. We want to thank 10

you. I thank you from the bottom of my heart. 11 12 You have been my best friend for all these 13 years, and we wish you the best. 14 MS. PENNY: Thank you, everyone. I just 15 -- you are all amazing and really blessed to 16 have worked with you. Still keep in touch. 17 Absolutely. I am going to be here every 18 Thursday for lunch. 19 MR. BROWN: She means it. 20 MR. BERGE: May I make some remarks as 21 an ominous floating head? 22 MS. PENNY: The floating head. Yes, 23 sir. Yes. 24 MR. BERGE: So I was certainly hoping to 25 be present for this very important event, and 0014 1 Proceedings 2 you know, at the very least be a person if not 3 a person holding a large plaque like Alison. 4 I was very impressed by that. But the 5 circumstances prevented that. I got a sick 6 kid in the other room, and there was just 7 nothing to be done. But I do regret it very 8 deeply because I have enjoyed every meeting 9 that I have been to at TRS in which Debra 10 Penny was the chair because she was a very 11 effective chair, a very compassionate chair, 12 and just a very pleasant person to deal with. 13 And I always thought when I had a chance 14 to talk with Debra and share ideas and 15 positions that she was really willing to 16 entertain thoughts on a very open-minded and 17 very thoughtful basis, and I gather that 18 everyone else at this table -- I am not at the 19 table but everyone else has had the same 20 experience and this board will miss you 21 tremendously, Debra, but wherever you go, they 22 will benefit greatly by your presence. So 23 thank you so much for gracing us at the TRS 24 Board for this last time today. 25 MS. PENNY: Thank you, Bryan. 0015 1 Proceedings 2 (Applause.) 3 MS. PENNY: On with the show. 4 MS. REILLY: So next on the agenda is 5 the calendar. The first item on the calendar 6 is the approval of the following minutes: 7 October 6, 2022 investment meeting minutes, December 1, 2022 investment meeting minutes, 8 9 and December 15, 2022 Board meeting minutes. 10 MS. PENNY: Thank you, Pat. Do I hear a 11 motion to approve the minutes of the October 12 6th, December 1st and December 15th investment

board meeting? 13 14 MR. BROWN: So moved. 15 MS. PENNY: Thank you, Mr. Brown. Do I 16 hear a second? 17 MS. HIRSH: Second. 18 MS. PENNY: Thank you, Ms. Hirsh. Any 19 questions? All those in favor, please say 20 aye. 21 Aye. 22 MR. BERGE: Ave. 23 MR. BROWN: Aye. 24 MR. BUCKLEY: Aye. 25 MR. KAZANSKY: Aye. 0016 1 Proceedings 2 MS. HIRSH: Aye. 3 MS. PENNY: Any opposed? Any 4 abstentions. Minutes are approved. 5 MS. REILLY: Next are the items on the 6 calendar, and you all received an electronic 7 version of the calendar and had an opportunity 8 to review it. 9 MR. KAZANSKY: Please waive the reading 10 of the calendar. 11 MS. PENNY: Thank you. Do I hear a 12 motion to approve the calendar? 13 MR. KAZANSKY: So moved. 14 MS. PENNY: Thank you, Mr. Kazansky. Do 15 I hear a second? 16 MS. HIRSH: Second. 17 MS. PENNY: Thank you, Ms. Hirsh. Any 18 questions? All those in favor, please say 19 aye. 20 Aye. 21 MR. BERGE: Aye. 22 MR. BROWN: Aye. 23 MR. BUCKLEY: Aye. 24 MR. KAZANSKY: Aye. 25 MS. HIRSH: Aye. 0017 1 Proceedings 2 MS. PENNY: Any opposed? Any 3 abstentions? Okay. Calendar is approved. MS. REILLY: Thank you. Next item is 4 5 other business. And today we have a CEM 6 pension administration benchmarking report 7 presentation. That will be given to us by 8 Mike Heale. He is the head of global business 9 development for CEM. 10 MR. HEALE: Thank you, Patricia. It's a 11 pleasure to be here. Hopefully we get the 12 presentation on the screen shortly. You have 13 my congratulations. I don't think I can talk. Some of your colleagues -- anyway, great 14

