THE PENSION BENEFITS DIVISION ACT
Calculation of the Maximum Transferable Amount (MTA)

The PBDA provides for the calculation of a maximum amount that will be paid under the Act. This amount is referred to as the maximum transferable amount (MTA). The following summary describes how the MTA is calculated.

Vested versus Non-vested

The method for calculating the MTA depends upon whether the member is vested at the time payment is to be made. If the member is not vested, the MTA is based on the contributions made during the period subject to division (PSTD).

The member is considered to be 'vested' when the member has the minimum service required by the plan to qualify for a pension. This requirement can vary from plan to plan; it can even vary by type of member within a plan. An employee of the Public Service is considered to be vested after acquiring two years of pensionable service.

Non-Vested Members

The MTA for non-vested members is 50% of the pension contributions made by the member during the PSTD, plus interest. Interest is calculated in the same manner and at the same rate as interest on a refund of contributions that would be payable to the member.

MTA for Vested Members who are Retired

The MTA for vested members is 50% of the actuarial present value of the benefits that accrued during the PSTD. The actuarial present value is the lump sum equivalent of the future benefits expected to be paid after the valuation day, which is the date of payment of the lump sum. The calculation of the actuarial present value under the PBDA is in accordance with generally accepted actuarial principles.

Step 1: Calculation of the Division Annuity

The first step in the MTA calculation is to establish the annual pension entitlement that relates to the PSTD. This is referred to as the division annuity. It is calculated using the basic pension formula of the member's plan, the service attributable to the PSTD and the average salary at the end of the PSTD. As an example, if a member of the Public Service Superannuation Act (PSSA) accrued 26 years of pensionable service during the PSTD and had an average salary for pension purposes of $48,000 at the end of the PSTD, the annual division annuity would be:

$48,000 x 26 x .02 = $24,960

Step 2: Calculation of the Division Annuity Deduction

Under plans which are integrated with the Canada and Quebec Pension (C/QPP), the member's pension entitlement is reduced, usually at age 65, based on the years of service after 1965. It is calculated using a five-year average of the Yearly Maximum Pensionable Earnings under the C/QPP, known as the Average Maximum Pensionable Earnings (AMPE), and a factor of .007. If the actual average salary is less than the AMPE, the actual average is used in the calculation. The reduction that related to the PSTD must be calculated because it affects the value of the future benefits.

To continue the example above, if all of the PSTD service were after 1965, and the AMPE for the year when the PSTD ended were $27,700, the annual division annuity deduction would be:

$27,700 x 26 x .007 = $5,041.40

Step 3: Determination of Manner of Payment

For members who have ceased to be employed, the division annuity is assumed to be payable in the same manner as the member's actual pension. This includes commencement date of the annuity, early retirement reduction (if any), and commencement date of supplementary benefits for inflation. (An exception applies to pensions payable on account of disability - the division annuity is considered to be payable in the same manner that the member's pension would have been payable had the member voluntarily terminated).

In our example, the member retired under the PSSA and is in receipt of an annual allowance with a 20% penalty. The member is in receipt of supplementary benefits. The division annuity deduction starts at age 65. The annual division annuity payments (minus the division annuity deduction, if applicable) are reduced to:

$24,960 x .8 = $19,968 prior age 65

$19,968 - $5,041.40 = $14,926.60 from age 65

Step 4: Inflation from End of PSTD to Valuation Day

Next, we must consider the actual inflation from the end of the PSTD to the valuation day. Because the division annuity (minus the division annuity deduction, if applicable) is calculated at the end of the PSTD, it must be updated to reflect the effect of supplementary benefits to the valuation day.

In our example, the actual inflation from the end of the PSTD to the valuation day has been 12%, therefore the division annuity (minus the division annuity deduction, if applicable) is increased by 12%:

$19,968 x 1.12 = $22,364.16 prior age 65

$14,926.60 x 1.12 = $16,717.79 from age 65

Step 5: Probability of Payments Being Made

Next, we need to consider whether each future payment will be made, because it is dependent on the member surviving to the date of payment. The expected payment is equal to the future payment times the probability that the member will survive to the date of payment. The probability of survival declines year by year until it eventually reaches zero. (Note that where a balance of the minimum five-year death benefit would be payable, it is included in the valuation; no other survivor benefits are included.)

In our example, the member is age 59 at the valuation day and has been retired for 5 years. The expected annual payments (not considering future inflation) from 59 for all future ages are determined:

Age	**Annual payment (not considering future inflation)**	**Probability of surviving payments**	**Expected annual payment (not considering future inflation)**
59	$22,364.16	0.996	$22,274.70
...			
65	$22,364.16	0.924	$20,664.48
66	$16,717.79	0.907	$15,163.04
...			
70	$16,717.79	0.828	$13,842.33
...			

For example, if the probability of surviving age 70 payments is 82.8%, the expected annual payment for age 70 (not considering future inflation, see step 6) is:

.828 x $16,717.79 = $13,842.33

Step 6: Interest and Future Inflation

Finally, we need to consider future interest earnings on the lump sum, and future inflation. The lump sum is equal to the expected future benefits determined in step 5, reduced by the expected future interest earnings on the lump sum, and then increased by expected future inflation after the valuation date.

For indexed payments, the expected future inflation rate is deducted from the expected interest rate to obtain a net interest rate. This results in a lower rate when the pension is indexed. The rates for the first 15 years are based on recent yields of Government of Canada long term bonds (both conventional bonds and real rate of return bonds). After 15 years rates of 6% p.a. for non-indexed and 3.25% p.a. for indexed payments are applied. Because recent yields of long term Government of Canada bonds are used, the lump sum can change significantly as these yields change.

In our example, the member is age 59 at the valuation day. If the interest and net interest rates based on recent yields are 9.5% p.a. and 5.0% p.a. respectively, then the actuarial present value of each future expected annual payment is determined:

Age	**Expected annual payment** (not considering future inflation)	**Discount for interest** (net inflation)	**Actuarial present value of annual payment**
59	$22,274.70	0.952	$21,205.51
...			
65	$20,664.48	0.710	$14,671.78
66	$15,163.04	0.677	$10,265.38
...			
70	$13,842.33	0.557	$7,710.18
...			
Total			**$241,140.20**

As an example, the age 70 expected payments are reduced to 55.7%. The actuarial present value of the age 70 payments is:

$13,842.33 x .557 = $7,710.18

Where 55.7% is calculated as (since the age 70 payments fall within the first 15 years):

(1 divided by 1.05) for 11 years, representing the discount for 11 years prior to year of payment

times (1 divided by 1.095) for .542 years, representing the discount for age 70, the year of payment, since payments are made monthly in arrears and are indexed retroactively once per year

Finally, the actuarial present value is found by summing the present value of payments for each age from 59 onward. In this example, the actuarial present value is $241,140.20.

Step 7: Calculation of the MTA

The MTA is 50% of the total actuarial present value. This is calculated as:

.5 x $241,140.20 = $120,570.10

MTA for Vested Members who are Active

For members who are still employed when the division payment is made, the value is determined in the same manner as explained above. However, under step 3, additional assumptions have to be made about when the member will cease to be employed. This in turn will establish when the pension becomes payable and whether any reduction for early retirement applies.

Generally, the assumptions for cessation of employment are those used in the latest triennial actuarial valuation of the pension plan and which apply to the member. Probabilities of cessation of employment are derived for each future year. These rates are expected to be representative of future plan experience.

Separate actuarial values are calculated for each year in the future based on the member ceasing employment in that year. These values are then multiplied by the probability that the member will cease employment in that year. The values are then summed to obtain the actuarial present value.