State of Alaska
ALASKA RETIREMENT MANAGEMENT BOARD
MEETING

Videoconference

MINUTES OF
September 23-24, 2021

Thursday, September 23, 2021

CALL TO ORDER

CHAIR ROBERT JOHNSON called the videoconference of the Alaska Retirement Management Board (ARMB) to order at 9:00 a.m.

ROLL CALL

MS. VRANA noted she was present on behalf of ACTING COMMISSIONER HOLLAND; CHAIR JOHNSON said that under the statues guarding the ARM Board, ACTING COMMISSIONER HOLLAND could not delegate the authority to vote; MS. VRANA stated that they were aware of that.

Seven ARMB trustees were present at roll call to form a quorum.

Board Members Present
Robert Johnson, *Chair*
Bob Williams, *Vice-Chair*
Gayle Harbo, *Secretary*
Lorne Bretz
Allen Hippler
Dennis Moen
Donald Krohn
Commissioner Amanda Holland *(joined late on 9/23/2021)*

Board Members Absent
Commissioner Lucinda Mahoney *(absent 9/23/2021)*
Commissioner Amanda Holland (absent 9/24/2021)

Investment Advisory Council Members Present
Dr. William Jennings
Dr. Jerrold Mitchell
Ruth Ryerson

Department of Revenue Staff Present
Zachary Hanna, Chief Investment Officer
Pamela Leary, Director, Treasury Division
Brian Fechter, Deputy Commissioner
Kayla Wisner, State Comptroller
Scott Jones, Head of Investment Operations, Performance & Analytics
Michelle Prebula, State Investment Officer
Kevin Elliot, State Investment Officer
Casey Colton, State Investment Officer
Benjamin Garrett, State Investment Officer
Victor Djajalie, State Investment Officer
Shane Carson, State Investment Officer
Mark Moon, State Investment Officer
Sean Howard, State Investment Officer
Steve Sikes, State Investment Officer
Ryan Kauzlarich, Accountant V
Hunter Romberg, Investment Data Analyst
Grant Ficek, Business Analyst
Alysia Jones, Board Liaison

Department of Administration Staff Present
Paula Vrana, Deputy Director, Division of Retirement & Benefits
Ajay Desai, Director, Division of Retirement & Benefits
Kevin Worley, Chief Financial Officer, Division of Retirement & Benefits
Kris Humbert, Business Integration Officer, Division of Retirement & Benefits

ARMB Legal Counsel Present
Benjamin Hofmeister, Assistant Attorney General, Department of Law
Rob Schmidt, Assistant Attorney General, Department of Law

Consultants, Invited Participants
Steve Center, Callan
Avery Robinson, Callan
Jonathan Gould, Callan
David Kershner, Buck
Scott Young, Buck
Paul Wood, Gabriel Roeder Smith
Bill Detweiler, Gabriel Roeder Smith
Steve Zaun, J.P. Morgan
Jeff Shields, J.P. Morgan
Tom Klugherz, J.P. Morgan
Darren Rabenou, UBS Farmland LLC
Jim McCandless, UBS Farmland LLC
Daniel Murray, UBS Farmland LLC

Tom Johnson, Timberland Investment Resources
Chung-Hong Fu, Timberland Investment Resources
Mark Seaman, Timberland Investment Resources
Chris Mathis, Timberland Investment Resources
Julio Garcia, IFM Global Infrastructure Fund
David Altshuler, IFM Global Infrastructure Fund
Nick Siemsen, Pathway
Jonathan Roth, Abbott
Leonard Pangburn, Abbot
Dillon Booth, Abbot

Others Present
Elaine Schroeder, Public
Doug Woodby, Public
Diane Graham, Public
Doug Gregg, Public
John Hudson, Public
Jim Simard, Public
Paul Miranda, Public

PUBLIC MEETING NOTICE

Board Liaison ALYSIA JONES confirmed that public meeting notice requirements had been met.

APPROVAL OF AGENDA

MR. HIPPLER moved to approve the agenda. MR. KROHN seconded the motion.

With no objections, the agenda was approved.

PUBLIC/MEMBER PARTICIPATION, COMMUNICATIONS AND APPEARANCES
MS. SCHROEDER, co-chair of 350Juneau noted an op-ed in the ADN by attorney and former state senator Joe Paskvan. She read selections from the piece regarding ExxonMobil and the company's loss of value by 50 percent and Norway's sovereign wealth fund was advised to divest all shares from oil and gas companies into renewable energy companies - Norway's fund rejected the advice and continued ownership in shares of oil and gas companies through 2020 which resulted in an 11 percent loss. She noted that Paskvan's op-ed noted that since 2018 the cost of producing electricity from solar had been lower than that of fossil fuels.

MR. WOODBY noted that he was a state pension beneficiary and a member of 350Juneau and thanked CHAIR JOHNSON and COMMISSIONER MAHONEY for the letter that was published in July on the state website explaining the reasoning for not divesting from fossil fuels, noting that the ARMB's fiduciary duty had more restrictive investor rules than most institutional investors. He went on to explain that they had sampled 10 states randomly to see if they too had prudent investor rules. He noted seven out of 10 had similarly restrictive policies on diversification. He said the diversification requirements had a caveat similar to Alaska's within Statute 13.36.235 which stated, "Unless the trustee reasonably determines that because of special circumstances the purposes of the trust are being served without diversifying." He then asked if a prudent investor looked at losing money on a failing sector, like oil and gas, as a special circumstance?

MR. WOODBY then thanked the staff for the response he received on September 13th to his request for public records regarding holdings information. He said the response indicated that the fossil fuel holdings amount to only 3 percent of the total holdings.

MR. WOODBY said that both New York City and New York State pensions were being divested through a fiduciary analysis approach. He said BlackRock and Leucadia had done the research. He noted that there had been no negative financial impacts but had moderate improvement to returns for institutions that had adopted divestment, and that institutional divestment actions had passed fiduciary prudence tests.

MR. WOODBY closed his discussion by stating that ExxonMobil had returned to the long-term downward trend showing a 31 percent loss over the past five years. He said the prudent approach would be to sell while the industry was enjoying a bounce back which he suggested would be short-lived.

MS. GRAHAM said that she was from Bethel and was concerned about the proposal to reset the market value of the TRS system assets for short-term benefit. She said her and her husband were retired educators that still lived in Bethel and their retirement was dependent upon the TRS being funded in the future.

MR. GREGG reminded the Board of the State Constitution Article 12, Section 7 which concluded with, "The systems shall not be diminished or impaired." He noted that the American Legislative Exchange Council estimate the unfunded liability for TRS and PERS at $33.9 billion and state actuaries with the FY2021 to FY2039 payoff plans estimated the unfunded liability at $8.1 billion. He noted that artificially low contributions during good times were part of the reason for the unfunded liability and that it was not the time to reduce contributions to the retirement systems.

MR. HUDSON of Juneau said that he was a member of 350Juneau and a state pensioner. He noted a signed executive order by Biden titled "Tackling the Climate Crises at Home and Abroad." He said that the consequences of the order would have a negative effect for the value of fossil fuel holdings. He said Biden had ordered the Secretaries of State, Treasury, and Energy to identify steps to end the international financing of fossil fuel-based energy, however the Treasury would advocate for investments that prioritize clean energy innovation and efficiency. He noted the order promoted renewable energy development on public lands and offshore waters with a goal to double offshore wind energy production by 2030. He said the Department of Interior was revising regulations that would lower the cost of wind and solar energy development on federal lands.

MR. HUDSON said that Biden had ordered the Secretary of the Interior to pause new oil and natural gas leases on public lands and offshore waters and consider adjustments to royalties. He noted that a federal judge had lifted the Interior's ban on new oil and gas leases last June, but the department had appealed the ruling. He also noted that Biden had ordered agencies to ensure that federal funding would not directly subsidize fossil fuels and the administration's American Jobs Plan, which was contained in the infrastructure bill, eliminated billions of dollars in subsidies, loopholes, and special foreign tax credits for the fuel industry.

MR. HUDSON said the trillion-dollar infrastructure bill that was moving through Congress would provide $75 billion to clean energy infrastructure, and the budget reconciliation package would provide $200 billion to incentivize clean energy production while penalizing fossil-fuel based energy.

CHAIR JOHNSON thanked the speakers.

APPROVAL OF MINUTES

<u>MS. HARBO moved to approve the minutes of the June 17-18, 2021 meeting of the ARM Board. MR. KROHN seconded the motion.</u>

With no objections, the minutes were approved.

STAFF REPORTS

A. Retirement & Benefits Division Report

1. Buck Consulting Invoices

MR. WORLEY noted that on pages 44 to 47 of the Board packet was a summary of the monthly billings request to the Board, that they provide a quarterly update on the billings received from Buck Consulting.

2. Membership Statistics

MR. WORLEY referred to pages 48 to 52 of the Board packet which was the report on retirement membership activity through June 30, 2021, summarizing that they've seen a decline in active membership in the DB Plan for PERS and TRS since its closures in 2006 for new members. The number continued to decline while active membership in the DCR Plan continued to increase.

MS. HARBO asked if there was any indication as to why they were leaving; MR. WORLEY said that they do not get specific reasons; MS. HARBO then asked if the DC Committee received feedback on the reasons members were cashing out at the DC Committee level; MR. WORLEY stated that some of the disbursements and reasons that membership checks some of that was covered in the fund financial presentation scheduled later on the agenda.

MR. DESAI referred to page 53 of the Board packet which was a report provided to the DC Committee yesterday. He reminded the Board that for many years the Division had received requests to withdraw funds from the DC Plan, which they could not do according to the plan provisions, but if they were terminated or experiencing a qualified unforeseeable emergency as defined by the IRS code, or to a QDRO or death, they would be able to draw from the DC Plan. Other than the aforementioned situations, the DC account remains unavailable to the members until distribution age of 72. He said that in 2020 Congress passed the SECURE Act which allowed withdrawal provisions for the DC Plan sponsors if they choose to offer it. The Division took the opportunity to amend the plans to adopt the additional features that would help membership.

MR. WILLIAMS asked if it was something the plan had to do and did not need the ARM Board approval for: MR. DESAI confirmed that was the case.

MR. DESAI gave an update on the BEARS project. He said DRB hired Linea Solutions, a project management team in 2019 and an agreement was signed with Sagitec Solutions in April of 2020. He explained the integrated enterprise-wide system supported all the core business functions for pension and health plans for all tiers. He said the system would be a retirement information system and a solution with tools to enable the state to maintain and improve the services to the members. He then introduced KRIS HUMBERT who was overseeing the project.

MS. HUMBERT reported that they were doing very well with the implementation of the project, that they were on time and on budget. She noted that they would have the first pilot implementation review and program testing starting November 8th.

B. Treasury Division Report

1. ARMB FY2023 Budget

MS. LEARY announced that MS. WISNER would be leaving and thanked her for her service and all her work at the Treasury Division.

MS. LEARY then referred to the action memo on page 53 of the packet. She stated that the information had been reviewed and discussed in the Operations Committee and an action memo to recommend the full board to adopt the FY2023 proposed budget was approved.

2. Action: FY2023 Budget Proposal

On behalf of the Operations Committee, CHAIR JOHNSON moved to adopt the FY2023 Proposed Budget, with the understanding that components will be subject to appropriation by OMB and the Legislature. A roll call vote was taken, and the motion passed unanimously.

C. Liaison Report

1. Disclosures Report

MS. JONES noted that the second quarter disclosure memorandum was in the Board packet and that there were no disclosure transactions that required additional review or discussion.