15 stuff. 16 And this is the first slide of the 17 presentation. Thank you for getting it up and 18 getting us going and just a reminder that I am 19 going to be speaking to the 2021 fiscal year 20 data that we collect from you and from other 21 benchmark administration systems in North 22 America and around the world and we collect 23 standardized data that allows us to compare 24 your cost, staffing levels in detail to other 25 pension administration systems, your service 0018 1 Proceedings 2 levels and that's what we will focus on today 3 in terms of the presentation of your results. 4 This also includes focus on global best 5 practices through a conference program, 6 research program, and networking with other 7 systems. Next slide, please. 8 These are the 69 leading global pension 9 systems that participate in the benchmarking 10 service. There are a large number of them are 11 from the US and north America. Also from 12 Europe in several countries, and the idea 13 behind having a global service is that you can 14 get best practices from all over the world 15 that you can choose to borrow from, but in 16 terms of comparing your results, we do that to 17 a custom peer group that's shown on the next 18 page. And these are systems that are close to 19 you in membership size and for comparing your 20 costs and analyzing them. It's cost per 21 member and that's active member and annuitant and that's what drives the work that you have 22 23 to do. And by design, this peer group are US 24 systems and around your size and that's 25 neutralized, to the extent that we can, the 0019 1 Proceedings 2 common scale benefit that accrues to having 3 more members. So CalPERS is not in your peer 4 group because they are a million-plus member 5 system and they benefit from the scale. 6 You have a slight -- with 216,000 7 members, you have a slight scale disadvantage 8 relative to the average. We try to keep the 9 peer group consistent over or as consistent as 10 we can over time, so it's very similar to what 11 you have seen in prior years so that we are 12 not changing things too much in terms of the 13 comparisons. So on the next slide, we will 14 start looking at costs. It's hard for people 15 to see? I will try to speak to the points. I 16 can sort of see it so if people are

17 struggling, I will do my best to help out. 18 But here we are looking at -- from 19 fiscal year 2021, we are looking at your total 20 cost per member of 238 dollars for active 21 members. You are in the dark blue line bar 22 and the distribution of costs which go from 23 about your peer group from about 50 dollars to 24 over 400 dollars are shown in charts. We use 25 a total volume of 51 million, 51.4 million of 0020

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2 total pension administration costs for you, 3 and here you can see the breakout in the key 4 categories. In the front office which are 5 those activities that face the members and interact directly with the members and then 6 7 the governance and support type activities 8 that support your overall operation. And the 9 front office.

10 On the next slide, this is the cost 11 model that we use to compare your cost and to 12 evaluate what drives your cost relative to 13 your peers. And there is four factors and you 14 -- the first one is the number of front office staff you have for 10,000 members and you do 15 16 have quite a bit more. 7.6 full-time 17 equivalent staff versus 4.2 for the peer average, and that contributes to 42 dollars of 18 19 higher costs relative to your peer group. The 20 next two factors you come in below your peer 21 group in terms of the amount of third-party 22 costs that you have supporting the front 23 office to deliver service to your members and 24 your somewhat surprising, as we will see in a 25 few slides, you have -- given that you are New 0021

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York City which is a high cost environment, you have lower cost overall per FTE in your operation. You do have higher support cost per member and that contributes 83 dollars of higher costs for you.

7 The next slide looks at one of the key 8 reasons why we would expect you to have higher 9 costs than your peers. Costs in the number of 10 FTE are driven by system complexity, and you 11 have the third highest complexity in our North 12 American universe of systems. And complexity 13 is driven by the multiplicity of rule sets 14 that you have to administer by having multiple 15 plan types and just differences and choices 16 that are available to members that have to be 17 accommodated by your IT systems and that have 18 to be administered by your staff. So that

