RETIREMENT SYSTEMS OF ALABAMA
RISK MANAGEMENT COMMITTEE
201 South Union Street
Montgomery, Alabama 36104
877.517.0020

* * * * * * * * * * * * * * *

COPY

* * * * * * * * * * * * * * *

THE ALABAMA RISK MANAGEMENT COMMITTEE MEETING that was taken by Jeana S. Boggs, Certified Court Reporter and Notary Public, in the conference room of the Retirement Systems of Alabama, 201 South Union Street, Montgomery, Alabama that was held on Tuesday, September 13th, 2021, at approximately 2:00 p.m.

APPEARANCES

BOARD MEMBERS:

NORRIS GREEN, CHAIRMAN

DAVID COLSTON, VIA WEBEX

JIM FIBBE

TAMMY ROLLING, VIA WEBEX

LISA STATUM, VIA WEBEX

ALSO PRESENT:

DON YANCEY, RSA DEPUTY DIRECTOR

JO MOORE, RSA DEPUTY DIR/ADMIN

DIANE SCOTT, RSA CFO

LARRY LANGER, CAVANAUGH MACDONALD

ED KOEBEL, CAVANAUGH MACDONALD

MATTHEW STROM, SEGAL

NICHOLAS COLLIER, MILLIMAN

SCOTT PORTER, MILLIMAN

DEBBY DAHL - RSA EXECUTIVE ASSISTANT

AGENDA

CALL TO ORDER/ROLL CALL

MR. NORRIS GREEN: I call the meeting to order. Roll call. We have got some on the web, I think. You are going to call the roll.

MS. DAHL: Norris Green?

MR. NORRIS GREEN: Here.

MS. DAHL: David Colston?

MR. COLSTON: Here.

MS. DAHL: Jim Fibbe?

MR. FIBBE: Here.

MS. DAHL: Tammy Rolling?

MS. ROLLING: Here.

MS. DAHL: Lisa Statum?

MS. STATUM: Here.

MR. NORRIS GREEN: Okay. So, that's four out of the five. A quorum is present. So, we can begin the meeting.

APPROVAL OF 9/10/2019 MINUTES

MR. NORRIS GREEN: The first order of business was to approve the minutes of September 10th, 2019. I think everybody had the book that has the minutes available to you.

Anybody have anything they want to change or questions about the minutes?

(No response).

MR. NORRIS GREEN: If not, someone might want to make a motion that we approve the minutes.

MR. FIBBE: I make a motion to approve the minutes.

MR. NORRIS GREEN: Do I have a second?

MS. STATUM: Second.

THE COURT: All in favor say "aye."

(Board members saying "aye".)

MR. NORRIS GREEN: Opposed?

(No response).

MR. NORRIS GREEN: So, the minutes are approved.

The reason we are here today is to go over the -- the main thing we are doing is to go over the results of the five-year experience study. Diane Scott is going to lead us with this. As a matter of fact, she is going to lead us and do it all. And so, we will ask questions of her as they arise.

We have also got two other actuarial firms here that are going to comment on the results of the study, and then there will be comments on their comments.

And so, we've got a pretty full afternoon, so we will get started.

Diane, I will just turn it over to you to proceed however you see fit.

FIVE-YEAR EXPERIENCE STUDY

MS. DIANE SCOTT: Thank you so much.

So, if everybody is using their Directorpoint, if you will go to A-1, which is the ERS summary, I want to give us an overview and allow you to understand what we are about to do. Okay?

Every five years our law says that we shall have prepared by an actuary an experience study which looks back at the previous five years and determines, based upon our experience, as well as looking forward, what our assumptions should be in our plan moving forward for the next five years. 9/30/2020 was the end of a five-year period.

So, our actuary, Cavanaugh Macdonald, completed an experience study. As a result of the completion of that experience study, on page 57, you will see the changes that we are going to ask the Board to approve. And if you move to page 58, you will see for the Judicial Retirement Fund the changes that we are going to ask the Board to approve.

So, to start with, if you glance through these changes, you will have a good idea of about the things that are going to be talked about over the next -- let's just say -- hour or so. And at the end, we will come back and ask for an approval for these changes.

Now, we feel like it is good practice that we have another actuarial firm or two to review -- to peer review the experience studies and to do a limited scope audit of the final valuation over a five-year period. We put out an RFP earlier this year, and Segal, as well as Milliman, were selected from that RFP process to peer review the experience study and to perform a limited scope of it. We have, not only here with us today Cavanaugh Macdonald, we also have representatives from Segal, as well as Milliman.

So, this is how I think we had planned to roll this afternoon. Cavanaugh Macdonald will talk with you for about 10 minutes related to the changes that they are recommending.

Then Segal will present their peer review and their limited scope audit. Cavanaugh Macdonald will have an opportunity to respond to you over their findings. Then Milliman will present their peer review and limited scope audit findings and Cavanaugh Macdonald will have an opportunity for you to -- for them to respond to that.

Of course, you can ask questions. They are here for us. They are here for us so that you can understand what we are -- what's being recommended. And after all of that, then I would come back and ask for a recommendation that the experience study results would be adopted by the Board. Okay?

So, if we are ready for Cavanaugh Macdonald to go through their recommendations. And, of course, they will be talking about ERS as well as JRF.

CAVANAUGH MACDONALD

ERS & JRF EXPERIENCE STUDY RECOMMENDATIONS

MR. KOEBEL: Good afternoon. I am Ed Koebel, Chief Executive Officer of Cavanaugh McDonald. With me, you know, is Larry Langer. He is principal and consulting actuary and the lead actuary for ERS. It's a pleasure to be here.

Like Diane said, we are going to go through just kind of a brief, very quick, synopsis of our experience study. And Diane kind of touched on it. It's a review of all of the assumptions that go into the valuation.

So, it's really important because a lot of the liabilities that we develop are based on all of the assumptions. So, economic, demographic, what is happening with the money, what are we projecting to happen with the money, what are we projecting to happen with people and their behaviors, retirement, mortality. All of those we make assumptions about to provide you-all with a most accurate picture of your benefit payment stream in the future. That's really what we are trying to do is to say how much are we paying in retirees in benefits today and what will that stream of benefit payments look like for the 50 to 60 years. So, that takes a lot of assumptions that go into it.

