整理番号　　43

# 事　業　費　集　計　表

## （森林整備事業）

事 業 名：　水源林造成事業

施行箇所：　九州整備局　昭和50年度契約地　　（単位：千円）

| 年度 | 年 | 事業費 | | 現在価値額 | 年度 | 年 | 事業費 | | 現在価値額 |
|---|---|---|---|---|---|---|---|---|---|
| S50 | 1 | 1,411,894 | × 3.95 | 5,576,982 | H33 | 47 | 0 | × 0.65 | 0 |
| S51 | 2 | 355,323 | × 3.79 | 1,346,675 | H34 | 48 | 0 | × 0.62 | 0 |
| S52 | 3 | 282,125 | × 3.65 | 1,029,756 | H35 | 49 | 0 | × 0.60 | 0 |
| S53 | 4 | 201,455 | × 3.51 | 707,107 | H36 | 50 | 0 | × 0.58 | 0 |
| S54 | 5 | 146,876 | × 3.37 | 494,972 | H37 | 51 | 0 | × 0.56 | 0 |
| S55 | 6 | 138,581 | × 3.24 | 449,002 | H38 | 52 | 0 | × 0.53 | 0 |
| S56 | 7 | 0 | × 3.12 | 0 | H39 | 53 | 0 | × 0.51 | 0 |
| S57 | 8 | 62,336 | × 3.00 | 187,008 | H40 | 54 | 0 | × 0.49 | 0 |
| S58 | 9 | 0 | × 2.88 | 0 | H41 | 55 | 4,781 | × 0.47 | 2,247 |
| S59 | 10 | 57,424 | × 2.77 | 159,065 | H42 | 56 | 32,604 | × 0.46 | 14,998 |
| S60 | 11 | 7,306 | × 2.67 | 19,507 | H43 | 57 | 0 | × 0.44 | 0 |
| S61 | 12 | 181,943 | × 2.56 | 465,774 | H44 | 58 | 0 | × 0.42 | 0 |
| S62 | 13 | 0 | × 2.46 | 0 | H45 | 59 | 0 | × 0.41 | 0 |
| S63 | 14 | 281,797 | × 2.37 | 667,859 | H46 | 60 | 0 | × 0.39 | 0 |
| H 1 | 15 | 0 | × 2.28 | 0 | H47 | 61 | 0 | × 0.38 | 0 |
| H 2 | 16 | 39,916 | × 2.19 | 87,417 | H48 | 62 | 0 | × 0.36 | 0 |
| H 3 | 17 | 0 | × 2.11 | 0 | H49 | 63 | 0 | × 0.35 | 0 |
| H 4 | 18 | 70,532 | × 2.03 | 143,180 | H50 | 64 | 0 | × 0.33 | 0 |
| H 5 | 19 | 0 | × 1.95 | 0 | H51 | 65 | 0 | × 0.32 | 0 |
| H 6 | 20 | 141,853 | × 1.87 | 265,265 | H52 | 66 | 0 | × 0.31 | 0 |
| H 7 | 21 | 108,249 | × 1.80 | 194,849 | H53 | 67 | 0 | × 0.30 | 0 |
| H 8 | 22 | 0 | × 1.73 | 0 | H54 | 68 | 0 | × 0.29 | 0 |
| H 9 | 23 | 0 | × 1.67 | 0 | H55 | 69 | 0 | × 0.27 | 0 |
| H10 | 24 | 0 | × 1.60 | 0 | H56 | 70 | 0 | × 0.26 | 0 |
| H11 | 25 | 0 | × 1.54 | 0 | H57 | 71 | 0 | × 0.25 | 0 |
| H12 | 26 | 194,019 | × 1.48 | 287,148 | H58 | 72 | 0 | × 0.24 | 0 |
| H13 | 27 | 0 | × 1.42 | 0 | H59 | 73 | 0 | × 0.23 | 0 |
| H14 | 28 | 0 | × 1.37 | 0 | H60 | 74 | 0 | × 0.23 | 0 |
| H15 | 29 | 0 | × 1.32 | 0 | H61 | 75 | 0 | × 0.22 | 0 |
| H16 | 30 | 0 | × 1.27 | 0 | H62 | 76 | 0 | × 0.21 | 0 |
| H17 | 31 | 0 | × 1.22 | 0 | H63 | 77 | 0 | × 0.20 | 0 |
| H18 | 32 | 0 | × 1.17 | 0 | H64 | 78 | 0 | × 0.19 | 0 |
| H19 | 33 | 0 | × 1.12 | 0 | H65 | 79 | 0 | × 0.19 | 0 |
| H20 | 34 | 0 | × 1.08 | 0 | H66 | 80 | 0 | × 0.18 | 0 |
| H21 | 35 | 0 | × 1.04 | 0 | | | | | |
| H22 | 36 | 0 | × 1.00 | 0 | | | | | |
| H23 | 37 | 0 | × 0.96 | 0 | | | | | |
| H24 | 38 | 0 | × 0.92 | 0 | | | | | |
| H25 | 39 | 0 | × 0.89 | 0 | | | | | |
| H26 | 40 | 0 | × 0.85 | 0 | | | | | |
| H27 | 41 | 97,813 | × 0.82 | 80,207 | | | | | |
| H28 | 42 | 0 | × 0.79 | 0 | | | | | |
| H29 | 43 | 0 | × 0.76 | 0 | | | | | |
| H30 | 44 | 0 | × 0.73 | 0 | | | | | |
| H31 | 45 | 0 | × 0.70 | 0 | | | | | |
| H32 | 46 | 0 | × 0.68 | 0 | 合　計 | | | | 12,179,018 |

総 費 用（C）　＝　　12,179,018　千円

事 業 名:　水源林造成事業
施行箇所:　九州整備局　昭和50年度契約地

8,315,638 千円

## 1　水源かん養便益
### (1)　洪水防止便益

$$B=\left[\sum_{t=1}^{T-1}\frac{t}{T\times(1+i)^{t}}+\sum_{t=T}^{Y}\frac{1}{(1+i)^{t}}\right]\times\frac{(f1-f2)\times\alpha\times A\times U}{360}$$

| | | | |
|---|---|---|---|
| U: | 治山ダムの単位流量調節量当たりの年間減価償却費(円／m3／sec) | | 4,400,000 |
| f1: | 事業実施前の流出係数 | 要整備森林(疎林)・浸透能大・急 | 0.55 |
| f2: | 事業実施後、T年経過後の流出係数 | 整備済森林・浸透能大・急 | 0.45 |
| T: | 事業実施後、流出係数が安定するのに必要な年数(年) | | 15 |
| α: | 100年確率時雨量(mm/h) | | 95 |
| A: | 事業対象区域面積(ha) | | 960 |
| Y: | 評価期間(年) | | 80 |
| 360: | 単位合わせのための調整値 | | |

便益算出表　　(単位:千円)

| 評価期間 | 経過年 | 年度 | 割引係数 ① | 事業対象区域面積(ha) | 年効果額 ② | 効果発生割合 ③ | 年発生効果額 ④=②×③ | 現在価値 ⑤=④×① |
|---|---|---|---|---|---|---|---|---|
| 1 | −35 | S50 | 3.95 | 960 | 111,418 | 7% | 7,428 | 29,340 |
| 2 | −34 | S51 | 3.79 | 960 | 111,418 | 13% | 14,856 | 56,303 |
| 3 | −33 | S52 | 3.65 | 960 | 111,418 | 20% | 22,284 | 81,335 |
| 4 | −32 | S53 | 3.51 | 960 | 111,418 | 27% | 29,711 | 104,287 |
| 5 | −31 | S54 | 3.37 | 960 | 111,418 | 33% | 37,139 | 125,159 |
| 6 | −30 | S55 | 3.24 | 960 | 111,418 | 40% | 44,567 | 144,398 |
| 7 | −29 | S56 | 3.12 | 960 | 111,418 | 47% | 51,995 | 162,224 |
| 8 | −28 | S57 | 3.00 | 960 | 111,418 | 53% | 59,423 | 178,269 |
| 9 | −27 | S58 | 2.88 | 960 | 111,418 | 60% | 66,851 | 192,530 |
| 10 | −26 | S59 | 2.77 | 960 | 111,418 | 67% | 74,279 | 205,752 |
| 11 | −25 | S60 | 2.67 | 960 | 111,418 | 73% | 81,706 | 218,156 |
| 12 | −24 | S61 | 2.56 | 960 | 111,418 | 80% | 89,134 | 228,184 |
| 13 | −23 | S62 | 2.46 | 960 | 111,418 | 87% | 96,562 | 237,543 |
| 14 | −22 | S63 | 2.37 | 960 | 111,418 | 93% | 103,990 | 246,456 |
| 15 | −21 | H 1 | 2.28 | 960 | 111,418 | 100% | 111,418 | 254,033 |
| 16 | −20 | H 2 | 2.19 | 960 | 111,418 | 100% | 111,418 | 244,005 |
| 17 | −19 | H 3 | 2.11 | 960 | 111,418 | 100% | 111,418 | 235,092 |
| 18 | −18 | H 4 | 2.03 | 960 | 111,418 | 100% | 111,418 | 226,178 |
| 19 | −17 | H 5 | 1.95 | 960 | 111,418 | 100% | 111,418 | 217,265 |
| 20 | −16 | H 6 | 1.87 | 960 | 111,418 | 100% | 111,418 | 208,351 |
| 21 | −15 | H 7 | 1.80 | 960 | 111,418 | 100% | 111,418 | 200,552 |
| 22 | −14 | H 8 | 1.73 | 960 | 111,418 | 100% | 111,418 | 192,753 |
| 23 | −13 | H 9 | 1.67 | 960 | 111,418 | 100% | 111,418 | 186,068 |
| 24 | −12 | H 10 | 1.60 | 960 | 111,418 | 100% | 111,418 | 178,269 |
| 25 | −11 | H 11 | 1.54 | 960 | 111,418 | 100% | 111,418 | 171,584 |
| 26 | −10 | H 12 | 1.48 | 960 | 111,418 | 100% | 111,418 | 164,898 |
| 27 | −9 | H 13 | 1.42 | 960 | 111,418 | 100% | 111,418 | 158,213 |
| 28 | −8 | H 14 | 1.37 | 960 | 111,418 | 100% | 111,418 | 152,643 |
| 29 | −7 | H 15 | 1.32 | 960 | 111,418 | 100% | 111,418 | 147,072 |
| 30 | −6 | H 16 | 1.27 | 960 | 111,418 | 100% | 111,418 | 141,501 |
| 31 | −5 | H 17 | 1.22 | 960 | 111,418 | 100% | 111,418 | 135,930 |
| 32 | −4 | H 18 | 1.17 | 960 | 111,418 | 100% | 111,418 | 130,359 |
| 33 | −3 | H 19 | 1.12 | 960 | 111,418 | 100% | 111,418 | 124,788 |
| 34 | −2 | H 20 | 1.08 | 960 | 111,418 | 100% | 111,418 | 120,331 |
| 35 | −1 | H 21 | 1.04 | 960 | 111,418 | 100% | 111,418 | 115,875 |
| 36 | 0 | H 22 | 1.00 | 960 | 111,418 | 100% | 111,418 | 111,418 |
| 37 | 1 | H 23 | 0.96 | 960 | 111,418 | 100% | 111,418 | 106,961 |
| 38 | 2 | H 24 | 0.92 | 960 | 111,418 | 100% | 111,418 | 102,504 |
| 39 | 3 | H 25 | 0.89 | 960 | 111,418 | 100% | 111,418 | 99,162 |
| 40 | 4 | H 26 | 0.85 | 960 | 111,418 | 100% | 111,418 | 94,705 |
| 41 | 5 | H 27 | 0.82 | 960 | 111,418 | 100% | 111,418 | 91,363 |
| 42 | 6 | H 28 | 0.79 | 960 | 111,418 | 100% | 111,418 | 88,020 |
| 43 | 7 | H 29 | 0.76 | 960 | 111,418 | 100% | 111,418 | 84,678 |
| 44 | 8 | H 30 | 0.73 | 960 | 111,418 | 100% | 111,418 | 81,335 |
| 45 | 9 | H 31 | 0.70 | 960 | 111,418 | 100% | 111,418 | 77,993 |
| 46 | 10 | H 32 | 0.68 | 960 | 111,418 | 100% | 111,418 | 75,764 |
| 47 | 11 | H 33 | 0.65 | 960 | 111,418 | 100% | 111,418 | 72,422 |
| 48 | 12 | H 34 | 0.62 | 960 | 111,418 | 100% | 111,418 | 69,079 |
| 49 | 13 | H 35 | 0.60 | 960 | 111,418 | 100% | 111,418 | 66,851 |
| 50 | 14 | H 36 | 0.58 | 960 | 111,418 | 100% | 111,418 | 64,622 |
| 51 | 15 | H 37 | 0.56 | 960 | 111,418 | 100% | 111,418 | 62,394 |
| 52 | 16 | H 38 | 0.53 | 960 | 111,418 | 100% | 111,418 | 59,051 |
| 53 | 17 | H 39 | 0.51 | 960 | 111,418 | 100% | 111,418 | 56,823 |
| 54 | 18 | H 40 | 0.49 | 960 | 111,418 | 100% | 111,418 | 54,595 |
| 55 | 19 | H 41 | 0.47 | 960 | 111,418 | 100% | 111,418 | 52,366 |
| 56 | 20 | H 42 | 0.46 | 960 | 111,418 | 100% | 111,418 | 51,252 |
| 57 | 21 | H 43 | 0.44 | 960 | 111,418 | 100% | 111,418 | 49,024 |
| 58 | 22 | H 44 | 0.42 | 960 | 111,418 | 100% | 111,418 | 46,796 |
| 59 | 23 | H 45 | 0.41 | 960 | 111,418 | 100% | 111,418 | 45,681 |
| 60 | 24 | H 46 | 0.39 | 960 | 111,418 | 100% | 111,418 | 43,453 |
| 61 | 25 | H 47 | 0.38 | 960 | 111,418 | 100% | 111,418 | 42,339 |
| 62 | 26 | H 48 | 0.36 | 960 | 111,418 | 100% | 111,418 | 40,110 |
| 63 | 27 | H 49 | 0.35 | 960 | 111,418 | 100% | 111,418 | 38,996 |
| 64 | 28 | H 50 | 0.33 | 960 | 111,418 | 100% | 111,418 | 36,768 |
| 65 | 29 | H 51 | 0.32 | 960 | 111,418 | 100% | 111,418 | 35,654 |
| 66 | 30 | H 52 | 0.31 | 960 | 111,418 | 100% | 111,418 | 34,540 |
| 67 | 31 | H 53 | 0.30 | 960 | 111,418 | 100% | 111,418 | 33,425 |
| 68 | 32 | H 54 | 0.29 | 960 | 111,418 | 100% | 111,418 | 32,311 |
| 69 | 33 | H 55 | 0.27 | 960 | 111,418 | 100% | 111,418 | 30,083 |
| 70 | 34 | H 56 | 0.26 | 960 | 111,418 | 100% | 111,418 | 28,969 |
| 71 | 35 | H 57 | 0.25 | 960 | 111,418 | 100% | 111,418 | 27,854 |
| 72 | 36 | H 58 | 0.24 | 960 | 111,418 | 100% | 111,418 | 26,740 |
| 73 | 37 | H 59 | 0.23 | 960 | 111,418 | 100% | 111,418 | 25,626 |
| 74 | 38 | H 60 | 0.23 | 960 | 111,418 | 100% | 111,418 | 25,626 |
| 75 | 39 | H 61 | 0.22 | 960 | 111,418 | 100% | 111,418 | 24,512 |
| 76 | 40 | H 62 | 0.21 | 960 | 111,418 | 100% | 111,418 | 23,398 |
| 77 | 41 | H 63 | 0.20 | 960 | 111,418 | 100% | 111,418 | 22,284 |
| 78 | 42 | H 64 | 0.19 | 960 | 111,418 | 100% | 111,418 | 21,169 |
| 79 | 43 | H 65 | 0.19 | 960 | 111,418 | 100% | 111,418 | 21,169 |
| 80 | 44 | H 66 | 0.18 | 960 | 111,418 | 100% | 111,418 | 20,055 |
| 合計(便益額) | | | | | | | | 8,315,638 |

