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EPISODE 59:

Innovating Pension Fund Management

with the Toronto Transit Commission Pension Plan

Robert Morier: Welcome to the Dakota Live Podcast. I'm your host Robert Morier. The goal of this podcast is to help you better know the people behind investment decisions. We introduce you to chief investment officers, manager research professionals, and other leaders in our industry to help you sell in between the lines and better understand the investment sales ecosystem. If you're not familiar with Dakota and their Dakota Live content, please check out our website at dakota.com to learn more about our services. Now, before we get started, I need to read a brief disclosure. This content is provided for informational purposes and should not be relied upon as recommendations or advice about investing in securities. All investments involve risk and may lose money. Dakota does not guarantee the accuracy of any of the information provided by the speaker who is not affiliated with Dakota, not a solicitation, testimonial, or an endorsement by Dakota or its affiliates. Nothing herein is intended to indicate approval, support, or recommendation of the investment advisor, or its supervised persons by Dakota. Today's episode is brought to you by Dakota Marketplace. Are you tired of constantly jumping between multiple databases and channels to find the right investment opportunities? Introducing Dakota Marketplace, the comprehensive institutional and intermediary database built by fundraisers for fundraisers. With Dakota Marketplace you'll have access to all channels and asset classes in one place, saving you time and streamlining your fundraising process. Say goodbye to the frustration of searching through multiple databases and say hello to a seamless and efficient fundraising experience. Sign up now and see the difference Dakota Marketplace can make for you. Visit dakotamarketplace.com today. Well, I am thrilled to introduce our audience today, Andy Green. Andy is the Chief Investment Officer at the Toronto Transit Commission pension plan or TTC Pension Plan. Andy, welcome to the show. It's so nice to see you. Thank you for coming on from Toronto.

Andy Greene: Rob, thank you very much. Very excited to be here.

Robert Morier: Well, we're excited to have you here as well. We have a lot of questions to ask you. You've had such a successful career, and we're so excited about what's been going on at TTC. But before we do, I'm going to read your biography for our audience. As chief investment officer Andy green oversees TTC investment portfolio. Canada's TTC Pension Plan, the $78.2 billion defined benefit fund for employees of Toronto's public transport network has been helping members ensure their secure financial retirement since 1940. The TTCPP is a jointly sponsored pension plan and is fully funded. Their goal is to provide their members with a reliable pension income they can count on for life. Members contribute to the plan and their employers and make equal contributions which are collectively invested and managed by external investment managers. When a member retires, they receive a monthly income based on their average earnings and years of service. In his role, Andy oversees all investment functions, including investment strategy, portfolio construction, due diligence, and risk management. He has been a senior leader

within the investment functions of TTCPP since joining the organization in 2017. Andy brings 25 years of pension and investment experience and has been responsible for establishing and developing the plan's investment team. Prior to joining TTC, Andy was the Director of Public Investments with OpTrust. While with OpTrust, Andy was responsible for oversight of external managers and portfolio management of not only and absolute return investments for the public markets portion of the $25 billion defined benefit plan, which was about $9 billion in total assets. Prior to OpTrust, he worked at Northern Trust in Investment Manager Research and Portfolio Construction for outsourced CIO clients, the University of Wisconsin Foundation as Associate Director of Investments where he was responsible for equities, fixed income, hedge funds, private equity, and real assets investments for the endowment, retirement, and operating funds. Andy also worked in consulting at AndCo Consulting and Willis Towers Watson. Andy started his career on the broker dealer side of the business at Smith Barney. Andy is a Certified Alternatives Investment Analyst and a Certified Investment Manager, as well as a member of the Pension Industry Association of Canada, CFA Institute and CFA Society Toronto. He is chair of the Investment Committee for the United Church of Canada Pension Plan and sits on the Investment Committee of York University Pension Plan. Andy holds an MA from Binghamton University and a BA from Ithaca College. Andy calls the greater Toronto area home but was born in Miami, spent his early days in Chicago, and went to University in Upstate New York. Andy, thank you for being here. Congratulations on all your success. It's really great to have you.

Andy Greene: Awesome. Thank you very much, Robert. Appreciate it.

Robert Morier: Yeah. Well, let me get started by saying congratulations on being appointed chief investment officer of the TTC Pension Plan in June of 2023 in what was a newly created role for the Plan. So, did you know the CIOC seat was on the horizon when you joined the Plan in 2017?

Andy Greene: You know I did know that it was going to be on the horizon. We didn't have a plan, a dedicated timeline. I think a lot of it was really trying to show the value-add of having a dedicated investment team. So maybe just stepping back for a second, when I joined, there was not a dedicated investment function. So, I think it was a matter of showing that we needed an investment person. And frankly, just it takes a couple of years to figure out if I was the right person to do the job. And so, I'm fortunate in the 6 plus years I've been here to have been able to slowly earn the trust of the board and our CEO.

Robert Morier: Interesting. Congratulations again.

Andy Greene: Thank you.

Robert Morier: I'm very excited to hear more about that building process. I didn't realize how quite entrepreneurial it was when you first started being a one-man band having to build out all the instruments and all the players. So, we're looking forward to hearing more about that. Before we do, we always start at the beginning of people's careers. And I'm a teacher, so in the classroom I have a lot of students who are asking me what they want to do with their careers. Were you familiar with the world of asset management and asset allocation, and how did the journey start for you initially?

