

様式2

事業費集計表

事業名:緑資源幹線林道事業

都道府県名:鳥取・島根県

施工箇所:日野・金城線

(単位:千円)

| 年度 | 事業費 | | | 年度 | 事業費 | | |
|----|-----------|--------|-----------|----|-------|--------|------------|
| 48 | 193,010 | × 4.27 | 824,153 | 21 | 7,601 | × 1.04 | 7,905 |
| 49 | 282,850 | × 4.10 | 1,159,684 | 22 | 7,601 | × 1.00 | 7,601 |
| 50 | 328,366 | × 3.95 | 1,297,045 | 23 | 7,601 | × 0.96 | 7,297 |
| 51 | 344,121 | × 3.79 | 1,304,219 | 24 | 7,601 | × 0.92 | 6,993 |
| 52 | 645,337 | × 3.65 | 2,355,482 | 25 | 7,601 | × 0.89 | 6,765 |
| 53 | 571,837 | × 3.51 | 2,007,150 | 26 | 7,601 | × 0.85 | 6,461 |
| 54 | 694,087 | × 3.37 | 2,339,073 | 27 | 7,601 | × 0.82 | 6,233 |
| 55 | 698,381 | × 3.24 | 2,262,753 | 28 | 7,601 | × 0.79 | 6,005 |
| 56 | 662,920 | × 3.12 | 2,068,311 | 29 | 7,601 | × 0.76 | 5,777 |
| 57 | 642,376 | × 3.00 | 1,927,128 | 30 | 7,601 | × 0.73 | 5,549 |
| 58 | 582,021 | × 2.88 | 1,676,220 | 31 | 7,601 | × 0.70 | 5,321 |
| 59 | 652,901 | × 2.77 | 1,808,535 | 32 | 7,601 | × 0.68 | 5,169 |
| 60 | 741,716 | × 2.67 | 1,980,383 | 33 | 7,601 | × 0.65 | 4,941 |
| 61 | 861,423 | × 2.56 | 2,205,242 | 34 | 7,601 | × 0.62 | 4,713 |
| 62 | 599,803 | × 2.46 | 1,475,515 | 35 | 7,601 | × 0.60 | 4,561 |
| 63 | 702,775 | × 2.37 | 1,665,576 | 36 | 6,877 | × 0.58 | 3,988 |
| 1 | 841,723 | × 2.28 | 1,919,128 | 37 | 6,877 | × 0.56 | 3,851 |
| 2 | 969,990 | × 2.19 | 2,124,277 | 38 | 5,962 | × 0.53 | 3,160 |
| 3 | 983,386 | × 2.11 | 2,074,944 | 39 | 5,962 | × 0.51 | 3,041 |
| 4 | 1,362,645 | × 2.03 | 2,766,170 | 40 | 4,882 | × 0.49 | 2,392 |
| 5 | 1,521,289 | × 1.95 | 2,966,514 | 41 | 4,882 | × 0.47 | 2,295 |
| 6 | 1,153,446 | × 1.87 | 2,156,945 | 42 | 4,582 | × 0.46 | 2,108 |
| 7 | 1,132,464 | × 1.80 | 2,038,435 | 43 | 4,582 | × 0.44 | 2,016 |
| 8 | 1,343,159 | × 1.73 | 2,323,665 | 44 | 4,582 | × 0.42 | 1,924 |
| 9 | 1,637,211 | × 1.67 | 2,734,142 | 45 | 3,731 | × 0.41 | 1,530 |
| 10 | 2,785,149 | × 1.60 | 4,456,238 | 46 | 3,731 | × 0.39 | 1,455 |
| 11 | 2,192,722 | × 1.54 | 3,376,792 | 47 | 3,731 | × 0.38 | 1,418 |
| 12 | 1,720,668 | × 1.48 | 2,546,589 | 48 | 2,573 | × 0.36 | 926 |
| 13 | 1,428,998 | × 1.42 | 2,029,177 | 49 | 2,573 | × 0.35 | 901 |
| 14 | 945,812 | × 1.37 | 1,295,762 | 50 | 2,573 | × 0.33 | 849 |
| 15 | 438,721 | × 1.32 | 579,112 | 51 | 2,573 | × 0.32 | 823 |
| 16 | 7,601 | × 1.27 | 9,653 | 52 | 2,573 | × 0.31 | 798 |
| 17 | 7,601 | × 1.22 | 9,273 | 53 | 1,984 | × 0.30 | 595 |
| 18 | 7,601 | × 1.17 | 8,893 | 54 | 1,984 | × 0.29 | 575 |
| 19 | 7,601 | × 1.12 | 8,513 | 55 | 470 | × 0.27 | 127 |
| 20 | 7,601 | × 1.08 | 8,209 | 合計 | | | 63,910,547 |

| | | |
|----------------|---------------|-----------------------------------------------|
| 事業実施計画期間事業費: | 29,661,307 千円 | 総費用(C) = 29,560,846 ÷ 29,560,846 × 63,910,547 |
| 事業実施計画期間維持管理費: | 100,461 千円 | 内維持管理費 = 29,560,846 ÷ 29,560,846 × 355,936 |
| 総事業費(維持管理費除く): | 29,560,846 千円 | |
| 全体計画総事業費: | 29,560,846 千円 | C= 63,910,547 千円 355,936 千円 |

4 木材生産等便益
(1)木材生産経費縮減便益

102,311 千円

$$B = \sum_{t=1}^T \frac{t \times (C_o - C_T) \times V_t}{T \times (1 + i)^t} + \sum_{t=T+1}^Y \frac{(C_o - C_T) \times V_t}{(1 + i)^t}$$

| | | |
|-----|------------------------------|--------------------|
| T: | 整備期間(年) | 31 |
| Y: | 評価期間(年) | 71 |
| Co: | 整備前の伐採・搬出等経費(円/m3) | 5,448 |
| CT: | 整備後の伐採・搬出等経費(円/m3) | 1,667 ~ 1,840 |
| Vt: | 路網整備前からの利用区域のt年後における伐採材積(m3) | 326.30 ~ 36,279.80 |

便益算出表

(単位:千円)