事 業 名:　水源林造成事業
施行箇所:　九州整備局　昭和50年度契約地

3,707,494 千円

**1　水源かん養便益**
**（2）　流域貯水便益**

$$B=\left[\sum_{t=1}^{T-1}\frac{t}{T\times(1+i)^{t}}+\sum_{t=T}^{Y}\frac{1}{(1+i)^{t}}\right]\times\frac{(D2-D1)\times A\times P\times U\times 10}{365\times 86400}$$

| | | |
|---|---|---|
| A: | 事業対象区域面積（ha） | 960 |
| P: | 年間平均降雨量（mm／年） | 2,269 |
| D1: | 事業実施前の貯留率 | 0.51 |
| D2: | 事業実施後、T年経過後の貯留率 | 0.56 |
| T: | 事業実施後、貯留率が安定するのに必要な年数（年） | 15 |
| U: | 開発水量当りの利水ダム年間減価償却費（円／m3／S） | 1,439,000,000 |
| Y: | 評価期間（年） | 80 |
| 10: | 単位合わせのための調整値 | |
| 365: | 1年間の日数 | |
| 86400: | 1日の秒数 | |

便益算出表　　（単位：千円）

| 評価期間 | 経過年 | 年度 | 割引係数 ① | 事業対象区域面積（ha） | 年効果額 ② | 効果発生割合 ③ | 年発生効果額 ④＝②×③ | 現在価値 ⑤＝④×① |
|---|---|---|---|---|---|---|---|---|
| 1 | −35 | S50 | 3.95 | 960 | 49,675 | 7% | 3,312 | 13,081 |
| 2 | −34 | S51 | 3.79 | 960 | 49,675 | 13% | 6,623 | 25,103 |
| 3 | −33 | S52 | 3.65 | 960 | 49,675 | 20% | 9,935 | 36,263 |
| 4 | −32 | S53 | 3.51 | 960 | 49,675 | 27% | 13,247 | 46,496 |
| 5 | −31 | S54 | 3.37 | 960 | 49,675 | 33% | 16,558 | 55,802 |
| 6 | −30 | S55 | 3.24 | 960 | 49,675 | 40% | 19,870 | 64,379 |
| 7 | −29 | S56 | 3.12 | 960 | 49,675 | 47% | 23,182 | 72,327 |
| 8 | −28 | S57 | 3.00 | 960 | 49,675 | 53% | 26,493 | 79,480 |
| 9 | −27 | S58 | 2.88 | 960 | 49,675 | 60% | 29,805 | 85,839 |
| 10 | −26 | S59 | 2.77 | 960 | 49,675 | 67% | 33,117 | 91,734 |
| 11 | −25 | S60 | 2.67 | 960 | 49,675 | 73% | 36,429 | 97,264 |
| 12 | −24 | S61 | 2.56 | 960 | 49,675 | 80% | 39,740 | 101,735 |
| 13 | −23 | S62 | 2.46 | 960 | 49,675 | 87% | 43,052 | 105,908 |
| 14 | −22 | S63 | 2.37 | 960 | 49,675 | 93% | 46,364 | 109,882 |
| 15 | −21 | H 1 | 2.28 | 960 | 49,675 | 100% | 49,675 | 113,260 |
| 16 | −20 | H 2 | 2.19 | 960 | 49,675 | 100% | 49,675 | 108,789 |
| 17 | −19 | H 3 | 2.11 | 960 | 49,675 | 100% | 49,675 | 104,815 |
| 18 | −18 | H 4 | 2.03 | 960 | 49,675 | 100% | 49,675 | 100,841 |
| 19 | −17 | H 5 | 1.95 | 960 | 49,675 | 100% | 49,675 | 96,867 |
| 20 | −16 | H 6 | 1.87 | 960 | 49,675 | 100% | 49,675 | 92,893 |
| 21 | −15 | H 7 | 1.80 | 960 | 49,675 | 100% | 49,675 | 89,415 |
| 22 | −14 | H 8 | 1.73 | 960 | 49,675 | 100% | 49,675 | 85,938 |
| 23 | −13 | H 9 | 1.67 | 960 | 49,675 | 100% | 49,675 | 82,958 |
| 24 | −12 | H 10 | 1.60 | 960 | 49,675 | 100% | 49,675 | 79,480 |
| 25 | −11 | H 11 | 1.54 | 960 | 49,675 | 100% | 49,675 | 76,500 |
| 26 | −10 | H 12 | 1.48 | 960 | 49,675 | 100% | 49,675 | 73,519 |
| 27 | −9 | H 13 | 1.42 | 960 | 49,675 | 100% | 49,675 | 70,539 |
| 28 | −8 | H 14 | 1.37 | 960 | 49,675 | 100% | 49,675 | 68,055 |
| 29 | −7 | H 15 | 1.32 | 960 | 49,675 | 100% | 49,675 | 65,571 |
| 30 | −6 | H 16 | 1.27 | 960 | 49,675 | 100% | 49,675 | 63,088 |
| 31 | −5 | H 17 | 1.22 | 960 | 49,675 | 100% | 49,675 | 60,604 |
| 32 | −4 | H 18 | 1.17 | 960 | 49,675 | 100% | 49,675 | 58,120 |
| 33 | −3 | H 19 | 1.12 | 960 | 49,675 | 100% | 49,675 | 55,636 |
| 34 | −2 | H 20 | 1.08 | 960 | 49,675 | 100% | 49,675 | 53,649 |
| 35 | −1 | H 21 | 1.04 | 960 | 49,675 | 100% | 49,675 | 51,662 |
| 36 | 0 | H 22 | 1.00 | 960 | 49,675 | 100% | 49,675 | 49,675 |
| 37 | 1 | H 23 | 0.96 | 960 | 49,675 | 100% | 49,675 | 47,688 |
| 38 | 2 | H 24 | 0.92 | 960 | 49,675 | 100% | 49,675 | 45,701 |
| 39 | 3 | H 25 | 0.89 | 960 | 49,675 | 100% | 49,675 | 44,211 |
| 40 | 4 | H 26 | 0.85 | 960 | 49,675 | 100% | 49,675 | 42,224 |
| 41 | 5 | H 27 | 0.82 | 960 | 49,675 | 100% | 49,675 | 40,734 |
| 42 | 6 | H 28 | 0.79 | 960 | 49,675 | 100% | 49,675 | 39,243 |
| 43 | 7 | H 29 | 0.76 | 960 | 49,675 | 100% | 49,675 | 37,753 |
| 44 | 8 | H 30 | 0.73 | 960 | 49,675 | 100% | 49,675 | 36,263 |
| 45 | 9 | H 31 | 0.70 | 960 | 49,675 | 100% | 49,675 | 34,773 |
| 46 | 10 | H 32 | 0.68 | 960 | 49,675 | 100% | 49,675 | 33,779 |
| 47 | 11 | H 33 | 0.65 | 960 | 49,675 | 100% | 49,675 | 32,289 |
| 48 | 12 | H 34 | 0.62 | 960 | 49,675 | 100% | 49,675 | 30,799 |
| 49 | 13 | H 35 | 0.60 | 960 | 49,675 | 100% | 49,675 | 29,805 |
| 50 | 14 | H 36 | 0.58 | 960 | 49,675 | 100% | 49,675 | 28,812 |
| 51 | 15 | H 37 | 0.56 | 960 | 49,675 | 100% | 49,675 | 27,818 |
| 52 | 16 | H 38 | 0.53 | 960 | 49,675 | 100% | 49,675 | 26,328 |
| 53 | 17 | H 39 | 0.51 | 960 | 49,675 | 100% | 49,675 | 25,334 |
| 54 | 18 | H 40 | 0.49 | 960 | 49,675 | 100% | 49,675 | 24,341 |
| 55 | 19 | H 41 | 0.47 | 960 | 49,675 | 100% | 49,675 | 23,347 |
| 56 | 20 | H 42 | 0.46 | 960 | 49,675 | 100% | 49,675 | 22,851 |
| 57 | 21 | H 43 | 0.44 | 960 | 49,675 | 100% | 49,675 | 21,857 |
| 58 | 22 | H 44 | 0.42 | 960 | 49,675 | 100% | 49,675 | 20,864 |
| 59 | 23 | H 45 | 0.41 | 960 | 49,675 | 100% | 49,675 | 20,367 |
| 60 | 24 | H 46 | 0.39 | 960 | 49,675 | 100% | 49,675 | 19,373 |
| 61 | 25 | H 47 | 0.38 | 960 | 49,675 | 100% | 49,675 | 18,877 |
| 62 | 26 | H 48 | 0.36 | 960 | 49,675 | 100% | 49,675 | 17,883 |
| 63 | 27 | H 49 | 0.35 | 960 | 49,675 | 100% | 49,675 | 17,386 |
| 64 | 28 | H 50 | 0.33 | 960 | 49,675 | 100% | 49,675 | 16,393 |
| 65 | 29 | H 51 | 0.32 | 960 | 49,675 | 100% | 49,675 | 15,896 |
| 66 | 30 | H 52 | 0.31 | 960 | 49,675 | 100% | 49,675 | 15,399 |
| 67 | 31 | H 53 | 0.30 | 960 | 49,675 | 100% | 49,675 | 14,903 |
| 68 | 32 | H 54 | 0.29 | 960 | 49,675 | 100% | 49,675 | 14,406 |
| 69 | 33 | H 55 | 0.27 | 960 | 49,675 | 100% | 49,675 | 13,412 |
| 70 | 34 | H 56 | 0.26 | 960 | 49,675 | 100% | 49,675 | 12,916 |
| 71 | 35 | H 57 | 0.25 | 960 | 49,675 | 100% | 49,675 | 12,419 |
| 72 | 36 | H 58 | 0.24 | 960 | 49,675 | 100% | 49,675 | 11,922 |
| 73 | 37 | H 59 | 0.23 | 960 | 49,675 | 100% | 49,675 | 11,425 |
| 74 | 38 | H 60 | 0.23 | 960 | 49,675 | 100% | 49,675 | 11,425 |
| 75 | 39 | H 61 | 0.22 | 960 | 49,675 | 100% | 49,675 | 10,929 |
| 76 | 40 | H 62 | 0.21 | 960 | 49,675 | 100% | 49,675 | 10,432 |
| 77 | 41 | H 63 | 0.20 | 960 | 49,675 | 100% | 49,675 | 9,935 |
| 78 | 42 | H 64 | 0.19 | 960 | 49,675 | 100% | 49,675 | 9,438 |
| 79 | 43 | H 65 | 0.19 | 960 | 49,675 | 100% | 49,675 | 9,438 |
| 80 | 44 | H 66 | 0.18 | 960 | 49,675 | 100% | 49,675 | 8,942 |
| 合計（便益額） | | | | | | | | 3,707,494 |

事 業 名:　水源林造成事業
施行箇所:　九州整備局　昭和50年度契約地

6,329,417 千円

**1　水源かん養便益**
**（3）　水質浄化便益**

$$B=\left[\sum_{t=1}^{T-1}\frac{t}{T\times(1+i)^{t}}+\sum_{t=T}^{Y}\frac{1}{(1+i)^{t}}\right]\times(D2-D1)\times A\times P\times u\times 10$$

$$u=\frac{Ux\times Qx+Uy\times Qy}{Qx+Qy}$$

| | | |
|---|---|---|
| Qx: | 全貯留量のうち生活用水使用相当量（m3／年） | 157億 |
| Qy: | 全貯留量－Qx（m3／年） | 1,707.25 億 |
| A: | 事業対象区域面積（ha） | 960 |
| P: | 年間平均降雨量（mm／年） | 2,269 |
| T: | 事業実施後、貯留率が安定するのに必要な年数（年） | 15 |
| D1: | 事業実施前の貯留率 | 0.51 |
| D2: | 事業実施後、T年経過後の貯留率 | 0.56 |
| Ux: | 単位当たりの上水道給水原価（円／m3） | 178.83 |
| Uy: | 単位当たりの雨水浄化費（円／m3） | 68.57 |
| u: | 単位当たりの水質浄化費（U x とU y を用いてQ x とQ yで比例按分して算出）（円/m3） | 77.90 |
| Y: | 評価期間（年） | 80 |
| 10: | 単位合わせのための調整値 | |

