CITY OF PHILADELPHIA SINKING FUNDS COMMISSION Wednesday, March 13, 2019

_ _ _

LOCATION: Two Penn Center Plaza

16th Floor

Philadelphia, Pennsylvania

REPORTED BY: Amy Marzario,

Court Reporter

PRESENT: DONN SCOTT, CHAIRMAN

CHRISTOPHER DIFUSCO

ALEX GOLDSMITH REBECCA RHYNHART

KELLAN WHITE RASHEIA JOHNSON

STREHLOW & ASSOCIATES
PHONE: (215) 504-4622

FAX: (215) 504-7155

COURT REPORTERS - VIDEOGRAPHERS

54 FRIENDS LANE, SUITE 116

NEWTOWN, PENNSYLVANIA 18940

 ${\tt WWW.STREHLOWCOURTREPORTING.COM}$

- 1 MR. SCOTT: Good morning,
- 2 everyone. I'd like to call this meeting of
- 3 the Sinking Funds Commission to order.
- 4 The first order of business is the
- 5 approval of the minutes from January 16th.
- 6 Is there a motion?
- 7 MS. JOHNSON: I make a
- 8 motion.
- 9 MR. SCOTT: A motion has been
- 10 made. Is there a second?
- MR. WHITE: Second.
- 12 MR. SCOTT: A motion has been
- 13 made and properly seconded. All those in
- 14 favor?
- MR. WHITE: Aye.
- MR. SCOTT: The next item on
- 17 the agenda is review and selection of
- 18 passive small cap. And, Christopher, I'm
- 19 going to turn that over to you.
- MR. DIFUSCO: Thank you,
- 21 Mr. Scott. So you recall our Commission
- 22 previously hired Copeland to replace the two
- 23 active managers -- small cap managers we
- 24 have in the lineup that contracts the work

- 1 being worked on. That contract's paperwork
- 2 is being worked on now. We'd like to pair
- 3 them as the Commission previously had with a
- 4 small cap index manager so an RFP was put
- 5 out recently for that.
- 6 We got three responses to that RFP:
- 7 BNY Mellon, Drumline, and Piedmont. We
- 8 liked Piedmont's response for various
- 9 reasons, mainly their length of track record
- 10 was not a qualifying response. Given our
- 11 previous and our current relationship with
- 12 Drumline, they've done a nice job. Fees are
- 13 extremely low and they were the lowest fee
- 14 for the year at about two and a half basis
- 15 points. We're recommending that the
- 16 Commission hire them for the index slot.
- 17 As Alex notes and marked in their
- 18 memo, they are 100 percent employee owned.
- 19 Their minority or female ownership is over
- 20 50 percent. They also comprise over 55
- 21 percent of the employees -- the firm's
- 22 employee base and they've done a very nice
- job as you've seen in the numbers I sent
- 24 around. I recorded it on the brokerage

March 13, 2019 Page 4 1 reports. They're always very, very high, well over the diversity in local brokers. 2 3 So we'd like to recommend that they be 4 required for the S&P 600 small caps loan, in that slot. 5 6 MR. SCOTT: Is there a 7 recommendation? I guess you made the recommendation? 8 9 MR. DIFUSCO: I did. MR. SCOTT: All in favor of 10 that recommendation, please say aye. Now, 11 12 let's get it over with. There's a motion 13 that we accept the recommendation made by 14 Christopher. Is there a second? 15 MS. RHYNHART: I second it. MR. SCOTT: All those in 16 17 favor? 18 MS. JOHNSON: Aye. 19 MS. RHYNHART: Aye. 20 MR. SCOTT: All right. Thank 21 you for that, Christopher. The next item is 22 asset allocation renew and update.

MR. DIFUSCO: So I'm going to

let Alex do most of the heavy lifting here.

23

24

- 1 But just by way of introduction, the purpose
- of this, you know, is for a broad background
- 3 discussion on where the plan sits now in
- 4 terms of asset allocation. You know,
- 5 thoughts over the next five, you know, ten
- 6 years and beyond where, you know, where
- 7 invested returns, you know, maybe take us
- 8 according to the experts and some thoughts
- 9 on, you know, things that we might consider
- 10 as a Commission and as a staff in terms of
- 11 all their asset classes and things of that
- 12 nature.
- We're not asking for any action to
- 14 be taken today. This is designed to be a
- 15 high level review to let folks, you know,
- 16 ask questions, you know, review the
- 17 material, and take the discussion kind of
- 18 wherever, you know, folks would like to see
- 19 it go. So with that, I'll let Alex start.
- MR. GOLDSMITH: Thanks,
- 21 Chris. So, yeah, this is the third tab of
- 22 the folder, you know, asset allocation and
- 23 presentation. You know, this is something
- 24 that, you know, we at PFM typically review

- 1 for our clients on an annual basis and, you
- 2 know, recommend that it's reviewed by the
- 3 Board of Trustees or their pension trustees,
- 4 you know, typically every two years or three
- 5 years.
- 6 It's designed to inform the
- 7 strategic asset allocation of your plan.
- 8 The strategic asset allocation being, you
- 9 know, the targeted allocation to each asset
- 10 class that is codified in the investment
- 11 policy statement and what the benchmark for
- 12 the plan is based off of. So, you know,
- 13 right now, your asset allocation is 65
- 14 equities, 35 fixed income.
- 15 And, you know, again, while that
- 16 may change day to day or month to month or
- 17 quarter to quarter based on our
- 18 recommendations, overweights to
- 19 underweights, those are more tactical in
- 20 nature and those short-term changes are not
- 21 reflected in, again, the IPS or the
- 22 benchmark which are typically long term and
- 23 typically static.
- 24 Things that would require the

- 1 strategic asset allocation to change would
- 2 be, you know, major shifts in the capital
- 3 market that cause, you know, significant
- 4 change with respect to returns for asset
- 5 classes over the long period of time. We're
- 6 talking beyond 30 years. So, you know, I'm
- 7 thinking it's a structural shift that might
- 8 lead us to expect the GDP will be much lower
- 9 or much less than expected for many, many
- 10 years to come.
- 11 And so that's what I'm talking
- 12 about when I say strategic. If you want to
- 13 -- you know, how we do this is if we run a
- 14 Monte Carlo simulation which is an optimized
- 15 simulation using a variety of inputs, in
- 16 this case, the inputs are the expected
- 17 return, the expected volatility, and then
- 18 correlations between asset classes.
- 19 So if you flip to page 3 of this
- 20 presentation, you can see the first of these
- 21 inputs. These are PFM's capital market
- 22 assumptions and we compile these on an
- 23 annual basis. Our investment committee, our
- 24 chief strategist, and our research director

- 1 supported by the research team is the group
- 2 that comes up with these. They're entirely
- 3 internal. We don't buy anyone's capital
- 4 markets assumptions. We don't take other
- 5 firms into account.
- 6 They're based on our, you know,
- 7 views of the market and our data. You can
- 8 see there are two sets here, intermediate on
- 9 the left side and then long term. As it
- 10 says, the intermediate are the expected
- 11 returns over the next expected annualized
- 12 returns over the next five years. You know,
- 13 more of a short-term market cycle.
- 14 These are typical numbers that we
- 15 would not use to inform long-term investment
- 16 policy type decisions. On the other side,
- 17 you have the long-term projections. You
- 18 know, there's no data figure here. You can
- 19 think of these as in perpetuity or really,
- 20 you know, beyond 30 years. And the reason
- 21 why we take that term is because the
- 22 approach that we go into creating these
- 23 long-term assumptions is one that, you know,
- 24 typically does not use cyclical type data,

- 1 more near team data.
- 2 You know, it's really a building
- 3 lock approach that takes into account
- 4 long-term fundamental factors, primarily GDP
- 5 growth. And so how do we factor GDP growth?
- 6 We're using things like population growth
- 7 and productivity growth and long-term
- 8 inflation numbers. And so these are things
- 9 that are far less cyclical over a long
- 10 period of time.
- 11 And also that that more than
- 12 30-year figure lines up with the duration of
- 13 benefits for a typical pension plan which,
- 14 you know, is fairly viewed at 30 years and
- 15 beyond, particularly so when there's
- 16 survivorship benefits at play, et cetera.
- 17 And so these are the inputs. You can see
- 18 predominantly they are lower over the
- 19 intermediate term than over the long term
- 20 and that's based on a number of things.
- 21 For equities primarily, the
- 22 intermediate term assumptions do take into
- 23 account current market conditions, primarily
- 24 valuations. And even with the volatility

- 1 we've seen in the market recently,
- 2 valuations are higher than their long-term
- 3 averages. And so, again, based on, you
- 4 know, that expectation, you know, if we were
- 5 to extrapolate what valuations are five
- 6 years down the road, we expect them, again,
- 7 on a mean reversion figure, to be slightly
- 8 lower than where they are now.
- And so in order to get there, the
- 10 price of equities would have to return lower
- 11 than what is expected in over long periods
- 12 of time. So that's why I think the
- 13 intermediate numbers for equities are
- 14 typically lower. For fixed income, for the
- 15 long term, you know, we look at mostly --
- 16 for the intermediate term, we look at the
- 17 nominal coupon yield of the fixed income
- 18 security assuming the whole to maturity and
- 19 then to apply the effects of interest rate
- 20 movements over the five-year period.
- 21 So movements in the yield curve,
- 22 you know, actions of the Fed. And so then
- 23 we adjust those numbers up or down. So, for
- 24 example, core fixed income taking a nominal

- 1 yield of, you know, 5% or so and then
- 2 lowering that because our expectation is
- 3 that interest rates over the next five
- 4 years, regardless of what may happen this
- 5 year in 2019, there's a lot of uncertainty
- 6 about the Fed.
- 7 But we believe that over five
- 8 years, you know, interest rates will rise so
- 9 that would weigh on the returns for fixed
- 10 income. So that's why they're typically
- 11 lower of the intermediate than versus the
- 12 long. If you flip the page, you can see the
- 13 next set of inputs. So it's not just we're
- 14 running the Monte Carlo situation. We're
- 15 typically running 10,000 simulations. It's
- 16 a bell curve distribution and the median is
- 17 looked at.
- But, you know, it's not done. It's
- 19 just, you know, we'll take equity returns
- 20 and then their volatility. And sort of one
- 21 simulation of equity returns might generate
- 22 25% annualized. And then fixed income will
- 23 generate their return and their volatility
- 24 independently so you can have equity returns

- 1 that are very low and fixed income returns
- 2 that are also very high.
- Those are, you know, maybe both is
- 4 the 75th percentile equity output but a 98th
- 5 percentile fixed income output. You know,
- 6 this is an extremely rare event. That
- 7 doesn't happen in these simulations because
- 8 we include the correlation. So the
- 9 correlations are also a factor and that's
- 10 important because, you know, they inform how
- 11 specific asset classes move in relation to
- 12 one another.
- 13 And I use the fixed income equity
- 14 example there because they, you know,
- 15 typically -- while the economy is good they
- 16 both might appreciate, but appreciate in
- 17 equities might be significantly higher. Or
- in periods like we saw last quarter when the
- 19 equity market was off sharply, the negative
- 20 correlation between equities and fixed
- 21 income comes into play. And so that's why
- 22 we include correlations.
- For example, there's a high yield
- 24 -- a high correlation between high yield and

- 1 equities, you know, which are data shown
- 2 over time. That helped draw in the last
- 3 quarter. So it's not just that, you know,
- 4 in Monte Carlo where we -- the asset classes
- 5 can just do what they want. This is
- 6 designed to operate like the markets would
- 7 so the interplay between asset classes, you
- 8 know, is a factor.
- 9 So we ran a number of scenarios in
- 10 this. On page 6, you can see, you know, the
- 11 top of this chart, you know, the broad
- 12 allocations. So equity, fixed income cap,
- 13 and the suballocations within those. And
- 14 then the portfolio is moving across from
- 15 left to right. You know, the current --
- 16 there are your current targets reflected in
- 17 the investment policy statement. And
- 18 there's 5% higher and 5% lower equity.
- 19 Typically, the major weight of the
- 20 dial up or dial down risk and expected
- 21 return in the portfolio is to adjust the
- 22 equity of fixed ratio. And so that's why we
- 23 chose those names. And as you can
- 24 understand, it's increasing equity in these

- 1 kinds of fixed or decreasing equity at the
- 2 expense of fixed.
- 3 MS. RHYNHART: Did you run
- 4 the Monte Carlo -- I see the sufficient fund
- 5 here on the intermediate. Do you have that
- 6 on the long -- on the 10 year or 20 year?
- 7 MR. GOLDSMITH: So the
- 8 official frontier is not on a time horizon.
- 9 It's surveyed point and time output. These
- 10 --
- MS. RHYNHART: Well, I was
- 12 thinking you're using the expected return
- 13 assumptions based on --
- 14 MR. GOLDSMITH: These are the
- 15 intermediate assumptions.
- MS. RHYNHART: So that's
- 17 five-year, right?
- 18 MR. GOLDSMITH: It's using
- 19 the five-year assumptions, yes.
- 20 MS. RHYNHART: Right. So I
- 21 guess when we're -- when you're setting the
- 22 assumed rate of return at 7.3% for this fund
- 23 -- 'cause it's 7.3% currently, right?
- MR. GOLDSMITH: Yes.

1 MS. RHYNHART: So this is 2 saying that in five years, we only have a 35% chance of actually hitting our rate of 3 4 return. On page 6, it's saying that? 5 MR. GOLDSMITH: Yes. 6 MS. RHYNHART: And that long 7 term over 30 years, we only have a 44.7% 8 chance of hitting our expected rate of 9 return? 10 MR. GOLDSMITH: Yes. 11 MS. RHYNHART: So my question 12 is through this efficient frontier process through the Monte Carlo simulation, if 13 you're looking on average -- I mean, I would 14 think it would be 10 to 20 years but if it's 15 -- in your opinion, based on the Monte Carlo 16 simulations you run, what would be -- what 17 18 should be the assumed rate of return that would be most reasonable that we should 19 20 expect to see? 21 MR. GOLDSMITH: Okay. You 22 know, so I can speak to this but we at PFM 23 don't set the return --24 MS. RHYNHART: I just wanted

- 1 your opinion.
- 2 MR. GOLDSMITH: There's a
- 3 number of factors. I think the return goes
- 4 intangent with what the allocations could
- 5 be. So there's a number of other
- 6 allocations that we show on here that can
- 7 get you towards that 7.3% return without
- 8 significantly increasing, you know,
- 9 equities.
- 10 It's by inviting additional asset
- 11 classes, primarily alternatives that help
- 12 diversify the portfolio and can increase
- 13 returns without markedly increasing
- 14 volatility. And so I don't -- we don't feel
- 15 that 7.3% is unachievable taking into
- 16 account some of those portfolio alternatives
- 17 that we're going to talk about.
- MS. RHYNHART: Is that what
- 19 you're going to be recommending?
- MR. GOLDSMITH: I'm not sure
- 21 we're necessarily recommending anything.
- 22 You know, as Chris said, this is for
- 23 consideration and discussion.
- MS. RHYNHART: Okay.