| 評価期間 | 経過年 | 年度 | 割引係数 | 伐採材積(m3) | 年効果額 | 効果発生割合 | 年発生効果額 = x | 現在価値 = x |
|---------|-----|----|------|----------|--------|----------|---------------|-------------|
| 1 | | 48 | 4.27 | 13,823.5 | 0 | 0% ~ 30% | 0 | 0 |
| 2 | | 49 | 4.10 | 13,823.5 | 0 | 0% ~ 30% | 0 | 0 |
| 3 | | 50 | 3.95 | 13,673.6 | 0 | 0% ~ 30% | 0 | 0 |
| 4 | | 51 | 3.79 | 13,673.6 | 0 | 0% ~ 30% | 0 | 0 |
| 5 | | 52 | 3.65 | 13,673.6 | 0 | 0% ~ 30% | 0 | 0 |
| 6 | | 53 | 3.51 | 13,673.6 | 0 | 0% ~ 30% | 0 | 0 |
| 7 | | 54 | 3.37 | 18,926.3 | 19,860 | 0% ~ 30% | 5,958 | 914 |
| 8 | | 55 | 3.24 | 31,803.9 | 42,327 | 0% ~ 30% | 12,698 | 3,744 |
| 9 | | 56 | 3.12 | 36,279.8 | 42,327 | 0% ~ 30% | 12,698 | 5,400 |
| 10 | | 57 | 3.00 | 36,279.8 | 42,327 | 0% ~ 30% | 12,698 | 6,923 |
| 11 | | 58 | 2.88 | 36,279.8 | 42,327 | 0% ~ 30% | 12,698 | 8,321 |
| 12 | | 59 | 2.77 | 36,279.8 | 42,327 | 0% ~ 30% | 12,698 | 9,601 |
| 13 | | 60 | 2.67 | 26,305.5 | 17,671 | 0% ~ 30% | 5,301 | 4,497 |
| 14 | | 61 | 2.56 | 26,305.5 | 17,671 | 0% ~ 30% | 5,301 | 4,941 |
| 15 | | 62 | 2.46 | 26,321.4 | 17,671 | 0% ~ 30% | 5,301 | 5,345 |
| 16 | | 63 | 2.37 | 30,129.3 | 17,671 | 0% ~ 30% | 5,301 | 5,711 |
| 17 | | 1 | 2.28 | 35,414.7 | 17,671 | 0% ~ 30% | 5,301 | 6,040 |
| 18 | | 2 | 2.19 | 16,497.3 | 150 | 0% ~ 30% | 45 | 54 |
| 19 | | 3 | 2.11 | 16,497.3 | 150 | 0% ~ 30% | 45 | 56 |
| 20 | | 4 | 2.03 | 16,497.3 | 150 | 0% ~ 30% | 45 | 58 |
| 21 | | 5 | 1.95 | 16,497.3 | 150 | 0% ~ 30% | 45 | 60 |
| 22 | | 6 | 1.87 | 16,497.3 | 150 | 0% ~ 30% | 45 | 61 |
| 23 | | 7 | 1.80 | 12,765.3 | 4,590 | 0% ~ 30% | 1,377 | 1,916 |
| 24 | | 8 | 1.73 | 12,765.3 | 4,590 | 0% ~ 30% | 1,377 | 1,951 |
| 25 | | 9 | 1.67 | 12,765.3 | 4,590 | 0% ~ 30% | 1,377 | 1,980 |
| 26 | | 10 | 1.60 | 12,765.3 | 4,590 | 0% ~ 30% | 1,377 | 2,004 |
| 27 | | 11 | 1.54 | 12,765.3 | 4,590 | 0% ~ 30% | 1,377 | 2,024 |
| 28 | | 12 | 1.48 | 2,996.4 | 8,948 | 0% ~ 30% | 2,685 | 3,974 |
| 29 | | 13 | 1.42 | 2,996.4 | 8,948 | 0% ~ 30% | 2,685 | 3,821 |
| 30 | | 14 | 1.37 | 2,996.4 | 8,948 | 0% ~ 30% | 2,685 | 3,674 |
| 31 | | 15 | 1.32 | 2,996.4 | 8,948 | 0% ~ 30% | 2,685 | 3,533 |
| 32 | 1 | 16 | 1.27 | 2,996.4 | 8,948 | 0% ~ 30% | 2,685 | 3,397 |
| 33 | 2 | 17 | 1.22 | 576.0 | 1,113 | 0% ~ 30% | 334 | 406 |
| 34 | 3 | 18 | 1.17 | 559.2 | 1,113 | 0% ~ 30% | 334 | 391 |
| 35 | 4 | 19 | 1.12 | 559.2 | 1,113 | 0% ~ 30% | 334 | 376 |
| 36 | 5 | 20 | 1.08 | 559.2 | 1,113 | 0% ~ 30% | 334 | 361 |
| 37 | 6 | 21 | 1.04 | 559.2 | 1,113 | 0% ~ 30% | 334 | 347 |
| 38 | 7 | 22 | 1.00 | 326.3 | 64 | 0% ~ 30% | 19 | 19 |
| 39 | 8 | 23 | 0.96 | 326.3 | 64 | 0% ~ 30% | 19 | 19 |
| 40 | 9 | 24 | 0.92 | 326.3 | 64 | 0% ~ 30% | 19 | 18 |
| 41 | 10 | 25 | 0.89 | 326.3 | 64 | 0% ~ 30% | 19 | 17 |
| 42 | 11 | 26 | 0.85 | 326.3 | 64 | 0% ~ 30% | 19 | 16 |
| 43 | 12 | 27 | 0.82 | 6,126.0 | 1,476 | 0% ~ 30% | 443 | 364 |
| 44 | 13 | 28 | 0.79 | 6,126.0 | 1,476 | 0% ~ 30% | 443 | 227 |
| 45 | 14 | 29 | 0.76 | 5,959.2 | 1,476 | 0% ~ 30% | 443 | 219 |
| 46 | 15 | 30 | 0.73 | 5,959.2 | 1,476 | 0% ~ 30% | 443 | 210 |
| 47 | 16 | 31 | 0.70 | 5,959.2 | 1,476 | 0% ~ 30% | 443 | 202 |
| 48 | 17 | 32 | 0.68 | 2,033.7 | 1,473 | 0% ~ 30% | 442 | 194 |
| 49 | 18 | 33 | 0.65 | 2,033.7 | 1,473 | 0% ~ 30% | 442 | 187 |
| 50 | 19 | 34 | 0.62 | 1,876.9 | 1,473 | 0% ~ 30% | 442 | 179 |
| 51 | 20 | 35 | 0.60 | 1,876.9 | 1,473 | 0% ~ 30% | 442 | 172 |
| 52 | 21 | 36 | 0.58 | 1,872.3 | 1,473 | 0% ~ 30% | 442 | 166 |
| 53 | 22 | 37 | 0.56 | 1,612.3 | 1,117 | 0% ~ 30% | 335 | 121 |
| 54 | 23 | 38 | 0.53 | 1,506.9 | 1,117 | 0% ~ 30% | 335 | 116 |
| 55 | 24 | 39 | 0.51 | 1,506.9 | 1,117 | 0% ~ 30% | 335 | 112 |
| 56 | 25 | 40 | 0.49 | 1,417.1 | 1,117 | 0% ~ 30% | 335 | 107 |
| 57 | 26 | 41 | 0.47 | 1,417.1 | 1,117 | 0% ~ 30% | 335 | 103 |
| 58 | 27 | 42 | 0.46 | 4,262.1 | 973 | 0% ~ 30% | 292 | 87 |
| 59 | 28 | 43 | 0.44 | 4,262.1 | 973 | 0% ~ 30% | 292 | 83 |
| 60 | 29 | 44 | 0.42 | 4,262.1 | 973 | 0% ~ 30% | 292 | 80 |
| 61 | 30 | 45 | 0.41 | 2,413.1 | 973 | 0% ~ 30% | 292 | 77 |
| 62 | 31 | 46 | 0.39 | 2,413.1 | 973 | 0% ~ 30% | 292 | 74 |
| 63 | 32 | 47 | 0.38 | 9,975.1 | 19,402 | 0% ~ 30% | 5,820 | 1,418 |
| 64 | 33 | 48 | 0.36 | 5,497.6 | 19,402 | 0% ~ 30% | 5,820 | 1,364 |
| 65 | 34 | 49 | 0.35 | 5,497.6 | 19,402 | 0% ~ 30% | 5,820 | 1,311 |
| 66 | 35 | 50 | 0.33 | 5,497.6 | 19,402 | 0% ~ 30% | 5,820 | 1,261 |
| 67 | 36 | 51 | 0.32 | 5,497.6 | 19,402 | 0% ~ 30% | 5,820 | 1,212 |
| 68 | 37 | 52 | 0.31 | 3,413.2 | 11,552 | 0% ~ 30% | 3,466 | 694 |
| 69 | 38 | 53 | 0.30 | 348.9 | 0 | 0% ~ 30% | 0 | 0 |
| 70 | 39 | 54 | 0.29 | 348.9 | 0 | 0% ~ 30% | 0 | 0 |
| 71 | 40 | 55 | 0.27 | 330.1 | 0 | 0% ~ 30% | 0 | 0 |
| 合計(便益額) | | | | | | | | 102,311 |

4 木材生産等便益
 (2) 木材利用増進便益

139,430 千円

$$B = \sum_{t=1}^Y \frac{(RT - Ro) / 100 \times Vt \times @}{(1 + i)^t}$$

| | | |
|-----|-------------------------------|-------------------|
| T: | 整備期間(年) | 31 |
| Y: | 評価期間(年) | 71 |
| Ro: | 整備前の利用間伐の割合(%) | 1% |
| RT: | 整備後の利用間伐の割合(%) | 50% |
| Vt: | 林道整備前からの利用区域のt年後における間伐採材積(m3) | 159.10 ~ 8,269.60 |
| @: | 間伐材の木材市場価格(円/m3) | 13,282 ~ 22,597 |

便益算出表

(単位:千円)