On slide 61, just a little bit of our valuation. You know, we collect member data. We collect asset data. And we know the benefit provisions of the plan. So, we use those assumptions to develop our employer contributions that we provide to you-all every year. We use those assumptions to develop the accrued liability and come up with our funded ratio. And then we use those again in our projections that we provide to you-all later on in the year.

On slide 62, it's important just

to note that there is not really any correct assumptions. We are going to talk about actuarial standards of practice in the guidelines that we use, but it is a blend of art and science. You know, we can look back at what happened over the last five years, but we know that that might not happen over the next five years or 10 years and so forth.

So, we want to, you know, develop good assumptions on behaviors that we have seen, but take into account what we see happening in the industry and the future and in the state.

When you use more aggressive assumptions, you can generate more actuarial losses. More conservatives are going to usually generate actuarial gains. It's important to know that. Obviously, the most important assumption that we will discuss here is the investment rate of return. And we are recommending a decrease in that, and we will touch on that as we go.

Skipping over to slide 64. So, there are three different economic assumptions that we review: Price inflation, the investment return, and the wage inflation, which we use for pay roll based plans. Again, the actuarial standards of practice, ASOPs, their guidelines of how we are to review the data that we have and how we are to kind of project out and make those assumptions for each of our plans in the future. And these are just some highlights of actuarial standards of practice number 27, which gives us guidance for economic.

On the demographic side, on slide 65, we are looking at, you know, what happens: The retirement behaviors, the behaviors of folks, when they leave, and that kind of stuff. So, again, different actuarial standards of practice, number 35, helps us guideline on those assumptions.

And then the last thing we look at is all of the actuarial methods. And this is on slide 66. To help with the funding of the plan and develop those employer contribution rates that we provide to you every year. So, we have an actuarial cost method, an actuarial smoothing of assets that we use and then the amortization of the unfunded accrued liability or the debt of the Retirement System and how we are going to pay for that. So, again, other ASOPs guide us in those -- in setting those methodologies.

So, just quickly on the economic assumptions, you know, I kind of look at us as a four-legged stool approach in looking at each one of these assumptions. Yeah, we want to look at the long-term historical information. We want to even look at the last five years and what happens over the last five years. But we really want to look at the forward looking modeling, you know, and especially in the economic side of things. The history is the history and what the markets have done and that kind of stuff. But what are the experts saying they are going to see in long -- in large cap equity asset portfolios and that kind of stuff.

So, we take that individually by each Retirement System and look at your asset allocation and provide that guidance going forward. So, that's the majority of our analysis when we look at economic assumptions.

And then we look at the peer review. What are the systems around you? What does the national data look like for each of these assumptions as well? So, we want to base that.

So, we will start with inflation. The current assumption is

2.75%. Here is just the historical view on slide 68 of what price inflation, or CPIU, has done annually since 1970. And then the blue line there is the 2.75%.

So, you can see back in the '70s obviously we had very large inflation, but then we see, you know, over the last 20 to 30 years that that inflation has been a little bit lower than the 2.75%.

When we forecast or look at experts that forecast inflation out -- because we don't do it ourselves -- but we have a survey of professional forecasters with Philadelphia. They look at it kind of on a short-term basis. And then the chief actuary for the Social Security Administration looks at it a little bit longer term, 75-year, they are looking at 2.4% inflation over the next 75 years.

Here's a look at your peer reviews, peer comparison. So, you are currently in the 2.75% -- and I'm on slide 70. You are in the 2.75% bucket there with the 43 plans across the country, public sectors plans across the country that are in this study. We are recommending going down a quarter of a point to the 2.5% on slide 71.

I'll skip over to slide 73. We are going to look at the investment return. So, again, we get the analysis from your investment folks of how each of the pension plans is -- the assets are allocated and the investments, and we look at the investment experts and what they predict we will see on a real return basis going forward.

So, we then project that out for the next 50 years, and we kind of put it in percentiles sort of like stochastic modeling. And you see on the 50th percentile there, on slide 73, your returns -- your asset allocation says, you know, 50% of the time we should be, you know, right at 5.83%. Okay? Or we will be below and above that 50% of the time. That's using RSA's assumptions.

Now, the Horizon actuarial surveys group -- there is a group that they take the 39 largest investment consultants across the country, and they kind of gather their data as well. So, we want to look at that, as well, just to see a comparison. They are a little bit lower than your investment team. They are at 5.11%. But, again, our real return assumption right now is 4.95%, so both of these studies show that it is over -- the real return assumption is over.

Here is a -- On slide 75 is just a look at your peer comparisons. And then on slide 76, again, it's just a little bit different of a view. But looking at the last 20 or so years on where investment returns have gone, they have certainly been dropping over the last 10 years from where they were at at

8%. Now their median is at 7%.

So, we are recommending to the Board, on slide 77, that the net investment return assumption be lowered from 7.7% to 7.45% basically leaving the real return assumption alone but dropping that inflation assumption by 50 basis points.

I am going to skip over to the demographic analysis just quickly. On slide 81, we talk about mortality. So, again, we are looking at behaviors of folks in the system, retirees.

Mortality, there is a new mortality table that has been published within the last few years. It's called the Pub-2010 Public Mortality Tables. And it's called 2010 because the data was up to 2010, but it took many years to get published. But it does use public sector data only. So, they gathered data from all public sector plans from across the country and developed their own tables based on just public sector tables.

The biggest thing here is not that -- really that table but implementing a generational mortality approach. So, what that means is that a 60-year-old today is projected to maybe live to 83. But a 60-year-old 40 years from now, or maybe who is 20 now, you know, in 40 years they will be 60, they're going to live possibly to 85 or 86. That has that generational improvement scale built into the mortality table to say that the younger generation may live a little bit longer than the current generation. So, that's a new concept that we are kind of building into a lot of our systems.

Then there's some other demographic assumption recommendations on retirement and disability and withdrawal. I'll kind of skip all of those for now. And I just want to show you to slide 88, the impact on the State Employees' and the State Police plans.

So, again, on 88, the first column there is the valuation results at 7.7%. And we were here in June and presented these results to the Board. The unfunded was just over $3 billion at 3.072%. The funded ratio is 62%. And then there are the Tier 1 and Tier 2 contribution rates.

Building in the demographic changes only, retirement, withdrawal and disability for right now is the next column. That actually dropped the unfunded accrued liability. So, it dropped the liability. We are keeping the same asset pool and increased the funded ratio. And it did drop the contribution requirements by about 21 to 35 basis points depending on the tier.