便益算出表　　（単位：千円）

| 評価期間 | 経過年 | 年度 | 割引係数 ① | 事業対象区域面積（ha） | 年効果額 ② | 効果発生割合 ③ | 年発生効果額 ④＝②×③ | 現在価値 ⑤＝④×① |
|---|---|---|---|---|---|---|---|---|
| 1 | −35 | S50 | 3.95 | 960 | 84,805 | 7% | 5,654 | 22,332 |
| 2 | −34 | S51 | 3.79 | 960 | 84,805 | 13% | 11,307 | 42,855 |
| 3 | −33 | S52 | 3.65 | 960 | 84,805 | 20% | 16,961 | 61,908 |
| 4 | −32 | S53 | 3.51 | 960 | 84,805 | 27% | 22,615 | 79,378 |
| 5 | −31 | S54 | 3.37 | 960 | 84,805 | 33% | 28,268 | 95,265 |
| 6 | −30 | S55 | 3.24 | 960 | 84,805 | 40% | 33,922 | 109,908 |
| 7 | −29 | S56 | 3.12 | 960 | 84,805 | 47% | 39,576 | 123,477 |
| 8 | −28 | S57 | 3.00 | 960 | 84,805 | 53% | 45,230 | 135,689 |
| 9 | −27 | S58 | 2.88 | 960 | 84,805 | 60% | 50,883 | 146,544 |
| 10 | −26 | S59 | 2.77 | 960 | 84,805 | 67% | 56,537 | 156,607 |
| 11 | −25 | S60 | 2.67 | 960 | 84,805 | 73% | 62,191 | 166,049 |
| 12 | −24 | S61 | 2.56 | 960 | 84,805 | 80% | 67,844 | 173,681 |
| 13 | −23 | S62 | 2.46 | 960 | 84,805 | 87% | 73,498 | 180,805 |
| 14 | −22 | S63 | 2.37 | 960 | 84,805 | 93% | 79,152 | 187,589 |
| 15 | −21 | H 1 | 2.28 | 960 | 84,805 | 100% | 84,805 | 193,356 |
| 16 | −20 | H 2 | 2.19 | 960 | 84,805 | 100% | 84,805 | 185,724 |
| 17 | −19 | H 3 | 2.11 | 960 | 84,805 | 100% | 84,805 | 178,939 |
| 18 | −18 | H 4 | 2.03 | 960 | 84,805 | 100% | 84,805 | 172,155 |
| 19 | −17 | H 5 | 1.95 | 960 | 84,805 | 100% | 84,805 | 165,370 |
| 20 | −16 | H 6 | 1.87 | 960 | 84,805 | 100% | 84,805 | 158,586 |
| 21 | −15 | H 7 | 1.80 | 960 | 84,805 | 100% | 84,805 | 152,650 |
| 22 | −14 | H 8 | 1.73 | 960 | 84,805 | 100% | 84,805 | 146,713 |
| 23 | −13 | H 9 | 1.67 | 960 | 84,805 | 100% | 84,805 | 141,625 |
| 24 | −12 | H 10 | 1.60 | 960 | 84,805 | 100% | 84,805 | 135,689 |
| 25 | −11 | H 11 | 1.54 | 960 | 84,805 | 100% | 84,805 | 130,600 |
| 26 | −10 | H 12 | 1.48 | 960 | 84,805 | 100% | 84,805 | 125,512 |
| 27 | −9 | H 13 | 1.42 | 960 | 84,805 | 100% | 84,805 | 120,424 |
| 28 | −8 | H 14 | 1.37 | 960 | 84,805 | 100% | 84,805 | 116,183 |
| 29 | −7 | H 15 | 1.32 | 960 | 84,805 | 100% | 84,805 | 111,943 |
| 30 | −6 | H 16 | 1.27 | 960 | 84,805 | 100% | 84,805 | 107,703 |
| 31 | −5 | H 17 | 1.22 | 960 | 84,805 | 100% | 84,805 | 103,463 |
| 32 | −4 | H 18 | 1.17 | 960 | 84,805 | 100% | 84,805 | 99,222 |
| 33 | −3 | H 19 | 1.12 | 960 | 84,805 | 100% | 84,805 | 94,982 |
| 34 | −2 | H 20 | 1.08 | 960 | 84,805 | 100% | 84,805 | 91,590 |
| 35 | −1 | H 21 | 1.04 | 960 | 84,805 | 100% | 84,805 | 88,198 |
| 36 | 0 | H 22 | 1.00 | 960 | 84,805 | 100% | 84,805 | 84,805 |
| 37 | 1 | H 23 | 0.96 | 960 | 84,805 | 100% | 84,805 | 81,413 |
| 38 | 2 | H 24 | 0.92 | 960 | 84,805 | 100% | 84,805 | 78,021 |
| 39 | 3 | H 25 | 0.89 | 960 | 84,805 | 100% | 84,805 | 75,477 |
| 40 | 4 | H 26 | 0.85 | 960 | 84,805 | 100% | 84,805 | 72,085 |
| 41 | 5 | H 27 | 0.82 | 960 | 84,805 | 100% | 84,805 | 69,540 |
| 42 | 6 | H 28 | 0.79 | 960 | 84,805 | 100% | 84,805 | 66,996 |
| 43 | 7 | H 29 | 0.76 | 960 | 84,805 | 100% | 84,805 | 64,452 |
| 44 | 8 | H 30 | 0.73 | 960 | 84,805 | 100% | 84,805 | 61,908 |
| 45 | 9 | H 31 | 0.70 | 960 | 84,805 | 100% | 84,805 | 59,364 |
| 46 | 10 | H 32 | 0.68 | 960 | 84,805 | 100% | 84,805 | 57,668 |
| 47 | 11 | H 33 | 0.65 | 960 | 84,805 | 100% | 84,805 | 55,123 |
| 48 | 12 | H 34 | 0.62 | 960 | 84,805 | 100% | 84,805 | 52,579 |
| 49 | 13 | H 35 | 0.60 | 960 | 84,805 | 100% | 84,805 | 50,883 |
| 50 | 14 | H 36 | 0.58 | 960 | 84,805 | 100% | 84,805 | 49,187 |
| 51 | 15 | H 37 | 0.56 | 960 | 84,805 | 100% | 84,805 | 47,491 |
| 52 | 16 | H 38 | 0.53 | 960 | 84,805 | 100% | 84,805 | 44,947 |
| 53 | 17 | H 39 | 0.51 | 960 | 84,805 | 100% | 84,805 | 43,251 |
| 54 | 18 | H 40 | 0.49 | 960 | 84,805 | 100% | 84,805 | 41,555 |
| 55 | 19 | H 41 | 0.47 | 960 | 84,805 | 100% | 84,805 | 39,859 |
| 56 | 20 | H 42 | 0.46 | 960 | 84,805 | 100% | 84,805 | 39,010 |
| 57 | 21 | H 43 | 0.44 | 960 | 84,805 | 100% | 84,805 | 37,314 |
| 58 | 22 | H 44 | 0.42 | 960 | 84,805 | 100% | 84,805 | 35,618 |
| 59 | 23 | H 45 | 0.41 | 960 | 84,805 | 100% | 84,805 | 34,770 |
| 60 | 24 | H 46 | 0.39 | 960 | 84,805 | 100% | 84,805 | 33,074 |
| 61 | 25 | H 47 | 0.38 | 960 | 84,805 | 100% | 84,805 | 32,226 |
| 62 | 26 | H 48 | 0.36 | 960 | 84,805 | 100% | 84,805 | 30,530 |
| 63 | 27 | H 49 | 0.35 | 960 | 84,805 | 100% | 84,805 | 29,682 |
| 64 | 28 | H 50 | 0.33 | 960 | 84,805 | 100% | 84,805 | 27,986 |
| 65 | 29 | H 51 | 0.32 | 960 | 84,805 | 100% | 84,805 | 27,138 |
| 66 | 30 | H 52 | 0.31 | 960 | 84,805 | 100% | 84,805 | 26,290 |
| 67 | 31 | H 53 | 0.30 | 960 | 84,805 | 100% | 84,805 | 25,442 |
| 68 | 32 | H 54 | 0.29 | 960 | 84,805 | 100% | 84,805 | 24,594 |
| 69 | 33 | H 55 | 0.27 | 960 | 84,805 | 100% | 84,805 | 22,897 |
| 70 | 34 | H 56 | 0.26 | 960 | 84,805 | 100% | 84,805 | 22,049 |
| 71 | 35 | H 57 | 0.25 | 960 | 84,805 | 100% | 84,805 | 21,201 |
| 72 | 36 | H 58 | 0.24 | 960 | 84,805 | 100% | 84,805 | 20,353 |
| 73 | 37 | H 59 | 0.23 | 960 | 84,805 | 100% | 84,805 | 19,505 |
| 74 | 38 | H 60 | 0.23 | 960 | 84,805 | 100% | 84,805 | 19,505 |
| 75 | 39 | H 61 | 0.22 | 960 | 84,805 | 100% | 84,805 | 18,657 |
| 76 | 40 | H 62 | 0.21 | 960 | 84,805 | 100% | 84,805 | 17,809 |
| 77 | 41 | H 63 | 0.20 | 960 | 84,805 | 100% | 84,805 | 16,961 |
| 78 | 42 | H 64 | 0.19 | 960 | 84,805 | 100% | 84,805 | 16,113 |
| 79 | 43 | H 65 | 0.19 | 960 | 84,805 | 100% | 84,805 | 16,113 |
| 80 | 44 | H 66 | 0.18 | 960 | 84,805 | 100% | 84,805 | 15,265 |
| 合計（便益額） | | | | | | | | 6,329,417 |

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## 2 山地保全便益
### （1） 土砂流出防止便益

$$B=\left[\sum_{t=1}^{T-1}\frac{t}{T\times(1+i)^{t}}+\sum_{t=T}^{Y}\frac{1}{(1+i)^{t}}\right]\times(V1-V2)\times A\times U$$

| | | | |
|---|---|---|---|
| U: | 1m3の土砂を保全するために要する単位当たりの砂防ダム建設コスト(円／m3) | | 5,780 |
| V1: | 事業実施前における1ha当りの年間流出土砂量(m3) | 荒廃地等・森林火災跡地 | 20.00 |
| V2: | 事業実施後における1ha当りの年間流出土砂量(m3) | 整備済森林 | 1.30 |
| A: | 事業対象区域面積(ha) | | 960 |
| T: | 事業実施後、年間流出土砂量が安定するのに必要な年数(年) | | 15 |
| Y: | 評価期間(年) | | 80 |

便益算出表　（単位：千円）

| 評価期間 | 経過年 | 年度 | 割引係数 ① | 事業対象区域面積(ha) | 年効果額 ② | 効果発生割合 ③ | 年発生効果額 ④＝②×③ | 現在価値 ⑤＝④×① |
|---|---|---|---|---|---|---|---|---|
| 1 | −35 | S50 | 3.95 | 960 | 103,717 | 7% | 6,914 | 27,312 |
| 2 | −34 | S51 | 3.79 | 960 | 103,717 | 13% | 13,829 | 52,412 |
| 3 | −33 | S52 | 3.65 | 960 | 103,717 | 20% | 20,743 | 75,714 |
| 4 | −32 | S53 | 3.51 | 960 | 103,717 | 27% | 27,658 | 97,079 |
| 5 | −31 | S54 | 3.37 | 960 | 103,717 | 33% | 34,572 | 116,509 |
| 6 | −30 | S55 | 3.24 | 960 | 103,717 | 40% | 41,487 | 134,417 |
| 7 | −29 | S56 | 3.12 | 960 | 103,717 | 47% | 48,401 | 151,012 |
| 8 | −28 | S57 | 3.00 | 960 | 103,717 | 53% | 55,316 | 165,947 |
| 9 | −27 | S58 | 2.88 | 960 | 103,717 | 60% | 62,230 | 179,223 |
| 10 | −26 | S59 | 2.77 | 960 | 103,717 | 67% | 69,145 | 191,531 |
| 11 | −25 | S60 | 2.67 | 960 | 103,717 | 73% | 76,059 | 203,078 |
| 12 | −24 | S61 | 2.56 | 960 | 103,717 | 80% | 82,974 | 212,413 |
| 13 | −23 | S62 | 2.46 | 960 | 103,717 | 87% | 89,888 | 221,125 |
| 14 | −22 | S63 | 2.37 | 960 | 103,717 | 93% | 96,803 | 229,422 |
| 15 | −21 | H 1 | 2.28 | 960 | 103,717 | 100% | 103,717 | 236,475 |
| 16 | −20 | H 2 | 2.19 | 960 | 103,717 | 100% | 103,717 | 227,141 |
| 17 | −19 | H 3 | 2.11 | 960 | 103,717 | 100% | 103,717 | 218,843 |
| 18 | −18 | H 4 | 2.03 | 960 | 103,717 | 100% | 103,717 | 210,546 |
| 19 | −17 | H 5 | 1.95 | 960 | 103,717 | 100% | 103,717 | 202,248 |
| 20 | −16 | H 6 | 1.87 | 960 | 103,717 | 100% | 103,717 | 193,951 |
| 21 | −15 | H 7 | 1.80 | 960 | 103,717 | 100% | 103,717 | 186,691 |
| 22 | −14 | H 8 | 1.73 | 960 | 103,717 | 100% | 103,717 | 179,431 |
| 23 | −13 | H 9 | 1.67 | 960 | 103,717 | 100% | 103,717 | 173,208 |
| 24 | −12 | H 10 | 1.60 | 960 | 103,717 | 100% | 103,717 | 165,947 |
| 25 | −11 | H 11 | 1.54 | 960 | 103,717 | 100% | 103,717 | 159,724 |
| 26 | −10 | H 12 | 1.48 | 960 | 103,717 | 100% | 103,717 | 153,501 |
| 27 | −9 | H 13 | 1.42 | 960 | 103,717 | 100% | 103,717 | 147,278 |
| 28 | −8 | H 14 | 1.37 | 960 | 103,717 | 100% | 103,717 | 142,093 |
| 29 | −7 | H 15 | 1.32 | 960 | 103,717 | 100% | 103,717 | 136,907 |
| 30 | −6 | H 16 | 1.27 | 960 | 103,717 | 100% | 103,717 | 131,721 |
| 31 | −5 | H 17 | 1.22 | 960 | 103,717 | 100% | 103,717 | 126,535 |
| 32 | −4 | H 18 | 1.17 | 960 | 103,717 | 100% | 103,717 | 121,349 |
| 33 | −3 | H 19 | 1.12 | 960 | 103,717 | 100% | 103,717 | 116,163 |
| 34 | −2 | H 20 | 1.08 | 960 | 103,717 | 100% | 103,717 | 112,015 |
| 35 | −1 | H 21 | 1.04 | 960 | 103,717 | 100% | 103,717 | 107,866 |
| 36 | 0 | H 22 | 1.00 | 960 | 103,717 | 100% | 103,717 | 103,717 |
| 37 | 1 | H 23 | 0.96 | 960 | 103,717 | 100% | 103,717 | 99,568 |
| 38 | 2 | H 24 | 0.92 | 960 | 103,717 | 100% | 103,717 | 95,420 |
| 39 | 3 | H 25 | 0.89 | 960 | 103,717 | 100% | 103,717 | 92,308 |
| 40 | 4 | H 26 | 0.85 | 960 | 103,717 | 100% | 103,717 | 88,160 |
| 41 | 5 | H 27 | 0.82 | 960 | 103,717 | 100% | 103,717 | 85,048 |
| 42 | 6 | H 28 | 0.79 | 960 | 103,717 | 100% | 103,717 | 81,937 |
| 43 | 7 | H 29 | 0.76 | 960 | 103,717 | 100% | 103,717 | 78,825 |
| 44 | 8 | H 30 | 0.73 | 960 | 103,717 | 100% | 103,717 | 75,714 |
| 45 | 9 | H 31 | 0.70 | 960 | 103,717 | 100% | 103,717 | 72,602 |
| 46 | 10 | H 32 | 0.68 | 960 | 103,717 | 100% | 103,717 | 70,528 |
| 47 | 11 | H 33 | 0.65 | 960 | 103,717 | 100% | 103,717 | 67,416 |
| 48 | 12 | H 34 | 0.62 | 960 | 103,717 | 100% | 103,717 | 64,305 |
| 49 | 13 | H 35 | 0.60 | 960 | 103,717 | 100% | 103,717 | 62,230 |
| 50 | 14 | H 36 | 0.58 | 960 | 103,717 | 100% | 103,717 | 60,156 |
| 51 | 15 | H 37 | 0.56 | 960 | 103,717 | 100% | 103,717 | 58,082 |
| 52 | 16 | H 38 | 0.53 | 960 | 103,717 | 100% | 103,717 | 54,970 |
| 53 | 17 | H 39 | 0.51 | 960 | 103,717 | 100% | 103,717 | 52,896 |
| 54 | 18 | H 40 | 0.49 | 960 | 103,717 | 100% | 103,717 | 50,821 |
| 55 | 19 | H 41 | 0.47 | 960 | 103,717 | 100% | 103,717 | 48,747 |
| 56 | 20 | H 42 | 0.46 | 960 | 103,717 | 100% | 103,717 | 47,710 |
| 57 | 21 | H 43 | 0.44 | 960 | 103,717 | 100% | 103,717 | 45,636 |
| 58 | 22 | H 44 | 0.42 | 960 | 103,717 | 100% | 103,717 | 43,561 |
| 59 | 23 | H 45 | 0.41 | 960 | 103,717 | 100% | 103,717 | 42,524 |
| 60 | 24 | H 46 | 0.39 | 960 | 103,717 | 100% | 103,717 | 40,450 |
| 61 | 25 | H 47 | 0.38 | 960 | 103,717 | 100% | 103,717 | 39,413 |
| 62 | 26 | H 48 | 0.36 | 960 | 103,717 | 100% | 103,717 | 37,338 |
| 63 | 27 | H 49 | 0.35 | 960 | 103,717 | 100% | 103,717 | 36,301 |
| 64 | 28 | H 50 | 0.33 | 960 | 103,717 | 100% | 103,717 | 34,227 |
| 65 | 29 | H 51 | 0.32 | 960 | 103,717 | 100% | 103,717 | 33,189 |
| 66 | 30 | H 52 | 0.31 | 960 | 103,717 | 100% | 103,717 | 32,152 |
| 67 | 31 | H 53 | 0.30 | 960 | 103,717 | 100% | 103,717 | 31,115 |
| 68 | 32 | H 54 | 0.29 | 960 | 103,717 | 100% | 103,717 | 30,078 |
| 69 | 33 | H 55 | 0.27 | 960 | 103,717 | 100% | 103,717 | 28,004 |
| 70 | 34 | H 56 | 0.26 | 960 | 103,717 | 100% | 103,717 | 26,966 |
| 71 | 35 | H 57 | 0.25 | 960 | 103,717 | 100% | 103,717 | 25,929 |
| 72 | 36 | H 58 | 0.24 | 960 | 103,717 | 100% | 103,717 | 24,892 |
| 73 | 37 | H 59 | 0.23 | 960 | 103,717 | 100% | 103,717 | 23,855 |
| 74 | 38 | H 60 | 0.23 | 960 | 103,717 | 100% | 103,717 | 23,855 |
| 75 | 39 | H 61 | 0.22 | 960 | 103,717 | 100% | 103,717 | 22,818 |
| 76 | 40 | H 62 | 0.21 | 960 | 103,717 | 100% | 103,717 | 21,781 |
| 77 | 41 | H 63 | 0.20 | 960 | 103,717 | 100% | 103,717 | 20,743 |
| 78 | 42 | H 64 | 0.19 | 960 | 103,717 | 100% | 103,717 | 19,706 |
| 79 | 43 | H 65 | 0.19 | 960 | 103,717 | 100% | 103,717 | 19,706 |
| 80 | 44 | H 66 | 0.18 | 960 | 103,717 | 100% | 103,717 | 18,669 |
| 合計(便益額) | | | | | | | | 7,740,896 |