| 評価期間 | 経過年 | 年度 | 割引係数 | 伐採材積(m3) | 年効果額 | 効果発生割合 | 年発生効果額 = x | 現在価値 = x |
|---------|-----|----|------|----------|-------|----------|---------------|-------------|
| 1 | 0 | 48 | 4.27 | 159.1 | 0 | 0% ~ 30% | 0 | 0 |
| 2 | 0 | 49 | 4.10 | 159.1 | 0 | 0% ~ 30% | 0 | 0 |
| 3 | 0 | 50 | 3.95 | 159.1 | 0 | 0% ~ 30% | 0 | 0 |
| 4 | 0 | 51 | 3.79 | 159.1 | 0 | 0% ~ 30% | 0 | 0 |
| 5 | 0 | 52 | 3.65 | 159.1 | 0 | 0% ~ 30% | 0 | 0 |
| 6 | 0 | 53 | 3.51 | 159.1 | 0 | 0% ~ 30% | 0 | 0 |
| 7 | 0 | 54 | 3.37 | 1053.6 | 7,270 | 0% ~ 30% | 2,181 | 7,357 |
| 8 | 0 | 55 | 3.24 | 1053.6 | 7,270 | 0% ~ 30% | 2,181 | 7,074 |
| 9 | 0 | 56 | 3.12 | 1405.2 | 7,270 | 0% ~ 30% | 2,181 | 6,802 |
| 10 | 0 | 57 | 3.00 | 1405.2 | 7,270 | 0% ~ 30% | 2,181 | 6,540 |
| 11 | 0 | 58 | 2.88 | 1405.2 | 7,270 | 0% ~ 30% | 2,181 | 6,289 |
| 12 | 0 | 59 | 2.77 | 1405.2 | 7,270 | 0% ~ 30% | 2,181 | 6,047 |
| 13 | 0 | 60 | 2.67 | 1405.2 | 7,270 | 0% ~ 30% | 2,181 | 5,814 |
| 14 | 0 | 61 | 2.56 | 1405.2 | 7,270 | 0% ~ 30% | 2,181 | 5,591 |
| 15 | 0 | 62 | 2.46 | 1788.7 | 7,270 | 0% ~ 30% | 2,181 | 5,376 |
| 16 | 0 | 63 | 2.37 | 2304.4 | 7,270 | 0% ~ 30% | 2,181 | 5,169 |
| 17 | 0 | 1 | 2.28 | 2629.2 | 7,270 | 0% ~ 30% | 2,181 | 4,970 |
| 18 | 0 | 2 | 2.19 | 2915.8 | 7,270 | 0% ~ 30% | 2,181 | 4,779 |
| 19 | 0 | 3 | 2.11 | 2915.8 | 7,270 | 0% ~ 30% | 2,181 | 4,595 |
| 20 | 0 | 4 | 2.03 | 2915.8 | 7,270 | 0% ~ 30% | 2,181 | 4,418 |
| 21 | 0 | 5 | 1.95 | 2915.8 | 7,270 | 0% ~ 30% | 2,181 | 4,248 |
| 22 | 0 | 6 | 1.87 | 2915.8 | 7,270 | 0% ~ 30% | 2,181 | 4,085 |
| 23 | 0 | 7 | 1.80 | 2945.1 | 7,270 | 0% ~ 30% | 2,181 | 3,928 |
| 24 | 0 | 8 | 1.73 | 2945.1 | 7,270 | 0% ~ 30% | 2,181 | 3,777 |
| 25 | 0 | 9 | 1.67 | 2945.1 | 7,270 | 0% ~ 30% | 2,181 | 3,632 |
| 26 | 0 | 10 | 1.60 | 2945.1 | 7,270 | 0% ~ 30% | 2,181 | 3,492 |
| 27 | 0 | 11 | 1.54 | 2945.1 | 7,270 | 0% ~ 30% | 2,181 | 3,358 |
| 28 | 0 | 12 | 1.48 | 2945.1 | 7,270 | 0% ~ 30% | 2,181 | 3,229 |
| 29 | 0 | 13 | 1.42 | 2945.1 | 7,270 | 0% ~ 30% | 2,181 | 3,104 |
| 30 | 0 | 14 | 1.37 | 2945.1 | 7,270 | 0% ~ 30% | 2,181 | 2,985 |
| 31 | 0 | 15 | 1.32 | 2945.1 | 7,270 | 0% ~ 30% | 2,181 | 2,870 |
| 32 | 1 | 16 | 1.27 | 2945.1 | 7,270 | 0% ~ 30% | 2,181 | 2,760 |
| 33 | 2 | 17 | 1.22 | 2945.1 | 7,270 | 0% ~ 30% | 2,181 | 2,654 |
| 34 | 3 | 18 | 1.17 | 2945.1 | 7,270 | 0% ~ 30% | 2,181 | 2,552 |
| 35 | 4 | 19 | 1.12 | 2945.1 | 7,270 | 0% ~ 30% | 2,181 | 2,453 |
| 36 | 5 | 20 | 1.08 | 2945.1 | 7,270 | 0% ~ 30% | 2,181 | 2,359 |
| 37 | 6 | 21 | 1.04 | 2945.1 | 7,270 | 0% ~ 30% | 2,181 | 2,268 |
| 38 | 7 | 22 | 1.00 | 7280.7 | 463 | 0% ~ 30% | 139 | 139 |
| 39 | 8 | 23 | 0.96 | 7280.7 | 463 | 0% ~ 30% | 139 | 134 |
| 40 | 9 | 24 | 0.92 | 7280.7 | 463 | 0% ~ 30% | 139 | 128 |
| 41 | 10 | 25 | 0.89 | 7280.7 | 463 | 0% ~ 30% | 139 | 124 |
| 42 | 11 | 26 | 0.85 | 7280.7 | 463 | 0% ~ 30% | 139 | 119 |
| 43 | 12 | 27 | 0.82 | 6318.3 | 420 | 0% ~ 30% | 126 | 104 |
| 44 | 13 | 28 | 0.79 | 6318.3 | 420 | 0% ~ 30% | 126 | 65 |
| 45 | 14 | 29 | 0.76 | 6318.3 | 420 | 0% ~ 30% | 126 | 62 |
| 46 | 15 | 30 | 0.73 | 6318.3 | 420 | 0% ~ 30% | 126 | 60 |
| 47 | 16 | 31 | 0.70 | 6318.3 | 420 | 0% ~ 30% | 126 | 57 |
| 48 | 17 | 32 | 0.68 | 5625.6 | 287 | 0% ~ 30% | 86 | 38 |
| 49 | 18 | 33 | 0.65 | 5625.6 | 287 | 0% ~ 30% | 86 | 36 |
| 50 | 19 | 34 | 0.62 | 5625.6 | 287 | 0% ~ 30% | 86 | 35 |
| 51 | 20 | 35 | 0.60 | 5625.6 | 287 | 0% ~ 30% | 86 | 34 |
| 52 | 21 | 36 | 0.58 | 5590.6 | 287 | 0% ~ 30% | 86 | 32 |
| 53 | 22 | 37 | 0.56 | 8269.6 | 4,532 | 0% ~ 30% | 1,360 | 490 |
| 54 | 23 | 38 | 0.53 | 7196.0 | 4,532 | 0% ~ 30% | 1,360 | 472 |
| 55 | 24 | 39 | 0.51 | 7196.0 | 4,532 | 0% ~ 30% | 1,360 | 453 |
| 56 | 25 | 40 | 0.49 | 5010.5 | 4,532 | 0% ~ 30% | 1,360 | 436 |
| 57 | 26 | 41 | 0.47 | 5010.5 | 4,532 | 0% ~ 30% | 1,360 | 419 |
| 58 | 27 | 42 | 0.46 | 3568.5 | 2,739 | 0% ~ 30% | 822 | 244 |
| 59 | 28 | 43 | 0.44 | 3568.5 | 2,739 | 0% ~ 30% | 822 | 234 |
| 60 | 29 | 44 | 0.42 | 3568.5 | 2,739 | 0% ~ 30% | 822 | 225 |
| 61 | 30 | 45 | 0.41 | 2528.1 | 2,739 | 0% ~ 30% | 822 | 217 |
| 62 | 31 | 46 | 0.39 | 2528.1 | 2,739 | 0% ~ 30% | 822 | 208 |
| 63 | 32 | 47 | 0.38 | 3195.7 | 412 | 0% ~ 30% | 124 | 30 |
| 64 | 33 | 48 | 0.36 | 1382.3 | 412 | 0% ~ 30% | 124 | 29 |
| 65 | 34 | 49 | 0.35 | 1382.3 | 412 | 0% ~ 30% | 124 | 28 |
| 66 | 35 | 50 | 0.33 | 1382.3 | 412 | 0% ~ 30% | 124 | 27 |
| 67 | 36 | 51 | 0.32 | 1382.3 | 412 | 0% ~ 30% | 124 | 26 |
| 68 | 37 | 52 | 0.31 | 1380.3 | 2,525 | 0% ~ 30% | 757 | 152 |
| 69 | 38 | 53 | 0.30 | 1069.8 | 0 | 0% ~ 30% | 0 | 0 |
| 70 | 39 | 54 | 0.29 | 1069.8 | 0 | 0% ~ 30% | 0 | 0 |
| 71 | 40 | 55 | 0.27 | 195.6 | 0 | 0% ~ 30% | 0 | 0 |
| 合計(便益額) | | | | | | | | 139,430 |

5 森林整備経費縮減便益

605 千円

(1) 造林作業経費縮減便益
歩行時間等経費縮減便益

$$B = \sum_{t=1}^T \frac{t \times (C_o - C_T) \times V_t}{T \times (1+i)^t} + \sum_{t=T+1}^Y \frac{(C_o - C_T) \times V_t}{(1+i)^t}$$

| | | |
|-----|--------------------------|------------------|
| T: | 整備期間(年) | 31 |
| Y: | 評価期間(年) | 71 |
| Co: | 整備前の造林等経費(円/ha) | 54,228 ~ 116,224 |
| CT: | 整備後の造林等経費(円/ha) | 20,713 ~ 110,083 |
| Vt: | 林道が整備されない場合のt年後の造林面積(ha) | 0.00 ~ 93.90 |