Andy Greene: You know, it didn't… I guess, I would say I didn't know about it, and I think because our industry is rather niche. And so, I guess, like a lot of us I fell into the industry. I came out of graduate school wanting to be an economist. And then I think the reality of the job market and what the opportunity set was. And frankly, it was through one of my best friends who was at the time was working at SCI. He told me what he did, and I thought, that sounds pretty cool. And so, I went and checked it out. And he at the time was… he left SCI and went to Smith Barney. And he told me about what he did, and there was a spot there. And I thought, that sounds really interesting learning about asset allocation and manager search and selection. So that's where I started at Smith Barney. I guess that Smith Barney doesn't exist anymore, but I was working with high net worth and smaller institutional clients. So that was a great start for me. And then I think as I started to learn more about the industry and what interests me, I realized that maybe the retail side of the business was not quite for me. I still remember quite clearly sitting next to the bullpen where the young brokers were cold calling people and listening to that, and then occasionally getting walked out when they didn't hit their quota. And I think that made a real impression on me. And so, I learned from a couple of really good consultants at Smith Barney who were more focused on the institutional side. And that was really what piqued my interest is more sophisticated types of investments and portfolio construction and just the groups of people that you're working with. So, I found that really interesting. And so, I wanted to move away from the retail broker side of the business and wanted to move into more institutional. And I think it was funny in those days, that the kind of your traditional pension consultant really, I think put their nose up at the retail consultants, you know, the quality of their work despite our research teams being triple the size of Mercer's or whoever at the time. So anyway, I mean, I wanted to make this move into institutional, and it just took a couple steps to get there. So, my next move was I started doing consulting for high net-worth individuals. So, I worked in the Wealth Management Group at Northern Trust working with the super-rich families and really enjoyed a lot of the work that we were doing there. And then from there, moved into traditional pension consulting where I worked at AndCo and Willis Towers Watson. And those were really phenomenal experiences for me working with at one place. AndCo tended to be more public fund and Taft-Hartley clients. And then when I was at Willis Towers Watson, a lot more corporate plans, and we also had a lot more healthcare clients.

So that was a really interesting experience for me really getting to focus on more manager research, higher level work. And then had a great opportunity to leave Chicago and go to the University of Wisconsin a couple hours down the road. And had a really phenomenal experience at Wisconsin at the time. It's like this build out theme is familiar because I joined the team at the time it was in a build out. I wasn't the first investment employee, but I was the second investment employee. And I got to work for a really fabulous CIO, David Erickson, who's now running Ascension Health and really had a phenomenal three years working with David at the endowment. And I would say I probably learned more in those 3 years than any other 3-year year span of my career just kind of given the environment, the types of investing we were doing, and we had a really top-notch Investment Committee that really… I could say this in hindsight. I can laugh about it now… they really challenged us. I mean, at the time they were really tough, but they were professional investors, very successful investors. And so, they were really able to challenge us. And then I moved to… after Wisconsin, I went back to Northern Trust, and that's what brought me to Canada. I moved to Toronto to work for Northern Trust in their OCIO business here. Spent three years at Northern doing a mix of manager research, asset allocation, client service to our OCIO clients. And then had a great opportunity to move to OpTrust where I spent 8 years. And I think you're going to have some other questions about there, so I won't dig into that. And then had this phenomenal opportunity to come to TTC 6 and 1/2 years ago.

Robert Morier: Two quick follow-up questions. Going back to the University of Wisconsin, you said you learned a lot of lessons. What's one of those lessons that you learned working in the endowment model that you've carried forward with you now in your CIO TTC?

Andy Greene: Wow, that's an excellent question. I really think probably a couple things. I mean, I think it was… the two things that jump out at me were one governance. The governance model was, it didn't start out great, but it ended really fabulously where we were… there was a broad board, but we were able to create a subcommittee of three people, and we would meet with them on a monthly basis. So, we were able to make decisions, I think, very quickly because we would go to those three people and get items approved or not approved. And so that's where, I would say, I probably had my most challenging discussions. And very often we would bring them work, and we'd have our head handed to us and bring it back. I think really getting challenged by very smart people really forced one to bring their A-game every time and really make sure you did their homework. And I think the other thing that was really just a kind of a focus on what can go wrong? Not that things went wrong but really try and look at an investment idea and try and look at different scenarios. Not just say, OK, well, the 5 years of… well, let's just assume that that's going to continue forever, and so that the markets, the economy, and things are fluid. And so, to really make sure that you really focus on what could go wrong. I

mean, hopefully, that's not going to be the case. But you need to know, OK, if your thesis doesn't play out, what do you do and when do you cut bait.

Robert Morier: A good lesson on risk management. And Northern Trust, the outsourced CIO model has evolved quite a bit since you were working within that ecosystem. So, as you remember your days working with clients on the outsourced CIO side of the business, what were some of those lessons learned from engaging directly with clients as it related to their asset allocation and portfolio construction? I'm assuming a lot of lessons were learned there as well, but I'm just curious, looking back, what you saw then, maybe what you're seeing now relative to what's happening in the industry?

Andy Greene: Well, I would say probably compared to then, I mean that was like over 15 years ago. And I would say I think part of it is people's plans. Asset allocations are very different now. I mean, probably back then the portfolios were more plain vanilla stocks and bonds, and you maybe had 5% or 10% in alternatives. I mean, obviously, at Wisconsin, we were north of 40% 50% alternatives. But your general corporate client was pretty plain vanilla. And so, I just think… I think the lessons learned were maybe… a lot of the folks that we were dealing with were not… they were often HR people, or they were the CFO who knows something about investing. And I think it's twofold. You have to really work to manage your message to the client. Do you think, oh, gosh, a CFO. They must know all about investing. They don't necessarily. And I think don't really assume that they know everything about everything because I think that's often not the case. So, I think just trying to navigate that with the CFO is very different. I think you have to dance around them a little bit more. They are the CFO. They tend to… it's a very important. And I think they think about the pension differently than the HR person thinks about it. And I think that was one of the keys is how do I adjust the message depending on the audience. Because HR person is more concerned about kind of overall level of benefits and communicating all this, whatever changes or whatever we're recommending to their beneficiaries. And I don't think the CFOs generally think about that. It's more black-and-white and about numbers.

