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3	NEW YORK CITY TEACHERS' RETIREMENT SYSTEM
4	BOARD MEETING
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7	Held on Thursday, December 19, 2019, at 55 Water
8	Street, New York, New York
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10	ATTENDEES:
11	DEBRA PENNY, Chairperson, Trustee
12	DAVID KAZANSKY, Trustee
13	THOMAS BROWN, Trustee
14	JOHN ADLER, Trustee
15	SUSANNAH VICKERS, Trustee
16	NATALIE GREEN-GILES, Trustee
17	VALERIE BUDZIK, Teachers' Retirement System
18	PATRICIA REILLY, Teachers' Retirement System
19	
20	REPORTED BY:
21	YAFFA KAPLAN
22	JOB NO. 4467984
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2 ATTENDEES (Continued):

3	KAVITA KANWAR, Teachers' Retirement System
4	SUSAN STANG, Teachers' Retirement System
5	ANNETTE HANHARAN, Teachers' Retirement System
б	LIZ SANCHEZ, Teachers' Retirement System
7	ANDREW BRADFORD, Teachers' Retirement System
8	ANTHONY MEZZACAPPA, Teachers' Retirement System
9	ROBERT BETHELMY, Teachers' Retirement System
10	RENEE PEARCE, Teachers' Retirement System
11	ISAAC GLOVINSKY, Teachers' Retirement System
12	PAUL RAUCCI, Teachers' Retirement System
13	MARTA ROSS, ESQ., Law Department
14	SHERRY CHAN, Office of the Actuary
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1	Proceedings
2	MS. REILLY: Good afternoon. Welcome to
3	the Teachers' Retirement Board meeting of
4	December 19, 2019. I will start by calling
5	the roll. John Adler.
6	MR. ADLER: I am here.
7	MS. REILLY: Thomas Brown?
8	MR. BROWN: Here.
9	MS. REILLY: Natalie Green-Giles?
10	MS. GREEN-GILES: Here.
11	MS. REILLY: David Kazansky?
12	MR. KAZANSKY: Present.
13	MS. REILLY: Lindsey Oates? Russell
14	Buckley? Debra Penny?
15	MS. PENNY: Here.
16	MS. REILLY: Susannah Vickers?
17	MS. VICKERS: Here.
18	MS. REILLY: We have a quorum. So next
19	on the agenda is an update on TRS operations,
20	given to us by Kavita Kanwar.
21	MS. KANWAR: Thank you, Patricia. TRS
22	is completing the processing of required
23	minimum distributions or RMDs for the tax year
24	2019. RMDs are paid to certain retirees who
25	are maintaining their TDA accounts but have

2	reached age 70 and a half. About 16,600
3	retirees will receive their distribution in
4	December of this year. About two-thirds of
5	these are members who did not make a specific
6	choice about how to receive the distribution
7	but are required to receive payment by the
8	year end. About 1,000 beneficiaries who
9	participate in our TDA B program will also
10	receive RMDs this month.
11	On January 1, 2020, a new plan year goes
12	into effect for Tier 6 members, which means
13	their pension contribution rate may change.
14	Based on the rules governing Tier 6, TRS has
15	reviewed and updated salary and wage
16	information for all Tier 6 members, and
17	approximately 9,900 will have a new rate
18	starting in January. Earlier in December, TRS
19	conducted an e-mail campaign to members about
20	our TDA program. Over 130,000 members
21	received messages encouraging participation
22	and mentioning the new contribution limits for
23	the year 2020. Thank you.
24	MS. REILLY: Thank you, Kavita. Next on
25	the agenda is the executive director's report,

1	Proceedings
2	and the first item on the report is the matter
3	of the next meeting. It's been suggested that
4	the next regular meeting of the Teachers'
5	Retirement Board be held on the fifth Thursday
6	of the month, January 30, 2020. So everyone
7	should mark their calendar.
8	Next is a resolution, authorization to
9	the Comptroller of the City of New York to
10	invest certain QPP funds.
11	MR. KAZANSKY: Please waive the reading.
12	MS. REILLY: Debra, I think we need a
13	vote.
14	MS. PENNY: Is there a motion?
15	MR. KAZANSKY: So moved.
16	MS. PENNY: Is there a second?
17	MR. ADLER: Second.
18	MS. PENNY: All those in favor? Aye.
19	MR. ADLER: Aye.
20	MR. BROWN: Aye.
21	MS. GREEN-GILES: Aye.
22	MR. KAZANSKY: Aye
23	MS. VICKERS: Aye.
24	MS. PENNY: Any opposed? Any abstain?
25	Motion carries.