- 1 MR. GOLDSMITH: You know,
- 2 obviously, the actual data should be taken
- 3 into account when that figure is set.
- 4 There's also, you know, adjusting the
- 5 discount rate is a decision that doesn't
- 6 just affect, you know, this --
- 7 MS. RHYNHART: Oh, I know.
- 8 MR. GOLDSMITH: -- point. It
- 9 has the ability -- it affects the portfolio
- 10 recommendations.
- MS. RHYNHART: I know.
- MR. GOLDSMITH: So, you know,
- 13 I can make recommendations based purely on
- 14 my knowledge of the plan but there's no
- 15 ability to meet those other liabilities.
- 16 It's things I can't do.
- MS. RHYNHART: Right. I
- 18 think the question is, and there's been a
- 19 lot of discussion around this topic outside
- 20 of this plan, but, you know, that if a
- 21 pension plan is setting assumed rate of
- 22 return too optimistically, it's a false
- 23 sense of security for them and for the union
- 24 members as well that are trying to depend on

- 1 the plan.
- 2 So that is my question of if we
- 3 kept the current asset allocation, is this
- 4 efficient frontier on page 7 saying that
- 5 really that what we should be assuming is
- 6 over around 6%, 6.4? Is that what it's
- 7 saying?
- 8 MR. GOLDSMITH: 6.4 for --
- 9 MS. RHYNHART: I'm just
- 10 looking at -- reading your efficient
- 11 frontier, page 7. PGW current. Isn't the
- 12 access --
- MR. GOLDSMITH: The long term
- 14 expected return for the current plan is 7%
- 15 annualized over the long period of time.
- MS. RHYNHART: But that's not
- 17 this chart.
- 18 MR. GOLDSMITH: This is the
- 19 intermediate efficient frontier you're
- 20 looking at. The long term efficient
- 21 frontier would be found on page 10.
- MS. RHYNHART: Oh, okay.
- MR. GOLDSMITH: And so you
- 24 can see where the current falls in there.

- 1 Now, that's an arithmetic figure, you know.
- 2 What's shown on the chart is geometric.
- 3 Geometric returns are what, you know,
- 4 applies to annualized long-term figures. So
- 5 it's not going to, you know, show higher
- 6 than 7.0 if you were to draw the line on
- 7 that chart. But, again, it's arithmetic
- 8 versus geometric.
- 9 You know, it's a 44% chance over
- 10 the long term. That's not above 50 percent.
- 11 I think, you know, 7 -- and we'll get to it
- 12 in a second here. I think 7.3% is
- 13 reasonable given if we allow this plan to
- 14 make some changes and allow for some asset
- 15 classes that aren't currently allowed within
- 16 the effects of the policy statement. You
- 17 know, again, primarily alternative asset
- 18 classes.
- 19 You know, there's been -- since
- 20 we've been here at PFM, you know, fees in
- 21 this plan have come down significantly and
- 22 so I think that there is the ability to sort
- 23 of add some active more expensive
- 24 alternative managers. If you consider doing

- 1 a fee budget, you know, we've reduced that
- 2 fee budget that traditional asset classes
- 3 are using for indexing and utilizing
- 4 managers with attractive fee proposals in
- 5 the active side.
- 6 You know, the alternative space,
- 7 things like real estate and private equity,
- 8 they do typically charge higher fees. But,
- 9 you know, as you can see, it's small
- 10 allocation. You know, we feel there's room
- 11 to take on some of that increased fee for
- 12 the, you know, for the benefit of increasing
- 13 the chance of making that discount rate.
- MS. RHYNHART: Okay.
- MR. GOLDSMITH: So, you know,
- 16 for illustrative purposes, that's what's
- 17 shown on page 6. You know, we can dial up
- 18 equity or dial down equity in trying to make
- 19 that return, but what that does is, you
- 20 know, pretty significantly increases the
- 21 volatility or decreases the volatility.
- 22 It's standard deviation only. And that's
- 23 going into the volatility of equities we've
- 24 seen over the last quarter.

- 1 And, you know, getting back to the
- 2 alternative proposal, if you want to flip
- 3 ahead to page 14, for example -- well, not
- 4 for example but to look at, you can see here
- 5 the current -- you know, the same allocation
- 6 we had earlier on the far left. But then
- 7 there's, you know, that allocation with 5%
- 8 to alternatives, 10% to alternatives, 15,
- 9 and 20%.
- 10 And you see here the impact, you
- 11 know, on the expected return and the risk of
- 12 the portfolio, both on the intermediate term
- 13 and the long term adding to alternatives,
- 14 essentially adding diversity; diversified
- 15 asset classes. It not only increases the
- 16 expected return but also does so while not
- 17 increasing volatility but lowering
- 18 volatility.
- MS. RHYNHART: That seems
- 20 counterintuitive that it wouldn't increase
- 21 the standard deviation with it increasing
- 22 alternatives.
- MR. GOLDSMITH: It seems
- 24 intuitive?

1 MS. RHYNHART: It seems counterintuitive. You would think that with 2 alternative investments that the volatility 3 4 would rise. MR. GOLDSMITH: It does seem counterintuitive. It's almost entirely 6 related to diversification and the fact that 8 different asset classes perform very 9 differently -- well, differently in different markets. And alternatives 10 typically have, you know, private equity 11 12 might correlate to the equity market somewhat but they will not perform exactly 13 the same certainly in real estate, certainly 14 in private debt, things like infrastructure 15 and timber. 16 And so when you add more asset 17 18 classes, assuming that you're rebalancing 19 back to your targets on a fairly relative basis, you know, let's say one asset class 20 21 overperforms while one underperforms, you go 22 back to targets and then different asset 23 classes outperform, it is the case that

adding more asset classes reduces

24

- 1 volatility. I'm not sure if I'm explaining
- 2 that in the best way.
- 3 MS. RHYNHART: So you're
- 4 saying the alternative investment by itself
- 5 has increased volatility but partner, the
- 6 correlation, is lower?
- 7 MR. GOLDSMITH: Yes. And if
- 8 you were to look at the total portfolio
- 9 level, it does reduce volatility. You know,
- 10 you can even do this by just taking domestic
- 11 equities and adding international equity.
- 12 If you look at the return of the S&P and
- then the volatility and then you're adding
- in, you know, taking -- doing 50/50 S&P,
- 15 50/50 international index, that portfolio
- 16 will be less volatile than either of those
- two indices combined simply because they're
- 18 moving in different directions at different
- 19 times.
- 20 And assuming that you are
- 21 rebalancing that, you're not letting one
- 22 investment appreciate, appreciate,
- 23 appreciate instead of depreciating.
- MS. RHYNHART: Okay.

1 MR. GOLDSMITH: And so I 2 I mean, I asked the same question 3 several years ago when I came. This doesn't 4 seem to make sense but it gets back to, you 5 know, one of the core tenants of a long-term 6 portfolio manager is diversification. So looking at the hard numbers, you know, adding in just a small amount of 8 9 alternatives, 5% over the long term, you 10 know, your expected return goes up to 7.2% and 48 or 49% chance of achieving the 7.3%. 11 12 Going up to 10% alternatives, you 13 know, which is not an unreasonable target by any means, many pension plans both that we 14 manage and we don't revise on or that, you 15 16 know, we have allocations to all, you know, above 5%, above 10%. And certainly within 17 18 that 5 to 10% range it's not unreasonable 19 for a plan like this which is highly liquid, very exposed to liquidity, you know. 20 21 wouldn't say liquidity but liquidity in the 22 markets and the volatility that goes along 23 with that. 24 But, again, also it has a fairly

- 1 low all-in cost. It's come down over the
- 2 last several years. And so, again, you
- 3 know, knowing that, sure, the discount rate
- 4 could be changed but that has other
- 5 challenges that go along with it. These
- 6 represent some alternatives to not change
- 7 the discount rate but increasing the chance
- 8 of missing that number and having unfunded,
- 9 you know, portions for down the road. So
- 10 you can see that there's the intermediate
- 11 CMAs, efficient frontier on 15 and on 18 is
- 12 the long term.
- 13 And you can kind of see how really
- 14 just adding asset classes moves the return
- 15 boxes up and even slightly to the left, you
- 16 know, left being lower standard deviation.
- 17 That's kind of the realm you want to be in.
- 18 You know, the floating bar charts here
- 19 throughout this exhibit, and it shows the
- 20 various cortiles, you can think of this as
- 21 sort of the stress testing element. You
- 22 know, the top box represents the top 25th
- 23 percentile of returns. The outsides to the
- 24 tail end, bottom similarly represent the

- 1 tail risk for the downside.
- 2 You know, those I think, you know,
- 3 it's interesting to see here that, you know,
- 4 adding alternatives really does not, you
- 5 know, expand the bottom box any lower than
- 6 it can. You know, due to printing, the
- 7 white boxes here should be ignored. It's,
- 8 you know, the lighter -- the bottom lighter
- 9 red-shaded box at the bottom is 25th
- 10 percent. And you can see that as
- 11 alternatives are added, you know,
- 12 theoretically, you know, having some risk
- 13 but we talked about correlation to
- 14 volatility.
- 15 You know, the bottom box, it
- 16 acually doesn't go any lower than what it
- 17 was for the PGW current allocation. And
- 18 actually, the whole box is on its own
- 19 shifted upwards. So in general, it's a more
- 20 efficient portfolio. You know, if you want
- 21 to flip back for a counterpoint to that to
- 22 page 11, so this is without alternatives
- 23 again.
- 24 And so, again, the current

- 1 portfolio on the left, you know, higher
- 2 equity in the middle, lower equity on the
- 3 right. For all these time periods, when
- 4 you, you know, go to a higher equity
- 5 portfolio, sure the top box, you know, goes
- 6 up but so does the bottom box. And so
- 7 you're adding the chance for higher risk but
- 8 also higher volatility, particularly so in,
- 9 you know, these tail risk periods of the
- 10 upside or the downside.
- 11 So, again, sort of the -- we're not
- 12 just -- in alternatives, we're not just
- 13 expanding the box but expanding it and sort
- 14 of moving the whole thing upwards. You
- 15 know, there are cash flows included in this
- 16 assumption. You can see those on page 20.
- 17 We're just assuming, you know, what we have
- 18 two million or so per month coming out.
- 19 You know, the difference in market
- 20 value between over 30 years between the
- 21 current portfolio and the 10% alternatives
- 22 portfolio is roughly, you know, 160 million
- 23 or so, you know, in real dollar terms. I
- 24 don't know what the liability growth would

- 1 be over here. That's a question for the
- 2 actuary.
- But ultimately, we do think 7.3% is
- 4 reasonable. We do think that adding some
- 5 alternatives in the 5 to 10% range is
- 6 reasonable that this plan, you know, could
- 7 take that on. So, again, this is designed
- 8 to facilitate some discussion. We've
- 9 already had a little bit. I don't know if
- 10 there are any other questions?
- 11 (No response).
- MR. DIFUSCO: And just to add
- 13 a little bit of color to Alex's -- and I
- 14 know Rebecca and maybe Kellan had asked
- 15 about this recently. To Alex's point about
- 16 the fees, they have come down fairly
- 17 substantially over the last five fiscal
- 18 years. So in fiscal year '14, we were
- 19 around 49.5 basis points. The most recent
- 20 complete fiscal year, we were down to 36
- 21 basis points and change. That represents
- over \$400,000 a year in fee savings.
- I would expect that to get a little
- 24 bit bigger in terms of fee savings based on

- 1 the fact that, you know, we'll have another
- 2 index manager that was just approved today,
- 3 and the fact that two international managers
- 4 that were recently approved, Curtis and
- 5 Acadia, they're cheaper than two of the
- 6 three mutual funds that we're getting ready
- 7 to exit the portfolio. So that should add,
- 8 you know, savings.
- 9 Copeland was the active small cap
- 10 manager, significantly cheaper than both of
- 11 the two small cap managers we currently have
- 12 in the lineup. So I would expect the fee
- 13 savings to grow even a little bit more from
- 14 where it is now once we have all that in
- 15 place.
- MS. RHYNHART: I think it's
- interesting that the modeling at 10%
- 18 alternatives gets to 7.3 with the same goal.
- 19 I mean, I find that interesting. I would be
- 20 interested to have Matt from my staff who's
- 21 right behind us and I have someone else on
- 22 staff in my policy and data group who did
- 23 the Monte Carlo simulation for the City's
- 24 main public pension plan.

