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# Quarter Ended September 30, 2013 Performance Meetings & Annual Investment Manager Reviews

November 21, 2013
Retirement Fund Conference Room

**Board of Trustees Present:**
Wilfred P. Leon Guerrero, Ed.D, Chairman, Investment Committee
Gerard A. Cruz, Trustee
Antolina S. Leon Guerrero, Trustee
James R.F. Duenas, Trustee
David O'Brien, Trustee

**Staff Present:**
Paula M. Blas, Director
Diana T. Bernardo, Controller

**Other Present:**
Maggie Ralbovsky, Wilshire Associates
Robert Ernst, Northern Trust
Bradley Blackwell, Northern Trust





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**Northern Trust**

Robert Ernst: It was in August I believe and I thank you for being accommodating unfortunately I was not able to come out at that point in time, but glad to be here with you today. So I thought what we could do if this sounds reasonable to you is for me to give you a quick update on Northern Trust in a custody relationship and then Brad represents our securities lending group, Justin Miller who you would remember from previous years had given a securities lending update by phone from our London office. Brad has moved to Hong Kong about 10 months ago and so services our securities lending clients in the Asia region from Hong Kong so obviously that would include you folks, so glad to have him a bit more local. And so we thought this is a good opportunity to bring Brad along to give you the update on securities lending in person and hopefully we can if that makes sense to you. So with that we had 2 books, one on securities lending and one on just the general updates so if we could I'll refer you to the general update first and we'll get started from there.

So just as a reminder if you look on page 2, what I thought we would cover just a quick reminder of who Northern Trust is and our business lines, a quick update on our financial strength and then one of the things that Diana had mentioned to me was that there is potentially an interest in learning more about some of the tools that we have that we can make available to you to help you manage risk and particular are compliance analyst application is available on passport it allows you to monitor your investment manager guidelines, kind of a sleeping policeman if you will. So we can spend a little bit of time talking about that and then from there I thought we would turn it over to Brad to give an update on securities lending. So that sounds reasonable?

So on page 4, as a reminder Northern Trust has a fairly unique business focus and that we essentially service two types of clients. We service institutional investors such as yourself on a worldwide basis and we service high network individuals mostly in the U.S. although that has been expanding to service European based private clients as well. But essentially those are our two clients that we work with and we do two things, we service their assets, custody and related services and we provide asset management services. For you, you know you would fall basically under our asset servicing category for our institutional investors. As of the 30th of September 5 and a quarter trillion dollars in assets under custody, 3.1 trillion of assets under administration and just shy of 850 billion in assets under management. And then if you look on page 5 just a reminder of the array of services that we provide, now most of what we are currently providing to the Government of Guam Retirement Fund is within the lower box our asset processing asset servicing capabilities. But moving up the ladder under asset reporting we do provide currently our performance analytics which we'll spend some time talking about this morning as well as our risk monitoring in your reporting which is our compliance analyst. Under our enhancement asset enhancement category mostly there what you see is our securities lending which you are currently participating in.

Just to give you a sense for our global coverage on page 5 you can see across the globe where we have offices and essentially where we have our where we service clients. Our three main processing groups are in Chicago, London and Bangalore where as our assets servicing centers are all of the other cities and locations that you see spread across the globe. Brad as I mentioned works from our Hong Kong office where we provide a number of services to our clients in this region as we do as well in Singapore, Melbourne, Tokyo and Bangalore. Moving on page 8, just a quick snapshot of our financial profile, again we remain a very highly rated financially strong institution which I think is important for you since we do have custody of your asset you should feel confident that your assets are with a safe secure organization that is well capitalized and continues to reinvest in our technology and reinvest in our business lives. So I won't go through these in any great detail but I think by all measures you can see that we are very financially sound organization.

And then likewise on page 9, you see some other key measurements which again point to our financial strength. And then again moving on to page 10, the same similar measurements you can see our assets under custody our assets under management all are growing quite respectfully and I think solid business growth and all of our business lines across the globe. On page 11 I wanted to highlight for you some of the trends and challenges that we see facing our public our U.S. public pension fund markets of which we consider you are a member of that group. We have a fairly large group in Chicago that's responsible for servicing public pension funds across the mainland. And I think that certainly when you look at the trends and challenges that we see across the board for our U.S. public funds are the very same trends and challenges that you would see facing you but I think that we can provide a number of services to help you particularly when it relates to the GASB reporting standards and other reporting needs that you may have. Then again this increased focus on risk governance is something that I wanted to spend a little bit of time on talking about in a few minutes. Just a general snapshot of what we see facing our other public fund clients across the states.

Moving on to page 12, highlighted as I have done for you in the past some key metrics in terms of your current custody relationship with the Northern. As you can see for the most part all key measurements have stayed fairly constant although the good news is your market value over 1.5 trillion dollars but the other measurements that we look at, the number of accounts that you have open, the number of trade activity all fairly constant over the years. Also I am pleased to report that the settlement rates for the trades that your managers are executing all very high settlement rates, so essentially what that means is that for year to date October 2013, 98.8% of your buy transactions settled contractual settlement date, 99.4% of your sell transactions settled settlement date. So very, very solid operational performance there. Quick snapshot on your foreign exchange activity which seems to be down a bit from previous years. But then if we look at the income collected over the last several year's again fairly consistent volumes and dollar amounts as well as the class action proceeds that we have collected on your behalf. And this is something I think we talked a little bit about last year when I was here is that Northern Trust takes a very active approach in monitoring in managing any class action filings that the fund may be able to participate in. Typically with most class actions there's about a 5 to 7 year tail between the time that the class period is been determined by the courts and when the ultimate filing and collection of those proceeds happens so we're just now getting to the point where Northern Trust is able to collect these on your behalf. I recently provided a report to Diana that essentially showed all of the class actions that we're monitoring on your behalf. 24, 25 page report so quite a large number not to say that you will have financial gain from all of those but at least those are class actions that we recognize you are potentially able to participate in, so we want to make sure that we do the appropriate filings in collecting any funds that may be due to you as a result.

Gerard Cruz: And so these, I'm sorry may I interrupt? Robert Ernst: Sure. Of course. Gerard Cruz: So the 19 events year to date are exclusive of the 21 events prior, so these are just for 2013? Robert Ernst: Right, so the 22 events are 22 individual events who we actually received payouts on. And there were separate 19 events that we have actually filed on your behalf which we would expect assuming you met all of the criteria that is been set forth by the courts, you would receive proceeds of some nature but it could be you may not receive proceeds for 6 months, it could be 2 years. So it's impossible to determine the length of time and it's really all up to the court system to make those determinations. But rest assured we are protecting your interest, we are making the filings on your behalf so to the extent that you qualify. It had transactions or holding during a particular class period, we're doing the work to ensure that you are paid what you're entitled. Antolina Leon Guerrero: And is that a new program that you started. Robert Ernst: No it's always been a part of our custody service and I'd say it's always been a core component of what global custodians routinely provide. One anomaly that we've beginning to see in recent years is we're beginning to see class actions outside of the U.S. Class actions used to be a U.S. only phenomena where as we're recently starting to see class actions in Australia, in the Netherlands in other markets. Unfortunately in many of those class actions outside the U.S. they follow different practices and not in all cases will we be able to file on your behalf. But what we will do is we will provide your investment managers details of those class actions so that in the event that they may want to participate in a filing or make a filing on their own they have a relevant details so that they may have the ability to do so.

Gerard Cruz: In the event that that manager is no longer with us, who then gets notified? Robert Ernst: In that case we could make notification to staff here. And if that were the case then I would need to organize that with Diana and make sure that we. Gerard Cruz: We just don't know, I mean you never know especially if it's because we changed international managers a couple of times. Robert Ernst: Now the report that I did send you the other day that does include what we call the informational only class actions which fall into two categories. One is informational only for non U.S. class actions, so those would be the ones that you would want to pay attention to. There are other informational only where a class has been announced by is going through the court system, a filing date has not yet been finalized. So it's there to show you that we're watching it, we're monitoring it and once a filing date has been established we will make the filing on your behalf.

Wilfred Leon Guerrero: How does the thing work with the Board? Robert Ernst: Well it's not untypical that typically amongst our U.S. public fund clients that they hire attorneys to also monitor class actions on their behalf and in some cases these attorneys may want to put you forward as a lead plaintiff in a class so the attorney may on occasion may be coming to you to ask if you want to be a lead plaintiff. We will simply our policy is to automatically file on behalf of our clients unless the client or their investment manger has specifically told us to opt out, not to file. So in the event that you're a lead plaintiff you would then ultimately need to tell us to opt you out because you can't be both the lead plaintiff and also file as part of the general class. Wilfred Leon Guerrero: Is the communication that clear between you, because you know we have several cases pending. Gerard Cruz: Well we are lead, we do have several cases where we are lead plaintiff. Paula Blas: But sometimes the class actions suits that the legal action puts forth maybe different from what we're actually filing under. Gerard Cruz: Yeah we don't know. That's true. Antolina Leon Guerrero: But I think we just need to give notice. Robert Ernst: You should give us notice in cases where you are lead plaintiff now granted when you are lead plaintiff you're in the game so to speak much earlier than you would be as if you are just a part of the general class.

Gerard Cruz: And when you get notification it's usually referenced as the lead plaintiff versus so and so, so you would see on the. Robert Ernst: Often times yes that's true. Yes, often times. Gerard Cruz: Yeah you're right I saw the communication flow between. Robert Ernst: Typically between the law firms that we work with there's probably 30 different law firms that represent any number of our public funds in the mainland, typically we provide data, we're instructed to provide data. And I can't recall if you instructed us to give your attorney data or whether they're getting it from another source. Paula Blas: No I think they are actually getting it from Northern. Robert Ernst: I have to go back and check our records, it's entirely possible that we would be providing them a data fee, they're representing I'm sure other public fund clients that we have that are clients of ours so we will be providing your data along with the other data that they were providing. Gerard Cruz: And then the investment manager as well obviously. Robert Ernst: Yeah. Right. Wilfred Leon Guerrero: So we're not too sure whether there's clear communication between.

Robert Ernst: I have to check on those cases where you're lead plaintiff and perhaps I can work with Diana after the fact and make sure that there are no conflicts that we would need to be concerned with, I doubt there would be but I can verify if you give me a list of those and I could speak to the manager of our class actions team to make sure that everything is in order. Paula Blas: I do know that there was there is one class action right now where we just got granted the lead plaintiff and that was for Invacare. Robert Ernst: So maybe we could speak off line about that. Wilfred Leon Guerrero: You don't initiate a law suit. Robert Ernst: No we're simply reactive to what the court decisions have ruled once we have those details we will scan our databases for any clients that have activity or holdings during that class period that potentially qualifies you, if you are potentially qualified then we will automatically file unless of course you tell us not to.

Gerard Cruz: May I ask another question, it's a different topic but I'm going back to page 5 under the asset enhancement, quick question. You talked a little bit about trade execution how you managed monitor the success rates of our managers. I'm curious to know about or get a little more information about commission management how exactly what that is and what. Robert Ernst: Commission management is essentially is commission recapture. We're essentially our Northern Trust Securities Inc. NTSI our brokerage unit can act as a commission recapture agent. So we essentially have a network of brokers that if you're investment manager's trade through that network, we are able to recapture a portion of those commission dollars that are being spent. Because often times commission dollars historically commission dollars have paid for more than just execution. Commission dollars have paid for research and other tools or resources to that the broker is making available to those parties that are trading with them. So what commission recapture essentially does is it strips out those two pieces and essentially with a commission capture program in place you're really just paying for execution cost. And anything over execution cost we're able to if it's been traded through our network, we're able to recoup a portion of that and pay that back to you on a monthly basis.