1	Proceedings
2	MS. REILLY: Next is the resolution,
3	authorization to the Comptroller of the City
4	of New York to invest certain tax-deferred
5	annuity funds.
6	MR. KAZANSKY: Please waive the reading.
7	MS. PENNY: Is there a motion?
8	MR. KAZANSKY: So moved.
9	MS. PENNY: Thank you. Is there a
10	second?
11	MR. BROWN: Second.
12	MS. PENNY: All those in favor? Aye.
13	MR. ADLER: Aye.
14	MR. BROWN: Aye.
15	MS. GREEN-GILES: Aye.
16	MR. KAZANSKY: Aye
17	MS. VICKERS: Aye.
18	MS. PENNY: Any opposed? Okay, motion
19	carries.
20	MS. REILLY: Next is an extension of
21	participation in the Common Investment
22	Meeting.
23	MR. KAZANSKY: Please skip to the
24	resolved.
25	MS. REILLY: "Resolved, the Teachers'

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1	Proceedings
2	Retirement Board extends for a one-year period
3	its participation in the Common Investment
4	Meeting as described on and separate to the
5	conditions of the Board's 2015 and 2016 CIM
б	resolutions, and be it further resolved
7	nothing in this resolution shall abrogate any
8	rights or waive any responsibilities reserved
9	for the Board of Trustees under applicable
10	law".
11	MS. PENNY: Is there a motion?
12	MR. ADLER: So moved.
13	MS. PENNY: Is there a second?
14	MR. KAZANSKY: Second.
15	MS. PENNY: All those in favor? Aye.
16	MR. ADLER: Aye.
17	MR. BROWN: Aye.
18	MS. GREEN-GILES: Aye.
19	MR. KAZANSKY: Aye
20	MS. VICKERS: Aye.
21	MS. PENNY: Any opposed? Motion
22	carries.
23	MS. REILLY: Next is the Emerging Market
24	Company Review Policy.
25	MR. KAZANSKY: Again, please skip to the

2 resolved.

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3 MS. REILLY: "Resolved, that the Board adopts the attached Emerging Market Company 4 Review Policy, and be it further resolved that 5 in furtherance of the Emerging Market Company б 7 Review Policy, within 90 days of submission to 8 the Board of reports from the ESG Review 9 Vendors, staff and an independent investment consultant will submit to the Board 10 11 recommended criteria as specified in the 12 policy to facilitate consideration of 13 identified financial and reputational risks; 14 and resolved that the Interim Public Emerging 15 Market Policy will remain in place until 16 further action by the Board". 17 MS. PENNY: Thank you. Is there a 18 motion? 19 MS. VICKERS: So moved. 20 MS. PENNY: Thank you. Is there a 21 second? 22 MR. KAZANSKY: Second. 23 MS. PENNY: Is there any discussion on 24 this? Are we all good with it? Okay. All those in favor? Aye. 25

Proceedings 1 2 MR. ADLER: Aye. 3 MR. BROWN: Aye. MS. GREEN-GILES: Aye. 4 5 MR. KAZANSKY: Aye MS. VICKERS: Aye. б 7 MS. PENNY: Any opposed? Motion carries. 8 9 MS. REILLY: Okay. Next is the calendar. And it's the approval of the 10 11 minutes for the month of October 3rd 12 investment meeting minutes, October 30th board 13 meeting minutes, November 7th investment 14 meeting minutes, November 20th CIM minutes, 15 and November 21st board meeting minutes. 16 MS. PENNY: Thank you. Is there a 17 motion to approve all of the minutes of those 18 meetings? 19 MR. BROWN: So moved. 20 MS. PENNY: Thank you. Is there a 21 second? 22 MS. VICKERS: Second. 23 MS. PENNY: All those in favor? Aye. 24 MR. ADLER: Aye. 25 MR. BROWN: Aye.