- I would just like to have them take
- 2 a look at what you've done just to better
- 3 understand it 'cause I find it really
- 4 interesting that you're able to get to 7.3
- 5 with volatility only at 10.7. So I just --
- 6 that would be helpful, Chris, if that's okay
- 7 to do?
- 8 MR. DIFUSCO: Yes. And we
- 9 have no -- yeah, we've worked with them, as
- 10 you know, so that's not a problem. And,
- 11 again, we don't expect to see a decision to
- 12 be made today. I mean, next steps in my
- 13 mind would be taking a closer look, you
- 14 know, Alex and I and the IPS, just in terms
- of what would need to be amended if we went
- 16 down this road. There would clearly need to
- 17 be some changes.
- 18 And then what I think would also be
- 19 helpful at either the next meeting or the
- 20 meeting after depending on where we're at to
- 21 just talk about if we went down this road
- 22 what type of alternatives we would start
- 23 with, you know, what that would look like.
- 24 Would we start with real estate? Would we

- 1 start with private equity? Where do we
- 2 start? What would the cost look like? How
- 3 would we scale in?
- 4 You know, one of the challenges,
- 5 and I know Alex and I have talked about it,
- 6 is that with a smaller plan, sometimes your
- 7 options are more limited in terms of they
- 8 can become more expensive which I'm not in
- 9 favor of. So you can have a little -- you
- 10 don't have the economies of scale. One
- 11 option that we've talked about and it can be
- 12 tricky is in certain situations we could
- 13 potentially partner when it makes sense with
- 14 somebody that the large funds do to keep the
- 15 fees down.
- Now, that's tricky because we have
- 17 a much more robust private equity, right,
- 18 portfolio. With the big plan, we only have
- 19 one or two relationships here. We have to
- 20 be a little bit more concerned about diverse
- 21 -- just because it's a little bit more
- 22 tricky. And so I just want to make sure
- 23 that -- and I'm not saying any of you or me
- or Alex won't be, we just have to be

- 1 thoughtful and prudent about how we do that.
- 2 So I think in my mind, those would
- 3 be the next steps in terms of looking at the
- 4 IPS, you know, taking a look at any of the
- 5 additional research Alex does or that Matt
- 6 and Nick, you know, provide in terms of any
- 7 of the things they do, and then maybe just
- 8 talking about a discussion as to where we
- 9 think we would start on alternatives if we
- 10 went down that road.
- 11 MR. GOLDSMITH: On page 14,
- 12 this is kind of the most current 5, 10, 15,
- 13 20. That's generally along the lines. If
- 14 we were to scale in, we would scale in in
- 15 that order from 5 to 10, for example.
- 16 MR. DIFUSCO: I just mean
- 17 with regards to the order.
- MR. GOLDSMITH: Yeah. There
- 19 would be specifics and there is education on
- 20 the elements of the proposal.
- MS. RHYNHART: Sounds good.
- MR. DIFUSCO: Thank you.
- MR. SCOTT: All right. Next
- 24 on the agenda is investment performance

- 1 management.
- 2 MR. GOLDSMITH: So today I
- 3 think we'll cover -- on the last tab in the
- 4 book, in the folder, you can see the full
- 5 report for the quarter end, December 31st,
- 6 the fourth quarter. We covered performance
- 7 here in the January meeting so there's
- 8 really nothing new. I'm not going to go
- 9 through this. But, again, this does
- 10 include, you know, your full performance
- 11 report.
- 12 You know, page 2.5 shows the cash
- 13 flows over the quarter of the year and, you
- 14 know, contributions, distributions, fees,
- 15 and expenses, you know, investment return.
- 16 If actually, if you want, you can flip ahead
- 17 to page 2.5 in the lower left. So, you
- 18 know, on the box on the bottom is the full
- 19 year. You can see the market value as of
- 20 January 1st.
- 21 Last year, it was 543 million.
- 22 About 27 million, 26.5 million, came into
- 23 the plan, 51 million in distributions over
- 24 the full year. You know, fees and expenses

- 1 are now -- and then, you know, the
- 2 investment return which reflects negative
- 3 26.3 million reflects a minus 5.4 return for
- 4 the full year. And so that's, you know, how
- 5 you get that 543 to 491,000.
- 6 On page 2.6, the asset allocations,
- 7 this is where we were for most of the year.
- 8 You know, even more overweight to equities
- 9 typically around 2.9 to 3% underweight to
- 10 fixed income and then in line with
- 11 international equity. It's important to
- 12 take that at this time because that's really
- 13 the reason why the plan had outperformed for
- 14 most of the year and then underperformed in
- 15 the fourth quarter when the equities were
- 16 off sharply. It's also the reason
- 17 explaining why the plan has performed fairly
- 18 well year to date in 2019.
- 19 MS. RHYNHART: I'm sorry. On
- 20 this page 2.5, this is showing the cash
- 21 flow, right?
- MR. GOLDSMITH: Yes.
- MS. RHYNHART: Okay. So on
- 24 the bottom, one year. You have

- 1 contributions of 27 million, distributions
- 2 51.8, fees 1.6. I mean, so a common method
- 3 of looking at cash flow in a pension plan is
- 4 to take out the return on investment and
- 5 just look at contributions and
- 6 distributions. The fact that it's so
- 7 negative, are we comfortable with that
- 8 because it's close to fully funded?
- 9 MR. GOLDSMITH: So you're
- 10 talking about, let's say a net basis, you
- 11 know, 24, 25 million or so net outflows for
- 12 the plan for the full year. You know, I
- 13 think that's -- again, on a year when we're
- 14 achieving the right or getting close to it
- or over long periods of time, that is an
- 16 appropriate amount of distributions, again,
- 17 assuming you're making the rate of return.
- 18 This is a little -- Chris, maybe you know
- 19 better than I do.
- 20 This plan doesn't really receive
- 21 contributions in the traditional sense so
- 22 most of the money -- you know, when we look
- 23 at it, we look at about 24 million coming
- 24 out per year, like I said. And, again, if

- 1 you take that number on its own over long
- 2 periods of time, you know, we've shown it in
- 3 the asset allocation number, you know, your
- 4 market value in the median will grow, you
- 5 know, assuming you're making -- you're
- 6 getting close to making those assumptions.
- 7 MR. DIFUSCO: I would also
- 8 say I think that -- I know that's part of
- 9 the reason why when the finance director set
- 10 the rate at 7.3 a couple years ago, we also
- 11 made changes which required PGW to start
- 12 making greater contributions.
- MS. RHYNHART: Yes.
- MR. DIFUSCO: And Tom, the
- 15 actuary, gets mad because I always flip
- 16 this. It's the greater of the 20-year
- 17 closed or the 30-year open annualization and
- 18 I may have flipped the open and close. But
- 19 it's the greater of those two things so over
- 20 time requiring PGW contributing more to the
- 21 plan, more to the benefits should improve
- 22 cash flow and help to pay down the unfunded
- 23 piece more quickly. But that definitely was
- 24 part of the rationale when that change was

- 1 made in addition to lowering the rate down
- 2 about 30 or 35 basis points at the time.
- 3 MR. GOLDSMITH: And over the
- 4 last several years, the plan, even with
- 5 those outflows, have been cash flow
- 6 positive. You know, we have an update as of
- 7 March 8th. It's not quite back to the
- 8 market value where things were but, you
- 9 know, it's getting that close. And also
- 10 Medicare payments have continued to be made,
- 11 you know, over this period as well so we're
- 12 still -- we've made, what, 15 months of
- 13 active payments since January 1st last year.
- 14 So with 15 months of payments, a very
- 15 volatile quarter, you know, and close to
- 16 where things were.
- 17 The rest of this book contains a
- 18 lot of supplemental information. Let's see
- 19 here. You know, it included allocated, you
- 20 know, managers, et cetera. I'm not going to
- 21 go through all of that. It includes the
- 22 number of alerts that I think we sent out
- 23 and discussed in previous meetings; our
- 24 alert from October that addressed market

- 1 volatility at the time, our alert from
- 2 January 7th that addressed the market
- 3 volatility towards the end of that period,
- 4 and then, you know, a short version of our
- 5 capital markets assumptions.
- I have a long version that I'll
- 7 leave everyone with. But at the very end,
- 8 there's a green page. If you flip beyond
- 9 that, you can see the performance as of
- 10 January 31st. So this was not -- I can't
- 11 recall. I don't think we had this at the
- 12 January meeting. It was a little too early.
- 13 Back on January 31st, the market value of
- 14 the plan was back up to 520 million,
- 15 520,736,000, a one-month return of January
- of nearly 6% net of fees, outperforming the
- 17 benchmark on overweight to equities.
- 18 You'll see most of the active
- 19 managers working close to their benchmarks
- 20 or underperformance slightly with the
- 21 exception of fixed income. But, you know,
- 22 it was the allocation not overreacting to a
- 23 volatile quarter, not getting out of
- 24 equities but remaining slightly overweight

- 1 to equities that allowed that performance to
- 2 be the way it was. February performance
- 3 will be released by the end of the day
- 4 tomorrow or so.
- 5 It was a similar month in February.
- 6 The markets were up to similar amounts.
- 7 Outperformance was similar. And that trend
- 8 has generally continued into March. We've
- 9 seen a little bit more volatility but so
- 10 far, you know, most equity markets are flat
- 11 to up slightly here in March. You know,
- 12 again, I mentioned within equities, a lot of
- 13 the active managers were, you know, fairly
- 14 close to their benchmarks, you know, net of
- 15 fees.
- 16 The international managers, you
- 17 know, get close, a mixed bag, hopefully
- 18 rolling off variances soon when we have the
- 19 new international managers. But then on the
- 20 next page, page 2, the fixed income, you
- 21 know, this is one where the whole fixed
- 22 income segment outperformed the benchmark by
- 23 about half a percent. This one was largely
- 24 on active management so it's nice to see

- 1 that we're underweight to fixed income, you
- 2 know, not relativity out of that
- 3 less-performing asset class but also taking
- 4 advantage of active management, you know,
- 5 pretty much across the board.
- 6 There are some exceptions; Logan
- 7 Circle investment grade credit. There's a
- 8 slightly missed benchmark, 2.35 to 2.48, but
- 9 that 2.35 was still, you know, 1.3% part of
- 10 its aggregate which this whole set is trying
- 11 to beat. Logan Circle's credit is a credit
- 12 overweight that we've had in these plans
- 13 since last June when we were added.
- 14 Skyhard, we're at the bottom, 4.33, lacks
- 15 high-yield benchmark slightly but still the
- 16 decision to be in high yield when it's not
- in the benchmark.
- The benefit of this plan has
- 19 benefited most of last year. It detracted
- 20 during the fourth quarter both in investment
- 21 grade credit and high yield but that trend
- 22 has, you know, as much of the equity markets
- 23 flipped back here in 2019. So we expect,
- 24 you know, when February comes out, similar

- 1 performance. You can see what was handed
- 2 out as of March 8th.
- 3 The handout, the top left, market
- 4 value is 530.9 million. And, again, this is
- 5 after another month. I think you used it to
- 6 pay the benefits from cash, I believe. It's
- 7 also after the March benefits have been
- 8 paid.
- 9 MS. RHYNHART: Can you talk a
- 10 little bit about Von Nelson? So under small
- 11 cap on -- I'm looking at January 31st. I
- 12 mean, Von Nelson looks like they've
- 13 underperformed year to date one year and
- 14 three years. They also have one of the
- 15 highest fees at 100 basis points. Why don't
- 16 we get rid of them, I guess is the question?
- MR. DIFUSCO: They are.
- 18 Their contract is done.
- MS. RHYNHART: Oh, wonderful.
- 20 MR. DIFUSCO: And so is
- 21 Eagle. They'll be replaced by -- Von and
- 22 Eagle will be replaced by Drumline who you
- 23 hired today. And Copeland --
- MS. RHYNHART: Oh, perfect.

- 1 MR. GOLDSMITH: And that's
- 2 what Chris was saying too. If you're going
- 3 from 100% active management to 50% active
- 4 management --
- 5 MS. RHYNHART: Can we always
- 6 do this? So I ask when --
- 7 MR. WHITE: I think Chris is
- 8 just happy that you asked a question and he
- 9 can say yes.
- 10 MR. DIFUSCO: I think I say
- 11 yes a lot.
- MR. GOLDSMITH: And the same
- 13 thing is like, as we've said, it's underway
- 14 at international too. The contract is
- 15 pretty close there so they'll be, you know,
- 16 inactive in the effects and approach there
- if that's what we're -- fees will be
- 18 lowered.
- 19 You know, the Von Nelson, their
- 20 underperformance, you know, they were
- 21 actually doing, you know, fairly well for
- 22 most of the calendar year in '18 and then I
- 23 think it just suffered in the fourth
- 24 quarter. And they've had issues with

Page 43 utilizing the direct broker so, you know, 2 there's no --3 MS. RHYNHART: No positives? 4 MR. GOLDSMITH: No loss or 5 anything. 6 MS. RHYNHART: Okay. MR. DIFUSCO: So both of 7 8 those will be out once we have the contracts 9 done. 10 MS. RHYNHART: Okay, great. 11 MR. GOLDSMITH: So that's 12 the end of my comments. I think next time we'll probably take another look at the 13 mechanics of the investment portfolio and 14 maybe look at the IPS language and look at 15 some specifics of the individual alternative 16 asset classes that we would consider adding, 17 18 and then where they would be sourced from. 19 MR. SCOTT: All right. 20 Is there any new business for us to 21 consider this morning? 22 MR. DIFUSCO: No. Just the 23 next meeting is May 15th and then a reminder

that the July meeting got moved to the 11th.