2. Communication Report

MS. JONES noted that the communications report contained a list of communications directed to the board since the last meeting, and a summary of public records requests received from May 1 to August 31, 2021.

3. Meeting Calendar

MS. JONES then presented the calendar noting the next scheduled Board meeting on October 11th and then the December meeting. She asked if the Board had suggestions as to where they would like the meeting held, given the current meeting had to transition to a virtual meeting.

CHAIR JOHNSON asked the Board for suggestions and stated that he would like it to be in Juneau. MS. HARBO asked if they should consider the outbreak of COVID; CHAIR JOHNSON said that was a consideration, but in the absence of an overwhelming objection, he said they should try to meet in Juneau. As there was no objection voiced, CHAIR JOHNSON asked MS. JONES to check into the logistics.

CHAIR JOHNSON noted that the meeting in October was a special meeting for further discussion on the prospect of changes to the valuation process going forward and that the meeting would most likely be virtual.

MR. WORLEY said that he believed they needed an Actuarial Committee meeting to pass the resolution from the committee before the Board could take it up.

CHAIR JOHNSON disagreed on the necessity of having it go through the Actuarial Committee meeting.

He said he would not propose a committee meeting for the Actuarial Committee, but to have an ARM Board meeting on the subject. He then asked if there were any objections, hearing none he stated that the Audit Committee would meet at 8:00, the ARM Board would meet at 9:00 and would possibly be completed by noon.

D. CIO Report

MR. HANNA started with an exhibit from Callan's report that showed the ARM Board returns for the fiscal year. He noted that the last year was very strong with the PERS return of 27.6 percent which was the highest return since they began tracking performance 37 years ago. He said the strong performance put the ARM Board near the top quartile for most time periods, exceeding the performance of 75 percent of the years' past.

MR. HANNA noted that he had a love/hate relationship with the cumulative performance chart, that they had been chasing the actual return target since the financial crisis. He said it took the global pandemic to finally catch up.

MR. HANNA said MR. SIKES and Callan had put together a complete review of the program, from an asset allocation perspective. He noted that they would hear from real estate, farmland, timberland, and infrastructure managers. They would also hear from Callan on performance, Shane Carson on risk, Pathway on cryptocurrency and blockchain technology, and Abbott Capital would report on their private equity portfolio.

MR. HANNA referenced the response to constituents concerned about the ARM Board's fossil fuel investments referenced earlier in the meeting and commented that within the response their daily holdings showed that public securities were 3.1 percent invested in fossil fuels as of the end of the fiscal year.

MR. HANNA noted that Item 2 of the CIO report was the watch list. He said the Man Group was the only manager on the watch list due to personnel changes and that they expected to continue monitoring that into 2022.

MR. HANNA said that Item 3 were areas where he exercised CIO delegation for contracting. He noted that contracting activity had slowed down modestly over the past several months for everyone except for SEAN HOWARD in private equity, whom had a very busy year.

MR. HANNA said Item 4 was the summary of the portfolio rebalancing that took place between June and August. He said the rebalancing focused on risk management and returning the portfolio back toward the ARM Board's established asset allocation and risk profile on a quarterly and more frequent basis when needed.

E. Fund Financial Presentation

MS. WISNER thanked MS. LEARY and MR. WORLEY for their kind words during the meetings and thanked Treasury staff and the Board.

MS. WISNER noted that the financial report for period ending July 31, 2021 started on page 65 of the Board packet. She stated that as of September 22nd for all nonparticipant-directed invested assets, PERS invested assets were 22.8 billion, TRS assets were 10.9 billion, JRS total invested assets were 293.8 million and NGNMRS had a total invested asset balance of $50 million. She said nonparticipant-directed plans had invested assets of $34.1 billion, year-to-date investment income for nonparticipant directed funds through September 22nd was $885 million, with a year-to-date contribution of $9.2 million. She said as September 22nd there was 17.2 billion worth of invested assets under internal management.

MS. HARBO thanked MS. WISNER and wished her the best for the future.

CHAIR JOHNSON also thanked MS. WISNER for her service.

MR. WORLEY noted that his presentation started on page 93 of the Board packet which showed the first month of FY2022. He then referred to page 94 which showed PERS DB Plan, the TRS DB Pension Plan and the Judicial Retirement System Pension Trust received the State of Alaska appropriation for PERS and TRS.

MR. WORLEY said that on page 99 of the packet, was the FY2021 financial report which showed the Board had full financial data and cash flows for the 12 months ending June 30. In response to MS. HARBO's earlier question, he said page 102 showed information provided by Empower for each of the Defined Contribution plans, including what type of payment it relates to.

TRUSTEE REPORTS & LEGAL REPORTS

A. Chair Report

CHAIR JOHNSON noted that they had seen the letter he co-signed with the Commissioner of Revenue responding to the inquiries from beneficiaries. He said that there were document requests and FOIA requests regarding the subject and that the Department of Revenue, through the liaison, had been responding to all of the requests appropriately.

B. Committee Reports

1. Audit Committee

MS. HARBO said during their meeting of September 22nd, they had a report from KPMG on the financial statements of the ARM Board's invested assets for FY2021. She said it yielded a clean audit with no matters of concern. She noted that MR. WORLEY had given an update on ongoing DRB audits which were a bit behind due to reconciliation of GASB concerns, that had caused a three-day delay because information had to go between Buck and KPMG.

MS. HARBO stated that MR. WORLEY also reported on the internal audits of the 165 PERS employers and the 58 TRS employers, noting that most of the audits in the past two years had been desk audits, but they would do some traveling in the near future for the large employers.

2. DC Plan Committee

MR. WILLIAMS said the DC Committee started with a warm welcome to MR. KROHN. He said that MR. WORLEY gave a presentation on membership fees with an overview of the history and the different fees for the different rates, with an overview of how the rates could be changed by MR. DESAI without a lot of process, if they needed to be changed. He noted there would be a follow-up agenda item regarding that at the December meeting.

MR. WILLIAMS reported that they had an update from Retirement and Benefits on the brokerage window implementation, that it was scheduled for November 15th tentatively.

MR. WILLIAMS said they had updates on the Deferred Compensation Plan amendments and an update from MS. DAVIDSEN of Empower regarding the general delivery address for those members in the rural communities and how they had to actual call in to register on the Empower system to have access to their accounts. They are working to get that issue fixed.

MR. WILLIAMS stated that they had a Treasury update from MR. HANNA and MS. PREBULA regarding the SmartSpend implementation, now known as SmartRetirement, which appeared to be going well.

MR. WILLIAMS said that MR. HANNA reported on the target date fund and three options that they were looking at with T. Rowe Price for DC members and the different ways they could improve what they had and at a better price.

MR. WILLIAMS said there was also a discussion about the glide path and the innovation and changes in some of the glide paths for target date funds.

3. Actuarial Committee

MR. HIPPLER said the first topic of discussion was the deviation between fair market value and actuarial value. COMMISSIONER MAHONEY had outlined the impact of a $7 billion increase in assets and noted that they could not combine healthcare trusts and funds with the pension trusts, that if they did and set it at market value, the TRS would be 101 percent funded. That led to a discussion about if it was appropriate for the state to reset fair market value to actuarial value with corresponding impacts on the funding of the state to cover the unfunded liabilities to the pension.

MR. HIPPLER said that the actuary from Buck noted that when that sort of deviation between market value and actuarial value was big enough to address, there would be concerns about increased volatility.

MR. HIPPLER said that they also heard from GRS, their review actuary, who had a different take and more concerns about increasing the volatility of the funds going forward and concerns about consistency, specifically with Practice No. 44. He noted that there had been comments about fiduciary duty as a key driver, concerns over timeliness. He stated that potential overfunding of the plans was also discussed, and more research was needed on the impacts to the plans in the event of overfunding.

MR. HIPPER said they had also discussed resetting actuarial value to fair market value and the additional state contributions for the various plans that might not necessarily be directly impacted by the decision. He noted that the Actuarial Committee did adopt most of the contribution rates and those would be submitted to the Board as action items.

MR. HIPPLER said that at the October 11th meeting they would discuss the resetting of actuarial value to fair market value and would need to understand the statute behind it to successfully explain why they made the decision not to recommend that contribution amount, and what they would suggest happen to amend that statute.

MR. HIPPLER noted that they also discussed the actuarial timelines going forward, that Buck had provided educational materials which were great tools to look at the metrics of the plans and the demographics.

4. Operations Committee

CHAIR JOHNSON said they heard reports on Trustee travel and honorarium and meeting costs. The motion regarding the adoption of the budget was approved for recommendation to the Board.

CHAIR JOHNSON stated that they heard the report by MR. JONES regarding a Middle Office update on the logistic issues for Treasury. He said that they had discussed the self-assessment which had also been discussed by the Actuarial Committee. He noted that there was a provision that requires self-assessment by the various committees. He said the Actuarial Committee adopted the process and performed a self-assessment, and the Operations Committee considered if it was a good idea to forward that to the other committees. He said there was a four-question matrix that would be presented at each of the other committees for their consideration.

5. Alaska Retiree Health Plan Advisory Board

MR. BRETZ stated that the Health Advisory Board (ARHPAB) had met several times since the last board meeting to add additional preventative services to the plan that differed from the level that active employees receive.

MR. BRETZ noted that there were costs associated with it and that the Board received several expert opinions regarding the costs, The two sets of experts' opinions were drafted into the resolution with two different opinions as to how much it was going to cost. He read excerpts from the resolution that the Board approved.

The evaluations by the independent certified Fellows of the Society of Actuaries for the addition of preventative care breaks down as follows:

Evaluation 1
Anticipated increase to annual plan costs by approximately $3.35 million
Implementation of prior authorization for specialty medications to decrease plan costs by approximately $7.7 million, resulting in a total anticipated decrease to the plan costs by approximately $4.35 million.

Evaluation 2
Anticipated increase to annual plan costs by approximately $28.6 million
Implementation of prior authorization for specialty medications to decrease plan costs by approximately $100.8 million, resulting in a total anticipated decrease to the plan costs by approximately $72.2 million

MR. BRETZ noted the difference of opinion as to how much it was going to cost. He also said that it had not yet been determined if they would see savings in the future. He said that every member of the Board that reviewed the studies had been working on the preventative issue and recommended that the Division implement the changes, so the Division was moving forward with the recommendation.

MR. BRETZ said that there was a public comment period and the majority of the public that commented was in favor of the changes. Several of the retirees were concerned as to how the prior authorization of prescription specialty medications were going to impact them directly and the Division was working to get answers.

MR. BRETZ said that it would not change the desire of the Division to have a Medicare supplement or Advantage Plan, which was still in the process, the preventative services would not be an option but a plan change.

MS. HARBO commented that EMILY RICCI and her team have had two town hall meetings to answer retiree question on the new proposals and had done an excellent job answering the questions of the retirees and anyone else who calls in.

MR. HIPPLER asked if the plan value increase were liabilities or assets; MR. BRETZ said it was accrued liabilities; MR. HIPPLER then asked if the changes would trigger a diminishment of benefits; MR. BRETZ stated they would not.

CHAIR JOHNSON recessed the meeting from 10:30 a.m. until 10:35 a.m.

C. Legal Report

MR. HOFMEISTER noted that his report had to do with diminution of benefits under Article 12 Section 7 of the Alaska Constitution which states, "accrued benefits of these systems shall not be diminished or impaired."