Gerard Cruz: Is that something we need to sign up for? Robert Ernst: It is something you need to sign up for. There is one technicality that if it's something that's of interest to you I can certainly provide an analysis of the past years activity and your managers trading activity to see what the potential revenue stream might look like for the fund. The one technicality that I need to work through is a couple of years ago I looked into the possibility of whether we could provide this service to you and at that point our brokerage unit had not licensed themselves to be an agent here in Guam. But if this is something that you'd be interested in taking forward we can certainly pursue the possibility, if the numbers look compelling. Gerard Cruz: I'm just curious, I can think of one manager who may not be so compelling I mean their quant shop that trades. Robert Ernst: In those cases you're right the quant managers typically are trading with brokers where they are only paying for execution. So you're generally probably getting those trades on a set for share basis or maybe a little bit lower. But your active managers potentially are paying more in so cases where you potentially. Gerard Cruz: Is there any value added for their paying more, that would maybe be compelling for us to say let's just keep it where we're at? Robert Ernst: Potentially so potentially these managers may be getting research or other services from the brokers that they're trading with. We never would suggest that any manager should direct all of their trades through a commission capture program. And the typical target we set is 25% so that then leaves 75% of their trading volume to be handled in the normal manner so that they could potentially get the other services the other benefits from trading with a particular broker. So that's kind of how we would typically structure our program. The other thing is that if you are using our program we could provide a trade execution analysis report. One of the common misnomers I think about commission recapture is that clients get concerned about well if I'm participating in commission management program, is the broker going to give me best execution? Are they going to be trading at the best time of the day, right? But we do have reports that are available that allow you to manage your execution via what's called the VWAP, valued weighted average price, I misquoted that but that allows you to kind of see where in the days trading range did a particular managers trade your position. And that is a rough gage in order to manage and monitor execution against the day's trading range. Gerard Cruz: Okay. Robert Ernst: If that's something that's of interest to the Board, I can certainly take that back as a follow up point, do some further research in terms of your specific trading volumes, what sort of revenue we think might be generated under such an arrangement. And then I would separately need to work with our brokerage unit to see what would need to happen in order to get them to be a registered agent here on the island.

Gerard Cruz: Sure. I think their first step is just the analysis chart before we go. Robert Ernst: Be happy to do that. Typically I think that on average you should see your broker commissions typically for your U.S. trades to be in the 1 to 2 set range. Essentially the goal of a commission management program is to try to drive down what your average commission dollars are and I think that over time you would see better commission management program is effective in doing that. Gerard Cruz: Okay. Good. Thank you.

Robert Ernst: The other thing that I want to spend just a few minutes on before we moved on to give you an update on our securities lending program is starting on page 14, I wanted just to talk about a few tools that we have available to you and to the staff here to help you manage your program risk. And really it ranges from very basic tools to very complex rules or very complex tools in everything in between. But essentially what we're getting at here is using our online system that we'll refer to as passport you have certain tools that help you monitor your country exposure, your industry exposure, your exposure to a particular company so if there's bad news in the press about a particular company, you want to know what your exposure is to that company. There's a tool on passport that we call security exposure. Diana just needs to enter in a ticker or a CUSIP and you will very quickly find out what managers hold that stock, what their position is and what their positions are in similar sectors, similar industries and similar types of companies as well. So if that's something that probably should give you a refresher Diana on how to access that information on passport. That's just a very basic tool that's available.

Then moving down the spectrum we do provide you have historically provided you our performance measurement reporting service where each month we provide our performance measurement of each of your managers accounts, the total fund performance against the benchmark that you selected. Now believe you are using the Wilshire data primarily as your official performance measurement source which is fine, but I think it's important for you to realize that you do have an alternative calculation it's good to benchmark against what Wilshire is doing, it's good for a second set of calculations if anything just to validate where the fund is performing. If you scroll a few pages through you can see that I have included what we refer to as our policy trade which is updated every day and you can get information around one day performance, month to day performance, quarter to day, fiscal year to day, any sort of time period that's all customizable. You can look at current information, you can look at month end information and again it's all perform your managers performance against the perspective benchmarks in all updated on a nightly basis. So you may want to consider more actively using this to help supplement the work that Wilshire is doing for you. And again I just wanted to make sure the Board was aware that information was available to the staff here.

Wilfred Leon Guerrero: How about trying to determine possible overlapping in holdings. Gerard Cruz: Like concentration. So how many managers across our entire universe of managers hold apple? Robert Ernst: So the security exposure tool that I mentioned if there was a specific company that you were interested in, that will very quickly allow you to see what that exposure is. Gerard Cruz: But would we be able to, I'm sorry I didn't mean to interrupt, just say from a compliance standpoint say send a signal to us if there is holdings in excess of 5%? Robert Ernst: Absolutely and that's the other tool that I wanted to mention to you, our compliance analyst tool which is essentially a compliance tool, it's a post trade compliance tool, so it looks at your information every night based on current market values and it compares that against the guidelines that you have set up either for this specific investment manager or general guidelines that you may have set up for the fund itself. Gerard Cruz: Oh wow. Robert Ernst: Right. So you may want at the fund level, you may always want to have a certain asset allocation, you want to make sure that you are always within a certain range. You may want to say for any one security we never want more than X percent exposure. Those are guidelines that you can set at the fund level and then based on the guidelines that you have set up in that are a part of your

IMA's with your investment managers, we can also then monitor against those guidelines and if they are any breaches, any exceptions we would push a report out to Diana so that she could then research the situation and then follow up with the investment manager or investment managers in the event that a breach has been detected.

Maybe something has been misclassified easy explanation, no real breach. Maybe it is a real breach and your investment manager probably would appreciate a call from you saying looks like you violated one of our guidelines, what are you going to do to rectify the situation? Maggie Ralbovsky: Now is that concentration in every nation of credit on the fixed income side or just the equity side? Robert Ernst: You can do it both ways. You can do it based on credit ratings on your fixed income portfolios or. Maggie Ralbovsky: No what I meant to say is the concentration the name, the security like Apple maybe is bad example they don't have debt, they have debt. So like can you aggregate the concentration to a particular name? Robert Ernst: Issuer. Yes. Maggie Ralbovsky: With equity and fixed income? Robert Ernst: Yes. So our issuer concentration will look at an issuer's equity and their debt as well. Gerard Cruz: Let's say your manager holds this and or. Robert Ernst: So you may have GE common stock and you may have GE commercial paper, you may have GE bonds. Maggie Ralbovsky: Would that work for the secure type sector fixed income they have multiple fixed income managers, they all have secure has you know like 8 asset back securities would that work for them or those probably would be complicated.

Robert Ernst: It potentially gets a little bit more complicated but our system maintains an issuer so the issuing party and then all of the debt that would it could roll up. Gerard Cruz: It would adjust to drill down to see the difference. Robert Ernst: Yes exactly. Right. Gerard Cruz: Maturities. Robert Ernst: But then you could set on the guidelines you could set certain bands for credit quality, you want so much of the fixed income portfolio to be A rated or above, you only want X percentage to be less than investment grade. So there's a lot of variables that you can set using this tool really depending on the guidelines and the investment program that you set up. So that's something that is available to you. What the first step in analyzing this would be for you to provide us with your investment manager guidelines as well as the fund's guidelines and then we would produce a report that told you of those guidelines, what can we monitor in an automated fashion. Inevitably we'll find a small portion of the guidelines we are not able to monitor either because we don't have the data or the guideline hasn't been written in a way that is easily quantifiable with the mathematical equation so to speak. So again that's something that is of interest first step on be to review your guidelines and then provide a report back in terms of the depths.

Wilfred Leon Guerrero: You don't have a copy of our. Gerard Cruz: IPS. Robert Ernst: Typically not. Typically we would not receive those, I think we may have them on file but we would typically not do anything with them unless the client was subscribing to our compliance analyst tool. Gerard Cruz: Is that a separate service from what we. Robert Ernst: It is a separate service so there will be some nominal fees it would be associated with that. Typically it's based on the number of accounts that you have. There's also different levels of service where by you could completely outsource the function to Northern Trust. We would set up the guidelines, we would maintain the guidelines, we would when in an exception with breach, we would do the analysis to understand why it was breached and we can even go so far as to contacting the investment manager on your behalf. So that's the full outsource arrangement which obviously carries a higher price tag than where as if we set up the guidelines for you and then you monitor them the exception the breaches that are kicked out and then you do the follow up to make sure that the corrective action has taken.

David O'Brien: And this risk management we're not getting it now, you said that. Robert Ernst: You are not getting our compliance analyst application today. You are using you do have our performance measurement calculation. And some of the other reports that are listed here you do have access to through our standard reporting tool called task port. James Duenas: This security explorer tool is that part of it or? Robert Ernst: Yes. Diana has that so if you'd like this afternoon I can give you a rush job how that. Diana Bernardo: No I'm certain that we are able to do that. We kind of were discussing that yesterday. David O'Brien: Currency exposures part of what we have already? Robert Ernst: Yes so there would be some currency exposure reporting where you could monitor the counter parties you are trading with, their credit ratings, their activity. A lot of this sort of the items that are listed here on page 15, these are a lot of standard reports that are available on passport that Diana would have access to. David O'Brien: Already. Robert Ernst: Already. Currently. Wilfred Leon Guerrero: Maggie, on this page we have a listing of asset I guess its page 19. How's your reporting different from this one of the things I noted is that one day change.

Maggie Ralbovsky: Right, ours are among them, we get report from Northern Trust so we use the data source of Northern Trust. We don't have the one day performance. Some of your funds are not daily valued so this would be an estimate of sorts in some quarter. Wilfred Leon Guerrero: Some of our funds are what? Maggie Ralbovsky: Are not daily valued. Gerard Cruz: Some of our funds are not. Maggie Ralbovsky: Not daily valued. Gerard Cruz: Oh yeah like Commingle funds. Robert Ernst: So where this comes helpful is for your separately managed portfolios, for assets that we were able to price for you on a daily basis so we essentially are able to give you a daily performance month to date, quarter to date in addition to the month end stuff that Wilshire is able to provide to you as well. And it is not uncommon that a client will use both the investment consultant for the information but also use the consultant their custodian for the information because two sources is good to validate what each party is doing. And as Maggie says we do provide them reports and I think that our essentially our data is part of their calculation. Maggie Ralbovsky: That's right.

Gerard Cruz: Okay. Robert Ernst: Those were a few things that I wanted to highlight. So I had two take aways, one on position management we'll do some analysis on that and report back to the Board on that. And then if you want to separately pursue our compliance analyst application, the first step would be for us to have all your current guidelines and then we can do an analysis and report back and provide a price proposal on that as well. Gerard Cruz: Yeah that's a good idea. Robert Ernst: So with that if we may shift gears to securities lending, as I mentioned Brad Blackwell represents our securities lending group. Brad works from our Hong Kong office, so didn't have quite support on this as I did. Gerard Cruz: Too bad, timing is tough right. Robert Ernst: So with that Brad if you could maybe kick of what we want to provide was an overview of the lending program and we also want to update the Board and other collateral arrangements that are available to you in the event that you wanted to pursue possible ways to enhance your securities lending regiment. Gerard Cruz: Great.

Bradley Blackwell: Thank you Bob, well first thank you very much for having me here at a time I know that we may not have as much time left so I'll try to be very concise. Quick introduction of myself, I'm responsible for sales and relationship management in Asia Pacific, based in Hong Kong as Bob has mentioned, previously I was in our Chicago office so just ended last year. And I was responsible for mainly large corporates but I also serviced U.S. government pension funds also and out of our Chicago office. Before that I was an account manager on that team that manager top manager team in the U.S. also. The first page I want to cover is page 4, which I really wanted to focus on the fact that really because our team has been growing both for two reasons, one is its expanding client base but also expanding sort of needs of our clients. So now historically we didn't have actually a relationship team in Asia, now I have myself and then we requested to have an account manager also based in Hong Kong, so early this year we hired Kaitlyn Choo as our account manager in Hong Kong. So a quick overview of our program. Gerard Cruz: Did you always have a Hong Kong, you always had a Hong Kong office though right? Bradley Blackwell: We did yes, always trading though. So actually our Hong Kong office was really regionally started because of securities lending but it always been just a trading office with most of our clients in Asia specific regions we serviced from our London office.