24

		Page	44
1	I sent that out to everyone and to		
2	scheduling assistants but just so you know.		
3	It's on a Thursday on July 11th so those are		
4	the next two meetings. But I didn't have		
5	any other new business.		
6	MR. SCOTT: All right. Is		
7	there a motion for us to adjourn?		
8	MS. JOHNSON: Yes.		
9	MR. SCOTT: So moved. Thank		
10	you very much.		
11			
12	(This concludes the hearing		
13	at 10:50 a.m.)		
14			
15			
16			
17			
18			
19			
20			
21			
22			
23			
24			

	Page 45
1	CERTIFICATION
2	
3	I hereby certify that the
4	proceedings and evidence noted are contained
5	fully and accurately in the stenographic
6	notes taken by me upon the foregoing matter
7	dated March 13, 2019 and that this is a
8	correct transcript of the same.
9	
10	
11	Amy Marzario
12	Court Reporter - Notary Public
13	
14	(The foregoing certification of
15	this transcript does not apply to any
16	reproduction of the same by any means,
17	unless under the direct control and/or
18	supervision of the certifying reporter.)
19	
20	
21	
22	
23	
24	

							Page 1
A	aggregate	35:16	10:18 18:5	benefits 9:13	caps 4:4	Christopher	3:20
	40:10	amounts 39:6	22:18 23:20	9:16 36:21	Carlo 7:14	1:11 2:18	concerned
a.m 44:13	ago 24:3	Amy 1:8	27:17 35:17	41:6,7	11:14 13:4	4:14,21	31:20
ability 17:9	36:10	45:11	36:5	best 23:2	14:4 15:13	Circle 40:7	concludes
17:15 19:22		and/or 45:17	assumption	better 30:2	15:16 29:23	Circle's 40:11	44:12
able 30:4	agree 24:2						
Acadia 29:5	ahead 21:3	annual 6:1	27:16	35:19	case 7:16	CITY 1:1	conditions
accept 4:13	33:16	7:23	assumptions	beyond 5:6	22:23	City's 29:23	9:23
access 18:12	alert 37:24	annualizati	7:22 8:4,23	7:6 8:20	cash 27:15	class 6:10	consider 5:9
account 8:5	38:1	36:17	9:22 14:13	9:15 38:8	33:12 34:20	22:20 40:3	19:24 43:17
9:3,23	alerts 37:22	annualized	14:15,19	big 31:18	35:3 36:22	classes 5:11	43:21
16:16 17:3	Alex 1:11	8:11 11:22	36:6 38:5	bigger 28:24	37:5 41:6	7:5,18	consideration
accurately	3:17 4:24	18:15 19:4	attractive	bit 28:9,13,24	cause 7:3	12:11 13:4	16:23
45:5	5:19 30:14	anyone's 8:3	20:4	29:13 31:20	14:23 30:3	13:7 16:11	contained
achieving	31:5,24	applies 19:4	average	31:21 39:9	Center 1:5	19:15,18	45:4
24:11 35:14	32:5	apply 10:19	15:14	41:10	certain 31:12	20:2 21:15	contains
action 5:13	Alex's 28:13	45:15	averages 10:3	BNY 3:7	certainly	22:8,18,23	37:17
actions 10:22	28:15	appreciate	aye 2:15 4:11	board 6:3	22:14,14	22:24 25:14	continued
active 2:23	all-in 25:1	12:16,16	4:18,19	40:5	24:17	43:17	37:10 39:8
19:23 20:5	allocated	23:22,22,23		book 33:4	certification	clearly 30:16	contract
29:9 37:13	37:19	approach	B	37:17	45:14	clients 6:1	41:18 42:14
38:18 39:13	allocation	8:22 9:3	back 21:1	bottom 25:24	certify 45:3	close 35:8,14	contract's 3:1
39:24 40:4	4:22 5:4,22	42:16	22:19,22	26:5,8,9,15	certifying	36:6,18	contracts
42:3,3	6:7,8,9,13	appropriate	24:4 26:21	27:6 33:18	45:18	37:9,15	2:24 43:8
actual 17:2	7:1 18:3	35:16	37:7 38:13	34:24 40:14	cetera 9:16	38:19 39:14	contributing
actuary 28:2	20:10 21:5	approval 2:5	38:14 40:23	box 25:22	37:20	39:17 42:15	36:20
36:15	21:7 26:17	approved	background	26:5,9,15	CHAIRMAN	closed 36:17	contributions
acually 26:16	36:3 38:22	29:2,4	5:2	26:18 27:5	1:10	closer 30:13	33:14 35:1
add 19:23	allocations	arithmetic	bag 39:17	27:6,13	challenges	CMAs 25:11	35:5,21
22:17 28:12	13:12 16:4	19:1,7	bar 25:18	33:18	25:5 31:4	codified 6:10	36:12
22.17 28.12 29:7	16:6 24:16	asked 24:2	base 3:22	boxes 25:15	chance 15:3,8	color 28:13	control 45:17
	34:6	28:14 42:8	based 6:12,17	26:7	19:9 20:13	combined	Copeland
added 26:11	allow 19:13	asking 5:13	8:6 9:20	broad 5:2	24:11 25:7	23:17	2:22 29:9
40:13	19:14	asset 4:22 5:4	10:3 14:13	13:11	27:7	come 7:10	41:23
adding 21:13	allowed 19:15	5:11,22 6:7	15:16 17:13	broker 43:1	change 6:16	19:21 25:1	core 10:24
21:14 22:24	39:1	6:8,9,13 7:1	28:24	brokerage	7:1,4 25:6	28:16	24:5
23:11,13	alternative	7:4,18	basis 3:14 6:1	3:24	28:21 36:24	comes 8:2	correct 45:8
24:8 25:14	19:17,24	12:11 13:4	7:23 22:20	brokers 4:2	changed 25:4	12:21 40:24	correlate
26:4 27:7	20:6 21:2	13:7 16:10	28:19,21	budget 20:1,2	changes 6:20	comfortable	22:12
28:4 43:17	22:3 23:4	18:3 19:14	35:10 37:2	building 9:2	19:14 30:17	35:7	correlation
addition 37:1	43:16	19:17 20:2	41:15	business 2:4	36:11	coming 27:18	12:8,20,24
additional	alternatives	21:15 22:8	beat 40:11	43:20 44:5	charge 20:8	35:23	23:6 26:13
16:10 32:5				buy 8:3	chart 13:11		
addressed	16:11,16	22:17,20,22 22:24 25:14	believe 11:7	buy 6.5	18:17 19:2	comments 43:12	correlations
37:24 38:2	21:8,8,13	34:6 36:3	41:6 bell 11:16			43:12 Commission	7:18 12:9
adjourn 44:7	21:22 22:10			C 45:1,1	19:7		12:22
adjust 10:23	24:9,12	40:3 43:17	benchmark		charts 25:18	1:1 2:3,21	cortiles 25:20
13:21	25:6 26:4	assistants	6:11,22	calendar 42:22	cheaper 29:5	3:3,16 5:10	cost 25:1 31:2
adjusting	26:11,22	44:2	38:17 39:22		29:10	committee	counterintu
17:4	27:12,21	ASSOCIA	40:8,15,17	call 2:2	chief 7:24	7:23	21:20 22:2
advantage	28:5 29:18	1:15	benchmarks	cap 2:18,23	chose 13:23	common 35:2	22:6
40:4	30:22 32:9	assumed	38:19 39:14	3:4 13:12	Chris 5:21	compile 7:22	counterpoint
affect 17:6	amended	14:22 15:18	benefit 20:12	29:9,11	16:22 30:6	complete	26:21
agenda 2:17	30:15	17:21	40:18	41:11	35:18 42:2	28:20	couple 36:10
32:24	amount 24:8	assuming	benefited	capital 7:2,21	42:7	comprise	coupon 10:17
			40:19	8:3 38:5			
	-	-	-	-	-	-	-

Court 1:8,17	detracted	23:14 42:21	11:21,24	24:20	firms 8:5	fund 14:4,22	12:15 32:21
45:12	40:19	dollar 27:23	12:4,13,19	extrapolate	first 2:4 7:20	fund 14.4,22 fundamental	grade 40:7,21
cover 33:3	deviation	domestic	13:12,18,22	10:5	fiscal 28:17	9:4	great 43:10
covered 33:6	20:22 21:21	23:10	13:24 14:1	extremely	28:18,20	funded 35:8	greater 36:12
creating 8:22	25:16	DONN 1:10	20:7,18,18	3:13 12:6	five 5:5 8:12	funds 1:1 2:3	36:16,19
credit 40:7,11	dial 13:20,20	downside	22:11,12	3.13 12.0	10:5 11:3,7	29:6 31:14	green 38:8
40:11,21	20:17,18	26:1 27:10	23:11 27:2	F	15:2 28:17	29.0 31.14	0
		draw 13:2		F 45:1		G	group 8:1 29:22
current 3:11	difference 27:19	19:6	27:2,4 31:1	facilitate 28:8	five-year	GDP 7:8 9:4	
9:23 13:15			31:17 34:11	fact 22:7 29:1	10:20 14:17	9:5	grow 29:13
13:16 18:3	different 22:8 22:10,22	Drumline 3:7	39:10 40:22	29:3 35:6	14:19 fixed 6:14		36:4
18:11,14,24		3:12 41:22	essentially	factor 9:5		general 26:19	growth 9:5,5
21:5 26:17	23:18,18	due 26:6	21:14		10:14,17,24	generally	9:6,7 27:24
26:24 27:21	differently	duration 9:12	estate 20:7	12:9 13:8	11:9,22	32:13 39:8	guess 4:7
32:12	22:9,9	E	22:14 30:24	factors 9:4	12:1,5,13	generate	14:21 41:16
currently	DIFUSCO		et 9:16 37:20	16:3	12:20 13:12	11:21,23	Н
14:23 19:15	1:11 2:20	E 45:1	event 12:6	fairly 9:14	13:22 14:1	geometric	n half 3:14
29:11	4:9,23	Eagle 41:21	evidence 45:4	22:19 24:24	14:2 34:10	19:2,3,8	
Curtis 29:4	28:12 30:8	41:22	exactly 22:13	28:16 34:17	38:21 39:20	getting 21:1	39:23
curve 10:21	32:16,22	earlier 21:6	example	39:13 42:21	39:21 40:1	29:6 35:14	handed 41:1
11:16	36:7,14	early 38:12	10:24 12:14	falls 18:24	flat 39:10	36:6 37:9	handout 41:3
cycle 8:13	41:17,20	economies	12:23 21:3	false 17:22	flip 7:19	38:23	happen 11:4
cyclical 8:24	42:10 43:7	31:10	21:4 32:15	far 9:9 21:6	11:12 21:2	given 3:10	12:7
9:9	43:22	economy	exception	39:10 favor 2:14	26:21 33:16	19:13	happy 42:8
	direct 43:1	12:15	38:21		36:15 38:8	go 5:19 8:22	hard 24:7
	45:17	education	exceptions	4:10,17	flipped 36:18	22:21 25:5	hearing 44:12
data 8:7,18	directions	32:19	40:6	31:9	40:23	26:16 27:4	heavy 4:24
8:24 9:1	23:18	effects 10:19	exhibit 25:19	FAX 1:16	floating 25:18	33:8 37:21	help 16:11
13:1 17:2	director 7:24	19:16 42:16	exit 29:7	February	Floor 1:5	goal 29:18	36:22
29:22	36:9	efficient	expand 26:5	39:2,5	flow 34:21	goes 16:3	helped 13:2
date 34:18	discount 17:5	15:12 18:4	expanding	40:24	35:3 36:22	24:10,22	helpful 30:6
41:13	20:13 25:3 25:7	18:10,19,20	27:13,13	Fed 10:22	37:5	27:5	30:19
dated 45:7		25:11 26:20	expect 7:8	11:6 fee 3:13 20:1	flows 27:15	going 2:19	high 4:1 5:15
day 6:16,16 39:3	discussed	either 23:16 30:19	10:6 15:20		33:13	4:23 16:17	12:2,23,24
debt 22:15	37:23		28:23 29:12	20:2,4,11	folder 5:22	16:19 19:5	12:24 40:16 40:21
December	discussion 5:3	element 25:21	30:11 40:23	28:22,24 29:12	33:4 folks 5:15,18	20:23 24:12	
	5:17 16:23		expectation	feel 16:14	,	33:8 37:20 42:2	high-yield
33:5	17:19 28:8	elements 32:20	10:4 11:2	20:10	foregoing		40:15
decision 17:5 30:11 40:16	32:8 distribution		expected 7:9	fees 3:12	45:6,14	GOLDSMI	higher 10:2 12:17 13:18
		employee	7:16,17		found 18:21	1:11 5:20	
decisions 8:16	11:16	3:18,22	8:10,11	19:20 20:8	fourth 33:6	14:7,14,18	19:5 20:8
decreases	distributions	employees	10:11 13:20	28:16 31:15	34:15 40:20	14:24 15:5	27:1,4,7,8
20:21	33:14,23	3:21	14:12 15:8	33:14,24	42:23	15:10,21	highest 41:15
decreasing	35:1,6,16	entirely 8:2	18:14 21:11	35:2 38:16	FRIENDS	16:2,20	highly 24:19
14:1	diverse 31:20	22:6	21:16 24:10	39:15 41:15	1:17	17:1,8,12	hire 3:16
definitely	diversificati	equities 6:14	expense 14:2	42:17	frontier 14:8	18:8,13,18	hired 2:22
36:23	22:7 24:6	9:21 10:10	expenses	female 3:19	15:12 18:4	18:23 20:15	41:23
depend 17:24	diversified	10:13 12:17	33:15,24	figure 8:18	18:11,19,21	21:23 22:5	hitting 15:3,8
depending	21:14	12:20 13:1	expensive	9:12 10:7	25:11	23:7 24:1	hopefully
30:20	diversify	16:9 20:23	19:23 31:8	17:3 19:1	full 33:4,10	32:11,18	39:17
depreciating 23:23	16:12	23:11 34:8	experts 5:8	figures 19:4	33:18,24	33:2 34:22	horizon 14:8
designed 5:14	diversity 4:2	34:15 38:17	explaining	finance 36:9 find 29:19	34:4 35:12	35:9 37:3	T
_	21:14	38:24 39:1 39:12	23:1 34:17 exposed	30:3	fully 35:8	42:1,12	ignored 26:7
6:6 13:6 28:7	doing 19:24	39:12 equity 11:19	exposeu	50:5 firm's 3:21	45:5	43:4,11 good 2:1	illustrative
20.1		equity 11:19		mm 8 3.21		goou 2.1	musirative

