

City of Pittsburgh

Inter-Governmental Cooperation Authority
for Cities of the Second Class

Pension Plan Review

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The Aon logo consists of the letters 'AON' in a bold, italicized, sans-serif font. The 'A' and 'O' are connected, and the 'N' is separate. The logo is positioned at the bottom right of the page.

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1 ● Executive Summary

The Inter-Governmental Cooperation Authority for Cities of the Second Class engaged Aon Consulting to perform a pension plan review for the City of Pittsburgh. Aon Consulting has agreed to provide consulting services to the Inter-Governmental Cooperation Authority for Cities of the Second Class for the following purposes:

- Assess the funding levels of the pension programs offered by the City of Pittsburgh;
- Determine a proper funding level (ratio of plan assets to plan liabilities); and
- Assess the current funding approach and determine whether changes should be made.

This study will determine if the City's program is being funded on a reasonable basis.

Aon Consulting's approach to this project was to thoroughly understand the City of Pittsburgh's programs and to provide recommendations, which are responsive to the current financial issues.

Data that is necessary to complete a thorough examination of the City of Pittsburgh's pension programs were identified. The relevant reports provided were based on January 2003 demographic and financial information. As such, certain aspects of plan funding may have changed over the course of 2003.

In order to gain a complete understanding of the City of Pittsburgh's pension program and its funded status, a review of current documents was performed. We examined actuarial reports for all three plans for 2002 and 2003, the actuarial experience study from 2001, and the investment guidelines.

1 ● Executive Summary

The review conducted was largely a financial review to audit the current funding levels of the plans. We also reviewed the approach to funding the plans in the future and any pitfalls or problems that could lead to higher costs.

In reviewing the assumptions and methods used to determine the funding levels of the plan we made several findings: Each plan determines its required funding levels based on a series of assumptions about future demographic and economic conditions. Two key assumptions stood out as warranting a closer look. The interest assumption used is 8.75% for all three plans. This assumption is on the high end of what is typically used for public sector plans and could be considered aggressive. The mortality table used to determine how long pension payments will continue is an older table. The use of this table could be understating plan liabilities and underfunding the plans.

The three pension plans were approximately 40% funded as of January 1, 2003. This amount is very low compared to other large municipal or statewide plans as well as to private corporations. There is no immediate danger of not meeting pension payments in the future, but the low funding levels represent a shifting of plan costs to future generations of taxpayers.

The funding schedules being used spread the payment for past service liabilities over a long period of time (over 40 years). This long funding period combined with an aggressive investment return assumption and an outdated mortality table could lead to funding concerns as time passes.

A more aggressive funding schedule would bring plan funding and security up in a more rapid fashion. Accelerating the funding process would reduce the debt load the plans represent as well as the interest payments on the unfunded liabilities. It would also give the City more flexibility in the future.

2 ● Actuarial Assumption Analysis

Pension plan funding approaches and amounts are based on the:

- level of benefits provided by the plan formula,
- actuarial methodology used for assigning costs to the past and the future and for smoothing out the impact of gains or losses,
- assumptions about future economic and demographic events that will impact the pension plan, the invested assets and the covered group of individuals.

Different combinations of assumptions and methods will change the timing of plan contributions but do not allow actual plan costs to be avoided. For example, a high interest rate assumption on invested assets will result in lower current contributions. However, if the assumed returns are not actually realized, the sponsor will need to make additional contributions later, to “make up” for the investment returns that never materialized. On the other hand, investment returns in excess of expectations will lead to lower future contribution requirements.

Ten to fifteen different assumptions are used in valuing the City pension plans. Some have a greater impact on the timing of plan costs than do others. Our overall analysis found that the combination of plan assumptions produced a bias toward an aggressive view of future demographic and economic trends. When an aggressive assumption set is used, current plan costs are reduced in anticipation of more favorable (from a cost perspective) future events. Below is a discussion of the two most important assumptions in terms of determining plan costs.

Interest Rates:

This economic assumption is the long-term return on invested assets assumed by the plans. To the extent plan returns are actually higher than the rate assumed, gains will be credited to the plan, which will reduce the employer contributions. The opposite is also true, that if returns are lower than the assumed rate, the employer will have to increase their plan contributions to make up the shortfall.

- The assumption changed to an 8.75% expected rate of return for the 2003 actuarial valuation from the 9.00% rate used previously.
- At the time of the last actuarial experience review, rates of 8.75% matched up well with the historical returns.
- The rates of return in 2001 and 2002 may have changed that conclusion.

2 ● Actuarial Assumption Analysis

We modeled the expected rates of return for the pension fund based on an asset allocation of 60% equity investments and a 40% fixed income investments. This is the investment breakdown referred to in the documentation supplied. We used a 2.50% inflation assumption in modeling the return expectation.