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施行箇所:　九州整備局　昭和50年度契約地

58,518 千円

## 2 山地保全便益
### (2) 土砂崩壊防止便益

$$B = \sum_{t=11}^{Y} \frac{V \times U}{(Y-10) \times (1+i)^{t}}$$

$$V = \frac{(Y-10)}{2Y} \times A \times R \times N \times H \times 10{,}000$$

| | | |
|---|---|---|
| U: | 1m3の土砂を保全するために要する単位当たりの砂防ダム建設コスト(円／m3) | 5,780 |
| V: | 崩壊見込み量(m3) | 10,927 |
| A: | 事業対象区域面積(ha) | 960 |
| R: | 流域内崩壊率 | 0.0016 |
| N: | 雨量比＝50年確率日雨量／既往最大日雨量 | 0.9900 |
| H: | 平均崩壊深(m) | 1.6 |
| Y: | 評価期間(年) | 80 |
| 10,000: | 単位合わせのための調整値 | |

便益算出表　　(単位:千円)

| 評価期間 | 経過年 | 年度 | 割引係数 ① | 事業対象区域面積(ha) | 年効果額 ② | 効果発生割合 ③ | 年発生効果額 ④=②×③ | 現在価値 ⑤=④×① |
|---|---|---|---|---|---|---|---|---|
| 1 | −35 | S50 | 3.95 | 960 | 0 | 0% | 0 | 0 |
| 2 | −34 | S51 | 3.79 | 960 | 0 | 0% | 0 | 0 |
| 3 | −33 | S52 | 3.65 | 960 | 0 | 0% | 0 | 0 |
| 4 | −32 | S53 | 3.51 | 960 | 0 | 0% | 0 | 0 |
| 5 | −31 | S54 | 3.37 | 960 | 0 | 0% | 0 | 0 |
| 6 | −30 | S55 | 3.24 | 960 | 0 | 0% | 0 | 0 |
| 7 | −29 | S56 | 3.12 | 960 | 0 | 0% | 0 | 0 |
| 8 | −28 | S57 | 3.00 | 960 | 0 | 0% | 0 | 0 |
| 9 | −27 | S58 | 2.88 | 960 | 0 | 0% | 0 | 0 |
| 10 | −26 | S59 | 2.77 | 960 | 0 | 0% | 0 | 0 |
| 11 | −25 | S60 | 2.67 | 960 | 902 | 100% | 902 | 2,409 |
| 12 | −24 | S61 | 2.56 | 960 | 902 | 100% | 902 | 2,310 |
| 13 | −23 | S62 | 2.46 | 960 | 902 | 100% | 902 | 2,219 |
| 14 | −22 | S63 | 2.37 | 960 | 902 | 100% | 902 | 2,138 |
| 15 | −21 | H 1 | 2.28 | 960 | 902 | 100% | 902 | 2,057 |
| 16 | −20 | H 2 | 2.19 | 960 | 902 | 100% | 902 | 1,976 |
| 17 | −19 | H 3 | 2.11 | 960 | 902 | 100% | 902 | 1,904 |
| 18 | −18 | H 4 | 2.03 | 960 | 902 | 100% | 902 | 1,832 |
| 19 | −17 | H 5 | 1.95 | 960 | 902 | 100% | 902 | 1,759 |
| 20 | −16 | H 6 | 1.87 | 960 | 902 | 100% | 902 | 1,687 |
| 21 | −15 | H 7 | 1.80 | 960 | 902 | 100% | 902 | 1,624 |
| 22 | −14 | H 8 | 1.73 | 960 | 902 | 100% | 902 | 1,561 |
| 23 | −13 | H 9 | 1.67 | 960 | 902 | 100% | 902 | 1,507 |
| 24 | −12 | H 10 | 1.60 | 960 | 902 | 100% | 902 | 1,444 |
| 25 | −11 | H 11 | 1.54 | 960 | 902 | 100% | 902 | 1,389 |
| 26 | −10 | H 12 | 1.48 | 960 | 902 | 100% | 902 | 1,335 |
| 27 | −9 | H 13 | 1.42 | 960 | 902 | 100% | 902 | 1,281 |
| 28 | −8 | H 14 | 1.37 | 960 | 902 | 100% | 902 | 1,236 |
| 29 | −7 | H 15 | 1.32 | 960 | 902 | 100% | 902 | 1,191 |
| 30 | −6 | H 16 | 1.27 | 960 | 902 | 100% | 902 | 1,146 |
| 31 | −5 | H 17 | 1.22 | 960 | 902 | 100% | 902 | 1,101 |
| 32 | −4 | H 18 | 1.17 | 960 | 902 | 100% | 902 | 1,056 |
| 33 | −3 | H 19 | 1.12 | 960 | 902 | 100% | 902 | 1,010 |
| 34 | −2 | H 20 | 1.08 | 960 | 902 | 100% | 902 | 974 |
| 35 | −1 | H 21 | 1.04 | 960 | 902 | 100% | 902 | 938 |
| 36 | 0 | H 22 | 1.00 | 960 | 902 | 100% | 902 | 902 |
| 37 | 1 | H 23 | 0.96 | 960 | 902 | 100% | 902 | 866 |
| 38 | 2 | H 24 | 0.92 | 960 | 902 | 100% | 902 | 830 |
| 39 | 3 | H 25 | 0.89 | 960 | 902 | 100% | 902 | 803 |
| 40 | 4 | H 26 | 0.85 | 960 | 902 | 100% | 902 | 767 |
| 41 | 5 | H 27 | 0.82 | 960 | 902 | 100% | 902 | 740 |
| 42 | 6 | H 28 | 0.79 | 960 | 902 | 100% | 902 | 713 |
| 43 | 7 | H 29 | 0.76 | 960 | 902 | 100% | 902 | 686 |
| 44 | 8 | H 30 | 0.73 | 960 | 902 | 100% | 902 | 659 |
| 45 | 9 | H 31 | 0.70 | 960 | 902 | 100% | 902 | 632 |
| 46 | 10 | H 32 | 0.68 | 960 | 902 | 100% | 902 | 614 |
| 47 | 11 | H 33 | 0.65 | 960 | 902 | 100% | 902 | 586 |
| 48 | 12 | H 34 | 0.62 | 960 | 902 | 100% | 902 | 559 |
| 49 | 13 | H 35 | 0.60 | 960 | 902 | 100% | 902 | 541 |
| 50 | 14 | H 36 | 0.58 | 960 | 902 | 100% | 902 | 523 |
| 51 | 15 | H 37 | 0.56 | 960 | 902 | 100% | 902 | 505 |
| 52 | 16 | H 38 | 0.53 | 960 | 902 | 100% | 902 | 478 |
| 53 | 17 | H 39 | 0.51 | 960 | 902 | 100% | 902 | 460 |
| 54 | 18 | H 40 | 0.49 | 960 | 902 | 100% | 902 | 442 |
| 55 | 19 | H 41 | 0.47 | 960 | 902 | 100% | 902 | 424 |
| 56 | 20 | H 42 | 0.46 | 960 | 902 | 100% | 902 | 415 |
| 57 | 21 | H 43 | 0.44 | 960 | 902 | 100% | 902 | 397 |
| 58 | 22 | H 44 | 0.42 | 960 | 902 | 100% | 902 | 379 |
| 59 | 23 | H 45 | 0.41 | 960 | 902 | 100% | 902 | 370 |
| 60 | 24 | H 46 | 0.39 | 960 | 902 | 100% | 902 | 352 |
| 61 | 25 | H 47 | 0.38 | 960 | 902 | 100% | 902 | 343 |
| 62 | 26 | H 48 | 0.36 | 960 | 902 | 100% | 902 | 325 |
| 63 | 27 | H 49 | 0.35 | 960 | 902 | 100% | 902 | 316 |
| 64 | 28 | H 50 | 0.33 | 960 | 902 | 100% | 902 | 298 |
| 65 | 29 | H 51 | 0.32 | 960 | 902 | 100% | 902 | 289 |
| 66 | 30 | H 52 | 0.31 | 960 | 902 | 100% | 902 | 280 |
| 67 | 31 | H 53 | 0.30 | 960 | 902 | 100% | 902 | 271 |
| 68 | 32 | H 54 | 0.29 | 960 | 902 | 100% | 902 | 262 |
| 69 | 33 | H 55 | 0.27 | 960 | 902 | 100% | 902 | 244 |
| 70 | 34 | H 56 | 0.26 | 960 | 902 | 100% | 902 | 235 |
| 71 | 35 | H 57 | 0.25 | 960 | 902 | 100% | 902 | 226 |
| 72 | 36 | H 58 | 0.24 | 960 | 902 | 100% | 902 | 217 |
| 73 | 37 | H 59 | 0.23 | 960 | 902 | 100% | 902 | 208 |
| 74 | 38 | H 60 | 0.23 | 960 | 902 | 100% | 902 | 208 |
| 75 | 39 | H 61 | 0.22 | 960 | 902 | 100% | 902 | 198 |
| 76 | 40 | H 62 | 0.21 | 960 | 902 | 100% | 902 | 189 |
| 77 | 41 | H 63 | 0.20 | 960 | 902 | 100% | 902 | 180 |
| 78 | 42 | H 64 | 0.19 | 960 | 902 | 100% | 902 | 171 |
| 79 | 43 | H 65 | 0.19 | 960 | 902 | 100% | 902 | 171 |
| 80 | 44 | H 66 | 0.18 | 960 | 902 | 100% | 902 | 162 |
| 合計(便益額) | | | | | | | | 58,518 |

事 業 名:　水源林造成事業
施行箇所:　九州整備局　昭和50年度契約地

1,208,963 千円

**3 環境保全便益**
**(1) 炭素固定便益**
**① 樹木固定分**　　**スギ**

$$B = \sum_{t=1}^{Y} \frac{V2-V1}{Y\times(1+i)^{t}} \times D \times BEF \times (1+R) \times 0.5 \times \frac{44}{12} \times U$$

| | | | |
|---|---|---|---|
| U: | 二酸化炭素に関する原単位(円/t-CO2) | | 6,046 |
| V1: | 事業を実施しない場合の評価最終年の当該森林の見込蓄積量(m3) | スギ | 159,162 |
| V2: | 事業を実施する場合の評価最終年の当該森林の見込蓄積量(m3) | スギ | 318,323 |
| Y: | 評価期間(年) | | 80 |
| D : | 容積密度( t /m 3) | スギ | 0.314 |
| BEF: | バイオマス拡大係数(地上部バイオマス量／幹バイオマス量) | 樹齢20年以下 スギ | 1.57 |
| | | 樹齢20年超 スギ | 1.23 |
| R : | 地上部に対する地下部の比率( 地下部バイオマス量／ 地上部バイオマス量) | スギ | 0.25 |
| 0.5: | 植物中の炭素含有率 | | |
| 44/12: | 炭素から二酸化炭素への換算係数 | | |

便益算出表　　(単位:千円)