Robert Morier: Well, you made the jump, as you mentioned, up to Toronto. So, with OpTrust, you spent 8 years there primarily on the public market side, which we're going to talk a little bit about. But I just want for our audience who may be less familiar with the Canadian market, specifically OpTrust. It's officially the OPSEU Pension Trust. It's a legal trust formed by the contractual agreement between the two plan sponsors Ontario Public Service Employees Union and the government of Ontario. It manages one of Canada's largest pension funds and administers the OPSEU pension plan worth approximately $25 billion. So, what were those 8 years like for you cutting your teeth now at a plan sponsor working directly in public markets at a shop that's quite large? I mean, the Toronto pension market in general,

as we were talking about before we started recording, is really one of the largest in the world. So, as you think about at one of those real leaders in the industry, what was that time like for you?

Andy Greene: Yeah, I mean, it is an interesting… I mean, I think we maybe think of Toronto as sort of a pension mecca. I mean, we're quite fortunate I think to be surrounded by leaders like CPPIB and Ontario teachers that have really set the table, the standard, I guess, in terms of governance and investment acumen. So, the almost 8 years I spent there at OpTrust was really a great experience for me. At a size of about $25 billion, it doesn't compete with CPPIB or Teachers or OMERS or any of those in terms of assets. Those are all $100 billion plus plans. But the difference is that $25 billion plan run like a $100 billion plan where they run a lot of things in-house much more so than other asset, more so than other plans. And I when I joined, what happened was I think they were really ahead of the pack in terms of private markets. So private markets, the team was pretty built, and they already had a number of co-investments or direct investments. And when I joined the public markets team, we were still… it was a… was a bulk of the portfolio, but at that time, mostly by consultants. So, consultants were involved with a lot of the manager selection and monitoring and all that. And so, the opportunity for me was to go in and build, I guess, a platform around public-markets. And at the time, it was pretty substantial. And it was a platform of how do we want to do manager search? How do we want to monitor… write a lot of… when you talk, I'm sure you get this a lot when you talk to folks like me. We spend a lot of time monitoring. Job number 1 is focusing on what you have. And so, it was building a platform, how do we monitor them? How do we do on-sites with them? What is portfolio construction look like for us? So, it was really an opportunity to build all that. So, take that away from consultants and build a platform. And we added a couple folks to that. I think at our height, our public markets team was probably nine people. And so, it was a really great experience I think for me to learn how the big guys do it and the right way to do it, I think, kind of in a perfect world at a larger fund. And, I think, that that is I got a lot of benefit from that. And so, what I've tried to do here at TTC is try and take a lot of the learnings of, what are the great things that these large plans do well and where do they in-source it and how do they add value and try and bring that to a much smaller fund. And, obviously, it's not directly transferable. We don't have an investment team of 100 people here. We have an investment team of 8. So, trying to take some of the best things from the large funds and bring it to TTC.

Robert Morier: Well, talk to us about those 8 people. So, you and 7 others are responsible for the pension. Can you actually just quickly give us an overview for our audience. I, obviously, gave the background in the description of TTC's plan, but we always like to hear from the CIO the mission as it relates to your team and what you're looking to accomplish day to day.

Andy Greene: Happy to answer that. I mean, ultimately, it comes down to what is the target return that we're trying to hit, our discount rate. It moves around a little bit, but right now as it stands our target return is 5.5%. We are a fully funded plan north of 110% funded right now. And so, we're in a position where we can, I think, take our foot off the gas a little bit in terms of risk because we're very well-funded. But we're an open plan so we're still growing. So, we can't just immunize and lock it up and hand the keys over to an insurance company right. So, what we're trying to do is this 5.5% return. We are allocated roughly kind of 60% public markets 40%, private markets. And that has changed pretty dramatically in the 6 years. Obviously, like most plans we've increased our private market exposure pretty significantly. And so, the team of 8 of us. I mean, I joined and was by myself for 2 years. I don't want to say I had no help. I did rely very heavily on the CEO and our CFO to help me. One person can only do so much. And then what happened was when we were able to spin off from the TTC… the TTCPP is an independent entity, so we run the money for the TTC, but we're a separate entity. And once that occurred, we were able to add some resources. So, we've slowly been adding to the team. So right now, there are 3 folks that directly report to me. There is a head of Public Markets, a head of Private Markets, and a head of Investment, Risk, and Analytics. And the heads of Public and Private Markets each have two people reporting to them. And we're about ready to hire a… or about ready to put out a posting for another person on the Investment, Risk, and Analytics team. So, it's been a slow build out over 6 years, and so you can appreciate some folks who are more of a generalist. And as we've started to grow, we've started to specialize a bit. So, I would say we still are a bit of generalist. I mean, Public Markets covers still equities, fixed income, and hedge funds and private equity. Private Markets is private equity, private credit, real estate, and infrastructure so still a lot on our plates.

Robert Morier: I read, I think it was last summer, you had said that TTC's aim is to reach approximately $10 billion in assets under management by 2030. So, you mentioned finding growth even though you're fully funded. So where is that growth in your opinion going to be coming from, and can you share a little bit more about the long-term goals of TTC before we get started in more of the granular due diligence side of our conversation.