Then we build in a salary scale of our recommendations. And that really had a very minor impact of changing the salary scale assumptions.

And then the next column over there is building in the mortality assumption. So, that has an impact of just adding about a -- just over $100 million of liability to today. Again, it's changing that benefit payment stream just slightly by, you know, using the generational mortality approach and having folks live longer than they currently live. So, we're discounting that back to today increases the liability.

You will see there where the bigger increase there is also on the normal costs for both of these plans, 12 basis points on Tier 1 and almost 20 basis points on Tier 2. Again, those are -- That generational mortality is really impacting those active members that are currently in the plan because we are stating that they are going to be living longer in the future. So, that has an impact.

And then the last impact on the last column is dropping that to 7.45%. That alone has -- and then some other economic assumption changes, that has an increase of about $200 million to the liabilities and drops the funded ratio to 60.39%.

Again, all of these are illustrative. They are as of September 30th of 2020. They won't really come into play until the 2021 valuations, but just to show you what we could potentially be seeing in the '21 valuations, which we ran it off of the 2020 val.

And then on slide 89 is the State Police, and you can see the impacts there on the State Police. Very similar patterns dropping liabilities due to demographic, but then mortality and the discount rate increase again those liabilities and decrease that funded ratio. And then a slight -- about 4% increase for both of the Tier 1 and Tier 2 contribution rates.

The rest of the material is kind of as an appendix, so you can read it at your leisure. If you're having trouble sleeping at night, perfect material to help you fall asleep. But I will leave it at that and see if there are any questions.

(No response).

MR. KOEBEL: Larry is going to come up and go over Judges. Are we good?

(No response).

MR. KOEBEL: Okay.

MR. LANGER: Good afternoon, everyone. Larry Langer from Cavanaugh Macdonald.

Going back to page 58, I will direct your -- I am going to talk a bit about Judges. A lot of what Ed has said is the same here. So, I am just going to touch on a couple of other places that are a little bit different as it were. So, this will be a lot faster.

So, the area I want to get into is a little bit more on the investment return assumption. With regard to inflation, you would anticipate that inflation would stay consistent from plan to plan to plan. We mentioned that we are dropping inflation but leaving a real return the same, and that's what drove the 25-basis-points reduction in inflation.

If you go to page 131 of the Directorpoint, it says "Economic Assumptions and Investment Returns" at the top of it. This is the projection of real returns based upon investment staff, their projections. So, you can see the real return because it's a different portfolio is 5.52%. And when you add that to inflation, you have a potential return of a little over 8%. And that's great. That's higher than the 7.4% we're recommending. So, it gives you a little cushion.

With that being said, you move to slide 132 of Directorpoint, you can see that it's 4.55%. 4.55% real return based upon Horizon Asset, independent group, and you can see that the overall investment return is about 7.1%. And I think a couple of differences are worth saying here is Horizon's survey. It's probably not as granular as what RSA staff puts together in specific regard to its funds.

So, it could be -- You could run into differences like that. But there is a difference. One of them suggests that you could even go lower. But I think we are reasonably comfortable at this point in time with the 7.4% investment return assumption that we are recommending.

The last couple of slides to go to are the cost impact. So, if you go to page 143 of Directorpoint, you can see here for Judges, same format that Ed talked about for ERS. We have the September 30, 2021, valuation -- September 2020 valuation results just as we presented them back in June. And then in the next column, we get into demographic changes only without mortality. And you can see here that there was a slight increase on the unfunded liability, a slight increase in the normal cost. Overall the contribution amounts for Tier 1 went from 42.1% to 42.51%. Tier 2, 37.34% to 37.63%. So, reasonably slight.

Where the rubber starts meeting the road a little bit more is where you add on the mortality. And we have the same thing here where we are projecting that future generations live longer than the current, and that adds cost because people are projected that they would live longer. And you can see the unfunded liability goes to 172 from 162. And the contribution rates increase from 42.1% to 43.86%, a 1.76% increase and a 2.07% increase for Judges.

Finally, reducing the discount rate, that has the biggest impact of all. And you can see the funded status goes from 66.13% to 64.01%. Contribution rates 45.03% and 40.63%.

District Attorneys -- frankly, the District Attorneys, it's fixed. There's a lot of changes that go on in the next slide. But the contribution rates stay fixed. We want to keep them elevated to cover any fluctuations in contributions that happen underneath.

You can see that when you look at the funded ratios, it starts off at 81.12% and goes all the way down to 78.668% in the end with all the changes back then.

So, there it ends the prepared comments. Two more actuarial firms are coming up. It's going to continue this day fun.

Any comments or questions?

(No response).

MR. LANGER: All right. Thank you.

EXPERIENCE STUDY AND LIMITED SCOPE AUDIT OF 9/30/2020 TRS VALUATIONS

MR. STROM: All right. Good afternoon. I am Matt Strom from Segal, actuary. We were part of the team that was hired to work on the actuarial audits of the 2020 valuations and the review of the experience studies, as well.

So, our presentation really starts on page 159 of the book with our scope. So, on the -- For the valuations, what we did was a limited scope actuarial audit. We did not attempt to replicate the entire 2020 valuations, but we did sample a cross-section of members across all the plans, across different tiers, different statuses, and we reconciled their liability amounts.

We looked at the data that went into the calculations to make sure that it was complete. We also looked at the valuation report and the calculations of contribution rates and actuarial value of assets, assess the conclusions, and then finally we looked at the report itself in the process to see if there was anything as far as improving transparency, clarity and any other information that we think a reader should be able to find in the actuarial report.

And then as far as the experience studies, we looked at the analysis that was provided in the reports from Cavanaugh Macdonald and assessed, you know, would we have -- is that enough data to make recommendations and was the process reasonable. And then, in addition to that, we looked at the process and came up with recommendations for improvement for potentially for future experience studies.

160, as far as the census data, we did collect information from both the system and the file that the actuary used. And we looked for pockets of information that may be in one place but not the other or testing things like total salary, average salary, average ages. And what we are looking for is just discrepancies there that might be material. We didn't find anything like that. The data does appear to be reasonable.

So, as far as the information that went into the process, we believe was sound to be able to develop conclusions on.

On 161, it talks about this matching that we did and really the sampling. And so, what we did was we collected -- we asked the actuary to send us individual calculations or individual liability amounts for various tiers of benefits across the plans. And then what we did is look at the literature and the code for your systems, you know, at the source and programmed our system as if we were going to be replicating the numbers.