Gerard Cruz: First guy I talked he was I don't know if he was from Hong Kong or from Singapore, when we first started doing securities lending with Northern. Robert Ernst: I think it might have been Sunil. Gerard Cruz: Maybe. Out of Singapore or Hong Kong. Bradley Blackwell: Yeah he was in Hong Kong he was sort of client servicing sort of played that role a little bit but he was the regional head at the time. Then after him was George Track and then we actually had a regional head of the business for a few years then Baxton replacing the regional head and the regional better have Maxwell client services instead. Gerard Cruz: Okay. Bradley Blackwell: From our program just to know of course it's important to have size global and have the expertise from a client old management standpoint so if 365 clients, $734 billion of them have assets that are lendable and $101 billion of that on loan in one time, or 51 markets across the globe, 31 of those equity markets, 20 fixed income markets, of course as you would expect 24 hour trading across our office is globally and then we have $108 billion in collateral both cash and non cash collateral. The cash portion managed by Northern Trust asset management so jointly with the $243 billion in other short duration assets.

From our counter party standpoint 49 of counter parties the top 10 which make up approximately 80% of our balances always A minus or better and then always from the customization standpoint we tend to pry ourselves in the ability with our clients customize or programs and if you're ever uncomfortable with the kind of party we have approved or if you maybe had a large relationship with them that you wanted to therefore not have them as part of your lineup for borrowers or have the ability to restrict the counter party. Then moving to page 7 is a quick overview as like I think you are well aware you started lending in late of 2010, currently only taking U.S. treasuries as collateral. Wilfred Leon Guerrero: Brad are there ever collateral that can be used, I know that this is what we are requiring but I'm just wondering. Bradley Blackwell: Yes, definitely we'll cover that a little bit. It does have impact on revenue on the plan that you accept is typically know as you expand open up your collateral a little bit more from we consider from U.S. treasuries most I would say limiting collateral just as because if its relatively expensive from a borrowers standpoint to pledge so as you go sort of expand that into you know other government securities equities and then into cash. Cash collateral you do see a particular method mainly on utilization so U.S. treasuries you're just going to lend the most special or the hottest stocks. As you expand your collateral even lend to the securities that we consider special so that you can utilize some of the securities we would consider special they would be the most in all in the new ones once you dip into cash collateral you would start utilizing what we call in the industry GC or general collateral and that would be your securities that are not trading special that we actually trade on an automated basis.

Wilfred Leon Guerrero: I don't understand a damn thing. Bradley Blackwell: Too much entry charging. Wilfred Leon Guerrero: I just want to know because we're requiring using a time period and I want to know if we have options. Gerard Cruz: We are in the most, there's conservative and then there's us right, so and I think you talked about liberalizing our requirements a little bit on a couple of different occasions. And so there's a step we can go that provides additional income potential but not without risk and so provided that we're willing to accept the added level of risk and I don't know, I don't know how much more or less that is, you may not be able. Wilfred Leon Guerrero: My question, what are they? Gerard Cruz: Well you can talk about your new collateral requirements or different collateral requirements. Robert Ernst: You maybe want to jump to page 12. Bradley Blackwell: Yes why don't we just jump to page 12, so currently exactly that you are asking which is laid out a huge event collateral scenarios and then what those revenue potentials look like. So start off with what you have today, so U.S. treasuries, what does that 12 month projection look like and then just sort of build up from there so just including your U.S. treasuries plus other OECD government debt which you would say rated double A minus or better. And then from there adding to that equities as collateral which for equities. Gerard Cruz: This includes the restriction of the total amount dollar wise that we can have outstanding at any one time? Bradley Blackwell: Yes. Gerard Cruz: Okay, just so that we're. Okay, thank you. Bradley Blackwell: And then this would add on top of that equities and then cash and cash collateral. So really again as you move up it's just utilizations here you're utilizing or lending more securities in your portfolio. That's what this additional collateral flexibility allows for. The one thing as we're sort of going through these examples I do want to note so you'll see the 12 month revenue projection with your current collateral is 515 thousand in growth revenue which is substantially more through your 2013 running rate which is due just some specials that you currently have in your portfolio that we expect to sort of extend for the next 12 months that will increase sort of revenue overall just wanted to make that note that's pretty obvious. If you look back to the other pages from what you're seeing historical revenue and run rate for 2013 is a bit higher. And then you will see sort of increment goes up just add different collateral. And one thing I want to mention on the equities.

So when we take equities as collateral we only lend equities. So we're not doing equities versus fixed income so obviously there's correlation risk there. Long way risk which we are not comfortable with. So we do it for a few clients but when we do it we don't offer our borrower default indication. Gerard Cruz: Do not. Bradley Blackwell: Do not, so typically most clients are happy with our certain program standard of equities versus equities. And the next layer is adding cash collateral where you really see the pick up where you take cash collateral is in your U.S. portfolio. So cash collateral is still king in the U.S. market and therefore you see utilization of your securities that are not trading special between U.S. market using cash collateral. Gerard Cruz: That's when you do take cash collateral. Bradley Blackwell: We do take cash collateral. Gerard Cruz: Could you explain why cash collateral would be considered at the other end of this spectrum.

Bradley Blackwell: Yep exact thing thank you. I sort of next point is the risk you take with cash collateral so in a lending program we have divided by 4 key risk and the first two are a default risk which is so many clarification for a trades can't get away from no matter what your collateral is. But then when you take cash you add two additional risks to that and that is the risk that cash collateral reinvest with risk you have to reinvest that collateral to make that transaction work so you take on that. So there's an asset that comes in pair or loses value that's a risk that the fund will be taking on. And there's interest rate risk which is something absolutely more acute when the rates are rising you'll see some time in the next 18-24 months. But that is managed, both of those are managed risk. Obviously what I like to tell clients from the cash cob final standpoint on both those risk the loss of value risk and the interest rate risk your cash cob guidelines are sort of your first line of defense. So I like to pick the right ones. What I shown here is how our Northern Trust institutional liquid assets portfolio which is a FCC registered money market fund so follows the money market guidelines the 287 a ruled 287 guidelines for money market funds. Also has the cost of dollar this portfolio we've had for some time so it first developed it really or started it because there's a requirement for FCC registered mutual funds to invest their cash collateral and message creditor money market fund. So that's the reason why we developed it it's been around some time through the financial crisis they performed very well, no losses experienced by any of our clients from a clash file standpoint, obviously you can't never guarantee there still at risk, can't take that away but it's just good to know that is how it performed through the financial crisis.

Mainly some of the investments that are made are what you'd expect so CD's and time deposits and major financial institutions we call. Wilfred Leon Guerrero: Through your knowledge of the other public pension plan ask for collateral other than US treasuries? Bradley Blackwell: Yes, so for our program I would say we only maybe have out of the 365 clients a handful that are limited to U.S. treasuries only. In the U.S. I'd say the standard is to have cash, cash collateral and then what we see is with the public pension funds a lot of cash plus government debt can easily it will add on or equities. So the equities for. Wilfred Leon Guerrero: So out of that 365 clients vast majority of them are using, are accepting collateral other than US treasuries. Bradley Blackwell: Yes. Wilfred Leon Guerrero: Okay. Bradley Blackwell: In terms of collateral yeah. So the vast majority would be accepting a wider array of collateral on the cash. Cash standpoint of is that has. Wilfred Leon Guerrero: Vast majority in cash? Bradley Blackwell: In the U.S. mass majority of the U.S. It's growing a little bit more in Europe but still Europe is very much a non cash market and the reason again for that is that in the U.S. cash collateral still is what's pledged majority of time and U.S. investors are still highly invested in U.S. markets get outside of the U.S. in Europe get in the Asia Pacific, that concentration is not as high so as soon as they collateral the cash collateral pick up its nice certificate. I do have clients in the Asia that take cash collateral but mainly it's by Central Bank clients that's more fixed income assets and therefore into cash works better for assets from legalization and lending standpoint.

Gerard Cruz: Okay. Bradley Blackwell: Other questions or maybe you know again we do sort of outside just U.S. Treasury, first understand though certain information especially on the cash I think. Gerard Cruz: Where would you see opportunity in the OECD AA or better and sovereign debt that would bring our income potential up to 581? I thought our fixed income portfolio is limited to U.S. securities or U.S. debt. Bradley Blackwell: It would be in a non U.S. equities for the most part. Gerard Cruz: Oh non U.S. equities. Wilfred Leon Guerrero: On your summary here, it would be nice if you included on the report what's the return on the 2013 term and I believe it's like 176 or something like that, right? Diana Bernardo: 190,000. Bradley Blackwell: I can show global Corporate is also on the next page, where that is included. TLC is one of the revenues joining the program on page 8, so year to date basically 188 revenue. And then which if you annualize that and just assume a run rate you are looking a little bit less than 2012, I did do a little bit of analysis to see really why is it possible that by the end of the year you could see little less than 2012 and it is really related to a trend that we have seen in the U.S. equity markets and securities lending which is fewer specials so fewer securities turning special and the ones that are turning specials are the generally have had lower spreads so I had seen for my other clients to decrease in the U.S. market earnings for those reasons and seems to be correlating here too.

Wilfred Leon Guerrero: On page 9, your listing here these are the securities that were bought right? Bradley Blackwell: These are the top 10 securities. Wilfred Leon Guerrero: Oh top 10. Bradley Blackwell: From our earnings stand point the top 10. Wilfred Leon Guerrero: How many of these are American companies? Bradley Blackwell: I think only number 6 and number 7. Wilfred Leon Guerrero; 6 and 7? Bradley Blackwell: Yes. So because the driver of earnings is pushing the top 10 of the yield asset trades which are facilitated in the European dividend season, so all of these are mainly European securities. Wilfred Leon Guerrero: I don't know how they structure corporations in Europe. My understanding that this program was such that Board controls the company by buying these shares so called the securities lending what they're actually doing and then have an election for Board of directors to buy in so that they get their people in, and I thought that's only happening in the U.S. but I guess it's happening in Europe, too.

Bradley Blackwell: You know definitely not in this case and it was I know a few years back that was a topic that came up was this thought that people were accessing this year's lending SPL through securities financing market to borrow shares so they can vote and sort of have some influence on, you had to borrow so many shares but in these cases here, so really you know 1 through 5 and then 8 through 10, that's the European we call an instrument of the yield enhancement trade it's really a dividend arbitrage trade whereby your withholding tax in the European country let's say and we'll use France as an example that's one of the yield enhanced markets. So let's say your withholding tax is 15%, so you are due 85% of the dividend. So if Golden Sachs borrows BASF and then they pay $1 dividend that's what your Euro so owed 85% that owed 85 cents, at borrowed Golden Sachs they have to manufacture that 85 cents back to you they owe you that and they do so.

What would happen for the other side is they are going to lend that security to someone who does not owe withholding tax or owes us although we're withholding tax creating an arbitrage and through that we know that's happening, it's not new to market its been around years and years and years, we charge pretty substantial fees for the securities around that time. And then you receive what we call in an all in rate, so if you're rate is 85% so you will receive 85% of the dividend. We add on top of that the lending revenue they earned over that time you'll really receive somewhere between 93 and 95% dividend. There's always a way so yield enhancement trading is almost a way to keep more of that dividend than you normally would have been eligible to receive. And that's what's happening and that's why the fees to the average spread are thousand of basis points and that's why thousand of basis points capturing all of that revenue in the very short amount of time. Gerard Cruz: Okay. That was a good explanation. Bradley Blackwell: Probably went over. What I wanted to just again if there's anything I can buy or make sense to have a discussion some other time that after you have some time to discuss internally about collateral options and the need to proceed since we've seen 50% increase in revenue from what you have today to including cash collateral and to expand collateral all the way. If you look back to last year just to know when we provided similar analysis, the increase was much higher and that was due to the fact that the specials as I was describing earlier that were created to higher revenue 515 thousand versus your run rate which has been 250 a year.

