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| 3 | NEW YORK CITY TEACHERS' RETIREMENT SYSTEM |
| 4 | INVESTMENT MEETING |
| 5 | |
| 6 | Held on Monday, June 22, 2015, at 55 Water Street |
| 7 | New York, New York |
| 8 | |
| 9 | ATTENDEES: |
| 10 | JOHN ADLER, Chairman, Trustee |
| 11 | SANDRA MARCH, Trustee |
| 12 | THOMAS BROWN, Trustee |
| 13 | SCOTT EVANS, Comptroller's Office |
| 14 | RAYMOND ORLANDO, Trustee |
| 15 | SUSANNAH VICKERS, Trustee |
| 16 | CHARLOTTE BEYER, Trustee |
| 17 | DAVID KAZANSKY, Trustee, Comptroller's Office |
| 18 | THAD McTIGUE, Teachers' Retirement System |
| 19 | RONALD SWINGLE |
| 20 | MELVYN AARONSON |
| 21 | MARTIN GANTZ, Comptroller's Office |
| 22 | WESLEY PULISKIK, Comptroller's Office |
| 23 | REPORTED BY: YAFFA KAPLAN |
| 24 | JOB NO. 170941 |

| 1 | ATTENDEES (Continued): |
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| 2 | SUSAN STANG, Teachers' Retirement System |
| 3 | MICHAEL FULVIO, Rocaton |
| 4 | ROBIN PELLISH, Rocaton |
| 5 | DAVID LEVINE |
| 6 | VALERIE BUDZIK, Teachers' Retirement System |
| 7 | RENEE PEARCE |
| 8 | EVAN NAHNSEN, Comptroller's Office |
| 9 | CHRIS PAK, Comptroller's Office |
| 10 | BRIAN COOK, Comptroller's Office |
| 11 | Alex Done, Comptroller's Office |
| 12 | YVONNE NELSON, Comptroller's Office |
| 13 | JOHN MERSEBURG, Comptroller's Office |
| 14 | JOSUE PIERRE, Comptroller's Office |
| 15 | ENEASZ KADZIELA, Comptroller's Office |
| 16 | JOHN DORSA, Comptroller's Office |
| 17 | LIZ SANCHEZ, Teachers' Retirement System |
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| 1 | MR. ADLER: Good morning, everybody. |
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| 2 | Welcome to the Teachers' Retirement System |
| 3 | investment meeting for June 22, 2015. |
| 4 | We are going to start with the Passport |
| 5 | Funds and will you please call the roll. Do |
| 6 | you have to call the roll for both? |
| 7 | MR. McTIGUE: Thank you, Mr. Chairman. |
| 8 | Good morning, members of the board. As Mr. |
| 9 | Adler mentioned, today is the June 22nd |
| 10 | investment meeting of the Teacher Retirement |
| 11 | Board. Mr. Adler? |
| 12 | MR. ADLER: Present. |
| 13 | MR. McTIGUE: Ms. Beyer? |
| 14 | MS. BEYER: Here. |
| 15 | MR. McTIGUE: Mr. Brown? |
| 16 | MR. BROWN: Here. |
| 17 | MR. McTIGUE: Mr. Kazansky? |
| 18 | MR. KAZANSKY: Here. |
| 19 | MR. McTIGUE: Ms. March I believe is on |
| 20 | her way. Mr. Orlando? |
| 21 | MR. ORLANDO: I am here. |
| 22 | MR. McTIGUE: And Ms. Vickers? |
| 23 | MS. VICKERS: Here. |
| 24 | MR. McTIGUE: We have a quorum, Mr. |
| 25 | Chairman, and you may start. |

| 1 | MR. ADLER: Thank you very much. I |
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| 2 | think we are going to start with the Passport |
| 3 | Funds. Do I turn it to Scott or turn it to |
| 4 | Robin? |
| 5 | MS. VICKERS: Robin. |
| 6 | MS. PELLISH: Thank you. So Mike Fulvio |
| 7 | is going to make some comments. |
| 8 | MR. FULVIO: Good morning, everybody. |
| 9 | So we are going to start with the quarterly |
| 10 | report for the Passports Funds for the first |
| 11 | quarter. That's the laminated book. So this |
| 12 | was distributed ahead of time and I am happy |
| 13 | to address any questions. We did have a few |
| 14 | things we wanted to point out within it. |
| 15 | You might recall from the May meeting |
| 16 | that we had noted possible revisions to the |
| 17 | unit value. TRS provided updated unit values |
| 18 | for the Diversified Equity Fund and the |
| 19 | International Equity Fund. And if you |
| 20 | wouldn't mind, please, flipping ahead to Tab 5 |
| 21 | on page 23, I just wanted to note for the |
| 22 | month of March the performance for the |
| 23 | Diversified Equity Fund was negative 1.1 |
| 24 | percent in line with its benchmarks. And for |
| 25 | the International Equity Fund, that fund |

| 1 | itself was down 1.43 percent also in line with |
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| 2 | its respective benchmark, the EAFE Index. And |
| 3 | we just wanted to note that for the record, |
| 4 | given it was something that we had pointed out |
| 5 | at the May meeting. |
| 6 | Were there any questions on the |
| 7 | quarterly itself? |
| 8 | MR. ADLER: I have a question, Mike. |
| 9 | MR. FULVIO: Sure. |
| 10 | MR. ADLER: So, you know, I just noticed |
| 11 | that if we look at the sort of longer-term |
| 12 | performance, one year, three year, really |
| 13 | almost across the board with the exception of |
| 14 | the inflation Protection Fund, the funds are |
| 15 | underperforming their respective benchmarks. |
| 16 | And in some cases it's, you know, fairly |
| 17 | minimal and in some cases fairly substantial. |
| 18 | I just wonder if you guys could address |
| 19 | that and have concerns about this sort of |
| 20 | long-term relative underperformance. |
| 21 | MR. FULVIO: Yes. So I believe maybe we |
| 22 | will start by focusing on the Diversified |
| 23 | Equity Fund. |
| 24 | MR. ADLER: Sure. |
| 25 | MR. FULVIO: You will note that we have |

| 1 | talked about this in the past, I believe the |
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| 2 | 15 percent allocation to the international |
| 3 | equity composite, and again that performance |
| 4 | mirrors the International Equity Fund. That |
| 5 | allocation has been it's there to serve as |
| 6 | a diversifier for the overall fund, but it has |
| 7 | detracted on an absolute basis from the |
| 8 | performance of that fund just given the |
| 9 | lagging of the developed markets relative to |
| 10 | the United States. So you can see that below. |
| 11 | For example, over the ten-year period |
| 12 | that composite returned about 4.6 percent |
| 13 | relative to the broad U.S. equity market |
| 14 | about 8.4 percent. And obviously above that |
| 15 | the impact on the Diversified Equity Fund |
| 16 | whereas there was a positive contribution from |
| 17 | the actively-managed strategies within the |
| 18 | composite, there was a little bit of lagging |
| 19 | with regard to the defensive strategies |
| 20 | composite. Although up 7 percent in an 8 |
| 21 | percent market, I think that's within the |
| 22 | realm of expectations just given the defensive |
| 23 | nature of that slice. |
| 24 | MS. PELLISH: So just to jump in to echo |
| | |

Mike's comments, if we just had U.S. equity

| 1 | strategies, we actually would have |
|----|--|
| 2 | outperformed the benchmark slightly over long |
| 3 | periods of time. Because although it varies a |
| 4 | little bit by time period, if you look at the |
| 5 | actively-managed U.S. equity composite that, |
| 6 | in general, has done actually surprisingly |
| 7 | well relative to the Russell 3000 Index. |
| 8 | So it's really a structural decision and |
| 9 | the structural decision made a number of years |
| 10 | ago was to have a defensive composite which |
| 11 | was actually reduced. At one point it was 25 |
| 12 | percent reduced to 15 percent and to have an |
| 13 | international equity composite for |
| 14 | diversification purposes. |
| 15 | So those two structural elements have |
| 16 | resulted in the Diversified Equity Fund |
| 17 | lagging somewhat. |
| 18 | MR. ADLER: But those I guess what I |
| 19 | am confused about is that the benchmark takes |
| 20 | into account the allocation to International |
| 21 | and the allocation to defense. |
| 22 | MS. PELLISH: The hybrid benchmark, |
| 23 | right. So if you look at those, so part of it |
| 24 | is structural and part of it is actually those |
| 25 | two have lagged passive indices. So you are |

| 1 | right. So both on a structural and it's |
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| 2 | really those two composites that have led to |
| 3 | an underperformance. |
| 4 | MR. ADLER: And the international equity |
| 5 | slug of the diversified is the same manager or |
| 6 | managers. |
| 7 | MS. PELLISH: It's the same exact, |
| 8 | literally the same exact structure. |
| 9 | MR. ADLER: So I guess one question |
| 10 | would be, is that something we ought to be |
| 11 | looking at the international equity managers? |
| 12 | Because typically I think that the EAFE Index |
| 13 | is one that active managers can typically more |
| 14 | easily outperform |
| 15 | MS. PELLISH: Yes, yes. |
| 16 | MR. ADLER: than the Russell 3000 and |
| 17 | S&P 500. And yet you have this lag, this |
| 18 | persistent under I am just asking, is that |
| 19 | something we ought to consider? |
| 20 | MS. PELLISH: Well, we are happy to look |
| 21 | at and the actually, there is much more |
| 22 | active management in the International Equity |
| 23 | Fund and composite than there is in the U.S. |
| 24 | equity program based on that logic. But in, |
| 25 | fact, if you look at the median International |

| 1 | manager, they have not done well over the last |
|----|--|
| 2 | five years. It's not there is all sorts of |
| 3 | reasons. Mostly it's been difficult between |
| 4 | countries. There is lot of macroeconomic and |
| 5 | political noise that has seemingly interfered |
| 6 | with manager's ability to identify good |
| 7 | companies and have those stocks do well as a |
| 8 | result of those good companies. We are happy |
| 9 | to come back to the board and have a |
| 10 | discussion with that. |
| 11 | So we just met with TRS at our office. |
| 12 | We just met with I think all of the |
| 13 | International Equities except one last week |
| 14 | and we do this we meet with all the |
| 15 | managers annually in our offices and then we |
| 16 | go Rocaton separately. Go onsite to managers |
| 17 | typically every 12 or 18 months. But there is |
| 18 | one manager SpruceGrove that has been notably |
| 19 | lagging by several-hundred basis points, so |
| 20 | there are no obvious issues with the managers. |
| 21 | I think that is the bottom line. And the |
| 22 | underperformance of this group of managers |
| 23 | unfortunately is pretty consistent with |
| 24 | underperformance of international equity |
| 25 | managers as a group. But happy to come back |

| 1 | with more detailed comments. |
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| 2 | MR. ADLER: I mean, I think one question |
| 3 | again: Building on the discussion that we had |
| 4 | whether it was last month or the month before |
| 5 | about in this sort of challenging |
| 6 | international market, does it make sense to |
| 7 | look at going passive as opposed to continuing |
| 8 | to go 100 percent active management? |
| 9 | MS. PELLISH: Well, it's not 100 percent |
| 10 | active. I think a third of it is passive, but |
| 11 | there is still the question, yes. So happy to |
| 12 | come back. |
| 13 | MR. ADLER: I am just curious, what's |
| 14 | our overall fee basis on the International? |
| 15 | MS. PELLISH: You know, we actually have |
| 16 | specific numbers if you look at the April |
| 17 | report. |
| 18 | MR. FULVIO: Page 6. That's the |
| 19 | separate handout. This was in response to a |
| 20 | question by the board at the last meeting. We |
| 21 | went back and added the annual fees for each |
| 22 | of the managers within the Passport Funds. |
| 23 | MR. ADLER: I'm sorry which page should |
| 24 | we look at? |
| 25 | MR. FULVIO: Page 6, the third column of |