23:15 29:2 indexing 20:3 indexing 20:4 indexing 2								rage 3
	20:16	interest 10:19	1.18 11.8	20:1.8	lines 9:12	0.18 10.8	Marzario 1:8	Monte 7:14
12-10 34-11 12-22 34-12 12-22 34-12 12-22 34-12 12-22 34-12 12-22 34-12 12-22 13-12 12-12 13-1	_							
improve interesting 26:329:17 K 23:1821 33:12.14.15 liquid 24:19 26:5.16 32:5 month 6:16 6:16 27:18 33:182.14 33:14.14.8								
36.21 26.3 29.17 Mincrore 29.19 30.14 Microre 29.11 Mincrore 29.19 30.14 Microre 29.11 Mincrore 29.11			June 40.13					
mature 29:19-3034 Keplan 1:12 35:11.12.18 little 28:9.13 little 28:9.13 little 28:9.13 little 28:9.13 little 28:9.14 lit	_		K	, ,	-	· · · · · · · · · · · · · · · · · · ·		
				· ·				
12:22 33:10 92:2 10:13 kind 5:17 37:69.11 35:18.812 29:19.30:12 32:16.35:2 43:21 32:16.35:2								
27:15 37:19								
						lowest 5:15		
37:21 15:10 10:10:11/12 10:10:14:17:24 10:10:14:17:24 10:10:14:17:24 10:10:14:17:24 10:10:14:17:24 10:10:14:17:24 10:10:14:17:24 10:10:14:17:24 10:10:14:17:24 10:10:14:17:24 10:10:14:17:24 10:10:14:17:24 10:10:14:17:24 10:14:17:24 10:14:17:24 10:14:17:24 10:14:17:24 10:14:17:17:24 10:14:17:24								
				· · · · · · · · · · · · · · · · · · ·				
10:14,17,24 International 5:6,7,9,15 40:2,4,9,22 1:5 Margin 7:2 Machines 43:14 44:9 Machines 43:14 Machines Machines 43:14 Machines Machines Machines 13:19 Machines Machines								
11:10,22								
12:15,13 29:3 34:11 5:23,24 6:2 42:19.20,21 40:11 33:17 39:20,22 interplay a florerased introduction 13:7 8:20,23 9:2 intreases intributive 11:18,18 20:21 23:42 11:19 12:3 increases 20:20 21:15 increases 20:20 21:15 increasing 13:24 41:8 8:15 13:17 15:22 16:8 13:24 16:8 8:15 13:17 15:22 16:8 13:24 16:8 8:15 13:17 15:22 16:8 13:24 16:8 23:24 33:15 32:4 40:7,20 19:13,5.9 21:62 5:15 index 34:14 22:33 22:33 22:33:15 29:2 indexing 20:31 index 34:16 22:31 22:32 20:60,9,10 11:24 index 34:16 22:31 22:31 22:31 22:31 22:31 22:31 22:31 22:31 22:31 22:31 22:31 22:31 22:31 22:31 22:31 33:17 41:3 23:12 32:4 43:16 22:31 23:42 23:18 33:17 41:3 23:18 33:17 41:3 23:18 33:19 3:24 33:15 41:11								
12:21 13:12 39:16,19 6:49,12,15 43:1 44:2 40:11 35:17 36:5 36:6,12 moves 25:14 m								
34:10 38:21 42:14 7:2,3,6,13 8:6,12,18 8:6,12,18 8:6,12,18 8:6,12,18 8:6,12,18 8:6,12,18 8:6,12,18 8:6,12,18 8:6,12,18 8:6,12,18 8:6,12,18 8:6,12,18 8:6,12,18 10:11,15 24:15 metal 7:15 m								
392,0,22 Interplay 8.6,12,18 8.20,23.9:2 17:14 10:11,15 24:15 meeti 17:15 moving 13:14 24:15 meeti 17:15 moving 13:14 27:14 meeti 17:15 meeting 2:2 30:19,20 moving 13:14 11:12,14:6 management 2:2 30:19,20 mutual 29:6 Moving 13:14 11:12,14:6 management 33:1,39:24 33:1,39:24 33:1,39:24 33:1,39:24 33:1,39:24 33:1,39:24 33:1,39:24 40:4,42:3,4 40:4,42:3,4 40:1,42:3,4 40:1,42:3,4 40:1,42:3,4 40:4,42:3,4 40:4,42:3,4 40:4,42:3,4 40:4,42:3,4 40:4,42:3,4 40:4,42:3,4 40:4,42:3,4 40:4,42:3,4 40:1,42:3,2 Moving 13:14 Movi								· ·
40:1 13:7 8:20,23 9:2 17:14 10:11,15 24:15 meet 17:15 moting 2:2 mintroduction 15:1 10:15,22 L 15:6 18:13 33:1 39:24 40:4 42:3,4 33:7 38:12 L Mintroduction 11:18,18 LANE 1:17 19:10 2:13 management mintroduction 13:13,18,10 43:15 35:15 36:1 29:10 manager 3:23 4:4 Mintroduction 13:13,18,10 43:15 35:15 36:1 29:10 manager 3:23 4:4 Mintroduction 13:23 4:6 8 8:15 13:17 15:22 16:8 15:22 16:8 15:21 15:4 13:22 16:8 15:22 16:8 15:22 16:8 15:21 15:4 13:22 16:8 15:21 15:4 13:23 15:22 16:8 15:21 15:4 13:23 15:22 16:8 15:21 15:4 13:23 15:22 16:8 15:21 15:4 13:23 15:22 16:8 15:21 15:4 13:23 15:22 16:8 15:21 15:4 13:23 15:22 16:8 15:21 15:4 13:23 15:22 16:8 15:21 15:4 13:23 15:22 16:8 15:21 15:4 13:23 15:22 16:8 15:21 15:4 13:23 15:22 16:8 15:21 15:4 13:23 15:22 16:8 15:21 15:4 13:23 15:22 16:8 15:21 15:24 13:3 15:24 15:24 13:3 15:24 15:2						· ·		
Introduction 16:12 21:20 16:12 21:12 16:12 13:12 16:12 21:12 16:12 13:12 16:12 13:12 16:13 13:12 16:13 13:12 16:13 13:12 16:13 13:12 16:13 13:12 16:13 13:12 16:13 13:12 16:13 13:12 16:13 13:12 16:13 13:12 16:13 13:12 16:13 13:12 16:13 13:12 16:13 13:12 16:13 13:12 16:13 13:12 16:13 13:13 16:14 16:13 13:13 16:14 16:14 16:15 16:14 16:15 16:14 16:15 16:14 16:15 16:14 16:15 16:14 16:15 16:14 16:15 16:14 16:15 16:14 16:15 16:14			, , ,		· ·			
16:12 21:20 intriesed intuitive intuitive 11:18,18 lacks 40:14 lacks 40:				17:14	· ·			
Increased 20:11 23:5 21:24 11:18,18 12:3 12:5,10,14 13:15,20 40:4 42:3,4 33:7 38:12 N 45:1 11:19 12:3 13:19 12:3 13:19 13:3 13:1,15 13:19 13:11,15 13:19 13:11,15 13:19 13:19 13:11,15 13:19								mutual 29:6
20:11 23:5 increases invested 5:7 12:51,0,14 language 24:9 25:12 24:6 29:2 meetings 37:23 44:4 largely 39:23 largely 39:33 largely 39:23 largely 39:23 largely 39:23 largely 39:33 largely 39:34 largely 39:23 largely 39:34 largely 39:33 largely 39:34 largely 39:23 largely 39:34 largely 39:								
increases invested 5:7 (20:20:21:15) investment increasing investment increasing 12:5,10,14 (3:15) (3:11,15) (3:								
20:20 21:15 investment 13:1,3,8,10 43:15 35:15 36:1 29:10 37:23 44:4 Mellon 3:7 6:20 managers Mellon 3:7 6:20 members mear 9:1 mearly 38:16 memo 3:18 marked 3:17 memo 3:22 marked 3:17 marked 3:21 memo 3:22 mimo 3:22 mimo 3:22 mimo 3:22 mimo								
13:24 16:8 8:15 13:17 15:22 16:8 13:24 16:8 8:15 13:17 16:22 16:8 13:24 16:22 17:1 16:13 20:12 23:4,22 16:22 17:1 16:24 23:4,23 17:12,20 19:1,3,5,9 21:6 25:15 19:4 24:5 17:12,40 19:1,17,19 25:16 27:1 21:4 23:8 23:15 29:2 22:3 20:6,9,10 19:12,15,17 10 10 10 10 10 10 10								
13:24 16:8								
16:13 20:12 23:4,22 32:24 33:15 17:4,6,7,11 lead 7'8 leave 38:7 9:4,7 10:2 29:3,11 memo 3:18 memtioned 3:18 method 35:2 method 35:2								
21:17,21 32:24 33:15 17:4,6,7,11 leave 38:7 p:4,7 10:2 29:3,11 memo 3:18 mentioned 16:21 method 35:2 method 35:2 method 35:2 method 35:2 midexing 20:3 inviting 16:10 20:12,15,17 left 8:9 13:15 20:6,9,10 length 3:9 30:13,23 39:11 41:2 million 27:18 35:7 marked 13:17 mind 30:13 39:12 method 35:2 million 27:18 method 35:2 million 27:18 million 27:18 million 27:18 marked 3:17 marked 13:17 marked 13:13 marked 13:17 marked 13:17						· · · · · · · · · · · · · · · · · · ·		
25:7 independen 11:24 34:2 35:4 40:7,20 17:12,20 19:1,3,5,9 19:1,3,5,9 left 8:9 13:15 21:6 25:15 look 10:15,16 21:6 25:15 look 10:15,16 39:13,16,19 39:12 method 35:2 method 35:2 3:17 indexing 20:3 inviting 16:10 indices 23:17 individual 43:16 43:15 22:11,20 20:20 21:1 lindividual 43:16 inflation 9:8 inform 6:6 inflation 9:8 itsues 42:24 item 2:16 information 37:18 information 37:13 38:2 25:9,16,18 information 37:13 38:10,12,13 38:10,12,13 38:10,12,13 38:10,12,13 38:10,12,13 38:10,12,13 38:10,12,13 38:10,12,13 38:10,12,13 38:10,12,13 38:10,12,13 38:10,12,13 38:10,12,13 38:10,12,13 38:10,12,13 38:10,12,13 38:15 41:11 job 3:12,23 27:4,5,9,15 inked 3:8 limited 31:7 25:1 lighter 26:8,8 1imited 31:7 25:1 lighter 26:8,8 1imited 31:7 25:1 lighter 26:8,8 1imited 31:7 25:1 lighter 36:20 27:20 intoted 45:4 10:21 37:20 38:10,10 method 35:2 method 35:1,6 ingustion 4:0 ingustion 4:10 ingustion 4:0 ingustion 4:10 ingustion 4:0 ingustion 4:0 in								•
independen 40:7,20 19:1,3,5,9 21:6 25:15 look 10:15,16 39:13,16,19 39:12 need 30:15,16 need 30:15,16 <th< td=""><td></td><td></td><td></td><td></td><td>· ·</td><td></td><td></td><td></td></th<>					· ·			
11:24 index 3:4,16 investments 19:20 20:1 33:17 41:3 23:12 30:2 37:7 39:8 39:11 41:2 middle 27:2 middle 27:2 midlion 27:18 35:7 marked 3:17 30:14 32:4 43:16 43:16 43:16 43:16 issues 42:24 item 2:16 8:15 12:10 information 37:18 information 37:18 information 37:18 24:20 25:3 33:7,20 22:20 25:2 16:27:1 20:20 27:1 40:3 35:3 41:11 12:19 22:12 35:7 marked 3:17 marked 3:17 marked 3:17 33:2,22,23 33:11 41:2 marked 3:17 marked 3:18 marked 7:3 marked 3:17 marked 3:17								
index 3:4,16 23:15 29:2 indexing 20:3 indicises 23:17 indicises 23:17 individual 43:16 43:15 inflation 9:8 inform 6:6 8:15 12:10 information 37:18 infrastruct 22:15 injust 7:15 injust 7:15 7:16,21 9:17 11:13 intangent 16:4 19:20 20:1 20:1 20:6,9,10 20:12,15,17 20:20 21:1 20:20 21:1 40:3 30:13,23 30:14:10 40:3 40:3 40:3 40:3 40:3 40:3 40:3 40:							39:12	
23:15 29:2 inviting 16:10 20:12,15,17 less-perfor 31:2 32:4 41:7 45:7 27:22 33:21 marked 3:17 marked 3:10 marked 3:17 marked 7:3 mark	11:24	43:14			21:4 23:8		method 35:2	
indexing 20:3 indices 23:17 indices 23:17 indices 23:17 individual inviting 16:10 20:12,15,17 20:20 21:1 40:3 35:5,22,23 43:17 individual 31:2 32:4 35:5,22,23 33:21 33:22,22,23 33:21 33:23 33:22,22,23 33:21 33:23 33:23 33:22,22,23 33:21 33:23	index 3:4,16		19:20 20:1			37:7 39:8	middle 27:2	
indices 23:17 individual IPS 6:21 20:20 21:1 40:3 35:5,22,23 marked 3:17 markedly 33:22,22,23 41:12 42:19 net 35:10,11 43:16 inflation 9:8 inflation 9:8 inform 6:6 item 2:16	23:15 29:2							
individual 30:14 32:4 21:5,7,11 let's 4:12 43:13,15,15 markedly 34:3 35:1 net 35:10,11 43:16 43:15 22:11,20 22:20 35:10 looked 11:17 16:13 35:11,23 38:16 39:14 inform 6:6 item 2:16 24:5,7,10 letting 23:21 18:10,20 7:21 8:7,13 mind 30:13 39:19 43:20 8:15 12:10 4:21 24:13,16,16 level 5:15 24:7 32:3 9:23 10:1 32:2 44:5 information 37:18 January 2:5 25:9,16,18 liabilities looks 41:12 27:19 33:19 minority 3:19 NEWTOWN 22:15 33:7,20 26:2,3,5,6,8 liability 27:24 lot 11:5 17:19 37:24 38:2 missed 40:8 39:24 7:16,21 38:10,12,13 26:20 27:1 lighter 26:8,8 42:11 markets 8:4 mixed 39:17 nominal 9:17 11:13 38:15 41:11 27:4,5,9,15 liked 3:8 limited 31:7 25:1 24:22 38:5 29:17 Notary 45:12 16:4 JOHNSON 27:23,24 line 19:6 <td>indexing 20:3</td> <td>inviting 16:10</td> <td>20:12,15,17</td> <td>less-perfor</td> <td></td> <td>41:7 45:7</td> <td></td> <td></td>	indexing 20:3	inviting 16:10	20:12,15,17	less-perfor		41:7 45:7		
43:16 43:15 43:15 22:11,20 22:20 35:10 looked 11:17 16:13 35:11,23 38:16 39:14 inflation 9:8 issues 42:24 23:9,14 37:18 looking 15:14 market 7:3 38:14 41:4 new 33:8 inform 6:6 8:15 12:10 4:21 24:13,16,16 level 5:15 24:7 32:3 9:23 10:1 32:2 mind 30:13 39:19 43:20 37:18 January 2:5 25:9,16,18 liabilities looks 41:12 27:19 33:19 minuts 3:3 NEWTOWN 22:15 33:7,20 26:2,3,5,6,8 liability 27:24 loss 43:4 36:4 37:8 minutes 2:5 mised 40:8 39:24 inputs 7:15 38:10,12,13 38:15 41:11 27:4,5,9,15 lighter 26:8,8 42:11 markets 8:4 mixed 39:17 nominal 9:17 11:13 38:15,223 27:17,19,22 limited 31:7 25:1 24:22 38:5 29:17 Notary 45:12 16:4 JOHNSON 27:23,24 line 19:6 lower 7:8 39:6,10 money 35:22 noted 45:4	indices 23:17				35:5,22,23		33:22,22,23	
inflation 9:8 issues 42:24 23:9,14 37:18 looking 15:14 market 7:3 38:14 41:4 new 33:8 8:15 12:10 4:21 24:5,7,10 level 5:15 24:7 32:3 9:23 10:1 32:2 44:5 information 37:18 J 25:9,16,18 liabilities looks 41:12 27:19 33:19 minority 3:19 NEWTOWN 22:15 33:7,20 36:2,3,5,6,8 liability 27:24 lot 11:5 17:19 37:24 38:2 minutes 2:5 missed 40:8 39:24 7:16,21 38:10,12,13 26:20 27:1 lighter 26:8,8 42:11 13:6 22:10 modeling 10:17,24 9:17 11:13 38:12,23 27:17,19,22 limited 31:7 25:1 25:23 38:5 29:17 Notary 45:12 16:4 JOHNSON 27:23,24 line 19:6 lower 7:8 39:6,10 money 35:22 noted 45:4	individual		21:5,7,11			markedly	34:3 35:1	
inform 6:6 8:15 12:10 item 2:16 4:21 24:5,7,10 24:13,16,16 letting 23:21 level 5:15 18:10,20 24:7 32:3 7:21 8:7,13 9:23 10:1 mind 30:13 32:2 39:19 43:20 44:5 information 37:18 January 2:5 25:9,16,18 January 2:5 25:22 26:2 35:3 41:11 10oks 41:12 12:19 22:12 27:19 33:19 minutes 3:3 minutes 2:5 missed 40:8 NEWTOWN 22:15 inputs 7:15 7:16,21 9:17 11:13 38:10,12,13 38:10,12,13 26:20,35,6,8 26:20 27:1 lighter 26:8,8 1iked 3:8 10:4 42:11 10w 3:13 12:1 38:13 41:3 38:15 41:11 10w 3:13 12:1 mixed 39:17 39:6,10 Notary 45:12 money 35:22 16:4 JOHNSON 27:23,24 line 19:6 lower 7:8 39:6,10 money 35:22 noted 45:4	43:16		22:11,20	22:20 35:10			35:11,23	38:16 39:14
8:15 12:10 information 4:21 24:13,16,16 24:20 25:3 level 5:15 23:9 24:7 32:3 35:3 41:11 12:19 22:12 minority 3:19 minuts 34:3 32:2 minority 3:19 minuts 34:3 118 NEWTOWN 37:18 infrastruct 22:15 inputs 7:15 7:16,21 9:17 11:13 intangent 16:4 33:7,20 24:20,25:3 26:20 27:1 16:4 13:40:40:40:40:40:40:40:40:40:40:40:40:40:	inflation 9:8		23:9,14		looking 15:14	market 7:3	38:14 41:4	new 33:8
information J 24:20 25:3 23:9 35:3 41:11 12:19 22:12 minority 3:19 minus 34:3 NEWTOWN 37:18 January 2:5 25:9,16,18 liabilities looks 41:12 27:19 33:19 minus 34:3 1:18 22:15 33:7,20 26:2,3,5,6,8 liability 27:24 lot 11:5 17:19 37:24 38:2 minutes 2:5 nice 3:12,22 inputs 7:15 38:10,12,13 26:20 27:1 lifting 4:24 37:18 39:12 38:13 41:3 missing 25:8 Nick 32:6 9:17 11:13 38:15 41:11 27:4,5,9,15 liked 3:8 low 3:13 12:1 13:6 22:10 modeling 10:17,24 16:4 JOHNSON 27:23,24 line 19:6 lower 7:8 39:6,10 money 35:22 noted 45:4	inform 6:6	item 2:16	24:5,7,10	letting 23:21	18:10,20	7:21 8:7,13	mind 30:13	39:19 43:20
37:18 January 2:5 25:9,16,18 liabilities looks 41:12 27:19 33:19 minus 34:3 minutes 2:5 nice 3:12,22 22:15 33:7,20 26:2,3,5,6,8 liability 27:24 lot 11:5 17:19 37:24 38:2 minutes 2:5 missed 40:8 39:24 inputs 7:15 38:10,12,13 26:20 27:1 lighter 26:8,8 42:11 markets 8:4 mixed 39:17 nominal 9:17 11:13 38:15 41:11 27:4,5,9,15 limited 31:7 low 3:13 12:1 13:6 22:10 modeling 10:17,24 16:4 JOHNSON 27:23,24 line 19:6 lower 7:8 39:6,10 money 35:22 noted 45:4	8:15 12:10	4:21	24:13,16,16	level 5:15	24:7 32:3	9:23 10:1	32:2	44:5
infrastruct January 2:5 25:22 26:2 17:15 loss 43:4 36:4 37:8 minutes 2:5 missed 40:8 39:24 inputs 7:15 33:7,20 26:2,3,5,6,8 liability 27:24 lot 11:5 17:19 37:24 38:2 missed 40:8 39:24 7:16,21 38:10,12,13 26:20 27:1 lighter 26:8,8 42:11 markets 8:4 mixed 39:17 nominal 9:17 11:13 38:15 41:11 27:4,5,9,15 liked 3:8 low 3:13 12:1 13:6 22:10 modeling 10:17,24 intangent JOHNSON 27:23,24 line 19:6 lower 7:8 39:6,10 money 35:22 noted 45:4	information		24:20 25:3	23:9	35:3 41:11	12:19 22:12	minority 3:19	NEWTOWN
infrastruct January 2:5 25:22 26:2 17:15 loss 43:4 36:4 37:8 minutes 2:5 nice 3:12,22 inputs 7:15 37:13 38:2 26:23,5,6,8 liability 27:24 lot 11:5 17:19 37:24 38:2 missed 40:8 39:24 7:16,21 38:10,12,13 26:20 27:1 lighter 26:8,8 42:11 markets 8:4 mixed 39:17 nominal 9:17 11:13 38:15 41:11 27:4,5,9,15 liked 3:8 low 3:13 12:1 13:6 22:10 modeling 10:17,24 intangent JOHNSON 27:23,24 line 19:6 lower 7:8 39:6,10 money 35:22 noted 45:4	37:18		25:9,16,18	liabilities	looks 41:12	27:19 33:19	minus 34:3	1:18
22:15 33:7,20 26:2,3,5,6,8 liability 27:24 lot 11:5 17:19 37:24 38:2 missed 40:8 39:24 inputs 7:15 37:13 38:2 26:11,12,15 lifting 4:24 37:18 39:12 38:13 41:3 missing 25:8 Nick 32:6 7:16,21 38:10,12,13 26:20 27:1 lighter 26:8,8 42:11 markets 8:4 mixed 39:17 nominal 9:17 11:13 38:15 41:11 27:4,5,9,15 liked 3:8 low 3:13 12:1 13:6 22:10 modeling 10:17,24 intangent JOHNSON 27:23,24 line 19:6 lower 7:8 39:6,10 money 35:22 noted 45:4	infrastruct	January 2:5	25:22 26:2	17:15	loss 43:4	36:4 37:8	minutes 2:5	nice 3:12,22
inputs 7:15 37:13 38:2 26:11,12,15 lifting 4:24 37:18 39:12 38:13 41:3 missing 25:8 Nick 32:6 7:16,21 38:10,12,13 26:20 27:1 lighter 26:8,8 42:11 markets 8:4 mixed 39:17 nominal 9:17 11:13 38:15 41:11 27:4,5,9,15 liked 3:8 low 3:13 12:1 13:6 22:10 modeling 10:17,24 intangent JOHNSON 27:23,24 line 19:6 lower 7:8 39:6,10 money 35:22 noted 45:4			26:2,3,5,6,8	liability 27:24	lot 11:5 17:19	37:24 38:2		39:24
7:16,21 38:10,12,13 26:20 27:1 lighter 26:8,8 42:11 markets 8:4 mixed 39:17 nominal 9:17 11:13 38:15 41:11 27:4,5,9,15 liked 3:8 low 3:13 12:1 13:6 22:10 modeling 10:17,24 intangent 16:4 JOHNSON 27:23,24 limited 31:7 lower 7:8 39:6,10 money 35:22 noted 45:4	inputs 7:15	37:13 38:2	26:11,12,15			38:13 41:3		Nick 32:6
9:17 11:13 38:15 41:11 27:4,5,9,15 liked 3:8 low 3:13 12:1 13:6 22:10 modeling 10:17,24 intangent 16:4 job 3:12,23 27:17,19,22 limited 31:7 25:1 24:22 38:5 29:17 Notary 45:12 line 19:6 lower 7:8 39:6,10 money 35:22 noted 45:4		38:10,12,13			42:11	markets 8:4		nominal
intangent job 3:12,23 27:17,19,22 limited 31:7 25:1 24:22 38:5 29:17 Notary 45:12 16:4 JOHNSON 27:23,24 line 19:6 lower 7:8 39:6,10 money 35:22 noted 45:4				_				10:17,24
16:4 JOHNSON 27:23,24 line 19:6 lower 7:8 39:6,10 money 35:22 noted 45:4	intangent			limited 31:7				
		~						
			· ·]	
		<u> </u>	l	<u> </u>	<u> </u>	<u> </u>	<u> </u>	<u> </u>