MR. HOFMEISTER noted that the first of the three cases he would discuss was the Metcalfe case. He said the Alaska Supreme Court had issued a decision holding that the changes in the law eliminating the ability of a state employee to reinstate to a prior service tier after the creation of the Defined Contribution Plan in 2005-2006 was unconstitutional under the diminishment clause. The case returned to the trail courts in May and the state moved for entry of final judgment as there was nothing further to litigate. Plaintiffs moved for a trial claiming they should be allowed to direct how the state imposes the decision. The state opposed that position, there was additional briefing and an oral argument. He said if the court agrees with the state's position, there would be an immediate implementation of Metcalfe which would result in a repeal of the prior amendments and a permanent enjoinment of the state back to that statute. He said if the plaintiffs were successful the outcome was less clear.

MR. HOFMEISTER noted that the impact would mean an increase in membership to the Defined Benefit Plan under PERS and TRS. He noted that the number used in terms of the formation of the class was approximately 78,000 potential prior employees that would be impacted, and cautioned the Board in using that number, stating that it was a theoretical number and in practice thought it was going to be much less. .

MR. HOFMEISTER gave an update on the RPEA case filed in 2018. He reminded the Board that the case was about amendments to the Retiree Health Plan in 2014 which coincided with a change in third-party administrators. He said plaintiffs were claiming the changes were causing diminishment of benefits. They were seeking injunctive and declaratory relief and restitution. A 10-day trial was scheduled in Anchorage on January 31st 2022 but could be continued due to COVID and discovery issues.

MR. HOFMEISTER discussed another RPEA case that had not been reported on for some was the Dental/Vision/Audio coverage matter filed in 2016. The case involved a possible diminishment occurrence related to changes to the DVA coverage in 2014. The case focused on whether DVA coverage was a constitutionally protected accrued benefit of state employment. The Superior Court ruled against the state requiring the state provide retirees the option of returning to the 2013 plan. The state complied with the order and appealed the underlying issues to the Supreme Court. He said oral argument occurred on April 1st, 2021, and a decision is expected next spring.

PRESENTATIONS

A. Performance Measurement - 2nd Quarter

CHAIR JOHNSON introduced STEVE CENTER from Callan.

MR. CENTER started with the slide located on page 103 of the Board packet. He said slide 2 of their presentation was of the second quarter of 2021 which had continued recovery, consumer sentiment was strong which was driven by the continued vaccine rollout. He noted that GDP growth was quite strong.

MR. CENTER stated that with the rapid decline then the rapid recovery near the end of 2020 and into 2021 would be something they would have to deal with for the next 10 to 15 years.

MR. CENTER noted that the fixed income market yields had fallen during 2021 and had affected the fixed income returns from the expected negative to a positive. He said TIPS on the other had rallied.

MR. CENTER moved on to slide 3 noting the overall market impact and what they had been watching. He stated that GDP had rose to 6.5 percent in the second quarter and the Fed was still anticipating a roughly 7 percent growth for the rest of the year. He noted an increase in consumer spending, nonresidential investment, consumers ramping up spending on food services, accommodations and there had been a return to travel. He noted that unemployment had dropped to 6 percent in March and held steady through June despite a gain of $850,000 jobs.

MR. CENTER noted that from a global standpoint, the Eurozone was up 8.2 percent in the second quarter, the U.K. was up 7.2 percent despite the pandemic and Brexit. He said Japan had slowed down, their vaccine rollout had been slow. He said he thought the end of Q2 they had about 8 percent of their age-eligible population vaccinated.

MR. CENTER said that China's GDP had risen 5.3 percent in the second quarter then slowed to a positive 1.6 percent in Q1. He noted that China was one of the few economies that saw positive GDP growth during 2020.

MR. CENTER noted that slide 4 showed a snapback in many of the sectors that had the biggest negative impact during the pandemic, such as airlines, REITS, travel and leisure.

MR. CENTER then moved on to slide 8 to discuss inflation. He said that the Fed looks at PCE, personal consumption expenditures, which excludes food and energy. He said the Fed targets historically 2 percent PCE over time. He said that data was not signaling a substantial rise in inflation, then noted that when inflation was north of 2 percent following a period where they had low to negative inflation, an increase in prices when there had been a decrease was not as impactful as if there had been a period of sustained inflation. He also noted that the Fed's aim was to achieve an average of 2 percent and that they were in a period where the PCE was north of 2 percent, but the Fed claimed it to be transitory and related to the ongoing economic recovery.

MR. CENTER stated that slide 9 showed the producer price index that tracks the overall cost related to industrial production. He said the PPI was falling pre-pandemic and continued to do so through the beginning of COVID and the onset of the economic slowdown. He said the PPI had spiked from supply chain issues and production issues. He noted that even with the growth of 19.5 percent in the near term, price levels related to 2018 had not hit where they historically had averaged.

MR. CENTER noted that slide 10 touched on the U.S. job market and the claims for unemployment continued to be above historic levels. He said the initial claims for unemployment remained high, north of 700,000 per month. He noted that there were about 9.5 million jobs to be regained in the

U.S. market.

MR. CENTER said that slide 11 showed federal intervention within the U.S. system. He explained the Federal Open Market Committee voted to continue to keep the Fed funds rate at zero in June. He said they had heard rumors about the Fed slowing their asset purchasing program which meant they believed the U.S. market had stabilized, so in turn the Fed would potentially continue the asset purchasing program and begin to moderate the market through their ability to move interest rates over time. He said the market predicts the rates to stay steady potentially through the middle of 2022 or approaching 2023.

MR. CENTER referenced slide 12 stating that liquidity was supporting the economy from the consumer side. He said the slide showed the U.S. personal savings rate had been pretty volatile but much higher than the historic average, raising to 34 percent in April of 2020. He said that savings usually fell during a recession. He noted that excess savings above the norm would insulate consumer spending during economic rough patches. He also noted that household financial assets had gone up substantially during the pandemic as well. He said the U.S. real estate market had done quite well during the pandemic, with people looking to buy in areas such as the suburbs where people could work from home.

MR. CENTER moved on to slide 15 which was Callan's periodic table of investment returns. He noted that they show the Board the table every quarter as a reminder of the benefits of diversification and why they create asset investment programs that were invested in equities and fixed income and real assets and alternatives.

MR. CENTER noted that slide 16 showed that the global equity market had continued to surge in the second quarter with the S&P 500 up 41 percent over the last year, emerging market equities up 41 percent, developed market equities were also up more than 30 percent and U.S. small cap stocks represented by the Russell 2000 were up 62 percent over the last 12 months. He said the initial recovery post pandemic was driven by Facebook, Amazon, Apple, Netflix, and Google.

MR. CENTER noted that slide 17 demonstrated the S&P 500 continued to reach record highs in the second quarter, since its low in March 2020 and the S&P was up over 96 percent with all sectors posting positive returns. He said there was an exception with utilities which were down 0.4 percent.

MR. CENTER referenced slide 18 showing outside the U.S. with strong performances despite COVID even though the vaccine rollout was slower. He noted that risk assets lost steam due to the Delta variant, small cap was in line with large cap with the exception of emerging markets where smaller companies had benefited. He said the U.S. dollar was pretty mixed, not a driver of performance for non-U.S. stocks. He said growth also had outperformed value outside the U.S. with the exception of emerging markets where commodity-rich countries rallied.

MR. CENTER moved on to slide 19 showing the U.S. Treasury yield curve had flattened during the quarter. He said the 10-year Treasury closed at 1.45 percent at the end of June with a dip of 29 basis points from the first quarter. He noted that the Bloomberg Barclays Aggregate Bond Index had rallied and was up 1.8 percent for the quarter. He said the high yield rallied and continued during the second quarter, with rates as low as they were, high yield issuers had continued to come into the market and had done very well.

CHAIR JOHNSON asked what exposures the ARM Board had with respect to Chinese investments - the real estate company that had been having problems; MR. CENTER said that the ARM Board did not really have any exposure to non-U.S. fixed income.

MR. HANNA noted that the ARM Board did have a low-level equity exposure since the Chinese company was in the equity indexes at less than a basis point overall.

MR. CENTER noted that he would skip over the real estate slides as his colleagues would be presenting on that topic the next day. He then moved on to Slide 23 which dealt with the private equity market. He noted that it had been a key driver of performance for the Alaska retirement plans and had produced big gains for 2020 and continued into 2021.

MR. CENTER moved on to slide 24 showing market trends that had impacted private equity. He said fundraising had continued to do well but had a slowdown in 2020 due to the pandemic. He said there was a substantial uptick in 2021 with more than $500 billion raised for the year and more than a 1,000 funds already in the market.

MR. CENTER showed Callan's dashboards on slide 26 which he noted had already been shown by MR. HANNA. He noted the returns in the top left-hand corner of the slide showing the performance over the 1, 3, 5 and 10-year periods, that all three plans were at or near the top quartile, ahead of the target over all periods. He noted that standard deviation or risk was in the top right-hand corner and showed no realized standard deviation again over 3, 5, and 10-year period, which was below median over all periods and below the target as well. He said the bottom left showed the maximum drawdown. He said the chart measured the largest loss over any of the individual time periods. He said that over all three time periods the maximum loss had been lower than peers.

MR. CENTER noted that slide 27 which showed the healthcare plans were basically the same story as slide 26 – near the top quartile for performance, below median standard deviation, maximum drawdown above the median, and Sharpe Ratio in the top quartile.

MR. CENTER explained that slide 28 was the military plan which had a lower target risk than the other retirement plans. He noted that its realized standard deviation over time was much lower relative to the peer group, resulting in a lower return profile. He stressed that was by design and directed the Board to look at performance relative to benchmark

MR. CENTER moved on to slide 29 explaining that it dealt with asset allocation. He reminded the Board that the PERS, TRS, and Judicial Retirement System had the same asset allocation targets and similar performance over time, noting that MR. HANNA and his team did a very good job keeping the asset allocation in line with the target asset allocation. He noted no areas of substantial deviation and said there was a slight overallocation to private equity which was a result of a very strong performance.

MR. CENTER displayed slide 30 explaining that one of the reasons they had a strong performance during the quarter and the trailing 12 months from the PERS, TRS, and Judicial plan was driven by the performance from private equity, and the overallocation to other alternatives which included private equity along with real assets. He said PERS had a slightly higher allocation to real estate and other real assets relative to peers which was one of the reasons for the strong performance relative to peers in the near term.

MR. CENTER said that slide 31 showed the historical performance for PERS was strong relative to peers, at or near the top quartile over all time periods shown.

MR. CENTER stated that the Sharpe Ratios were very strong at or near 1 percent with the PERS portfolio over the last 3, 5, and 10 years. He also said the PERS portfolio was in the top quartile with a Sharpe Ratio of 1.04 over the last 5 years and 0.94 over the last 10 years.

MR. CENTER said that slide 35 dealt with attribution, explaining that attribution analysis was to try to determine what the drivers of relative performance were for a plan versus its target benchmark over the given time period. He explained how the data in the columns, when calculated, would come up with two figures known as the manager effect and the asset allocation effect. He noted that if the asset class had outperformed its target, the manager effect would be positive, if it underperformed its target, it would be negative. He further explained that the asset allocation effect was drivers of performance that were created by being overweight or underweight to an asset class.

MR. CENTER said that slide 40 showed that the total domestic equity portfolio lagged during the quarter and year by 45 basis points behind its benchmark for the quarter and 1.5 percent behind over the last year. He noted that most of the underperformance came from the structure of the domestic equity pool, more specifically, the use of the factor-based strategies. He said that they did have slight recovery from those strategies in Q1, Q2 and a slight return towards growth and momentum, and large cap outperforming small cap.