But we run through the sample life people, so now we have a really independent look at the benefits. We use their assumptions, but the provisions we look at independently and we try to replicate. And our threshold there is we want to be -- in a present value basis, we want to be within 5% plus or minus just because different systems have different ways of applying different provisions or assumptions. So, you do get a little bit of difference there, but we want to be within 5%.

Across all the systems, we collected 59 test slides. So, for ERS and JRF it was probably, you know, slightly more than half of the 59 that we collected and the vast majority of those we matched almost what we would consider to be exactly, within 1%. It is very closely.

So, we feel that the calculations at least for generating the liabilities are done very accurately. Another handful, within plus or minus 3%, there was one calculation that was off by 7%; but as a dollar amount, it was very small. And we were able to -- thanks to the information that the actuary had provided, the background detail, we were able to identify that it was really just the system, a valuation system difference between the two. And across all your members -- we were just looking at one. But across all the members, it would net out to a zero difference. So, it would be very immaterial.

On 162, there were a few other items that we recommended to be looked at, again, from looking at this detail. But they were really getting into the minutiae of the calculation.

So, as far as moving the needle on the numbers, they didn't have a very large impact at all. So, just very minor things that we mentioned to them but nothing very material.

And then, lastly, I mentioned that we did go through -- once they have the liability calculations, we go through how those were used within the valuation. And we were able to replicate and match all those calculations. So, like, the contribution rates, things within there like the interest timing and things of that nature, we replicated all that. So, we are comfortable with that too.

And on 163, as far as looking at the reports and things with -- you know, providing clarity again, another actuary should be able to pick up a valuation report and easily follow it and find all sorts of information in there.

So, we did have some comments in there. And, namely, on the last bullet here, just some other items that would be nice to be included in that valuation report, things like a history of the returns both on a market and actuarial basis and averages, and you can kind of compare that to what the expectation was over those years.

Looking at histories of funded ratios, a history of cash flows so you can be able to see side by side the contributions both from the employers and employees coming in versus the benefit payments and expenses that are going out. And you can see that cash flow over time.

And then the last one there is a reconciliation of the change in the required contribution rates. So, just knowing, okay, the rate last year was this and the rate this year is -- you know, maybe, what, went from 10% to 11%. Just knowing what caused that 1% increase, what were the sources of that. To add that in there is some good information.

On 164, now we are kind of getting into our review of the experience study. And so, starting with the economic assumptions for inflation, the 2.5% we believe that that is reasonable. So, we are comfortable with the 2.5%.

We do notice that -- noting that, you know, using -- or looking at the public plans database, there is a little bit of a lag when you compare that information. So, here you are in your cycle and you're saying, well, we're going to change to this, and you look at the database because it's close to here. You don't want to necessarily rely on that source as the only source because it's lagged. So, when you go to 2.5%, that's going to get -- you know, it will get adopted. It will go into the cycle. The actuary will use it, then it will get published, and then it will be reported in this database. And you can see there is a lag there.

So, when we -- and the experience studies that we've done and we've -- the assumption changes that we maybe recommended to other systems in the last couple of years, they are not going to filter their way through that database for another year or two.

On the investment return assumption, that calculation of the 50th percentile real rate of return using the same information particularly with the Horizon survey information, we were able to closely replicate that. So, we are comfortable with how that number was calculated.

Just a couple of items to look at for future studies and just some considerations as, again, we do agree that the systems are very long term in nature, but the liabilities for your retired members, you know, that's a pretty big portion that will be paid out actually over a shorter period of time. And if you looked at your present value of benefits, it might be, you know, anywhere from 40% to 50% of your liability. It's not necessarily long term. It is a relatively short-term number.

So, just one thing to consider is, with your capital market assumptions and particularly in that Horizon, they are published at 20-year and a 10-year. And the 10-year assumptions are going to have lower expected returns. So, if you were to weight -- calculate a 20-year expected real return and a 10-year real return and weight that between the liability that is expected to be settled in the near term versus your long term, you might get a different -- you'll get a different answer. But that's consistent with how your liability is going to get paid out.

And then the other -- just something to consider is an adjustment for negative cash flow. So, you know, that number -- the investment return assumes that you will earn that for all assets that are there. But when you have more benefits and expenses being paid out than contributions coming in, there is a little bit of a drag on your assets. So, that total value at the beginning of the year is not actually there all year to be earning that investment income.

So, maybe to consider making an

adjustment -- small adjustment for that negative cash flow for the money that's really not going to be there to be able to earn investment return.

For payroll growth on page 165, we see where that recommendation came from, and we are comfortable with -- we agree that that's appropriate. We do note that for the JRF fund that actual increases in payroll if you go back and look retrospectively that they have been lower than even 2.75%.

So, to the extent that, you know, there is something there that even in the future you think those increases in payroll will be less than 2.75%. You know, that could be something to consider if there is something systematically there.

In salary scale we agree with the recommendations there. We looked at the analysis, and we thought that that was reasonable.

And then the last one on page 166 is for the administrative expenses. And we think that that was fine for ERS and JRF. That recommendation to drop the admin assumptions seemed reasonable to us.

On the demographic side, those assumptions now that are affecting your membership and how people behave starting with mortality, certainly with the change to the Pub tables and using generational mortality, Segal agrees with that, gives it a thumbs up.

One place where we had a comment was about the improvement scale or the mortality and projection scale. And this is the scale that is applied on top of your base rates that tell how much longer are your younger people going to live in retirement than the people that are currently in retirement.

And so, there is a skill that does that calculation. And then the recommendation is to use two-thirds of that increase. So, that would be like saying someone who is 30 now, you know, the projection scale might say when they turn 65, they would expected to live maybe three years longer than someone who is already 65. And so, by using two-thirds of the scale, you are going to say, well, we think our improvements are going to be slower than the published scale, and that they might only live an extra two years on top of that.

So, that's just -- We've seen that done before, but it's not the most common approach. So, it really goes down to do you think that published scale is appropriate for your system or do you think there needs to be an adjustment? And that is something that we would rely on the actuary and the Board to make that decision, but we did want to point that out that it's an unusual practice.

For retirement turnover and disability, we reviewed that analysis. We think those assumptions were reasonable.

And then one other comment that we had on the entire report was that there was a demonstration that you are going to see an increase in liability, an increase in cost from the assumption changes. And one option is to phase that in over time -- phase that into the costs over time.