19 explains some -- that is one of the reasons 20 why we would expect you to have higher staff 21 and higher costs in support activities like IT 22 and major projects. Next slide. 23 So I already spoke to this and we will 24 keep moving, but it shows you where you are at 25 that 7.6 staff in the range from around 2 to 0022 1 Proceedings 2 about 12 across your peer groups and you are 3 above that average. Next slide. You also 4 have a lot more work. You have much higher 5 transaction volumes across many activities and 6 it's hard to see, but we quantify this on this 7 slide in terms of workload. So you can see 8 the difference in the volumes for key 9 activities costs, and next slide we will see 10 some of them in a simpler format in a graph 11 that's much easier to see. But the key point 12 I wanted to point out the weighted total at 13 the bottom, if you go back one more, basically 14 you have almost four times as much work that 15 your system has to accommodate because your 16 members are so engaged and are so active and 17 you have such high transaction costs and the 18 next slide really illustrates that in terms of 19 key transaction costs. 20 MR. BROWN: As much work as our peers? 21 MR. HEALE: Yes. It's all relative to 22 your peers that we are talking about. So you 23 have a lot more work when we standardize work 24 by applying the peer median costs to your 25 transaction volumes and their transaction 0023 1 Proceedings 2 volumes. That's how we calculate the weighted 3 total which is the workload if you will. Next 4 slide, if we could. 5 And this just shows, this is quite a 6 stark chart to me and somewhat unusual one. 7 Your members are just very engaged across all 8 channels. You have got high web visits, and 9 you can see -- you are the dark blue bar in 10 these charts versus the peers and the universe 11 average in the light blue and the all average. 12 You have got very high web volume, but you 13 have also got incoming calls and e-mails that 14 are about twice your peers. They have come 15 down somewhat which is a good thing. Even 16 physical mail you are about twice -- twice the 17 volume. Members counseled one on one which 18 you have some control on and over in terms of 19 proffering it, but you also obviously have 20 good takeup. So the key thing is just your

members are very engaged, unusually so 21 22 relative to peers and what I have seen from 23 other clients. Next slide. 24 Your overall costs per FTE were lower 25 than peers, and this is salaries and benefits 0024 1 Proceedings 2 and other direct costs for supporting FTE. 3 With one exception. Buildings and utilities. Where you are about twice -- twice the cost 4 5 but overall you come in under and this is 6 quite surprising and if we go to the next 7 slide, you will see why. 8 This is using the US Bureau of Labor 9 standardized costs for public administration 10 in the counties where your peer groups reside 11 as well as you. You have the highest cost 12 environment. You are 50 percent above the 13 peer average, and you know, the expected cost 14 differential for you compared to Cole County, 15 Missouri at the extreme at the other end is 16 like double. You have double the operating 17 costs to do the same kind of work that's 18 necessary, so it's quite surprising that your 19 costs per FTE are where they are given this 20 factor. Next slide. 21 You pay more for back office activities. 22 We have all seen the overall number. What I 23 really want to point out here is that your 24 major project costs is a key contributor to 25 that and you are at 71 dollars versus 15 0025 1 Proceedings 2 dollars for the peer average and that's a 3 56-dollar difference so it's a big factor in driving this. I think complexity contributes 4 5 to that. The state of your system renewal and 6 maintenance can contribute to it and if we go 7 to the next slide, I just want to show you how 8 much of an impact it has in percentage terms, your major project costs. That's the biggest 9 10 driver of IT costs for you and everybody else 11 and for you it's 25 percent of your total cost 12 where it's 5 percent for the peer median. So 13 it's a big driver of your costs currently. 14 Next slide. 15 So this is the cost trend over since 16 2014, so I think that's 8 years. Your costs 17 over the period have increased very slightly 18 at .6 percent per annum. That's less than the 19 cost increase of your peers and less than 20 inflation over the period and so that's good 21 and they did peak in 2015, 2016 and have come 22 down quite a bit since then. Next slide,