Gerard Cruz: And so the indemnity portion that we currently have run or exists all the way up to the point where we are where we elect or if we elected to include cash as collateral, is that correct or does it or is it just where we are right now in our customized? Bradley Blackwell: So you have a borrowed default divity? And that would be for each one of these scenarios, you still have that divity. Gerard Cruz: Okay and the specifics of that are again that if ok I'll let you explain. Bradley Blackwell: The divity so while that is the case. You do have that borrower default I just want to make very clear lines those that risk is like the cash investment risk is not indemnify risk. Antolina Leon Guerrero: The cash is not. Bradley Blackwell: Yeah exactly so just you know it has to be transparent about that. So how the borrower default an indication works is if admissible of the advisable mind but if you have once to carry out IBM and Goldman Sacks is under they've given us collateral, we need to do our job as your agent lender to liquidate that collateral and buy in that security regardless if that collateral is adequate. So if we haven't done what we're supposed to do and mark that collateral to 102% well it's our fault, we better buy in your security and make your whole.

Gerard Cruz: So you replace that security? Bradley Blackwell: Yeah we replace the security regardless of. Gerard Cruz: Cost on your end. Bradley Blackwell: Yeah essentially. Gerard Cruz: And so that works for all non cash. I mean that exists. Bradley Blackwell: Yeah it works. So where there's if let's say you know in your cash file fund we had to liquidate assets to create the cash to go buy in securities, and then when we did that there was a loss and that's not good buy. So the investment risk was not good buy. Wilfred Leon Guerrero: We have a cap in terms of. Gerard Cruz: I think it's 300 million? Paula Blas: 300 million no more than 50 million to borrow. Wilfred Leon Guerrero: And so how much did you use up? Gerard Cruz: I don't know have we ever come close to that 300 million cap? Bradley Blackwell: No, so you have a billion in Lendable, I don't if I have utilization average utilization right here but it would be, so it's 1.47% if you look at page 9. Gerard Cruz: Okay. Robert Ernst: You might come closer to the percentages although I still don't know whether you go over them or you would get closer to them if you were to move to the cash collateral arrangement.

Bradley Blackwell: You do appropriate utilization actually if you look at cash now it's at 21.9 you'll be looking at 200 million on the balance range. Gerard Cruz: I understand. Okay. Thank you. Getting closer. Robert Ernst: Well thank you all again for the time, I think we did run over into your time sorry Maggie. But very much appreciate the business and very much value the relationship and I'm happy to make my annual trip out to see everyone. If anything comes up I think it's good now that Brad is in Hong Kong and to the extent that if you might want to have a more detailed discussion. Gerard Cruz: Where's your office in Hong Kong? Bradley Blackwell: You know where Pacific Place is? Right there. Gerard Cruz: Oh sweet. Robert Ernst: So if you are in Hong Kong or if you want Brad to come down to see you, I would be more than happy to arrange a separate meeting just to talk specifically about helping you understand where the risk were if you did want to pursue volatility what I consider a more traditional cash arrangement.

Bradley Blackwell: I would second that about the user maybe due diligence is required so again having come in do another presentation where it goes to so what are we doing from a risk management standpoint when it comes to cash flow, what's our team looking at and are we going to be reinvested. Gerard Cruz: Very good. Thank you. Robert Ernst: Nice to see you again.

**Investment Update-Asset Allocation**

Maggie Ralbovsky: You don't remember but we had a discussion of commission recapture program present last year we actually. That's right we actually discussed why we shouldn't do it, I just want to make sure we had that discussion. David O'Brien: What's commission recapture again? Maggie Ralbovsky: Is that you direct your trades to certain brokers and the broker rebates you certain. David O'Brien: Certain amount and that comes back to us should. Maggie Ralbovsky: To you the commission and what's not being considered in this kind of relationship is to assume that the trading cost is only commission but commission is only 1/3 of the trading cost. The trading cost majority of the trading cost is market impact cost which means when you trade the portfolio manager wants to trade he has a target price in mind. And if you delay so you send it to Northern Trust, Northern Trust doesn't trade, you publish to their 60 brokers say who wants to take this trade, that whole delay actually creates a huge opportunity cost which is the majority of the trading cost. So what you see is you have some recapturing of that commission but you missed the entire larger part of the trading cost and studies have shown that commission recapture program tend to eventually give you a worst return because of the slippage in that opportunity that's why we terminated that program.

Gerard Cruz: We had a ...No. We had discount brokers. It wasn't. Maggie Ralbovsky: You had 3. You had 3 directed brokers which were actually direct brokers instead of which in a way that's your better relationship than having Northern Trust being the agent to direct broker think about the delay in that whole thing. And you actually had 3 direct brokers that converge is one of them which used to be Northern Bank of New York subsidiary, not any more. So then recently they had this huge, they almost went bankrupt one day because of the trade in the. Gerard Cruz: Just for a day? Maggie Ralbovsky: Just for that day they almost went bankrupt because of the computer system glitch and the market dropped a thousand points related to that whole issue basically they almost went they had to have people buying to their preferred stock to inject capital to survive. Anyway so the whole discussion, the key point is that commission recapture program does not consider the opportunity cost. David O'Brien: What's the opportunity cost missing the price that you want to trade at is that the opportunity.

Maggie Ralbovsky: Is the market impact. Market impact. So when you are trying to sell something. Gerard Cruz: You need to do it right away. Maggie Ralbovsky: You need to do it right away. If you tell everybody going to try to sell this then already there's the information is good. Gerard Cruz: Is out. Maggie Ralbovsky: Yeah, you're going to sell at a lower price. And we want to buy something when you do that. David O'Brien: So it's the price you pay, that's right. Maggie Ralbovsky: And especially when the dark pools right now having all the computer monitor so all those computer trading reigine they actually capture that information and trading manual segments immediately trading. So those are the fast trading schemes basically arbitrage on this kind of information. David O'Brien: So somebody's measuring that trading cost opportunity cost? Maggie Ralbovsky: Well like Intech give us the thing yesterday which they contracted. David O'Brien: Well why they playing that game I mean that's. Maggie Ralbovsky: Well no they contract well they sort of play that game. But they have a contract with a trading consulting firm to give them the true trading cost. Gerard Cruz: The true cost of trading. Maggie Ralbovsky: The true cost of trading you see the commission is only very fractional thing compared to the market impact.

Gerard Cruz: But that's the only way that this model works because they trade so often that if their trades and. Maggie Ralbovsky: If they have slippage in trades they will never. Gerard Cruz: They will never make. David O'Brien: I have to hit their price to make their model work otherwise they got to adjust their model. Wilfred Leon Guerrero: Are we going to talk about asset allocation? Maggie Ralbovsky: I am going to talk about asset allocation. Gerard Cruz: I'm going to eat while you talk. Wilfred Leon Guerrero: We're going to be eating and. Maggie Ralbovsky: Yes you should please, please, I had a huge breakfast so I'd love to delay my eating.

Maggie Ralbovsky: Okay, I'm going to start with the universe comparison. I'm going to skip the buckets today, how is that? Bucket basically says that the majority of the risk allocation in current portfolio is in equities. So even though. David O'Brien: I read your I read the last minute meeting minutes so I know all about buckets. Maggie Ralbovsky: Ok so I'm going to start with page 3. David O'Brien: Just start. Gerard Cruz: Page 3, I'm with you. Maggie Ralbovsky: Page 3. Gerard Cruz: Go ahead Maggie, I'm following you. Gerard Cruz: I'm sorry where are you? Asset allocation page 3. Maggie Ralbovsky: Asset allocation page 3. Gerard Cruz: I'm with you. Maggie Ralbovsky: Waiting on James. Okay asset allocation page 3. Here I provided a universe comparison of GGRF's asset allocation with the public fund 60 public funds with over 500 million dollars in assets. And you can immediately observe that there is a higher concentration of allocation in U.S. equity and U.S. fixed income. GGRF's U.S. equity allocation is actually. David O'Brien: Supersonic. Maggie Ralbovsky: Huh? Supersonic? David O'Brien: Sorry. Maggie

Ralbovsky: It's an outlier it's not even in the universe band and outlier you see that. Its how we. Gerard Cruz: U.S. equity? Outlier.

Maggie Ralbovsky: An outlier and then U.S. fixed income. David O'Brien: Not in the normal curb. Maggie Ralbovsky: The U.S. fixed income while not an outlier is really on the top 10 percentile range as well as real estate which in here it's entirely in REITs, which is also concentration 10% REITs is a very high concentration as well because the universe real estate also includes Commingle funds which includes now REITs. Being in REITs and REITs is also U.S. equity so if you count REITs as U.S. equity you've U.S. equity allocation is even higher right. Okay, so bottom line if the allocation is more concentrated than universe however, if you move to the next page, if you think about when this asset allocation target is set it was in 2006, and if we move back to 2006, use the same universe and you can see in range perfect in range at a time so really the world has evolved since this asset allocation target was set. I'm hoping to make a case to say hey we also need to evolve to consider some of the different approaches. Now that our modernization ball is hopefully going to be approved by the governor, this bill is hopefully approved.

I'm going to skip the next page which we already talked about last time. I'm going to go to portfolio optimization so to perform this I'm going to tap to page 7. To perform the following analysis we started with the asset allocation assumption that Wilshire produces. We actually do a thorough study once a year and every quarter we update this. So for the analysis we actually used the midyear estimate which accounted for the fact interest rate went up a little bit since the beginning of the year. We usually do not adjust this drastically quarter by quarter but given the fact interest rate has gone up pretty substantially between the end of 2nd quarter and end of last year, we actually have adjusted this. You can see that we reduced the certain asset classes, return assumptions and we increased asset allocation assumption of certain asset classes because of the interest rate movement. Okay, so based on this based on these assumptions I performed an efficient frontier analysis on next page, page 8.

Efficient frontier just to refresh everybody's memory is the summary of the most efficient portfolios. And the efficiency is defined as how much you're getting paid by the risk you are taking. So there is no based on the selection of asset classes there is no combination of the asset classes that will be plotted above the line. That's how you define efficient frontier unless you change the asset classes. Now here what you can see is that was the current asset classes we do not include any of the other asset classes that you are currently not using, you pretty much can not improve what you are right now. Your current asset allocation is very much the only efficient frontier which you can see is the purple circle, so your current asset class allocation is quite efficient if you do not include other asset classes or you do not use leverage. So there are 2 ways you can include this current thing is to include other asset classes or include leverage. Let's say we do not include leverage, let's say we just use more asset classes, the asset allocation efficient frontier can be pushed to the red line. Gerard Cruz: Are we able to use leverage with this new bill? Maggie Ralbovsky: Yes if you use Commingle fund if you use it in a Commingle fund. Not explicit elaborate. Gerard Cruz: Are we able to go short? Maggie Ralbovsky: In a Commingle fund yes as long as we use the Commingle fund. David O'Brien: What's Commingle fund as in some analysis in. Maggie Ralbovsky: Commingle fund means that you do not own a security. Which is going to if we move to anything away from the current asset allocation, it will make the securities lending less of an issue because you'll have less lendable assets. So, I also. David O'Brien: Yeah but utilization is so small anyways right? Maggie Ralbovsky: So the public fund universe portfolio, I also plotted there which is the green football which is more diversified than the purple football. Then I plotted the other past portfolios. I selected A, B and C. I want to highlight portfolio A because I think portfolio A is a portfolio that will meet our return objective which is 7% and takes almost exactly the same levels of risk as the current portfolio. So if you look at the table, focus on return risk at the bottom, and starting with the current portfolio, the current portfolio with our current projection will return 6.4% a year.