| 評価期間 | 経過年 | 年度 | 割引係数 ① | V2-V1(m3) 樹種名　スギ | 年効果額 ② | 効果発生割合 ③ | 年発生効果額 ④=②×③ | 現在価値 ⑤=④×① |
|---|---|---|---|---|---|---|---|---|
| 1 | -35 | S50 | 3.95 | 159,162 | 13,589 | 100% | 13,589 | 53,678 |
| 2 | -34 | S51 | 3.79 | 159,162 | 13,589 | 100% | 13,589 | 51,503 |
| 3 | -33 | S52 | 3.65 | 159,162 | 13,589 | 100% | 13,589 | 49,601 |
| 4 | -32 | S53 | 3.51 | 159,162 | 13,589 | 100% | 13,589 | 47,698 |
| 5 | -31 | S54 | 3.37 | 159,162 | 13,589 | 100% | 13,589 | 45,796 |
| 6 | -30 | S55 | 3.24 | 159,162 | 13,589 | 100% | 13,589 | 44,029 |
| 7 | -29 | S56 | 3.12 | 159,162 | 13,589 | 100% | 13,589 | 42,399 |
| 8 | -28 | S57 | 3.00 | 159,162 | 13,589 | 100% | 13,589 | 40,768 |
| 9 | -27 | S58 | 2.88 | 159,162 | 13,589 | 100% | 13,589 | 39,137 |
| 10 | -26 | S59 | 2.77 | 159,162 | 13,589 | 100% | 13,589 | 37,642 |
| 11 | -25 | S60 | 2.67 | 159,162 | 13,589 | 100% | 13,589 | 36,283 |
| 12 | -24 | S61 | 2.56 | 159,162 | 13,589 | 100% | 13,589 | 34,789 |
| 13 | -23 | S62 | 2.46 | 159,162 | 13,589 | 100% | 13,589 | 33,430 |
| 14 | -22 | S63 | 2.37 | 159,162 | 13,589 | 100% | 13,589 | 32,207 |
| 15 | -21 | H 1 | 2.28 | 159,162 | 13,589 | 100% | 13,589 | 30,984 |
| 16 | -20 | H 2 | 2.19 | 159,162 | 13,589 | 100% | 13,589 | 29,761 |
| 17 | -19 | H 3 | 2.11 | 159,162 | 13,589 | 100% | 13,589 | 28,673 |
| 18 | -18 | H 4 | 2.03 | 159,162 | 13,589 | 100% | 13,589 | 27,586 |
| 19 | -17 | H 5 | 1.95 | 159,162 | 13,589 | 100% | 13,589 | 26,499 |
| 20 | -16 | H 6 | 1.87 | 159,162 | 13,589 | 100% | 13,589 | 25,412 |
| 21 | -15 | H 7 | 1.80 | 159,162 | 10,646 | 100% | 10,646 | 19,164 |
| 22 | -14 | H 8 | 1.73 | 159,162 | 10,646 | 100% | 10,646 | 18,418 |
| 23 | -13 | H 9 | 1.67 | 159,162 | 10,646 | 100% | 10,646 | 17,779 |
| 24 | -12 | H 10 | 1.60 | 159,162 | 10,646 | 100% | 10,646 | 17,034 |
| 25 | -11 | H 11 | 1.54 | 159,162 | 10,646 | 100% | 10,646 | 16,395 |
| 26 | -10 | H 12 | 1.48 | 159,162 | 10,646 | 100% | 10,646 | 15,757 |
| 27 | -9 | H 13 | 1.42 | 159,162 | 10,646 | 100% | 10,646 | 15,118 |
| 28 | -8 | H 14 | 1.37 | 159,162 | 10,646 | 100% | 10,646 | 14,586 |
| 29 | -7 | H 15 | 1.32 | 159,162 | 10,646 | 100% | 10,646 | 14,053 |
| 30 | -6 | H 16 | 1.27 | 159,162 | 10,646 | 100% | 10,646 | 13,521 |
| 31 | -5 | H 17 | 1.22 | 159,162 | 10,646 | 100% | 10,646 | 12,989 |
| 32 | -4 | H 18 | 1.17 | 159,162 | 10,646 | 100% | 10,646 | 12,456 |
| 33 | -3 | H 19 | 1.12 | 159,162 | 10,646 | 100% | 10,646 | 11,924 |
| 34 | -2 | H 20 | 1.08 | 159,162 | 10,646 | 100% | 10,646 | 11,498 |
| 35 | -1 | H 21 | 1.04 | 159,162 | 10,646 | 100% | 10,646 | 11,072 |
| 36 | 0 | H 22 | 1.00 | 159,162 | 10,646 | 100% | 10,646 | 10,646 |
| 37 | 1 | H 23 | 0.96 | 159,162 | 10,646 | 100% | 10,646 | 10,221 |
| 38 | 2 | H 24 | 0.92 | 159,162 | 10,646 | 100% | 10,646 | 9,795 |
| 39 | 3 | H 25 | 0.89 | 159,162 | 10,646 | 100% | 10,646 | 9,475 |
| 40 | 4 | H 26 | 0.85 | 159,162 | 10,646 | 100% | 10,646 | 9,049 |
| 41 | 5 | H 27 | 0.82 | 159,162 | 10,646 | 100% | 10,646 | 8,730 |
| 42 | 6 | H 28 | 0.79 | 159,162 | 10,646 | 100% | 10,646 | 8,411 |
| 43 | 7 | H 29 | 0.76 | 159,162 | 10,646 | 100% | 10,646 | 8,091 |
| 44 | 8 | H 30 | 0.73 | 159,162 | 10,646 | 100% | 10,646 | 7,772 |
| 45 | 9 | H 31 | 0.70 | 159,162 | 10,646 | 100% | 10,646 | 7,452 |
| 46 | 10 | H 32 | 0.68 | 159,162 | 10,646 | 100% | 10,646 | 7,240 |
| 47 | 11 | H 33 | 0.65 | 159,162 | 10,646 | 100% | 10,646 | 6,920 |
| 48 | 12 | H 34 | 0.62 | 159,162 | 10,646 | 100% | 10,646 | 6,601 |
| 49 | 13 | H 35 | 0.60 | 159,162 | 10,646 | 100% | 10,646 | 6,388 |
| 50 | 14 | H 36 | 0.58 | 159,162 | 10,646 | 100% | 10,646 | 6,175 |
| 51 | 15 | H 37 | 0.56 | 159,162 | 10,646 | 100% | 10,646 | 5,962 |
| 52 | 16 | H 38 | 0.53 | 159,162 | 10,646 | 100% | 10,646 | 5,643 |
| 53 | 17 | H 39 | 0.51 | 159,162 | 10,646 | 100% | 10,646 | 5,430 |
| 54 | 18 | H 40 | 0.49 | 159,162 | 10,646 | 100% | 10,646 | 5,217 |
| 55 | 19 | H 41 | 0.47 | 159,162 | 10,646 | 100% | 10,646 | 5,004 |
| 56 | 20 | H 42 | 0.46 | 159,162 | 10,646 | 100% | 10,646 | 4,897 |
| 57 | 21 | H 43 | 0.44 | 159,162 | 10,646 | 100% | 10,646 | 4,684 |
| 58 | 22 | H 44 | 0.42 | 159,162 | 10,646 | 100% | 10,646 | 4,471 |
| 59 | 23 | H 45 | 0.41 | 159,162 | 10,646 | 100% | 10,646 | 4,365 |
| 60 | 24 | H 46 | 0.39 | 159,162 | 10,646 | 100% | 10,646 | 4,152 |
| 61 | 25 | H 47 | 0.38 | 159,162 | 10,646 | 100% | 10,646 | 4,046 |
| 62 | 26 | H 48 | 0.36 | 159,162 | 10,646 | 100% | 10,646 | 3,833 |
| 63 | 27 | H 49 | 0.35 | 159,162 | 10,646 | 100% | 10,646 | 3,726 |
| 64 | 28 | H 50 | 0.33 | 159,162 | 10,646 | 100% | 10,646 | 3,513 |
| 65 | 29 | H 51 | 0.32 | 159,162 | 10,646 | 100% | 10,646 | 3,407 |
| 66 | 30 | H 52 | 0.31 | 159,162 | 10,646 | 100% | 10,646 | 3,300 |
| 67 | 31 | H 53 | 0.30 | 159,162 | 10,646 | 100% | 10,646 | 3,194 |
| 68 | 32 | H 54 | 0.29 | 159,162 | 10,646 | 100% | 10,646 | 3,087 |
| 69 | 33 | H 55 | 0.27 | 159,162 | 10,646 | 100% | 10,646 | 2,875 |
| 70 | 34 | H 56 | 0.26 | 159,162 | 10,646 | 100% | 10,646 | 2,768 |
| 71 | 35 | H 57 | 0.25 | 159,162 | 10,646 | 100% | 10,646 | 2,662 |
| 72 | 36 | H 58 | 0.24 | 159,162 | 10,646 | 100% | 10,646 | 2,555 |
| 73 | 37 | H 59 | 0.23 | 159,162 | 10,646 | 100% | 10,646 | 2,449 |
| 74 | 38 | H 60 | 0.23 | 159,162 | 10,646 | 100% | 10,646 | 2,449 |
| 75 | 39 | H 61 | 0.22 | 159,162 | 10,646 | 100% | 10,646 | 2,342 |
| 76 | 40 | H 62 | 0.21 | 159,162 | 10,646 | 100% | 10,646 | 2,236 |
| 77 | 41 | H 63 | 0.20 | 159,162 | 10,646 | 100% | 10,646 | 2,129 |
| 78 | 42 | H 64 | 0.19 | 159,162 | 10,646 | 100% | 10,646 | 2,023 |
| 79 | 43 | H 65 | 0.19 | 159,162 | 10,646 | 100% | 10,646 | 2,023 |
| 80 | 44 | H 66 | 0.18 | 159,162 | 10,646 | 100% | 10,646 | 1,916 |
| 合計(便益額) | | | | | | | | 1,208,963 |

事 業 名:　水源林造成事業
施行箇所:　九州整備局　昭和50年度契約地

751,024 千円

## 3 環境保全便益
### (1) 炭素固定便益
#### ① 樹木固定分　　ヒノキ

$$B = \sum_{t=1}^{Y} \frac{V2-V1}{Y\times(1+i)^{t}} \times D \times BEF \times (1+R) \times 0.5 \times \frac{44}{12} \times U$$

| | | | |
|---|---|---|---|
| U: | 二酸化炭素に関する原単位(円/t-CO2) | | 6,046 |
| V1: | 事業を実施しない場合の評価最終年の当該森林の見込蓄積量(m3) | ヒノキ | 76,052 |
| V2: | 事業を実施する場合の評価最終年の当該森林の見込蓄積量(m3) | ヒノキ | 152,104 |
| Y: | 評価期間(年) | | 80 |
| D : | 容積密度( t /m 3) | ヒノキ | 0.407 |
| BEF: | バイオマス拡大係数(地上部バイオマス量／幹バイオマス量) | 樹齢20年以下 ヒノキ | 1.55 |
| | | 樹齢20年超 ヒノキ | 1.24 |
| R : | 地上部に対する地下部の比率( 地下部バイオマス量／ 地上部バイオマス量) | ヒノキ | 0.26 |
| 0.5: | 植物中の炭素含有率 | | |
| 44/12: | 炭素から二酸化炭素への換算係数 | | |

便益算出表　　(単位:千円)

| 評価期間 | 経過年 | 年度 | 割引係数 ① | V2-V1(m3) 樹種名　ヒノキ | 年効果額 ② | 効果発生割合 ③ | 年発生効果額 ④=②×③ | 現在価値 ⑤=④×① |
|---|---|---|---|---|---|---|---|---|
| 1 | -35 | S50 | 3.95 | 76,052 | 8,376 | 100% | 8,376 | 33,084 |
| 2 | -34 | S51 | 3.79 | 76,052 | 8,376 | 100% | 8,376 | 31,744 |
| 3 | -33 | S52 | 3.65 | 76,052 | 8,376 | 100% | 8,376 | 30,572 |
| 4 | -32 | S53 | 3.51 | 76,052 | 8,376 | 100% | 8,376 | 29,399 |
| 5 | -31 | S54 | 3.37 | 76,052 | 8,376 | 100% | 8,376 | 28,226 |
| 6 | -30 | S55 | 3.24 | 76,052 | 8,376 | 100% | 8,376 | 27,138 |
| 7 | -29 | S56 | 3.12 | 76,052 | 8,376 | 100% | 8,376 | 26,132 |
| 8 | -28 | S57 | 3.00 | 76,052 | 8,376 | 100% | 8,376 | 25,127 |
| 9 | -27 | S58 | 2.88 | 76,052 | 8,376 | 100% | 8,376 | 24,122 |
| 10 | -26 | S59 | 2.77 | 76,052 | 8,376 | 100% | 8,376 | 23,201 |
| 11 | -25 | S60 | 2.67 | 76,052 | 8,376 | 100% | 8,376 | 22,363 |
| 12 | -24 | S61 | 2.56 | 76,052 | 8,376 | 100% | 8,376 | 21,442 |
| 13 | -23 | S62 | 2.46 | 76,052 | 8,376 | 100% | 8,376 | 20,604 |
| 14 | -22 | S63 | 2.37 | 76,052 | 8,376 | 100% | 8,376 | 19,851 |
| 15 | -21 | H 1 | 2.28 | 76,052 | 8,376 | 100% | 8,376 | 19,097 |
| 16 | -20 | H 2 | 2.19 | 76,052 | 8,376 | 100% | 8,376 | 18,343 |
| 17 | -19 | H 3 | 2.11 | 76,052 | 8,376 | 100% | 8,376 | 17,673 |
| 18 | -18 | H 4 | 2.03 | 76,052 | 8,376 | 100% | 8,376 | 17,003 |
| 19 | -17 | H 5 | 1.95 | 76,052 | 8,376 | 100% | 8,376 | 16,333 |
| 20 | -16 | H 6 | 1.87 | 76,052 | 8,376 | 100% | 8,376 | 15,663 |
| 21 | -15 | H 7 | 1.80 | 76,052 | 6,701 | 100% | 6,701 | 12,061 |
| 22 | -14 | H 8 | 1.73 | 76,052 | 6,701 | 100% | 6,701 | 11,592 |
| 23 | -13 | H 9 | 1.67 | 76,052 | 6,701 | 100% | 6,701 | 11,190 |
| 24 | -12 | H 10 | 1.60 | 76,052 | 6,701 | 100% | 6,701 | 10,721 |
| 25 | -11 | H 11 | 1.54 | 76,052 | 6,701 | 100% | 6,701 | 10,319 |
| 26 | -10 | H 12 | 1.48 | 76,052 | 6,701 | 100% | 6,701 | 9,917 |
| 27 | -9 | H 13 | 1.42 | 76,052 | 6,701 | 100% | 6,701 | 9,515 |
| 28 | -8 | H 14 | 1.37 | 76,052 | 6,701 | 100% | 6,701 | 9,180 |
| 29 | -7 | H 15 | 1.32 | 76,052 | 6,701 | 100% | 6,701 | 8,845 |
| 30 | -6 | H 16 | 1.27 | 76,052 | 6,701 | 100% | 6,701 | 8,510 |
| 31 | -5 | H 17 | 1.22 | 76,052 | 6,701 | 100% | 6,701 | 8,175 |
| 32 | -4 | H 18 | 1.17 | 76,052 | 6,701 | 100% | 6,701 | 7,840 |
| 33 | -3 | H 19 | 1.12 | 76,052 | 6,701 | 100% | 6,701 | 7,505 |
| 34 | -2 | H 20 | 1.08 | 76,052 | 6,701 | 100% | 6,701 | 7,237 |
| 35 | -1 | H 21 | 1.04 | 76,052 | 6,701 | 100% | 6,701 | 6,969 |
| 36 | 0 | H 22 | 1.00 | 76,052 | 6,701 | 100% | 6,701 | 6,701 |
| 37 | 1 | H 23 | 0.96 | 76,052 | 6,701 | 100% | 6,701 | 6,433 |
| 38 | 2 | H 24 | 0.92 | 76,052 | 6,701 | 100% | 6,701 | 6,165 |
| 39 | 3 | H 25 | 0.89 | 76,052 | 6,701 | 100% | 6,701 | 5,964 |
| 40 | 4 | H 26 | 0.85 | 76,052 | 6,701 | 100% | 6,701 | 5,696 |
| 41 | 5 | H 27 | 0.82 | 76,052 | 6,701 | 100% | 6,701 | 5,495 |
| 42 | 6 | H 28 | 0.79 | 76,052 | 6,701 | 100% | 6,701 | 5,294 |
| 43 | 7 | H 29 | 0.76 | 76,052 | 6,701 | 100% | 6,701 | 5,092 |
| 44 | 8 | H 30 | 0.73 | 76,052 | 6,701 | 100% | 6,701 | 4,891 |
| 45 | 9 | H 31 | 0.70 | 76,052 | 6,701 | 100% | 6,701 | 4,690 |
| 46 | 10 | H 32 | 0.68 | 76,052 | 6,701 | 100% | 6,701 | 4,556 |
| 47 | 11 | H 33 | 0.65 | 76,052 | 6,701 | 100% | 6,701 | 4,355 |
| 48 | 12 | H 34 | 0.62 | 76,052 | 6,701 | 100% | 6,701 | 4,154 |
| 49 | 13 | H 35 | 0.60 | 76,052 | 6,701 | 100% | 6,701 | 4,020 |
| 50 | 14 | H 36 | 0.58 | 76,052 | 6,701 | 100% | 6,701 | 3,886 |
| 51 | 15 | H 37 | 0.56 | 76,052 | 6,701 | 100% | 6,701 | 3,752 |
| 52 | 16 | H 38 | 0.53 | 76,052 | 6,701 | 100% | 6,701 | 3,551 |
| 53 | 17 | H 39 | 0.51 | 76,052 | 6,701 | 100% | 6,701 | 3,417 |
| 54 | 18 | H 40 | 0.49 | 76,052 | 6,701 | 100% | 6,701 | 3,283 |
| 55 | 19 | H 41 | 0.47 | 76,052 | 6,701 | 100% | 6,701 | 3,149 |
| 56 | 20 | H 42 | 0.46 | 76,052 | 6,701 | 100% | 6,701 | 3,082 |
| 57 | 21 | H 43 | 0.44 | 76,052 | 6,701 | 100% | 6,701 | 2,948 |
| 58 | 22 | H 44 | 0.42 | 76,052 | 6,701 | 100% | 6,701 | 2,814 |
| 59 | 23 | H 45 | 0.41 | 76,052 | 6,701 | 100% | 6,701 | 2,747 |
| 60 | 24 | H 46 | 0.39 | 76,052 | 6,701 | 100% | 6,701 | 2,613 |
| 61 | 25 | H 47 | 0.38 | 76,052 | 6,701 | 100% | 6,701 | 2,546 |
| 62 | 26 | H 48 | 0.36 | 76,052 | 6,701 | 100% | 6,701 | 2,412 |
| 63 | 27 | H 49 | 0.35 | 76,052 | 6,701 | 100% | 6,701 | 2,345 |
| 64 | 28 | H 50 | 0.33 | 76,052 | 6,701 | 100% | 6,701 | 2,211 |
| 65 | 29 | H 51 | 0.32 | 76,052 | 6,701 | 100% | 6,701 | 2,144 |
| 66 | 30 | H 52 | 0.31 | 76,052 | 6,701 | 100% | 6,701 | 2,077 |
| 67 | 31 | H 53 | 0.30 | 76,052 | 6,701 | 100% | 6,701 | 2,010 |
| 68 | 32 | H 54 | 0.29 | 76,052 | 6,701 | 100% | 6,701 | 1,943 |
| 69 | 33 | H 55 | 0.27 | 76,052 | 6,701 | 100% | 6,701 | 1,809 |
| 70 | 34 | H 56 | 0.26 | 76,052 | 6,701 | 100% | 6,701 | 1,742 |
| 71 | 35 | H 57 | 0.25 | 76,052 | 6,701 | 100% | 6,701 | 1,675 |
| 72 | 36 | H 58 | 0.24 | 76,052 | 6,701 | 100% | 6,701 | 1,608 |
| 73 | 37 | H 59 | 0.23 | 76,052 | 6,701 | 100% | 6,701 | 1,541 |
| 74 | 38 | H 60 | 0.23 | 76,052 | 6,701 | 100% | 6,701 | 1,541 |
| 75 | 39 | H 61 | 0.22 | 76,052 | 6,701 | 100% | 6,701 | 1,474 |
| 76 | 40 | H 62 | 0.21 | 76,052 | 6,701 | 100% | 6,701 | 1,407 |
| 77 | 41 | H 63 | 0.20 | 76,052 | 6,701 | 100% | 6,701 | 1,340 |
| 78 | 42 | H 64 | 0.19 | 76,052 | 6,701 | 100% | 6,701 | 1,273 |
| 79 | 43 | H 65 | 0.19 | 76,052 | 6,701 | 100% | 6,701 | 1,273 |
| 80 | 44 | H 66 | 0.18 | 76,052 | 6,701 | 100% | 6,701 | 1,206 |
| 合計(便益額) | | | | | | | | 751,024 |