便益算出表

(単位:千円)

| 評価期間 | 経過年 | 年度 | 割引係数 | 造林面積(m3) | 年効果額 | 効果発生割合 | 年発生効果額 = x | 現在価値 = x |
|---------|-----|----|------|----------|------|----------|---------------|-------------|
| 1 | 0 | 48 | 4.27 | 15.8 | 0 | 0% ~ 30% | 0 | 0 |
| 2 | 0 | 49 | 4.10 | 15.8 | 0 | 0% ~ 30% | 0 | 0 |
| 3 | 0 | 50 | 3.95 | 27.2 | 0 | 0% ~ 30% | 0 | 0 |
| 4 | 0 | 51 | 3.79 | 27.2 | 0 | 0% ~ 30% | 0 | 0 |
| 5 | 0 | 52 | 3.65 | 27.2 | 0 | 0% ~ 30% | 0 | 0 |
| 6 | 0 | 53 | 3.51 | 27.2 | 0 | 0% ~ 30% | 0 | 0 |
| 7 | 0 | 54 | 3.37 | 33.5 | 59 | 0% ~ 30% | 18 | 3 |
| 8 | 0 | 55 | 3.24 | 34.6 | 87 | 0% ~ 30% | 26 | 8 |
| 9 | 0 | 56 | 3.12 | 73.2 | 87 | 0% ~ 30% | 26 | 11 |
| 10 | 0 | 57 | 3.00 | 73.2 | 87 | 0% ~ 30% | 26 | 14 |
| 11 | 0 | 58 | 2.88 | 73.2 | 87 | 0% ~ 30% | 26 | 17 |
| 12 | 0 | 59 | 2.77 | 73.2 | 87 | 0% ~ 30% | 26 | 20 |
| 13 | 0 | 60 | 2.67 | 78.1 | 183 | 0% ~ 30% | 55 | 47 |
| 14 | 0 | 61 | 2.56 | 78.1 | 183 | 0% ~ 30% | 55 | 51 |
| 15 | 0 | 62 | 2.46 | 80.9 | 183 | 0% ~ 30% | 55 | 55 |
| 16 | 0 | 63 | 2.37 | 88.0 | 183 | 0% ~ 30% | 55 | 59 |
| 17 | 0 | 1 | 2.28 | 93.9 | 183 | 0% ~ 30% | 55 | 62 |
| 18 | 0 | 2 | 2.19 | 76.8 | 77 | 0% ~ 30% | 23 | 28 |
| 19 | 0 | 3 | 2.11 | 76.8 | 77 | 0% ~ 30% | 23 | 29 |
| 20 | 0 | 4 | 2.03 | 76.8 | 77 | 0% ~ 30% | 23 | 30 |
| 21 | 0 | 5 | 1.95 | 76.8 | 77 | 0% ~ 30% | 23 | 31 |
| 22 | 0 | 6 | 1.87 | 76.8 | 77 | 0% ~ 30% | 23 | 32 |
| 23 | 0 | 7 | 1.80 | 40.7 | 0 | 0% ~ 30% | 0 | 0 |
| 24 | 0 | 8 | 1.73 | 40.7 | 0 | 0% ~ 30% | 0 | 0 |
| 25 | 0 | 9 | 1.67 | 40.7 | 0 | 0% ~ 30% | 0 | 0 |
| 26 | 0 | 10 | 1.60 | 40.7 | 0 | 0% ~ 30% | 0 | 0 |
| 27 | 0 | 11 | 1.54 | 40.7 | 0 | 0% ~ 30% | 0 | 0 |
| 28 | 0 | 12 | 1.48 | 30.9 | 19 | 0% ~ 30% | 6 | 8 |
| 29 | 0 | 13 | 1.42 | 30.9 | 19 | 0% ~ 30% | 6 | 8 |
| 30 | 0 | 14 | 1.37 | 30.9 | 19 | 0% ~ 30% | 6 | 8 |
| 31 | 0 | 15 | 1.32 | 30.9 | 19 | 0% ~ 30% | 6 | 7 |
| 32 | 1 | 16 | 1.27 | 30.9 | 19 | 0% ~ 30% | 6 | 7 |
| 33 | 2 | 17 | 1.22 | 5.1 | 37 | 0% ~ 30% | 11 | 14 |
| 34 | 3 | 18 | 1.17 | 5.1 | 37 | 0% ~ 30% | 11 | 13 |
| 35 | 4 | 19 | 1.12 | 5.1 | 37 | 0% ~ 30% | 11 | 13 |
| 36 | 5 | 20 | 1.08 | 5.1 | 37 | 0% ~ 30% | 11 | 12 |
| 37 | 6 | 21 | 1.04 | 5.1 | 37 | 0% ~ 30% | 11 | 12 |
| 38 | 7 | 22 | 1.00 | 0.0 | 0 | 0% ~ 30% | 0 | 0 |
| 39 | 8 | 23 | 0.96 | 0.0 | 0 | 0% ~ 30% | 0 | 0 |
| 40 | 9 | 24 | 0.92 | 0.0 | 0 | 0% ~ 30% | 0 | 0 |
| 41 | 10 | 25 | 0.89 | 0.0 | 0 | 0% ~ 30% | 0 | 0 |
| 42 | 11 | 26 | 0.85 | 0.0 | 0 | 0% ~ 30% | 0 | 0 |
| 43 | 12 | 27 | 0.82 | 19.3 | 6 | 0% ~ 30% | 2 | 2 |
| 44 | 13 | 28 | 0.79 | 19.3 | 6 | 0% ~ 30% | 2 | 1 |
| 45 | 14 | 29 | 0.76 | 19.3 | 6 | 0% ~ 30% | 2 | 1 |
| 46 | 15 | 30 | 0.73 | 19.3 | 6 | 0% ~ 30% | 2 | 1 |
| 47 | 16 | 31 | 0.70 | 19.3 | 6 | 0% ~ 30% | 2 | 1 |
| 48 | 17 | 32 | 0.68 | 6.2 | 6 | 0% ~ 30% | 2 | 1 |
| 49 | 18 | 33 | 0.65 | 6.2 | 6 | 0% ~ 30% | 2 | 1 |
| 50 | 19 | 34 | 0.62 | 6.2 | 6 | 0% ~ 30% | 2 | 1 |
| 51 | 20 | 35 | 0.60 | 6.2 | 0 | 0% ~ 30% | 0 | 0 |
| 52 | 21 | 36 | 0.58 | 15.7 | 0 | 0% ~ 30% | 0 | 0 |
| 53 | 22 | 37 | 0.56 | 6.5 | 0 | 0% ~ 30% | 0 | 0 |
| 54 | 23 | 38 | 0.53 | 6.4 | 0 | 0% ~ 30% | 0 | 0 |
| 55 | 24 | 39 | 0.51 | 6.4 | 0 | 0% ~ 30% | 0 | 0 |
| 56 | 25 | 40 | 0.49 | 6.2 | 0 | 0% ~ 30% | 0 | 0 |
| 57 | 26 | 41 | 0.47 | 6.2 | 0 | 0% ~ 30% | 0 | 0 |
| 58 | 27 | 42 | 0.46 | 13.3 | 0 | 0% ~ 30% | 0 | 0 |
| 59 | 28 | 43 | 0.44 | 13.3 | 0 | 0% ~ 30% | 0 | 0 |
| 60 | 29 | 44 | 0.42 | 8.9 | 0 | 0% ~ 30% | 0 | 0 |
| 61 | 30 | 45 | 0.41 | 8.9 | 0 | 0% ~ 30% | 0 | 0 |
| 62 | 31 | 46 | 0.39 | 8.9 | 0 | 0% ~ 30% | 0 | 0 |
| 63 | 32 | 47 | 0.38 | 45.2 | 0 | 0% ~ 30% | 0 | 0 |
| 64 | 33 | 48 | 0.36 | 31.7 | 0 | 0% ~ 30% | 0 | 0 |
| 65 | 34 | 49 | 0.35 | 31.7 | 0 | 0% ~ 30% | 0 | 0 |
| 66 | 35 | 50 | 0.33 | 31.7 | 0 | 0% ~ 30% | 0 | 0 |
| 67 | 36 | 51 | 0.32 | 31.7 | 0 | 0% ~ 30% | 0 | 0 |
| 68 | 37 | 52 | 0.31 | 12.8 | 0 | 0% ~ 30% | 0 | 0 |
| 69 | 38 | 53 | 0.30 | 0.7 | 0 | 0% ~ 30% | 0 | 0 |
| 70 | 39 | 54 | 0.29 | 0.7 | 0 | 0% ~ 30% | 0 | 0 |
| 71 | 40 | 55 | 0.27 | 0.7 | 0 | 0% ~ 30% | 0 | 0 |
| 合計(便益額) | | | | | | | | 605 |