And the risk is expected to be 11.3% and portfolio A is expected risk is 11.2 for the same risk as the current portfolio but the return expectation is going to be moved to about 7%. Gerard Cruz: How do you could you again define that risk management 11.2 in word terms. Maggie Ralbovsky: That is the volatility of the return. So if we expecting 7% return, that is just the median of what you may be experiencing right, because it probably had very little chance you going to end up with 7% but you're going to be all over the place but eventually a median of that distribution is 11% is 7%. Now with the 11% risk that just means that the standard deviation of that expectation is 11% so within 67% the chance your return is going to be 7% plus or minus that standard deviation. That's right. James Duenas: So how did you achieve a lower risk? Maggie Ralbovsky: You need to add you need to increase diversification so when you add new asset classes to your current portfolio, you're going to because asset classes don't move in the same direction at the same time, by having that cancel out you know when some goes up some goes down, the volatility gets smoothed out. So the more asset classes you add especially from a more concentrated portfolio, your biggest bang for the buck in terms of diversification is the largest and once you already have a very diversified portfolio to increase diversification sometimes have a diminished benefit but your current portfolio is so concentrated.

David O'Brien: The counter strike to that James is that you have the pretty wild ride in some of the alternatives, it's the correlation that's benefiting you not the excitement factor. The excitement factor goes up. Maggie Ralbovsky: So if we just focus on a certain. The whole portfolio series is that the riskiness of an asset class is hard to judge in isolation because just because something is risky doesn't mean if you add that risky thing in your portfolio is going to make your entire portfolio more risky. With the diversification of that may make the whole portfolio less risky just because you added something more risky you know it means nothing. So it needs to be put into the context of your portfolio so that's what this efficient frontier is trying to accomplish. David O'Brien: Can I ask you something about your choices scenarios. Maggie Ralbovsky: Yes. David O'Brien: Did you model the actuarial assumption? Maggie Ralbovsky: Yes we did. We did. David O'Brien: If you did later that's okay. Maggie Ralbovsky: Yeah it's going to shorten your time to reach for funding. Right now it set at 28.

Wilfred Leon Guerrero: Maggie, your recommendation is A right, is that what you're saying? Maggie Ralbovsky: I'm using A as an example which is my preference and I can tell you we're not getting there in one step because it's pretty large gap. So I have 5 steps. Wilfred Leon Guerrero: This is very complicated for us, especially for me. Maggie Ralbovsky: I know I understand. Wilfred Leon Guerrero: So would you please explain what is private partnership. Maggie Ralbovsky: Yes, I am about to. Gerard Cruz: Private placement? Maggie Ralbovsky: I am about to. Okay. David O'Brien: GPA have you ever thought of that? Maggie Ralbovsky: Okay, yes so as I want to make a quick disclaimer here, this is a very drastic lead from the current portfolio and I do not expect us to get there in 1 step, I actually put together 5 steps for us to get there. David O'Brien: Why is it so drastic Maggie, what's so drastic when you say drastic? Maggie Ralbovsky: Let's start from private partnership. And in the model of the private partnership I included, you see that's the note number 1, note number 1 that included private lending funds. If you think about Gerry's business, he's lending to some mid market firms. Wilfred Leon Guerrero: Oh, he makes a lot of money, is that what you're talking about? Gerard Cruz: I don't make a lot of money, I make just enough to show up to these meetings every month. Maggie Ralbovsky: The mid market segment is the segment that if you don't know them you don't make loans to them like the big banks, you can't get like you know Meskla, they probably can't get a loan from Chase or Citibank, they have no idea who these people are right. So there's a segment of the market place that actually are significant enough to need to have loans it's not the mom and pop shop that doesn't need loans right, I just use my equity.

So there is a segment in the market that needs loans but cannot access loans from big banks and they go to community banks and that's not enough so there's this huge segment with demand that can be satisfied by these private lending vehicles. The private lending vehicles are usually run by you know Goldman Sacks for example, they have this merchant bank. They actually raise money some portion of that merchant bank money is Goldman Sacks money and you sort of co-invest with them. They have these lending funds that go out and they actually lend to these mid markets segments and get interest just like what you do. So that's the private lending. Gerard Cruz: Oh they do? David O'Brien: Does Berkshire Hathaway do this as well? Maggie Ralbovsky: They probably have private placement lending. So all these financing companies have these mid market lending segments. David O'Brien: So the clause aren't banks. Maggie Ralbovsky: Yes, that's what they called. Gerard Cruz: Finance companies. Maggie Ralbovsky: Yeah. Financing companies. So that's the private lending then the expectation for that in terms of return is in the high single digits after fees. Wilfred Leon Guerrero: So you have what do you call that the operation what's distress.

Maggie Ralbovsky: Yes so okay then that's private lending funds. The next thing is distress investments. What is distress investments? If you think about Europe. European banks as we talked about yesterday, they have this bazzle 3 capital requirement coming due next year. And they have all these non performing loans on their books. They need to get rid of it. These are loans that they will sell cents on the dollar because they need to get rid of it. And that's a distress investment. Distress investment by official definition is a par security trading below 40 cents on the dollar. Gerard Cruz: Below 40 cents? Maggie Ralbovsky: Below 40 cents on the dollar so if somebody sells you something that you know you think is worth 40 cents on the dollar, you pay 40 cents on the dollar that's distress investment. And distress investment also includes things that just filed for bankruptcy for example I think there's a TXU that the big Texas utility company that just filed for bankruptcy and their debt is trading at 20 cents on the dollar. And it's not because it's worth than 20 cents on the dollar it's because all these funds have to sell.

If you are insurance company you cannot buy anything that's in bankruptcy, you have to sell and it doesn't matter what price is you sell right, so there's all these different sellers out there that are they have to sell which make certain securities worth more than what their price is those are distress investment. Well of course if you don't understand how to work it out with these situations you don't buy that security. Like I can't hire a lawyer to represent me in a bankruptcy committee and try to go to the court and state my case. So if you don't have that kind of a capability you don't you don't buy it. So there are companies investment companies out there that formed for this purpose alone they go out and buy these distress situations then they participate in the creditors committee, they go to the court then they make a case and say hey this loan is actually by covenance is secured by this particular assets and these assets belong to me and you give it to me, I give you this debt and at the liquidate assets, you liquidate the assets that's maybe worth more than 20 cents, so that's what distress investment's about. Gerard Cruz: And there's managers that do that? Maggie Ralbovsky: That's right. There's managers will do that. Ok. So that's private partnerships. Gerard Cruz: And you're suggesting that we up to 10% of our portfolio in that type of investment, not anyone particular? Maggie Ralbovsky: Not one particular in this group investments which I'm going to. Ok so that's number 1 that's sort of. Gerard Cruz: That's step number 5 right? Maggie Ralbovsky: Yeah step number 5. Gerard Cruz: My term is over. Maggie Ralbovsky: Ok so the next one you see a high yield we have extensive discussion so I'm not going to say anything about that. And the Global bonds actually they public fund average has a 2% allocation I am not recommending anything right now because global bonds right now is actually pretty terrible space. Gerard Cruz: Global bonds, really? Maggie Ralbovsky: Global bonds is actually not a very good space right now. Okay, so U.S. REITs also is going to be switched to global REITs and the allocation is going to be reduced in this to 5%. Ok U.S. REITs only applies in U.S. and Global REITs U.S. is about half of that. Antolina Leon Guerrero: Oh it is included. Maggie Ralbovsky: Yeah it is half of them. So then the next basket is another basket that's probably laboring the steps which is alternative basket. Ok so let me tell you.

Gerard Cruz: That's 20%. Maggie Ralbovsky: Yes. So this basket however has many different things in it. So number 1, well commodities. Number 1 though is unconstrained strategy. What's unconstrained strategy well we also have a name called hedge funds. Gerard Cruz: Yummy, it's a good thing I had the Chinese food last night. Maggie Ralbovsky: So. Gerard Cruz: Hedge fund okay, no hedge funds are not a bad thing. Maggie Ralbovsky: No, no, there's also risk parity, if you guys remember risk parity we had that discussion that also belongs to this category. Gerard Cruz: Yeah that's a good one. David O'Brien: I didn't have that discussion, what's risk parity? Maggie Ralbovsky: Risk parity is to allocate your assets not based on asset percentage but based on risk percentage. So for example if you recall my discussion. Gerard Cruz: No he doesn't he's not. Maggie Ralbovsky: Yeah ok so if everybody else recalls the basket discussion so if you look at how volatile an asset class is. U.S. as equity is about 4 times as volatile as fixed income. And if you just allocate 50-50 into these asset classes U.S. equity and fixed income for example, 50-50 in dollar terms you're actually allocating about 95% in terms of risk into equity because it'll give you so much more. Gerard Cruz: Correlated. Maggie Ralbovsky: So much more risky.

Maggie Ralbovsky: So how do you actually try to control your portfolio risk by allocating equal risk into these strategies? Gerard Cruz: It's the L word. David O'Brien: Oh I understand. Maggie Ralbovsky: Leverage. Yeah okay. So that's risk parity. Antolina Leon Guerrero: Did he just say the L word? Oh yeah. Maggie Ralbovsky: Okay, so risk parity is a great diversification tool, it's great. We could talk about more of these different strategies but that's included in that. And also arbitrage strategies, which right now we are totally missing that whole piece for example, Gerard Cruz: Ok go ahead. Maggie Ralbovsky: For example, if you look at the capital structure of a company there's the equity trunch fixed income trunch, if some many, many times if you observe how the equity holders trading the equity of a certain company, we have an expectation. And if you look at the bond holders who are trading the same companies bonds they have a set of expectations and most expectations can be very different. For example I can give you a live example, Kodak. So when Kodak before it filed for bankruptcy the credit side sold the company to like 20 cents on a dollar. The stock side people still trading that company at 5, 6 dollars a share. So if you are trading Kodak at 5 or 6 dollars a share, the bond should be trading at 100 dollars right if there's still value for the stock, the bonds should be 100 dollars. But the bond market already sold this company to 20 cents to a dollar. So in this case an arbitrager would do is to buy the bond at shorter stock because it doesn't matter what happens you should win right, if the stock market is correct your bonds should go to par, if the bond market is right your stock should go to zero right. So it doesn't matter which one is right you going to win, that's an arbitrager.

Gerard Cruz: But is that is that one off type of situations? Maggie Ralbovsky: No it happens pretty much all the time every day. So there's arbitrager that does this all the time every day. There's managers out there that just does that just arbitrager these different things it's called relative rally relative value trades. Ok, so that's in this basket. Gerard Cruz: I know but ok. Maggie Ralbovsky: I'm not expecting us to get all the baskets right, this is my first. Antolina Leon Guerrero: She's just wants to introduce us to the steps. She knows us. Maggie Ralbovsky: As I said yesterday, I prepared to discuss this 8 times before we start. Gerard Cruz: We're at number 1. Antolina Leon Guerrero: She said that that's what the study shows, 8 times, she has to say 8 times before people would guess. Paula Blas: Before you start to say, Oh.. Gerard Cruz: Let me think about it? Paula Blas: Yeah. Gerard Cruz: Where are we? December, January, February, March, April, May, June that's six months.

