0001 1 ------NEW YORK CITY TEACHERS' RETIREMENT SYSTEM 2 3 REGULAR BOARD MEETING 4 _____ 5 6 Thursday, December 16, 2021 DATE: 7 3:33 p.m. - 4:18 p.m. TIME: 8 9 HELD: Via Zoom Videoconference 10 REPORTER: Tara M. Drake, RPR 11 Job No. J7321152 12 13 14 ATTENDEES: 15 16 Debra Penny, Chairperson 17 Patricia Reilly, Executive Director, TRS Thaddeus McTigue, Deputy Executive Director, TRS 18 19 David Kazansky, Trustee 20 Thomas Brown, Trustee 21 John Adler, Trustee, Mayor's Office Russell Buckley, Trustee, TRS/BERS 22 Cynthia Collins, Trustee, Mayor's Office 23 John Dorsa, Trustee, Comptroller's Office 24 25 Susannah Vickers, Trustee, Comptroller's Office 0002 Natalie Green Giles, Trustee 1 2 Robert Bethelmy, TRS Andrew Bradford, TRS 3 Valerie Budzik, TRS 4 5 Kate Chen, TRS 6 Carmela Crivell, TRS 7 Isaac Glovinsky, TRS 8 Annette Hanrahan, TRS 9 Kavita Kanwar, TRS 10 Natarajan Krishnamoorthy, TRS 11 Matt Laskowksi, TRS 12 Tony Mezzacappa, TRS 13 Paul Raucci, TRS 14 Liz Sanchez, TRS 15 Susan Stang, TRS 16 Sherry Chan, Actuary 17 Mike Samet, Actuary 18 Keith Snow, Actuary 19 Marta Ross, Law Department 20 Edwina Easton, MJ Hudson Amaces 21 Larry Gokhman, MJ Hudson Amaces 22 Mitchell Fruchter 23 24 25

0003 1 12/16/2021 Proceedings MS. REILLY: Good afternoon. Welcome 2 3 to the Teachers' Retirement Board Meeting for 4 December 16th, 2021, and I'm going to start by 5 calling the roll. 6 John Adler? 7 MR. ADLER: I am here. 8 MS. REILLY: Thomas Brown? 9 MR. BROWN: I'm here, Patricia. 10 MS. REILLY: Natalie Green Giles? 11 MS. GREEN GILES: Good afternoon. I'm 12 here in my box. 13 MS. REILLY: David Kazansky? 14 MR. KAZANSKY: Present. 15 MS. REILLY: Russell Buckley? MR. BUCKLEY: Good afternoon. 16 I'm 17 here. 18 MS. REILLY: Debra Penny? 19 MS. PENNY: Here. 20 MS. REILLY: Susannah Vickers? 21 MS. VICKERS: Here. 22 MS. REILLY: We have a quorum. 23 So next on the agenda is an update for 24 TRS operations, and Kavita Kanwar is going to 25 give us that update. 0004 1 12/16/2021 Proceedings 2 MR. KANWAR: Hi. Good afternoon. 3 TRS has completed the latest member 4 newsletters in service news and the benefits 5 report. Members will receive their newsletter in the mail later this month. 6 7 On January 1st, a new plan year goes 8 into effect for Tier 6 members, which means that pension contribution rate may change. 9 10 TRS is currently reviewing updated salary and wage information for all our Tier 6 members in 11 12 preparation for a new rate starting in 13 January. Thank you. 14 MS. REILLY: Oh, thank you very much, 15 Kavita. 16 MR. KANWAR: Uh-huh. 17 MS. REILLY: So next on the agenda is a 18 report from the actuary on the Annual 19 Comprehensive Financial Report. 20 MS. CHAN: Thank you, Patricia. 21 The attachment for the Annual 22 Comprehensive Financial Report was included in 23 the packet for the board. This is the -- it 24 is not a new report. It is for this year, but 25 it's not a new report from scratch. It is a 0005 1 12/16/2021 Proceedings