MR. CENTER then displayed slide 41 which showed building blocks of domestic equity portfolio. He said that over the last year the total domestic equity pool had lagged the Russell 3000 index, large cap equity underperformed the Russell 1000 index, but the small cap had a strong performance placing the small cap portfolio up 66.7 percent last year versus the Russell 2000 index up 62 percent.

MR. HIPPLER asked if they had implemented factor-based strategies prior to the date shown on slide 40; MR. CENTER said the factor-based strategies were implemented prior to that; MR. HIPPLER then asked if 25 percent of the portfolio having factoring was enough to pull the total combined return down by 2.5 of 3 percent compared to peers; MR. CENTER stated that was correct as shown on slide 44; MR. HIPPLER then asked if the factors provided additional benefit, in the form of reduced beta; MR. CENTER confirmed that they should, that factor-based strategies historically had resulted in outperformance with slightly lower beta relative to the market. He also said that the way the domestic equity portfolio was structured it should result in outperformance over time with lower risk.

MR. CENTER moved onto slide 47 noting that it was the global equity portfolio. He said that portfolio was ahead of its target over all time periods and the last 12 months had it ahead of its benchmark by 1.3 percent.

MR. CENTER said that slide 48 showed the developed market equity portfolio noting that it did not include the emerging market equity exposure. He noted that the portfolio also had outperformed the benchmark over all time periods, well above median over the last year. He noted that some of the building blocks were shown on slide 49 from the international equity space. He noted a strong performance from all active managers over the last 12 months with Arrowstreet up over 50 percent. He said that Baillie Gifford and Brandes, the large cap growth and value non-U.S. equity managers, both performing over a positive 40 percent.

MR. CENTER said that slide 50 referenced the emerging market equity that had undergone a few changes post 2019 moving away from active managers and towards passive. He said that portfolio consisted of one passive investment in the emerging market index. He noted that portfolio underperformed its benchmark by 1.7 percent last year, but the overall performance was positive, up almost 40 percent.

MR. CENTER said slide 52 consisted of the fixed income portfolio which had a strong performance over the last year, up 2.2 percent relative to the benchmark, the fixed income target down 0.3 percent over the last 12 months and had outperformed its target over all time periods.

MR. CENTER said slide 53 was a snapshot of the underlying fixed income strategies, that the internal aggregate portfolio was down 19 basis points over the last 12 months, the aggregate index was down 33 basis points – the internal portfolio did outperform the aggregate.

MR. CENTER said slide 54 showed the opportunistic portfolio was up 23.4 percent over the last year, in particular the alternative equity strategy with McKinley Healthcare was up 35 percent. The tactical asset allocation strategies were up 28.3 percent.

MR. HIPPLER asked why they had outperformed substantially for the core fixed income; MR. CENTER said the internal fixed income strategy did outperform the aggregate benchmark by 14 basis points. He said the internally managed fixed income team had the ability to actively manage relative to the index, they can overweight or underweight Treasuries versus credit, they can opportunistically buy higher quality or lower quality corporate credit names relative to the index and take on a credit risk by buying more corporates than the benchmark has allowed for an actively managed portfolio to outperform the index.

MR. CENTER noted that slide 57 showed the various plans, starting with the PERS DC plan which ended the second quarter of 2021 with just under $2 billion in assets with two-thirds of the assets invested in the allocation funds.

MR. CENTER explained that slide 58 showed flows on an individual quarterly basis, explained the bars would be similar for each plan.

MR. CENTER noted that they had five consecutive quarters of positive investment gains or losses. He said that slide 59 showed that the DC Plan ended the quarter with $812 million in assets, up two-thirds of the assets invested in the target date funds and was cash flow positive from a contribution versus withdrawal standpoint. He skipped slide 60 and said that slide 61 was the Deferred Comp Plan with 1.2 billion in assets as of June 30. He noted that the plan was cash flow negative and had been historically cash flow negative with about $10 million flowing out rather than in on a quarterly basis.

MR. CENTER showed slide 63 stating that it was the SBS fund that had ended the quarter with just over $5 billion in assets.

MR. CENTER said the active options within the self-directed plans were geared for the benchmarks. He said the three-month T-bill index had underperformed Stable Value, which was a top decile performer relative to peers. He said the T. Rowe Price small cap fund had done well, the international equity fund which was made up of Brandes and Baillie Gifford had a very strong performance relative to peers and the benchmark.

B. Risk Report

MR. CARSON started his presentation on slide 2 (page 178 of the Board packet). He explained that twice a year a risk analysis was completed by TruView, which takes the ARM Board portfolio as of year-end and again at the half year mark and generates a significant report. The report takes the key charts and tables that are important in reporting to the Board and summarizes the results. He said the retirement system was designed to take risks with the end goal of paying benefits to the participants when due.

MR. CARSON explained that the staff used the tool to answer key questions which include risk positioning compared to the asset allocation that would be approved by the Board, what would be the potential magnitude of losses, how were risks compared to the strategic benchmark, were there areas that were adding or detracting from risks outside of expectations, and were there any unexpected exposures or concentrations of risk? TruView would then model several scenarios and stress-testing analysis.

MR. CARSON said that slide 5 showed volatility decomposition, which he said there was nothing to report. He said for volatility there was little change since December's reporting, public entities continued to contribute the bulk of volatility, that there was an increase in the contribution of volatility from private equity. He said the volatility at the portfolio level remained below expectations from the target asset allocation for FY2021, which was 13.9 percent, and that current volatility was at 12.6 percent. He said that the portfolio level value-at-risk in June was close to December's, so very little change. He noted that domestic and non-U.S. equities contributed the majority of the value-at-risk and was as expected. He said that equity beta on slide 7 was within expectations for the June report. He said the stress test showed relative outcomes compares to the asset class' benchmark.

MR. CARSON summarized the report by saying that everything was within expectations, public equity was the largest driver of portfolio volatility and value-at-risk.

CHAIR JOHNSON recessed the meeting from 11:56 a.m. until 1:15 p.m.

C. JPM Strategic Property Fund

MR. SIKES introduced MR. JEFF SHIELDS of JP Morgan; MR. KLUGHERZ informed the Board that MR. SHIELDS was having difficulties joining; he started the presentation noting the trends in the real estate market as well as areas of uncertainty. He said the real estate markets recovered quicker than expected due to improving operating fundamentals at the property level and the lower interest rates. He stated there had been a demand from investors that were actively allocating to core for yield in the low interest rate environment. He noted the income returns in the 4 percent range annually for core offered an attractive current return, and longer-term appreciation and diversification. He said industrial and suburban and multifamily properties had experienced a strong recovery, while urban office, retail and urban multifamily were recovering slowly.

MR. KLUGHERZ said the SPF fund had a very diversified portfolio of high-quality assets they believed was well position in the recovery. He also noted they had a strong performance year-to-date and a projected return for 2021 in excess of 10 percent. He said the fund had a strong asset selection that reflected in the fund's performance and would be important going forward as the recover would be uneven in the terms of performance.

MR. KLUGHERZ commented on the size of the fund saying that it was a unique advantage in that they had been able to access investments that were not widely available to other investors such as industrial investments made into several large truck terminal portfolios.

MR. KLUGHERZ noted that page 5 of the presentation discussed Real Estate Americas having a 50-year history in investing in core assets, an experience that was important not only to SPF's portfolio but also how they source and access investments. He said SPF had $40 billion of the firm's $60 billion-plus in asset investments and was the key focus for their organization. He noted that they had over $10 billion in transaction activity every year and they actively see opportunities as they come into the market.

MR. KLUGHERZ provided an overview of the firm, the locations of the offices, and their proximity to the local markets that they invest and manage.

MR. KLUGHERZ moved to page 10 which showed that SPF had delivered returns above the benchmark since inception. He noted that the fund had evolved significantly over the last 3 to 5 years to address the areas of underperformance. He said they were under allocated to industrial but had almost tripled that allocation over the last 5 years and were close to benchmark. He noted that they had in their development pipeline to add 200 to 300 more basis points of exposure to get them closer to benchmark. He said that they had reduced their office investments over the last five years by over $7 billion and narrowed their strategic focus to nine markets that they felt had long-term outperformance for the net operating income. He noted they were continuing to reduce their retail exposure and had only half a billion dollars of retail that was in various stages of disposition.

MR. KLUGHERZ then handed the presentation over to MR. ZAUN.

MR. ZAUN said that it was a great time to be invested in core real estate relative to other classes as it had been hitting fresh highs for the past 12 months. He noted that the return outlook for the next 3 years was in the 8 to 10 percent range, the highest return outlook they have had in the past 10 years.

MR. ZAUN presented slide 12 which showed a reminder of what SPF was and how it fitted into the market. He said SPF was the largest fund in the competitive index at $30 billion of equity and $40 billion of gross assets size and was a collection of several high-quality assets that had been curated over decades. He said the assets had outsized rent growth over cycles, that in good markets they grow rents faster because the tenants want to be in the buildings; he noted that they have renters from top law, financial services and some entertainment tenants. He said with a down market the rentals they have are a protection because the tenants want to be in the buildings for a long period of time.

MR. ZAUN moved on to slide 13 stating it displayed the outlook for the fund, which they thought was very bright. He said they thought the performance was going to be better that it had been over the past three years with a 9 percent year-to-date or greater through the end of the third quarter.

MR. ZAUN noted that in the past they were a largely overweight office, that as they looked forward, they had narrowed the office overweight, bringing them in line with the index. He said that to date, they had seen appreciation from industrial and suburban multifamily, but they were starting to see appreciation in retail and thought that the current quarter would show about 50 basis points in appreciation from their retail portfolio. He said they were also seeing it from urban apartments, that urban rents had recovered quite quickly. He said they expected the appreciation to be in the 2 to 3 percent range.

MR. ZAUN stated that 5 percent of the fund was allocated to development, that although it was a small percent of the fund, the development pipeline was well positioned with industrial development primarily in Southern California and a single-family for rent product under development which was a hot sector. He also noted a suburban Sun Belt multifamily under development that was doing well. He said they were expecting significant returns from it as the construction projects are completed.

MR. ZAUN said that slide 16 showed how the performance would broaden out. He said it was due to the revitalization of the urban cities. He noted that due to COVID, large cities like New York and San Francisco lost tenants and they thought it would take a couple of years to recover to the pre-COVID occupancy levels, but they had seen a strong recovery within the last six months. He noted that residential was the leading indicator due to its transient nature and were seeing higher occupancy levels across the portfolio than what they had pre-COVID. He also noted that rents were trending higher than they were pre-COVID. He said that with strong fundamentals combined with cheap financing was driving transactions.

MR. ZAUN moved to slide 19 which showed the balance sheet. He said the fund was conservatively leveraged with about 25 percent, they had no redemption queue and had an inbound contribution queue of $500 million. He noted that 93 to 94 percent of the portfolio was stabilized and shy of 5 percent of it was under development and 1.3 percent of it was completed development and was in lease-up.

MR. ZAUN said that he thought that work from home would become evolutionary and would have an impact to the densification that they had seen over the last 10 to 15 years where people had moved from private offices into more dense seating configurations.

MR. ZAUN commented that their positioning would give superior returns relative to the benchmark as it had over the last 5 years. He thought that they had outperformed due to the quality of focus and their positioning as far as the types of the offices they owned as well as the markets they were in. He noted that they were overweight in the San Francisco Bay area, west LA, and Boston which was where a lot of the innovation was taking place.

MR. ZAUN stated that they had designed the portfolio through infill development; that supply and demand dynamics in those infill locations were much better. He noted that they thought they were moving toward a model where same and next day package delivery would be the new norm and owning buildings that were close to the urban centers over time would prove to be much more desirable.