| 1 | numbers. It's entitled "Annual Fees." That's |
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| 2 | a new column. And, again, all the performance |
| 3 | in this report is already net of fees, but we |
| 4 | thought it would be helpful to add this. You |
| 5 | can see the fees here and it's worth noting |
| 6 | that the fees here were flat, the aggregation |
| 7 | of assets across all of the Teachers and other |
| 8 | New York City Retirement Systems. So |
| 9 | SpruceGrove, as Robin mentioned, you could see |
| 10 | their fee there relative to the others is |
| 11 | quite quite favorable just given the broad |
| 12 | assets held by the other systems. |
| 13 | MS. PELLISH: But despite that, it it |
| 14 | doesn't make up for that. So we don't have a |
| 15 | total program cost, which would be worth doing |
| 16 | and we will add that. But if you sort of |
| 17 | roughly you see the passive allocation is |
| 18 | up 4 basis points and the other managers are |
| 19 | between. Spruce is at the low end of 18 and |
| 20 | Paramus is at 60. So the active managers call |
| 21 | it somewhere around 30 to 40 basis points on |
| 22 | average, it looks like. |
| 23 | MR. ADLER: So it's kind of surprising |
| 24 | that all of the managers all of the active |
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managers except for SpruceGrove show excess

| 1 | returns since inception. And while most of |
|----|--|
| 2 | those inceptions are five years or less, the |
| 3 | inceptions, and yet we have this persistent |
| 4 | MS. PELLISH: So well, these are the |
| 5 | current managers. What our program shows is |
| 6 | the impact of managers we have terminated. |
| 7 | MR. ADLER: I see. |
| 8 | MS. PELLISH: So happy to come back with |
| 9 | more detail because it's a topic that we pay a |
| 10 | lot of attention to and we would love to |
| 11 | discuss further with the board. |
| 12 | MR. ADLER: Seems like it might make |
| 13 | sense to do that in the fall. |
| 14 | MR. FULVIO: It probably makes sense. |
| 15 | Adding one of the things we talked about, the |
| 16 | managers do have some advantage going into the |
| 17 | emerging markets and emerging markets have |
| 18 | lagged developed markets for recent time |
| 19 | period. While that is a smaller piece and |
| 20 | it's worth and structure is set to evolve |
| 21 | with dedicated emerging market equity managers |
| 22 | as well, with the structure evolving it will |
| 23 | also evolve the benchmark. |
| 24 | MS. PELLISH: But, nonetheless, that's |
| 25 | an active decision they made. They made the |

| 1 | decision of going to emerging markets. Many, |
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| 2 | if not all, managers and certainly not the |
| 3 | passive strategy and that that did not pay |
| 4 | off over the last five years. |
| 5 | MR. ADLER: Okay. |
| 6 | MR. FULVIO: Were there any questions |
| 7 | with regard to the quarterly, any additional |
| 8 | questions? |
| 9 | If we could, stay in the April flash |
| 10 | report and just cover the performance for the |
| 11 | month. So just if you wouldn't mind, please, |
| 12 | flipping back on page 1, you can see at the |
| 13 | end of April the Diversified Equity Fund was |
| 14 | about 11.3 billion in assets. For the month |
| 15 | of April the fund returned positive 85 basis |
| 16 | points. And you can see that return is right |
| 17 | in the middle of the hybrid benchmark for the |
| 18 | fund which returned 1.27 percent and the |
| 19 | Russell 3000 Index which returned about half a |
| 20 | percent over that time period. Year to date |
| 21 | the overall fund returned about 3.25 percent. |
| 22 | And, again, that is slightly lagging the |
| 23 | hybrid benchmark which returned about 3.4 |
| 24 | percent and ahead of the Russell 3000 Index |
| 25 | which returned about 2-1/4 percent. |

| 1 | And, you know, of the things to note |
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| 2 | here, you will notice the international equity |
| 3 | composite down at the bottom there returning |
| 4 | 4.5 percent. We are seeing some of the |
| 5 | reversal in the performance of non-U.S. |
| 6 | markets having contributed over this month and |
| 7 | the year-to-date period. Year to date that |
| 8 | composite is up about 9.3 percent, so you will |
| 9 | see that the international allocation is |
| 10 | paying off a little bit so far this year. |
| 11 | Just above that, the actively managed U.S. |
| 12 | equity composite lagged for the month. |
| 13 | However, year to date still contributing about |
| 14 | 1 percent relative to returns. The defensive |
| 15 | composite there is some lagging there as you |
| 16 | can see over the year-to-date time period, |
| 17 | though we are happy to see that over the year |
| 18 | to date it is keeping pace with the Russell |
| 19 | 3000 Index. Also, we like to see how it's |
| 20 | outperforming its custom benchmark as well. |
| 21 | We already discussed the fees for the |
| 22 | Diversified Equity Fund managers on page 6, so |
| 23 | I will move ahead then to the bond fund. You |
| 24 | can see at the end of April \$335 million in |
| 25 | assets there. The fund relatively flat for |

| 1 | the quarter, slightly trailing the benchmark |
|----|--|
| 2 | and year to date about 10 basis points behind |
| 3 | the return of the benchmark for like a five |
| 4 | year above credit. The International Equity |
| 5 | Fund about \$111 million at the end of the |
| 6 | April returning about 4.5 percent. You can |
| 7 | see it for the month slightly ahead of the |
| 8 | EAFE Index. And, again, for the year-to-date |
| 9 | time period about 9 percent return lagging the |
| 10 | EAFE Index by about 9.4 percent. |
| 11 | The Inflation Protection Fund at the end |
| 12 | of the month about \$44 million in assets |

of the month about \$44 million in assets returning about 1.14 percent. Year to date, the fund returned about 1.2 percent. You can see that lags its custom benchmark by 1.5 percent over the long term. This -- this overall fund has done very well relative to its custom benchmark and the CPI benchmark that we have in here.

Just below that the Socially Responsive Equity Fund about \$100 million at the end of the month. You can see the performance was lagging, negative for the month trailing the S&P 500 Index, which was up about 1 percent. Year to date is lagging somewhat, but doing a

| 1 | better job in keeping pace with the return of |
|----|--|
| 2 | 1.8 percent relative to the 1.9 percent for |
| 3 | the S&P. |
| 4 | MR. ADLER: Can I just ask, sorry, one |
| 5 | more question. Can you explain the |
| 6 | distinction between the performance numbers |
| 7 | for the separate International Equity Fund |
| 8 | from the international equity composite that |
| 9 | is part of the Diversified Fund? I thought |
| 10 | they were the same. |
| 11 | MR. FULVIO: Sure. So the exception |
| 12 | there is that there is a cash allocation |
| 13 | within the it's outside the international |
| 14 | equity composite, but within the International |
| 15 | Equity Fund to serve as a liquidity buffer for |
| 16 | participants who move their money from one |
| 17 | fund to another. |
| 18 | MS. PELLISH: It's a little bit of a |
| 19 | cash drag. |
| 20 | MR. ADLER: Got it, okay. Thank you. |
| 21 | MR. FULVIO: So if there is nothing else |
| 22 | on April, we can move ahead then to May. |
| 23 | There is a one-pager with preliminary market |
| 24 | performance. You can see here the Russell |
| 25 | 3000 Index, the broad U.S. proxy is up about |

| 1 | 1.4 percent for the month of May. That |
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| 2 | brought the calendar year-to-date return to |
| 3 | about 3.7 percent positive. The EAFE Index |
| 4 | developed equity markets, we are down about 40 |
| 5 | basis points in the month of May and. That |
| 6 | brought the year to date return for EAFE down |
| 7 | to about 8.9 percent. The defensive |
| 8 | strategies composite benchmark was up about 84 |
| 9 | basis points. Year to date 3 almost just |
| 10 | over 3-1/4 percent. And the Diversified |
| 11 | Equity Fund hybrid benchmark returned about |
| 12 | 1.03 percent, about 4-1/2 percent year to |
| 13 | date. And that we would expect to limit the |
| 14 | allocation of the Diversified Equity Fund if |
| 15 | they were implemented in the past. |
| 16 | That concludes the public session for |
| 17 | the Passport Funds. |
| 18 | MR. ADLER: So now we are going to go |
| 19 | into public session on the pension funds, but |
| 20 | we don't need another rollcall; is that |
| 21 | correct? |
| 22 | MR. McTIGUE: Right. |
| 23 | MR. ADLER: Okay, Mr. Evans. |
| 24 | MR. EVANS: Okay, this is our quarterly |
| 25 | report on the first quarter March And so |

| 1 | what you want to do is get the big spiral |
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| 2 | books out which have the quarterly |
| 3 | information. Turn to page 10 in the spiral |
| 4 | book. I am going to start talking about the |
| 5 | fund overall and then the asset class heads |
| 6 | will come up and talk about their groups. |
| 7 | As you can see on page 10, the quarter |
| 8 | ended March 31st. Total plan return was 2.19 |
| 9 | percent, 2.38 for the benchmark. This is |
| 10 | gross of fees in the public, net of fees on |
| 11 | private as we have been doing it historically. |
| 12 | More on that later, but this is the |
| 13 | traditional way of looking at it. Excess |
| 14 | return minus 19 basis points, 11 coming from |
| 15 | allocation selection. |
| 16 | And if you turn to page 13, you can see |
| 17 | the breakdown of the allocation selection. |
| 18 | Going down to the bottom which is the |
| 19 | selection effect, you can see the domestic |
| 20 | equity outperformed and contributed 13 basis |
| 21 | points positive and private equity |
| 22 | underperformed 23 basis points in the |
| 23 | negative. Of course, you know, I caution |
| 24 | whether private equity is positive or negative |
| 25 | on a time-weighted basis. It's you have a |

| L | lag both for the portfolio and for the |
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| 2 | benchmark, but the way we think is the most |
| 3 | accurate is private equity is still a |
| 1 | cumulative IRR and a cumulative IRR for the |
| 5 | public market equivalent. Alex Done will take |
| 5 | you through that when he talks about private |
| 7 | equity. |
| | |

If you turn to page 14, you can see how the performance of the Teachers' portfolio as stacked up against the Wilshire TUCS universe. On the far left is the quarter. We are looking at 2.19 percent, which is in the 64 percentile. It's a little below the average fund or the median fund, whereas the benchmark was a little above the median fund. And if we look at the fiscal year to date and look at sort of ten-year numbers and shorter-term numbers bounce around a lot. That's about where we have been in the middle of the pack for the total fund, whereas the benchmark is a little better than the middle of the pack.

Now, several months ago we started talking about the fact that we need to change the way we report to you. And, in fact, this is something that you had been asking for,

| 1 | which is to see both public and private net of |
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| 2 | fees. And so we are trying to be responsive |
| 3 | to that. I had promised that for the next |
| 4 | quarterly report, the June quarter, these net |
| 5 | of fees numbers would be built into the books |
| 6 | that we had and we intend to keep that |
| 7 | promise. But I have good news for you, I |
| 8 | actually have the months for the March quarter |
| 9 | which I am going to hand out to you. This is |
| 10 | a preliminary report. Just take one and pass |
| 11 | it around. |
| | |

So if you look at this, what I have done is just to give you a -- except for the first page, a stock State Street report. So I have not customized the report at all. I intend to do that, but I wanted to get some feedback from you guys about it. It's -- the first page is a little customized and you can see -- if you look in the three-month numbers that we were just looking at, you can see the 2.19 which is what we report to you.

Now the estimated fees for the public, so this is the public fees that were not in the report, were five basis points over the third three-month period. Taking us down to

| 1 | 2.14, so the 19 basis points that I talked |
|----|---|
| 2 | about goes to 24 basis points negative. And |
| 3 | you can see we have the data through |
| 4 | starting with January of 2014 so we can fill |
| 5 | in three-month fiscal year to date, year to |
| 6 | date and one-year numbers and you can see the |
| 7 | impact. We are running at about a 16 basis |
| 8 | point drag. In other words, our public market |
| 9 | fees are are costing us 16 basis points of |
| 10 | the total portfolio. And it's been tracking |
| 11 | pretty consistently over that time. So we are |
| 12 | on a one-year basis, 69 basis points below. |

You can see in the three, five and ten year and fifteen-year numbers we do not have the fees. But, you know, to the extent they have been consistently 16 basis points, you can just subtract 16 basis points from the numbers on the bottom to give you a sense of where we are. We will attempt to build back the history. It's going to get very, very difficult when we go back before State Street was custodian to a different custodian. I am not sure how much history we can go into, but we will be able to move forward. We will integrate these reports into the quarterly

1 report for the next quarter.

As you can see on the following pages, we have summaries by asset class and then we have all of the manager detail both gross and net arrayed below. I don't believe that this format is easy to look at. This is a standard State Street format and I am proposing at a minimum, we have the net figures there so that you can see quickly looking at them in red and green just as you are accustomed to in our other reports. But I am happy to take any feedback over this the next few months from you about how you would like to see this and we will go forward and integrate it into the books on a going-forward basis.