And there was an illustrative example to do that, like, over a five-year period, and let's say it was a 5% increase in contribution that it would take, you know, 1% the first year, 2% the second year and 3% the third year and so on. We just were pointing out that you would actually -- if implemented, you would want to use a time value of money.

So, it might be 1% the first year, but because you didn't pay the full 5% increase that first year, it might jump to, like, you know, an extra 1.2% that next year, and then an extra 1.4% that third year.

So, there is some kind of time value of money adjustment to be made there. But we had a discussion with the actuaries about that, and they were saying, yes, for purposes of the report -- this was an illustrative -- if this is actually implemented this way, it would be implemented with taking into consideration that time-valued money.

Another comment was with the change in the funding policy contribution and the amortization layers. We agreed with that change. It seems a lot more straightforward than the approach that is there right now but not really sacrificing what the goals are of the system to be funded over time. So, we think it's a -- we agree with that change and that approach.

Finally, in summary, on page 169, we certainly think that the valuations were -- we had a very close match on those liabilities, thought the data was good. So, we have a -- we think it validates the findings there.

And we generally agree with the experience study. And, again, there were places where we are looking at each assumption individually. You know, it's reasonable, but it might be a little bit slightly aggressive. But then there doesn't seem to be many assumptions that lean the other way to kind of offset that looking at the package.

So, when you have a few assumptions that are leaning a little bit on the aggressive side, when you take a step back and look at the entire package of assumptions, it may be just a little bit more aggressive than maybe what you intend. But really nothing was unreasonable as far as either the valuations or the experience study. There was nothing that we thought, you know, needed to go back to the drawing board and redo anything. Just really -- just really things to consider for future experience studies.

And I think that's pretty much the end of our presentation from Segal.

MR. NORRIS GREEN: Thank you.

MR. STROM: All right. Thanks.

CAVANAUGH MACDONALD RESPONSE TO SEGAL REPORT

MR. LANGER: So, in slide 174 is our response.

And first off, I want to talk about what a joy it was to work with Segal and Milliman. Maybe it's just that actuaries like hanging out together, but it was a good process and I think a very helpful process. Because you-all put a lot of good faith in us and the numbers that we put together, and it takes another actuarial firm, good ones like Segal and Milliman, to make sure, like, what we are doing, you know, is done well. So, we appreciate that.

We are pleased with their overall findings. This is our letter that we have there. And there is a lot of recommendations that were made as Matt said. We don't have to go back to the drawing board, which is, you know, the highest of all high praise. But there are some things to consider for the next valuation, and we will certainly work with staff in putting that together.

As you were listening to Matt, was there anything that you had a follow-up question for us at CavMac as you were listening to him? I just wanted to flag any of those questions.

(No response).

MR. LANGER: If not, that's the end of my prepared comments.

MR. NORRIS GREEN: Explain to us -- but he mentioned that this may tend to be a little bit more aggressive than intended. Can you talk about that just a little bit, what that means?

MR. LANGER: Certainly. So, aggressive -- you know, I always -- I get -- terminology throws me sideways sometimes. When I think of "aggressive," I think of bears. But really aggressive is just that the liabilities that we developed would be a little bit lower -- the costs might be a little bit lower than if everything was right down the middle of the road.

And it's sort of -- it's one of these deals where there is a few assumptions which are a little bit -- you know, create a little bit less liabilities like you mentioned mortality specifically and investment return where those might result in a little bit lower liabilities. And you add them up and then maybe you're a little bit closer -- I'm not sure if it's left or right, but you would develop unfunded liabilities that are a bit lower than anticipated.

I think that's a nice point. I think that sometimes we get hung up in reviews, and we talk about where we are, and we want to look at where we've been and where we are going to. And we have been working towards doing things like shortening up the amortization period, lowering the discount rate over time, thoughtfully implementing these new mortality tables. The mortality table, the thing with -- we are not taking the full scale that the side actuary recommends.

One of the fun things about the projection of improvement and life expectancy that the SOA has been developing, they have been developing that scale for several years. Over the past eight years, every year they have come back and ramped it back.

So, they have overshot the mark, which is nice. That means they're optimistic. They think people are going to live longer, but it's overshot.

So, we took a little bit off that table. And if it turns out it's right, we will go back in when we're back and experience three and five years, maybe we implement the full table.

But, you know, we have developed slightly -- potentially slightly lower liabilities than you might if everything was right down the middle of the road. And, you know, we are comfortable, and we will keep looking at -- we'll look at it between now and the next experience review, and we will keep monitoring it. Did that answer?

MR. NORRIS GREEN: That was an

answer.

MR. LANGER: I am working so hard on my answers, too.

Okay. That's it for my prepared comments. Any questions? All good?

(No response).

MR. NORRIS GREEN: I think not. Anybody on the web have any questions? Is anybody still there?

MS. STATUM: I'm here.

MR. NORRIS GREEN: All right. Thanks.

MR. LANGER: Beautiful. Thank y'all.

MILLIMAN ON PEER REVIEW OF EXPERIENCE STUDY AND LIMITED SCOPE AUDIT OF 9/30/2020 EXPERIENCE STUDY FOR FY 2021-2025

MR. COLLIER: Good morning. I'm Nick Collier -- oh, wait a minute. I've done too many meetings. It's good afternoon. I am Nick Collier. I am here with Scott Porter, and we are with Milliman. And we are here to present the results of the actuarial audit.

If you go to 182, that should get you to the page that I'm on. You've already heard from Segal really a lot about what we are going to talk about, so I will try not to beat that too much to death but just hit on the high points. Obviously the purpose of the audit is to write an indigent peer review, and we appreciate your kind of glutinous for punishment and having two actuaries look over your actuary's shoulder. But really I think it does, as Larry said, you know, provide a really good end product.

So, our main focus here is going to be on the 2020 valuation, you know, assessing the accuracy of those calculations. And then secondly and probably more importantly is reviewing the recommendations and experience study for reasonableness and adding some commentary there.

As Matt told you, there is a limited scope on it. We did not reproduce all of CavMac's numbers, but we did do a real detailed review of the components of the valuation. And Matt really touched on those, so I won't go into too much detail there. I would just say that we did the same thing where we looked at those sample lives. Those really show you the inner workings of the actual mind of the calculations of liabilities, and we are very close on those calculations, like Segal was.