1	Proceedings
2	MS. GREEN-GILES: Aye.
3	MR. KAZANSKY: Aye
4	MS. VICKERS: Aye.
5	MS. PENNY: Any discussion? All those
6	opposed? Okay. Motion carries.
7	MS. REILLY: So for the rest of the
8	calendar, the Board has received an electronic
9	version of the calendar.
10	MR. KAZANSKY: You can waive the
11	reading.
12	MS. REILLY: Thank you. So just a
13	motion.
14	MS. PENNY: Is there a motion to adopt
15	it?
16	MR. BROWN: So moved.
17	MS. PENNY: Is there a second?
18	MS. VICKERS: Second.
19	MS. PENNY: All those in favor? Aye.
20	MR. ADLER: Aye.
21	MR. BROWN: Aye.
22	MS. GREEN-GILES: Aye.
23	MR. KAZANSKY: Aye
24	MS. VICKERS: Aye.
25	MS. PENNY: Any opposed? Motion

1	Proceedings
2	carries. We have adopted the calendar.
3	MS. REILLY: Next under other business
4	is a presentation by Kavita on data
5	governance.
6	MS. KANWAR: Good afternoon. My name is
7	Kavita Kanwar, and I am going to be presenting
8	to you our formal data governance program, how
9	we are going about establishing it. So as
10	part of the agenda, we are going to be
11	defining the term "data governance", some of
12	the expected value of, proposition from the
13	data governance program. How are we going
14	about developing the overall program and our
15	current status, where are we with this
16	program?
17	So data governance is needed because
18	data and information are what we rely on to do
19	our jobs on a day-to-day basis, service our
20	members, and report to our stakeholders. We
21	need policies and procedures in place to make
22	sure that we are managing it correctly. So
23	data governance is the exercise of
24	authoritarian control, which is basically
25	planning, managing, and enforcement of our

1	Proceedings
2	data asset. So what you see on here on the
3	pie chart are the ten knowledge areas that are
4	prescribed by the Data Management Association,
5	which is also known as DAMA, which is
б	basically the practices of the formal data
7	governance program.
8	Data governance is very central to all
9	our technical and system related areas that
10	are involved in the capture and flow of data
11	within the organization. So procedures are
12	required in each of these areas to support our
13	policies when it comes to safeguarding our
14	data. Understanding the need for better data
15	governance, TRS has made it part of its

1 1 1! strategic vision. So some of the objectives 16 17 for the overall data governance program are 18 safeguarding the integrity of its data as a critical asset, reduce the costs associated 19 with addressing the data problems, increase 20 21 the organization's shared understanding of its data, and enable effective decision making 22 23 regarding the structure and content, the 24 content during our agency's modernization 25 effort and thereafter for our regular

2 operations.

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3 So one of the key parts of the data governance is to establish an authoritative 4 data dictionary. So TRS data dictionary is an 5 б online, easily accessible repository that 7 includes a catalog of all the data elements 8 used by the various databases by the TRS 9 applications. The TRS data dictionary allows 10 the linkages of business terms to the 11 technical terms and leads to a shared 12 understanding of data terminology both on the technical side as well as on the business 13 14 side. The dictionary is a key tool for 15 self-service reporting and understanding system impacts when the business rules change 16 17 or the applications are modified.

So in here what we see is an example. 18 So "In-service member" is a very commonly used 19 20 term here at TRS. And what the slide tries to present is that one area of the organization I 21 22 may assume that in-service member is somebody 23 who is actively engaged in day-to-day work, reports to work every day, whereas some other 24 area may be thinking that an in-service member 25

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2 is somebody who is in active service as well 3 as somebody who is on leave. So the question is how do we come to a resolution wherein 4 5 everybody understands this term in the right б way or what should be the right way? So the 7 data governance program lays down the process 8 that will enable the organization to achieve 9 this shared understanding. They will bring 10 all the departments involved to collaborate 11 and come to the common definition.