MR. ZAUN moved on to slide 22 to discuss the retail sector which had been out of favor for several years up to the pandemic but had survived and the tenants were still there paying rent. He noted the occupancy across the portfolio was 91 percent and had never dipped below 90 even during the pandemic. He said their average square foot across the mall portfolio was more than $1000 per square foot. He also noted that even in a consolidating market where tenants were downsizing the number of stores in their fleet, they were not going to downside the stores in their location where they had the highest sales.

MR. ZAUN moved on to residential where the last year had been urban versus suburban. He noted that suburban performed well and urban struggled as everyone moved out of the cities into the suburbs, however, urban snapped back and the portfolio was balanced.

MR. ZAUN said that it was a great entry point for core in general and SPF specifically, that they had performed well year-to-date and were excited about where they were headed.

MR. HIPPLER asked how 6 percent IRR for unlevered core compare historically; MR. SHIELDS said that it had been stable over the past 5 years, that the unlevered IRRs had been in that range, a little higher for retail and lower for multifamily, but on average in that range. He said that the debt costs were at 4 percent, with levered IRRs in the 8 percent range and with debt cost at 2 percent it did not take a lot of leverage to get to a 10 percent levered return; MR. HIPPLER then asked if the IRRs were stable over the last 5 years, did that mean cap rates were also stable; MR. SHIELDS said that the IRRs relative to cap rates depended on the variable they were assuming for rent growth, but that cap rates had been stable in the 4 to 5 percent range.

DR. MITCHELL asked about the holding time for the properties in the fund, if most of them were buy-and-hold situations, or did they buy properties and turn them over a year or two after. His second question was what were the sellers' point of view on the economy, interest rates, financing; MR. SHIELDS said for the first question, they tend to underwrite new deals for a 10-year hold and target to turn over about 10 percent of the portfolio each year. He said for the last question, he said that was a tough one to answer because the sellers were all so different, often there were performance fees attached to a lot of the deals that motivated sellers to sell so they could reap the fees.

MR. WILLIAMS asked about urban and retail and the lack of flight and wanted to know if that was because people were locked in for longer periods of time; MR SHIELDS said that for residential, the leases were short-term, typically for one-year. He said for the commercial side, office tenants had long-term leases where they would be locked in. He said the retail side had been promising as the tenants were making money in the locations they were in and were choosing to stay in place.

MR. BRETZ asked if diversity, equity, and inclusion strategy impact the choices that they made for investments and that they had mandated: MR. SHIELDS said no, that if they invested in specific assets, they had not made an impact, that it was more about how they run the platform and more about at JPMorgan Chase that's the platform.

D. UBS Farmland LLC

MR. SIKES introduced JIM McCANDLESS from UBS Farmland to review the portfolio and market outlook.

MR. McCANDLESS introduced DARREN RABENOU as head of the newly set up farm and agriculture group.

MR. RABENOU noted that he had recently joined UBS in April but had been consulting with them for a year and a half prior. He said he had experience in permanent crops in California and Portugal. He also said that he was the head of ESG investing which covered real estate, infrastructure, and agriculture.

MR. McCANDLESS presented slides regarding the Midnight Sun part of their business, showing the regional offices that were responsible for the acquisition, asset management and disposition of properties in the portfolio.

MR. McCANDLESS noted that the portfolio that had been transferred to them by the Board last year and had been fully integrated into their management system. He said the portfolio was a little over $900 million in gross asset value, the farmland value in that portfolio was about $895 million with a cost of about $645 million. He noted that there was a significant unrealized gain in that portfolio, and they expected that to increase. He said it was about 145,000 acres in 15 different states with 88 different investments and they were producing over 25 different types of crops. He explained that the target for the portfolio was to have 80 percent in annual crops and 20 percent in permanent crops. He said that the highest concentration of land was in the mountain states and three states in that region that they invest in was Idaho, Colorado, and Arizona. He said in Arizona the properties they invested in were the winter vegetable area down in Yuma, then followed by California which has commodity crops, vegetable crops, and permanent corps. He explained that commodity crops were made up of corn, soybeans, cotton wheat, rice; permanent crops were grapes, apples, nuts, citrus, and vegetable crops were the leafy green items found in the produce department. He then said that they have crops in the delta states and Texas. He said the corn belt was fairly low at 10 percent.

MR. McCANDLESS said they had what they call the Midnight Benchmark which was data supplied by the NCREIF Farmland Index organization. He said the performance of the fund on a property level exceeded that benchmark, as well as the total return level from 3 year to since inception.

MR. McCANDLESS said that since inception they had distributed back to the ARMB $206 million which was a combination of income returns and capital gains on some sales.

MR. MURRAY said that in the last 12 months they had spent less capital on the portfolio than they ordinarily had since the portfolio's inception in 2004. He said one of the major capital projects they had done in the last four quarters was replaced by the majority of the hand and wheel line irrigation system on MSI#67, the Minidoka Farm, allowing them to increase the rent by just under 6 percent which equated to about a 7.4 percent return on the cost of capital to make the improvement.

MR. MURRAY said that an apple orchard in Washington state with two separate Cosmic Crips redevelopment projects was going on, one of the projects started in 2020, the other one had just been approved and would be planting those trees in the spring of 2022.

MR. MURRAY said the Gaver Ranch, which was a vegetable farm in the Salinas Valley in California had large capital projects related to culverts that would be finished this year.

MR. MURRAY said the Northern Ag, the Portage 73, a farm in Wisconsin had all of the pivots replaced as they were fully depreciated, and they were able to configure them in a way that enabled them to achieve six extra acres of irrigated land and increase the rent for the new configuration.

MR. MURRAY explained that if an apple orchard is full of Red Delicious that commands a small premium compared to a Cosmic Crisp apple, they pull the old varieties out and replace them with a more promising variety. They do the same with pears and cherries as well.

MR. MURRAY stated that there had been no acquisitions in the account, but the account just came back into rotation and was in first position in the investment rotation. He said that as far as dispositions, they did dispose of one of the Northern Ag properties, No. 13, Colquitt Omega, a Georgia vegetable farm. They sold it for 4.5 percent over the appraised and book value in March. He said the reason for the sale was it was a highly erodible farm, and they were concerned about its sustainability program. He said the Northern AG takeover of 24 farms for just under $290 million, was transferred on October 1st and fully incorporated into the management and was 100 percent leased.

MR. MURRAY said as to the capital projects in the portfolio, they replaced pivots on Portage 73, removed some almond trees that were damaged in a windstorm in 2019 on the Kern Kraft property and were deciding what to plant next there as the almond market had been challenging over the past number of years. He then said they had finished up a previously approved capital project to improve the potato cellar and updated the irrigation at Fremont 700 N, an irrigated road crop farm in Idaho.

MR. McCANDLESS said that last year they had launched the Leading Harvest sustainability ESG program together with a small working group of peers. He said it had 13 principals and objectives, 33 performance managers, and 77 indicators and it goes into all different aspects of agriculture practices, environmental activities, social and governance issues, like soil and water conservation, farming practices, maintenance of biodiversity, crop rotation use of regional agricultural best management practices, etc. He said they have 88 farms enrolled in the program.

MR. HIPPLER asked if there was any evidence that the sustainability leads to higher returns or better risk-adjusted returns in the future; MR. McCANDLESS said that as it was new, there was no track record. He said they seek out and evaluate the properties to ensure they demonstrate good stewardship. He noted that the program was designed to be audited and had engaged an auditor to measure compliance. He said the first audit would be done next year and were working with the auditor to identify gaps, if any.

MR. MURRAY explained the climate risks as it related to water. He said in California the ground water basins had been over pumped and there was a 20-year program to get them back in balance. He said that 40 percent of the Midnight Sun account would have very little to no impact if any form of groundwater pumping restrictions were in place, and 28 percent of those are located in what was known as Exchange Contractor Districts with the most senior surface water rights that exist in the state of California. He said another 12 percent could receive recycled tertiary wastewater from local municipalities and Midnight Sun No. 60, Carneros Hills Vineyard in Napa County was one of the properties that represents the 12 percent. He said basically it meant that as long as people kept going to the bathroom in Napa and Sonoma, there would not be concern about water for the vineyard. He said 27 percent was primarily vegetable farms in Salinas County which relies on groundwater irrigation wells. He said they felt that was a lower risk to the SGMA restrictions as it was vegetables which does not have the same level of water consumption as trees.

MR. MURRAY said the next 28 percent was a mixture of three orchards and one table grape vineyard that had more than one source of water. He noted there was one farm in the portfolio that was not located in a district, and it relied on its on-site wells for irrigation. He said that 96 percent of the portfolio had almost no SGMA risk, or they had a mitigation strategy that they felt was sufficient to allow the farms to continue to operate.

MR. RABENOU said that the wildfires in California had not been a threat to the north coast or the grapes of any of the other properties because the vineyards act as a fire break during wildfire season because the vineyards are often irrigated and do not contribute to the amount of fuel for the fires. The real issue was the smoke from the wildfires and the Sales Ranch MSI No. 69 was affected, and the grapes were not harvested in that vineyard last year because they had absorbed the smoke and were rendered un-harvestable.

MR. WILLIAMS asked if there had been insurance on the crop; MR. MURRAY said because they lease the properties and did not operate them, the risk is with the farmer and in the case of MSI No. 69, the farmer had crop insurance which covers up to 80 percent of their revenue.

CHAIR JOHNSON recessed the meeting from 2:45 p.m. until 2:55 p.m.

E. Timberland Investment Resources

MR. SIKES introduced MARK SEAMAN, president, and CIO of Timberland Investment Resources.

MR. SEAMAN then introduced TOM JOHNSON of client services, CHRIS MATHIS who heads up the real estate and disposition strategies, and DR. HONG FU, their forest economist had joined him. He then turned the presentation over to MR. JOHNSON.

MR. JOHNSON described the firm as being 100 percent employee owned and had been in business since 2003, founded by MR. SEAMAN. He said they were focused on the middle market with transactions between $10 million and $75 million. He then moved to a map showing the locations of the properties in the Mountainside Timber portfolio. He said they were scattered across the Southeast, from North Carolina to Texas. He also noted properties in New York, the lake states, Wisconsin, Washington, and Oregon totaling 160,000 acres.

MR. JOHNSON noted that the portfolio was unleveraged and also the benchmark they used were the NCREIF Timberland Index, as well as net-of-fee total return for public equities and fixed income, which was a benchmark provided by ARMB.

MR. JOHNSON said they had various species within two broad categories that they managed. He said one of them was softwoods, located in the Southeast and the Pacific Northwest. He said softwoods such as loblolly pine was grown to make various products; they will sell the timber which would be used to make lumber, newspaper, OSB, poles, shipping boxes and shopping bags. The fibers of the wood were longer and have strength properties that were good for construction and also chipped and turned into pulp or engineered products.

MR. JOHNSON said the Northeast and lake states grow the hardwoods which were used for railroad ties and pallets. The higher quality hardwoods were used for flooring and cabinetry. He said paper products were also being produced from the wood. He said they plant the trees like rows of corn and as they grow and reach the age of 12 or 13, they can recognize the certain trees that would be better crop trees, such as for sawtimber, they can also tell the poorer trees and remove them to allow more space and capacity for the better trees to grow. He said when they remove the poorer trees, they are sold for pulp logs and used to produce paper, packaging, and diapers. The larger of the small trees would be chipped up and turned into OSB and the lower grade would be for biomass and wood fuel. He said pulpwood sells for $10 a ton and $25 a ton for sawtimber.