Andy Greene: Sure. I mean, our goal… I mean, we're not an organization that's looking to probably become an outsourced CIO for other pension plans. We've seen that trend really occur. It's really picked up in Canada. You've got some groups like the Investment Company of Ontario University Pension Plans and the College of Applied Arts and Technology, CAAT, all looking to take on third party assets. We're just going to grow organically and really that's a function, I think, primarily of our membership is growing. So yes, we are as a pension plan, we are aging like any defined benefit plan our ratio of active to retirees. It used to be 3 to 1 years ago like most DV plans and now it's a little over… it's kind of 1 and 1/2 to one right now, and

that'll slowly become 1 to 1 like most defined benefit plans. But we are trying to grow, and we do think at that growth rate of… I said 5.5% but really, we're shooting for something north of that… we think we'll get to that $10 billion through organic growth. And I think one of the things about getting there is we just think that a larger asset base and as we grow, it warrants or enables us to add some more people. Because as anybody can appreciate, it's a bigger base to spread out fixed costs over. So, we are we are trying to grow as an organization. We're trying to… whether it's on the investment side, we're trying to bring more investments in-house. We do rely on consultants in some areas, but we're trying to much like we did at OpTrust, trying to do more of that ourselves. So, whether it's only things we do all that ourselves, and some other asset classes, we do rely on consultants. And I think over time, we'll continue to bring that more in-house. Not that we're going to do direct deals, but I do think that we could bring manager selection in-house more. And I think the challenge for us will be as we continue to look at co-investments… you know, that's a challenging… that's a unique spot to try and due diligence, and it requires a certain skill set. So as a whole the organization is just trying to grow and, I think, become more professional. I mean, I think that was… if I go back to your earlier question about the CIO title, I think it's just a realization that we've, I think, graduated to hopefully, the big leagues in terms of pension plan management. I think along with my promotion in the summer, we hired our first HR person in the Spring. So, I think it's like we're becoming a proper organization now, and I think what we're doing is looking at all the things that we're doing. And, I think, we've done a pretty good job of picking up everything. But I still think things fall through the cracks, or things that we could be doing better. And in our case, our team is just trying to get a better handle on the portfolio, whether it's going to AGMs more than we have in the past because we didn't have the people, and we didn't have the budget. Well, now we have more people. We now have more budget to go to AGMs. So rather than that knowledge going to consultants, we're trying to bring that knowledge in-house. And frankly, I think it makes for a more interesting job for my team. I think we're more likely to keep people if they're not just paper pushers… like, if they're actually investing. I think that makes a big difference.

Robert Morier: I also think it makes a big difference growing with the business. If you're really growing and you're seeing your business grow and you're seeing the organization grow and your people your employees your team is growing with it, that feeling of being aligned with the organization goes a really long way. So, it's fun. It sounds like you're at a startup pension fund. You don't get that often.

Andy Greene: It is. I mean, I think to be honest, yeah, I mean it's really lucky. I mean, that's part of the reason why I joined. It was a startup. You know it may not work out, but I think to be honest with you, that's how we've also been able to attract talent because people see us as a startup. The team… I'm really lucky. We have a really entrepreneurial, very smart team. And so, people can add a lot of value by just

coming up with stuff on their own. My team very often will come up with… even people that have been here years are still coming up with new and better ways to do things.

Robert Morier: What I love about it is that the equity owners are the plan participants.

Andy Greene: 100%.

Robert Morier: So that's what makes it makes it so unique. Well, maybe thinking about that plan so starting with asset allocation. So, the team is sitting around the table, obviously, the table's already been set. But what did that process look like from a top-down perspective, whether it was risk budgeting or more traditional asset allocation work, how did the top down come together?

Andy Greene: So, it's really more of a top-down approach. We have not… I mean, well, I think, it's a mix of both. I think it's probably mostly top-down but also, we're investors in all these asset classes and we know where we are seeing more opportunity. And I know you're going to… you're going to ask some questions about that a little later. But I really think it's a mix of both. I mean, I think it's mostly top-down. We do an asset liability study generally every 3 years with an outside consultant to help us set the asset mix, but that asset mix is really driven a lot by the team. So, we do have a lot of input to say, we like these asset classes a little better. Can we lean in a little bit more. So, we're able to nudge the asset allocation, and even then, it's a very broad framework. And we do have some wiggle room where we can underweight or overweight certain sectors, even within the asset mix. So, the asset mix will set up something we call the SIP in Canada. I know in the States, you call it the IPS. But basically, it'll set a framework of minimum and maximum to each asset class. And then we as staff have leniency to work within those. And so, we will take certain tilts in our portfolio within the SIP. And then occasionally, like we did in '21 you may fall outside those guidelines a little bit because of the denominator effect. If you think back when equities fell pretty precipitously a couple of years ago, we put us offsides in a couple of asset classes, but thankfully the board was able to not force us into a fire sale just because we're a little overweight. I don't think that happens much in pension plan world, but I know it does if one is maybe egregiously out of whack. But we were able to let it slide, and now we've gotten back a little closer to our target range. But we but we typically keep it within kind of plus or minus 2% of our targets.

Robert Morier: So once an asset class has been identified where you need to address either an existing manager or manager, you are looking to potentially add a new manager, what does that underwriting process look like? So, if you could walk us

through that chronology of events as it relates to really the manager research process itself?

Andy Greene: So maybe I'll use an example. We had a new asset class in the last sale study, multi-asset credit. And one of the things that we did was we went back to our actuary and said, OK, what is the experience that you're modeling? We don't necessarily need to 100% match it, but we know in an asset liability study, that's the exposure or that's the role in the portfolio. And we also had IG credit as a standalone bucket. So, what we did was that made us focus on what do we want to achieve. So, we said, OK, we've already got investment grade multi-asset credit. So, when we want to go out and look for multi-asset credit managers, well, we've already got IG, so it brought us to a discussion like, do we want a manager that can have IG and multi-asset credit? Because a lot of the universe wants to move across everything credit, and they would say, well, IG credit is one of the levers that we would like to pull. But in our case, it was somewhere that we already had an exposure, and we felt we already had enough. So, we said, OK, let's go out and look for the universe of multi-asset credit managers that can do a mandate like the one we're looking for. We don't want the investment grade, but what do we want? So that brought a lot of other questions in because, of course, you want high yield and loans. But then we started to get into some asset classes where it gets kind of tricky where you go, well, our CLOs are those public or private? Yes, and yes, right? Like it's sort of both. So, what that did was it created a discussion between the public and private teams. And we go, well, do we have CLOs and other structured credit in our private bucket? If not, where do we want to put it? So, it created a discussion. I will say it was actually a good discussion amongst the team on, where do we think the right place for that to fit is. And in our case, we thought the right case was to put it in public credit in this multi-asset credit. So it was, OK, we want to attack the. Space what are the managers? What types of strategies do we want to use? And then it's a portfolio construction discussion about what strategies do we want to cover, and how do we want, do we want to hire dedicated managers and EM, and high yield, and do we want to hire all these dedicated managers, or do we want to hire a multi-strat. And in our case, because we're a smaller team and even when we did the search a couple of years ago, we were a couple of people smaller than that, and we just said, look, we want to hire somebody that we think that can move… that there's alpha and beta in moving from high yield to loans to structured credit. So that's the way that we did that. And then it's, how do we find a manager like that that we think can add value in not only each of the individual sectors but can add value in making that tactical decision when to move from asset class to asset class. And so really it was a… in that case, it took us a lot of analysis to look at how good is the manager in each of those sleeves knowing that they're probably not going to be good in all of those sleeves, but we just want to make sure at least that beta exposure to each of those pieces was good. And then trying to look at their attribution and look at do they have the skill to time when to move from sector to sector? So, it was kind of a two-stage