- Based on this information we calculated a weighted mean return of 7.90%.
- In terms of percentile returns, a long-term return (over 20 years) for this investment mix of 8.75% would be considered in the 70th percentile (30% of funds with this mix will do better and 70% of funds will do worse).
- A second consideration when selecting the investment return is to determine how sensitive annual costs will be to short-term market fluctuations and how capable the sponsoring organization is of absorbing these fluctuations.
 - Missing the investment return assumption by 1% creates a loss of about \$3.1 million in 2003.
 - This equates to an additional contribution of 0.2% of payroll (\$350,000 per year) for 15 years for each 1% the return is under the assumption.
 - Investment return losses in the last two years have added about \$16.0 million in additional costs over what was expected.
 - For most employers, with high sensitivity to fluctuations in cash contribution requirements we would recommend a more conservative investment assumption. This helps to decrease the risk of having higher costs than anticipated or budgeted.

As a point of comparison, the Wisconsin Legislative Council published its regular survey of large public employer retirement systems at the end of 2003. Of the 85 plans surveyed the average interest rate assumption was 8.05%. Fifty-six of the 85 plans used a rate under 8.00%.

A change in the investment return assumption to 8.00% would result in a significantly higher contribution. This might be offset in part be a reduced assumed level of pay increases (the pay increase assumption has the same inflationary base as the return assumption).

Mortality Assumptions:

Plan benefits are payable generally over the life of the participant and a named beneficiary (often the spouse).

- The plans base the projections for employee and retiree longevity on an older mortality table (the UP 1984) table which is based on experience studies conducted in the 1970s.

2 ● Actuarial Assumption Analysis

- A number of more recent experience studies have been conducted that indicate an improvement in mortality among individuals covered by employer sponsored pension plans.
- This is in line with significant improvements in treatments and health care that have occurred over the last 20 years.
- The 2001 experience study did not show any actuarial losses from the use of the current table.
- However, unless there is a direct reason or study that shows that the mortality experience of the covered groups should be worse than that of the population in general, it is reasonable to conclude that losses will begin to appear over time.

The approach we recommend is to start to fund for expected increases in longevity now as opposed to after they become visible. If the City waits until an experience study demonstrates that a large number of participants are living according to more up to date tables they will be funding in arrears and face a higher overall cost that should have been funded for currently. A move to a more up to date table would seem prudent. Based on the average ages shown in the actuarial reports, liabilities would increase from 10% to 15% based on the table selected.

Comparison of Mortality Tables

	Municipal Pension Plan	Police Pension Plan	Firemen's Pension Plan	Total of All Plans
Estimated Percentage Increase in Liability	12%	11%	12%	12%
Amount of Newly Recognized Unfunded Liability	\$26,020,000	\$34,570,000	\$27,140,000	\$89,130,000
15 Year Amortization of Newly Recognized Liability	\$2,900,000	\$3,900,000	\$3,100,000	\$9,900,000
Additional Annual Cost as a Percent of Payroll	3.3%	5.8%	5.6%	4.8%

3 ● Plan Funding Levels

The three pension funds were approximately 41% funded as of January 1, 2003 on an actuarial accrued liability basis. The amount of assets on hand are equal to about 5.3 years worth of benefit payments based on the current level of payouts. As a result there is no immediate problem with meeting expected cash requirements. However, cash contributions were only about 50% of the payouts for benefits in 2002 meaning the balance of pensioner payments comes from the invested assets and the investment income.

	Municipal Pension Plan	Police Pension Plan	Firemen's Pension Plan	Total of All Plans
Funded Ratio	43%	33%	50%	41%
Years of Pension Payments Available	5.6 Years	3.8 Years	7.7 Years	5.3 Years

A typical pension funding goal, indeed the objective of most pension funding methods, is to fund each participant's benefit over the course of their career, culminating with a fully funded benefit at the time of retirement. This way the cost of an individual's benefit is realized while the person is performing services for the organization. Costs can be managed as an element of the cost of employing that person. This approach puts the cost of paying for the benefit on the shoulders of the people (taxpayers) who are realizing the benefit from the employment of that person.

The plans had assets as of January 1, 2003 of approximately 74% of the retiree liability. This means that only a portion of the existing retiree's benefits have been paid for and that none of the current group of active employee's benefits have yet been paid for. With the average active participant about 56% of the way through his career this means the city is well behind the typical funding objective. The funded status shown above would be even worse if 8% were used as the investment assumption and a more up to date mortality table were used.

A good deal of this shortfall can be attributed to the investment losses experienced in 2000, 2001, and 2002. However, the strong markets that preceded those years might have been expected to build in somewhat of a cushion against such losses.

3 ● Plan Funding Levels

Compared to other large municipal funds Pittsburgh's pension funds are noticeably underfunded:

- Philadelphia: 73% funded (July 1, 2002),
- SERS: 104% funded (1/1/02),
- PSERS: 104% funded (7/1/02).
- Only 7 of the 85 plans included in the Wisconsin survey were less than 50% funded at the time of their 2002 valuations.