options 31:7 pay 36:22 18:1,14 9:21,23 R 45:1 recorded 3:24 8:1 32:5 17:17 27:3 order 2:3,4 41:6 19:13,21 16:11 19:17 ran 13:9 red-shaded respect 7:4 29:21 31:17 10:9 32:15 payments 24:19 28:6 printing 26:6 range 24:18 26:9 response 3:8 32:23 34:2 32:17 37:10,13,14 29:24 31:6 private 20:7 28:5 reduce 23:9 3:10 28:11 35:14 43:19 outflows Penn 1:5 31:18 33:23 22:11,15 rare 12:6 reduced 20:1 responses 3:6 44:6	rage r							
number 9:20 cotsides 7:19 cotsides 25:23 coverperforms 25:24 coverpeight coverpeight coverweight coverpeight cover	45:6	14.9	nercentile	nlease 4·11	9.7	ratio 13:22	relation	21.16.23.12
13-19 16-3.5 25-23 25-23 25-23 25-23 25-23 25-24 25-23 25-								
25:23 37:22 37:24 37:2								
37:22 numbers 3:22 32:21 37:24:115 policy 6:11 33:24:33:6 33:33:33:33:33:33:33:33:33:33:33:33:33:								
8.14 9.8 overweight 33:24 33:36 38:21 19:16 29:22 provided 32:6 overweight 34:17 overweight			_	,				
1901 1902 1903 1906 1907 1908								
24:7								
Second Color Seco							•	
O O O O O O O O O O	24:7							
Overweights								
Dotionally 17:2			-		_			
17:2 October ownership 3:19 38:3 23:8.15 20:16 20:16 34:13.16 20:16 36:20 20:10								
Second S	•							
38:19 38:3 23:8,15 20:16 36:19 reasonable replaced reviewed 6:2				,	purpose 5:1	realm 25:17		review 2:17
official 14:8 Oh 17:7 — Pages 7:19 page 7:19 periods 10:11 24:6 26:20 27:15,21 put 3:4 Qualifying 15:19 19:13 36:9 reasonable 15:19 19:13 report 33:55 RHYNHA RFP 3:4.6 RFP 3:4.6 RFP 3	October	ownership	18:15 37:11	17:9 21:12	purposes	reason 8:20	renew 4:22	5:15,16,24
Dh 17:7 18:22 41:19 page 7:19 page 7:19 page 7:19 11:12 13:10 page 7:19 11:12 13:10 page 7:19 11:12 13:10 page 7:19 15:4 18:4 perpetuity portions 25:9 positive 37:6 positive 37:6 positive 37:6 positive 34:3 3:10 quarter 6:17 positive 34:3 3:13 3:15 potentially 33:13 3:15 potentially 33:13 3:15 potentially 33:13 3:15 predomina 34:15 37:15 page 36:20 pagerwork page 36:20 pagerwork positive 34:3 predomina page 36:20 pagerwork positive 34:3 presentation 5:23 7:20 page 13:2 page 41:8 page 36:23 pretty 20:20 page 42:15 page 36:23 pretty 20:20 positive 34:3 previous 31:1 passive 2:18 page 36:29 page 41:8 page 36:21 page 61:3 page 36:21 page 61:3 page 33:10 quarter 6:17 page 36:20 pag	37:24	3:19	38:3	23:8,15	20:16	34:13,16	replace 2:22	reviewed 6:2
Dh 17:7 18:22 41:19 page 7:19 11:12 13:10 36:2 31:18 43:14 perpetuity portions 25:9 31:18 43:14 33:63 43:23 34:20 38:8 34:20 38:8 34:20 38:8 page 7:19 page 36:23 page work portions 25:10 page 36:23 page work portions 25:10 positive 34:3 33:15 page 36:20 page work portions 25:10 page 36:23 page work portions 25:10 page 36:23 page work portions 31:1 page 36:24 page 36:23 page 36:24 page 36:23 page 36:23 page 36:24 page 36:23 page 36:23 page 36:24 page 36:23 page 36:24 page 36:23 page 36:24 page 36:23 page 36:24 page 36:23 page 36:24 page 36:24 page 36:24 page 36:25 page 36	official 14:8		periods 10:11	24:6 26:20	put 3:4	36:9	replaced	revise 24:15
18:22 41:19		P			· 			RFP 3:4,6
Ali:24		page 7:19			Q			,
okay 15:21 15:4 18:42 perpetuity portions 25:9 positive 37:6 quarter 6:17 gositive 37:6 quarter 6:17 and 30:6 34:23 reasons 3:9 rebalancing reporter 1:8 positive 37:6 quarter 6:17 growth 23:21 and 30:6 34:23 REPORTED 4:19 14:3 14:11,16,20 probabancing probabancing positive 37:6 quarter 6:17 growth 23:21 and 32:22 and 36:20 positive 34:3 and 33:5,6,13 and 33:6,13 and 33:2,0 and 3					qualifying		_	
16:24 18:22 20:17 21:3 20:17 21:3 20:17 21:3 20:17 21:3 20:17 21:3 20:17 21:3 20:17 21:3 20:17 21:3 20:17 21:3 20:17 21:3 20:18 23:2 20:17 20:18 20:18 23:2 20:19:20 20:18 23:2 20:17 36:10 32:11 33:12 20:14 23:24 20:17 36:11 39:20; 20 36:20 20:18 23:24 20:17 36:11 36:18 20:18 23:2 20:17 36:11 36:18 20:18 23:2 20:17 36:11 36:18 20:18 23:2 20:17 36:11 20:18 23:2 20:17 36:11 36:18 20:18 23:2 20:17 36:19 20:18 23:2 20:17 36:19 20:18 23:2 20:17 36:19 20:18 23:2 20:17 36:19 20:18 23:2 20:17 36:19 20:18 23:2 20:18 20:18 23:2 20:19 20:10 20:18 20:19 20:19 20:19 20:19 20:19 20:10 20:18 20:19 20:19 20:19 20:19 20:19 20:19 20:19 20:19 20:19 20:19 20:19 20:19 20:19 20:10 20:18 20:19 20:19 20:19 20:19 20:19 20:19 20:19 20:19 20:10 20:18 20:19 20:19 20:19 20:19 20:10 20:19 20:10 20:19 20:10 20:19 20:10 20:19 20:10 20:19 20:10 20:19 20:10 20:19 20:10 20:10								
20:14 23:24 20:17 21:3 PFM 5:24 30:6 34:23 26:22 27:16 15:22 19:20 potentially 31:13 33:5.6,13 33:13 34:6 43:8 34:20 38:8 26:17 36:11 predomina 34:15 37:15 recall 2:21 1:17 17:11,17	•							
30:6 34:23 26:22 27:16 15:22 19:20 potentially 33:3 20:24 33:14 32:14 33:15 36:13 32:14 33:17 34:6 32:11 33:12 PFM's 7:21 predomina 33:15 37:15 33:17 34:6 33:17 33:17 33:18 33:20.20 36:20 PRESENT 1:10 9:18 38:23 40:20 38:11 receil 2:21 1:17 17:11,17					_	0		
43:6,10 32:11 33:12 PFM's 7:21 73:13 73:14 33:17 34:6 PGW 18:11 43:8 34:20 38:8 34:20 38:8 34:20 38:8 39:20,20 36:20 PHONE 1:16 pair 3:2 1:1,6 presentation presentation presentation presentation presentation presents and presents and presents and presents and presents and presents are presents and presents and presents and presents and presents are presents and presents and presents and presents and presents are presents and presents and presents and presents and presents are presents and presents and presents are presents and presents are presents and presents and presents and presents are presents and presents are presents and presents and presents are presents are presents and presents are presents and presents are presents and presents are presents are presents and presents are previous are presents a								
once 29:14 43:8 33:17 34:6 34:20 38:8 PGW 18:11 26:17 36:11 38:15 predomina 9:18 33:15 37:15 38:23 40:20 recall 2:21 38:11 1:17 reports 4:1 38:13 17:11,17 reports 4:1 17:11,17 reports 4:1 18:9,16,22 38:13 38:23 40:20 78:81 38:23 40:20 78:81 38:23 40:20 receile 2:21 38:11 38:11 reports 4:1 18:9,16,22 18:9,16,22 18:9,12 <th></th> <th></th> <th></th> <th></th> <th></th> <th></th> <th></th> <th></th>								
43:8								
one-month 39:20,20 paid 41:8 36:20 paid 41:8 PRESENT l:10 question presentation pair 3:2 42:24 question l:11:11:11:11:11:11:11:13:3 receive 35:20 represent 20:14 21:13:3 36:18 open 36:17 as:6:18 paperwork operate 13:6 paperwork paperwork operate 13:6 PHONE 1:16 part 36:8,24 piedmont 3:7 pretty 20:20 pretty 20:20 pretty 20:20 28:1 41:16 part 36:8,24 pretty 20:20 pretty 20:20 pretty 20:20 28:1 41:16 part 36:8,24 pretty 20:20 pretty 2								
38:15							_	
open 36:17 36:18 operate 13:6 opinion 15:16 part 36:8,24 16:1 pair 3:2 paperwork part 3:2 part 36:8,24 16:1 1:1,6 piece 36:23 pretty 20:20 40:5 42:15 pretive 3:31 40:5 42:15 previous 3:11 optimized primized								
36:18			_				· ·	
operate 13:6 opinion 15:16 optimistically optimistically 17:22 optimized optimized optimized optimized optimized optimized optimized 23:5 optimist 13:13 passive 2:18 place 29:15 plan 5:3 6:7 order 2:3.4 optimos 31:7 order 2:3.4 outperform 23:15 optimos 3:17 outperform 22:23 pension 6:3 35:3,12,20 outperform 35:3,12,20 outperform 39:7 outperform 39:7 outperform 39:7 outperform 39:7 outperform 39:13 optimos 31:20 outperform 39:10 outperform 39:20 outperform	-	_						
opinion 15:16 16:1 part 36:8,24 40:9 Piedmont 3:7 Piedmont's 3:8 40:5 42:15 previous 3:11 37:23 42:8 questions 5:16 28:10 quickly 36:23 recommend 6:18 17:10 45:16 require 6:24 require 6:24 41:9,19,24 42:5 43:3,6 42:5 43:3,6 recommend optimized optimized potion 31:11 option 31:11 option 31:12 option 31:17 passive 2:18 option 31:17 order 2:3,4 10:9 32:15 payments 32:17 17:14,20,21 primarily 9:4 primarily 9:4 primarily 9:4 primarily 9:4 primarily 9:4 primarily 9:21,23 32:17 R 45:1 record 3:9 record 3:9 record 3:9 recorded 3:24 red-shaded private 20:7 28:5 reduce 23:9 33:10 28:11 35:14 43:12 reduce 23:9 reduce 23:9 33:10 28:11 35:14 43:12 reduce 22:24 8:1 32:5 response 3:8 32:23 34:2 response 3:8 32:23 34:2 response 3:8 32:23 34:2 response 3:8 32:23 34:2 response 3:8 32:23 34:2 response 3:6 4:6 response 3:6 4:6 respon								
Total								
optimistically 17:22 particularly 9:15 27:8 plan 5:3 6:7 plan 5:3 6:3 plan 5:3 6:7 plan 5:3 6:7 plan 5:3 6:7 plan 5:3 6:7 plan 5:3 6:3 plan 5:3 6:3 plan 5:3 6:3 plan 5:3 6:3 p								
17:22								
optimized 7:14 partner 23:5 plan 5:3 6:7 2:22 3:3 quite 37:7 3:15 16:19 requiring 36:20 right 4:20 option 31:11 option 31:7 passive 2:18 pay 36:22 18:1,14 pay 36:23 18:1,14 pay 36:24 18:1,14								
7:14 option 31:11 option 31:71 option 31:11 passive 2:18 option 31:7 6:12 9:13 trecord 3:9 primarily 9:4 pay 36:22 R 45:1 record 3:9 research 7:24 trecord 3:9 response 3:8 3:13:11 trecord 3:20 trecord 3:9 research 7:24 trecord 3:9 response 3:8 trecord 3:24 trecord 3:24 trecord 3:9 response 3:6 tre								
option 31:11 options 31:7 options 31:8 options 31:7 options 31:8 options 31:9 options 31:9 options 31:10 op	_				quite 37:7			0
options 31:7 order 2:3,4 order 2:3,4 10:9 32:15 payments 19:13,21 24:19 28:6 printing 26:6 printing 26:6 printing 26:6 printing 26:6 printing 26:6 s32:17 outflows R 45:1 recorded 3:24 red-shaded respect 7:4 29:21 31:17 printing 26:6 printing 26:10 printing 26:6 printing 26:10 print								
order 2:3,4 41:6 19:13,21 16:11 19:17 printing 26:6 ran 13:9 ran 13:9 red-shaded respect 7:4 response 3:8 29:21 31:17 range 24:18 32:17 37:10,13,14 29:24 31:6 private 20:7 28:5 reduce 23:9 3:10 28:11 35:14 43:19 reduce 20:1 outflows Penn 1:5 Pennsylvania 34:13,17 31:1,17 probably 31:1,17 probably RASHEIA reduces 22:24 responses 3:6 44:6 responses 3:6 responses 3:6 44:6 responses 3:6 responses 3:6 44:6 responses 3:6 resp			17:14,20,21	primarily 9:4		record 3:9		14:17,20,23
10:9 32:15 payments 24:19 28:6 printing 26:6 range 24:18 26:9 response 3:8 32:23 34:2 32:17 37:10,13,14 29:24 31:6 private 20:7 28:5 reduce 23:9 3:10 28:11 35:14 43:19 outflows Penn 1:5 31:18 33:23 22:11,15 rare 12:6 reduced 20:1 response 3:6 44:6 35:11 37:5 Pennsylvania 34:13,17 31:1,17 RASHEIA reduces 22:24 rest 37:17 rise 11:8 22:4 outperform 1:6,18 35:3,12,20 probably 1:13 reflected 6:21 return 7:17 risk 13:20 22:23 pension 6:3 36:21 37:4 43:13 rate 10:19 13:16 10:10 11:23 21:11 26:1 Outperfor 9:13 17:21 38:14 40:18 problem 14:22 15:3 reflects 34:2 13:21 14:12 26:12 27:7 39:7 24:14 29:24 plans 24:14 30:10 15:8,18 34:3 14:22 15:4 27:9 outperform 35:3 percent 3:18 proceedings 17:5,21 <		pay 36:22	· ·					17:17 27:3
32:17 37:10,13,14 29:24 31:6 private 20:7 28:5 reduce 23:9 3:10 28:11 35:14 43:19 outflows Penn 1:5 31:18 33:23 22:11,15 rare 12:6 RASHEIA reduced 20:1 responses 3:6 44:6 35:11 37:5 Pennsylvania 34:13,17 31:1,17 RASHEIA reduces 22:24 rest 37:17 rise 11:8 22:4 outperform 1:6,18 35:3,12,20 probably 1:13 reflected 6:21 return 7:17 risk 13:20 Outperfor 9:13 17:21 38:14 40:18 problem 14:22 15:3 reflects 34:2 13:21 14:12 26:12 27:7 39:7 24:14 29:24 plans 24:14 30:10 15:8,18 34:3 14:22 15:4 27:9 outperform 35:3 percent 3:18 play 9:16 45:4 20:13 25:3 11:4 16:3,7 25:9 30:16 outperform 3:20,21 12:21 process 15:12 25:7 35:17 regards 32:17 17:22 18:14 30:21 32:10 38:16 19:10 26:10 Plaza 1:5 p	order 2:3,4	41:6	19:13,21	16:11 19:17	ran 13:9	red-shaded	respect 7:4	29:21 31:17
32:17 37:10,13,14 29:24 31:6 private 20:7 28:5 reduce 23:9 3:10 28:11 35:14 43:19 outflows Penn 1:5 31:18 33:23 22:11,15 rare 12:6 RASHEIA reduced 20:1 responses 3:6 44:6 35:11 37:5 Pennsylvania 34:13,17 31:1,17 RASHEIA reduced 20:1 responses 3:6 44:6 outperform 1:6,18 35:3,12,20 probably 1:13 reflected 6:21 return 7:17 risk 13:20 Outperfor 9:13 17:21 38:14 40:18 problem 14:22 15:3 reflects 34:2 13:21 14:12 26:12 27:7 39:7 24:14 29:24 plans 24:14 30:10 15:8,18 34:3 14:22 15:4 27:9 outperform 35:3 40:12 proceedings 17:5,21 regardless 15:9,18,23 road 10:6 34:13 39:22 percent 3:18 play 9:16 45:4 20:13 25:3 11:4 16:3,7 25:9 30:16 38:16 19:10 26:10 Plaza 1:5 productivity 36:10 37:1	10:9 32:15	payments	24:19 28:6	printing 26:6	range 24:18	26:9	response 3:8	32:23 34:21
outflows Penn 1:5 31:18 33:23 22:11,15 rare 12:6 reduced 20:1 responses 3:6 44:6 35:11 37:5 Pennsylvania 34:13,17 31:1,17 RASHEIA reduces 22:24 rest 37:17 rise 11:8 22:4 outperform 1:6,18 35:3,12,20 probably 1:13 reflected 6:21 return 7:17 risk 13:20 22:23 pension 6:3 36:21 37:4 43:13 rate 10:19 13:16 10:10 11:23 21:11 26:1 Outperfor 9:13 17:21 38:14 40:18 problem 14:22 15:3 reflects 34:2 13:21 14:12 26:12 27:7 outperform 35:3 40:12 proceedings 17:5,21 regardless 15:9,18,23 road 10:6 34:13 39:22 percent 3:18 play 9:16 45:4 20:13 25:3 11:4 16:3,7 25:9 30:16 outperform 3:20,21 12:21 process 15:12 25:7 35:17 regards 32:17 17:22 18:14 30:21 32:14 38:16 19:10 26:10 Plaza 1:5 productivity 36:10 37:1 <th>32:17</th> <th></th> <th>29:24 31:6</th> <th></th> <th>28:5</th> <th>reduce 23:9</th> <th>_</th> <th>35:14 43:19</th>	32:17		29:24 31:6		28:5	reduce 23:9	_	35:14 43:19
35:11 37:5 Pennsylvania 34:13,17 31:1,17 RASHEIA reduces 22:24 rest 37:17 rise 11:8 22:4 outperform 1:6,18 35:3,12,20 probably 1:13 reflected 6:21 return 7:17 risk 13:20 22:23 pension 6:3 36:21 37:4 43:13 rate 10:19 13:16 10:10 11:23 21:11 26:1 Outperfor 9:13 17:21 38:14 40:18 problem 14:22 15:3 reflects 34:2 13:21 14:12 26:12 27:7 outperform 35:3 40:12 proceedings 17:5,21 regardless 15:9,18,23 road 10:6 34:13 39:22 percent 3:18 play 9:16 45:4 20:13 25:3 11:4 16:3,7 25:9 30:16 outperform 3:20,21 12:21 process 15:12 25:7 35:17 regards 32:17 17:22 18:14 30:21 32:14 38:16 19:10 26:10 Plaza 1:5 productivity 36:10 37:1 related 22:7 20:19 21:11 robust 31:17	outflows		31:18 33:23		rare 12:6		responses 3:6	44:6
outperform 1:6,18 35:3,12,20 probably 1:13 reflected 6:21 return 7:17 risk 13:20 Outperfor 9:13 17:21 38:14 40:18 problem 14:22 15:3 reflected 6:21 10:10 11:23 21:11 26:1 39:7 24:14 29:24 plans 24:14 30:10 15:8,18 34:3 14:22 15:4 27:9 outperform 35:3 40:12 proceedings 17:5,21 regardless 15:9,18,23 road 10:6 34:13 39:22 percent 3:18 play 9:16 45:4 20:13 25:3 11:4 16:3,7 25:9 30:16 outperform 3:20,21 12:21 process 15:12 25:7 35:17 regards 32:17 17:22 18:14 30:21 32:14 38:16 19:10 26:10 Plaza 1:5 productivity 36:10 37:1 related 22:7 20:19 21:11 robust 31:17							_	rise 11:8 22:4
22:23 pension 6:3 36:21 37:4 43:13 rate 10:19 13:16 10:10 11:23 21:11 26:1 Outperfor 9:13 17:21 38:14 40:18 problem 14:22 15:3 reflects 34:2 13:21 14:12 26:12 27:7 39:7 24:14 29:24 plans 24:14 30:10 15:8,18 34:3 14:22 15:4 27:9 outperform 35:3 40:12 proceedings 17:5,21 regardless 15:9,18,23 road 10:6 outperform 3:20,21 12:21 process 15:12 25:7 35:17 regards 32:17 17:22 18:14 30:21 32:16 38:16 19:10 26:10 Plaza 1:5 productivity 36:10 37:1 related 22:7 20:19 21:11 robust 31:17								
Outperfor 9:13 17:21 38:14 40:18 problem 14:22 15:3 reflects 34:2 13:21 14:12 26:12 27:7 39:7 24:14 29:24 plans 24:14 30:10 proceedings 15:8,18 problem 34:3 34:3 34:3 14:22 15:4 proceedings 15:9,18,23 productivity 15:9,18,23 productivity 15:9,18,23 productivity 16:3,7 productivity 25:9 30:16 productivity 25:7 35:17 productivity 15:3,17 productivity 16:3,7 productivity 25:9 30:16 productivity 25:7 35:17 productivity 17:22 18:14 productivity 30:21 32:10 productivity 36:10 37:1 productivity 17:22 18:14 productivity 30:21 32:10 productivity		· ·						
39:7 24:14 29:24 plans 24:14 30:10 15:8,18 34:3 14:22 15:4 27:9 outperform 35:3 40:12 proceedings 17:5,21 regardless 15:9,18,23 road 10:6 34:13 39:22 percent 3:18 play 9:16 45:4 20:13 25:3 11:4 16:3,7 25:9 30:16 outperform 3:20,21 12:21 process 15:12 25:7 35:17 regards 32:17 17:22 18:14 30:21 32:10 38:16 19:10 26:10 Plaza 1:5 productivity 36:10 37:1 related 22:7 20:19 21:11 robust 31:17		_						
outperform 35:3 40:12 proceedings 17:5,21 regardless 15:9,18,23 road 10:6 34:13 39:22 percent 3:18 play 9:16 45:4 20:13 25:3 11:4 16:3,7 25:9 30:16 outperform 3:20,21 12:21 process 15:12 25:7 35:17 regards 32:17 17:22 18:14 30:21 32:10 38:16 19:10 26:10 Plaza 1:5 productivity 36:10 37:1 related 22:7 20:19 21:11 robust 31:17								
34:13 39:22 outperform percent 3:18 outperform play 9:16 outperform 45:4 process 15:12 productivity 20:13 25:3 oct 13:4 regards 32:17 regards 32:17 oct 17:22 18:14 oct 18:4								
outperform 3:20,21 12:21 process 15:12 25:7 35:17 regards 32:17 17:22 18:14 30:21 32:19 38:16 19:10 26:10 Plaza 1:5 productivity 36:10 37:1 related 22:7 20:19 21:11 robust 31:17	_							
38:16 19:10 26:10 Plaza 1:5 productivity 36:10 37:1 related 22:7 20:19 21:11 robust 31:17								
		· ·		-				
output 12.4,3 39:25 rates 11:3,8			1 laza 1:3	productivity		related 22:7	20.19 21:11	100ust 51:1/
	output 12:4,5	39:23			rates 11:5,8			