So this is pretty much what we expected it to be, but we now have, you know, the solid, you know, numbers built up fund by fund and integrated into the State Street reports. Harder than it should be. One of the major reasons for this is that our contracts are nonstandard rather than being, you know, a basis point on average daily asset value of the fund which is how 99.9 percent of mutual funds and other funds here are rated. We have

| 1 | the structures. You know, there is a cap on |
|----|--|
| 2 | the fee. And on the absolute dollars, it's |
| 3 | part of the procurement process and the fees |
| 4 | are calculated a little bit differently. I am |
| 5 | happy to talk about the details of that in |
| 6 | executive session, if you would like. |
| 7 | That's all I have on my piece. If there |
| 8 | any aren't any questions, I will pause briefly |
| 9 | in case you have any questions on the net of |
| 10 | fees number. If not, I will hand on off to |
| 11 | John Merseburg. |
| 12 | MR. MERSEBURG: Thank you, Scott. If |
| 13 | everyone would please turn to page 19 in the |
| 14 | spiral bound book. On page 19 we show the |
| 15 | domestic equity composite. As the slide |
| 16 | shows, the composite was ahead of the |
| 17 | benchmark by 345 basis points for the quarter |
| 18 | though it was 25 behind the benchmark for the |
| 19 | trailing 12 months. But when you look at the |
| 20 | longer term, the composite for the most part |
| 21 | has closely tracked the benchmark. |
| 22 | Turning to page 20 we have the small cap |
| 23 | composites that trailed the benchmark slightly |
| 24 | for the quarter, but is well ahead for the |
| 25 | longer-term trailing periods. |

| Τ | Next on page 21 we have the mid-cap |
|----|--|
| 2 | composite which was ahead of the benchmark for |
| 3 | the quarter, trailed for the longer periods. |
| 4 | On page 22 the Russell 1000 composite |
| 5 | trailed by 20 basis points for the quarter. |
| 6 | Moving to page 23, we have the Russell |
| 7 | 3000 passive composite and that was close to |
| 8 | the benchmark for the quarter as expected and |
| 9 | for the longer-term trailing periods. |
| 10 | And then on page 24, we have the |
| 11 | emerging manager of managers composite and |
| 12 | that trailed the benchmark by 7 basis points |
| 13 | for the quarter. |
| 14 | Are there any questions on the U.S. |
| 15 | domestic equity portion of the report? |
| 16 | MS. BEYER: Standard deviation, the |
| 17 | three-year mark is roughly 9 and at the |
| 18 | ten-year market it's roughly 15. To me, that |
| 19 | seems a big difference. Is there something in |
| 20 | the markets that you can speak to as to the |
| 21 | fact that the volatility or standard deviation |
| 22 | just seems to be much more benign? You or |
| 23 | MR. MERSEBURG: I mean, I don't |
| 24 | necessarily have particular insight into it |
| 25 | other than volatility is volatile. The VIX |

| 1 | Index, Martin tends to usually talk about the |
|----|--|
| 2 | other part. |
| 3 | MS. BEYER: It seems to be quiet. |
| 4 | Especially I am just bringing it up because it |
| 5 | seems when things get too quiet, sometimes you |
| 6 | wonder. And it's now a big difference between |
| 7 | the ten year and the three year. |
| 8 | MR. MERSEBURG: Maybe if rates change |
| 9 | that people are anticipating, that would |
| 10 | change as well. |
| 11 | MS. BEYER: I didn't expect you to have |
| 12 | a complete crystal ball or marker. |
| 13 | MR. MERSEBURG: I borrowed Martin's |
| 14 | Magic 8 Ball. |
| 15 | Then I will move on to the non- U.S. |
| 16 | equity. Turning to page 26 the developed |
| 17 | markets composite trailed the benchmark for |
| 18 | by 29 basis points for the quarter, but it's |
| 19 | ahead of the benchmark for the longer-term |
| 20 | trailing periods. |
| 21 | You will see on page 27 the developed |
| 22 | markets growth active composite trailed for |
| 23 | the quarter, but it is ahead of the benchmark |
| 24 | for the trailing three and five-year periods. |
| 25 | And then on page 28, it's a similar |

| 1 | story. The developed value active composite |
|----|---|
| 2 | trailed for the quarter, but is ahead of the |
| 3 | benchmark for the longer term trailing five |
| 4 | and ten-year periods, flash for three years. |
| 5 | On page 29, the developed small cap |
| 6 | active composite was close to the benchmark |
| 7 | for the quarter. Doesn't really have a very |
| 8 | long track record. |
| 9 | And on page 30 we have the emerging |
| 10 | markets summary. The active managers trailed |
| 11 | for the quarter and that's what really pulled |
| 12 | down the overall composite for the quarter a |
| 13 | bit, but not by too much. |
| 14 | Are there any questions on the non-U.S. |
| 15 | portion of the report? Okay, if not, I am not |
| 16 | sure if I am handing it off to Yvonne for |
| 17 | REITS or markets for fixed income. Yvonne for |
| 18 | REITS. Thank you. |
| 19 | MS. NELSON: So just a brief segue to |
| 20 | REITS on page 31, the REITS portfolio has |
| 21 | outperformed its benchmark for the quarter by |
| 22 | 42 basis points and for every period out to |
| 23 | ten year. The ten-year outperformance is 17 |
| 24 | basis points, so a good result for the |
| 25 | program. |

| 1 | And now I think I am going to hand it |
|----|--|
| 2 | off to you, Martin, right, for fixed income. |
| 3 | MR. GANTZ: Thank you. |
| 4 | Good morning Mr. Chair, trustees. |
| 5 | Looking now at page 33, you will see the chart |
| 6 | that shows the overall fixed income |
| 7 | allocation. We are over \$21 billion, about 35 |
| 8 | percent of the plan. You will see the largest |
| 9 | by far area that we are invested in fixed |
| 10 | income is in dark blue. Nearly half of the |
| 11 | portfolio is in the core fixed income, what we |
| 12 | label "Structured Programs." Structured |
| 13 | because it's the core program broken into |
| 14 | three categories. |
| 15 | Those three categories are further |
| 16 | broken down on page 34. You will see the pie |
| 17 | chart of those categories as well as the |
| 18 | numbers. Key numbers and take-aways here are |
| 19 | the underweights and overweights. We have |
| 20 | been talking about this for quite a while. |
| 21 | Underweight the government sector, which is |
| 22 | labelled the "Treasury Agency" and we are |
| 23 | overweight the spread sectors which are |
| 24 | mortgage and credit. In this particular |
| 25 | quarter, the best returns were in the treasury |

| agency sector. But as you will see as we go |
|--|
| through the monthly report, the underweight |
| would have helped a lot in the starting in the |
| month of May because treasury yields went from |
| about 185 to where they are now in the low |
| 230s, actually 250 in the second half. But |
| they are moving up and so the underweight has |
| helped. |
| |

In the meantime you will see in the "Difference" column all the way on the right, the managers did well in every one of the sectors. So, for instance, for the quarter of thirteen managers, eleven outperformed and two managers that didn't were not by much. And for the three-year period of the twelve managers, every one of them outperformed.

On page 35 we show returns. This is \$10 billion, 10.1 billion, 16.8 percent of the fund. For the quarter, 190 versus 188. Just ahead of the fund benchmark. For the fiscal year to date we are behind by 45 basis points which is what I just mentioned before when yields went down, that underweight in the treasury sector occurred. That will reverse itself in the coming -- in May and so far this

| 1 | month to date. That's why the underweight of |
|----|--|
| 2 | 30 basis points for the one-year number, |
| 3 | although with the yields so low that's the |
| 4 | explanation for why you have a 6.8 percent |
| 5 | return when yields are so low and that's |
| 6 | because of duration. When yields go down, we |
| 7 | have a very high long duration of over six |
| 8 | years in the program. So if rates go down 1 |
| 9 | percent, you earn 6 percent right there. So |
| 10 | the rates went down by about $1-1/2$ to 1 |
| 11 | percent and that explains the return. For the |
| 12 | three years and all the longer times periods, |
| 13 | we are well ahead of the benchmark given our |
| 14 | expectations, 49 basis points for three years |
| 15 | and longer-term periods ahead of the benchmark |
| 16 | as well with returns for three years at 4.33 |
| 17 | and in the high 5s and low 6s for the longer |
| 18 | time periods. You will also see in the |
| 19 | volatility on the bottom, very low, abnormally |
| 20 | low and so we should expect going forward that |
| 21 | that number does go up. But again when we say |
| 22 | go up, going from the 3s to maybe 5 percent. |
| 23 | So compared to equities, this is barely |
| 24 | noticeable. And compared to fixed income, |
| 25 | it's what we would expect. So we have been in |

the very, very benign environment for fixed

| 2 | income. |
|----|--|
| 3 | Progress is on the next page. Emerging |
| 4 | manager of managers. I'm sorry, did I skip a |
| 5 | page? No, page 36. And they did well in the |
| 6 | quarter outperforming by 19 basis points, |
| 7 | returning 1.8. Similarly under the benchmarks |
| 8 | slightly for the fiscal year-to-date 12 months |
| 9 | by 30 basis points and 6 basis points |
| 10 | respectively for similar reasons. That will |
| 11 | reverse itself starting in the month of May. |
| 12 | You will see in the next report you |
| 13 | will see from us in the monthly report as well |
| 14 | as in the next quarterly report, which would |
| 15 | be in September for the fiscal year ending |
| 16 | June. For TIPS, by the way, for emerging |
| 17 | managers you will see LM yet because they were |
| 18 | just funded. So you are not going to see that |
| 19 | yet. You will see that probably in the |
| 20 | September or December quarter. For TIPS this |
| 21 | reflects returns and includes the transition. |
| 22 | You will see things went well. For the |

three-month period the returns were 165, 23

TIPS. And for the fiscal year to date, the

basis points ahead on the \$1.4 billion in

23

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| 1 | returns are mostly while they are negative |
|---|---|
| 2 | because that's because the returns for the |
| 3 | asset class were negative, but we are 8 basis |
| 4 | points ahead of the benchmark. And for the |
| 5 | one-year period right on top of the benchmark |
| 6 | 310 versus 311 and longer-term period between |
| 7 | 15 about actually 11, 16 basis points. So |
| 8 | just ahead of the benchmark. One of the |
| 9 | reasons why we decided to put more in passive |
| 0 | than active. |

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High yield is on page 38. High yield has been a very active area because energy, it is one of the larger sectors and energy has been very volatile, to say the least, for the quarter ending December in a negative way and the quarter ending in March in a positive way. So the return for the month quarter on the left were positive on an absolute relative basis by 26 basis point returning 274. But you see fiscal year to date roughly flat 18 basis points behind and 12 months returning 213. The 213 is partially because of duration, but also because of the energy sector. So it's high yield, but the high yield starts showing up in the longer-term

| 1 | numbers. The high part of it, returns start |
|----|--|
| 2 | showing up as in the 78 percent range |
| 3 | returning ahead of the benchmark with the |
| 4 | exception of five years just 14 basis points |
| 5 | behind. And you will remember that |
| 6 | encompasses the time period where we got rid |
| 7 | of managers after 2012. That was because of |
| 8 | our search that were underperforming and were |
| 9 | replaced with what we believe are better |
| 10 | managers to replace them and we are very |
| 11 | comfortable with the managers. So for the |
| 12 | quarter the eight managers, seven outperformed |
| 13 | in a different report. |
| 14 | MR. ADLER: Can I just ask one question |
| 15 | about it. So it's interesting that our |
| 16 | long-term standard deviation |
| 17 | MR. GANTZ: This came up before. I know |
| 18 | what you are going to ask. The 4.3, that is a |
| 19 | typo. |
| 20 | MR. ADLER: Oh, it's still there. |
| 21 | MR. GANTZ: No, it's a typo that is not |
| 22 | a typo that is a typo. What do I mean? The |
| 23 | benchmark. |
| 24 | MR. KAZANSKY: Talking like a |
| 25 | politician. |

| 1 | MR. GANTZ: The benchmark provider is |
|----|--|
| 2 | correct as per our benchmark provider, but it |
| 3 | is incorrect. They simply have an error in |
| 4 | there. They haven't fixed it and they are not |
| 5 | going to fix it, so you will see in the ten |
| 6 | years it starts evening out. They are simply |
| 7 | not going to not going to fix it. That's the |
| 8 | benchmark provider response. |
| 9 | MR. ADLER: Can we fire the benchmark |
| 10 | provider? |
| 11 | MR. GANTZ: It's a volatility number |
| 12 | that will as you see over time even out. But |
| 13 | I can tell you when we looked at these numbers |
| 14 | internally, as you see in the long-term |
| 15 | numbers they are pretty much right on top of |
| 16 | the benchmarks even though these are all |
| 17 | active managers. So it's an error in what the |
| 18 | benchmark is saying the standard deviation is, |
| 19 | but they are not going to fix it. You will |
| 20 | see that we did well in the three months |
| 21 | actually, I just did that. Bank loans are |
| 22 | higher in the capital structure and so any |
| 23 | problems that we had in in high yield in |
| 24 | energy would be lessened in this case. And |
| 25 | overall in the long term you would expect a |

| 1 | return that's lower than high yield, but |
|---|---|
| 2 | higher than core plus 5 with less volatility. |
| 3 | No volatility here yet. It starts showing up |
| 4 | after three years. And the returns are all |
| 5 | good. We have five managers and all five |
| 6 | outperformed in the one-year period. And the |
| 7 | one-year period is 389 versus 283 over 100 |
| 8 | basis points, so the program has done quite |
| 9 | well. |