renaming of a previous report known as the 2 3 Comprehensive Annual Financial Statements. 4 It's a report that has financial information, 5 investment section, statistical section, as 6 well as an actuarial section. 7 My office is in charge of producing the 8 actuarial section that includes the actuarial 9 assumptions, some of the liabilities, the contribution history, as well as some other 10 11 things. So it is part of a larger report for 12 the comptroller that he puts out at the end of 13 the calendar year. And I'm not sure if TRS 14 has it compiled, but once it is, it would be 15 available other places, but also on our 16 website. 17 I'm happy to answer any questions or 18 turn it back over to you, Patricia. 19 MS. REILLY: Any questions? 20 All right. Thank you, Sherry. 21 Next on the agenda is the Executive 22 Director's Report, and the first item on the report is the next meeting. And it has been 23 suggested that the next -- next regular 24 25 meeting of the Teachers' Retirement Board be 0006 1 12/16/2021 Proceedings 2 held on the third Thursday of the month, 3 January 28th, 2022. 4 Next item on the agenda is the 5 resolution to acknowledge Michael Samet as the 6 First Deputy Chief Actuary. 7 MR. KAZANSKY: Please skip to the 8 resolve. 9 MS. REILLY: Resolve, that the Board of 10 Trustees hereby recognizes the designation 11 Michael -- designation, Michael Samet, as 12 First Deputy Chief Actuary, and concurs that 13 upon the vacancy in the position of chief 14 actuary, Mr. Samet will perform the duties of 15 the chief actuary on an interim basis. 16 MS. PENNY: Thank you, Patricia. 17 Do I hear a motion? 18 MR. BROWN: Todd Brown, so moved. 19 MS. PENNY: Thank you, Mr. Brown. 20 Do I hear a second? 21 MS. VICKERS: Susannah Vickers, second. 22 MS. PENNY: Thank you, Ms. Vickers. Any discussion? 23 24 All those in favor, please say, "Aye." 25 THE TRUSTEES: Aye. 0007 1 12/16/2021 Proceedings 2 MS. PENNY: Any opposed? 3 Any abstentions?

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4
            Okay. And hello to Mike Samet, who's
 5
     up there. Okay.
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            MS. REILLY: All right. Next item on
 7
     the agenda -- Executive Director's Report is
 8
     the authorization to the comptroller of the
 9
     City of New York to invest certain TPP funds.
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            MR. KAZANSKY: Please waive the reading
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     of the resolution.
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            MS. PENNY: Okay. Do I hear a motion
13
     to accept the resolution?
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            MR. KAZANSKY: David Kazansky, so
15
    moved.
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            MS. PENNY: Thank you, Mr. Kazansky.
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            Do I hear a second?
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            MR. BROWN: Tom Brown for second.
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            MS. PENNY: Thank you, Mr. Brown.
20
            Any discussion?
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            All those in favor, please say, "Aye."
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           THE TRUSTEES: Aye.
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           MS. PENNY: All right. Any opposed?
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            Any abstentions?
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           Motion carries.
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              12/16/2021 Proceedings
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            MS. REILLY: The next resolution is
 3
    authorization to the comptroller of the City
    of New York to invest certain tax deferred
 4
 5
     annuity funds.
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            MR. KAZANSKY: Again, please waive the
 7
    reading of the resolution.
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            MS. PENNY: Okay. Thank you.
 9
            Do I hear a motion?
            MR. BROWN: Tom Brown, so moved.
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            MS. PENNY: Thank you, Mr. Brown.
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            Do I hear a second?
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            MS. VICKERS: Susannah Vickers, second.
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            MS. PENNY: Thank you, Ms. Vickers.
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            Any discussion about the authorization
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     of the comptroller?
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            Okay. All those in favor, please say,
     "Aye."
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            THE TRUSTEES: Aye.
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            MS. PENNY: Any opposed?
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            Any abstentions?
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            The motion carries.
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            MS. REILLY: The next resolution is
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     standard and service expectations of the
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     actuary to the system.
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            MR. KAZANSKY: Please skip to the
 3
    resolve.
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            MS. REILLY: Resolve that the Board of
 5
     Trustees adopts the standards and service
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expectations of the actuary to the system. 6 7 MS. PENNY: Okay. Do I hear a motion? 8 MR. KAZANSKY: David Kazansky, so 9 moved. 10 MS. PENNY: Thank you, Mr. Kazansky. 11 Do I hear a second? 12 MR. BROWN: Tom Brown, second. 13 MS. PENNY: Thank you, Mr. Brown. 14 Any discussion? 15 MR. ADLER: Yes. I would like to ask 16 the actuary for -- the actuary's office for 17 their comments on this proposal. 18 MS. CHAN: Thanks, John. 19 There is some concerns with the timing 20 that we have discussed internally. You know, 21 I think this is going to affect Mike's timeline more than it's going to affect mine; 22 23 so I'm going to let him speak up and let him 24 voice his concerns. 25 MS. PENNY: Okay. So -- so that's not 0010 1 12/16/2021 Proceedings 2 appropriate at this time. 3 Are there any questions that -- that a 4 trustee has regarding this? 5 MR. ADLER: Yes. I would like to ask 6 the actuary's office to comment on the 7 three-month notice requirement that's in the 8 proposal. Would you, please, comment on that. 9 MR. SAMET: Sure, I will. It cause --10 it does cause a logistical issue that we've got. Let -- let me give you an example. Let 11 me walk through it real quick. 12 13 MS. PENNY: Okay. Mr. Samet, thank 14 you. But I'm sorry, that's not appropriate at 15 this moment. 16 MR. ADLER: Why is that? Why is that, 17 Madam Chair? 18 MS. PENNY: From the trustees at this 19 time. 20 MR. ADLER: I'm sorry, Madam Chair? MS. PENNY: Okay. And we can certainly 21 22 go into executive session if there's a 23 question with it, and maybe we should do that. 24 We'll finish the -- Valerie, what do you 25 suggest? 0011 1 12/16/2021 Proceedings 2 MS. BUDZIK: Maybe that -- that's fine 3 if you want to have the discussion in 4 executive session. 5 MS. PENNY: Okay. Yeah, we can 6 continue in executive. MR. ADLER: Well, can I just ask a 7