							1 490 3
rolling 39:18	39:9	2:3	6:8 7:1,12	22:19,22	Thursday	<u>U</u>	1:17
room 20:10	segment	sits 5:3	strategist	team 8:1 9:1	44:3		viewed 9:14
roughly	39:22	situation	7:24	ten 5:5	timber 22:16	ultimately	views 8:7
27:22	selection 2:17	11:14	STREHLOW	tenants 24:5	time 7:5 9:10	28:3	volatile 23:16
run 7:13 14:3	sense 17:23	situations	1:15	term 6:22 8:9	10:12 13:2	unachievable	37:15 38:23
15:17	24:4 31:13	31:12	stress 25:21	8:21 9:19	14:8,9	16:15	volatility 7:17
running	35:21	Skyhard	structural 7:7	9:19,22	18:15 27:3	uncertainty	9:24 11:20
11:14,15	sent 3:23	40:14	suballocatio	10:15,16	34:12 35:15	11:5	11:23 16:14
11.11,13	37:22 44:1	slightly 10:7	13:13	15:7 18:13	36:2,20	underperfo 38:20 42:20	20:21,21,23
S	set 11:13	25:15 38:20	substantially	18:20 19:10	37:2 38:1		21:17,18
S&P 4:4	15:23 17:3	38:24 39:11	28:17	21:12,13	43:12	underperfo 34:14 41:13	22:3 23:1,5
23:12,14	36:9 40:10	40:8,15	suffered	24:9 25:12	times 23:19		23:9,13
savings 28:22	sets 8:8	slot 3:16 4:5	42:23	terms 5:4,10	today 5:14	underperfo 22:21	24:22 26:14
28:24 29:8	setting 14:21	small 2:18,23	sufficient	27:23 28:24	29:2 30:12	understand	27:8 30:5
29:13	17:21	3:4 4:4 20:9	14:4	30:14 31:7	33:2 41:23	13:24 30:3	38:1,3 39:9
saw 12:18	sharply 12:19	24:8 29:9	SUITE 1:17	32:3,6	Tom 36:14		Von 41:10,12
saying 15:2,4	34:16	29:11 41:10	supervision	testing 25:21	tomorrow	underway 42:13	41:21 42:19
18:4,7 23:4	shift 7:7	smaller 31:6	45:18	Thank 2:20	39:4	42:13 underweight	
31:23 42:2	shifted 26:19	somebody	supplemental	4:20 32:22	top 13:11		$\overline{\mathbf{W}}$
says 8:10	shifts 7:2	31:14	37:18	43:19 44:9	25:22,22	34:9 40:1 underweights	want 7:12
scale 31:3,10	short 38:4	somewhat	supported	Thanks 5:20	27:5 41:3	6:19	13:5 21:2
32:14,14	short-term	22:13	8:1	theoretically	topic 17:19	unfunded	25:17 26:20
scenarios	6:20 8:13	soon 39:18	sure 16:20	26:12	total 23:8	25:8 36:22	31:22 33:16
13:9	show 16:6	sorry 34:19	23:1 25:3	thing 27:14	track 3:9	union 17:23	wanted 15:24
scheduling	19:5	sort 11:20	27:5 31:22	42:13	traditional	unreasonable	way 5:1 23:2
44:2	showing	19:22 25:21	surveyed	things 5:9,11	20:2 35:21	24:13,18	39:2
Scott 1:10 2:1	34:20	27:11,13	14:9	6:24 9:6,8	transcript	update 4:22	we'll 11:19
2:9,12,16	shown 13:1	Sounds 32:21	survivorship	9:20 17:16	45:8,15	37:6	19:11 29:1
2:21 4:6,10	19:2 20:17	sourced	9:16	20:7 22:15	trend 39:7	upside 27:10	33:3 43:13
4:16,20	36:2	43:18		32:7 36:19	40:21	upwards	we're 3:15
32:23 43:19	shows 25:19	space 20:6	T	37:8,16	tricky 31:12	26:19 27:14	5:13 7:5 9:6
44:6,9	33:12	speak 15:22	T 45:1,1	think 8:19	31:16,22	use 8:15,24	11:13,14
second 2:10	side 8:9,16	specific 12:11	tab 5:21 33:3	10:12 15:15	trustees 6:3,3	12:13	14:21 16:17
2:11 4:14	20:5	specifics	tactical 6:19	16:3 17:18	trying 17:24	utilizing 20:3	16:21 27:11
4:15 19:12	significant	32:19 43:16	tail 25:24	19:11,12,22	20:18 40:10	43:1	27:12,17
seconded	7:3	staff 5:10	26:1 27:9	22:2 25:20	turn 2:19	43.1	29:6 30:20
2:13	significantly	29:20,22	take 5:7,17	26:2 28:3,4	two 1:5 2:22	v	35:13 37:11
security	12:17 16:8	standard	8:4,21 9:22	29:16 30:18	3:14 6:4 8:8	valuations	40:1,14
10:18 17:23	19:21 20:20	20:22 21:21	11:19 20:11	32:2,9 33:3	23:17 27:18	9:24 10:2,5	42:17
see 5:18 7:20	29:10	25:16	28:7 30:1	35:13 36:8	29:3,5,11	value 27:20	we've 10:1
8:8 9:17	similar 39:5,6	start 5:19	34:12 35:4	37:22 38:11	31:19 36:19	33:19 36:4	19:20 20:1
11:12 13:10	39:7 40:24	30:22,24	36:1 43:13	41:5 42:7	44:4	37:8 38:13	20:23 28:8
14:4 15:20	similarly	31:1,2 32:9	taken 5:14	42:10,23	type 8:16,24	41:4	30:9 31:11
18:24 20:9	25:24	36:11	17:2 45:6	43:12	30:22	variances	36:2 37:12
21:4,10	simply 23:17	statement	takes 9:3	thinking 7:7	typical 8:14	39:18	39:8 40:12
25:10,13	simulation	6:11 13:17	talk 16:17	14:12	9:13	variety 7:15	42:13
26:3,10	7:14,15	19:16	30:21 41:9	third 5:21	typically 5:24	various 3:8	Wednesday
27:16 30:11	11:21 15:13	static 6:23	talked 26:13	thoughtful	6:4,22,23	25:20	1:2
33:4,19	29:23	stenographic	31:5,11	32:1	8:24 10:14	version 38:4	weigh 11:9
37:18 38:9	simulations	45:5	talking 7:6,11	thoughts 5:5	11:10,15	38:6	weight 13:19
38:18 39:24	11:15 12:7	steps 30:12	32:8 35:10	5:8	12:15 13:19	versus 11:11	went 30:15,21
41:1	15:17	32:3	target 24:13	three 3:6 6:4	20:8 22:11	19:8	32:10
seen 3:23	Sinking 1:1	strategic 6:7	targeted 6:9	29:6 41:14	34:9	VIDEOGR	white 1:12
10:1 20:24			targets 13:16				2:11,15
	ı	ı 	·	·	<u> </u>	ı 	<u> </u>