Just a couple of things we did a little bit different, we also did a review of the benefit calculations done by the RSA staff. And we further -- then we looked at the -- to kind of assess reasonableness of the valuation data, we took the valuation data and took it back to what data is actually used in the calculations to make sure those were consistent.

So, I would just like to add one additional thing, which is, you know, what Larry said. It was a real good working relationship, and RSA staff was really helpful to us, and we had a bunch of requests and questions and similarly to CavMac. So, we really appreciate the cooperative nature.

So, moving to the next slide, so, our findings are that basically all facets of valuation results were materially accurate. We found the benefit calculations were also accurate. And looking at the 2021 experience data recommendations, I think you've kind of already heard this. We really think they are going in the right direction. Yeah, maybe we would have gone a little bit further, but we still think the recommendations are reasonable. And as we said, I think the direction you are heading is going to be beneficial going forward.

So, basically a favorable audit review. We have some recommended changes, but the ones that we are actually recommending changes, there is none of them that would have a material impact. We just suggested another few other items. These are more subjective in nature for your consideration.

I am going to let Scott talk about that. But those have more of the potential to be material if they were implemented. And I will turn it over to Scott.

MR. PORTER: Good afternoon. So, I think we are on slide 184. So, as Nick mentioned in our report, we had noted several recommended changes but nothing of any material impact that would have a significant impact on the valuation results.

I would like to spend the rest of our time in terms of changes that we think could be considered between now and the next experience study, specifically the investment return assumption utilizing a lower assumption than the recommended 7.45%. As both actuarial firms have talked about, this mortality improvement scale using 100% of the scale instead of two-thirds of the scale, considering amortization periods that are going to be 20 years or less.

So, CavMac recommended using 20 years for what we are going to call new gains and losses. But the current level of amortization period is somewhere around 27 years. So, potentially moving that downward, as well.

And then the last thing is sort of monitoring the actual payroll growth in terms of how that is being used to develop the amortization amount.

On the next slide, on 185, just a couple of additional comments regarding JRF. So, again, we found a couple of little things, nothing that would have a material impact, specifically on how compensation was being developed for one particular tier and just a consistency with how the salary was being developed for benefit purposes, as well as normal cost purposes. So, some technical items.

And then, again, we talk about the investment return assumption. So, CavMac recommended a difference, I will say, between what's being used for TRS and ERS versus what's being used for JRF by five basis points. So, 7.45% but for JRF, 7.4%. Based on the capital market assumptions that we reviewed, we found that difference to be somewhere between 31 to 56 basis points.

So, if the assumption chosen for TRS and ERS is 7.45%, then that would put that range for JRF at 6.89% to 7.14%. And that's based on the differences in the asset allegation between JRF and then the other two systems.

So, slide 186, we have a couple of different charts on this slide. So, on the top left, we provide information on sort of the capital market assumptions that were utilized in the experience study. The first two columns were utilized in the experience study by CavMac, ones that were provided by RSA and then, as they noted, the Horizon survey -- and this was from 2020 -- and that real return of 5.83% or 5.11% was utilized in their recommendation to remain at the 4.95%. And based on that data, we concur that it's reasonable.

At the time we conducted the audit, Horizon's survey -- the 2021 survey came out, and so those assumptions had come down. Milliman also creates their own capital market assumptions. And so, we include that as well. So, based on those two assumptions sets and the inflation assumptions embedded in each of those assumption sets, we would come up with a lower investment return assumption than the 7.45%.

Also, we looked at what -- sort of the peer comparison. So, the NASRA study which takes into account all information for all statewide systems. And so, about 80% of statewide systems had selected a return that's lower than the 7.45%.

So, considering of when the new assumption is adopted and gets reflected in the actuarial valuation and then that gets reflected in the contribution rates paid by employers, which I believe is three fiscal years after it's, you know, reflected in the actuarial valuation.

So, just considering that lead time in terms of looking at the assumptions with -- before maybe the next experience study, you want to be looking at what the investment return assumption is, where capital market assumptions are going. It's possible you might want to make a -- I will say a mid-cycle change if the capital market assumptions keep moving downward, but it's something you want to keep your eye on.

On slide 187, I will start at the bottom there in terms of the demographic assumptions.

So, again, we have all talked about the mortality improvement assumption basically, you know, effectively we would all like to see using 100% of the mortality improvement scale. And so, I think it's appropriate that in the next experience study you look at that possibility. And it will be based on the mortality improvement scale at that time. As Larry noted, the scale has changed, you know, each year that the Society has published the improvement scale. And who knows what sort of the COVID-19 pandemic is going to have an impact on what that scale is going to look like in the next couple of years.

The last thing we note is on the economic assumptions in terms of payroll growth and what the payroll growth assumption is. When there is an unfunded liability, that unfunded liability is getting amortized, similar to a mortgage, and it's coming up with a certain dollar amount. And then that dollar amount is being divided by a payroll figure to come up with the contribution rate that the employers are then contributing on.

To the extent that actual payroll is going to come in less than what the actuary is projecting as that payroll number, then the actual dollars, contribution dollars, coming in might be less than what was expected. So, that could result in a slight increase in that unfunded liability; and then if those actuarial dollars are less, the contribution rate might increase a little bit from what it was the year before.

So, again, I think just monitoring it -- we looked at the last 10 years. And actually ERS over the last five years was higher than, I would say, the recommended assumption of 2.75%. So, I would just say just continually monitor that assumption and just make sure that the payroll is coming in as projected.

MR. COLLIER: All right. Thanks, Scott.

So, we are moving to 188. So, you've heard about the funding changes. We think the simplification and moving to amortization of 20 years on future changes on unfunded liability makes a lot of sense, and we definitely agree with that change.

There is a graph down in the corner there. We have shown TRS because we have done a one-size-fits-all presentation. This TRS is going to be very similar to your State employees, what the projection of the unfunded paying system.

So, there's two things I would like to highlight here. One is what you can see is the proposed method with the orange line there. It's projected to pay off your unfunded sooner than the blue line which is, you know, your current method.

So, that's definitely a positive sign. Just note that what you also can see is if you -- the current -- what you see is an increase. Basically what we have is what is called negative amortization in that the unfunded will gradually increase over the next few years if all the assumptions are met.

So, you actually end up increasing your principal.

So, it's kind of slow to pay down. It's not optimal from our perspective, but it's -- a lot of systems are doing it. And there is not anything inherently wrong with it, but we just want to point that out.