12 So in this case you see how we did come 13 to a common acceptable definition to all the 14 different areas, and it is somebody --15 actually an in-service member is somebody who is actively working as well as is on leave of 16 17 up to seven years. So that's the acceptable definition across the organization. So the 18 group that includes the data governance 19 20 organization is basically the data governance program manager that we represent data from 21 22 areas from different departments. They are 23 called data stewards as well as IT data managers who are also commonly referred to as 24 data custodians, and they will all meet 25

2	together to craft the definition and come to a
3	consensus and approve the publication to the
4	TRS data dictionary. So data governance
5	organization is also responsible for ongoing
6	maintenance of this, and if any updates are
7	needed, they will be coming together again to
8	ensure that, you know, we come to a common
9	consensus.

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So another part of data governance is to 10 11 formulate policies and procedures. So in this 12 slide basically what we are seeing is that address information is a key component for 13 14 applying data governance. So the data 15 governance policy regarding address data helps 16 us to ensure that the data quality and 17 completeness is achieved for a person's 18 address. So what is demonstrated on this 19 slide is that data is coming into TRS through 20 different sources. So some of the sources 21 could be employers sending us data feeds such 22 as DOE, CUNY, and charter schools, or the 23 member could be themselves entering this 24 information using our member portal. So one of the elements of address field is the state 25

2	data. So in here what is being demonstrated
3	is the State of New York is being provided in
4	many different formats. As you can see here,
5	somebody is using a short form. Some other
6	source would be using different cases for
7	providing that information, but once we apply
8	the data standardization process and
9	procedures to that intake of the feeds and as
10	the data is coming into our databases, it
11	ensures consistency.
12	So when we are bringing in this data,
13	it's coming in as this is New York, which is
14	what is being shown, and that's how we are
15	bringing it into our database. So this is the
16	data standardization process. Another
17	example. So further building on that is how
18	we in here we are demonstrating that along
19	with the data standardization, we are also
20	validating data, so that's another of the
21	procedure that gets applied. And what the
22	data validation procedure is trying to
23	accomplish is ensure completeness and accuracy
24	of the data. So on the address field there
25	are certain under address data there are

2 certain fields that are required. So like 3 address line one, the city, state are required feeds and the ZIP code. So when the data is 4 5 reported and again being brought in through б the data feeds, we are ensuring that we are 7 validating those pieces of information and 8 only bringing it once they conform to the 9 validation groups, which would be that it 10 should be filled out, that it should be in a 11 certain format, and that it should be 12 reported. You know, it could be validating 13 with external sources like Melissa data in kind of trying to standardize, so what's going 14 15 to come through is what's feeding our standard, which is one of the examples. 16 The 17 other one where it's incomplete is going to actually fall out as an exception and those 18 exceptions would be brought back to the source 19 20 of the information which could be an employer in this case could be DOE or CUNY or the 21 22 charter school and they are required to fix 23 that data and resolve it before we can bring it into our system. 24

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So once the data is complete,

2	standardized and accurate, reporting of data
3	becomes very easy. As a member centric
4	organization, this furthers our goal of
5	achieving operational excellence. That is
6	through straight-through processing and
7	providing member satisfaction by having
8	complete and timely information. So it
9	eventually results in efficient operations.
10	So ensuring the proper management of
11	data is essential to our mission of providing
12	exceptional service to our members. The cost
13	of that data can impact all operational areas
14	of our organization and we get a better handle
15	on our liabilities and impact of changes made
16	when the data and how it's used through our
17	system is clear and consistent.
18	So putting things in perspective, and to
19	appreciate the complexity of instilling a
20	formal data governance program and a culture
21	of data stewardship and data ownership through
22	the organization, just want to give you some
23	numbers. So there are about 3,000-plus
24	technical terms that are in the scope of the
25	overall program. You know, in our new system