Maggie Ralbovsky: So what does this mean to our contribution so I actually calculated if we move to A, B, or C, what does that mean for our contribution? Okay, so the present value of the contribution until we reach full funding will be reduced. Gerard Cruz: The present value of our contribution okay, okay I'm sorry got you. Maggie Ralbovsky: Of the future contribution. Gerard Cruz: Will be reduced. Maggie Ralbovsky: Will be reduced. And then I want to make sure we understand these are present value, it doesn't look like the numbers difference is so large but it's discounted back to today's value for the next you know 20 years, 10 years. Gerard Cruz: To fully funded. Maggie Ralbovsky: To get fully funded status. Gerard Cruz: I understand. Maggie Ralbovsky: So if the relationship that matters it's not the sheer value that matters. So if you look at 2013 to 2028, that's the last bar, if you compare the current bar versus the A, B & C, another reason I think A is my preferred choice is the fact that the downside is not as dramatic. So the downside is actually the top. The higher, the.

Antolina Leon Guerrero: I'm sorry I'm not sure how to read this. Maggie Ralbovsky: How to read, this is the present value future contribution because there's uncertain these market place, so. Antolina Leon Guerrero: Why are we looking at this last step? Maggie Ralbovsky: For example the last step, the current target, the very pessimistic case which means that market is really is not performing for the next 10 years, 15 years the present value of the contribution is going to be 1.4 billion. Antolina Leon Guerrero: Okay. Gerard Cruz: Under the current. Maggie Ralbovsky: Under the current condition. And the very optimistic which is to say the market goes really well, it's going to be 550 million. Antolina Leon Guerrero: Okay. David O'Brien: That's the contribution we, the difference. Antolina Leon Guerrero: The government. David O'Brien: Government contributions into the fund. Maggie Ralbovsky: That's right. To keep our current actuarial amortization schedule. David O'Brien: I'm sorry I just want to know what contributions. Maggie Ralbovsky: Amortization schedule. David O'Brien: Yeah understood. Gerard Cruz: This is under our current model right? Maggie Ralbovsky: Model, current portfolio. So the agencies. Antolina Leon Guerrero: Over this period of time we would expect the contribution to be at this level. David O'Brien: To meet the actuarial levels that we have. Gerard Cruz: Yeah to get us here. Present value of that future. David O'Brien: Where ever our target is for safety or security. Gerard Cruz: To be fully funded by 2031.

Maggie Ralbovsky: That's right, so the. Wilfred Leon Guerrero: Wait, wait, does anybody remember what's our current contribution? Gerard Cruz: Yeah it is 1. Maggie Ralbovsky: 20, 28 is for funding. Gerard Cruz: Our current contribution is 160. Right? Because 40 or 20 it's about I'm thinking 150, 160 dollars. Paula Blas: No, it's a percentage of payroll. Gerard Cruz: We're funding out of corpus between 30 about 30 million. We need 180 for contribution so the difference is the contribution rate I mean the contribution dollars. So about 150. Wilfred Leon Guerrero: How close is these figures? Gerard Cruz: It's far. Paula Blas: I think Maggie you're just using these as examples, right? Wilfred Leon Guerrero: I don't understand Maggie. Maggie Ralbovsky: I don't understand what your question is? Gerard Cruz: His question is what is the. Wilfred Leon Guerrero: This is the government contribution right and right now it's looking. Maggie Ralbovsky: These are present value of futures, to use for funding, it's not one year. David O'Brien: That's all the contributions for that period in today's dollars, so you could actually get to it maybe by taking the 2013 to 2015, that's 5 years and dividing 5 into that number, would that do give an approximate. Maggie Ralbovsky: Yeah that's approximate. Antolina Leon Guerrero: Of the annual contribution. David O'Brien: Yeah the annual because this is for a period. Wilfred Leon Guerrero: I'm sorry you're looking for a 5 year period. Antolina Leon Guerrero: And the next one is a 10 year period and then a 15 year period. David O'Brien: So if you want to compare to what Gerry just said, ours is currently 150, then you know it's not going to be precise because its different present values you know it's different years.

Wilfred Leon Guerrero: And if you divide this, its 100 and. Maggie Ralbovsky: So the bottom line is it's going to help alleviate the contribution pressure. David O'Brien: Even in the short term looks like. Gerard Cruz: Yeah even in the short term. Maggie Ralbovsky: Even in the short term. Wilfred Leon Guerrero: I'm just wondering whether what we're looking at it's just way out of whack but I know it's like do we divide this by 5 that 546 so that's about hundred something. Gerard Cruz: It's about right. Wilfred Leon

Guerrero: Okay. Maggie Ralbovsky: And the solvency ratio, page 10 which is and you can see that based on. So even if you make less contribution you still can do reach solvency ratio faster. So the way to read this chart is that you have to take into consideration of the reduced contribution from the previous page. So this is how you're going to be reaching the 100% funding sooner even with less contribution from the government. David O'Brien: Can I just ask a question on these guys. So we have a security ratio that's 44 today, that's not the same as the solvency ratio? Maggie Ralbovsky: It is the same thing. David O'Brien: It's the same thing? Maggie Ralbovsky: Yeah it's the same thing. David O'Brien: So we're not going. Gerard Cruz: Solvency is the opposite of security. Oh no it's not. Maggie Ralbovsky: It's the same thing. David O'Brien: So at the end of the actuarial period what's our security ratio supposed to be? Gerard Cruz: In 2031? David O'Brien: Yeah. Maggie Ralbovsky: A hundred. David O'Brien: No, 2028. Paula Blas: Well actually we sunset at 2031. Antolina Leon Guerrero: So what she's saying is by 2028. Maggie Ralbovsky: So the annual contribution is determined by amortizing the unfunded amount. David O'Brien: Yeah, I understand all that. Antolina Leon Guerrero: He was just asking what the end date is. Maggie Ralbovsky: Oh the end date is, okay. Gerard Cruz: But this is saying the end date is 2028. David O'Brien: That's why I was wondering, I mean. Maggie Ralbovsky: I'm just saying that 2028 you will reach the achieve it. Gerard Cruz: Yeah. Yeah. So we'd be 2 years early. We'd get there 2 years earlier than the law states.

David O'Brien: That's why by 2028 the median expected is only 97 because you got 3 more years to go. Antolina Leon Guerrero: That's just with the current. Gerard Cruz: That's right you got a couple more years to go, that's right. David O'Brien: And so we had moved this out to 2031. Sorry this doesn't I'm just trying to make sure I understand. That would be 100 under current target year 2031, okay thanks. Maggie Ralbovsky: Okay, so then I also want to show you the risk. Gerard Cruz: This assumes that we by 2013, we fast tracked all 5 steps though right? Maggie Ralbovsky: Yeah, so you'll be off the Board right, no, I hope you get re-elected, re-appointed. David O'Brien: So on page 10, the downside the pessimistic. Maggie Ralbovsky: You still get better funded right, 80% versus 76%, if you go to A. David O'Brien: No, no, no I'm looking. Okay. Thanks. Maggie Ralbovsky: So then I also want to show you some empirical data as to how these portfolios have done. So this first one is portfolio A, okay so the way to read this chart is that portfolio A versus the top is GGRF current target. Gerard Cruz: The top? Maggie Ralbovsky: The top is the current target, the top 2 charts are for the current target. The bottom is for portfolio A and this is empirical data for the past 10 years.

Gerard Cruz: Okay, based on just. Maggie Ralbovsky: Based on the current portfolio. Gerard Cruz: Yeah the top obviously but the bottom, ok I'll let you. Maggie Ralbovsky: The bottom is portfolio A, the top is current portfolio and the total return and I also graphed the equity. So the total return you can see that your current portfolio returned for the past 10 years 7.65% annualized, the bottom portfolio returned 8.09% annualized. So that's how you read that total return chart. Gerard Cruz: The bottom one which is A, returned 8.09% the top we returned 7.65. Okay. Maggie Ralbovsky: So each time period it did better and for each also up market or down market. Gerard Cruz: It outperformed. Antolina Leon Guerrero: It did the same. Maggie Ralbovsky: It has actually. David O'Brien: What's frequency of success means? Maggie Ralbovsky: Okay, so this is like a batting average. What's the percent of time you did better than the Wilshire 5000 which is the equity market.

Maggie Ralbovsky: So this is when equity market goes up how much you have done. It's like how much you have done better, what's the time when you have done better when equity market goes down. Antolina Leon Guerrero: The current portfolio does better on down market. Maggie Ralbovsky: No does better in down market. Antolina Leon Guerrero: Does better than the portfolio in the down market. Maggie Ralbovsky: Does better in down market on average for the 10 years but does worse than the one below in up market. Antolina Leon Guerrero: But don't we try to do better in down markets and we try to do better in up market. Maggie Ralbovsky: We do but we want to be also more balanced. The bottom one you see don't do much worse than down market right? Antolina Leon Guerrero: I don't know. Gerard Cruz: So like in. So for the 5 years, we did better 90% of the time in down markets? Maggie Ralbovsky: Than Wilshire 5000. Gerard Cruz: And the portfolio A did better 85% of the time in down markets but in up markets we did only out performed 20% of the time and portfolio A outperformed 30% of the time. Maggie Ralbovsky: That's right, that's how you read this chart. And the next two. Gerard Cruz: And the difference in terms of returns is.

Maggie Ralbovsky: The difference in terms of returns on this side is different. Antolina Leon Guerrero: What is that 30%? Gerard Cruz: 7.55 which is the same, so even though we performed better in down markets our return was still the same. Maggie Ralbovsky: What do you mean return was still the same? No, no on this side is Wilshire 5000, you look at the blue bar. Gerard Cruz: Oh the blue bar, it's still the same, no? Maggie Ralbovsky: No it's not the same. The bottom one is 50 basis points better, the bottom one is the blue one on the bottom. Gerard Cruz: Oh gotcha this is portfolio A. David O'Brien: We should just all go on the Wilshire 5000. Gerard Cruz: I know. Maggie Ralbovsky: Too volatile. Okay, so then the B and C is on the next page. Then page 13, I did the risk return chart which is probably easier to understand. So on the top is the worst drawdown period, the chart I want to say the stress testing. Stress testing worse period is the 2 years between the August 2007 and March of 2009. Okay, so during this stress period the current portfolio did the best. You can see that did better than A, B and C. But A isn't much behind if you look at total returns it's at 3 percentage points we had. Okay the other 2 portfolio is a more risky and had worse down side and the 10 year however, if you look at the longer term including this stress period, but for the longer term that's on the bottom 10 year chart. Gerard Cruz: That's from 2000. Maggie Ralbovsky: 2003 to 2013. Gerard Cruz: Yeah. But you know okay, it's a little technical but we didn't we weren't fully implemented we weren't fully engaged. Maggie Ralbovsky: I know this is the current target, I didn't say it's the current portfolio, it's the current target. Gerard Cruz: I'm just making a point. Maggie Ralbovsky: Yeah I know, I know. Antolina Leon Guerrero: Because you're looking at you know if we're looking at a picture that doesn't really looks like that then it just sort of skews a little discussion. Maggie Ralbovsky: Well this is the current target. Gerard Cruz: No I understand. Maggie Ralbovsky: Right, I understand this is not your current portfolio actual return this is the current target portfolio, we're trying to evaluate the current target right, not what your actually have done. So you see that in the period of time that last 10 years the other 3 portfolio has done better in everyday although has higher risk. So my bottom line so this scale is very small. Bottom line is that I think A is a good is a good balance between the risk voidance and the return seeking.