MR. JOHNSON said that in terms of investing in timberland, it's the diversification; a strong inflation-hedging property that attracts investors, capital preservation and yield. He said forestry provides well-paying rural jobs, which was important in large parts of the country that depend on forestry as a major income source. He noted that those who were concerned about climate change have been increasingly willing to pay forest owners to grow trees for carbon.

MR. JOHNSON explained that timberland was more highly correlated from an r-squared perspective, versus other real assets such as real estate and farmland. He said that if inflation were a concern, timberland had been a proven inflation hedge and was a property that some investors find as an important attribute.

MR. FU noted that the most important market that had caught the attention of many people for the past year was softwood lumber. He said it was a commodity used in residential construction and whose price over the past 18 months had been a rollercoaster ride. He said that during COVID the mills decided to shut down or they would take a loss and one quarter of all mill capacity was curtailed causing the loss of lumber through the pipeline. He explained that with so many people staying at home, they decided to work on home improvement projects which caused a demand for lumber, which then caused the first wave of lumber prices spiking. He then noted another trend in the fall of last year where people decided to move away from urban centers and into the suburbs resulting in a strong demand for home purchases and new builds and another large wave for lumber and extraordinary prices peaking above $1,500 per thousand board feet in June.

MR. FU explained the charts of the cost to produce lumber from the two major regions, the U.S. South, and the U.S. Pacific Northwest. He said in the South, it takes $260 to produce 1,000 board feet of lumber and they were getting a price of $487 for their product, close to a 50 percent margin, on average for the mills to produce lumber. In the Pacific Northwest, the profit margin was a bit lower at $339. He said that over the past 7 to 8 years there had been more than $4 billion of capital investments that went into the U.S. South to improve, expand, and build new sawmills. The new construction of mill capacity had an effect in the U.S. South with a gain of 35 percent.

MR. FU displayed a chart that showed the historical prices and the forecast for softwood sawtimber for the South and Pacific Northwest over the next 5 years.

MR. WILLIAMS asked how accurate past predictions been for the 5 years out; MR. FU said that 5 years out was a stretch, but what the Board should focus on was the fundamentals driving the forecasts, were the fundamentals going in their favor or against it. He said that if Canada supplied less lumber in the future and capacity had increased in certain regions in the United States, then demand would keep prices from not going any lower.

MR. FU noted that a boost for the Pacific Northwest for pricing was British Columbia which got hit by wildfires with estimates at 1.5 million acres burned in 2021 which would have an impact on supplies, as well as the pine beetle issue - they would be exporting less lumber going into the future. He noted that was an opportunity for the Pacific Northwest to capture the market share and keep prices tight going into the future.

F. IFM Global Infrastructure Fund

MR. SIKES introduced DAVID ALTSHULER and JULIO GARCIA of IFM Global Infrastructure.

MR. GARCIA introduced himself as the head of the infrastructure equity team in North America. MR. ALTSHULER explained that he was the head of the Global Relationship Group in North America.

MR. ALTSHULER moved to slide 7 which showed their initial open-ended core fund investing in Australia, incepted in 1995 and the global infrastructure fund, incepted in 2004. He then moved on to slide 8 showing the overview of the partners in their funds.

MR. GARCIA said that their focus was to build a portfolio of diversified core infrastructure assets. He said they focus on three industry segments - transportation which consisted of toll roads, airports, and seaports; utilities which consisted of gas, water, and electric; and midstream energy assets such as pipelines for the LNG processing facilities, and the big tanks at seaports that facilitate the trade of either refined petroleum or crude petroleum.

MR. GARCIA said they invest with open-ended funds which enables them to match the characteristics of the assets in the asset class with the longevity of a fund. He said the fund was well diversified and has an asset value of almost $35 billion with 18 different portfolio companies. He said their strategy was not to add a large amount of risk to the asset class. He noted that infrastructure was considered a defensive asset class with growth characteristics where none of the investments should go out of business. He stated that they had found that if an asset in that sector goes bad, it was due to the investor had added too much leverage to try to add returns and added a level of risk that should not have been part of the asset class.

MR. GARCIA said that they are an open-ended manager, but they do take opportunities as they present themselves to either sell entire exposures or partial exposures when they think they could get a better value by making that sale, or if they find that one part of the portfolio was overly weighted to a particular exposure.

MR. WILLIAMS asked if they were confident that the Colonial Pipeline ransomware type risk had been mitigated so it would not be a repeated event in any other infrastructure projects; MR. GARCIA explained that financially it was not a major hit to the company, but it opened their eyes to the weak points for their infrastructure assets. He said there was a lot of work going on to ensure that they had as strong a system as possible to avoid any future incidents.

MR. GARCIA said that they target an 8 to 12 percent net return after all fees back to the investors, he noted the 8 to 12 percent was due to economic cycles. He said that the assets in the portfolio were highly cash generative but there was also a component of the return coming from capital yield. He said there was over 6 percent return coming back from cash from the investments in the return series. MR. GARCIA said that they use debt in the capital structures due to the relative predictability of cash flows but were cognizant of keeping the levels that were representative of what each asset in the portfolio should be able to handle on an investment grade basis. He said that with utilities, regulators allow about 60 percent leverage, with an airport asset they would have only 20 to 30 percent due to the variable nature of passenger flow.

MR. WILLIAMS asked if the Indiana Toll Road that was divested in 2016 and also in 2021 and was also listed as a new acquisition; MR. GARCIA explained that the toll road was acquired in 2015 at 100 percent of the concession deed with 65 years left in the toll road concession, at $3.3 billion in equity value. They offered a co-investment to qualifying investors at a premium of 20 percent from what they had acquired the company at. Then they went to the government in Indiana and negotiated a deal with their other shareholders to be able to invest an extra billion dollars of capital into the company in return for a modification to the concession terms. He said the Indiana Toll Road was I80 which started in San Francisco and went across the country. The portion that was in Indiana had a much lower tow rate for trucks than the neighboring states. They informed the State of Indiana that they were not getting their fair share of the toll revenue and that IFM would grant the billion-dollar investment if they could put the rates closer to being on par with the neighboring states. They recently sold a 15 percent stake to CDPO of Canada for nearly 50 times multiple to a partner that they had in other assets.

MR. GARCIA noted that the most recent investment was in partnership with Ontario Teachers to make an investment in a Canadian company called Enwave, which operated in the district heating space, both are 50 percent holders of the equity.

MR. GARCIA finished his presentation by explaining the exposures as having 18 individual companies with a few underlying assets such as European airports, seaport facilities, the toll road sector through Aleatica and the Indiana Toll Road, the M6 in Britain, which was the only toll road in Britain.

CHAIR JOHNSON recessed the meeting at 4:17 p.m.

Friday, September 24, 2021

CALL BACK TO ORDER

CHAIR JOHNSON reconvened the meeting at 9:00 a.m. All Board members were present.

G. Crypto, Bitcoin, and Blockchain

MR. HANNA introduced the next presentation stating that it was for education purposes, not part of an investment initiative. MR. HANNA introduced NICK SIEMSEN of Pathway.

MR. SIEMSEN explained the different types of digital money, saying that the first was money in bank accounts, then attempts at making digital currencies such as E-gold and Liberty Reserve that were backed by gold but a unit of exchange that could be traded online. He said there were also in-game or in-app currencies that had existed for many years. He said they all had a company behind them keeping track of everyone's balances. Before Bitcoin there was no way to prevent someone from maliciously duplicating the digital funds to double spend money. He said that Bitcoin prevents people from doing that. He explained that Bitcoin was a database that you can only add to, but not delete, and instead of giving one party or company permission to write to that database, everyone gets a chance to do it. He said people who do this are called miners and they are rewarded with freshly minted Bitcoin.

MR. SIEMSEN explained that there was nothing backing Bitcoin in terms of reserves or cash flows. He said it was distributed around the world and keeps partial anonymity to those who have it.

MR. SIEMSEN then showed the price history of Bitcoin. He then explained that a massive hack of a Japanese based company of their Bitcoin with ongoing litigation. He noted that there was a ramp up for Bitcoin in 2017 and 2018 from the ICO (Initial Coin Offering) boom. He said it was like an IPO, but instead of issuing shares, they issued Bitcoins. They would make their own and sell it to fund a company they were starting. He said the companies were blockchain-based business, like decentralized exchanges or decentralized file storage where they would use the money to build their company and the tokens they sold would be used within the company instead of dollars to pay for the service. He said that during that time about $15 billion was raised through ICOs but the funding basically came out of nowhere. Ultimately the ICOs have gone away.

MR. SIEMSEN noted that they were in a new era characterized by retail activity. He said there was a new retail boom not only in Bitcoin and Ethereum, but also in alternatives like NFTs and other sort of tokens. He said recently Dogecoin had become popular. He said it had started out as a joke but went on to have significant market cap and massive amounts of retail trading.

MR. SIEMSEN said that they were seeing a development of real ecosystem around crypto assets such as ETFs available in Canada, U.S. companies holding positions directly in Bitcoin, and increased interest from the institutional investment world. He said MicroStrategy had about $3.6 billion of its balance sheet directly invested in Bitcoin and Tesla has about $1.5 million of Bitcoin on its balance sheet. He said that Visa was investing in Bitcoin as well as companies related to the space, such as CryptoPunk. He also said that traditional investment managers like Grayscale was a trust that holds Bitcoin that could be traded on the U.S. exchanges. The said firms like Galaxy Digital or Pantera were solely set up as regulated investment firms to invest in crypto. He noted that many pensions, insurance companies and endowments had exposure through other means, including the ARMB.

MR. SIEMSEN said that he did not believe that anyone knows why crypto was priced the way it was but there was a theory by a journalist named Matt Levine who coined something he called the boredom markets hypothesis, (BMH) that says people would buy stocks or cryptocurrencies when buying stocks is more fun than other things they could be doing. MR. SIEMSEN said he thought it was a case of fixed supply of Bitcoin versus what is an unknown demand. He said BofA had a report out estimating that under $100 million of buy volume was enough to move the price of Bitcoin up by 1 percent.

MR. SIEMSEN noted that Goldman, Morgan Stanley, J.P. Morgan all had or were developing products to allow their clients to trade cryptocurrencies or to get exposure to the space.

MR. SIEMSEN explained that investing in crypto meant consideration as to custody. He said there were hardware wallets that look like USB drives that hold crypto on it and off of the internet where it would be vulnerable, but that would be prone to human error as well as the risk of having the cryptocurrency hacked. He said that large institutions such as Fidelity had a custody offering.

MR. SIEMSEN said another thing to consider was inflation, that Bitcoin had not performed well against inflation in the past. He said another major consideration was ESG. He said Bitcoin's annual energy consumption by design was staggering and continued to grow. There was also ransomware attached that were paid in cryptocurrencies and other illicit activity that occurs due to the anonymity associated with cryptocurrencies.

MR. SIEMSEN noted another issue with cryptocurrencies was the regulatory space, that it could be regulated out of existence. He also mentioned the volatility or Bitcoin, going from $29,000 up to $53,000 then down to $40,000. He went on to list other cryptocurrencies that were equally volatile. He noted that slide 13 showed a spectrum of investments from direct to very periphery.

MR. SIEMSEN said that Pathway preferred to get their exposure by investing purely with the best managers. He said they look for the best venture capital managers, many of those had been putting a portion of their portfolio into crypto or crypto-related companies.
MR. HIPPLER asked how effective the governments were in collecting tax on capital gains of cryptocurrency. MR. SIEMSEN said companies like Coinbase, Gemini and Robinhood report the information to the IRS.