search in there. And then it's really a focus on in our case, because we're doing the search, we're doing a list of it's the typical the five Ps that people process, philosophy, performance, and really of going through each of those to understand who has the right firm. We don't have a bias towards small managers or big managers. I mean, there's pros and cons of both. And so, when we went through that, there's the pros of the big shop and all the compliance people and legal and the I can sleep well at night, and I'm probably not going to get fired for hiring x. But on the other hand, some of these managers are much too large, and it really hinders their ability to add alpha. So, we looked at a mix of both. And then looking at the experience and the people and their experience, their incentive, are they aligned to add money, or are they just asset gathering? So, it's the whole, let's talk to the team. How much money do they have in the strategy? What's their experience in strategy? And the key, I think, to any of these is… which is very hard to quantify, is this competitive advantage and is it sustainable. And I think that's the biggest variable in manager selection. We can look at quantitative analysis, and it's great for determining if they've been able to do that in the past. In this case, you have some covert of we think, OK, they're really good in all these sectors and unless they get stupid suddenly, they should be OK. But is there depth there? And people leave and life Happens, so what's the depth of the team? And then, I think, it's important for us to go out and meet these folks. So, it's interesting. I think a couple of years ago trying to do due diligence in a COVID world where we were not able to do the onsite, physical onsite. I mean, everything was done was done virtually, and now we're back to a mix of, I think, virtual and in-person. So, what we what we do now is we try and do a lot of the upfront work on Zoom calls, and then as we get really close, we've been back for a couple of years now back to going onsite and meeting the not just the key decision makers but meeting with a number of people on the team. And we always like to meet the junior person and understand why they joined the team and what their onboarding looks like. Because, you know, the top person they're always very smart and charismatic. And so, I think, it's really trying to get a sense of some other folks. And I think that really helps with one's conviction when you know that there's not just one person pulling the strings.

Robert Morier: Is that what helps you inform the culture? So how are you ascertaining the culture of an organization. It sounds like the start-off process… which makes a lot of sense. I think one thing that's come out of COVID as it relates to Zoom is that you can cast a wider net and not have to travel to various cities, and you can pack in more meetings particularly when you're trying to narrow a universe. But once you do go onsite, in addition to meeting the team, the juniors, how do you ascertain a culture, how do you understand the character of a portfolio manager or the team? It's a question I ask a lot because it's probably arguably the fuzziest part of the manager research process. So, I would love to hear your thoughts on it.

Andy Greene: Yeah, I wish I had some unique special sauce on this one. I really do think you're trying to, I think, understand… I always find it's helpful if the potential the candidate or partner if they understand what you're trying to achieve. I think it's do they do more talking or do they more listening. And I find very often, the more asking questions and listening is really a good sign because, I think, they really… they think of it more of a long-term partnership. I mean, they're more interested in what we're trying to achieve, not just trying to sell us a product. And how can they cross sell something else, right? I mean, I think, that happens very often. I think also if a manager is not willing to put their best foot forward right out of the gate, I really wonder what client service is going to look like a year from now. it tends to often drop off from there. So, I think it's how transparent they are, how willing they are to let you speak to numerous members of the team and make people available. I think I find that very helpful. I also find… get a couple of them in the room together particularly when it's a team, and I love watching the dynamics when someone's talking and looking at the other people. So usually, I know a lot of folks will do this. You'll go into a meeting… when we do due diligence meetings, they're never 1 person. They're often 2 or 3 people on our team. And often, the role of the other people in the meeting… an example, if I'm leading the meeting, someone else on my team their job is… even if I don't tell them that is to just watch the faces of the other people. Because you can see if someone's talking and the other persons checked out, that doesn't bode well for like a good team dynamic. That makes you wonder how they're looking. Or they're rolling their eyes, or they seem kind of checked out. I mean, that's pretty… I mean, that's… I don't know how often you see something quite that egregious. But I just really think about looking at how the team members, how do they work together. I think, do they always defer to somebody? Does the senior person step back and let the junior person, or does that person want to do all the talking and monopolize the whole meeting. I think that just gives you some insight into the organization. And I really think trying to understand why they're doing it. Like, I know it's about the money, but I think, also really trying to understand how they're getting compensated for this. And I think it's helpful when you're talking with them, particularly at big shops, they're not just running one strategy. What's their role on multiple strategies? So, I run this an example of multi-asset credit, oh, I run multi-asset credit, but I also run the funds high yield strategy, and then I run this core bond strategy. Well, that seems kind of weird. There's some overlap there. You know, what are the assets, and where are you going to spend your time? What do you get paid on? Oh, you're running this hedge fund also on the side. Well, guess what, I think, I know where you're going to spend most of your time even if you do have a good allocation policy. So yeah, I just think that that's a lot of it trying to get a feel of the people, I think how they answer the questions. And also, do they… I think this move towards diversity of thought, I think there's something really to that because it's… I'll pick up my old hometown. If everybody went to University of Chicago and got an MBA, they're all super smart, but I don't know that that's diversity of thought. I think people tend to look at the same lens as things. I think

that goes back to that whole point about risk management or looking at what could go wrong. I think it just gives you gives you a different lens to look at ideas.