The consequence of a low funding ratio is that current and future taxpayers are footing the bill for services that were provided in the past. This is in addition to the cost for the services being provided currently. As a result there is a higher burden today, partially because costs have been shifted from past generations.

4 ● Funding Approaches

The Authority has asked for information regarding the funding of the pension plans over the future. To better understand the challenges involved in funding the plans they have asked three questions:

- What is a reasonable time period in which to reach the desired funding level?
- Will the plan's funding status reach the "proper" funding level in a reasonable period of time under the current funding methodology?
- What level of contributions will be needed to reach the "proper" funding level in a reasonable period of time?

What is a reasonable time period in which to reach the desired funding level?

Generally speaking, a "reasonable" time period to reach a funding goal will vary by organization. Each employer will have competing needs for cash in addition to the pension programs. Some of those other programs will take precedence over the pension fund and result in a longer funding period. These are determinations that the governing bodies would need to make.

The determination of the time period to reach a funding target is also somewhat contingent on how far from that target the organization is at the starting point. Trying to decrease the level of unfunded liabilities by half is easier to do if a plan is 80% funded versus one that is 40% funded.

A measured pace that the organization can afford to maintain for a long time period is generally better than making sporadic large contributions followed by periods with no contributions. A regular improvement can be seen and progress measured. Based on the average expected working lifetime of the active group, a 20-year funding period seems reasonable.

Will the plan's funding status reach the "proper" funding level in a reasonable period of time under the current funding methodology?

The current funding levels listed in the actuarial reports show a payment schedule equal to the Normal Cost plus an amortization of unfunded past service liabilities. Translated into English, this means paying for benefits as they are earned plus a fixed dollar payment

4 ● Funding Approaches

to cover the unfunded costs of benefits that have already been earned. The contributions come from three sources:

- Employee payroll deductions (at a fixed rate).
- State aid,
- City sources.

Based on the actuarial reports for 2003, actual plan contributions seem to be trailing the requirements listed in the actuarial reports.

Using the 8.75% plan interest rate, the unfunded past service liabilities will not be paid down within 40 years. A more reasonable period of time to structure the benefit payments around might be 20 years. This change in the amortization period to 20 years would:

- Reduce the shortfall measurably each year.
- Allow costs to be paid closer in time to when a participant performed the services that entitled him to the benefit.
- More rapidly eliminate the burden of the past employee group's benefits.
- Create an amortization period that is closer to the average future-working lifetime of the covered group.

What level of contributions will be needed to reach the “proper” funding level in a reasonable period of time?

Assuming the 20 year amortization of the past service liabilities is acceptable, the funding contributions would appear as follows*:

	Municipal Pension Plan	Police Pension Plan	Firemen's Pension Plan	Total of All Plans
Normal Cost	\$ 4,500,000	\$ 6,900,000	\$ 5,300,000	\$16,700,000
20 Year Amort. Payment	\$11,900,000	\$21,500,000	\$11,400,000	\$44,800,000
Total	\$16,400,000	\$28,400,000	\$16,700,000	\$60,500,000
Total as a Percent of Payroll	19%	43%	31%	29%

*Changing the investment assumption and mortality table would generate higher costs.

5 ● Conclusion

The City of Pittsburgh sponsors three pension plans for its employees:

- The Municipal Pension Plan,
- The Firemen's Relief and Pension Fund and
- The Policemen's Relief and Pension Fund.

All three of these plans were measured as very underfunded in the last actuarial valuations done. When determining the funding levels for a pension plan, the sponsor needs to make assumptions about future rates of investment return, mortality experience, salary increases, inflation and other key factors that will determine the eventual payout stream for the pension plan. A good choice of assumptions will allow the plan sponsor to pay for the plan on a relatively uniform basis year to year, neither overpaying currently, nor deferring current costs into the future.

The assumptions being used are generally acceptable. However two key assumptions stand out at the current time.

- The interest rate assumption is 8.75%. This is within the acceptable range but is on the high end of what most municipalities are using.
- The mortality table is out of date and has generally been replaced throughout the industry. The use of these assumptions may be deferring costs into the future that should be borne today.

The plans are only 40% funded as of January 2003. Many employers seek to keep the funding levels at or above 80% funding. This allows plan contributions to be reasonable in relation to current payroll and provides a cushion against adverse experience.

The plans are being funded on a long-term basis. This is in keeping with rules established by the State. However, given the size of the unfunded liabilities in relation to payroll levels and the age of the current employee groups it may be advisable to increase the rate of funding. A twenty year funding strategy would require about \$10 million more in annual contributions than the current strategy, but would phase out the past service liabilities on a much more rapid basis.