H. Abbott Private Equity Presentation
MR. HANNA introduced JONATHAN ROTH and LEN PANGBURN of Abbott Capital.

MR. ROTH said that he was the Co-President and had been with Abbott since 1992. He said that MR. PANGBURN was also Co-President and had joined Abbott in 2005. He said they were also joined by DILLON BOOTH, from their client relations support team.

MR. ROTH noted that Abbott had just celebrated 35 years and they exclusively focus on private equity then continued discussing the firm's history and client base. He then turned the presentation over to MR. PANGBURN.

MR. PANGBURN explained that there was a $12 billion customized private equity solution provider that offered multiple ways for investors to access venture capital and private equity and that they work closely with the staff and Callan to ensure all of the plan's objectives and goals were met. He commented on their due diligence process and some of the ways Abbott mitigates risk on top of standard due diligence.

MR. PANGBURN then moved on to a slide that he called their report card which included all investments that Abbott had made since inception. He noted that in 26 of the 31 vintage years Abbott's IRRs had been over 10 percent with only two below 8 percent. He said that over 50 percent of their primary commitments on a dollar-weighted basis since 1987 had been to top quartile managers, almost 80 percent were above the median, and since 1987 their selections had outperformed the median private equity benchmark by over 1,000 basis points.

MR. ROTH displayed a slide with several charts that showed the amount of capital that was coming into investing into U.S. private equity funds, fundraising, and valuations. He noted that they were at very high purchases prices. He noted that they had seen equity firms paying much more than 13 times EBITDA and cash flow because the businesses being purchased were growing faster and had more attractive margins and were worth potentially more than 13 times. He said the ARMB's portfolio had captured the record high gains during the year.

MR. ROTH said that there was a lot of demand for private equity because elsewhere returns were not as attractive, which causes pressures on prices, but exits were being done at very high prices. He said the venture market was very similar; venture capital fundraising market raised $774 billion in the first half of the year. He noted that was due to the exit activity at near records and some had been blow-out returns.

MR. ROTH showed a slide that discussed SPACs. He said that a lot had changed over the course of

2021; that the SPAC market had a precipitous drop off the first quarter. He said that once they merge with their target company, they trade as an operating business and that had been unimpressive. He then moved on to SPVs, special purpose vehicles that had been formed to address end-of-life fund options. He explained a new SPV buys all the remaining companies in an old fund which allows the limited partners in the old fund to have a choice to sell, get cash, or continue in a new fund. He said that it was not all the portfolios' companies but one single portfolio company that goes into a SPV. He said that was how a lot of the capital coming into the private equity system was being absorbed.

MR. ROTH said that a complicating factor with SPV's was the valuation, that they are often times set up by the same GPs who were managing the legacy fund, so the buyer and the seller were one and the same. He said they try to encourage general partners to seek a third-party independent valuation process.

MR. WILLIAMS asked how well would a third-party know the product they set they price for - how would that be addressed; MR. ROTH said they come in with due diligence of the company, they submit term sheets that states that they would invest a certain amount of value in the business at this price.

DR. MITCHELL asked if the greater fundraising was across the board in private equity or was it the largest most successful companies raising larger and larger funds; DR. ROTH confirmed that across the board there was more capital available to all funds.

MR. PANGBURN displayed a slide that showed the ARMB portfolio as of Q1, noting that the plan was in a cash-positive position with $3.1 billion of distributions as of Q1 compared to $2.8 billion in paid capital. He explained their strategy for the ARMB was to commit $5 million to four co-investments each year for approximately $20 million in total, which was equal to one primary buyout fund by size. He said the plan was two-thirds private equity, one-third venture capital and growth equity, that the portfolio NAV was approaching $1.9 billion and that it was very diversified with a little over 2,500 companies.

CHAIR JOHNSON recessed the meeting from 10:30 a.m. until 10:40 a.m.

I. Real Assets Annual Plan

MR. SIKES said the portfolio was performing consistent with expectations and objectives since the COVID pandemic began, performing between stocks and bonds, and in line with the risk and return parameters of the primarily core portfolio. He noted that the ARMB's investments were all equity, but most of the assets were underpinned by contractual cash flows and the portfolio was well-position to provide an inflation hedge if cost pressures persisted.

MR. SIKES noted that the FY2022 real assets plan reflected a stay-the-course approach, and the recommendations reflected the increase in target asset allocation from 13 to 14 percent as previously approved by the Board during the June meeting. He said that the portfolio was generally in line with targets at the end of the fiscal year; that the underweight to REITs was partially offset with exposures to non-core real estate. He said the underweight to farmland was being address with additional allocation to the sector and that the portfolio had a modest overweight to infrastructure. He said the real assets exposures approximated the Board's 13 percent target weight at the end of fiscal year.

MR. SIKES he explained that as real assets were primarily illiquid sectors that they are not able to quickly increase or decrease exposure to, they allocate any over or under weight at the asset class level to domestic equity and fixed income on a 60/40 basis in managing the plans overall exposure.

MR. SIKES said that applying the target weights to the June 30 plan assets indicated an additional $700 million in real asset investment should be made with $400 million in core real estate and $300 million in farmland based on the June 30 plan assets. He said the overall plan returns in FY2021 were 27.6 percent, much higher than the real assets return of 11.14 percent.

MR. SIKES noted that page 6 of his presentation broke down the performance for the overall real assets portfolio and by category. He said that during FY2021 the real assets portfolio returned 11.4 percent net of fees which compared favorably to the target benchmark return of 8.95 percent. He said for the most part, the portfolio had met or exceeded the target benchmark over the periods show net of fees.

MR. SIKES said that real estate had been a good investment for the ARMB with the core portfolio having delivered 8.73 percent annualized net return over the past 10 years. He said that farmland had delivered results consistent with its benchmark, but a slight underperformance compared to the NCREIF benchmark, which was attributed to the underweight permanent crops. He said timberland results had a strong fiscal year compared to the benchmark with longer-term results in line with the benchmark.

MR. SIKES then moved to page 7 to provide perspective on how real assets compared to domestic equity and fixed income through the six quarters ending June 30. He noted that the chart on page 7 was unconventional, but it gave a sense of the range of the returns of each asset class over the time period. MR. SIKES stated that page 8 summarized the significant portfolio accomplishments in FY2021.

MR. SIKES said that page 9 gave a profile of the current portfolio showing the value of the portfolio at approximately $1.9 billion as of June 30, with 38 percent of the portfolio in core separate accounts representing investments in 15 properties. He said there was an additional 28 percent in core open-end funds which were large, comingled funs that enabled the ARMB to invest in larger assets than it would be able to on a separate account basis.

MR. SIKES said the chart on page 10 was provided by BlackRock Real Estate who managed one of the open-end funds the ARMB was invested in. He said the chart gave a sense of how the main property types had been performing and showed that industrial and apartments had been the outperformers as housing and e-commerce trends provided a lift to those sectors. He noted that office returns had held up well but were in a holding pattern as employers felt more comfortable with returning to work. He said retail continued to feel the negative impacts of the pandemic and the preexisting impact of the migration of the retail economy to e-commerce.

MR. SIKES said that page 11 provided a performance look-back based on unlevered core real estate gathered by NCREIF over the past 40 years. He noted that the COVID related drawdown was nowhere near the GFC move in 2008 as all sectors had responded favorably after the initial markdown. He said that industrial returns were at their highest point over the 40-year time period and the variability in recent sector returns was also interesting, the widest over the 40-year time period with industry being the standout.

MR. SIKES said that page 12 showed various charts, one of them was in regard to the decline in the cap rate variable of real estate returns. He said that as yields dropped across the bond market and other asset classes, real assets had followed suit as investors sought out yield.

MR. SIKES moved on to page 13 which showed the strategies and said that the recommended approach was to stay the course with the primary focus on core real estate and separate accounts in open-end funds and that continuing to diversify the portfolio was an important focus as well as continuing to focus towards industrial and apartment sectors.

MR. SIKES moved to page 14 which showed the ARMB's core portfolio projections by property type, based on expected investments over time. He noted that there was an increase to multifamily driven by additional investment in the Sentinel separate account which was approved by the Board last year.

MR. SIKES stated that the REIT portfolio was a significant part of the ARMB's real asset allocation with a target weight of 15 percent. He said that REITs offer the portfolio liquidity, diversification, and historically attractive returns.

MR. SIKES moved to page 16 saying that the increase to the real asset's allocation, as well as the increase in overall plan assets, creates a need for an additional $400 million in core real estate exposure. The Board would first need to authorize reinvestment of the $140 million allocation that UBS distributed from the proceeds of a mortgage financing transaction during FY2021, which will help improve the diversification of the portfolio. He then explained that Sentinel would implement the use of leverage and increase the diversification of the portfolio due to the $125 million in additional allocation that had been previously authorized by the Board. Third, the Board would need to commit an additional $135 million to core open-ends funds. The staff would work with Callan to evaluate funds to consider the market opportunity for that capital. They would also evaluate transitioning the J.P. Morgan Strategic Property Fund exposure to a nonqualified eligible structure. They would continue to use REITs as a rebalance tool for the asset class and continue to selectively consider non-core strategies that offer alpha opportunities to the portfolio.

MR. HIPPLER asked why MR SIKES anticipated cap rates for industrial properties would continue to decline; MR. SIKES said it was combined with the expectation that rent growth in the industrial sector would continue to increase.

MR. WILLIAMS asked if they had the capacity and performance at the level needed with what was going on internally; MR. SIKES said that he did and explained that the one-year performance for REITS was 32.49 percent versus the index at 32.8 percent could be attributed to some cash flow friction and was not a reflection of poor management.

DR. JENNINGS asked if he would comment on the overall level of fees relative to the ongoing diversification benefit from real estate; MR. SIKES said that they had been able to achieve some fee savings, opportunistically through an open-end fund and negotiations with the separate account managers.

MR. SIKES then moved on to farmland which also required an additional $300 million of new capital investment based on the June 30 plan asset level to meet target allocations. He noted that the farmland was a leased-based approach comprised of 88 assets with almost 145,000 acres worth $900 million. He said that for FY2022 an additional $100 million in allocation had been previously authorized and waiting activation in the UBS rotation and that staff would work with UBS to monitor investment pace and consider authorizing additional allocation when the opportunities present themselves.

MR. SIKES noted that page 20 involved timberland and that no additional allocation was being recommended for timberland in FY2022.

MR. SIKES state the infrastructure was the final component, and the value of the portfolio was $742 million. He noted that the performance of the infrastructure portfolio had been good, achieving the 8 to 12 percent target return level and exceeding the CPI-plus-four benchmark. He noted that no recommendations were being made for the infrastructure portfolio.

MR. SIKES displayed page 24 of his presentation stating that it was the summary of the FY2022 plan recommendations.

J. Callan Real Assets Plan/Performance Review

MR. SIKES introduced MR. AVERY ROBINSON, noting he was the Co-Head of Reals Assets at Callan.

MR. ROBINSON said that he had his colleague MR. JOHNATHAN GOULD who would be covering the ARMB real assets portfolio. He noted that the first two slides were a reminder of why the Board invested in real assets. He said the Board had done well mitigating some of the considerations, particularly with the illiquidity, with structures in separate accounts, and open-ended vehicles that provided liquidity to make decisions.

MR. ROBINSON said the next slide was a reminder of how they categorized the strategies within real assets and what could be expected from appreciation and income return for the various strategies.

MR. ROBINSON said that he thought the managers did a good job at providing an update on the market and how the various property sectors within real estate had diverged. He said that industrial and apartments were doing very well, and that retail and office were the ones surrounded by questions. He said the focus should probably be on the nontraditional property sectors such as lab space, particularly medical office lab space. He said that is a sector that is not amenable to working remotely. He also mentioned self-storage as a sector of growing interest. He noted that the portfolio had the flexibility to look at alternative property sectors and recommended that would be something for consideration.