23 please. 24 Now we are going to change focus and 25 look at total service score, and we collect 0026 1 Proceedings 2 about 120 different measures of service 3 covering all the key interactions that you 4 have with your clients that go into this 5 composite score. You are at 71 which is below 6 the peer average of 80. And the message here 7 -- I don't want to say that having higher 8 services is necessarily the goal you need to 9 have. I mean, you are running a business and 10 you have to do what's best for your clients, 11 best for your fiscal environment and there is 12 no right or wrong answer to that. But there 13 are some very -- it's sort of the tale of two 14 cities in terms of your service story. In 15 many areas your service is aligned or above 16 with service levels of your peers but you have 17 one key area that's been challenging and 18 that's been the contact center, the call 19 center area, and we will see that in the next 20 few slides. So go to that. 21 This shows the weights basically and 22 your scores for these sort of aggregated areas 23 that build up the total service measure and I will just point out here because we are going 24 25 to go to some specific examples, but if you 0027 1 Proceedings 2 look at the call center, it's weighted 21 percent currently. Your score is 45 versus a 3 4 peer median of 75. So this is the area that 5 overall has really pulled your service level down recently, and we will get to look at some 6 7 of the measures as we advance to the next 8 slide. 9 These are some examples to help bring 10 the service measure scores to life and member contacts is at the top and you 2019, 2021 11 12 versus the peer average so undesired outcomes, 13 busy signals messages, hang ups, a bad thing. 14 So a bigger number is not good. 15 So you went from 21 percent to 17 16 percent so some improvement in 2021, but the 17 peer average is 11 percent. Quite a bit 18 lower. Average total wait time, a smaller 19 number is obviously better. In 2021 you had 20 901 seconds. Fifteen minutes. That's a long 21 wait time. It was 4 minutes or 240 seconds in 22 peer average. Almost everyone's call center 23 experience was hurt by COVID, so I know you 24 had issues but it's very common systems took a

hit. Big problems retaining staff and keeping 25 0028 1 Proceedings 2 call centers up and running efficiently over 3 the period. Seems like it's starting to 4 rebound but that's the reality what happened. 5 You see we look at some things about 6 your website, and your website is very well 7 aligned now. You have 14 tools available, for 8 example, versus 15 for your peers that are 9 available to your members to do, to self-serve 10 kind of transact. Your one-on-one counseling and member presentation volumes are high, and 11 12 that's one of the elements that reflected in 13 the service score. So that's a good thing. 14 Your pension inceptions are very good. 15 Ninety-nine percent of retirees go from the 16 paid payroll to the annuity payroll with no 17 interruption of cash flow month on month and 18 that's the gold standard, so that's very good 19 versus 87 percent for peers. And on the next 20 slide, I just tried to highlight some of the 21 areas where you had higher service scores than 22 your peers, so again, it's sort of a tale of 23 two cities for what we just talked about. I 24 won't go through them all, but you can see 25 some of them, but it's true in several areas 0029 1 Proceedings 2 you have better scores, service scores than 3 your peers. 4 The next slide highlights the challenges 5 in your call center area. So there is 6 basically -- if you would get to a perfect 7 score and I am not saying that's necessarily a 8 goal that you should aspire to or a practical 9 goal, but you basically get to median service 10 with big improvements in your call center. 11 That's the area again that's very meaningful. 12 Next slide. 13 Your service score did increase from 68 14 to 71 between 2014 and 2021. The improvements 15 were in the number of tools on your website. One-on-one counseling, purchasing transferred 16 17 in, the turnaround times have improved, and 18 again the call center especially recently has 19 hurt your scores. Next slide, please. 20 And this is just to summarize what we 21 have already been through. I will just 22 reiterate, your costs of 238 dollars per 23 member was above the peer average. And there 24 is several interrelated factors and challenges that you have that are driving that: High 25 0030

1 Proceedings 2 system complexity, high major project costs, 3 your members are very engaged, you have got 4 very high transaction volumes in all channels, 5 and your location is a high cost business 6 environment. Some of these things are jobs 7 that are difficult to do much about. 8 Certainly at the operating level, some of them 9 are difficult to do very much about. Despite 10 that, your costs have increased over the past 11 eight years less than your peers. Your 12 service score was 71, below the peer median of 13 80 and there is two story lines. Across many 14 of the areas, your service levels are 15 comparable, some cases better than your peers. 16 Your call center has really struggled in this 17 period recently. 18 That's the conclusion of my 19 presentation. Are there questions or 20 discussion points that you would like to? 21 MR. KAZANSKY: I have got a question. If you go back to slide 18, you were talking 22 23 about changes to the website between 2019 and 24 2021. I know one of the things that TRS was 25 able to accomplish during the COVID era 0031 1 Proceedings 2 period, everybody locked up at home period was 3 the in-person application process went 4 completely digital. That's reflected in this 5 changing? MR. HEALE: Yes. It's reflected in the 6 7 history of your scores. And I would say not 8 everything about COVID and the pandemic and 9 the reaction and the results are negative. Longer term we talked about some service 10 11 measures that really suffered, but some 12 systems have found that replacing one-on-one 13 counseling, physical counseling with virtual 14 counseling forever worked quite well for some 15 of them and some members actually preferred 16 that. It's more convenient for them. So 17 there is something less -- some changes that 18 are positive despite all the challenges. 19 MR. KAZANSKY: Thank you. 20 MS. REILLY: One thing about CEM. Ιt 21 doesn't include any of the work that TRS does 22 for the tax deferred. That's not -- this is 23 just the pension. That's typical so it 24 doesn't -- I mean, all those -- the calls that 25 we get about TDA don't get reported either. 0032 1 Proceedings So when I am reporting, a lot of the work is 2