8 question? Will we have the actuaries present 9 in executive session? 10 MS. PENNY: No, we actually won't. 11 MR. ADLER: So -- so I have -- I --12 MS. PENNY: --13 MR. ADLER: But I -- I object to that. 14 Well, I -- this is a proposal for the 15 actuaries, and I think the actuaries have 16 insight into how the proposal may actually 17 negatively impact the fund's ability to do its 18 job. So -- public session with the actuary. 19 MS. PENNY: We'll allow the actuary to 20 answer the question. 21 MR. ADLER: Thank you. 22 MR. SAMET: Okay. So here's where the 23 issue --24 MS. PENNY: We'll allow the actuary to 25 answer the question at this moment. 0012 1 12/16/2021 Proceedings 2 I'm sorry, Mike. 3 MS. CHAN: All right. So the concern 4 with the three months' timing is that, you 5 know, they're on -- part of the standards and 6 expectations is that if there are any changes 7 to the assumptions and methods that the -- any 8 cost related to that must be communicated to 9 the board at least three months before the 10 contributions are communicated to the board. 11 That poses a logistical issue with the 12 time frame because of the way of the timeline 13 of from when we close out the fiscal year to 14 when we collect the data to when we run the employer contributions. 15 16 So specifically, when a fiscal year 17 closes, we don't get the data from the 18 retirement systems until probably close to the 19 end of the calendar year. So we're -- we're 20 talking about November, sometime December time 21 frame. And we, you know, run our valuations, 22 and that takes a few months into about 23 February, and we deliver it to the board in 24 March. 25 It's only at that time do we have a 0013 1 12/16/2021 Proceedings 2 baseline to run these cost analysis for any 3 assumptions and methods changes that the board 4 would like to see ahead of time. 5 And so if we have to wait three months 6 between that time frame and when we present it 7 to the board, the -- the contributions to the 8 board, that just means that the contributions 9 are going to be delayed until the end of

10 fiscal year. 11 And, you know, if the board is 12 requesting a three-month, you know, time frame 13 between when the cost analysis is seen and 14 when the contributions are presented, I wanted 15 to emphasize that it's not that we can push up 16 the assumptions and methods cost analysis any 17 of -- any sooner and give it to the board any 18 sooner. It's that we're pushing the 19 contributions later. 20 And if we're not getting preliminary 21 contributions to this board until June, you 22 know, that might pose some issues in terms of 23 the city's planning for financial purposes for 24 the following fiscal year, as well as 25 disclosing the necessary contributions to each 0014 1 12/16/2021 Proceedings 2 of the employers that contributes into TRS. 3 MS. VICKERS: Sherry, it's Susannah. Ι think that the -- the concern is, you know, 4 5 finding a way to ensure that trustees have ample time to review and consider pretty --6 7 what are sometimes pretty big and impactful 8 suggested changes. 9 And if I understand correctly what --10 what you just said, is that, you know, your 11 assumption -- no pun intended, is that these 12 changes would need to be in effect for the 13 upcoming calculations, and that's why there's 14 a compressed time frame. 15 But I don't see why boards couldn't 16 have due time to deliberate, and once the 17 assumptions and methods changes have been 18 reviewed, there's been ample deliberation and 19 discussion, and then those -- once they pass 20 the board, they can just go into effect for 21 whatever the next calculation is; it doesn't 22 have to all occur within the same fiscal year. 23 MS. CHAN: Right. And that's -- you 24 know, that's the alternative that we're 25 proposing, is that you do see it at the same 0015 12/16/2021 Proceedings 1 2 time around February or March. And the board 3 does get, you know, the three months to review 4 the assumptions and the contributions before 5 they -- they are adopted, which isn't -- which 6 isn't different from, you know, past years 7 where when I am presenting assumption changes, 8 it does get to the board, you know, early in 9 the calendar year most of the time. And, you 10 know, boards have a few months to -- to talk 11 and discuss and ask me questions and we have