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Convertible bonds is on the next page, page 40. We have been telling you, we will at some point outperform the benchmark for the program and we have this quarter for the fiscal year to date, I should say. This quarter was underperforming slightly, but we added the gray and I want to remind you the light blue is the overall benchmark. None of our managers, of our three managers, managed to reach that benchmark. There is a benchmark overall, so over a market cycle markets go up and down. You would expect the program outperforms it. Unfortunately, we haven't had that because the market has been a bull market since we funded that. Not that I am hoping or we hope to lose money and the market go down,

| 1 | but when that occurs because of the way the |
|----|--|
| 2 | benchmark is constructed what happens is a |
| 3 | name that's 1 percent of the benchmark becomes |
| 4 | 2 percent, 3 percent 4 percent, 5 percent, |
| 5 | even 10 percent. Our managers for purely |
| 6 | risk-related purposes aren't going to own 10 |
| 7 | percent of anything, so as something is going |
| 8 | up they are cutting back by its very nature. |
| 9 | So in a bull market that hurts them, in a bear |
| 10 | market that helps them. So for a market cycle |
| 11 | it will come back. So you see that in the |
| 12 | gray they are outperforming their individual |
| 13 | benchmarks quite nicely, but the light blue |
| 14 | for the fiscal year to date they are doing |
| 15 | okay, and for all the periods they are |
| 16 | outperforming the benchmark. And, by the way, |
| 17 | the longer term period includes Lord Abbett |
| 18 | which was terminated several years ago. So |
| 19 | the program is doing what we expect, which is |
| 20 | better returns. Basically 75 percent of the |
| 21 | U.S. equity with about 40 percent of |
| 22 | volatility. |
| 23 | Opportunistic Fixed Income is on page |
| 24 | 41. For the short term, first of all, these |
| 25 | returns like private equity are kind of |

| 1 | trailing while we say the last three months. |
|----|--|
| 2 | This is not the quarter ending March. It's |
| 3 | mostly December and that's the quarter that |
| 4 | had the terrible returns for energy. Our |
| 5 | managers were just starting to get into the |
| 6 | opportunities that they saw in energy so it |
| 7 | was a difficult quarter then, but our managers |
| 8 | aren't really looking at or being measured or |
| 9 | evaluated on a quarter or monthly basis. So |
| 10 | we know what they are doing, we understand |
| 11 | what they are doing, and we expect that that |
| 12 | will do well. And the long-term numbers that |
| 13 | you see in three and five years will continue, |
| 14 | but the underperformance that you see in the |
| 15 | short run while the numbers on an absolute |
| 16 | basis are good, they are underperforming our |
| 17 | high benchmark of 10 percent because of what |
| 18 | they do. But if you look at them versus the, |
| 19 | for instance, fiscal year to date of one year |
| 20 | versus the gray which is the global high field |
| 21 | that includes the securities, they are doing |
| 22 | very well and they are actually doing what we |
| 23 | expected. We will have more information on |
| 24 | them when we have our annual plan, which will |
| 25 | be September or October. |

| 1 | We also have something in the executive |
|----|--|
| 2 | session today. Unless you have any questions, |
| 3 | I am going to turn it over to. |
| 4 | MR. ADLER: I just want to make one |
| 5 | point, that Ms. March has walked in. Thank |
| 6 | you. |
| 7 | MR. COOK: Hi. For our last chart, the |
| 8 | ETI portfolio on page 42. Overall Teachers |
| 9 | outperformed its benchmark by 59 basis points |
| 10 | over the last quarter and 200 basis points |
| 11 | over the last fiscal year. And you can see we |
| 12 | are doing very well in our standardized |
| 13 | returns. |
| 14 | So switching now to the big book which |
| 15 | actually feels less big which I guess is a |
| 16 | good thing, but come up with a new name for |
| 17 | it, page 8. We will go over what we did for |
| 18 | the collateral benefits and I will describe |
| 19 | how each program is doing. |
| 20 | On page 8 and 9 we have the PPAR |
| 21 | program, which is our long-term loan program. |
| 22 | The chart that looks like this for anyone who |
| 23 | the PPAR program outperformed its benchmark by |
| 24 | 86 basis points in the first quarter and 315 |
| 25 | basis points over the last 12 months. During |

| 1 | the first quarter, Teachers purchased \$44 |
|----|--|
| 2 | million worth of loans to create or preserve |
| 3 | 133 units. And I should note that in the |
| 4 | first quarter, we had our first rate lock from |
| 5 | Lisk who was one of the approved lenders that |
| 6 | Teachers passed back in 2013. They are a good |
| 7 | nonprofit. It's \$6.6 million loan of which |
| 8 | Teachers' portion will be 1.9 million. So we |
| 9 | are starting to see some of our new managers |
| 10 | originate new loans for us, which is great. |
| 11 | Moving to the next two pages, page 10 |
| 12 | and 11, we have AFL-CIO HIT. The HIT |
| 13 | underperformed its benchmark by 1 basis point |
| 14 | in the first quarter and outperformed by 23 |
| 15 | basis points over the last 12 months. And I |
| 16 | should note that is the net of return number. |
| 17 | There is the there was an issue with State |
| 18 | Street putting together our full returns on |
| 19 | page 42 where they combined net and gross |
| 20 | starting in November. So pre-November we had |
| 21 | net, post-November we had gross. It's an |
| 22 | internal back-end thing that they are trying |
| 23 | to fix, but mea culpa that will change the |
| 24 | overall category slightly once we get that |
| 25 | corrected. And I should note that in the |

| Τ | first quarter, the AFL-C10 HIT invested 8 |
|----|---|
| 2 | million into Harry Smith Houses, which we |
| 3 | covered last month when we were talking about |
| 4 | workforce housing. |
| 5 | And last on page 12, we have access |
| 6 | capital strategies. They invest in |
| 7 | multifamily and primarily single-family homes. |
| 8 | Access outperformed its benchmark by 50 basis |
| 9 | points in the first quarter, 207 basis points |
| 10 | over the last 12 months. On the collateral |
| 11 | benefits side in the first quarter, they |
| 12 | purchased \$10 million of Ginnie Mae securities |
| 13 | for Christopher Court in the Bronx. And, in |
| 14 | addition, they purchased \$5 million in a |
| 15 | Fannie Mae securities for Section 8 apartments |
| 16 | in little Italy in Manhattan which is, you |
| 17 | know, a very unique opportunity to keep a |
| 18 | portion of the city affordable. |
| 19 | And with that, I will turn it over to |
| 20 | Alex Done unless there are any questions. |
| 21 | MR. DONE: So we are going to review the |
| 22 | private equity quarterly update. Just to |
| 23 | recall, private equity is on a lag so we will |
| 24 | be reviewing the December, 2014 quarter. |
| 25 | And by way of introduction while I am |

| 1 | standing, I want to reintroduce Eneasz |
|----|--|
| 2 | Kadziela who I believe you met at I believe |
| 3 | at our last meeting in May. As we continue to |
| 4 | grow the team, he has been with us since |
| 5 | earlier this year. And I will have Eneasz |
| 6 | walk us through some of the highlights for the |
| 7 | quarter and we will be on page 24 of the large |
| 8 | book. |
| 9 | MR. KADZIELA: Good morning, everyone. |
| 10 | I will be walking you through the December 31, |
| 11 | 2014 private equity quarterly report which |
| 12 | Alex mentioned starts on page 24 of your |
| 13 | agenda package. And on this page we have a |
| 14 | snapshot of your active commitments and |
| 15 | overall portfolio performance. So as of |
| 16 | December 31st, Teachers had 5.6 billion in |
| 17 | active commitments across 94 managers. And |
| 18 | the private equity portfolio had a market |
| 19 | value of approximately 2.7 billion, which |
| 20 | represents 4.7 percent of total plan assets. |
| 21 | In addition, unfunded commitments totalled 2.1 |
| 22 | billion, resulting in a total exposure of 4.9 |
| 23 | billion to the asset class. Looking at the |
| 24 | bottom of the table you can see the portfolio |
| 25 | since inception, net IRR declined 6 basis |

| 1 | points over the quarter to 9.39 percent from |
|----|--|
| 2 | 9.45 percent while the net multiple remained |
| 3 | steady at 1.3 times. |
| 4 | Turning to page 25, we list the recent |
| 5 | commitments. And you can see that for the |
| 6 | fourth quarter, Teachers closed on five |
| 7 | commitments during the quarter an aggregate of |
| 8 | 486.4 million to one core manager and four |
| 9 | emerging managers. On the next page, we show |
| 10 | the commitments that were closed subsequent to |
| 11 | quarter end through June, 2015. And TRS |
| 12 | closed on an additional 167 million to three |
| 13 | partnerships, two core managers, and another |
| 14 | emerging manager. |
| 15 | Turning to page 27, you can see your |
| 16 | portfolio's return presented over various time |
| 17 | periods and against the relative benchmarks. |
| 18 | Since inception, the portfolio generated a |
| 19 | 9.39 percent net IRR, which lags the program's |
| 20 | benchmark by 396 basis points. On a one-year |
| 21 | basis the portfolio generated an 8.82 percent |
| 22 | net IRR, which does trail the program's |
| 23 | benchmark due to the continued outperformance |

of the public markets. However, given the

long-dated nature of the asset class, we

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believe that the since inception figures are the most relevant.

Let's take a quick look at page 28 for the quarterly value analysis. As far as cash flow activity during the fourth quarter, the portfolio was cash flow positive to the tune of the 21.4 million and it has been cash flow positive in two of the last five quarters.

You will notice that both quarter over quarter and year over year the portfolio value has increased net of cash flow activity. Over the prior quarter the portfolio increased 1 percent or \$27.8 million. And over the prior year the portfolio increased 8.2 percent or \$208.4 million.