James Duenas: So my question is, during the 5 steps, during each of the steps are the risk lower than. Maggie Ralbovsky: I have a chart for that. So lets. Gerard Cruz: Page 15? Maggie Ralbovsky: Page 15 is the 5 steps. Gerard Cruz: All right. Maggie Ralbovsky: Ok I believe the most important thing right now is to diversify the core fixed allocation because I do think interest rate environment is becoming hostile. Gerard Cruz: Oh the core fixed income allocation. Maggie Ralbovsky: Core fixed income allocation. Gerard Cruz: Gotcha. Understood. Maggie Ralbovsky: So that is number one. And you can see number one. David O'Brien: Oh number 1, there it is. Okay, got it. Gerard Cruz: Is to move into high yield. Maggie Ralbovsky: Is to move a portion into high yield from the core fixed. Gerard Cruz: So what's so that would entail taking dollar amount, how much? Maggie Ralbovsky: Taking 8%. Gerard Cruz: So taking 8% of the current fixed income allocation? Maggie Ralbovsky: 8% of the total fund. Gerard Cruz: Okay, 8% of the total fund which is I don't know, you're good at math. Maggie Ralbovsky: 120 million. Gerard Cruz: Okay and taking it from our existing bond managers and moving them into high yield.

Maggie Ralbovsky: To high yield. We needed to do one search of high yield, but I do think we should probably hire 2 high yield managers. Gerard Cruz: Active managers? Maggie Ralbovsky: Yeah definitely active and there's different flavors of high yield. I think we should have a core high yield and an opportunistic high yield, so 2 high yield managers. But there only needs one search. David O'Brien: Everything else would stay the same? Maggie Ralbovsky: For step one. Gerard Cruz: Everything I'm sorry, so one search for 2 different high yield manager types? David O'Brien: So step one also number one also go with core bonds because step one is number one includes going from 30 to 22 or whatever. Maggie Ralbovsky: Yes from 30 to 22, yes. So step one is to take 8% points out of core bonds and move into high yield but I believe we should do this as soon as possible. David O'Brien: And core high yield opportunistic high yield what's the difference? Maggie Ralbovsky: The difference between core high yield and opportunistic is that core high yield tend to stay in the corporate high yield ranked between triple C and double B. And only corporate securities. An opportunistic goes to bank loans which are now rated. So opportunistic managers goes above it goes away not just go into the corporate bond ranked between double B and triple C, they also go to bank loans which are syndicated loans that most of the time not rated.

Wilfred Leon Guerrero: You are using the word bank what? Maggie Ralbovsky: Bank loans. Gerard Cruz: Bank loans. So private loans from yeah that are not rated that are syndicated. Maggie Ralbovsky: Syndicated through the capital market. Gerard Cruz: Through the capital markets? Maggie Ralbovsky: Yeah, they are actually traded with brokers over the counter so their syndicated with. Wilfred Leon Guerrero: I don't have any problem with that step 1 I can tell you that right now. David O'Brien: Wait. What's the difference between risk? James Duenas: That's what I'm asking during step 1. What is the difference between. Gerard Cruz: If we just did that what would be the effect to the portfolio. Maggie Ralbovsky: 30 basis points better and risk on the next page is 20, 30 basis points worse. Gerard Cruz: 30 basis okay 30 basis points better in terms of expected return. Maggie Ralbovsky: And 30 basis points worse in terms of risk. Gerard

Cruz: Of volatility. Antolina Leon Guerrero: You mean 30%, 30 basis points more risk. Maggie Ralbovsky: More risk however risk can be on the up side. Antolina Leon Guerrero: Just asking, when you said worse. Maggie Ralbovsky: I actually believe risk can be on the upside because core bond risk is actually much worse. David O'Brien: She was saying remember yesterday, I think, she was saying that they expect or once they start looking into core bonds that the volatility in core bonds standard deviation is going way up and is going higher. Gerard Cruz: Oh it's going higher? Maggie Ralbovsky: Yeah core bond risk is going higher. Gerard Cruz: Oh core bond risk. Maggie Ralbovsky: Core bond volatility is going higher, it's more than the yield you're getting, this is the first time in history that happened so. David O'Brien: Go ahead. Maggie Ralbovsky: So the risk getting higher for the portfolio doesn't mean its bad risk right, the risk could be the up side risk. David O'Brien: And the other thing she said is, I think she said maybe it's one of the managers, was that in terms of going into high yield now because the interest rates are so low that the default levels on high yield are historical lows as well. So you got two things moving. Gerard Cruz: But as soon as it starts to go up then. Maggie Ralbovsky: It's already locked in for the next ten years. Gerard Cruz: Oh these are locked rates.

David O'Brien: But you just have I think the point I was trying to get from Maggie is, is it possible we'll get the better return with no change in risk given these other things? Maggie Ralbovsky: Well the risk calculation will increase but the risk can be on the upside, so with this standard deviation. David O'Brien: I don't know what that means. Gerard Cruz: It's not risk in terms of I mean we think of risk as losing money. She's using the definition versus volatility. Maggie Ralbovsky: So standard deviation doesn't take into consideration which side of the around the main so even it goes higher than what we expected, that's still considered risk. So standard deviation is not only on negative side. Antolina Leon Guerrero: Got it. James Duenas: With the risk that we're taking now, is like what 11 point something percent, if we move to step 1, what is the total percent? Gerard Cruz: 13 percentage points? James Duenas: What is the total percent not just the percent? Maggie Ralbovsky: 11.6, 11.6. Gerard Cruz: 30 basis points. Maggie Ralbovsky: 30 basis points. Gerard Cruz: I thought you said 30 okay I didn't hear basis I heard percentage. Maggie Ralbovsky: No it's 30 basis points. Antolina Leon Guerrero: Basis points. Gerard Cruz: Oh basis, okay. David O'Brien: Look on your chart, it goes from 11-3 to 11-6 and that's the portfolio risk right? Maggie Ralbovsky: That's total portfolio. Gerard Cruz: Okay 30 basis points. James Duenas: Okay, so when we go to step 2.

Maggie Ralbovsky: Okay, step 2, I put it here the reason I. David O'Brien: Wait, Fred wants to lock in step 1, I think. Wilfred Leon Guerrero: Let's just hold it there, the law hasn't passed yet. Gerard Cruz: You're coming back in January. Wilfred Leon Guerrero: We won't be able to work on even if you all agree on that because the law hasn't passed yet. Antolina Leon Guerrero: We could do subject to the enactment of the law. Gerard Cruz: Let's just go step 1. Maggie Ralbovsky: Lets go step 1. Gerard Cruz: That's a big one. Maggie Ralbovsky: Yeah I think step 1 is urgent we should do it. Antolina Leon Guerrero: And you think it's urgent because? Maggie Ralbovsky: Because I think the core fixed income is going to be a drag. Gerard Cruz: Oh yeah I think so too, there's no question it's just a matter of when. Antolina Leon Guerrero: Like the global REITs, I mean I don't know why we don't just do that now since you said global REITs includes you as REITs. Gerard Cruz: Yeah why not just make that change? Antolina Leon Guerrero: I mean why wait till. David O'Brien: Especially since she said yesterday that REITs are really financing vehicles anyways. Since you said didn't you say REITs were bond like. Maggie Ralbovsky: I do not like REITs at all. Antolina Leon Guerrero: Right and since we'll get our U.S. exposure by going to global. David O'Brien: So did I, until yesterday.

Gerard Cruz: They're going to be a good substitute for the GSC's I think at some point. Maggie Ralbovsky: That means if they are going to fire both of your managers and hire new managers. Antolina Leon Guerrero: Oh because neither of them does global. Maggie Ralbovsky: Yeah. Yeah. Gerard Cruz: Global and you don't need three, you don't need one specializing. David O'Brien: What is the advantage of going to global REITs again? Gerard Cruz: You should expand your universe. Maggie Ralbovsky: Yeah so REITs first of all has only 100 securities in the U.S. okay 100 securities and it's dominated by the top 5, 10. So the top 5 or 6 securities of the REIT universe is like 50% of the market cap. It's dominated by those and you hired two managers and talk about concentration, those two managers probably hold very similar securities because there's only so many to select from and their dominant top heavy. And REITs the goal if the goal is to gain exposure to real estate, you're not getting it because REITs just doesn't track risk. Gerard Cruz: Well we just wanted an alternative vehicle. Maggie Ralbovsky: An alternative for diversification. Gerard Cruz: Diversification. Maggie Ralbovsky: You are very concentrating in a small universe therefore global REITs is a much better choice in terms of diversification and I also do not believe REITs deserves a 10% allocation, it just doesn't. David O'Brien: So you're suggesting two things then, moving into global to get the diversification, moving out of REITs period because of the issue that is more bond like and it's really a financing vehicle on the wrong end of the high yield. Maggie Ralbovsky: I did recommend 5% allocation to Global REITs. David O'Brien: I saw that. But it's down to 10. 10 to U.S. down to 5 to global. And the issue is that in a rising with the yield curve the way it is. Maggie Ralbovsky: Right now it's priced at 4% cap rate for REITs. 4% you know when interest rate goes up, when that cap rate goes up. Gerard Cruz: It'll be worth less. Maggie Ralbovsky: Yeah, much worse. David O'Brien: I understand that part. Maggie Ralbovsky: That's why REITs was underperforming. David O'Brien: But that's going to affect global REITs as well right? Maggie Ralbovsky: Well global REITs you have different kind of drivers. Gerard Cruz: Drivers and the interest rate. Like Japan for example going in the other direction. Maggie Ralbovsky: That's right. Japan and Europe. Gerard Cruz: And Europe is going in the other direction. So U.S. interest rates may go up.

Maggie Ralbovsky: And also global is not entirely REITs. Some of these are countries don't have REIT laws, real estate companies, operating companies. Antolina Leon Guerrero: Not a financial it's really property. Maggie Ralbovsky: Yes like property company like in Hong Kong. Property companies are in the REIT universe. Gerard Cruz: In the Philippines they just passed that REIT law. The IALA group it owns all of the SM. David O'Brien: So we're going to own REITs in China is that what you're talking? Maggie Ralbovsky: No, real estate companies in Hong Kong. So I guess I'm agreeable to observation on step 1. The reason I did the way I did with that number is to think about how on the margin of diversification that can be added to the portfolio. That's why I didn't put REITs as number 1 because it already has exposure. So I do think if there's consensus we take high yield as step 1 and we could also include in the RFP for the. Gerard Cruz: You mean a separate RFP for the REITs, we have to have a separate. Maggie

Ralbovsky: Let me finish, as I was actually thinking of transition manager. Okay, let me think, transition manager.

Wilfred Leon Guerrero: That's one of the things I'm thinking of is if this thing gets out we're going to have everybody serving on some kind of search committee. Maggie Ralbovsky: We evaluated that and there fees were horrible twice as much as I'm sorry go ahead. Wilfred Leon Guerrero: You know one of the things that I'm thinking of is that we're all going to be serving in some kind of search committee. So I'm just saying hey let's take it slowly. Maggie Ralbovsky: Yeah let's do it slowly, one step at a time. Antolina Leon Guerrero: Why you want to do all the searches? Gerard Cruz: No. Antolina Leon Guerrero: Why don't we just have you guys just let investments do all the search? Gerard Cruz: No, one at a time baby steps. Maggie Ralbovsky: Okay one at a time. David O'Brien: Why, Gerry? Maggie Ralbovsky: Okay do you want to add to the REITs in the first one? Gerard Cruz: I think it's this is a big. David O'Brien: I'm only concerned because she got a number 5. Gerard Cruz: I don't mind doing the global REITs because I think that was just for, I mean this one is easy enough that it's not going to have. David O'Brien: But here's the thought, If one of our big exposures is to the fixed income market. Antolina Leon Guerrero: Right I think we should go with that too. David O'Brien: And if there's what seems to be smart consensus everywhere, this interest rate by the yield curves like a totem pole. You know what seems to me to be the case she made yesterday still makes sense which is the fixed income side, we already know it's suffering, what at least I found out yesterday is that REITs is closely tied to that same dynamic. Why wouldn't you if you're willing to move on that dynamic why wouldn't we throw REITs into the same step 1, that was my question.