Robert Morier: Yeah, absolutely. I mean, there's a lot in there, a lot of good advice. One is, watch your facial expressions when you're meeting with your team. It's funny someone said to me that the best listeners are those who hear what's not said. So, it sounds like you're listening to what's not being said watching people's body language, watching their interactions. And I couldn't agree more on diversity of thought. When I think about some of the big issues that have taken place, particularly with quant funds that may be using a lot of the same factor-based models, a lot of times, it's that lack of diversity of thought that gets the broader market into trouble.

Andy Greene: Absolutely.

Robert Morier: So, appreciate you sharing that. You mentioned at the beginning that TTC has been increasing its allocation to private assets with a focus on private equity. I mean, I think we have a good sense of where private markets fit into the overall investment strategy, but what are the opportunities that you're specifically seeing. Because it's so interesting. You are a startup. You're growing. Are you looking, for example, at early-stage venture capital, or are you looking more at lower middle market private equity, or like the rest of the cohort, are we are we all looking at private credit? What's on the menu for you right now as you think about your private market exposure?

Andy Greene: Yeah, I have to laugh about private credit. If we hear about private credit again, I think we're all going to be sick. I would say it depends a little bit on each of our portfolios. Because if I look at our… like our broad and our private markets portfolio across the four verticals, they're all at different stages of maturity. And private equity is the one that you mentioned, they were probably the least mature, and I would say furthest away from in terms of our target. And our portfolio I would say generally is in private equity very mid-market focused. So, I would say that mid-market is a focus of us, will continue to be a focus of us. We invest with almost no large mega funds to be honest, the big guys, because they're just too focused on asset gathering. And my view and like a lot of others, I think, if you buy a mega buyout fund, it's like buying the S&P. It's the S&P of private equity. So, in our case, we're not big investors in venture and growth equities. Our target is about a third of our private equity portfolio. And I think that is really a function of we don't need to hit the same return targets that an endowment needs to hit. And that's why 50% or 60% of their portfolio is in venture. I also think it goes back to what is our competitive advantage. Our competitive advantage is not in venture capital. I know a lot of our peers have dedicated Menlo Park offices somewhere on Sand Hill Road or Boston or Austin where all these things are occurring. We just don't have the

competitive advantage there. We don't have a team of people dedicated to venture. That all being said, I think venture is interesting. Maybe it's a bit contrarian because when everybody hates it… I mean, venture is really important and knowing that there's a real shortage of cash in the venture space makes that interesting. So, I think even though it's a small part of our portfolio, I think we'll probably tilt a little bit more than we have in the past. I am tilting maybe in other parts of the book. For example, we're big fans of infrastructure. I think compared to a lot of the US plans we have a 12% allocation to infrastructure. And that's a space that we like very much, not just the transmission side where obviously there's huge opportunities there, but just generically. It's a really great space. It's immature as an asset class. And we find that the GPs are really because of the state of infrastructure, the GPs are much more friendly to work with us on terms LPAC seats and co-investments and some of the other areas. And so that's an area where I mentioned earlier being able to tilt. We're actually leaning more towards infrastructure than real estate. So, we have a 12% allocation of real estate as well. We're actually a little bit over, but we're in the process of selling some industrial assets right now. And we'll just reallocate a little bit more towards infrastructure. So, I said, we have an overall allocation of real assets. So as long as we stay within that overall band in real assets, we're OK. So that allows us to overweight infrastructure a little bit. And then I think within credit, we have pivoted a bit. We still like direct lending. That is still a significant part of our private credit portfolio. But more and more over the last year and a half, we've been investing in more special situations type managers. Nobody calls it distressed anymore, but it's special sits. And the other spot which, I think, is really interesting is real estate debt. So unfortunately, we're getting beat up like a lot of folks on the real estate equity side of our book, particularly office. But I think there's a real opportunity on the debt side. Because construction projects still need to happen developers, still have projects half built that they need financing for, and we're able to get really attractive rates of return on that space. So those are the areas that we're most excited about. I think the other one that we're debating pretty internally pretty heavily is just emerging markets overall because we know that emerging markets have had a really tough year. We know that China has really had a tough go. And China is really quite cheap, but there doesn't seem to be a catalyst for change there. So that's a space that we're debating internally how do we attack that space. And it would probably be through public markets given kind of rule of law challenges in dealing with private markets there.

Robert Morier: One area we didn't touch on yet is the hedge fund portfolio. So, the hedge fund allocation has evolved over the years as I understand with a shift towards a more concentrated and cost-effective direct hedge fund portfolio. So, can you discuss a little bit the rationale behind that evolution and where and what is going on now within the hedge fund portfolio?