And, lastly, I would like to turn to page 32 where you can see your portfolio exposures. You will see here that Teachers' portfolio is broadly diversified with buyouts representing the largest exposure 54 percent relative to a 60 to 85 percent target. This exposure should increase as we continue to source and commit to high-conviction buyout managers. In terms of the geography at the portfolio level, North America represents the

| 1 | largest exposure of 80 percent, with Europe at |
|----|--|
| 2 | 15 percent, and the rest of the world at 5 |
| 3 | percent. And we also break out here the New |
| 4 | York State and New York New York City |
| 5 | exposure. And in terms of market value, 8 |
| 6 | percent of Teachers' portfolio is exposed to |
| 7 | New York State-based companies and 4 percent |
| 8 | is exposed to New York City-based companies. |
| 9 | Are there any questions? |
| 10 | MR. ADLER: Thanks, Eneasz. |
| 11 | MR. DONE: Thank you. |
| 12 | MR. EVANS: Let's move to real assets, |
| 13 | Yvonne. |
| 14 | MS. NELSON: So we are going to start |
| 15 | the real asset report beginning with real |
| 16 | estate and it immediately follows PE, page 46. |
| 17 | Looking at page 47, so again we are |
| 18 | going to be talking about the fourth quarter |
| 19 | of 2014 a quarter lag. What I always look |
| 20 | forward to about the fourth quarter is that |
| 21 | when that's when everything gets scrubbed. |
| 22 | So you have auditors coming in looking and |
| 23 | preparing financial statements and in |
| 24 | particular looking at the GP's estimate of |
| 25 | value. And in some instances that estimate of |

| 1 | value is also kind of farmed out to an |
|----|---|
| 2 | appraisal, so this is actually a good look at |
| 3 | the portfolio here at the fourth quarter. |
| 4 | Marketwise the real estate recovery continues |
| 5 | to take hold, particularly in the U.S. as |
| 6 | leading the way followed by London. Less |
| 7 | distressed in the U.S. kind of confined them |
| 8 | in pockets and that's exactly what your |
| 9 | managers are doing. Europe is probably where |
| 10 | there is more wholesale kind of distress and |
| 11 | hopefully we will be bringing you |
| 12 | opportunities to take advantage of that. |
| 13 | Overall transaction volume and real estate is |
| 14 | up over 20 percent. Again boosted by high |
| 15 | values, record sales, and in particular you |
| 16 | have low interest rates which helps buyers |
| 17 | when they want to finance those properties. |
| 18 | So let's go into an overview of the TRS |
| 19 | portfolio and we can see how these trends |
| 20 | manifest themselves. So for real assets we |
| 21 | have an allocation of 6 percent, give or take |
| 22 | 2 percent that we have for rebalancing. And |
| 23 | the market value of the real estate that we |
| 24 | have in the ground today is about a billion |
| 25 | and a half which is 20 percent more where we |

| 1 | were 12 months ago at 1.2 billion. So a year |
|----|--|
| 2 | over year 25 percent increase in value. We |
| 3 | have about 925 million that we have sitting on |
| 4 | the side, the unfunded commitments that we |
| 5 | have made and all together our exposure to |
| 6 | real estate is \$2.4 billion. That comprises |
| 7 | of about 46 separate investments by 36 |
| 8 | managers who are executing core and noncore |
| 9 | strategies for you. In terms of portfolio |
| 10 | construction, our IPS and our discussions with |
| 11 | the trustees and what the trustees have |
| 12 | approved is a portfolio that's a blend of core |
| 13 | strategies and noncore strategies and there is |
| 14 | a 40 percent floor on that. So as of fourth |
| 15 | quarter we were 40 percent core, core plus |
| 16 | investments, and about 60 percent noncore. |
| 17 | And so let's kind of look at the |
| 18 | performance results. Over to the right, the |
| 19 | lower right, good news here. For the fourth |
| 20 | quarter, the quarter that we spoke about, you |
| 21 | know, Teachers is ahead 4.4 percent. The |
| 22 | benchmark is 3.3 percent. You will see that |
| 23 | the Teachers' real estate portfolio with the |
| 24 | exception of the three-year outperforms the |
| 25 | benchmark. |

| 1 | A little word on the benchmark. So the |
|----|--|
| 2 | benchmark is a time-weighted benchmark. It's |
| 3 | based on core real estate and we have talked |
| 4 | about the fact that the portfolio is actually |
| 5 | a blend of core and noncore. So to raise the |
| 6 | bar a bit the benchmark is the ODCE benchmark |
| 7 | which is a core benchmark, but we have also |
| 8 | assessed a hundred basis points on top of |
| 9 | that. So when you look at this graph down on |
| 10 | the lower right, the Teachers' portfolio was |
| 11 | the dark line and the benchmark is the lighter |
| 12 | line. And the mile marker for us in terms of |
| 13 | the IPS has us to look at the performance over |
| 14 | the market cycle, which we define in the IPS |
| 15 | as ten years. So if you kind of look at that |
| 16 | ten-year bar, you will see that the results |
| 17 | are very strong for the TRS real estate |
| 18 | portfolio, outpacing the benchmark by 410 |
| 19 | basis points. |
| 20 | Also an alternative measure, if you just |
| | |

Also an alternative measure, if you just want to kind of go by cash flow dollars in and dollars out, the IRR for the portfolio to date on an after-fee basis is 9.1 percent in real estate reflecting a 1.3 times equity multiple. So that's an overview of where we sit today.

| 1 | In terms of new activity, we closed \$65 |
|----|--|
| 2 | million commitment, re-upped to H2 in addition |
| 3 | to another re-up to Almanac VII of \$65 |
| 4 | million. We have also TRS has also gave |
| 5 | its consensus on commitments for two emerging |
| 6 | managers and an additional core plus that we |
| 7 | are still working on and we hope to be closed |
| 8 | the next time that we see you. |
| 9 | On the following page which I am |
| 10 | going to by the page numbers, page 2. So page |
| 11 | 2 is a further discussion on the portfolio in |
| 12 | terms of investments style. The circle graph |
| 13 | shows the darker circle shows a portion of |

going to by the page numbers, page 2. So page 2 is a further discussion on the portfolio in terms of investments style. The circle graph shows — the darker circle shows a portion of — the circle shows your noncore exposure.

And, again as I mentioned, we are right on top of policy at 60 percent for noncore and 40 percent for core/core plus. The table down at the bottom merely translates what that means in numbers. So the second group of numbers, I am looking under style sector exposure where there are dollar figures. There is an unfunded core — unfunded noncore and unfunded emerging all indicating capacity to do more business. And lastly on this page, I think it's important to kind of talk about the

| 1 | status of the program. We are 2-1/2 percent |
|---|---|
| 2 | funded in real estate at this point and 4.1 |
| 3 | percent committed. |

The following page on page 3, this is really a deep dive into the quarterly performance. It breaks up the performance between those core and noncore managers and investors and it has a graph down at the bottom. This is great, but again it's a quarterly snapshot and real estate is a long-term asset class. We are going to be moving up and down with the market, but it's also always good to tell good stories when you can.

On the following page on page 4, it's a different look at the portfolio. So on the right this table is showing you which managers or which investments, rather, are driving the performance for the quarter. So everything out to the right as the arrow indicates pointing up is above average. And if you look down toward the left, the arrow going down shows you the investments that are performing below average. For this particular quarter, I would say that the engines that are driving

| 1 | the portfolio was related to Taconic and KTR. |
|----|--|
| 2 | And what I think is interesting about these |
| 3 | drivers of returns even though it's just for |
| 4 | the quarter related and Taconic of course, as |
| 5 | you know, is your New York-based operating |
| 6 | partners so they are doing very well and of |
| 7 | course New York City is doing very well. KTR |
| 8 | is an industrial specialist. All three of |
| 9 | these teams sponsor investment vehicles that |
| 10 | are under a billion, so they are flying under |
| 11 | the radar. And I think this kind of speaks to |
| 12 | what we at BAM are trying to do and that's |
| 13 | identify strong investment class managers no |
| 14 | matter what size they are. So now you have |
| 15 | mid-size and small-size managers pushing |
| 16 | returns for the quarter and that's a good |
| 17 | story. |
| 18 | The next page shows how we diversified |
| 19 | the portfolio by property type and geography. |
| 20 | So again the Teachers' portfolio is a dark |
| 21 | line and the ODCE is a the white bar, so again |
| 22 | the ODCE is a core benchmark. We are not |
| 23 | going to match up exactly because our |
| 24 | portfolio is a blend of core and noncore |
| 25 | strategy, but we would like to share this |

| 1 | information with you. And down at the bottom |
|----|--|
| 2 | in particular, we have been tracking our New |
| 3 | York City exposure within the portfolio. So |
| 4 | if you look over to the left on the Northeast |
| 5 | bar, that triangle that you see indicates an |
| 6 | exposure to New York City of 17.3 percent. |
| 7 | Also for those that are interested in terms of |
| 8 | our international exposure is growing and |
| 9 | that's at approximately 16 percent. |
| 10 | MR. ADLER: May I just ask a question. |
| 11 | So the benchmark doesn't have an |
| 12 | international; is that correct? |
| 13 | MS. NELSON: That's correct. |
| 14 | MR. ADLER: We are growing, we are 15.8 |
| 15 | and growing, so that seems a little bit of a |
| 16 | disconnect, right, to have an essentially |
| 17 | international portfolio against the domestic |
| 18 | benchmark? |
| 19 | Is there any way to sort of take a look |
| 20 | is there an international benchmark we |
| 21 | could incorporate to more accurately reflect |
| 22 | the composition of our portfolio. |
| 23 | MS. NELSON: They are all kind of |
| 24 | emerging and I would say that most |
| 25 | institutional investors are constantly looking |

| Τ | at the real estate benchmarks coming out from |
|----|---|
| 2 | real estate for this reason and for others. |
| 3 | The other reason obviously is my constant |
| 4 | reference that the index is core versus, you |
| 5 | know, we have core/core plus so. We are all |
| 6 | especially internally at BAM we have been |
| 7 | looking at different benchmarks that are |
| 8 | around in the industry. |
| 9 | MR. ADLER: Okay, thank you. |
| 10 | MR. EVANS: We are sort of less |
| 11 | satisfied with this benchmark than any other |
| 12 | benchmark we have and Yvonne and I and the |
| 13 | rest of the team are actively talking about |
| 14 | it. |
| 15 | MR. ADLER: Thanks. |
| 16 | MS. NELSON: Any other questions on real |
| 17 | estate? I will turn it over to Evan. |
| 18 | MR. NAHNSEN: Good morning. I am going |
| 19 | to give a quarterly update on Teachers' |
| 20 | infrastructure portfolio which is on page 56. |
| 21 | The IRR of the program to date is 13.9 |
| 22 | percent. That exceeds the benchmark IRR by |
| 23 | 820 basis points. Deployed as of quarter end |
| 24 | was \$42.2 million. Some commentary, I guess. |
| 25 | I think this 13.9 percent number is actually |

| 1 | misleadingly low a little bit because if you |
|----|--|
| 2 | look on individual performance, Brookfields is |
| 3 | with a 16 percent IRR and it's being dragged |
| 4 | down slightly by first reserve which just had |
| 5 | one draw for fees during the quarter. So you |
| 6 | are actually doing even better than we think, |
| 7 | although the program is in its initial stages. |
| 8 | The market continues to be challenging, |
| 9 | especially for large core assets, as systems |
| 10 | search for yield in this low interest rate |
| 11 | environment and also there is increasing |
| 12 | interest in the asset class. The managers you |
| 13 | have hired are doing a great job of turning |
| 14 | over rocks to find deals that are not shopped |
| 15 | to the broader markets and we are happy. I |
| 16 | think in the pacing update that we are talking |
| 17 | about later, we will have some more news since |
| 18 | quarter end. |
| 19 | MR. EVANS: Thanks very much. Okay, if |
| 20 | there no other questions about the quarterly |
| 21 | report, we will turn to the April monthly |
| 22 | report briefly. We will go over that and then |
| 23 | get to the asset allocation review. |
| 24 | If we return to the flip book, on page |
| 25 | 32 first of all, I want to go to page 39. |

| 1 | This gives you the returns for the month of |
|----|--|
| 2 | April. The fund was up 85 basis points versus |
| 3 | 68 to the benchmark so it's a good month |
| 4 | relative to the benchmark, up 17 basis points. |
| 5 | This is gross public net of private. |
| 6 | If you look at how that 85 breaks down |
| 7 | at page 31, you can see that most of the |
| 8 | return here in the equity side is coming from |
| 9 | the international in yellow and emerging in |
| 10 | brown. You can see how different that is from |
| 11 | the one-year time period where most of the |
| 12 | return was coming from the U.S. equity market |
| 13 | in green. This is fortuitous and our |
| 14 | rebalancing policy has paid off for us. If |
| 15 | you remember, last summer about a year ago we |
| 16 | went from a very overweight position in U.S. |
| 17 | equities to more balanced position. We had no |
| 18 | idea that the, you know, international was |
| 19 | going to outperform. But by rebalancing we |
| 20 | are actually buying things that are weak, |
| 21 | throwing things when they are strong, and it's |
| 22 | paid off for us during the recent period of |
| 23 | time. |
| 24 | You can see our current structure on |
| 25 | nage 32 and you can see we are sticking to the |