12 time to discuss it. 13 MS. PENNY: Okay. So, Valerie? 14 MS. BUDZIK: Yeah. I guess -- so what 15 you just indicated, that the board does get 16 the -- the calculations with the assumptions 17 and methods and the calculations based on 18 those assumptions and methods with ample time, 19 and I think it's -- three months is -- is that 20 ample time. That -- that's what the -- said, 21 I think. That's what it was intended to --22 that was the expectation it's intended to set, 23 that when the board -- when the actuary 24 changes assumptions and methods and 25 calculations, which that's -- a lot of stuff 0016 1 12/16/2021 Proceedings 2 out there, that it is complicated; that the 3 board has sufficient time, that time because 4 of three months, and I believe that has 5 generally been the practice of the actuary; so we actually didn't see this as a challenge. 6 7 We understood there was a concern with we can't necessarily give you three months to 8 9 review every change in an assumption or method 10 because those can be late breaking. So 11 that -- the three-month requirement doesn't 12 apply to -- to the -- those kinds of, you 13 know, issues that the actuary deals with. It 14 is really those -- the calculations that you 15 give the board and which you have 16 historically -- your office has historically 17 provided a few months for the board to review, 18 I just -- just document that that's the 19 board's expectation. 20 I mean, you can't jam the board with 21 a -- a major change in assumptions, methods, 22 and calculations in June, you know, which can 23 create problems for, you know, an employer's 24 budget if they have to close their budget out 25 by the end of the year. It puts the board in 0017 1 12/16/2021 Proceedings 2 a bad position. 3 MS. PENNY: Okay. So it's really just 4 to give a -- give us the three months to go 5 through it? 6 MS. BUDZIK: Yes. 7 MS. PENNY: All right. Well, fine. 8 MS. BUDZIK: Which, again, is -- we --9 we didn't check the -- you know, the EDRs for 10 every year, but we just -- you -- your 11 office --12 MS. PENNY: Historically --13 MS. BUDZIK: -- does have --

14 MS. PENNY: -- we had the three months? 15 MS. BUDZIK: --16 MS. PENNY: So this is just ensuring 17 that there's time for the board --18 MS. BUDZIK: Yeah. 19 MS. PENNY: -- to go through it, and it's similar to what you've done in the past? 20 21 MS. BUDZIK: Correct. 22 MS. PENNY: Okay. Any other questions? MS. CHAN: Okay. I have a question 23 24 for, you know, Mike just because he's going to 25 be the one who's going to be, you know, 0018 1 12/16/2021 Proceedings 2 obviously implementing what's stated in this 3 expectation -- standards and expectations. 4 So, you know, I know I'm not a board 5 member, but I would like to note my concerns. 6 MS. PENNY: I'll stop you because he's 7 not at the moment the actuary, and so we're 8 really asking you: Is there a -- we've --9 you've always given us three months, and we're just ensuring that we have those three months. 10 11 So we're asking --MS. CHAN: As long -- go ahead. 12 13 MS. PENNY: Yeah. So we're just 14 putting forward a resolution just to ensure 15 that the practice that's been in effect 16 continues to be in effect. 17 MR. KAZANSKY: Well said. 18 MS. CHAN: Right. As long as it's 19 understood -- which is what I'm trying to 20 emphasize, is that there -- it might be 21 concurrent. Like, it -- the assumptions and 22 methods might be delivered to the board in 23 concurrence with the contributions using those 24 assumptions and methods. 25 But the three months is -- even though 0019 12/16/2021 Proceedings 1 2 it's given to you concurrently in, say, you 3 know, March time frame, there is time for the 4 board to review it for three months and ask me 5 questions or ask the actuary questions during that time. I -- I just want to emphasize 6 7 that, if you understand what I'm saying. That 8 it's not going to be three months before the 9 contributions you're going to see the 10 assumptions and methods, unless you delay the 11 contributions. You will have three months to 12 review it, but they're going to be presented 13 at the same time. 14 MR. KAZANSKY: All right. 15 MS. BUDZIK: That's correct, and

16 I would say we adjusted how this paragraph 17 previously read based on that concern that was 18 raised by your office. 19 MS. PENNY: Okay. Great. 20 MS. BUDZIK: It is not for assumptions 21 and methods. It's the calculations. 22 MR. ADLER: So I want to ask a question 23 about this because there was an instance --24 and I believe it occurred in 2015 during 25 Ms. Chan's year as chief actuary -- where 0020 1 12/16/2021 Proceedings 2 there was a midyear change in assumptions. It 3 was the mortality tables. And honestly, Sherry and I had a big fight over this because 4 5 she insisted that the change take place 6 effective January 1, which increased in the 7 middle of a budget year, the city's 8 contributions. I -- I don't remember the 9 specific amount for TRS, but let's just say it 10 was roughly \$200 million a year in the middle 11 of the year that the City had to, you know, 12 change in the budget. 13 And I asked that it be delayed until 14 the next fiscal year so that the City had time 15 to work that into its budget proposal for the 16 following fiscal year. And as I recall -- and 17 my memory might not be perfect on this --18 Sherry said, well, the ASOP, that's the 19 actual -- actuarial standards of practice, 20 about which I know little to nothing, require 21 that it be done right away. 22 And so I would just like to ask Ms. Chan to explain whether there might be 23 24 instances where there are sort of midcourse 25 corrections in assumptions and methods where 0021 1 12/16/2021 Proceedings 2 the three months' notice might not be possible 3 or practicable. MS. PENNY: So I'm going to give 4 5 Mr. Kazansky the opportunity. 6 MR. KAZANSKY: Yeah. I just want to 7 jump in here. 8 Look, I don't think any of us is trying 9 to say that should something bizarre and 10 unique and unusual happen that these are so 11 set in stone that we can never even consider 12 it. Right? 13 I think the goal here is to make sure 14 that everyone understands a timetable that is 15 fair and reasonable for the majority of 16 circumstances that we deal with and for some 17 unforeseen circumstances that we didn't