5 森林整備経費縮減便益
 (1) 造林作業経費縮減便益
 作業道作設経費縮減便益

2,831,960 千円

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

| | | |
|-----|------------------------|-----------------|
| Y: | 評価期間(年) | 71 |
| Lt: | 林道が整備されない場合に必要作業道延長(m) | 4,346 ~ 23,298 |
| @: | 作業道の開設単価(円/m) | 14,000 ~ 20,000 |
| C: | 作業道の維持管理費用(円/m) | 130 ~ 200 |

便益算出表

(単位:千円)

| 評価期間 | 経過年 | 年度 | 割引係数 | 年効果額 | 効果発生割合 | 年発生効果額 = x | 現在価値 = x |
|---------|-----|----|------|---------|--------|---------------|-------------|
| 1 | 0 | 48 | 4.27 | 39,482 | 100% | 39,482 | 14,102 |
| 2 | 0 | 49 | 4.10 | 39,515 | 100% | 39,515 | 27,142 |
| 3 | 0 | 50 | 3.95 | 39,548 | 100% | 39,548 | 39,181 |
| 4 | 0 | 51 | 3.79 | 39,581 | 100% | 39,581 | 50,274 |
| 5 | 0 | 52 | 3.65 | 39,614 | 100% | 39,614 | 60,476 |
| 6 | 0 | 53 | 3.51 | 39,647 | 100% | 39,647 | 69,839 |
| 7 | 0 | 54 | 3.37 | 47,442 | 100% | 47,442 | 79,601 |
| 8 | 0 | 55 | 3.24 | 47,479 | 100% | 47,479 | 88,528 |
| 9 | 0 | 56 | 3.12 | 92,243 | 100% | 92,243 | 116,595 |
| 10 | 0 | 57 | 3.00 | 92,344 | 100% | 92,344 | 142,446 |
| 11 | 0 | 58 | 2.88 | 92,444 | 100% | 92,444 | 166,205 |
| 12 | 0 | 59 | 2.77 | 73,453 | 100% | 73,453 | 130,200 |
| 13 | 0 | 60 | 2.67 | 73,536 | 100% | 73,536 | 147,625 |
| 14 | 0 | 61 | 2.56 | 53,229 | 100% | 53,229 | 107,245 |
| 15 | 0 | 62 | 2.46 | 82,270 | 100% | 82,270 | 143,819 |
| 16 | 0 | 63 | 2.37 | 87,050 | 100% | 87,050 | 79,710 |
| 17 | 0 | 1 | 2.28 | 110,547 | 100% | 110,547 | 126,128 |
| 18 | 0 | 2 | 2.19 | 137,715 | 100% | 137,715 | 104,656 |
| 19 | 0 | 3 | 2.11 | 137,926 | 100% | 137,926 | 145,643 |
| 20 | 0 | 4 | 2.03 | 138,137 | 100% | 138,137 | 183,470 |
| 21 | 0 | 5 | 1.95 | 89,004 | 100% | 89,004 | 102,782 |
| 22 | 0 | 6 | 1.87 | 89,116 | 100% | 89,116 | 120,328 |
| 23 | 0 | 7 | 1.80 | 104,356 | 100% | 104,356 | 139,459 |
| 24 | 0 | 8 | 1.73 | 48,557 | 100% | 48,557 | 43,854 |
| 25 | 0 | 9 | 1.67 | 48,593 | 100% | 48,593 | 48,376 |
| 26 | 0 | 10 | 1.60 | 48,628 | 100% | 48,628 | 52,495 |
| 27 | 0 | 11 | 1.54 | 48,664 | 100% | 48,664 | 56,235 |
| 28 | 0 | 12 | 1.48 | 48,700 | 100% | 48,700 | 59,620 |
| 29 | 0 | 13 | 1.42 | 40,974 | 100% | 40,974 | 51,114 |
| 30 | 0 | 14 | 1.37 | 41,006 | 100% | 41,006 | 53,801 |
| 31 | 0 | 15 | 1.32 | 17,741 | 100% | 17,741 | 23,346 |
| 32 | 1 | 16 | 1.27 | 2,630 | 100% | 2,630 | 3,328 |
| 33 | 2 | 17 | 1.22 | 2,630 | 100% | 2,630 | 3,200 |
| 34 | 3 | 18 | 1.17 | 2,630 | 100% | 2,630 | 3,076 |
| 35 | 4 | 19 | 1.12 | 2,630 | 100% | 2,630 | 2,958 |
| 36 | 5 | 20 | 1.08 | 2,630 | 100% | 2,630 | 2,844 |
| 37 | 6 | 21 | 1.04 | 2,630 | 100% | 2,630 | 2,735 |
| 38 | 7 | 22 | 1.00 | 2,630 | 100% | 2,630 | 2,630 |
| 39 | 8 | 23 | 0.96 | 2,630 | 100% | 2,630 | 2,529 |
| 40 | 9 | 24 | 0.92 | 2,630 | 100% | 2,630 | 2,431 |
| 41 | 10 | 25 | 0.89 | 2,630 | 100% | 2,630 | 2,338 |
| 42 | 11 | 26 | 0.85 | 2,630 | 100% | 2,630 | 2,248 |
| 43 | 12 | 27 | 0.82 | 2,630 | 100% | 2,630 | 2,161 |
| 44 | 13 | 28 | 0.79 | 2,630 | 100% | 2,630 | 2,057 |
| 45 | 14 | 29 | 0.76 | 2,630 | 100% | 2,630 | 1,978 |
| 46 | 15 | 30 | 0.73 | 2,630 | 100% | 2,630 | 1,902 |
| 47 | 16 | 31 | 0.70 | 2,630 | 100% | 2,630 | 1,829 |
| 48 | 17 | 32 | 0.68 | 2,630 | 100% | 2,630 | 1,758 |
| 49 | 18 | 33 | 0.65 | 2,630 | 100% | 2,630 | 1,691 |
| 50 | 19 | 34 | 0.62 | 2,630 | 100% | 2,630 | 1,626 |
| 51 | 20 | 35 | 0.60 | 2,630 | 100% | 2,630 | 1,563 |
| 52 | 21 | 36 | 0.58 | 2,439 | 100% | 2,439 | 1,393 |
| 53 | 22 | 37 | 0.56 | 2,439 | 100% | 2,439 | 1,339 |
| 54 | 23 | 38 | 0.53 | 2,235 | 100% | 2,235 | 1,179 |
| 55 | 24 | 39 | 0.51 | 2,235 | 100% | 2,235 | 1,133 |
| 56 | 25 | 40 | 0.49 | 1,788 | 100% | 1,788 | 869 |
| 57 | 26 | 41 | 0.47 | 1,788 | 100% | 1,788 | 836 |
| 58 | 27 | 42 | 0.46 | 1,498 | 100% | 1,498 | 671 |
| 59 | 28 | 43 | 0.44 | 1,498 | 100% | 1,498 | 645 |
| 60 | 29 | 44 | 0.42 | 1,498 | 100% | 1,498 | 621 |
| 61 | 30 | 45 | 0.41 | 1,005 | 100% | 1,005 | 397 |
| 62 | 31 | 46 | 0.39 | 1,005 | 100% | 1,005 | 381 |
| 63 | 32 | 47 | 0.38 | 1,005 | 100% | 1,005 | 367 |
| 64 | 33 | 48 | 0.36 | 445 | 100% | 445 | 151 |
| 65 | 34 | 49 | 0.35 | 445 | 100% | 445 | 145 |
| 66 | 35 | 50 | 0.33 | 445 | 100% | 445 | 139 |
| 67 | 36 | 51 | 0.32 | 445 | 100% | 445 | 134 |
| 68 | 37 | 52 | 0.31 | 445 | 100% | 445 | 129 |
| 69 | 38 | 53 | 0.30 | 368 | 100% | 368 | 109 |
| 70 | 39 | 54 | 0.29 | 368 | 100% | 368 | 105 |
| 71 | 40 | 55 | 0.27 | 151 | 100% | 151 | 41 |
| 合計(便益額) | | | | | | | 2,831,960 |