| 1 | plan of being balanced relative to policy on |
|----|--|
| 2 | the equities. That's on the left side where |
| 3 | there is about a zero and on the right |
| 4 | side, although very long-term objectives are |
| 5 | to stay balanced relative to long-term |
| 6 | targets. We are overweight short-term |
| 7 | securities, those less than four years in |
| 8 | gray, and underweight long-term securities in |
| 9 | blue, both dark blue and light blue. We will |
| 10 | continue to do that. |
| 11 | As Martin has said, recent months the |
| 12 | wind has been in our faces a little bit. But |
| 13 | just very recently interest rates which begin |
| 14 | to climb, that's paying off for us relative to |
| 15 | our normal stance as we are closer to the |
| 16 | Barclays' Ag with a little shorter duration |
| 17 | than would be our long-term preference. |
| 18 | I am going to turn it over to Martin now |
| 19 | and he can give you some highlights of April. |
| 20 | MR. GANTZ: Thank you. |
| 21 | So working on what Scott just mentioned, |
| 22 | if you turn back a few pages to page 27 you |
| 23 | will see the returns for April by asset class. |
| 24 | So in the first set of it's the page that |
| 25 | looks like this with all the numbers. The |

| Τ | first set of numbers is U.S. Russell 3000 was |
|----|--|
| 2 | up 45 basis points, but as Scott mentioned the |
| 3 | returns really came from non- U.S. equity. |
| 4 | Second set of numbers you will see the returns |
| 5 | were very, very strongly positive in both the |
| 6 | EAFE and emerging markets. Down at the bottom |
| 7 | the core plus 5 is down 45 basis points. |
| 8 | That's when interest rates started going up. |
| 9 | May will be on the next page. You will |
| 10 | see a similar story. And June, which we don't |
| 11 | have yet, will be even further. The high |
| 12 | yield did well, bank loans did well, TIPS did |
| 13 | okay, surprisingly so because of the interest |
| 14 | rate rise. Convertible bonds did well. REITS |
| 15 | did not and that's because they are very tied |
| 16 | to interest rates. So just like REITS were |
| 17 | superb investments when rates were going down, |
| 18 | when rates go up at least in the short term |
| 19 | the rates are tied to rates. So when rates go |
| 20 | up, REITS went down. And REITS went down by |
| 21 | over 5 percent a month. |
| 22 | Scott mentioned on page 31 return for |
| 23 | the month was 85 basis points bringing the |
| 24 | fiscal year of return to over 4 percent. May |
| 25 | was a good month. And just to show you that, |

| 1 | the month looks like almost a duplicate other |
|----|--|
| 2 | than non-U.S. equity what the April numbers |
| 3 | looked like. So if you turn back the page |
| 4 | from this or a page forward from the April |
| 5 | returns, you will see Russell 3000 up over 1 |
| 6 | percent. Non-U.S. was down. Core plus 5 is |
| 7 | down 37 basis points. High yield was up, bank |
| 8 | loans were up, TIPS were down, REITS were |
| 9 | roughly flat, so that 412 for May will be |
| 10 | higher. The question is, do we hit a 5. |
| 11 | That's going to be close. We will see it in |
| 12 | the next book that we print. Where are we now |
| 13 | because, you know, June we can't the |
| 14 | markets have come off their record highs and |
| 15 | recently came back and today was at least a |
| 16 | strong morning before I left, at least in the |
| 17 | pre-trading. And the short answer is I ran |
| 18 | this on Friday. We are approximately while |
| 19 | May was very good, June came back down and |
| 20 | came back up. So we are pretty much back to |
| 21 | where we are here, a little bit higher. So |
| 22 | probably in the mid-4s right about now. We |
| 23 | got a couple of weeks or ten days to the end |
| 24 | of the fiscal year so I know that's important, |
| 25 | but as soon as we get that number we will be |

| 1 | transmitting | that | information | to | you, | a | couple |
|---|--------------|------|-------------|----|------|---|--------|
| 2 | of pieces of | info | rmation. | | | | |

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Turn back to pages 15 and 16. What's been driving the market a lot has been the EAFE returns, certainly versus the U.S. on pages 15 and 16. You will see that the dollar finally is weakening after a strong period of strength. That weakening accelerated in the last week when the Fed met and Chairman Yellen made -- not only did not raise rates, but made it clear that rates are not going up immediately. Probably not until the end of the year. Of course, no one really knows. The feds speak. It can change from week to week or speech to speech, but what that did was part of the strength in the dollar was the expectation of rates going up. One currency versus another in very simple terms if one currency all things being equal is paying a higher level of interest, well, that currency will be stronger. That's usually in the long run. In the short run it can be exaggerated the moves and that's what we see. You saw really the move from 80s to about 100. That's a 20 percent move. That is a remarkable move

| 1 | in a short period of time for the dollar as |
|----|--|
| 2 | you see on page 15 and a similar move on the |
| 3 | downside. Most of it was driven by the euro, |
| 4 | but a similar chart for the yen. The yen |
| 5 | actually would look even more exaggerated, but |
| 6 | it's come of off the lows. So the dollar has |
| 7 | weakened because of the chairperson's comments |
| 8 | that the rates aren't going up any time soon. |
| 9 | That obviously will change when the news is in |
| 10 | the markets that the expectation is it's |
| 11 | happening. You will see strength again. |
| 12 | Crude oil prices on page 17 has been a big |
| 13 | factor. You will see after the remarkable |
| 14 | move downwards by a factor of 2 or factor of |
| 15 | 50 percent, prices have settled around \$60 a |
| 16 | barrel for quite some time. The VIX is very |
| 17 | calm at 13, which historically is a very low |
| 18 | number and that's why the equity markets are |
| 19 | doing okay. |
| 20 | Page 20 shows the ten year. The time we |
| 21 | did this last week, it was 237 and I think now |
| 22 | it's in the low 230s. I think it happened |
| 23 | this morning. But you will see while it |
| 24 | doesn't look like much, it's a remarkable |
| 25 | increase from the 180 on a percentage basis. |

| 1 | And that's why the core plus 5 is |
|----|--|
| 2 | underperforming, in particular the government |
| 3 | sector. And that's why starting in May and in |
| 4 | June, you will see much better returns in that |
| 5 | sector where we had underperformance because |
| б | of that positioning that the underweight |
| 7 | overall and the underweight in governments |
| 8 | that will have paid off in the month of May. |
| 9 | MR. ADLER: Martin, can you give us the |
| 10 | 30-second version of why such a dramatic |
| 11 | increase in ten year? |
| 12 | MR. GANTZ: If you want to pay me like a |
| 13 | hedge fund manager, sure. |
| 14 | MR. ADLER: Didn't I just agree to do |
| 15 | that. |
| 16 | MR. GANTZ: So when interest rates |
| 17 | it's about it's about several things. In |
| 18 | Europe rates have moved up in Europe. |
| 19 | Rates were actually negative in Germany, which |
| 20 | is a safe haven in Europe. That was for |
| 21 | technical reasons and for common sense |
| 22 | reasons. It doesn't make sense for anyone to |
| 23 | be investing guaranteeing themselves a |
| 24 | negative rate of return. |
| 25 | In addition the problem with Furone |

| 1 | about Greece and the euro. So it's a safe |
|----|--|
| 2 | haven investment. Investors, especially |
| 3 | sovereign banks, are buying dollars. And when |
| 4 | they are buying dollars they are buying |
| 5 | treasuries with those dollars, so that helps, |
| 6 | but what is hurting is the reality that rates |
| 7 | are going to go up when we don't know. And so |
| 8 | what's happening is the yield curve is |
| 9 | shifting up in a parallel sense and, quite |
| 10 | frankly, flattening a little bit. So the |
| 11 | short end is moving up or frankly lately in |
| 12 | the last week it went back down. But when it |
| 13 | was moving up, the long end was moving up, the |
| 14 | short end was catching up. |
| 15 | So if you look at the yield curve over |
| 16 | here, this is actually a good picture on page |
| 17 | 19 (indicating). It's a reaction. The |
| 18 | market regardless of the fact of the save |
| 19 | havens I just mentioned, this concern about |
| 20 | rates rising in the U.S. outweighs all of |
| 21 | those other factors and the fast money, the |
| 22 | hedge funds. And the managers trying to buy |
| 23 | low, sell high are trying to get ahead of |
| 24 | that. So even though rates aren't expected to |
| 25 | go up they are moving not only ahead of the |

| 1 | news, they are moving ahead of the news which |
|----|--|
| 2 | isn't even news yet. So when rates move, they |
| 3 | really move very fast. I am talking about |
| 4 | long rates. It went up from 180 and change to |
| 5 | 230 in the blink of an eye really and then |
| 6 | kind of flattened out a little bit. I would |
| 7 | expect this to happen again when people expect |
| 8 | rates to really move, so it could be when |
| 9 | rates drift lower. |
| 10 | This is speculation. This is my 30 |
| 11 | seconds. I know it's more than 30 seconds, |
| 12 | but that's what going on in the markets, what |
| 13 | our managers are telling us. |
| 14 | Scott, you want to say anything? |
| 15 | MR. EVANS: No. It's been an |
| 16 | extraordinarily move in the long term, |
| 17 | extraordinary. |
| 18 | MS. MARCH: Can I just say, you |
| 19 | mentioned the word "Greece." And if I |
| 20 | remember an investment meeting back aways we |
| 21 | had an education on all the dangers investors |
| 22 | may face because of Greece and Ireland and |
| 23 | Portugal and Greece has been in the newspaper |
| 24 | a number of times in the last week two or |
| 25 | three. So could we do that kind of education, |

| 1 | reeducation again at our first investment |
|----|--|
| 2 | meeting? I think it would be very helpful. |
| 3 | Thank you. |
| 4 | MR. GANTZ: So noted. |
| 5 | MR. EVANS: With that, Mr. Chairman, I |
| 6 | believe you have the next item, asset |
| 7 | allocation. |
| 8 | MR. GANTZ: Thank you. |
| 9 | MR. ADLER: Thank you, Martin. So this |
| 10 | is page 141 of the agenda book. Okay, so this |
| 11 | is a proposal that we direct the chief |
| 12 | investment officer and BAM with the assistance |
| 13 | of the chief actuary Rocaton and, if |
| 14 | necessary, our asset class consultants to lead |
| 15 | us in a full asset allocation review. |
| 16 | Any discussion or questions about the |
| 17 | proposal? So one question just that is in the |
| 18 | memo here is how we want to schedule our |
| 19 | discussion on asset allocation. I really look |
| 20 | to Robin and Scott. Is this something that we |
| 21 | need to schedule separate sessions to do or |
| 22 | can we do it in the context of our regular |
| 23 | investment committee meetings in the fall? |
| 24 | MR. EVANS: I mean, we can try to do it |
| 25 | in a regular session. And if the scheduling |

| 1 | gets to be such that it's just not going to be |
|----|--|
| 2 | possible to give the time that it needs, we |
| 3 | can schedule it in a special session. In the |
| 4 | past, you have been able to do it. |
| 5 | MS. PELLISH: Yes. And now we have time |
| б | set aside at each meeting for educational |
| 7 | topics. We can use that time. |
| 8 | MR. ADLER: Okay. Any other questions |
| 9 | or discussion? |
| 10 | Okay, so I think I guess the question |
| 11 | is do we have consensus, right? |
| 12 | MS. MARCH: We have consensus, at least |
| 13 | the Teachers' trustees' consent. |
| 14 | MR. ADLER: Anyone else? |
| 15 | Okay, so we have consensus to move |
| 16 | forward with the proposal. |
| 17 | MR. EVANS: We will work with Rocaton to |
| 18 | do that as expeditiously as possible. |
| 19 | MR. ADLER: Thank you very much. |
| 20 | MS. MARCH: Does someone have to notify |
| 21 | the actuary that we are doing this, because I |
| 22 | know the actuary does play a role in this. |
| 23 | MR. EVANS: Yes. We are trying to get |
| 24 | on Sherry's calendar to talk about a number of |
| 25 | things, but we will make sure they are looped |

| 1 | in. |
|----|--|
| 2 | MR. ADLER: Okay. So as far as public |
| 3 | session, then we move into trustee education. |
| 4 | MR. EVANS: I guess Rocaton. |
| 5 | MS. PELLISH: There is a handout that's |
| 6 | being distributed. It's on asset allocation. |
| 7 | And I believe this was sent out in advance as |
| 8 | well and this is the same exact dec that was |
| 9 | received by e-mail. So we put together a few |
| 10 | pages that really talk about just the |
| 11 | principles of asset allocation. These numbers |
| 12 | do not speak to the pension fund specifically, |
| 13 | but are intended to provide some underlying |
| 14 | principles that we would certainly use in the |
| 15 | upcoming asset allocation study. |
| 16 | So if I can ask you to turn to page 2 |
| 17 | and just talk about the introduction, the |
| 18 | reason why we focus on asset allocation is |
| 19 | because it's the single most important |
| 20 | decision that the board can make and we cite |
| 21 | here a number of studies that confirm that |
| 22 | asset allocation the asset allocation |
| 23 | decision determines more than 90 percent of |
| 24 | the volatility that the portfolio will |
| 25 | experience. So it's a really key really |

| 1 | key policy. And, in fact, I and most |
|----|--|
| 2 | observers think it's the most important |
| 3 | decision we can make. We spend a lot of time |
| 4 | talking about performance above and below the |
| 5 | benchmark because of active managers. And |
| б | while that's important, it is dwarfed by the |
| 7 | performance of deciding which asset classes |
| 8 | you will invest in and what the allocations to |
| 9 | those asset classes will be. |
| 10 | So when we go through the asset |
| 11 | allocation, we will need to identify what our |
| 12 | objectives are in terms of risk and return. |
| 13 | So we have the 7 percent rate of return |
| 14 | hurdle, but we also need to identify what's a |
| 15 | reasonable level of risk to assume over both |
| 16 | short and long-term periods of time. We need |
| 17 | to define what the universe of appropriate |
| 18 | investments opportunities is and in this case |
| 19 | we are talking about asset classes. |
| 20 | So at the end of the day I guess it's in |

