

Shown in the table below are the approximate discount rates, for a range of the most probable program lives, that would be implied by analyses in which explicit discounting is not used but in which the assumed program lives are shorter than the most probable program lives. The implicit discount rates in an actual case may be somewhat different, depending on the form of the cost or benefit streams over time.

Implicit Discount Rates in Percent

| Most probable<br>program life<br>(years) | Assumed program life (years) |          |           |           |           |           |
|------------------------------------------|------------------------------|----------|-----------|-----------|-----------|-----------|
|                                          | <u>1</u>                     | <u>5</u> | <u>10</u> | <u>15</u> | <u>20</u> | <u>25</u> |
| 1                                        | -                            | -        | -         | -         | -         | -         |
| 5                                        | 100                          | -        | -         | -         | -         | -         |
| 10                                       | 100                          | 15       | -         | -         | -         | -         |
| 15                                       | 100                          | 18       | 6         | -         | -         | -         |
| 20                                       | 100                          | 19       | 8         | 3         | -         | -         |
| 25                                       | 100                          | 20       | 9         | 4         | 2         | -         |

Benefit-cost ratios may be very sensitive to the explicit discount rate used in calculating the present value of costs and benefits. As shown in the following example, which involves a program with a probable life of 25 years that requires an initial investment of \$50 million, changes in the rate can turn what would appear to be an attractive program into an unattractive program and vice versa.

| Initial<br>invest-<br>ment | Annual<br>operating<br>costs | Annual<br>benefits | Ratios of benefits to cost |                                    |                                    |
|----------------------------|------------------------------|--------------------|----------------------------|------------------------------------|------------------------------------|
|                            |                              |                    | Undis-<br>counted          | Dis-<br>counted<br>at<br>3 percent | Dis-<br>counted<br>at<br>7 percent |
| —————(millions)—————       |                              |                    |                            |                                    |                                    |
| \$50                       | \$12                         | \$16               | 1.14                       | 1.08                               | 0.98                               |