As I said, this would apply to ERS. It would not apply to -- it would apply to State employees. It wouldn't apply to State police or JRF, that negative amortization comment.

And, also, some discussion was on the phase-in. If you phase in, that would probably increase your increase in your UAL over the next few years. But on the other hand, you have a -- as of right now looking like a fairly strong return, caveat obviously the year end isn't done, but that could also help mitigate that. And obviously the look on employers are going to be kind of all over the place, so I am not going to try and fit them into one box.

So, moving to the next slide, speaking of local employers, there's small local employers. I have got a client in a very similar situation. To the local employers, we have got over 800 employers, and, you know, they range from one to 10,000 employees. And what do you do with those small employers to try to keep them out of trouble? And we have done pretty similar things to what is being done right now. There's some what we would call conservative assumptions in that they produce higher liabilities or higher contribution rates, which strengthens the funding. So, if they do run into problems down the road, they are in a stronger funding position.

We don't have any magic answer to that. We have done some things a little bit differently. But it's really the same concept that you are creating a somewhat higher contribution rate to get that stronger funding upfront. My client does have another option, which is for the individual employers can contribute at a higher rate, so they can effectively prefund themselves at a higher rate to keep themselves out of trouble. Of course, it's generally the plans that are in the best shape that are doing that. So, it's not necessarily the answer, but it's, you know, one possible option if you wanted to explore that.

So, that concludes our formal presentation. And we are happy to take any questions.

MR. NORRIS GREEN: Anybody have any questions?

(No response).

MR. NORRIS GREEN: Thank you.

MR. COLLIER: Okay. Thank you.

CAVANAUGH MACDONALD

RESPONSE TO MILLIMAN REPORT

MR. KOEBEL: All right. We are almost done.

I just want to thank the folks at Milliman for their professionalism in this. It was great conversations that we had to answer their questions and to, you know, answer any of this data questions that they had was great back and forth, and I appreciate that.

Again, as Larry said, it's nice to get a clean audit from a second actuarial firm. And, yes, they have some great recommendations for the Board and for the staff and for us to consider going forward.

Our letter is provided here starting on page 192.

On 193 is just the sample lives that Milliman mentioned, you know, for the most part with some of their programming. Modifications, I think it will really benefit the liabilities going forward, and we agree with these observations. And then the other ones that we were happy to discuss with RSA staff about the going forward in the next few valuations.

On 194, we talk about -- they talked about funding, about the mention of the 20 years. And we would certainly consider that in the next experience study and their unfunded accrued liability contribution rate and the payroll growth assumption that goes with it. We will happily discuss that with our RSA staff during the next valuation.

On slide 195, they talk about the investment return assumption and, you know, going lower or possibly even reducing it further to the 7.45%, and we will definitely consider that. Even, you know, pre -- maybe even before the next experience study and maybe look at that more -- at a more frequent time given the acceptance by RSA staff of that.

And then just lastly, on 196, talking about the reports and -- where is the other section? Oh, just the reports on that. And, again, we agree with the many observations that we -- you know, just making sure our reports say the correct assumptions that go into our liabilities, just fine tuning that. And then we will be happy to discuss any other things with RSA staff and consider in the next experience study.

So, again, any questions you-all have from what Milliman went through that I could help clarify?

(No response).

MR. KOEBEL: No? Great.

MR. NORRIS GREEN: Thank you.

MR. KOEBEL: Thank you so much.

MR. NORRIS GREEN: Are we at the approval?

MS. DIANE SCOTT: We are at the

approval.

RECOMMENDATION TO ADOPT ERS and JRF FY 2016-2020 EXPERIENCE STUDY FOR FY 2021-2025

MS. DIANE SCOTT: So, back on page 57 and 58, you can see the -- you can see the changes that are being recommended. 57 for ERS and 58 for JRF.

I would mention -- I think this is probably an appropriate place to mention it. I handed out to those present, as well as I think it was emailed to those listening in from the committee, some demographic information related to the local employers.

And we will hand this out to the full Board tomorrow and have it emailed out for those who might be listening in so that you can see the demographic makeup, how many cities, how many counties, how many actives that each has, how many retirees, what kind of total assets are related to the cities, counties, librairies, utilities, other and how the locals stack up against the retiree -- against the State and State Police in numbers. Okay?

So, to me that is really good information to have. So, we thought we would give you that. But I did want to remind everyone that for those local employers with less than 25 active employees, there are two assumptions that we have tightened up. And we did this at the last experience study. Those assumptions are that the employees will retire at first day eligible, all of them. And the other assumption is that the withdrawals will be 50% of what a withdrawal rate would be if they had more than 25 employees. Okay?

So, that tightens them up. One of the things that we were interested in is how did that go? Well, we are phasing that in over four years. The final year was 9/30/2020. That rate created as a result of that 2020 is applicable to be paid in 2023. So, I guess you could say we phased in the calculation, but we haven't fully phased in the rate.

Then on top of that, with the changes that we are recommending today, these changes will also affect those same employers with less than 25. So, it was a general consensus of us with the actuary that we wouldn't do anything to those as far as modify the two more stringent factors.

Let's look at this into the next five-year period, and let's see how well we have achieved our goals of strengthening those employers with less than 25 active employees. Okay?

MR. NORRIS GREEN: Okay.

RECOMMENDATION TO ADOPT ERS and JRF FY 2016-2020 EXPERIENCE STUDY FOR FY 2021-2025

MS. DIANE SCOTT: But, yes, at this point in time would be the time that out of this committee, you would make the

recommendation that the Board approve
these changes.

MR. NORRIS GREEN: I would
entertain a motion from someone to approve
the changes on page 57 for the ERS and the
Judicial Retirement Fund.

MR. FIBBE: I will address that in
just a moment. But before I make the
motion to approve, I would just like to
say that was an overwhelming amount of
information. And I think we have all the
experts in the room and the staff in the
room from all of that information and
their working together, we have been
supplied these recommendations for changes
and approval. And based on those
recommendations from the experts and the
staff, I will make a motion that we
approve the recommendations from the 2020
experience study summary results on page
57 and 58 of our material.

MR. NORRIS GREEN: Do we have a
second?

MS. STATUM: I second.
MR. NORRIS GREEN: All in favor say "aye."
(Board members saying "aye").
MR. NORRIS GREEN: Opposed?
(No response).
MR. NORRIS GREEN: Ayes have it.
MS. DIANE SCOTT: Thank you.
MR. NORRIS GREEN: Experience study recommendations are adopted. We are going to move into the funding policy changes, correct?
MS. DIANE SCOTT: That is correct.