So at the end of the day I guess it's in virtually all the asset classes that you might consider, but we will just confirm that there aren't any other asset classes that we want to make sure we are evaluating. We need to establish a range of potential outcomes across

| asset classes and what we are really saying |
|--|
| here, we need to think about expected risk of |
| return over various time frames for the range |
| of asset classes that we will be considering, |
| so Rocaton. And we have information here, |
| spent a lot of time thinking about what is a |
| reasonable set of expectations for different |
| capital markets, but we certainly don't have a |
| crystal ball and, therefore, we run a lot of |
| scenarios. We also get input from a lot of |
| outside sources to make sure that our |
| expectations are at least reasonable. |

And then at the end of the day what we are going to be doing is evaluating tradeoffs between portfolios. We will together look at a set of alternative portfolio allocations and try to identify which portfolio mix is the most appropriate in light of the risk and return expectations for the pension fund.

There are a couple of principles,

fundamental principles of asset allocation

that are really important to highlight. The

first is the principle of diversification, so

that's not news to anyone. Here but what is

really important to recognize we think is that

| 1 | simply calling an asset class something |
|----|--|
| 2 | different doesn't make it diversified. So the |
| 3 | fact is that we have U.S. equity and private |
| 4 | equity. Private equity is not really a |
| 5 | diversifier versus global developed market |
| 6 | equity. What it is is intended to be a return |
| 7 | enhancer, but as goes public equities so goes |
| 8 | private equity a few quarters later. So what |
| 9 | we try to do is think about diversification in |
| 10 | terms of where the sources of risk and return |
| 11 | are for different asset classes. |
| 12 | So to give you a simple example for U.S. |
| 13 | equity or for any equity asset class, most |
| 14 | important source of return and risk is |
| 15 | economic growth. As goes economic growth, so |
| 16 | goes the equity market over time. Now it |
| 17 | doesn't happen coincidentally, but it happens |
| 18 | with lags. Real interest rates of course are |
| 19 | the driver of fixed income returns, both TIPS |
| 20 | and noncore bonds. So that's the way we like |
| 21 | to think about diversification, what are the |
| 22 | primary drivers for the risk for asset |
| 23 | classes. Let's make sure we are |
| 24 | over-diversified across those sources of risk |
| 25 | and return. And having 20 different asset |

| 1 | classes that are labelled by different names |
|----|--|
| 2 | doesn't mean that we are well diversified. We |
| 3 | want to make sure we are looking at current |
| 4 | market evaluations and thinking about asset |
| 5 | allocation. And that's not because we believe |
| 6 | we have again, we have no crystal ball and |
| 7 | we also don't want to engage in tactical asset |
| 8 | allocation at the board level. We have some |
| 9 | managers who may do some of that, but we don't |
| 10 | want to do that. We want to develop the |
| 11 | strategic asset allocation, but we don't want |
| 12 | to invest blind. |

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We look at time horizons from 1 to 30 years in considering how we want to allocate among asset classes and we want to be cognizant of what current market evaluations are when we allocate assets. And then consistent with that point, we want to look at multiple time horizons. Again we can't forecast out what the next 12 months is going to look like, but we can develop a reasonable range of outcomes for different time horizons. And we want to make sure that we are looking at all those time horizons when -- if we were doing an asset allocation study 15 or 20 years

| 1 | ago we would have said, we are long-term |
|----|--|
| 2 | investors, we have a 30-year horizon, it |
| 3 | doesn't matter what the asset class valuation |
| 4 | is today, it doesn't matter what our |
| 5 | shorter-term expectations are because this is |
| 6 | a 30 or 40 or 50-year investment pool. But |
| 7 | the reality is you can only get to the 30 or |
| 8 | 40-year horizon if you are able to live |
| 9 | through the one, five or ten-year horizon. |
| 10 | And we all have learned a lot over the past |
| 11 | decade, so we spent a lot of time looking at |
| 12 | the very long term as well as the shorter |
| 13 | term. |
| 14 | And then the last point that I want to |
| 15 | emphasize in the introduction is that the |
| 16 | asset allocation studies are a very useful |
| 17 | tool to think about allocated against |
| 18 | different asset classes and different regions |
| 19 | of the capital market, but it's not a useful |
| 20 | tool for thinking about how you want to |
| 21 | implement asset classes. So the decision |
| 22 | between passively and actively investing in an |
| 23 | asset class is not readily accomplished with |
| 24 | an asset allocation study. |
| | |

In the asset allocation study we assume

| 1 | asset class returns, beta returns, passive |
|----|--|
| 2 | returns if you want. We don't think about |
| 3 | active manager value added which is a little |
| 4 | bit of a conundrum because if you think about |
| 5 | some asset classes such as private equity, you |
| 6 | can't invest passively in private equity. |
| 7 | High yield you also really can't invest |
| 8 | passively. So what we do, therefore, in those |
| 9 | asset classes which we know we are going to |
| 10 | invest in actively, we try to think about what |
| 11 | is a reasonable premium above the public |
| 12 | capital markets in case of private equity, |
| 13 | what should we get paid for taking on |
| 14 | illiquidity. So that's a basic low-level |
| 15 | expectation for private equity, but we will |
| 16 | discuss whether we think we can there are |
| 17 | implementations considerations we can |
| 18 | certainly discuss. |
| 19 | What I think can't be accomplished is |
| 20 | it's very difficult to put in an expected |
| 21 | return for your active manager alpha within |
| 22 | asset classes like private equity and high |
| 23 | yield. |
| 24 | So with that unless there is any |
| 25 | questions and I am happy to be interrupted, we |

| 1 | can turn to investor specific considerations. |
|----|--|
| 2 | So we develop a set of capital market |
| 3 | assumptions that we try to use fairly |
| 4 | consistently across these asset allocation |
| 5 | studies, but every study that is done for a |
| 6 | portfolio should be very specific to that |
| 7 | sponsor's issues, concerns and objectives. |
| 8 | So some of the things we will be looking |
| 9 | at, some of the challenges that the pension |
| 10 | fund might be facing like any other large |
| 11 | institutional investor are noted on page 3. |
| 12 | First of all, liquidity. So the good news is |
| 13 | for the pension fund there are significant |
| 14 | payouts from the pension fund, but there are |
| 15 | also significant contributions and there is a |
| 16 | high level of liquidity that exists in the |
| 17 | pension fund today. So we don't think that |
| 18 | will be a particular concern, but we want to |
| 19 | pay attention to it. But that's not going to |
| 20 | be a limiting factor we don't think in the |
| 21 | case of the pension fund. Time horizon and |
| 22 | benefit payments, we have a very long time |
| 23 | horizon which would imply a higher risk |
| 24 | tolerance certainly than an investor who has a |
| 25 | much shorter time horizon. Statutory |

| 1 | limitations, we are paying attention to the |
|----|--|
| 2 | basket clause. |
| 3 | MR. GANTZ: Sorry to interrupt you, we |
| 4 | are internally because we are so close to the |
| 5 | limit on a policy basis and no doubt whatever |
| 6 | the asset allocation is likely to be very |
| 7 | close to that as well for the basket clause. |
| 8 | We are internally looking at dusting off some |
| 9 | of the areas of the statute that we had not |
| 10 | previously relied on, so internally our |
| 11 | counsel is looking at that and we will be |
| 12 | talking to you about those. |
| 13 | MR. ADLER: What's an example of that, |
| 14 | Martin? |
| 15 | MR. GANTZ: Private debt. |
| 16 | MR. ADLER: In other words, private debt |
| 17 | is part of the basket? |
| 18 | MR. GANTZ: It's complicated. We |
| 19 | consider it part of the basket, but in certain |
| 20 | cases it's not. So bank loans, for instance, |
| 21 | would be an example of that. |
| 22 | MR. EVANS: We may be able to get |
| 23 | certain fixed income assets outside of that. |
| 24 | MR. GANTZ: It's not game changing, but |
| 25 | it will help with room and space potentially |

| 1 | given an asset allocation. |
|----|--|
| 2 | MS. MARCH: Can I ask as this study goes |
| 3 | on that we are kept informed through our |
| 4 | counsel. She is not here, but Renee is here. |
| 5 | That we be kept informed as to |
| 6 | MR. GANTZ: We haven't brought it to any |
| 7 | of the system's counsel yet because we are |
| 8 | gathering the information also. We are also |
| 9 | talking to state and state Teachers. We want |
| 10 | to be consistent that their interpretation is |
| 11 | this. We want to check our interpretation. |
| 12 | MS. MARCH: Our system's counsel has a |
| 13 | lot of experience. |
| 14 | MR. GANTZ: Oh, I know that. |
| 15 | MS. PELLISH: So I am mindful of time, |
| 16 | but I just want to note that there are a |
| 17 | number of other specific considerations that |
| 18 | will be incorporated into the asset allocation |
| 19 | study including current capital market |
| 20 | expectations which are fairly low relative |
| 21 | certainly in the short term relative to the 7 |
| 22 | percent of debt. |
| 23 | So let's turn to page 4, if I can. |
| 24 | Another something else that we will be talking |
| 25 | about a lot in the asset allocation study is |

| the performance of looking at different time |
|--|
| horizons and time horizon really matters for a |
| variety of reasons. One, expected returns |
| change based on the time horizon because of |
| course we are looking at where we are starting |
| today, but also the other fact is that the |
| range of potential outcomes shrinks over long |
| periods of time. So volatility actually, |
| this is something that I find compelling. |
| Volatility actually reduces by the square root |
| of time, so volatility shrinks over time |
| because returns are smooth as you experience |
| more periods of return. And so again we will |
| be looking at different time horizons because |
| you have to live through the five years to get |
| to the thirty years. |
| |