Andy Greene: So, when I joined, I inherited a hedge fund portfolio that was about 5% of assets. It's now 8%. And it was in 2 fund of funds. And so, as we all know, hedge fund of funds have… generally not all of them have overly diversified, overly expensive, and haven't quite delivered on performance. And so, we looked at what is hedge fund's 2.0 for us? And knowing at the time it was frankly just me. We hadn't hired anybody else yet. So, what we did was we hired a consultant to build a discretionary mandate to build a hedge fund portfolio for us. So that has been done. We built at the time, it was 20 names, and it was probably a little overly diversified I think a couple of reasons because we were getting money back in hedge funds from our fund of funds and a couple of tranches. And also, we wanted… there's capacity constrained managers, and some managers can only take so much at a time. And we didn't want to just throw money in, we think, the second-class and third-class of managers. So, we hired a couple more managers than we would have probably liked. And what we've done over the probably the last year and a half, is now that we've kind of gotten our roster of managers and as the team has grown and we've gotten a better handle on those managers ourselves, we've started a process to reduce the number of managers. And so. what we're doing is in a number of areas, we're just, I think, doing what a lot of folks do is just replace single-strategy managers with some multi-manager, multi-strat. So, we've been we've been adding those, and we all know the challenges there. You're not going to get into Millennium and Citadel even if you wanted to get in. So, it's looking at some of the other names, and we don't want to put money to work in multi-strat if we don't find anybody good. So, we've been trying to add some partners there. And, I think, it's also trying to figure out which niche strategy still makes sense for us. So as much as I've said, we've moved towards multi-strat in a couple areas across some broad asset classes. We still think… we still have some specialists. We still have some long-short equity specialists because we think in Asia, long-short, that's the way to do it. Or insurance linked, we've got a specialist there… and event driven. So, we think our CTAs we just think there's some cases where there's specialists. And I think what's happened is just we've gotten better conviction and better understanding of our managers. And the way we're at right now is we hired a discretionary consultant to do it on a discretionary basis. But a couple of things I would say have changed that have enabled us to… we're in the process of doing is trying to take over the portfolio right now from the consultant. And I think the two things that have changed and allowed that to happen, I mentioned the better knowledge of our funds, but also our resources have changed. So now we have a couple more folks. So now we've got a 3-person public markets team instead of just me. So, we just hired a gentleman who really brings a hedge fund specialist background. And I think the other thing, which is not really sexy, but the governance has changed at our organization. So, one of the big the things that I think I'm probably most proud of is when I joined is any manager that was hired had to go to the Investment Committee. And you can imagine trying to build a hedge fund portfolio of 18 or 20 managers, and I've got to bring every manager in front of the Investment Committee.

That would take 2 or 3 years. And so that's part of the reason why we hired in the mandate that we did. We hire somebody on a discretionary basis. They could hire all the managers. Well, I think what's happened is because I've been with the organization for almost 6 and 1/2 years. Our CEO has been here about 8 years. I think that there's a level of trust. Trust is earned. It's not just given. And it just takes a while. Trust doesn't happen in 6 months. It takes years. And in our case, when the board turns over a bit here and there, the process takes a little longer. But I think the board really trusts us, and so as a result of that, earlier this year… I would say probably right before I got my promotion… the board granted us authority to hire and fire managers. So, I think that that governance changing has really allowed us to take on a more hands-on role and not have to use consultants. So, it's a portfolio that we think we manage. We think we have all the bases covered. And we think the reality is with a more concentrated portfolio… but that's what we do in the rest of the portfolio. We tend to run a more concentrated portfolio because the reality is look, we get better client service, we get better fees, and better transparency. I know managers say they treat everybody the same, but they don't treat everybody… they can't. You always treat your biggest clients. You spend more time with those clients. So that's the rationale for doing that.

Robert Morier: Well, a big question to ask you at the end of this portfolio discussion, but what are some of the risks that you're seeing as we go into 2024? We're about to close out the first month. The question that gets asked often is, how are you avoiding these risks? But how are you capitalizing on these risks? So, as you think about some areas of opportunity that may be coming up as a result of some of the challenges that we're facing, either politically or economically, we'd love to hear your thoughts on that.

Andy Greene: Yeah. So, I'll take a shot at that. I mean, I think the biggest risks are… I think a couple. I mean, the geopolitical one is an easy one to point out. Everybody knows about what's going on there. And obviously, the worry is things get worse before they get better. And, I think, at a high level that has us a little defensive poorly positioned. So that regards, I've kept us a little underweight-emerging markets and some other areas, even equities. I would say right now we're a little more tilted towards bonds. And part of it is bonds are not so crummy anymore. If you're looking for a 5.5% return, I can sit on bonds and get most of the way there and wait to see what happens. I think that one of the worries… and it's definitely borne itself out a little bit more in the last few weeks is the expectation was that the Fed, and in our case, the Bank of Canada, were going to cut rates much faster. And now there's been a bit of a realization that that's, particularly in the US, is not going to happen. And I think here it's a little different in Canada. I think Canada we're going to be forced to cut rates sooner partly because in the US your mortgages are 20-year mortgages. Here in Canada, we can only get 5-year mortgages and a lot of them are floating rate. So, I think a lot of it is we're just feeling a lot more pain, and we have a

much more inflated housing market compared to the US. So, I think the Bank of Canada is going to see personal bankruptcies are going up, credit card delinquencies are going up. So, I think that is an area of concern. And that doesn't really answer your question about, how do we take advantage of that. And so, I think where we're trying to get advantage of that is on some of the asset-based lending. We think spreads are very attractive, and so there's a lot of concern about defaults. We're still moving into credit. I still probably a little more measured because of the worried about the defaults haven't really happened. Like they've picked up, but I was wrong all last year. I was underweight high yield and all that because I just kept thinking spreads had to blow out. And then they would blow out a little bit, and then come right back in. So, I think, in our case, it's really some of it is just trying to be smart in how we're… it's kind of cliche but pick up pennies and nickels where we can, whether it's structuring deals. Like one of the things that I can't take credit for my head of private markets has done is a lot of people have had the issue with the denominator effect and wanting to go back to GPs and going, oh, sorry I can't reup because I don't have enough capital. And one of the things that she's come up with which I give her a lot of credit for is going to the GPs and saying, you know what? We would normally write you a check for… let's keep it simple and say $30 million. You know what? How about we give you half of that now, and our intention is to give you the other half later, but can we get the first-close discount on it? And I'm surprised at how many firms have said yes to that. And we haven't had to put that in writing. We tell them that's our intent. And I will say, to be honest, so far, every time we've said we were going to do that, we have done that. But it's a nice way, I think, to get some first-close discounts and not have to allocate all your money in it. It helps reduce some of the blind pool risk. So just that, I think. And trying to be smarter with how we structure our documents. I think we're getting… the LP/GP pendulum has swung a little bit back to the LP. So, I think trying to get slightly better terms than we have been able to get the last few years. I think those sorts of things. And I think the other one is also looking where some areas capital is deprived. So, we've actually done some stuff in the E&P space because capital is just so scarce there. And unfortunately, we're going to need oil and coal and all those things. We're not going to go out and build a coal mine, but we may be involved with ancillary service to some of those kinds of companies. So, because we are… I know one of the things we could have talked about was ESG, but I mean, I think, the good news here is, I think, it's a function of our board, and pensioners have said, your job is to make money for the pension. And I think part of that has come from we're a transit company. We're all about moving people cheaply and as cleanly as we can. I mean, TTC has the largest fleet of electric buses in North America. So, I think partly where my board comes from is we've already put our money where our mouth is and well, let's make some money on the pension side. So, we think in some of these areas as well as transition are some ways to make some money.