RECOMMENDATION TO AMEND ERS & JRF FUNDING POLICIES BASED UPON EXPERIENCE STUDY RECOMMENDATIONS

MS. DIANE SCOTT: So, moving to page 198, as a result of the changes that we just agreed to make means that the funding policy of the Board needs to be modified somewhat. The last time they were modified was when we finished the 2015 experience study. So, you can see the motion that I have on 198 for ERS and JRF.

Starting on 199, I have taken the funding policies as they exist today, and I have redlined them so you can easily see the changes that we are recommending. And after those, each of those, I have accepted all the changes, which starts on page 203, so you could read it through without having to look at the black and the white on there.

Primarily modifying the amortization period, taking out everything that relates to open amortization because we will no longer have any component of our unfunded liability that's open. This is an awesome feat that we have been able to get to. And it identifies and articulates that we will close future layers of gains or losses over a 20-year period.

So, with that, I would ask that

those modified and updated amended funding policies be --

MR. NORRIS GREEN: This is going to the 27 years for the current liability, right?

MS. DIANE SCOTT: Right. That the layer, everything to 27.

MR. NORRIS GREEN: Not doing the 115 going forward.

MS. DIANE SCOTT: Exactly.

MR. NORRIS GREEN: So, we are going to 27 years. Anything after this would be on a 20-year, either up or down?

MS. DIANE SCOTT: Yes. Yes.

MR. NORRIS GREEN: Any questions on the funding policy changes?

(No response).

MR. NORRIS GREEN: So, we need a motion to approve the funding policy changes as recommended on page 201 -- 200 through 201 and highlighted on 203 through 205.

MS. STATUM: I will make a motion

that we approve the changes to the funding policy.

MR. NORRIS GREEN: All right. We've got a motion. Is there a second?

MR. COLSTON: I second.

MR. NORRIS GREEN: We have a second. All in favor say "aye."

(Board members saying "aye").

MR. NORRIS GREEN: Opposed?

(No response).

MR. NORRIS GREEN: All right. The funding policy recommendation has been adopted.

The next item is the recommendation to appoint the Board actuary.

APPOINTMENT OF BOARD ACTUARY

MS. DIANE SCOTT: Yes, sir. Our law says that the Board shall appoint an actuary. We have a five-year contract with CavMac. With what we have just done, that completes their work for the previous five-year contract. We went out to bid with an RFP earlier this year. We had four proposers. We had formed a committee to review all of the proposers and to have finalist interviews.

Once we reviewed those four proposals, we narrowed it down to two finalists. And those two finalist provided a best and final. We interviewed them, and it is the unanimous consensus of the group that we appoint -- or that we would hire Cavanaugh Macdonald again for another five-year period.

So, what we need for the Boards to do is to formally appoint Cavanaugh Macdonald for the five-year period, ending with the valuations 2021, 2022, 2023, 2024, and 2025.

MR. NORRIS GREEN: Is there a motion to approve the recommendation of Cavanaugh Macdonald for the next five years as the Board's actuary?

MR. FIBBE: So moved.

MR. NORRIS GREEN: Do we have a second?

MR. COLSTON: I second.

MR. NORRIS GREEN: All right. All in favor say "aye."

(Board members saying "aye").

MR. NORRIS GREEN: Opposed?

(No response).

MR. NORRIS GREEN: All right. The actuary recommendation is approved.

Do you have anything else?

APPOINTMENT OF BOARD INVESTMENT ADVISOR

MS. DIANE SCOTT: One more item is the recommendation to approve the Board investment adviser. The law says that the Board shall appoint an investment adviser. And in that law, it has three provisions: One provision is that it has to be an Alabama bank. The second provision is that I think it has to have a capitalization of $300 million, and it has to have an organized investment department.

There is only one bank in the state of Alabama that qualifies, and that's Regions. And that's our current adviser.

So, we would ask that the Board now adopt as the law says or appoint Regions as the investment adviser for a period not to exceed five years.

MR. NORRIS GREEN: All right. So, is there a motion to approve Regions Bank as the investment adviser for the next five years?

MR. FIBBE: I'll make that motion.

MR. NORRIS GREEN: We've got a motion. Is there second?

MS. STATUM: I second.

MR. NORRIS GREEN: All right. All in favor say "aye."

(Board members saying "aye".)

MR. NORRIS GREEN: Opposed?

(No response).

MR. NORRIS GREEN: All right. So, Regions Bank is the investment adviser for the -- as far as the Risk Management Committee is concerned.

All right. I think we need a motion to adjourn, I believe. Is there anything else we need to discuss?

ADJOURN

MR. FIBBE: I have nothing else. I make a motion that we adjourn.

MR. NORRIS GREEN: We have got a motion to adjourn. Is there a second?

MR. COLSTON: I second.

MR. NORRIS GREEN: All right. All in favor say "aye."

(Board members saying "aye".)

MR. NORRIS GREEN: Opposed?

(No response).

MR. NORRIS GREEN: All right. The committee is adjourned. Thank you-all. Thank you-all for presenting.

MS. DIANE SCOTT: Thank you-all.

(Risk Management Meeting concluded at 3:17 p.m.)

REPORTER'S CERTIFICATE

STATE OF ALABAMA
ELMORE COUNTY

I, Jeana S. Boggs, Certified Professional Reporter and Notary Public in and for the State of Alabama at Large, do hereby certify that I reported the ALABAMA RISK MANAGEMENT COMMITTEE meeting that was held on Tuesday, September 13th, 2021; that the foregoing colloquies, statements, questions and answers thereto were reduced to 83 typewritten pages under my direction and supervision; that the above is a true and accurate transcription of said meeting set out herein.

I further certify that I am duly licensed by the Alabama Board of Court Reporting as a Certified Court Reporter as evidenced by the ABCR number following my name found below.

I further certify that I am neither of relative, employee, attorney or counsel of any of the parties, nor am I a relative or employee of such attorney or counsel, nor am I financially interested in the results thereof. All rates charged are usual and customary.

This the 13th day of September, 2021, in the year of our Lord.

/S/Jeana S. Boggs

Jeana S. Boggs
ABCR NO. 7, Exp 9/30/2022
Certified Court Reporter and
Notary Public
Commission expires: 8/9/2022

C

C

D

D

D

E

F

L

P

R

S

T

T