3 TDA, but the scores are just on the fund. 4 MR. HEALE: Other programs that you have 5 to administer will add indirectly to the 6 complexity. 7 MS. REILLY: And TDA is a complexity 8 that we don't get to see here. 9 MS. KANWAR: Or the loans program. 10 MR. HEALE: So that's to get 11 comparability. 12 MR. BUCKLEY: How are the costs 13 allocated out? You are excluding the TDA, 14 right, again loans? Is the cost that is 15 reflected in this presentation sort of 16 allocated based on the time studies. 17 MS. REILLY: Well, so we have, of 18 course, our allocation project. 19 MS. KANWAR: Yes, yes. We do exclude to 20 our best ability. 21 MS. REILLY: Why don't you mention how 22 we get the data? 23 MS. KANWAR: Right. So we have a whole cost allocation application that we run and 24 25 has all these multiple areas that we have 0033 1 Proceedings 2 defined and allocate costs to each activity 3 under all those different per diem work areas that we have and then we backtrack and exclude 4 5 the loans and we assign to FTEs to those areas 6 as well and then do exclusions using some 7 methods and that's how we try to get to the point where we do the cost allocation, but 8 it's a very intensive, effort-intensive 9 10 process. Takes us three, four months to do the overall collection of the data, allocation 11 12 of the costs and then submitting. 13 MR. HEALE: And we do appreciate it 14 because comparability is really important. То 15 get good quality comparisons, you need that 16 effort. 17 MS. REILLY: I also think something that 18 differentiates us -- and I won't say it does 19 or doesn't get reflected, but I think most or 20 all of our peers are state systems where we 21 are a city system. So you know, I guess that 22 will help us, sometimes will hurt us. We are 23 just a little different. We have the same 24 amount or comparable members but some of their 25 members are further out as opposed to -- our 0034 1 Proceedings 2 -- I don't think that we are being compared to 3 other teachers' retirement systems 4 specifically, so our members are a different,

5 you know, level of engagement. 6 MR. KAZANSKY: They are New Yorkers too. 7 MR. HEALE: That didn't make it into the 8 presentation. It's based on not just your 9 data. There is like -- there is a California thing, and there is a New York thing. 10 11 MS. REILLY: Laid back. 12 MR. HEALE: Not to stereotype people too 13 much. 14 MS. PENNY: So I was going to ask about 15 the peer group if they were municipal -- if 16 they were city teachers. 17 MR. HEALE: We do have some but you 18 know, they are quite small and you are at the 19 size of many state level systems because New 20 York City is so big. So in an ideal world, we 21 would be able to have a teachers only peer 22 group for you that was similar in size, but we 23 just don't have the participants to make it 24 work. 25 MS. PENNY: So I think the nature of 0035 1 Proceedings 2 what our members do means a lot so our 3 president is always talking about most of our 4 members, 50 percent of our members leave in 5 the first five years. So I think there is a lot of coming into the system, staying in the 6 7 system leaving the system, questioning should 8 I leave the system. 9 Years ago -- and I was a perfect 10 example. You became a teacher, and you knew 11 you were staying in it for at least 30 years. 12 Now our members -- more and more the biggest 13 question we get is how affordable, is the 14 pension affordable, what happens if I leave. 15 So I imagine there is a lot of change going 16 on, a lot of influx in and out, and that 17 certainly -- you know, as trustees and 18 certainly we run the pension department in our 19 union, we know all the questions and we know, 20 you know, the challenges that TRS has so I 21 just --22 MR. HEALE: It's reflected in the 23 complexity. 24 MS. PENNY: It's unbelievable the 25 question and again, so I want to thank TRS 0036 1 Proceedings 2 because they are always supportive and always 3 willing to help our members and do what's best 4 for them and I just wish some of those numbers 5 really showed how hard they work for the 6 members because they really do and I think