foresee, let's say, a year ago, which led us 18 19 to actually create this document to make sure 20 that everybody involved in this process had 21 the same expectation, the same timetables, and 22 same understanding of how things were supposed 23 to progress. 24 Should there be an exception, as 25 always, we'll roll with it, but I -- I -- I 0022 1 12/16/2021 Proceedings 2 don't feel that using, you know, an exception 3 would be a good reason not to push this -this document forward. 4 5 MR. ADLER: Madam Chair. MS. PENNY: Thank you, Mr. Kazansky. 6 7 All right. Mr. Adler. MR. ADLER: Madam Chair. 8 9 MS. PENNY: Yes? 10 MR. ADLER: Yeah. Might I just 11 suggest, then, that the language read 12 either -- so that the sentence in question reads: "The board expects the actuary in all 13 14 instances to provide the board at least three 15 months to review any calculation based on 16 proposed changes to assumptions and methods." 17 I --18 MS. PENNY: We don't have it in front 19 of us. 20 MS. BUDZIK: I -- I have a copy here. 21 One. 22 MS. PENNY: Well, this is something, 23 Valerie, you have vetted and you've spoken to 24 the law department with this -- and this is --25 MR. ADLER: Can I finish? I'm sorry. 0023 1 12/16/2021 Proceedings 2 I didn't finish. 3 MS. PENNY: Go ahead, Mr. Adler. 4 MR. ADLER: Thank you. 5 So I would suggest that perhaps that sentence be adjusted to either say "in" -- "in 6 7 most instances," as opposed to "all," or to 8 say "at least three months whenever practicable" so that -- that we don't get into 9 10 a fight or the board not get into a fight with 11 the actuary down the road where there are 12 situations that arise, like Mr. Kazansky just 13 described, where, you know, then it -- it 14 results in negative acrimony or what have you. 15 I would just like to suggest that the 16 language itself reflect that sentiment that 17 Mr. Kazansky just raised. 18 MS. PENNY: Okay. We're just looking 19 it over for one second.

20 MR. KAZANSKY: John, I -- I -- I get to 21 some extent where you're going with that, but 22 I think we need -- I mean, where I'm looking 23 at it is, is that the minute we -- I think 24 wherever practicable or whatever two words 25 you've use -- right? -- I think it's too 0024 1 12/16/2021 Proceedings 2 lenient. Right? In my estimation. 3 MR. ADLER: Too what? Too what? I 4 couldn't hear your word. 5 MR. KAZANSKY: It's too -- because then it could be every single time, could be --6 7 MS. PENNY: Right. 8 MR. KAZANSKY: -- you know, well, this 9 time this happened, this time that happened, 10 this time this happened --11 MS. PENNY: Yeah, I think. MR. KAZANSKY: -- you know. 12 So I -- I 13 think that -- that we need to -- we need to make sure that it's -- it's clear that should 14 15 there be an unexpected incident -- right? --16 that that would require discussion or 17 something to that effect, rather than just 18 watering down the entirety. 19 MR. ADLER: That's fine. I mean, I 20 don't object to adding language along those 21 lines. The reality is that the rest of the 22 board received this document after 5 o'clock 23 on Tuesday night. I -- I -- I get the sense 24 that some of the trustees have seen it 25 beforehand. But -- so I'm sorry? 0025 1 12/16/2021 Proceedings 2 MS. REILLY: You received it when we 3 originally -- when we did the original --MS. BUDZIK: We did --4 5 MS. REILLY: We asked for comments. 6 MS. BUDZIK: We did distribute this for 7 comments, which I didn't -- we didn't receive any comments from trustees. I would note that 8 9 the -- that three months was in the draft, but 10 it applied to the assumptions and methods. 11 In discussions with the actuary's 12 office, they said we can't give you three 13 months' notice on assumptions and methods; 14 it's just not workable for us. So that we 15 changed to "as soon as practicable." 16 However --17 MR. ADLER: Where does it say that? 18 MS. BUDZIK: -- but, you know, the 19 ultimate work product, which is the 20 calculations, that we say the board needs at 21 least the -- the three months to review that