1,239,187 千円

5 森林整備経費削減等便益
 (4) 森林整備促進便益
 水源かん養便益
 イ 流域貯水便益

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

| | | |
|--------|---------------------------------|-----------------|
| A: | 事業対象区域面積 (ha) | 1.40 ~ 1,748.70 |
| P: | 年間平均降雨量 (mm / 年) | 1,706 ~ 1,919 |
| 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、流出係数が安定するのに必要な年数 (年) | 10 |
| U: | 開発流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) | 71 |
| 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 | 事業対象区域面積 (ha) | 年効果額 | 効果発生割合 | 年発生効果額 = x | 現在価値 = x |
|----------|-----|----|------|---------------|--------|------------|---------------|-------------|
| 1 | 0 | 48 | 4.27 | 1.4 | 27 | 70% ~ 100% | 27 | 116 |
| 2 | 0 | 49 | 4.10 | 4.3 | 84 | 70% ~ 100% | 84 | 343 |
| 3 | 0 | 50 | 3.95 | 9.7 | 189 | 70% ~ 100% | 189 | 745 |
| 4 | 0 | 51 | 3.79 | 17.5 | 341 | 70% ~ 100% | 341 | 1,292 |
| 5 | 0 | 52 | 3.65 | 27.7 | 539 | 70% ~ 100% | 539 | 1,967 |
| 6 | 0 | 53 | 3.51 | 40.5 | 788 | 70% ~ 100% | 788 | 2,765 |
| 7 | 0 | 54 | 3.37 | 56.4 | 1,097 | 70% ~ 100% | 1,094 | 3,689 |
| 8 | 0 | 55 | 3.24 | 75.3 | 1,465 | 70% ~ 100% | 1,454 | 4,715 |
| 9 | 0 | 56 | 3.12 | 100.9 | 1,965 | 70% ~ 100% | 1,940 | 6,051 |
| 10 | 0 | 57 | 3.00 | 133.1 | 2,590 | 70% ~ 100% | 2,548 | 7,639 |
| 11 | 0 | 58 | 2.88 | 172.1 | 3,349 | 70% ~ 100% | 3,283 | 9,467 |
| 12 | 0 | 59 | 2.77 | 216.4 | 4,210 | 70% ~ 100% | 4,116 | 11,412 |
| 13 | 0 | 60 | 2.67 | 266.1 | 5,178 | 70% ~ 100% | 5,046 | 13,453 |
| 14 | 0 | 61 | 2.56 | 320.6 | 6,239 | 70% ~ 100% | 6,058 | 15,529 |
| 15 | 0 | 62 | 2.46 | 380.0 | 7,395 | 70% ~ 100% | 7,154 | 17,633 |
| 16 | 0 | 63 | 2.37 | 444.7 | 8,658 | 70% ~ 100% | 8,345 | 19,777 |
| 17 | 0 | 1 | 2.28 | 515.6 | 10,040 | 70% ~ 100% | 9,644 | 21,977 |
| 18 | 0 | 2 | 2.19 | 590.5 | 11,506 | 70% ~ 100% | 11,026 | 24,160 |
| 19 | 0 | 3 | 2.11 | 668.6 | 13,035 | 70% ~ 100% | 12,475 | 26,283 |
| 20 | 0 | 4 | 2.03 | 746.9 | 14,570 | 70% ~ 100% | 13,930 | 28,219 |
| 21 | 0 | 5 | 1.95 | 825.7 | 16,120 | 70% ~ 100% | 15,399 | 29,996 |
| 22 | 0 | 6 | 1.87 | 904.8 | 17,677 | 70% ~ 100% | 16,877 | 31,610 |
| 23 | 0 | 7 | 1.80 | 980.9 | 19,178 | 70% ~ 100% | 18,302 | 32,961 |
| 24 | 0 | 8 | 1.73 | 1,053.5 | 20,618 | 70% ~ 100% | 19,674 | 34,070 |
| 25 | 0 | 9 | 1.67 | 1,122.8 | 21,993 | 70% ~ 100% | 20,992 | 34,954 |
| 26 | 0 | 10 | 1.60 | 1,188.4 | 23,297 | 70% ~ 100% | 22,250 | 35,622 |
| 27 | 0 | 11 | 1.54 | 1,249.8 | 24,526 | 70% ~ 100% | 23,441 | 36,086 |
| 28 | 0 | 12 | 1.48 | 1,305.4 | 25,636 | 70% ~ 100% | 24,524 | 36,301 |
| 29 | 0 | 13 | 1.42 | 1,356.6 | 26,661 | 70% ~ 100% | 25,524 | 36,329 |
| 30 | 0 | 14 | 1.37 | 1,404.5 | 27,620 | 70% ~ 100% | 26,458 | 36,209 |
| 31 | 0 | 15 | 1.32 | 1,448.3 | 28,493 | 70% ~ 100% | 27,309 | 35,937 |
| 32 | 1 | 16 | 1.27 | 1,487.9 | 29,285 | 70% ~ 100% | 28,082 | 35,533 |
| 33 | 2 | 17 | 1.22 | 1,520.8 | 29,943 | 70% ~ 100% | 28,724 | 34,948 |
| 34 | 3 | 18 | 1.17 | 1,550.5 | 30,537 | 70% ~ 100% | 29,300 | 34,277 |
| 35 | 4 | 19 | 1.12 | 1,577.1 | 31,069 | 70% ~ 100% | 29,814 | 33,537 |
| 36 | 5 | 20 | 1.08 | 1,600.4 | 31,530 | 70% ~ 100% | 30,257 | 32,726 |
| 37 | 6 | 21 | 1.04 | 1,620.5 | 31,926 | 70% ~ 100% | 30,633 | 31,858 |
| 38 | 7 | 22 | 1.00 | 1,636.9 | 32,249 | 70% ~ 100% | 30,937 | 30,937 |
| 39 | 8 | 23 | 0.96 | 1,650.3 | 32,515 | 70% ~ 100% | 31,185 | 29,986 |
| 40 | 9 | 24 | 0.92 | 1,661.3 | 32,729 | 70% ~ 100% | 31,384 | 29,017 |
| 41 | 10 | 25 | 0.89 | 1,669.2 | 32,884 | 70% ~ 100% | 31,525 | 28,026 |
| 42 | 11 | 26 | 0.85 | 1,674.5 | 32,989 | 70% ~ 100% | 31,617 | 27,027 |
| 43 | 12 | 27 | 0.82 | 1,678.6 | 33,069 | 70% ~ 100% | 31,686 | 26,044 |
| 44 | 13 | 28 | 0.79 | 1,684.1 | 33,178 | 70% ~ 100% | 31,785 | 24,308 |
| 45 | 14 | 29 | 0.76 | 1,690.6 | 33,307 | 70% ~ 100% | 31,906 | 23,461 |
| 46 | 15 | 30 | 0.73 | 1,698.7 | 33,469 | 70% ~ 100% | 32,061 | 22,667 |
| 47 | 16 | 31 | 0.70 | 1,708.0 | 33,654 | 70% ~ 100% | 32,241 | 21,919 |
| 48 | 17 | 32 | 0.68 | 1,717.4 | 33,839 | 70% ~ 100% | 32,423 | 21,198 |
| 49 | 18 | 33 | 0.65 | 1,727.3 | 34,038 | 70% ~ 100% | 32,617 | 20,507 |
| 50 | 19 | 34 | 0.62 | 1,737.8 | 34,247 | 70% ~ 100% | 32,821 | 19,844 |
| 51 | 20 | 35 | 0.60 | 1,748.7 | 34,464 | 70% ~ 100% | 33,033 | 19,206 |
| 52 | 21 | 36 | 0.58 | 1,495.9 | 29,550 | 70% ~ 100% | 28,113 | 15,624 |
| 53 | 22 | 37 | 0.56 | 1,507.4 | 29,779 | 70% ~ 100% | 28,336 | 15,145 |
| 54 | 23 | 38 | 0.53 | 982.3 | 19,567 | 70% ~ 100% | 18,118 | 9,105 |
| 55 | 24 | 39 | 0.51 | 991.3 | 19,749 | 70% ~ 100% | 18,294 | 8,843 |
| 56 | 25 | 40 | 0.49 | 667.0 | 13,443 | 70% ~ 100% | 11,982 | 5,386 |
| 57 | 26 | 41 | 0.47 | 673.4 | 13,574 | 70% ~ 100% | 12,108 | 5,237 |
| 58 | 27 | 42 | 0.46 | 659.5 | 13,242 | 70% ~ 100% | 11,838 | 4,911 |
| 59 | 28 | 43 | 0.44 | 666.6 | 13,389 | 70% ~ 100% | 11,980 | 4,783 |
| 60 | 29 | 44 | 0.42 | 674.4 | 13,548 | 70% ~ 100% | 12,134 | 4,662 |
| 61 | 30 | 45 | 0.41 | 481.0 | 9,790 | 70% ~ 100% | 8,372 | 2,956 |
| 62 | 31 | 46 | 0.39 | 487.6 | 9,926 | 70% ~ 100% | 8,503 | 2,892 |
| 63 | 32 | 47 | 0.38 | 498.2 | 10,145 | 70% ~ 100% | 8,712 | 2,857 |
| 64 | 33 | 48 | 0.36 | 412.1 | 8,484 | 70% ~ 100% | 7,035 | 2,138 |
| 65 | 34 | 49 | 0.35 | 423.3 | 8,719 | 70% ~ 100% | 7,250 | 2,124 |
| 66 | 35 | 50 | 0.33 | 437.0 | 9,009 | 70% ~ 100% | 7,513 | 2,123 |
| 67 | 36 | 51 | 0.32 | 453.2 | 9,352 | 70% ~ 100% | 7,822 | 2,132 |
| 68 | 37 | 52 | 0.31 | 470.1 | 9,708 | 70% ~ 100% | 8,141 | 2,140 |
| 69 | 38 | 53 | 0.30 | 229.8 | 5,060 | 70% ~ 100% | 4,960 | 1,470 |
| 70 | 39 | 54 | 0.29 | 29.6 | 678 | 70% ~ 100% | 576 | 164 |
| 71 | 40 | 55 | 0.27 | 30.2 | 691 | 70% ~ 100% | 588 | 161 |
| 合計 (便益額) | | | | | | | | 1,239,187 |