事 業 名:　水源林造成事業
施行箇所:　九州整備局　昭和50年度契約地

83,629 千円

**3 環境保全便益**
**(1) 炭素固定便益**
**① 樹木固定分**　　**広葉樹**

$$B = \sum_{t=1}^{Y} \frac{V2-V1}{Y\times(1+i)^{t}} \times D \times BEF \times (1+R) \times 0.5 \times \frac{44}{12} \times U$$

| | | | |
|---|---|---|---|
| U: | 二酸化炭素に関する原単位(円/t-CO2) | | 6,046 |
| V1: | 事業を実施しない場合の評価最終年の当該森林の見込蓄積量(m3) | 広葉樹 | 6,144 |
| V2: | 事業を実施する場合の評価最終年の当該森林の見込蓄積量(m3) | 広葉樹 | 12,221 |
| Y: | 評価期間(年) | | 80 |
| D : | 容積密度( t /m 3) | 広葉樹 | 0.570 |
| BEF: | バイオマス拡大係数(地上部バイオマス量/幹バイオマス量) | 樹齢20年以下 広葉樹 | 1.46 |
| | | 樹齢20年超 広葉樹 | 1.35 |
| R : | 地上部に対する地下部の比率( 地下部バイオマス量/ 地上部バイオマス量) | 広葉樹 | 0.26 |
| 0.5: | 植物中の炭素含有率 | | |
| 44/12: | 炭素から二酸化炭素への換算係数 | | |

便益算出表　　(単位:千円)

| 評価期間 | 経過年 | 年度 | 割引係数 ① | V2-V1(m3) 樹種名　広葉樹 | 年効果額 ② | 効果発生割合 ③ | 年発生効果額 ④=②×③ | 現在価値 ⑤=④×① |
|---|---|---|---|---|---|---|---|---|
| 1 | -35 | S50 | 3.95 | 6,077 | 880 | 100% | 880 | 3,478 |
| 2 | -34 | S51 | 3.79 | 6,077 | 880 | 100% | 880 | 3,337 |
| 3 | -33 | S52 | 3.65 | 6,077 | 880 | 100% | 880 | 3,214 |
| 4 | -32 | S53 | 3.51 | 6,077 | 880 | 100% | 880 | 3,091 |
| 5 | -31 | S54 | 3.37 | 6,077 | 880 | 100% | 880 | 2,967 |
| 6 | -30 | S55 | 3.24 | 6,077 | 880 | 100% | 880 | 2,853 |
| 7 | -29 | S56 | 3.12 | 6,077 | 880 | 100% | 880 | 2,747 |
| 8 | -28 | S57 | 3.00 | 6,077 | 880 | 100% | 880 | 2,641 |
| 9 | -27 | S58 | 2.88 | 6,077 | 880 | 100% | 880 | 2,536 |
| 10 | -26 | S59 | 2.77 | 6,077 | 880 | 100% | 880 | 2,439 |
| 11 | -25 | S60 | 2.67 | 6,077 | 880 | 100% | 880 | 2,351 |
| 12 | -24 | S61 | 2.56 | 6,077 | 880 | 100% | 880 | 2,254 |
| 13 | -23 | S62 | 2.46 | 6,077 | 880 | 100% | 880 | 2,166 |
| 14 | -22 | S63 | 2.37 | 6,077 | 880 | 100% | 880 | 2,087 |
| 15 | -21 | H 1 | 2.28 | 6,077 | 880 | 100% | 880 | 2,008 |
| 16 | -20 | H 2 | 2.19 | 6,077 | 880 | 100% | 880 | 1,928 |
| 17 | -19 | H 3 | 2.11 | 6,077 | 880 | 100% | 880 | 1,858 |
| 18 | -18 | H 4 | 2.03 | 6,077 | 880 | 100% | 880 | 1,787 |
| 19 | -17 | H 5 | 1.95 | 6,077 | 880 | 100% | 880 | 1,717 |
| 20 | -16 | H 6 | 1.87 | 6,077 | 880 | 100% | 880 | 1,647 |
| 21 | -15 | H 7 | 1.80 | 6,077 | 815 | 100% | 815 | 1,467 |
| 22 | -14 | H 8 | 1.73 | 6,077 | 815 | 100% | 815 | 1,410 |
| 23 | -13 | H 9 | 1.67 | 6,077 | 815 | 100% | 815 | 1,361 |
| 24 | -12 | H 10 | 1.60 | 6,077 | 815 | 100% | 815 | 1,304 |
| 25 | -11 | H 11 | 1.54 | 6,077 | 815 | 100% | 815 | 1,255 |
| 26 | -10 | H 12 | 1.48 | 6,077 | 815 | 100% | 815 | 1,206 |
| 27 | -9 | H 13 | 1.42 | 6,077 | 815 | 100% | 815 | 1,157 |
| 28 | -8 | H 14 | 1.37 | 6,077 | 815 | 100% | 815 | 1,116 |
| 29 | -7 | H 15 | 1.32 | 6,077 | 815 | 100% | 815 | 1,076 |
| 30 | -6 | H 16 | 1.27 | 6,077 | 815 | 100% | 815 | 1,035 |
| 31 | -5 | H 17 | 1.22 | 6,077 | 815 | 100% | 815 | 994 |
| 32 | -4 | H 18 | 1.17 | 6,077 | 815 | 100% | 815 | 953 |
| 33 | -3 | H 19 | 1.12 | 6,077 | 815 | 100% | 815 | 913 |
| 34 | -2 | H 20 | 1.08 | 6,077 | 815 | 100% | 815 | 880 |
| 35 | -1 | H 21 | 1.04 | 6,077 | 815 | 100% | 815 | 847 |
| 36 | 0 | H 22 | 1.00 | 6,077 | 815 | 100% | 815 | 815 |
| 37 | 1 | H 23 | 0.96 | 6,077 | 815 | 100% | 815 | 782 |
| 38 | 2 | H 24 | 0.92 | 6,077 | 815 | 100% | 815 | 750 |
| 39 | 3 | H 25 | 0.89 | 6,077 | 815 | 100% | 815 | 725 |
| 40 | 4 | H 26 | 0.85 | 6,077 | 815 | 100% | 815 | 693 |
| 41 | 5 | H 27 | 0.82 | 6,077 | 815 | 100% | 815 | 668 |
| 42 | 6 | H 28 | 0.79 | 6,077 | 815 | 100% | 815 | 644 |
| 43 | 7 | H 29 | 0.76 | 6,077 | 815 | 100% | 815 | 619 |
| 44 | 8 | H 30 | 0.73 | 6,077 | 815 | 100% | 815 | 595 |
| 45 | 9 | H 31 | 0.70 | 6,077 | 815 | 100% | 815 | 570 |
| 46 | 10 | H 32 | 0.68 | 6,077 | 815 | 100% | 815 | 554 |
| 47 | 11 | H 33 | 0.65 | 6,077 | 815 | 100% | 815 | 530 |
| 48 | 12 | H 34 | 0.62 | 6,077 | 815 | 100% | 815 | 505 |
| 49 | 13 | H 35 | 0.60 | 6,077 | 815 | 100% | 815 | 489 |
| 50 | 14 | H 36 | 0.58 | 6,077 | 815 | 100% | 815 | 473 |
| 51 | 15 | H 37 | 0.56 | 6,077 | 815 | 100% | 815 | 456 |
| 52 | 16 | H 38 | 0.53 | 6,077 | 815 | 100% | 815 | 432 |
| 53 | 17 | H 39 | 0.51 | 6,077 | 815 | 100% | 815 | 416 |
| 54 | 18 | H 40 | 0.49 | 6,077 | 815 | 100% | 815 | 399 |
| 55 | 19 | H 41 | 0.47 | 6,077 | 815 | 100% | 815 | 383 |
| 56 | 20 | H 42 | 0.46 | 6,077 | 815 | 100% | 815 | 375 |
| 57 | 21 | H 43 | 0.44 | 6,077 | 815 | 100% | 815 | 359 |
| 58 | 22 | H 44 | 0.42 | 6,077 | 815 | 100% | 815 | 342 |
| 59 | 23 | H 45 | 0.41 | 6,077 | 815 | 100% | 815 | 334 |
| 60 | 24 | H 46 | 0.39 | 6,077 | 815 | 100% | 815 | 318 |
| 61 | 25 | H 47 | 0.38 | 6,077 | 815 | 100% | 815 | 310 |
| 62 | 26 | H 48 | 0.36 | 6,077 | 815 | 100% | 815 | 293 |
| 63 | 27 | H 49 | 0.35 | 6,077 | 815 | 100% | 815 | 285 |
| 64 | 28 | H 50 | 0.33 | 6,077 | 815 | 100% | 815 | 269 |
| 65 | 29 | H 51 | 0.32 | 6,077 | 815 | 100% | 815 | 261 |
| 66 | 30 | H 52 | 0.31 | 6,077 | 815 | 100% | 815 | 253 |
| 67 | 31 | H 53 | 0.30 | 6,077 | 815 | 100% | 815 | 244 |
| 68 | 32 | H 54 | 0.29 | 6,077 | 815 | 100% | 815 | 236 |
| 69 | 33 | H 55 | 0.27 | 6,077 | 815 | 100% | 815 | 220 |
| 70 | 34 | H 56 | 0.26 | 6,077 | 815 | 100% | 815 | 212 |
| 71 | 35 | H 57 | 0.25 | 6,077 | 815 | 100% | 815 | 204 |
| 72 | 36 | H 58 | 0.24 | 6,077 | 815 | 100% | 815 | 196 |
| 73 | 37 | H 59 | 0.23 | 6,077 | 815 | 100% | 815 | 187 |
| 74 | 38 | H 60 | 0.23 | 6,077 | 815 | 100% | 815 | 187 |
| 75 | 39 | H 61 | 0.22 | 6,077 | 815 | 100% | 815 | 179 |
| 76 | 40 | H 62 | 0.21 | 6,077 | 815 | 100% | 815 | 171 |
| 77 | 41 | H 63 | 0.20 | 6,077 | 815 | 100% | 815 | 163 |
| 78 | 42 | H 64 | 0.19 | 6,077 | 815 | 100% | 815 | 155 |
| 79 | 43 | H 65 | 0.19 | 6,077 | 815 | 100% | 815 | 155 |
| 80 | 44 | H 66 | 0.18 | 6,077 | 815 | 100% | 815 | 147 |
| 合計(便益額) | | | | | | | | 83,629 |

事 業 名:　水源林造成事業
施行箇所:　九州整備局　昭和50年度契約地

15,558 千円

## 3 環境保全便益
### (1) 炭素固定便益
#### ① 樹木固定分　　前生樹

$$B = \sum_{t=1}^{Y} \frac{V2-V1}{Y\times(1+i)^{t}} \times D \times BEF \times (1+R) \times 0.5 \times \frac{44}{12} \times U$$

| | | | | |
|---|---|---|---|---|
| U: | 二酸化炭素に関する原単位(円/t-CO2) | | | 6,046 |
| V1: | 事業を実施しない場合の評価最終年の当該森林の見込蓄積量(m3) | | 前生樹 | 1,131 |
| V2: | 事業を実施する場合の評価最終年の当該森林の見込蓄積量(m3) | | 前生樹 | 2,261 |
| Y: | 評価期間(年) | | | 80 |
| D : | 容積密度( t /m 3) | | 前生樹 | 0.570 |
| BEF: | バイオマス拡大係数(地上部バイオマス量／幹バイオマス量) | 樹齢20年以下 | 前生樹 | 1.46 |
| | | 樹齢20年超 | 前生樹 | 1.35 |
| R : | 地上部に対する地下部の比率( 地下部バイオマス量／ 地上部バイオマス量) | | 前生樹 | 0.26 |
| 0.5: | 植物中の炭素含有率 | | | |
| 44/12: | 炭素から二酸化炭素への換算係数 | | | |

便益算出表　　(単位:千円)