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22
    very complex document.
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            As David said, I mean, there's the
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     assumption -- the idea with these expectations
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     is if something unexpected comes up, first of
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     all, the -- the actuary would know I need to
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     speak to the board. And the board, you
 4
     know --
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            MR. ADLER: And then I think --
 6
            MS. BUDZIK: -- what we do --
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            MS. PENNY: So this is the resolution
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     we have before us. Everyone has had a chance
 9
     to weigh in on it and change it if necessary.
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     So we'll vote on the resolution as written,
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     and everyone will make a decision. Okay?
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            So all those in favor of passing the
13
     resolution, please say, "Aye."
14
            THE TRUSTEES: Aye.
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            MS. PENNY: All those opposed?
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            Any abstentions?
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            MR. ADLER: I abstain.
18
            MR. BUCKLEY: I would like to abstain
19
     as well. Thank you.
20
            MS. PENNY: Okay.
21
            MS. GREEN GILES: I'm going to abstain
22
     as well.
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            MS. PENNY: All right. We have three
24
     abstentions, and the motion carries. Thank
25
     you.
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              12/16/2021 Proceedings
 2
            MS. REILLY: The next item on the
 3
     agenda is attendance of the conference.
    Resolved that the trustees of the Teachers'
 4
    Retirement Board hereby approve the attendance
 5
 6
    of resolution of the executive director and/or
 7
    her designees and any interested trustee at
 8
     the council of institutional investors, spring
 9
     2022 conference from May 7th to May 9th -- oh,
10
     excuse me. March 7th through the 9th 2022.
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            MS. PENNY: Thank you.
12
            Do I hear a motion?
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            MR. BROWN: Tom Brown, so moved.
            MS. PENNY: Thank you, Mr. Brown.
14
15
            Do I hear a second?
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            MR. KAZANSKY: David Kazansky, second.
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            MS. PENNY: Thank you. Any discussion?
18
            All those in favor, please say, "Aye."
19
            THE TRUSTEES: Aye.
20
            MS. PENNY: Oh, okay. Motion carries.
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            MS. REILLY: Next item is the calendar.
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    And the first item on the calendar is the
23
    matter of the equivalent of the minutes for
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24
     the November 4th, 2021, investment meeting
25
     minutes; November 18th, 2021, board meeting
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              12/16/2021 Proceedings
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    minutes.
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            MS. PENNY: Do I hear a motion to
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     approve the minutes?
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            MS. VICKERS: Yes, so moved.
            MS. PENNY: Thank you, Ms. Vickers.
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 7
            Do I hear a second?
 8
            MR. BROWN: Tom Brown, second.
 9
            MS. PENNY: Thank you, Mr. Brown.
10
            Any discussion?
11
            All those in favor, please say, "Aye."
12
            THE TRUSTEES: Aye.
13
            MS. PENNY: Any opposed?
14
            Any abstentions?
15
            Okay. The minutes are approved.
16
            MS. REILLY: Okay. And the next item
17
     are -- on the calendar are the actual items.
18
    You all received the electronic version of the
19
    calendar.
20
            MR. KAZANSKY: Please waive the reading
21
     of the calendar.
22
            MS. REILLY: Thank you.
23
            MS. PENNY: Do I hear a motion to
24
     approve the calendar?
25
            MR. KAZANSKY: David Kazansky, so
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    moved.
 3
            MS. PENNY: Thank you, Mr. Kazansky.
 4
            Do I hear a second?
 5
            MR. BROWN: Tom Brown, second.
 6
            MS. PENNY: Thank you, Mr. Brown.
 7
            Any discussion about the calendar?
 8
            All those in favor, please say, "Aye."
 9
            THE TRUSTEES: Aye.
10
            MS. PENNY: Any opposed?
11
            Any abstentions?
12
            Calendar passes.
            MS. REILLY: Thank you. So the first
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14
     item under "other business," I'm adding is --
15
     you know, for us to have a moment of silence
16
     for Sam Rumley, who we lost this past week.
17
            I just wanted to say for myself it was
18
     always a privilege and an honor to work with
19
     Sam. He was a true gentleman, a true
20
     professional. And he was always ready,
21
    willing, and able to work with the system to
22
    help us and to ensure that our certifications
23
     got done in a timely manner and worked with us
     on -- on a varied number of projects.
24
25
            I started to work with Sam when we were
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0030 1 12/16/2021 Proceedings developing our prior computer system. I mean, 2 3 he and one of your staff members back then 4 named Helen Phinney provided so much of their 5 knowledge so that we could -- we could 6 actually get all of the rules and -- and 7 actuarial formula into our system. 8 So it is with great sadness that we 9 learned about his passing. So I would like to 10 have a moment of silence for Sam. 11 (Moment of silence.) 12 MS. REILLY: Thank you. 13 Next, we're going to have a 14 presentation from Amicus [sic] -- an Amicus 15 presentation, excuse me. We here at Teachers' 16 Retirement System contacted with Amicus to 17 come and to take a look at our investment 18 accounting processes and make recommendations 19 for streamlining and -- streamlining them, and 20 any other recommendations they had after 21 reviewing the processes that we use in order 22 to come up with the unit value and all of the 23 other processes that are our investment 24 accounting does. 25 So I'm going to turn it to over to 0031 1 12/16/2021 Proceedings 2 Amicus. I'm sorry. 3 MR. MCTIGUE: Edwina. 4 MS. REILLY: Edwina. I'm sorry. 5 Edwina from Amicus, and she's going to go 6 through what, you know -- a presentation on 7 what they found and what recommendations they 8 made. 9 MS. EASTON: Sure, happy to do that. 10 Hello, everyone. Thanks for your time. 11 I'm Edwina Easton from Amaces, and I'm here 12 with my colleague, Larry Gokhman, from Amaces. 13 So the two of us make up the team, and we did 14 the majority of the review. 15 So we were brought on board -- and I 16 don't know how long I have; so I'll try to 17 stick within just a couple minutes, and then 18 feel free to ask me questions or not depending 19 on your policies and procedures. 20 But in terms of the overall project, it 21 was to take a look at the operations and the 22 accounting policies and procedures and 23 operations as it relates to the unit value 24 calculation processes internally at TRS. 25 In addition to that, it was also to 0032 1 12/16/2021 Proceedings