31,511,587 千円

5 森林整備経費削減等便益
 (4) 森林蓄積促進便益
 蓄積健全便益
 ア 炭素固定便益
 樹木固定分

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

| | | |
|------|------------------------------------|--------------------|
| 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) | 13,204 ~ 124,286 |
| 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) | 26,194 ~ 204,755 |
| Y: | 評価期間(年) | 71 |
| D: | 容積密度(t/m ³) | 0.361 |
| 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) | スギ・ヒノキ(樹齢20上) 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) | スギ・ヒノキ(樹齢20上) 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

| 評価期間 | 経過年 | 年度 | 割引係数 | V2-V1(m3) | 年効果額 | 効果発生割合 | 年発生効果額 | 現在価値 |
|---------|-----|----|------|-------------|---------|------------|---------|------------|
| | | | | 樹種名(スギ・ヒノキ) | | | = x | = x |
| 1 | 0 | 48 | 4.27 | 1,631.7 | 250,288 | 70% - 100% | 250,288 | 1,068,251 |
| 2 | 0 | 49 | 4.10 | 1,631.7 | 250,288 | 70% - 100% | 250,288 | 1,027,165 |
| 3 | 0 | 50 | 3.95 | 1,631.7 | 237,196 | 70% - 100% | 237,196 | 935,996 |
| 4 | 0 | 51 | 3.79 | 1,631.7 | 237,196 | 70% - 100% | 237,196 | 899,996 |
| 5 | 0 | 52 | 3.65 | 1,631.7 | 237,196 | 70% - 100% | 237,196 | 865,381 |
| 6 | 0 | 53 | 3.51 | 1,631.7 | 237,196 | 70% - 100% | 237,196 | 832,097 |
| 7 | 0 | 54 | 3.37 | 1,970.6 | 289,477 | 70% - 100% | 273,793 | 923,539 |
| 8 | 0 | 55 | 3.24 | 1,970.6 | 420,242 | 70% - 100% | 401,853 | 1,303,369 |
| 9 | 0 | 56 | 3.12 | 3,553.8 | 583,175 | 70% - 100% | 564,786 | 1,761,369 |
| 10 | 0 | 57 | 3.00 | 3,553.8 | 583,175 | 70% - 100% | 564,786 | 1,693,625 |
| 11 | 0 | 58 | 2.88 | 3,553.8 | 583,175 | 70% - 100% | 564,786 | 1,628,486 |
| 12 | 0 | 59 | 2.77 | 3,553.8 | 583,175 | 70% - 100% | 564,786 | 1,565,851 |
| 13 | 0 | 60 | 2.67 | 3,553.8 | 717,161 | 70% - 100% | 655,906 | 1,748,537 |
| 14 | 0 | 61 | 2.56 | 3,553.8 | 717,161 | 70% - 100% | 655,906 | 1,681,286 |
| 15 | 0 | 62 | 2.46 | 5,039.3 | 720,582 | 70% - 100% | 659,328 | 1,624,627 |
| 16 | 0 | 63 | 2.37 | 6,827.6 | 717,103 | 70% - 100% | 655,848 | 1,553,896 |
| 17 | 0 | 1 | 2.28 | 8,110.3 | 696,498 | 70% - 100% | 635,243 | 1,447,175 |
| 18 | 0 | 2 | 2.19 | 8,110.3 | 318,074 | 70% - 100% | 289,929 | 634,889 |
| 19 | 0 | 3 | 2.11 | 8,110.3 | 318,074 | 70% - 100% | 289,929 | 610,471 |
| 20 | 0 | 4 | 2.03 | 8,110.3 | 316,545 | 70% - 100% | 288,399 | 584,236 |
| 21 | 0 | 5 | 1.95 | 8,110.3 | 316,545 | 70% - 100% | 288,399 | 561,765 |
| 22 | 0 | 6 | 1.87 | 8,110.3 | 316,545 | 70% - 100% | 288,399 | 540,159 |
| 23 | 0 | 7 | 1.80 | 8,509.3 | 236,841 | 70% - 100% | 237,514 | 427,742 |
| 24 | 0 | 8 | 1.73 | 8,509.3 | 236,841 | 70% - 100% | 237,514 | 411,290 |
| 25 | 0 | 9 | 1.67 | 8,509.3 | 244,366 | 70% - 100% | 245,038 | 406,609 |
| 26 | 0 | 10 | 1.60 | 8,509.3 | 244,366 | 70% - 100% | 245,038 | 390,970 |
| 27 | 0 | 11 | 1.54 | 8,509.3 | 244,366 | 70% - 100% | 245,038 | 375,933 |
| 28 | 0 | 12 | 1.48 | 8,509.3 | 280,656 | 70% - 100% | 275,748 | 406,932 |
| 29 | 0 | 13 | 1.42 | 8,509.3 | 280,656 | 70% - 100% | 275,748 | 391,281 |
| 30 | 0 | 14 | 1.37 | 8,509.3 | 319,412 | 70% - 100% | 314,504 | 423,384 |
| 31 | 0 | 15 | 1.32 | 8,509.3 | 319,412 | 70% - 100% | 314,504 | 407,100 |
| 32 | 1 | 16 | 1.27 | 8,509.3 | 319,412 | 70% - 100% | 314,504 | 391,442 |
| 33 | 2 | 17 | 1.22 | 8,509.3 | 208,675 | 70% - 100% | 194,518 | 230,406 |
| 34 | 3 | 18 | 1.17 | 8,509.3 | 208,675 | 70% - 100% | 194,518 | 221,544 |
| 35 | 4 | 19 | 1.12 | 8,509.3 | 173,332 | 70% - 100% | 159,175 | 177,680 |
| 36 | 5 | 20 | 1.08 | 8,509.3 | 173,332 | 70% - 100% | 159,175 | 170,846 |
| 37 | 6 | 21 | 1.04 | 8,509.3 | 173,332 | 70% - 100% | 159,175 | 164,275 |
| 38 | 7 | 22 | 1.00 | 8,509.3 | 66,744 | 70% - 100% | 66,081 | 64,863 |
| 39 | 8 | 23 | 0.96 | 8,509.3 | 66,744 | 70% - 100% | 66,081 | 62,368 |
| 40 | 9 | 24 | 0.92 | 8,509.3 | 64,998 | 70% - 100% | 64,334 | 58,534 |
| 41 | 10 | 25 | 0.89 | 8,509.3 | 64,998 | 70% - 100% | 64,334 | 56,283 |
| 42 | 11 | 26 | 0.85 | 8,509.3 | 64,998 | 70% - 100% | 64,334 | 54,118 |
| 43 | 12 | 27 | 0.82 | 8,509.3 | 65,902 | 70% - 100% | 64,969 | 52,558 |
| 44 | 13 | 28 | 0.79 | 8,509.3 | 65,902 | 70% - 100% | 64,969 | 50,537 |
| 45 | 14 | 29 | 0.76 | 8,509.3 | 66,026 | 70% - 100% | 65,093 | 48,677 |
| 46 | 15 | 30 | 0.73 | 8,509.3 | 66,026 | 70% - 100% | 65,093 | 46,805 |
| 47 | 16 | 31 | 0.70 | 8,509.3 | 66,026 | 70% - 100% | 65,093 | 45,004 |
| 48 | 17 | 32 | 0.68 | 8,509.3 | 62,236 | 70% - 100% | 61,314 | 40,720 |
| 49 | 18 | 33 | 0.65 | 8,509.3 | 62,236 | 70% - 100% | 61,314 | 39,154 |
| 50 | 19 | 34 | 0.62 | 8,509.3 | 63,146 | 70% - 100% | 62,224 | 38,154 |
| 51 | 20 | 35 | 0.60 | 8,509.3 | 63,146 | 70% - 100% | 62,224 | 36,686 |
| 52 | 21 | 36 | 0.58 | 8,254.6 | 61,519 | 70% - 100% | 60,598 | 34,336 |
| 53 | 22 | 37 | 0.56 | 8,254.6 | 68,313 | 70% - 100% | 67,165 | 36,662 |
| 54 | 23 | 38 | 0.53 | 6,877.7 | 59,451 | 70% - 100% | 58,303 | 30,520 |
| 55 | 24 | 39 | 0.51 | 6,877.7 | 61,185 | 70% - 100% | 60,037 | 30,138 |
| 56 | 25 | 40 | 0.49 | 5,294.5 | 47,002 | 70% - 100% | 45,854 | 21,977 |
| 57 | 26 | 41 | 0.47 | 5,294.5 | 47,002 | 70% - 100% | 45,854 | 21,132 |
| 58 | 27 | 42 | 0.46 | 5,014.7 | 43,151 | 70% - 100% | 42,155 | 18,631 |
| 59 | 28 | 43 | 0.44 | 5,014.7 | 43,151 | 70% - 100% | 42,155 | 17,915 |
| 60 | 29 | 44 | 0.42 | 5,014.7 | 42,742 | 70% - 100% | 41,746 | 17,072 |
| 61 | 30 | 45 | 0.41 | 2,020.8 | 15,933 | 70% - 100% | 14,937 | 6,060 |
| 62 | 31 | 46 | 0.39 | 2,020.8 | 15,933 | 70% - 100% | 14,937 | 5,827 |
| 63 | 32 | 47 | 0.38 | 2,020.8 | 44,384 | 70% - 100% | 39,945 | 14,984 |
| 64 | 33 | 48 | 0.36 | 2,020.8 | 44,384 | 70% - 100% | 39,945 | 14,408 |
| 65 | 34 | 49 | 0.35 | 2,020.8 | 44,384 | 70% - 100% | 39,945 | 13,854 |
| 66 | 35 | 50 | 0.33 | 2,020.8 | 44,384 | 70% - 100% | 39,945 | 13,321 |
| 67 | 36 | 51 | 0.32 | 2,020.8 | 44,384 | 70% - 100% | 39,945 | 12,809 |
| 68 | 37 | 52 | 0.31 | 2,020.8 | 26,901 | 70% - 100% | 23,902 | 7,370 |
| 69 | 38 | 53 | 0.30 | 1,681.8 | 16,906 | 70% - 100% | 16,906 | 5,012 |
| 70 | 39 | 54 | 0.29 | 1,681.8 | 16,906 | 70% - 100% | 16,906 | 4,819 |
| 71 | 40 | 55 | 0.27 | 399.1 | 2,471 | 70% - 100% | 2,471 | 677 |
| 合計(便益額) | | | | | | | | 31,511,587 |