| 評価期間 | 経過年 | 年度 | 割引係数 ① | V2-V1(m3) 樹種名　前生樹 | 年効果額 ② | 効果発生割合 ③ | 年発生効果額 ④=②×③ | 現在価値 ⑤=④×① |
|---|---|---|---|---|---|---|---|---|
| 1 | -35 | S50 | 3.95 | 1,131 | 164 | 100% | 164 | 647 |
| 2 | -34 | S51 | 3.79 | 1,131 | 164 | 100% | 164 | 621 |
| 3 | -33 | S52 | 3.65 | 1,131 | 164 | 100% | 164 | 598 |
| 4 | -32 | S53 | 3.51 | 1,131 | 164 | 100% | 164 | 575 |
| 5 | -31 | S54 | 3.37 | 1,131 | 164 | 100% | 164 | 552 |
| 6 | -30 | S55 | 3.24 | 1,131 | 164 | 100% | 164 | 531 |
| 7 | -29 | S56 | 3.12 | 1,131 | 164 | 100% | 164 | 511 |
| 8 | -28 | S57 | 3.00 | 1,131 | 164 | 100% | 164 | 491 |
| 9 | -27 | S58 | 2.88 | 1,131 | 164 | 100% | 164 | 472 |
| 10 | -26 | S59 | 2.77 | 1,131 | 164 | 100% | 164 | 454 |
| 11 | -25 | S60 | 2.67 | 1,131 | 164 | 100% | 164 | 437 |
| 12 | -24 | S61 | 2.56 | 1,131 | 164 | 100% | 164 | 419 |
| 13 | -23 | S62 | 2.46 | 1,131 | 164 | 100% | 164 | 403 |
| 14 | -22 | S63 | 2.37 | 1,131 | 164 | 100% | 164 | 388 |
| 15 | -21 | H 1 | 2.28 | 1,131 | 164 | 100% | 164 | 373 |
| 16 | -20 | H 2 | 2.19 | 1,131 | 164 | 100% | 164 | 359 |
| 17 | -19 | H 3 | 2.11 | 1,131 | 164 | 100% | 164 | 346 |
| 18 | -18 | H 4 | 2.03 | 1,131 | 164 | 100% | 164 | 333 |
| 19 | -17 | H 5 | 1.95 | 1,131 | 164 | 100% | 164 | 319 |
| 20 | -16 | H 6 | 1.87 | 1,131 | 164 | 100% | 164 | 306 |
| 21 | -15 | H 7 | 1.80 | 1,131 | 152 | 100% | 152 | 273 |
| 22 | -14 | H 8 | 1.73 | 1,131 | 152 | 100% | 152 | 262 |
| 23 | -13 | H 9 | 1.67 | 1,131 | 152 | 100% | 152 | 253 |
| 24 | -12 | H 10 | 1.60 | 1,131 | 152 | 100% | 152 | 243 |
| 25 | -11 | H 11 | 1.54 | 1,131 | 152 | 100% | 152 | 233 |
| 26 | -10 | H 12 | 1.48 | 1,131 | 152 | 100% | 152 | 224 |
| 27 | -9 | H 13 | 1.42 | 1,131 | 152 | 100% | 152 | 215 |
| 28 | -8 | H 14 | 1.37 | 1,131 | 152 | 100% | 152 | 208 |
| 29 | -7 | H 15 | 1.32 | 1,131 | 152 | 100% | 152 | 200 |
| 30 | -6 | H 16 | 1.27 | 1,131 | 152 | 100% | 152 | 193 |
| 31 | -5 | H 17 | 1.22 | 1,131 | 152 | 100% | 152 | 185 |
| 32 | -4 | H 18 | 1.17 | 1,131 | 152 | 100% | 152 | 177 |
| 33 | -3 | H 19 | 1.12 | 1,131 | 152 | 100% | 152 | 170 |
| 34 | -2 | H 20 | 1.08 | 1,131 | 152 | 100% | 152 | 164 |
| 35 | -1 | H 21 | 1.04 | 1,131 | 152 | 100% | 152 | 158 |
| 36 | 0 | H 22 | 1.00 | 1,131 | 152 | 100% | 152 | 152 |
| 37 | 1 | H 23 | 0.96 | 1,131 | 152 | 100% | 152 | 146 |
| 38 | 2 | H 24 | 0.92 | 1,131 | 152 | 100% | 152 | 139 |
| 39 | 3 | H 25 | 0.89 | 1,131 | 152 | 100% | 152 | 135 |
| 40 | 4 | H 26 | 0.85 | 1,131 | 152 | 100% | 152 | 129 |
| 41 | 5 | H 27 | 0.82 | 1,131 | 152 | 100% | 152 | 124 |
| 42 | 6 | H 28 | 0.79 | 1,131 | 152 | 100% | 152 | 120 |
| 43 | 7 | H 29 | 0.76 | 1,131 | 152 | 100% | 152 | 115 |
| 44 | 8 | H 30 | 0.73 | 1,131 | 152 | 100% | 152 | 111 |
| 45 | 9 | H 31 | 0.70 | 1,131 | 152 | 100% | 152 | 106 |
| 46 | 10 | H 32 | 0.68 | 1,131 | 152 | 100% | 152 | 103 |
| 47 | 11 | H 33 | 0.65 | 1,131 | 152 | 100% | 152 | 99 |
| 48 | 12 | H 34 | 0.62 | 1,131 | 152 | 100% | 152 | 94 |
| 49 | 13 | H 35 | 0.60 | 1,131 | 152 | 100% | 152 | 91 |
| 50 | 14 | H 36 | 0.58 | 1,131 | 152 | 100% | 152 | 88 |
| 51 | 15 | H 37 | 0.56 | 1,131 | 152 | 100% | 152 | 85 |
| 52 | 16 | H 38 | 0.53 | 1,131 | 152 | 100% | 152 | 80 |
| 53 | 17 | H 39 | 0.51 | 1,131 | 152 | 100% | 152 | 77 |
| 54 | 18 | H 40 | 0.49 | 1,131 | 152 | 100% | 152 | 74 |
| 55 | 19 | H 41 | 0.47 | 1,131 | 152 | 100% | 152 | 71 |
| 56 | 20 | H 42 | 0.46 | 1,131 | 152 | 100% | 152 | 70 |
| 57 | 21 | H 43 | 0.44 | 1,131 | 152 | 100% | 152 | 67 |
| 58 | 22 | H 44 | 0.42 | 1,131 | 152 | 100% | 152 | 64 |
| 59 | 23 | H 45 | 0.41 | 1,131 | 152 | 100% | 152 | 62 |
| 60 | 24 | H 46 | 0.39 | 1,131 | 152 | 100% | 152 | 59 |
| 61 | 25 | H 47 | 0.38 | 1,131 | 152 | 100% | 152 | 58 |
| 62 | 26 | H 48 | 0.36 | 1,131 | 152 | 100% | 152 | 55 |
| 63 | 27 | H 49 | 0.35 | 1,131 | 152 | 100% | 152 | 53 |
| 64 | 28 | H 50 | 0.33 | 1,131 | 152 | 100% | 152 | 50 |
| 65 | 29 | H 51 | 0.32 | 1,131 | 152 | 100% | 152 | 49 |
| 66 | 30 | H 52 | 0.31 | 1,131 | 152 | 100% | 152 | 47 |
| 67 | 31 | H 53 | 0.30 | 1,131 | 152 | 100% | 152 | 45 |
| 68 | 32 | H 54 | 0.29 | 1,131 | 152 | 100% | 152 | 44 |
| 69 | 33 | H 55 | 0.27 | 1,131 | 152 | 100% | 152 | 41 |
| 70 | 34 | H 56 | 0.26 | 1,131 | 152 | 100% | 152 | 39 |
| 71 | 35 | H 57 | 0.25 | 1,131 | 152 | 100% | 152 | 38 |
| 72 | 36 | H 58 | 0.24 | 1,131 | 152 | 100% | 152 | 36 |
| 73 | 37 | H 59 | 0.23 | 1,131 | 152 | 100% | 152 | 35 |
| 74 | 38 | H 60 | 0.23 | 1,131 | 152 | 100% | 152 | 35 |
| 75 | 39 | H 61 | 0.22 | 1,131 | 152 | 100% | 152 | 33 |
| 76 | 40 | H 62 | 0.21 | 1,131 | 152 | 100% | 152 | 32 |
| 77 | 41 | H 63 | 0.20 | 1,131 | 152 | 100% | 152 | 30 |
| 78 | 42 | H 64 | 0.19 | 1,131 | 152 | 100% | 152 | 29 |
| 79 | 43 | H 65 | 0.19 | 1,131 | 152 | 100% | 152 | 29 |
| 80 | 44 | H 66 | 0.18 | 1,131 | 152 | 100% | 152 | 27 |
| 合計(便益額) | | | | | | | | 15,558 |

事 業 名:　水源林造成事業
施行箇所:　九州整備局　昭和50年度契約地

331,644 千円

**3 環境保全便益**
**(1) 炭素固定便益**
**② 森林土壌蓄積分**

$$Bd\text{-}1 = \sum_{t=1}^{Y} \frac{1}{(1+i)^{t}} \times (C1-C2) \times A \times 0.3 \times \frac{44}{12} \times U$$

$$C1 = \frac{s \times e1}{30} \qquad C2 = \frac{s \times e2}{30}$$

| | | |
|---|---|---|
| U: | 二酸化炭素に関する原単位(円/t-CO2) | 6,046 |
| C1: | 事業を実施しない場合の年間流出土砂量に含まれる炭素量(t-C/ha) | 0.566 |
| C2: | 事業を実施した場合の年間流出土砂量に含まれる炭素量(t-C/ha) | 0.037 |
| Y: | ①浸食深が30cmに達するまでの年数(T)　又は<br>②評価期間内に浸食深が30cmに達しない場合は評価期間(年) | 80 |
| A : | 事業対象区域面積(ha) | 960 |
| s: | 単位面積あたりの土壌平均炭素蓄積量(t-C/h) | 84.950 |
| 44/12: | 炭素から二酸化炭素への換算係数 | |
| e1: | 事業を実施しない場合の侵食深(cm/年) | 0.200 |
| e2: | 事業を実施した場合の侵食深(cm/年) | 0.013 |
| 30: | 土壌炭素の測定深度(cm) | |
| 0.3: | 流出土壌排出炭素係数 | |

便益算出表　　(単位:千円)

| 評価期間 | 経過年 | 年度 | 割引係数<br>① | 事業対象区域面積(ha) | 年効果額<br>② | 効果発生割合<br>③ | 年発生効果額<br>④=②×③ | 現在価値<br>⑤=④×① |
|---|---|---|---|---|---|---|---|---|
| 1 | -35 | S50 | 3.95 | 960 | 3,379 | 100% | 3,379 | 13,348 |
| 2 | -34 | S51 | 3.79 | 960 | 3,379 | 100% | 3,379 | 12,808 |
| 3 | -33 | S52 | 3.65 | 960 | 3,379 | 100% | 3,379 | 12,334 |
| 4 | -32 | S53 | 3.51 | 960 | 3,379 | 100% | 3,379 | 11,861 |
| 5 | -31 | S54 | 3.37 | 960 | 3,379 | 100% | 3,379 | 11,388 |
| 6 | -30 | S55 | 3.24 | 960 | 3,379 | 100% | 3,379 | 10,949 |
| 7 | -29 | S56 | 3.12 | 960 | 3,379 | 100% | 3,379 | 10,543 |
| 8 | -28 | S57 | 3.00 | 960 | 3,379 | 100% | 3,379 | 10,138 |
| 9 | -27 | S58 | 2.88 | 960 | 3,379 | 100% | 3,379 | 9,732 |
| 10 | -26 | S59 | 2.77 | 960 | 3,379 | 100% | 3,379 | 9,361 |
| 11 | -25 | S60 | 2.67 | 960 | 3,379 | 100% | 3,379 | 9,023 |
| 12 | -24 | S61 | 2.56 | 960 | 3,379 | 100% | 3,379 | 8,651 |
| 13 | -23 | S62 | 2.46 | 960 | 3,379 | 100% | 3,379 | 8,313 |
| 14 | -22 | S63 | 2.37 | 960 | 3,379 | 100% | 3,379 | 8,009 |
| 15 | -21 | H 1 | 2.28 | 960 | 3,379 | 100% | 3,379 | 7,705 |
| 16 | -20 | H 2 | 2.19 | 960 | 3,379 | 100% | 3,379 | 7,401 |
| 17 | -19 | H 3 | 2.11 | 960 | 3,379 | 100% | 3,379 | 7,130 |
| 18 | -18 | H 4 | 2.03 | 960 | 3,379 | 100% | 3,379 | 6,860 |
| 19 | -17 | H 5 | 1.95 | 960 | 3,379 | 100% | 3,379 | 6,590 |
| 20 | -16 | H 6 | 1.87 | 960 | 3,379 | 100% | 3,379 | 6,319 |
| 21 | -15 | H 7 | 1.80 | 960 | 3,379 | 100% | 3,379 | 6,083 |
| 22 | -14 | H 8 | 1.73 | 960 | 3,379 | 100% | 3,379 | 5,846 |
| 23 | -13 | H 9 | 1.67 | 960 | 3,379 | 100% | 3,379 | 5,643 |
| 24 | -12 | H 10 | 1.60 | 960 | 3,379 | 100% | 3,379 | 5,407 |
| 25 | -11 | H 11 | 1.54 | 960 | 3,379 | 100% | 3,379 | 5,204 |
| 26 | -10 | H 12 | 1.48 | 960 | 3,379 | 100% | 3,379 | 5,001 |
| 27 | -9 | H 13 | 1.42 | 960 | 3,379 | 100% | 3,379 | 4,799 |
| 28 | -8 | H 14 | 1.37 | 960 | 3,379 | 100% | 3,379 | 4,630 |
| 29 | -7 | H 15 | 1.32 | 960 | 3,379 | 100% | 3,379 | 4,461 |
| 30 | -6 | H 16 | 1.27 | 960 | 3,379 | 100% | 3,379 | 4,292 |
| 31 | -5 | H 17 | 1.22 | 960 | 3,379 | 100% | 3,379 | 4,123 |
| 32 | -4 | H 18 | 1.17 | 960 | 3,379 | 100% | 3,379 | 3,954 |
| 33 | -3 | H 19 | 1.12 | 960 | 3,379 | 100% | 3,379 | 3,785 |
| 34 | -2 | H 20 | 1.08 | 960 | 3,379 | 100% | 3,379 | 3,650 |
| 35 | -1 | H 21 | 1.04 | 960 | 3,379 | 100% | 3,379 | 3,514 |
| 36 | 0 | H 22 | 1.00 | 960 | 3,379 | 100% | 3,379 | 3,379 |
| 37 | 1 | H 23 | 0.96 | 960 | 3,379 | 100% | 3,379 | 3,244 |
| 38 | 2 | H 24 | 0.92 | 960 | 3,379 | 100% | 3,379 | 3,109 |
| 39 | 3 | H 25 | 0.89 | 960 | 3,379 | 100% | 3,379 | 3,008 |
| 40 | 4 | H 26 | 0.85 | 960 | 3,379 | 100% | 3,379 | 2,872 |
| 41 | 5 | H 27 | 0.82 | 960 | 3,379 | 100% | 3,379 | 2,771 |
| 42 | 6 | H 28 | 0.79 | 960 | 3,379 | 100% | 3,379 | 2,670 |
| 43 | 7 | H 29 | 0.76 | 960 | 3,379 | 100% | 3,379 | 2,568 |
| 44 | 8 | H 30 | 0.73 | 960 | 3,379 | 100% | 3,379 | 2,467 |
| 45 | 9 | H 31 | 0.70 | 960 | 3,379 | 100% | 3,379 | 2,366 |
| 46 | 10 | H 32 | 0.68 | 960 | 3,379 | 100% | 3,379 | 2,298 |
| 47 | 11 | H 33 | 0.65 | 960 | 3,379 | 100% | 3,379 | 2,197 |
| 48 | 12 | H 34 | 0.62 | 960 | 3,379 | 100% | 3,379 | 2,095 |
| 49 | 13 | H 35 | 0.60 | 960 | 3,379 | 100% | 3,379 | 2,028 |
| 50 | 14 | H 36 | 0.58 | 960 | 3,379 | 100% | 3,379 | 1,960 |
| 51 | 15 | H 37 | 0.56 | 960 | 3,379 | 100% | 3,379 | 1,892 |
| 52 | 16 | H 38 | 0.53 | 960 | 3,379 | 100% | 3,379 | 1,791 |
| 53 | 17 | H 39 | 0.51 | 960 | 3,379 | 100% | 3,379 | 1,723 |
| 54 | 18 | H 40 | 0.49 | 960 | 3,379 | 100% | 3,379 | 1,656 |
| 55 | 19 | H 41 | 0.47 | 960 | 3,379 | 100% | 3,379 | 1,588 |
| 56 | 20 | H 42 | 0.46 | 960 | 3,379 | 100% | 3,379 | 1,554 |
| 57 | 21 | H 43 | 0.44 | 960 | 3,379 | 100% | 3,379 | 1,487 |
| 58 | 22 | H 44 | 0.42 | 960 | 3,379 | 100% | 3,379 | 1,419 |
| 59 | 23 | H 45 | 0.41 | 960 | 3,379 | 100% | 3,379 | 1,386 |
| 60 | 24 | H 46 | 0.39 | 960 | 3,379 | 100% | 3,379 | 1,318 |
| 61 | 25 | H 47 | 0.38 | 960 | 3,379 | 100% | 3,379 | 1,284 |
| 62 | 26 | H 48 | 0.36 | 960 | 3,379 | 100% | 3,379 | 1,217 |
| 63 | 27 | H 49 | 0.35 | 960 | 3,379 | 100% | 3,379 | 1,183 |
| 64 | 28 | H 50 | 0.33 | 960 | 3,379 | 100% | 3,379 | 1,115 |
| 65 | 29 | H 51 | 0.32 | 960 | 3,379 | 100% | 3,379 | 1,081 |
| 66 | 30 | H 52 | 0.31 | 960 | 3,379 | 100% | 3,379 | 1,048 |
| 67 | 31 | H 53 | 0.30 | 960 | 3,379 | 100% | 3,379 | 1,014 |
| 68 | 32 | H 54 | 0.29 | 960 | 3,379 | 100% | 3,379 | 980 |
| 69 | 33 | H 55 | 0.27 | 960 | 3,379 | 100% | 3,379 | 912 |
| 70 | 34 | H 56 | 0.26 | 960 | 3,379 | 100% | 3,379 | 879 |
| 71 | 35 | H 57 | 0.25 | 960 | 3,379 | 100% | 3,379 | 845 |
| 72 | 36 | H 58 | 0.24 | 960 | 3,379 | 100% | 3,379 | 811 |
| 73 | 37 | H 59 | 0.23 | 960 | 3,379 | 100% | 3,379 | 777 |
| 74 | 38 | H 60 | 0.23 | 960 | 3,379 | 100% | 3,379 | 777 |
| 75 | 39 | H 61 | 0.22 | 960 | 3,379 | 100% | 3,379 | 743 |
| 76 | 40 | H 62 | 0.21 | 960 | 3,379 | 100% | 3,379 | 710 |
| 77 | 41 | H 63 | 0.20 | 960 | 3,379 | 100% | 3,379 | 676 |
| 78 | 42 | H 64 | 0.19 | 960 | 3,379 | 100% | 3,379 | 642 |
| 79 | 43 | H 65 | 0.19 | 960 | 3,379 | 100% | 3,379 | 642 |
| 80 | 44 | H 66 | 0.18 | 960 | 3,379 | 100% | 3,379 | 608 |
| 合計(便益額) | | | | | | | | 331,644 |