take a look at, you know, the overall 2 3 custodian relationship that you have with JP Morgan and some of the policies and procedures 4 5 as it relates to, you know, your interactions 6 with State Street, as information comes in 7 from the broader plan. 8 So when we were taking a look at this, 9 we were really focused on -- on people, 10 processes, technologies, systems, and 11 controls. 12 One of the things that we've walked 13 away with is really securing and -- and doing a deep dive review of the policies and 14 15 procedures and updating those throughout for 16 the various, you know, steps along the way in 17 that process. 18 In addition to that, we looked at some 19 overall governance around the relationships 20 with your custodians and internally at TRS. 21 And we took a look at, you know, the -- the 22 overall team and the structure of the team 23 and -- and how that was set up and designed, 24 and then, really, the system supporting all of 25 that flow and activity. 0033 1 12/16/2021 Proceedings 2 So any questions so far? 3 Okay. So from a -- from a -- really 4 just from a next steps -- you know, what --5 what do you do next with this information, is 6 a couple of things that we've proposed: One 7 is from a pure of governance perspective; 8 right? So we like to make sure that our pension plans and public plans, private plans, 9 10 foundations, endowments, whatever, in terms of that utilize a custodian put some governance 11 12 frameworks in place. 13 So taking a look at several 14 service-level standards and how do you monitor 15 that, how do you understand what's happening 16 with your service provider relative to your 17 contract that's in place. So, really, just 18 overall governance of the relationship and 19 monitoring the services that they're 20 performing for you and on your behalf. That 21 goes from both an operational aspect, as well 22 as a commercial element. So think anything 23 around fees, foreign exchange spreads, you 24 know, if there are splits from a securities 25 lending arrangement, cash, overdraft, interest 0034 1 12/16/2021 Proceedings 2 rates, et cetera, as it relates to the plan. 3 So that was one of our recommendations

4 that could really theoretically be put in 5 place for both of the custodian relationships. 6 The other thing that -- any questions? 7 Okay. The other thing that we 8 suggested is kind of a two-part. You know, if you look at the sort of -- I'm going to call 9 10 it short-term and long-term solutions that 11 might be put in place from an operational 12 perspective within TRS is around accounting 13 and unitization and the process flows. 14 So there are some short-term solutions 15 that could be put in place, as you look at the data, the data that comes into TRS. Then, you 16 17 know, more of a longer term strategic view 18 might be to take a look at the market in 19 general. Right? 20 So the custodians and accounting 21 providers have come a long way in the last 22 several years. So there might be some 23 opportunity, both from a fee perspective and 24 operational flow standpoint, client service, 25 delivery, et cetera, where you might benefit 0035 1 12/16/2021 Proceedings 2 from a market analysis and review of both your 3 custodian and accounting functions as it 4 relates to those processes. 5 And then the other -- the other 6 components to this that we suggested to take a look at are just generally your fees. So one 7 8 of the fee components that we took a look at 9 for you was very -- was very focused on the accounting fees. We think there might be some 10 11 benefit as you look at the total commercial 12 relationship with your provider that you have 13 in place today. 14 And then I think generally from a 15 people perspective -- that was one of the 16 other items that we touched on; so I want to 17 make sure we hit on that too. You know, just 18 making sure that from a -- a total people 19 perspective, that there's a cross training 20 that's happening internally at TRS and then 21 those folks have the ability to help 22 streamline as maybe you look at some of these 23 sort of short-term and long-term solutions 24 that we've proposed from an accounting on an 25 overall market perspective. 0036 1 12/16/2021 Proceedings 2 The final thing that we proposed or one 3 of the actions we thought would be helpful is 4 as you look at not only your operations but