Robert Morier: That's great. Thank you for sharing all that. Really interesting and insightful comments and definitely a path for people who are listening in both from the allocation side as well as the asset management side. So just two questions left for you. And they're more about you because I've just found your history is very interesting. A quote that I've been taking through these conversations at least the last month or so is, what you are is an expression of history. So where does your history show up in your life today?

Andy Greene: That is such an unfair question, but it's a really good question. It's a really good question. So, I would say that I've been able to have a lot of positive and negative experiences in my life. And I am a firm believer that things seem to happen for a reason. We may not in that time, but whether it's, I think, personally or professionally, I think… I mean, interestingly we didn't get into that, but it was family reasons that brought me up to Toronto. And I feel like maybe I was brought to Toronto for a reason besides meeting my wife and having two wonderful kids here. But it really… I think, the challenge is… and it was also the benefit of having some really good mentors. And I was going to say, that's one of the things, I feel like you're never too old to have good mentors. I've been very lucky, and I still have really some really phenomenal people that I'm able to bounce ideas off things that I'm feeling. When I'm frustrated, I'm able to talk to them about those. And I think I would just say I wasn't the most patient earlier on in my career. I remember being in a job and somebody telling me to wait 6 months or something for a promotion. And I was like, I can't wait 6 months. That's too long. That's nothing now. I wish I can go back in a time machine and tell myself to be a little bit more patient. And I just think that has helped me navigate, I think, some of the challenges I've had with my board. I mean, I talked about the trust thing. It enabled me to say, you know what? This is going to take me a couple of years. I'm not going to have the trust of the board, of the CEO in 6 months. It's probably going to take a couple of years. I don't see them every day. I see my board members every 6 weeks or so, sometimes once a month. It just takes a long time. So, I will say it's interesting. And in some ways, I feel like I've gone full circle in that I came out of school wanting to be an economist. And in some ways, I'm kind of an economist again. My role is become a strategist. So, I think being able to look at the big picture. And I think my economist background has served me well looking at… and also looking at history. I'm also a big… I mean, you made the comment about my history, but I'm a big fan of history. And so, what's the line? If you forget history, you're folly to repeat it. So, I just think that is really helpful. I mean, I know that we can't always look back from a risk management perspective. We want to look back and say, oh, this is just like the GFC and let's just model the GFC and that will help us. We have no idea. We just have no idea. The next blowup is going to happen for some other reason that we cannot model. So, I think it's just trying to be flexible. I think it's also the belief that you have to have a long-term horizon. Focus on… look, you have to sometimes admit when you're wrong and move on. But I think really having sometimes a fortitude when things are not going

your way, you can check it and reaffirm it. But to really stay the long-term course. And I still remember some of the best advice I remember reading is… everybody thinks about books that were really helpful for them. I remember a number of years ago reading Hedgehogging by Barton Biggs. And probably anybody under 40 has no idea who Barton Biggs is. But Barton Biggs was the long-time Morgan Stanley economist. And I think his last go he was involved with Blackstone or KKR. And so, he wrote a great book called Hedgehogging. And I remember… and this is the nugget that I was going to get to is, he… and I still I still agree with this, is he thought it made more… or he got more out of at reading the Economist once a week. And I know nobody can actually ever read the whole Economist because it's too long. But because the Economist was big picture and thematic and it was things… thinking about the big picture. And he said it's better to read the Economist than look at your Bloomberg screen. Because what happens is the human psyche when we see red numbers flashing or maybe even green numbers but it's usually the red, the red flashing does something in our brain, and then we feel like we have to do something. And so, whether it's your fund or your pension portfolio, it makes you want to do something. And I think that tries to distract us and keep us off course. It makes us second guess ourselves over a day or a week. And, I think, it's the focus on the long picture, and this reminder of history.

Robert Morier: Well, we are so happy that your history has brought us here today to have this wonderful conversation. It was really wonderful to speak with you, to hear your thoughts and your success. Congratulations, again. It's really wonderful as I as I keep saying. So, thank you for being here, Andy. I greatly appreciate it.

Andy Greene: Rob, thank you very much. I'm really flattered that you reached out on this. And I've really enjoyed. You and I've had a couple of conversations now, and I've really enjoyed the opportunity to speak with you and your audience. So, thank you very much for that.

Robert Morier: If you want to learn more about Andy and the TTC Pension Plan, please visit their website at www.ttcpp.ca.You can find this episode and past episodes on Spotify, Apple, or your favorite podcast platform. We are also available on YouTube if you prefer to watch while you listen. If you'd like to catch up on past episodes, check out our website at dakota.com. Finally, if you like what you're seeing and hearing, please be sure to like, follow, and share these episodes. We welcome your feedback as well. Andy, thank you again for joining us. And to our audience, thank you for investing your time with Dakota.