On page 5 we talk about evaluation and what we do is again we are not -- we don't have -- we don't have any sort of illusion that we can accurately forecast returns over any short period of time, but we do want to pay attention to where interests rates are to where PE ratios are to where bond spreads are when we are recommending an agency as an asset class. So you can see that here if you look

| 1 | at the red area of these four boxes, it's |
|----|--|
| 2 | indicating whether that particular signal |
| 3 | indicates that the asset class is expensive |
| 4 | relative to history. U.S. treasuries look |
| 5 | relatively expensive. Yields are even |
| 6 | though they are rising, they are still very |
| 7 | low relative to history. U.S. PE ratios are |
| 8 | slightly higher than history so to making |
| 9 | U.S. look less attractive than non-U.S. |
| 10 | equities and bond spreads and break-even |
| 11 | inflation are roughly in the neutral zone. |
| 12 | MR. ADLER: So nothing is cheap. |
| 13 | MS. PELLISH: No, and that's that's |
| 14 | really the challenge. The cheapest and you |
| 15 | will see that in our expected returns. It |
| 16 | looks like the cheapest broad asset class |
| 17 | might be emerging markets, but also a very |
| 18 | volatile asset class. |
| 19 | I am going to skip page 6 and go to page |
| 20 | 7 again in the interest of time. Page 6 says |
| 21 | that we will be looking at a wide array of |
| 22 | potential outcomes for both asset classes and |
| 23 | portfolio nexus. There are different risk |
| 24 | factors that we want to run scenarios analysis |
| 25 | for in the asset allocation study. So risks |

| 1 | are inflation, deflation, the risk that the |
|----|--|
| 2 | dollar becomes weak, weak economic growth, |
| 3 | market illiquidity and financial shocks. |
| 4 | These are all very significant risks that we |
| 5 | want to make sure we pay attention to. So, |
| 6 | again, what I am trying to highlight here is |
| 7 | that we are not simply creating a set of asset |
| 8 | class expectations and running an |
| 9 | optimization. We want to look at a wide array |
| 10 | of scenarios, talk about the range of |
| 11 | potential outcomes in different economic |
| 12 | environments and in different time periods, |
| 13 | and discuss with the board is this an |
| 14 | unacceptable outcome. We think this might be |
| 15 | a reasonable probability. If we run into this |
| 16 | scenario would that be an unacceptable outcome |
| 17 | and, therefore, this asset allocation would be |
| 18 | acceptable. So it's a very iterative |
| 19 | discussion. |
| 20 | MR. ORLANDO: Just can you explain to me |
| 21 | what the market illiquidity column, risk |
| 22 | mitigation strategy, consider plan's ability |
| 23 | to generate incremental returns by acting as a |
| 24 | liquidity provider means? |
| 25 | MS. PELLISH: Yes. So particularly in |

| 1 | the fixed income market, because of regulatory |
|----|--|
| 2 | reform I think it's particularly the ability |
| 3 | of the proprietary desk to act to provide |
| 4 | inventory. And improve market liquidity has |
| 5 | eroded and so there is value to be gained by |
| 6 | large institutional investors who have lots of |
| 7 | liquidity, as does the pension fund, to think |
| 8 | about providing liquidity to the fixed income |
| 9 | market which is essentially what we do in the |
| 10 | OFI program, right, in the opportunistic fixed |
| 11 | income program. So the plan's ability to |
| 12 | generate incremental returns by acting as a |
| 13 | liquidity provider is something that we should |
| 14 | continue to explore and think about how in a |
| 15 | market in which we expect low asset class |
| 16 | returns, perhaps this provides a slight edge. |
| 17 | MR. ORLANDO: Thanks. |
| 18 | MS. PELLISH: Sure. I want to turn to |
| 19 | pages 8 and 9, if I can, for a moment. This |
| 20 | gets to our forecast for major asset classes |
| 21 | being relatively low. |
| 22 | What we see on page 8 is the five-year |
| 23 | expected return for major asset classes as |
| 24 | well as different portfolio mixes. |

And then on page 9 we see the 30-year

| 1 | forecast return. So if you look at our |
|----|--|
| 2 | forecast for U.S. equity over the next five |
| 3 | years, you see it being somewhere between. So |
| 4 | this is the expected outcome, the 50 |
| 5 | percentile somewhere between 3 and 4 percent, |
| 6 | very low historically. And I will tell you we |
| 7 | are not outliers, so maybe that means that |
| 8 | everyone is wrong. But I think given where |
| 9 | our U.S. equity market valuations are now, |
| 10 | yes, it's a sad statement. It's a very sad |
| 11 | statement given where U.S. equity market |
| 12 | valuations are. We have just seen the sixth |
| 13 | consecutive calendar rise in the U.S. equity |
| 14 | market. We are starting to see the rates |
| 15 | rise, interest rates rise. None of this bodes |
| 16 | well for the next five years. If you look at |
| 17 | the 30-year outcome, you will see a number |
| 18 | that's north of 36 percent. Again pretty far |
| 19 | away from the often-cited 10 percent very |
| 20 | long-term average return for U.S. equities |
| 21 | which is no longer accurate, but 10 percent is |
| 22 | sort of anchored in everyone's head I think. |
| 23 | So over 30 years we see more reason for |
| 24 | optimism. Even 10 we see more reason for |
| 25 | optimism, but we have to do an asset |

| 1 | allocation that makes sense over the next five |
|----|--|
| 2 | years as well. |
| 3 | MS. BEYER: Question. |
| 4 | MR. ADLER: Go ahead, Charlotte. |
| 5 | MS. BEYER: Thank you. I am just not |
| 6 | sure I understand the subtitle "Five-year |
| 7 | expected 50 percentile and downside first |
| 8 | percentile." I am just seeing one dot for |
| 9 | each of those things on both pages 8 and 9, so |
| 10 | can you help me understood what that title |
| 11 | means? |
| 12 | MS. PELLISH: So if you look at |
| 13 | horizontal what we have, the five-year |
| 14 | downside. The first percentile, so you will |
| 15 | see for U.S. equity. So we look at everything |
| 16 | over thousands of scenarios, so when we take |
| 17 | we take two data points. One is the |
| 18 | expected return and the other is volatility |
| 19 | and if you look at what we might think of as |
| 20 | the worst outcome. |
| 21 | MS. BEYER: I got it. I just didn't |
| 22 | read the chart correctly. |
| 23 | MS. PELLISH: I think importantly if you |
| 24 | look at the very worst outcome we can imagine |
| 25 | given our expectation of II S equity median |

| 1 | returns and expected risk, you can actually |
|----|--|
| 2 | realize an average annual return of minus 15 |
| 3 | percent which would be awful. But that's |
| 4 | you know, that is not outside the range of |
| 5 | probability. It's, you know, three standard |
| 6 | deviations, but we have lived through three |
| 7 | standard deviation events more often than |
| 8 | would be predicted. |
| 9 | MR. ADLER: What I find kind of shocking |
| 10 | about that chart on page 8 is that you are |
| 11 | forecasting that the 64 equity fixed, the |
| 12 | median outperforms, you know, the U.S. equity |
| 13 | median with obviously much less downside. I |
| 14 | mean, that's a very surprising relative spot. |
| 15 | MS. PELLISH: Yes. Well, what it tells |
| 16 | is there is actually some correlation benefit. |
| 17 | MR. ADLER: No, I understand. But you |
| 18 | would typically expect there to be. You know, |
| 19 | over a five-year period isn't a very long |
| 20 | period, but would typically expect the 50 |
| 21 | percentile come with equity, you would the |
| 22 | excess of volatility, but higher. |
| 23 | MS. PELLISH: You would expect the curve |
| 24 | to be upwards sloping. |
| 25 | MR. ADLER: Yes. Anyway, that's |

| 1 | surprising. |
|----|--|
| 2 | MS. PELLISH: Yes, and it's confounded. |
| 3 | MR. ADLER: I mean, it's really what |
| 4 | you are essentially saying is that the equity |
| 5 | markets are fully priced at this point. |
| 6 | MS. PELLISH: And particularly in the |
| 7 | U.S. Yes, yes. |
| 8 | MR. ADLER: Yes, definitely. |
| 9 | MS. PELLISH: And the appendix contains |
| 10 | a lot of information about how we develop |
| 11 | these expectations as well as some more detail |
| 12 | than perhaps you would like about our process, |
| 13 | but with that I am going to conclude my |
| 14 | remarks. |
| 15 | Happy to discuss anything if you have |
| 16 | any questions. |
| 17 | MR. ADLER: Questions for Robin. |
| 18 | MS. BEYER: What do you mean when you |
| 19 | put quotation marks around "true |
| 20 | diversification"? What is in your mind false |
| 21 | diversification. |
| 22 | MS. PELLISH: So that goes back to the |
| 23 | statement that I am investing in ten asset |
| 24 | classes and think you are highly diversified. |
| 25 | So if you are investing in corporate debt and |

| 1 | U.S. debt, still very highly correlated. |
|----|---|
| 2 | MS. BEYER: Thank you. |
| 3 | MR. ADLER: Other questions for Robin? |
| 4 | Okay. |
| 5 | MR. EVANS: That concludes our public |
| 6 | agenda. |
| 7 | MR. ADLER: Okay, so I think a motion to |
| 8 | move into executive session would now be in |
| 9 | order. |
| 10 | MS. MARCH: I so move that we go into |
| 11 | executive session under Public Officer Law |
| 12 | Section 105 for the purpose of discussing |
| 13 | purchase and sales of securities and updates |
| 14 | on specific investment managers. |
| 15 | MR. ADLER: Thank you. Is there a |
| 16 | second? |
| 17 | MS. BEYER: Second. |
| 18 | MR. ADLER: Motion moved and seconded. |
| 19 | Any discussion. All in favor, please say aye. |
| 20 | Aye. |
| 21 | MS. BEYER: Aye. |
| 22 | MR. BROWN: Aye. |
| 23 | MS. MARCH: Aye. |
| 24 | MS. VICKERS: Aye. |
| 25 | MR ORIANDO: Ave |

| 1 | MR. KAZANSKY: Aye. |
|----|---|
| 2 | MR. ADLER: Opposed, abstentions? |
| 3 | So we now conclude the public session |
| 4 | and go into executive session. Why don't we |
| 5 | take a short break while we break down the |
| 6 | cameras and then we will start up with the |
| 7 | executive session. |
| 8 | (Recess taken.) |
| 9 | MR. ADLER: Okay. So I think we need a |
| 10 | motion to go back into public session. Is |
| 11 | there such a motion? |
| 12 | MS. MARCH: We move. |
| 13 | MR. ADLER: Do we have a second? |
| 14 | MS. BEYER: Second. |
| 15 | MR. ADLER: Moved and seconded. All in |
| 16 | favor of the motion to go back into public |
| 17 | session, please say aye. |
| 18 | MS. BEYER: Aye. |
| 19 | MR. BROWN: Aye. |
| 20 | MS. MARCH: Aye. |
| 21 | MS. VICKERS: Aye. |
| 22 | MR. ORLANDO: Aye. |
| 23 | MR. KAZANSKY: Aye. |
| 24 | MR. ADLER: Aye. Opposed, abstentions? |
| 25 | Okay. When Liz is ready, we will be |

| 1 | back in public session. |
|----|--|
| 2 | Okay. Could we get a report back from |
| 3 | the executive session, please? |
| 4 | MS. STANG: Certainly in the executive |
| 5 | session of the variable fund an update on an |
| 6 | upcoming survey was presented in the executive |
| 7 | session of the pension fund. Updates on a |
| 8 | manager and services provider was presented. |
| 9 | An annual pacing plan for opportunistic fixed |
| 10 | income, private equity, infrastructure and |
| 11 | real estate were presented. An investment in |
| 12 | ETI was presented. Consensus was reached |
| 13 | which will be announced at the appropriate |
| 14 | time. An update on the secondary market for |
| 15 | our private equity program was presented. |
| 16 | There was an update on the private equity |
| 17 | emerging manager program which was presented. |
| 18 | There was a plan for 2015 going forward for |
| 19 | the emerging managers in PE was presented, |
| 20 | discussed. Consensus was reached, which will |
| 21 | be announced at the appropriate time. |
| 22 | MR. ADLER: Okay, very good. Thank you. |
| 23 | Okay, so I think a motion to adjourn |
| 24 | would be in order. |
| 25 | MP KN7NNSKV: So moved |

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| 1 | MR. ADLER: Moved. Is there a second? |
|----|--|
| 2 | MS. MARCH: Seconded. |
| 3 | MR. ADLER: Moved and seconded. All in |
| 4 | favor of the motion to adjourn, please say |
| 5 | aye. |
| 6 | MS. BEYER: Aye. |
| 7 | MR. BROWN: Aye. |
| 8 | MS. MARCH: Aye. |
| 9 | MS. VICKERS: Aye. |
| 10 | MR. ORLANDO: Aye. |
| 11 | MR. KAZANSKY: Aye. |
| 12 | MR. ADLER: Aye. Opposed, abstentions? |
| 13 | The meeting is adjourned. Thank you very |
| 14 | much. |
| 15 | [Time noted: 12:58 p.m.] |
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| 1 | CERTIFICATE |
|----|---|
| 2 | STATE OF NEW YORK) |
| 3 | : ss. |
| 4 | COUNTY OF QUEENS) |
| 5 | |
| 6 | I, YAFFA KAPLAN, a Notary Public |
| 7 | within and for the State of New York, do |
| 8 | hereby certify that the foregoing record of |
| 9 | proceedings is a full and correct |
| 10 | transcript of the stenographic notes taken |
| 11 | by me therein. |
| 12 | IN WITNESS WHEREOF, I have hereunto |
| 13 | set my hand this 29th day of June, 2015. |
| 14 | |
| 15 | |
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| 17 | YAFFA KAPLAN |
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