5 the market, take a look at those contractual

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relationships with your banks today.
 6
 7
     Primarily, we focused on JP Morgan, but
     embedded in those contracts, you want to make
 8
 9
     sure that, again, from a commercial and an
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     operational risk perspective that you're
11
    protected.
12
            Is there any questions? Do you want me
13
     to go into deep dive into anything that -- I
14
     noticed everyone was keeping it high level;
15
     so...
16
            MR. MCTIGUE: Edwina, I just want to
17
     thank you for the work you did. I know you
18
     found our team very cooperative, and we do
19
     appreciate that. And I would say that we've
20
    already kind of delved into some of the
21
    issues, like the unitization and looking at
22
    those functions that are manual and trying to
23
     take advantage of technology to update those;
24
     so -- and start the work already, and, you
25
     know, appreciate your efforts and -- and your
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              12/16/2021 Proceedings
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     ability to take phone calls even after the
 3
     report was done.
 4
            MS. EASTON: You're fine. Thank you.
 5
            MS. PENNY: Okay. Questions and
 6
    comments?
 7
            MS. REILLY: Any questions or comments
 8
     from the public?
 9
            MS. PENNY: Okay. Hearing none, do I
10
    hear a motion to go into executive session?
11
            MS. VICKERS: So moved.
            MS. PENNY: Thank you, Ms. Vickers.
12
13
            Do I hear a second?
14
            MR. KAZANSKY: Second.
15
            MS. PENNY: Thank you, Mr. Kazansky.
16
            All those in favor of going into
17
    executive session, please say, "Aye."
18
           THE TRUSTEES: Aye.
19
            MS. PENNY: Thank you.
20
            All those opposed?
21
            Okay. We are going into executive
22
    session.
23
            (Off the record at 4:08 p.m.)
24
            (On the record at 4:15 p.m.)
25
            MS. STANG: In executive session, we
0038
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              12/16/2021 Proceedings
 2
     passed a resolution about certain investments.
 3
            MS. PENNY: Thank you, Susan.
 4
            And -- and I will say it again:
                                            So
 5
   this is the last board meeting of the present
 6
     leadership. And we thank everyone. We say a
 7
     fond goodbye to John Adler, Susannah Vickers,
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Russell Buckley, and Natalie Green Giles. 8 9 Unsure if they'll come back. We certainly 10 hope we will see them again. We thank them. 11 We don't always -- we didn't always agree. We 12 didn't always see eye to eye, but we 13 definitely had our members' best interests at 14 heart, and we did what we felt we should do. 15 And so we thank you, and we wish all of you a 16 happy and a healthy new year, and I certainly 17 hope that our paths cross again. 18 Anyone else want anything --19 MR. KAZANSKY: Feel free to stop by in 20 public session any time you want. 21 MS. STANG: We need the viewership. 22 MR. KAZANSKY: Then our ratings will go 23 up. 24 MR. ADLER: Thank you. It was a 25 pleasure serving with you all and serving the 0039 1 12/16/2021 Proceedings 2 members of the Teachers' Retirement System. 3 It's really been an honor. 4 MR. KAZANSKY: Thank you, John. 5 MS. PENNY: Thank you. 6 MS. VICKERS: I -- I will echo what --7 what John said. It has been great working 8 with all of you, and I -- you know, and the staff of TRS deserves a lot of credit. You 9 10 guys do an amazing job for your members every 11 day, and it was -- it was great to -- to work 12 with you officers. 13 MS. PENNY: Okay. Mr. Buckley, we 14 might have the pleasure of continuing to work 15 with you. We're unsure at this moment. But 16 we certainly hope. 17 MR. BUCKLEY: If not, it's been a 18 pleasure serving with the six of you, and I 19 wish you all the very best in your future 20 endeavors whether they lie with Teachers' 21 Retirement System or elsewhere. 22 MS. PENNY: Thank you. 23 All right, everyone. Have a wonderful 24 vacation. 25 0040 1 12/16/2021 Proceedings 2 MR. BROWN: Happy holidays, everybody. 3 MS. PENNY: Have a happy holiday and a 4 wonderful new year. Thank you. 5 MR. KAZANSKY: Motion to adjourn. 6 MS. PENNY: Do I hear a motion to 7 adjourn? 8 MR. KAZANSKY: So moved. 9 MS. PENNY: Second?

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10
            MS. VICKERS: Second.
11
            MS. PENNY: Any discussion?
12
            All those in favor, please say, "Aye."
13
            THE TRUSTEES: Aye.
14
            MS. PENNY: Opposed?
15
            We stand adjourned.
                                 Thank you,
16
     everyone. Have a good one.
17
            (End time: 4:18 p.m.)
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                 REPORTER'S CERTIFICATE
 2
 3
           I, TARA M. DRAKE, RPR, a Court Reporter
 4
     and Notary Public in and for the State of New
 5
     York, certify:
 6
           That the foregoing proceedings were
 7
     stenographically reported by me at the time and
     place therein set forth and were thereafter
 8
 9
     transcribed;
10
           That the foregoing is a true and correct
11
     transcript of my shorthand notes so taken to the
     best of my ability and belief.
12
13
           I further certify that I am not a relative
14
     or employee of any attorney of the parties nor
15
     financially interested in the action.
16
           I declare under penalty of perjury under
17
     the laws of New York that the foregoing is true
18
     and correct.
19
           Dated:
                    January 3, 2021
20
21
22
23
                    Tara M. Drake, RPR
24
25
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