2	and old system, which are being defined as
3	part of this program, there are about 800-plus
4	business terms in various business glossaries
5	across all the departments at TRS as part of
6	this effort. And the total volume of data
7	that we are talking about is about 3-plus
8	terabytes, and in relative terms, if we were
9	to cut 150,000 trees and make paper out of
10	that and print on those pieces of paper,
11	that's the amount of information we are
12	talking about when we say 3-plus terabytes of
13	information.
14	MS. CHAN: So 50,000 per terabyte.
15	MS. KANWAR: So in terms of our current
16	status. Right now, during the course of
17	post-modernization, we are in the process of
18	defining and establishing the data and how
19	it's being managed and how as we proceed into
20	the post-modernization phase TRS will be
21	basically optimizing the data governance
22	program and then proactively controlling,
23	maintaining our data using all those policies
24	and procedures.
25	So that's all I have. Any questions?

1	Proceedings
2	MS. REILLY: Thank you. Next on the
3	agenda is comments from the public. Seeing
4	none, do I hear a motion to move into
5	executive session?
б	MR. BROWN: I move pursuant to Public
7	Officers Law Section 105 to go into executive
8	session for discussions regarding specific
9	contract matters.
10	MS. PENNY: Thank you, Mr. Brown. Do I
11	hear a second?
12	MS. VICKERS: Second.
13	MS. PENNY: All those in favor to go
14	into executive session, please say aye. Aye.
15	MR. ADLER: Aye.
16	MR. BROWN: Aye.
17	MS. GREEN-GILES: Aye.
18	MR. KAZANSKY: Aye
19	MS. VICKERS: Aye.
20	MS. PENNY: Thank you. Any opposed? We
21	are in executive session.
22	(Whereupon, the meeting went into Executive
23	Session.)
24	MS. PENNY: Is there a motion to come
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1	Proceedings
2	out of executive session?
3	MR. BROWN: So moved.
4	MS. PENNY: Thank you, Mr. Brown. Is
5	there a second?
б	MS. GREEN-GILES: Second.
7	MS. PENNY: Thank you, Ms. Giles. All
8	those in favor? Aye.
9	MR. ADLER: Aye.
10	MR. BROWN: Aye.
11	MS. GREEN-GILES: Aye.
12	MR. KAZANSKY: Aye
13	MS. VICKERS: Aye.
14	MS. PENNY: Any opposed? Okay. We are
15	out of executive session and back to public
16	session. Welcome back. Is there any other
17	matters?
18	MS. REILLY: Susan is going to read out
19	what happened in executive session.
20	MS. STANG: Exactly. A contract matter
21	was discussed. Consensus was reached, which
22	will be announced at the appropriate time.
23	Another contract matter was discussed. A vote
24	was taken, the results of which will be
25	announced at the appropriate time.

1	Proceedings
2	MS. REILLY: Thank you.
3	MS. PENNY: Thank you, Susan. Now, are
4	there any other matters? Okay. Is there a
5	motion?
6	MS. VICKERS: Motion to adjourn.
7	MS. PENNY: Thank you. Is there a
8	second?
9	MR. KAZANSKY: Second.
10	MS. PENNY: Thank you. All those in
11	favor? Aye.
12	MR. ADLER: Aye.
13	MR. BROWN: Aye.
14	MS. GREEN-GILES: Aye.
15	MR. KAZANSKY: Aye
16	MS. VICKERS: Aye.
17	MS. PENNY: Any opposed? We stand
18	adjourned.
19	MR. BROWN: Happy holidays.
20	(Time noted: 4:11 p.m.)
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CERTIFICATE STATE OF NEW YORK) : ss. COUNTY OF QUEENS) б I, YAFFA KAPLAN, a Notary Public within and for the State of New York, do hereby certify that the foregoing record of proceedings is a full and correct transcript of the stenographic notes taken by me therein. IN WITNESS WHEREOF, I have hereunto set my hand this 1st day of January, 2020. YAFFA KAPLAN