rage 0		•	-
26:7 42:7	10% 21:8	3	6
wonderful	24:12,17,18	3 7:19	
41:19	27:21 28:5		6 13:10 15:4
work 2:24	29:17	3% 34:9	20:17
worked 3:1,2	10,000 11:15	30 7:6 8:20	6% 18:6
30:9	10,000 11.13 10.7 30:5	9:14 15:7	38:16
	10:7 30.3 10:50 44:13	27:20 37:2	6.4 18:6,8
working		30-year 9:12	600 4:4
38:19	100 3:18	36:17	65 6:13
wouldn't	41:15	31st 33:5	
21:20 24:21	100% 42:3	38:10,13	7
WWW.ST	11 26:22	41:11	7 18:4,11
1:18	116 1:17	35 6:14 37:2	19:11
	11th 43:24	35% 15:3	7% 18:14
X	44:3	36 28:20	7.0 19:6
	13 1:2 45:7		7.2 24:10
Y	14 21:3 28:18	4	7.3 14:22,23
yeah 5:21	32:11	4.33 40:14	16:7,15
30:9 32:18	15 21:8 25:11	400,000	19:12 24:11
year 3:14	32:12 37:12	28:22	28:3 29:18
11:5 14:6,6	37:14	44% 19:9	30:4 36:10
28:18,20,22		44.7 15:7	75th 12:4
33:13,19,21	160 27:22	48 24:11	7th 38:2
33:24 34:4	16th 1:5 2:5	49% 24:11	7 til 30.2
34:7,14,18	18 25:11		8
34:24 35:12	42:22	49.5 28:19	
35:13,24	18940 1:18	491,000 34:5	8th 37:7 41:2
37:13 40:19	1st 33:20		
41:13,13	37:13	5	9
42:22	37:13	5 24:18 28:5	98th 12:4
	2	32:12,15	
years 5:6 6:4		5% 11:1	
6:5 7:6,10	2 39:20	13:18,18	
8:12,20	2.35 40:8,9	21:7 24:9	
9:14 10:6	2.48 40:8	24:17	
11:4,8 15:2	2.5 33:12,17	5.4 34:3	
15:7,15	34:20	50 3:20 19:10	
24:3 25:2	2.6 34:6	50% 42:3	
27:20 28:18	2.9 34:9	50/50 23:14	
36:10 37:4	20 14:6 15:15	23:15	
41:14	27:16 32:13	504-4622	
yield 10:17	20-year 36:16	1:16	
10:21 11:1	20% 21:9	504-7155	
12:23,24	2019 1:2 11:5	1:16	
40:16,21	34:18 40:23	51 33:23	
· · · · · · · · · · · ·	45:7		
\mathbf{Z}	215 1:16,16	51.8 35:2	
	24 35:11,23	520 38:14	
0	25 35:11,23	520,736,000	
	25 % 11:22	38:15	
1		530.9 41:4	
1 2 40.0	25th 25:22	54 1:17	
1.3 40:9	26:9	543 33:21	
1.6 35:2	26.3 34:3	34:5	
10 14:6 15:15	26.5 33:22	55 3:20	
18:21 32:12	27 33:22 35:1		
32:15			
	I	I	