Gerard Cruz: No I agree. Antolina Leon Guerrero: See we've been listening Maggie, we've been listening all along. Gerard Cruz: Maggie, it's just very logical because he agrees with you. Antolina Leon Guerrero: Well I like the fact that he says, what she said yesterday. Gerard Cruz: And he said it so eloquently. Antolina Leon Guerrero: Still holds true today I said hey, I hope it would hold true today. David O'Brien: Maggie's currency is at least one day. Gerard Cruz: One and five. One and this number 5, is fine I don't have a problem with that. But it's just going to get complicated on the U.S. equity side I don't want to move there yet. Wilfred Leon Guerrero: Why did you put 5 on priority is there a rationale for it? Gerard Cruz: We had fast track B. Maggie Ralbovsky: Yeah the rationale is to make the biggest band for the most marginal diversification, that was my thinking when I put the numbers on it. So when I put number 1, I think that's the biggest band. Gerard Cruz: No I think right no I don't think you have disagreement there, we need to do something about our fixed income. Maggie Ralbovsky: Right. So then the reason I didn't think well REITs I agreed to all the things you said, and I also agreed to all the things you said about REITs. Gerard Cruz: Alright, you'll be here long after us. David O'Brien: You know we weren't worried until just now. Maggie Ralbovsky: So the only reason I put as number 5 is because we already had that exposure, this is sort of a different kind of twist to that exposure. That's why I didn't think it was a very high priority but I can totally be persuaded to say hey you know that's easy enough to move forward that step. Now I do think in this RFP if we're going to do it we should also include the transition manager. David O'Brien: You're against this? You're against this? Paula Blas: No I'm not against this. Gerard Cruz: No. No you're right. It's just when you start to get into the equity side

U.S., non U.S. also it's a pain going through these evaluations and searches, it really takes its toll. Wilfred Leon Guerrero: Sometimes we never complete it.

David O'Brien: Why is it so painful? Gerard Cruz: Well there is a lot first of all and it's very complicated reading. David O'Brien: The reading is straight forward. Gerard Cruz: But there's like 20 managers you have to do it for. David O'Brien: Why don't we, why is, don't you filter the number of managers for us? Maggie Ralbovsky: We can do the whole thing for you. David O'Brien: No I don't mean that, can you not narrow it down to 3 or 2? Maggie Ralbovsky: Well here's what you can do you have to do publish RFP. Paula Blas: The proposals that come in are usually anywhere between 30 to 50. We send it to our consultant and they will go ahead and rate out the top. Antolina Leon Guerrero: They'll rank them. Maggie Ralbovsky: But the way to number of response is to set the minimum requirement high. So you don't get all these little shops. Gerard Cruz: No we do that too though but there's still a lot of big ones. Paula Blas: Now that the laws changed in terms of the requirements, investment dollars and all that. David O'Brien: We've been through a lot of interviews right, you guys have certainly have and I have on my side. And the interviews tend to be marked mixed you know I mean they it's kind of like listening to David from Robeco yesterday you know, how many times have you heard about the valuation process from a valuation manager. Well it's all the same. You don't need to do that so you know.

Antolina Leon Guerrero: It was for you because you weren't here last quarter last year. David O'Brien: The only one was Intech that I didn't quite understand what their process was. But the value guys you know every value guy you talk to, they might as well record it and just play it. Wilfred Leon Guerrero: Guess what you probably chair the first. Gerard Cruz: You're chair number 5 or 4. David O'Brien: It's not possible then for Wilshire to narrow it down? Gerard Cruz: Oh they do, they will. Paula Blas: They just can't rate them they can narrow it down and give us. Gerard Cruz: To those that meet the screen and from there. David O'Brien: They can't, they cannot give us. Gerard Cruz: 1 through 5, 1, 2, 3, 4, 5. David O'Brien: Forget rank they can just put it in tiers, they can put it in tiers right. So if we define each tier as 3, we could ask them for the top tier the top 2 tiers, whatever. Wilfred Leon Guerrero: Usually see the choices like strategy and sometimes we don't understand their strategy. David O'Brien: Talking to Maggie is better than talking to 18. Wilfred Leon Guerrero: No, no, no when you're going through the decision. David O'Brien: No you can interview them you're interviewing two, right. Paula Blas: No, sometimes it depends on the tier. Gerard Cruz: Sometimes there things are so close. Wilfred Leon Guerrero: Usually it's like trying to determine their giving you strategies okay and you're trying to figure out how this strategy works because that's what the decision usually comes to. Gerard Cruz: And then beyond that you have to think about if you hire this manager and you're hiring 2 managers for similar mandate. David O'Brien: I understand that. Gerard Cruz: So, it's just.

Antolina Leon Guerrero: It's not our favorite thing. David O'Brien: You guys go through managers like water too so you know I mean you make a mistake, their out. You guys are quick though. Maggie Ralbovsky: No, I don't think so. It takes a long time. Antolina Leon Guerrero: No we give them almost 3 years. Gerard Cruz: It takes at least 5 meetings first to make a decision. Paula Blas: They don't get terminated. Antolina Leon Guerrero: We monitor for 2 years it's not until almost 2 and 3 years that we let them. Gerard Cruz: I think the last one we let go is. Paula Blas: Aberdeen. Gerard Cruz: No. Metwest. Antolina Leon Guerrero: But before them was. David O'Brien: You know to me the only reason I say that and I'm not even on this committee. Is the only reason why I say it is just 2 words, 3 words, high yield curve. Gerard Cruz: No on the high yield stuff, yeah no we need to move on that I agree. David O'Brien: And the REITs. Gerard Cruz: And the REITs.

Maggie Ralbovsky: As soon as the governor signs the bill we're going to send out the RFP's. Gerard Cruz: No as soon as the governor signs the bill then we have to redo our IPS and agree on a strategic allocation. Maggie Ralbovsky: Oh then, oh I see. Gerard Cruz: Because we can't I mean what are we hiring a high yield, it's not even on our IPS. Maggie Ralbovsky: So. Gerard Cruz: So you ought to start working on the changes on the IPS. Maggie Ralbovsky: The IPS, okay. David O'Brien: You got it by the ball? Maggie Ralbovsky: Yes. David O'Brien: Oh she does. Antolina Leon Guerrero: Based on what though? Gerard Cruz: Yeah, it's going to have to be based on what? Maggie Ralbovsky: What do you mean based on what? Gerard Cruz: We're going to have to agree to this target allocation. Maggie Ralbovsky: So yeah we're going to take a percentage out of the core bonds and fund the high yield. Gerard Cruz: No we have to agree to the target allocation. Maggie Ralbovsky: Right, so we're just going to take the first and the number 5. Gerard Cruz: No but what I'm saying is that those are logistics, we have to agree to strategy first. Antolina Leon Guerrero: The execution can be in steps but you still have to agree on the allocation. Maggie Ralbovsky: I thought the IPS you can also go steps, you cannot? Gerard Cruz: No we can. But right now our IPS says that we're going to have 60-40 bonds equity. Antolina Leon Guerrero: I mean if we agree to portfolio A, and the allocation then. Maggie Ralbovsky: It's easy enough to change when we agree to the next step right because I think if we get all this approved, it will take us forever I have prepared for age discussions for this to happen. Gerard Cruz: I know but we'll travel faster. David O'Brien: You guys mustered the same thing because your IPS in the asset allocation looks like ours, in step 1. Wilfred Leon Guerrero: How come you keep saying you guys? David O'Brien: Oh sorry that's right. I mean you guys the investment committee. Gerard Cruz: Yeah, you are you guys.

Maggie Ralbovsky: That is okay. Because looks like there's consensus for the first for the first two changes. Antolina Leon Guerrero: I think you might have consensus for more than that and the implementation of the different steps is what we can do over time. Gerard Cruz: Yeah we need to agree on strategic allocation which. Antolina Leon Guerrero: I think you have support for this portfolio A and its reallocation. Maggie Ralbovsky: I see so it is the implementation that you do not have to define in the IPS. Gerard Cruz: That's correct, that's correct. David O'Brien: Ask questions, investment committee. Gerry your IPS right now doesn't have several of these asset classes or strategies in it, that's the main problem right because what we need to do is add. Wilfred Leon Guerrero: Go by the law. David O'Brien: That's right is put it in the IPS through the Board but you could set your range from zero to whatever you know matching this and then this strategic allocation could reflect Maggie's steps, so in other words put the asset classes in assuming we buy into her approach and then when we like the IPS just put in the step one stuff at a strategic allocation and then when the investment committee's ready for step 2, we just go back and we just bring back a change in the strategic allocation rather than a change in asset class. Gerard Cruz: Yeah you can do it that way, that's fine or you can. David O'Brien: Then she can run her optimizer based on. Gerard Cruz: Or you can just the other way to do it is to agree to portfolio A, and then as an addendum have the different steps, so you can change the addendum without changing the entire IPS.

David O'Brien: That's and idea I like that. James Duenas: The question that I have, as we're taking the steps we're increasing the risk at what step is our highest risk? What is the highest risk and when does it start going down? Maggie Ralbovsky: Well I guess I don't have the answer to that question, the more different the implementation the more different the class you introduce the more reduction of risk there is. So if you just switch from one equity manager to another you're probably not going to achieve any reduction risk. But if you are going to go from a public market investment to an alternative basket investment that's going to have a risk. James Duenas: That's what I mean you looked at. Gerard Cruz: But you're going to be able to before we move forward tactically right you're going to be able to say okay now we are at step number 2, the impact of going into step number 2 in terms of return in risk is this. Antolina Leon Guerrero: It's going to be like what you have on page 16. Maggie Ralbovsky: Yes, that's right. Gerard Cruz: Because then at that point will determine whether or not we agree to go to the full 5% allocation or whether we peel it back.

David O'Brien: So my question is which it answers James' I think is you already have step, conversations 2 through 8 already plotted out? On powerpoint? Maggie Ralbovsky: I can do that very easily. David O'Brien: Yeah because if she did that then we get this graph for each step. Antolina Leon Guerrero: For each step right. Maggie Ralbovsky: I will do that. David O'Brien: And then we know if it's a good idea. Maggie Ralbovsky: Yeah I probably have it on my computer. James Duenas: If the transition between each step causes us to go up to 15, 20% risk before we start going back. David O'Brien: But it should go the other way because you know we take on some riskier assets but the correlations will be lower and therefore the overall portfolio risk should. Antolina Leon Guerrero: Be less. David O'Brien: Be less by you know. James Duenas: That's what I wanted to see because if you do certain steps at certain periods of time you could actually de-risk instead of increasing the risk. Maggie Ralbovsky: I'll get that for you tomorrow, I actually have that in my computer I just need to produce it. Gerard Cruz: Awesome.

David O'Brien: You got through 4 conversations. Gerard Cruz: I know, good job Maggie. David O'Brien: Excellent job Maggie. Wilfred Leon Guerrero: Before that guy leaves let's make what's going to be our. Maggie Ralbovsky: Can we say conditional on the governors. David O'Brien: Well we can mark up a draft if anything is fine.

Diana Bernardo: Do you want to go into regular committee meeting? Wilfred Leon Guerrero: Yeah, what are we going to recommend? So what are we going to recommend? Gerard Cruz: We are going to recommend the adoption of portfolio A. Wilfred Leon Guerrero: No let's start from the other stuff. Gerard Cruz: And then yeah we need to well, before we even do this we need to make sure that the law is passed, right? Antolina Leon Guerrero: Well right, upon the enactment of the law. Paula Blas: Preface it by that. Antolina Leon Guerrero: We've done that before. Wilfred Leon Guerrero: Okay.

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| **Respectfully submitted,** | **Affirmed:** |
| **Angelina Castro/Marilyn Aguon**<br>**Recording Secretary** | **WILFRED P. LEON GUERRERO, Ed.D.**<br>**Investment Committee Chairman** |