事 業 名:　水源林造成事業
施行箇所:　九州整備局　昭和50年度契約地

**4 木材生産等便益** 100,393 千円

**（3） 木材生産確保・増進便益**

**① 森林整備分　　スギ**

$$B = \sum_{t=1}^{Y} \frac{V_t \times @}{(1+i)^t}$$

Y:　評価期間（年）　80

Vt:　t 年後における伐採材積（m3）　254,659

@:　山元立木価格（円/m3）　2,190

便益算出表　（単位：千円）

| 評価期間 | 経過年 | 年度 | 割引係数 ① | 伐採材積（m3） | 年効果額 ② | 効果発生割合 ③ | 年発生効果額 ④＝②×③ | 現在価値 ⑤＝④×① |
|---|---|---|---|---|---|---|---|---|
| 1 | −35 | S50 | 3.95 | | | | 0 | 0 |
| 2 | −34 | S51 | 3.79 | | | | 0 | 0 |
| 3 | −33 | S52 | 3.65 | | | | 0 | 0 |
| 4 | −32 | S53 | 3.51 | | | | 0 | 0 |
| 5 | −31 | S54 | 3.37 | | | | 0 | 0 |
| 6 | −30 | S55 | 3.24 | | | | 0 | 0 |
| 7 | −29 | S56 | 3.12 | | | | 0 | 0 |
| 8 | −28 | S57 | 3.00 | | | | 0 | 0 |
| 9 | −27 | S58 | 2.88 | | | | 0 | 0 |
| 10 | −26 | S59 | 2.77 | | | | 0 | 0 |
| 11 | −25 | S60 | 2.67 | | | | 0 | 0 |
| 12 | −24 | S61 | 2.56 | | | | 0 | 0 |
| 13 | −23 | S62 | 2.46 | | | | 0 | 0 |
| 14 | −22 | S63 | 2.37 | | | | 0 | 0 |
| 15 | −21 | H 1 | 2.28 | | | | 0 | 0 |
| 16 | −20 | H 2 | 2.19 | | | | 0 | 0 |
| 17 | −19 | H 3 | 2.11 | | | | 0 | 0 |
| 18 | −18 | H 4 | 2.03 | | | | 0 | 0 |
| 19 | −17 | H 5 | 1.95 | | | | 0 | 0 |
| 20 | −16 | H 6 | 1.87 | | | | 0 | 0 |
| 21 | −15 | H 7 | 1.80 | | | | 0 | 0 |
| 22 | −14 | H 8 | 1.73 | | | | 0 | 0 |
| 23 | −13 | H 9 | 1.67 | | | | 0 | 0 |
| 24 | −12 | H 10 | 1.60 | | | | 0 | 0 |
| 25 | −11 | H 11 | 1.54 | | | | 0 | 0 |
| 26 | −10 | H 12 | 1.48 | | | | 0 | 0 |
| 27 | −9 | H 13 | 1.42 | | | | 0 | 0 |
| 28 | −8 | H 14 | 1.37 | | | | 0 | 0 |
| 29 | −7 | H 15 | 1.32 | | | | 0 | 0 |
| 30 | −6 | H 16 | 1.27 | | | | 0 | 0 |
| 31 | −5 | H 17 | 1.22 | | | | 0 | 0 |
| 32 | −4 | H 18 | 1.17 | | | | 0 | 0 |
| 33 | −3 | H 19 | 1.12 | | | | 0 | 0 |
| 34 | −2 | H 20 | 1.08 | | | | 0 | 0 |
| 35 | −1 | H 21 | 1.04 | | | | 0 | 0 |
| 36 | 0 | H 22 | 1.00 | | | | 0 | 0 |
| 37 | 1 | H 23 | 0.96 | | | | 0 | 0 |
| 38 | 2 | H 24 | 0.92 | | | | 0 | 0 |
| 39 | 3 | H 25 | 0.89 | | | | 0 | 0 |
| 40 | 4 | H 26 | 0.85 | | | | 0 | 0 |
| 41 | 5 | H 27 | 0.82 | | | | 0 | 0 |
| 42 | 6 | H 28 | 0.79 | | | | 0 | 0 |
| 43 | 7 | H 29 | 0.76 | | | | 0 | 0 |
| 44 | 8 | H 30 | 0.73 | | | | 0 | 0 |
| 45 | 9 | H 31 | 0.70 | | | | 0 | 0 |
| 46 | 10 | H 32 | 0.68 | | | | 0 | 0 |
| 47 | 11 | H 33 | 0.65 | | | | 0 | 0 |
| 48 | 12 | H 34 | 0.62 | | | | 0 | 0 |
| 49 | 13 | H 35 | 0.60 | | | | 0 | 0 |
| 50 | 14 | H 36 | 0.58 | | | | 0 | 0 |
| 51 | 15 | H 37 | 0.56 | | | | 0 | 0 |
| 52 | 16 | H 38 | 0.53 | | | | 0 | 0 |
| 53 | 17 | H 39 | 0.51 | | | | 0 | 0 |
| 54 | 18 | H 40 | 0.49 | | | | 0 | 0 |
| 55 | 19 | H 41 | 0.47 | | | | 0 | 0 |
| 56 | 20 | H 42 | 0.46 | | | | 0 | 0 |
| 57 | 21 | H 43 | 0.44 | | | | 0 | 0 |
| 58 | 22 | H 44 | 0.42 | | | | 0 | 0 |
| 59 | 23 | H 45 | 0.41 | | | | 0 | 0 |
| 60 | 24 | H 46 | 0.39 | | | | 0 | 0 |
| 61 | 25 | H 47 | 0.38 | | | | 0 | 0 |
| 62 | 26 | H 48 | 0.36 | | | | 0 | 0 |
| 63 | 27 | H 49 | 0.35 | | | | 0 | 0 |
| 64 | 28 | H 50 | 0.33 | | | | 0 | 0 |
| 65 | 29 | H 51 | 0.32 | | | | 0 | 0 |
| 66 | 30 | H 52 | 0.31 | | | | 0 | 0 |
| 67 | 31 | H 53 | 0.30 | | | | 0 | 0 |
| 68 | 32 | H 54 | 0.29 | | | | 0 | 0 |
| 69 | 33 | H 55 | 0.27 | | | | 0 | 0 |
| 70 | 34 | H 56 | 0.26 | | | | 0 | 0 |
| 71 | 35 | H 57 | 0.25 | | | | 0 | 0 |
| 72 | 36 | H 58 | 0.24 | | | | 0 | 0 |
| 73 | 37 | H 59 | 0.23 | | | | 0 | 0 |
| 74 | 38 | H 60 | 0.23 | | | | 0 | 0 |
| 75 | 39 | H 61 | 0.22 | | | | 0 | 0 |
| 76 | 40 | H 62 | 0.21 | | | | 0 | 0 |
| 77 | 41 | H 63 | 0.20 | | | | 0 | 0 |
| 78 | 42 | H 64 | 0.19 | | | | 0 | 0 |
| 79 | 43 | H 65 | 0.19 | | | | 0 | 0 |
| 80 | 44 | H 66 | 0.18 | 254,659 | 557,739 | 100% | 557,739 | 100,393 |
| 合計（便益額） | | | | | | | | 100,393 |

事 業 名:　水源林造成事業
施行箇所:　九州整備局　昭和50年度契約地

**4 木材生産等便益** 124,188 千円

**（3） 木材生産確保・増進便益**

**① 森林整備分　ヒノキ**

$$B = \sum_{t=1}^{Y} \frac{V_t \times @}{(1+i)^t}$$

Y:　評価期間（年）　80

Vt:　t 年後における伐採材積（m3）　114,271

@:　山元立木価格（円/m3）　6,038

便益算出表　（単位：千円）

| 評価期間 | 経過年 | 年度 | 割引係数 ① | 伐採材積（m3） | 年効果額 ② | 効果発生割合 ③ | 年発生効果額 ④＝②×③ | 現在価値 ⑤＝④×① |
|---|---|---|---|---|---|---|---|---|
| 1 | −35 | S50 | 3.95 | | | | 0 | 0 |
| 2 | −34 | S51 | 3.79 | | | | 0 | 0 |
| 3 | −33 | S52 | 3.65 | | | | 0 | 0 |
| 4 | −32 | S53 | 3.51 | | | | 0 | 0 |
| 5 | −31 | S54 | 3.37 | | | | 0 | 0 |
| 6 | −30 | S55 | 3.24 | | | | 0 | 0 |
| 7 | −29 | S56 | 3.12 | | | | 0 | 0 |
| 8 | −28 | S57 | 3.00 | | | | 0 | 0 |
| 9 | −27 | S58 | 2.88 | | | | 0 | 0 |
| 10 | −26 | S59 | 2.77 | | | | 0 | 0 |
| 11 | −25 | S60 | 2.67 | | | | 0 | 0 |
| 12 | −24 | S61 | 2.56 | | | | 0 | 0 |
| 13 | −23 | S62 | 2.46 | | | | 0 | 0 |
| 14 | −22 | S63 | 2.37 | | | | 0 | 0 |
| 15 | −21 | H 1 | 2.28 | | | | 0 | 0 |
| 16 | −20 | H 2 | 2.19 | | | | 0 | 0 |
| 17 | −19 | H 3 | 2.11 | | | | 0 | 0 |
| 18 | −18 | H 4 | 2.03 | | | | 0 | 0 |
| 19 | −17 | H 5 | 1.95 | | | | 0 | 0 |
| 20 | −16 | H 6 | 1.87 | | | | 0 | 0 |
| 21 | −15 | H 7 | 1.80 | | | | 0 | 0 |
| 22 | −14 | H 8 | 1.73 | | | | 0 | 0 |
| 23 | −13 | H 9 | 1.67 | | | | 0 | 0 |
| 24 | −12 | H 10 | 1.60 | | | | 0 | 0 |
| 25 | −11 | H 11 | 1.54 | | | | 0 | 0 |
| 26 | −10 | H 12 | 1.48 | | | | 0 | 0 |
| 27 | −9 | H 13 | 1.42 | | | | 0 | 0 |
| 28 | −8 | H 14 | 1.37 | | | | 0 | 0 |
| 29 | −7 | H 15 | 1.32 | | | | 0 | 0 |
| 30 | −6 | H 16 | 1.27 | | | | 0 | 0 |
| 31 | −5 | H 17 | 1.22 | | | | 0 | 0 |
| 32 | −4 | H 18 | 1.17 | | | | 0 | 0 |
| 33 | −3 | H 19 | 1.12 | | | | 0 | 0 |
| 34 | −2 | H 20 | 1.08 | | | | 0 | 0 |
| 35 | −1 | H 21 | 1.04 | | | | 0 | 0 |
| 36 | 0 | H 22 | 1.00 | | | | 0 | 0 |
| 37 | 1 | H 23 | 0.96 | | | | 0 | 0 |
| 38 | 2 | H 24 | 0.92 | | | | 0 | 0 |
| 39 | 3 | H 25 | 0.89 | | | | 0 | 0 |
| 40 | 4 | H 26 | 0.85 | | | | 0 | 0 |
| 41 | 5 | H 27 | 0.82 | | | | 0 | 0 |
| 42 | 6 | H 28 | 0.79 | | | | 0 | 0 |
| 43 | 7 | H 29 | 0.76 | | | | 0 | 0 |
| 44 | 8 | H 30 | 0.73 | | | | 0 | 0 |
| 45 | 9 | H 31 | 0.70 | | | | 0 | 0 |
| 46 | 10 | H 32 | 0.68 | | | | 0 | 0 |
| 47 | 11 | H 33 | 0.65 | | | | 0 | 0 |
| 48 | 12 | H 34 | 0.62 | | | | 0 | 0 |
| 49 | 13 | H 35 | 0.60 | | | | 0 | 0 |
| 50 | 14 | H 36 | 0.58 | | | | 0 | 0 |
| 51 | 15 | H 37 | 0.56 | | | | 0 | 0 |
| 52 | 16 | H 38 | 0.53 | | | | 0 | 0 |
| 53 | 17 | H 39 | 0.51 | | | | 0 | 0 |
| 54 | 18 | H 40 | 0.49 | | | | 0 | 0 |
| 55 | 19 | H 41 | 0.47 | | | | 0 | 0 |
| 56 | 20 | H 42 | 0.46 | | | | 0 | 0 |
| 57 | 21 | H 43 | 0.44 | | | | 0 | 0 |
| 58 | 22 | H 44 | 0.42 | | | | 0 | 0 |
| 59 | 23 | H 45 | 0.41 | | | | 0 | 0 |
| 60 | 24 | H 46 | 0.39 | | | | 0 | 0 |
| 61 | 25 | H 47 | 0.38 | | | | 0 | 0 |
| 62 | 26 | H 48 | 0.36 | | | | 0 | 0 |
| 63 | 27 | H 49 | 0.35 | | | | 0 | 0 |
| 64 | 28 | H 50 | 0.33 | | | | 0 | 0 |
| 65 | 29 | H 51 | 0.32 | | | | 0 | 0 |
| 66 | 30 | H 52 | 0.31 | | | | 0 | 0 |
| 67 | 31 | H 53 | 0.30 | | | | 0 | 0 |
| 68 | 32 | H 54 | 0.29 | | | | 0 | 0 |
| 69 | 33 | H 55 | 0.27 | | | | 0 | 0 |
| 70 | 34 | H 56 | 0.26 | | | | 0 | 0 |
| 71 | 35 | H 57 | 0.25 | | | | 0 | 0 |
| 72 | 36 | H 58 | 0.24 | | | | 0 | 0 |
| 73 | 37 | H 59 | 0.23 | | | | 0 | 0 |
| 74 | 38 | H 60 | 0.23 | | | | 0 | 0 |
| 75 | 39 | H 61 | 0.22 | | | | 0 | 0 |
| 76 | 40 | H 62 | 0.21 | | | | 0 | 0 |
| 77 | 41 | H 63 | 0.20 | | | | 0 | 0 |
| 78 | 42 | H 64 | 0.19 | | | | 0 | 0 |
| 79 | 43 | H 65 | 0.19 | | | | 0 | 0 |
| 80 | 44 | H 66 | 0.18 | 114,271 | 689,934 | 100% | 689,934 | 124,188 |
| 合計（便益額） | | | | | | | | 124,188 |