MR. ROBINSON also said that there was a decrease in capital flows towards real estate, towards real assets, but as the year progressed, capital flows rebounded towards real estate. He said investors were feeling more comfortable moving forward with real estate allocations.

MR. ROBINSON noted that the next few slides provided context as to how the property sectors held up compared to the past. He noted that retail suffered the most during COVID but has been rebounding.

MR. ROBINSON said that the next slide was a snapshot of the performance for private real estate during the past year. He noted that industrial was the outlier, that it benefited from COVID to an extent and was probably one of the safer property sectors to be in. He said that the COVID crisis did not have as big of an impact as some of the other crises seen in the past.

MR. ROBINSON said the next slide showed the market declines during the 90s and during the GFC. He said that compared to the last year, core returns depreciated only about 1.5 percent., compared to the GFC with 20-point declines. He noted that the COVID crisis did not have the impact that was feared.

MR. ROBINSON said that the next slide focused on transaction markets which took a decline during COVID. He said they are seeing a rebound that had been led by industrial and apartment transactions, but office and retail had been slow and led to uncertainty around price discovery.

MR. ROBINSON moved to the next slide which focused on the REIT markets. He said that REITs took a beating but had rebounded the past year.
He highlighted the comparison of how various region and property sectors within the global REIT market were trading compared to their net asst values.

DR. JENNINGS asked MR. ROBINSON to comment on whether global REITs were still real estate; MR. ROBINSON said that various indices were starting to include more sectors that historically have not been real estate, such as tech infrastructures. He said that it was their opinion that it was becoming more of a gray area, but they were comfortable with them being in REITS that may have exposure to nontraditional real estate properties.

MR. ROBINSON said that the next slide was a snapshot of the capital flows for open-end real estate funds. He said they were seeing several of the high-demand real estate funds have considerable entry queues with projections of up to a year and a half before capital gets place into their funds or gets invested.

MR. ROBINSON said Callan created the real estate indicators slide after the GFC. He said that it showed the most advantageous times to buy and sell real estate. He commented that currently it was a mixed bag of metrics, compared to historical marks.

MR. GOULD said that in terms of performance of the portfolio, the real assets portfolio performed well overall, was consistent with the benchmark over the long-term periods. He noted that public real estate performance over the last year had been a strong driver. He noted that in the real assets, the non-real-estate portion, there were some components of that return that had legacy investments in the composite that were no longer part of the portfolio, which included MLPs that were about 12.5 percent of the portfolio and energy which was still in the portfolio but no longer part of the strategic target.

MR. GOULD said that private real estate had performed very well compared to the NCREIF Total Index with a strong long term and short-term performance. He noted that the portfolio included core separate accounts, core open-end funds and some non-core that had added to the performance. He said the income was about 45 percent of the return.

MR. GOULD said that public real estate had a strong performance going back over the last 10 years. He said the portfolio switched from an active strategy to an internally managed passive strategy between 10 and 16 years ago.

MR. GOULD said that infrastructure had a very good net performance across that portfolio since the plan invested in private infrastructure over 6 years ago. He said there had been an imbalance between the two open-end funds, one of them performed well and the other one did not perform as well but was still performing in line with the benchmark.

MR. GOULD noted that farmland was a bit more of a mix but overall was a steady performer. He said that timber had been challenged but not dramatic negative returns. He said they had consolidated managers into one account and are looking to see an uplift.

MR. GOULD said that in terms of progress over the last year, they had made a significant amount of progress across each of the components over the last few years and as previously mentioned, they had adopted the ability to use leverage in the core portfolio.

MR. GOULD said that with non-core they had continued to consider re-up opportunities very strategically. with the approvals of KKR and Almanac. He said those had been strong performers and they would continue to look at those at re-up opportunities as well as other strategies that could potentially be a fit.

MR. GOULD said there were no recommendations for changes to the infrastructure portfolio. He said they do not recommend rebalancing out of it because the funds had a very long deployment path, so their entry queues were quite long.

MR. WILLIAMS asked if they were thinking about getting rid of timber as it is listed at zero to 10 percent or was the focus to keep 10 percent for timber; MR. GOULD said that they thought it would be okay to let timber wind down naturally without having to force an exit if the dynamics of the asset class warranted that. That if it naturally dips down to a level where it would not be impactful then they could start thinking about letting it go down to zero.

MR. GOULD showed slide 26 which covered core real estate and farmland - the two areas with allocation recommendations to get to the target weights. He said that slide 27 was a recap of the recommendations to continue the course.

K. Real Assets Action Items - Plan & Guidelines

MR SIKES referred to page 473 of the Board packet and explained that the staff prepared an annual real assets investment plan to review performance, structure, objectives, and strategy of the portfolio. A real assets investment plan for FY2022 had been developed by the staff with help from Callan. He said that for FY2022 the plan was to make additional investments in core real estate and farmland. The recommendations for FY2022 were to invest $400 million in core real estate over time to meet the allocation requirements; $125 million of allocation had already been approved for Sentinel. He stated that an allocation of an additional $140 million to UBS to reinvest financing proceeds and increase the investments in core open-end funds by $135 million. He said they would explore non-qualified structure for the existing J.P. Morgan Strategic Property Fund, continue to consider non-core investments on a selective basis, and adjust the REIT position as needed during quarterly rebalancing; and invest $300 million in farmland over time to meet the allocation requirements. He recommended the approval of Resolution 2021-11 which would adopt the Real Assets Investment Plan for FY2022.

Action: Resolution 2021-11

MS. HARBO so moved. MR. HIPPLER seconded the motion.

A roll call vote was taken, and the action item passed unanimously.

L. Actuarial Resolutions - FY2023 Contribution Rate Setting

MR. HIPPLER explained that there were seven resolutions listed, however 2021-04, 2021-07 and 2021-10 would be discussed at the October 11th meeting.

1. History of PERS/TRS Employer Contribution Rates

Action: Resolution 2021-05

On behalf of the Actuarial Committee, MR. HIPPLER moved to adopt Resolution 2021-05 regarding setting a contribution rate for the public employees' Defined Contribution Retirement Plan retiree major medical insurance rate FY2023.

A roll call vote was taken, and the action item passed unanimously.

Action: Resolution 2021-06

On behalf of the Actuarial Committee, MR. HIPPLER moved to adopt Resolution 2021-06 relating to the FY2023 employer contribution rate for public employees' Defined Contribution Retirement Plan occupational death and disability benefits.

A roll call vote was taken, and the action item passed unanimously.

Action: Resolution 2021-08

On behalf of the Actuarial Committee, MR. HIPPLER moved to adopt Resolution 2021-08 relating to the FY2023 employer contributions rate for the Teacher's Defined Contribution Retirement Plan retiree major medical insurance rate.

A roll call vote was taken, and the action item passed unanimously.

Action: Resolution 2021-09

On behalf of the Actuarial Committee, MR. HIPPLER moved to adopt Resolution 2021-09 relating to the FY2023 employer contribution rate for the Teachers' Defined Contribution Retirement Plan occupational death and disability benefit rate.

A roll call vote was taken, and the action item passed unanimously.

2. JRS Contribution

MR. HIPPLER noted that the JRS contribution was listed on the agenda but there was no action item associated with it and asked if there were any questions regarding it. As there were none, CHAIR JOHNSON stated that it was a matter of record for information.

UNFINISHED BUSINESS - None.

NEW BUSINESS - None

OTHER MATTERS TO PROPERLY COME BEFORE THE BOARD - None.

PUBLIC/MEMBER COMMENTS

MR. SIMARD stated that he was a member of the board of 350Juneau and a librarian retired from the State of Alaska. He referenced his previous testimony regarding the risks to the retirement fund investments posed by climate-related litigation against the fossil fuel industry. He said the cases were mostly public nuisance cases that sought reimbursement for damages. He stated that most of the cases have been successful in remaining in the state court systems. He noted that there was a growing amount of human rights cases involving indigenous communities and migrants who were considered to be climate refugees.

MR. SIMARD referred to a case filed in Vermont against ExxonMobil, Shell, and others. The suit would require that oil sold in Vermont be labeled as dangerous to the health of the global climate when it's used as intended. The suit claims that oil producers have waged a disinformation campaign, depriving Vermont consumers of the information needed to make informed choices in the use of the oil products.

MR. SIMARD stated that he would like the Board to protect the investments by divesting from risky and threatened oil stocks and ensure transparency to the public, so Alaskans came educate themselves about the economic risks as well as the ongoing damage to the global climate.

CHAIR JOHNSON thanked MR. SIMARD for his testimony.

INVESTMENT ADVISORY COUNCIL COMMENTS

DR. MITCHELL congratulated MR. HANNA on the very excellent performance.

DR. MITCHELL noted that he disagreed with Callan and others on their views of inflation. He said that he thought that inflation will be higher and last longer than the consensus expects and thought it would be interesting for the staff to look at what the portfolio would do in a 4 percent inflation environment. He noted that he liked the presentation on crypto and blockchain and found the presentations to be well done..

DR. MITCHELL commented that real assets was an asset class that was not needed. He said a portfolio could do well without real assets, however they are valuable when other assets were not performing well. He went on to compliment the staff for having real assets and noted the assets were not always easy to get rid of or get into so having a good helmsman like Steve Sikes was very important.

MS. RYERSON echoed the compliments of DR. MITCHELL to MR. HANNA and staff. She noted that there were two pages of the actuarial presentation that were not touched on very much, and those were Scenarios 1 and 2. She noted that Scenario 1 was what the actuaries thought the state contribution would be at 7.38, and Scenario 2 was what it really would be, even with smoothing, at almost 28 percent return. She also noted the savings in state contributions of $59 million, and TRS $34 million, which, over the 5-year period increased to $246 million.

DR. JENNINGS stated that there had been questions about ESG and DEI issues and shared insights that had caught his attention. He noted that women had higher returns that men, that single women were best, single men were worst, and the married couples were in the middle. He quipped that it meant that marriage made men smarter and women dumber.

DR. JENNINGS said that studies found that diversity in teams could lower the risk and emphasized male-female diversity and the generational diversity. He noted that wider the age range, the more impact it had on a reduction.

DR. JENNINGS then complemented MR. HANNA and MR. SIKES on the meeting and how well it went.

TRUSTEE COMMENTS

MS. HARBO thanked the staff of Treasury and DRB for the excellent presentations and the work that went into organizing the meeting. She also noted that she agreed with DR. MITCHELL on his inflation prediction.

MR. WILLIAMS complimented staff on the excellent returns and the well-organized meeting. He said he thought the presentations were well aligned with what they were doing. He also noted that he was glad they did not rush to decisions on some of the action items and was glad that the meeting on October 11th would be a much deeper discussion on those items.

MR. HANNA noted that they had 68 days until the next main ARM Board meeting and noted that the December meeting would be focused on private equity, and that Callan and staff would present the annual plan. He also noted that in December the actuaries would begin their experience study, which they complete every 4 years.

FUTURE AGENDA ITEMS - None.

ADJOURNMENT

There being no objection and no further business to come before the board, the meeting was adjourned at 12:34 p.m. on September 24, 2021, on a motion made by MS. HARBO and seconded by MR. KROHN.

Chair of the Board of Trustees
Alaska Retirement Management Board

ATTEST:

Gayle Harbo

Corporate Secretary

Note: An outside contractor recorded the meeting and prepared the summary minutes. For in-depth discussion and more presentation details, please refer to the recording of the meeting and presentation materials on file at the ARMB office.