7 just the nature of what we do, what our 8 members do, it makes it more of a challenge. 9 MS. REILLY: I mean, in this time frame 10 we are constantly working on our call center 11 so -- and -- but we are limited to hiring 12 people within the City of New York. We can't 13 say let's get, you know, people who are 14 working from home throughout the country and 15 bring them, so we are constantly -- you know, 16 we can't fill the positions we have. We are 17 limited to only people who live in the city of 18 New York and which is fine but the point is 19 that, you know, when you have a whole country 20 out there that could be answering people's 21 questions, but we are constantly struggling to 22 hire people and keep them and there is 23 constant rollover of people. 24 MR. HEALE: Your results are somewhat 25 lower in some areas, but you also have very 0037 1 Proceedings 2 big challenges. We try to quantify it and --3 MS. PENNY: We have so many tiers and 4 the tiers are so nuanced that we have to train 5 the call center. They answer the question the 6 wrong way, and it impacts the person's life so 7 it's definitely complex. Do you find the 8 other pension systems have so many toers? 9 MR. HEALE: So you are the third -- I -we measure complexity across a lot of 10 11 different measures, but you are the third 12 highest in our North American universe. 13 MS. REILLY: We used to be second. 14 MR. BUCKLEY: Obviously. Then it will 15 be also above average complexity. 16 MR. HEALE: I think these things are 17 interrelated. 18 MR. BUCKLEY: More complexity drives 19 more calls. Vicious cycle. Could this 20 presentation be circulated after the meeting? 21 MS. REILLY: You want the presentation? 22 Well, the presentation and the report? 23 MR. BUCKLEY: Take it all. 24 MR. HEALE: Thank you very much. 25 MS. REILLY: So next on the agenda is 0038 1 Proceedings 2 questions or comments from the public. Seeing 3 none, okay. So --4 MS. PENNY: Do I hear a motion to go 5 into executive session? 6 MR. KAZANSKY: So moved. 7 MR. BROWN: So moved. 8 MS. PENNY: Thank you, Mr. Kazansky, and

9 that was a second from Mr. Brown. 10 MR. BROWN: Yes. 11 MS. PENNY: Okay. Any questions. All 12 those in favor, please say aye. Aye. 13 MR. BERGE: Aye. 14 MR. BROWN: Aye. 15 MR. BUCKLEY: Aye. 16 MR. KAZANSKY: Aye. 17 MS. HIRSH: Aye. 18 MS. PENNY: Thank you. Any opposed? 19 Any abstentions? We are going into executive 20 session now. 21 (Discussion off the record.) 22 (Returned to public session.) 23 MR. SWINGLE: In the executive session 24 of the Board meeting, there was a discussion 25 on an investment matter. Consensus was 0039 1 Proceedings 2 reached. 3 MS. PENNY: Do we have anything else for 4 the Board meeting? Okay. Do I hear a motion 5 to adjourn? 6 MR. BROWN: So moved. 7 MS. PENNY: Thank you, Mr. Brown. Do I 8 hear a second? 9 MR. KAZANSKY: Second. 10 MS. PENNY: Thank you, Mr. Kazansky. Any questions? All those in favor of 11 12 adjourning, please say aye. 13 Aye. 14 MR. BERGE: Aye. MR. BROWN: Aye. 15 16 MR. BUCKLEY: Aye. 17 MR. KAZANSKY: Aye. 18 MS. HIRSH: Aye. MS. PENNY: Any opposed? Any 19 20 abstentions? We stand adjourned. 21 (Time noted: 4:31 p.m.) 22 23 24 25 0040 1 Proceedings 2 CERTIFICATE 3 STATE OF NEW YORK ) 4 : ss. 5 COUNTY OF QUEENS ) 6 7 I, YAFFA KAPLAN, a Notary Public 8 within and for the State of New York, do 9 hereby certify that the foregoing record of 10 proceedings is a full and correct

11	transcript of the stenographic notes taken
12	by me therein.
13	IN WITNESS WHEREOF, I have hereunto
14	set my hand this 31st day of January,
15	2023.
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