5 森林整備経費削減等便益
 (4) 森林整備促進便益
 環境保全便益
 ア 炭素固定便益
 森林土壌蓄積分

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

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

| | | |
|--------|----------------------------------------------------------|-----------------|
| 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) | 0.712 |
| 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) | 0.046 |
| Y: | 浸食深が30cmに達するまでの年数(T) 又は 評価期間内に浸食深が30cmに達しない場合は評価期間(年) | 43 ~ 62 |
| A: | 事業対象区域面積 (ha) | 1.40 ~ 1,748.70 |
| s: | 単位面積あたりの土壌平均炭素蓄積量 (t-C/h) | 106.840 |
| 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浸食深 (cm/年) | 0.200 |
| e2: | 事業を実施した場合の浸食深 (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 | 事業対象区域面積 (ha) | 年効果額 | 効果発生割合 | 年発生効果額 = × | 現在価値 = × |
|----------|-----|----|------|---------------|-------|------------|---------------|-------------|
| 1 | 0 | 48 | 4.27 | 1.4 | 6 | 70% ~ 100% | 6 | 26 |
| 2 | 0 | 49 | 4.10 | 4.3 | 19 | 70% ~ 100% | 19 | 78 |
| 3 | 0 | 50 | 3.95 | 9.7 | 43 | 70% ~ 100% | 43 | 170 |
| 4 | 0 | 51 | 3.79 | 17.5 | 78 | 70% ~ 100% | 78 | 294 |
| 5 | 0 | 52 | 3.65 | 27.7 | 123 | 70% ~ 100% | 123 | 448 |
| 6 | 0 | 53 | 3.51 | 40.5 | 179 | 70% ~ 100% | 179 | 629 |
| 7 | 0 | 54 | 3.37 | 56.4 | 249 | 70% ~ 100% | 248 | 838 |
| 8 | 0 | 55 | 3.24 | 75.3 | 331 | 70% ~ 100% | 329 | 1,067 |
| 9 | 0 | 56 | 3.12 | 100.9 | 442 | 70% ~ 100% | 438 | 1,365 |
| 10 | 0 | 57 | 3.00 | 133.1 | 580 | 70% ~ 100% | 573 | 1,718 |
| 11 | 0 | 58 | 2.88 | 172.1 | 747 | 70% ~ 100% | 737 | 2,124 |
| 12 | 0 | 59 | 2.77 | 216.4 | 937 | 70% ~ 100% | 922 | 2,556 |
| 13 | 0 | 60 | 2.67 | 266.1 | 1,148 | 70% ~ 100% | 1,127 | 3,006 |
| 14 | 0 | 61 | 2.56 | 320.6 | 1,379 | 70% ~ 100% | 1,350 | 3,460 |
| 15 | 0 | 62 | 2.46 | 380.0 | 1,628 | 70% ~ 100% | 1,590 | 3,919 |
| 16 | 0 | 63 | 2.37 | 444.7 | 1,899 | 70% ~ 100% | 1,850 | 4,384 |
| 17 | 0 | 1 | 2.28 | 515.6 | 2,195 | 70% ~ 100% | 2,132 | 4,859 |
| 18 | 0 | 2 | 2.19 | 590.5 | 2,508 | 70% ~ 100% | 2,433 | 5,331 |
| 19 | 0 | 3 | 2.11 | 668.6 | 2,836 | 70% ~ 100% | 2,749 | 5,791 |
| 20 | 0 | 4 | 2.03 | 746.9 | 3,165 | 70% ~ 100% | 3,066 | 6,211 |
| 21 | 0 | 5 | 1.95 | 825.7 | 3,497 | 70% ~ 100% | 3,385 | 6,594 |
| 22 | 0 | 6 | 1.87 | 904.8 | 3,830 | 70% ~ 100% | 3,706 | 6,942 |
| 23 | 0 | 7 | 1.80 | 980.9 | 4,151 | 70% ~ 100% | 4,016 | 7,232 |
| 24 | 0 | 8 | 1.73 | 1,053.5 | 4,459 | 70% ~ 100% | 4,314 | 7,471 |
| 25 | 0 | 9 | 1.67 | 1,122.8 | 4,755 | 70% ~ 100% | 4,602 | 7,662 |
| 26 | 0 | 10 | 1.60 | 1,188.4 | 5,036 | 70% ~ 100% | 4,877 | 7,808 |
| 27 | 0 | 11 | 1.54 | 1,249.8 | 5,302 | 70% ~ 100% | 5,138 | 7,909 |
| 28 | 0 | 12 | 1.48 | 1,305.4 | 5,543 | 70% ~ 100% | 5,376 | 7,958 |
| 29 | 0 | 13 | 1.42 | 1,356.6 | 5,766 | 70% ~ 100% | 5,597 | 7,966 |
| 30 | 0 | 14 | 1.37 | 1,404.5 | 5,975 | 70% ~ 100% | 5,803 | 7,941 |
| 31 | 0 | 15 | 1.32 | 1,448.3 | 6,165 | 70% ~ 100% | 5,991 | 7,884 |
| 32 | 1 | 16 | 1.27 | 1,487.9 | 6,338 | 70% ~ 100% | 6,163 | 7,798 |
| 33 | 2 | 17 | 1.22 | 1,520.8 | 6,482 | 70% ~ 100% | 6,305 | 7,671 |
| 34 | 3 | 18 | 1.17 | 1,550.5 | 6,612 | 70% ~ 100% | 6,433 | 7,526 |
| 35 | 4 | 19 | 1.12 | 1,577.1 | 6,727 | 70% ~ 100% | 6,547 | 7,364 |
| 36 | 5 | 20 | 1.08 | 1,600.4 | 6,827 | 70% ~ 100% | 6,644 | 7,186 |
| 37 | 6 | 21 | 1.04 | 1,620.5 | 6,912 | 70% ~ 100% | 6,727 | 6,996 |
| 38 | 7 | 22 | 1.00 | 1,636.9 | 6,981 | 70% ~ 100% | 6,793 | 6,793 |
| 39 | 8 | 23 | 0.96 | 1,650.3 | 7,037 | 70% ~ 100% | 6,847 | 6,583 |
| 40 | 9 | 24 | 0.92 | 1,661.3 | 7,083 | 70% ~ 100% | 6,890 | 6,370 |
| 41 | 10 | 25 | 0.89 | 1,669.2 | 7,114 | 70% ~ 100% | 6,920 | 6,151 |
| 42 | 11 | 26 | 0.85 | 1,674.5 | 7,135 | 70% ~ 100% | 6,938 | 5,931 |
| 43 | 12 | 27 | 0.82 | 1,678.6 | 7,151 | 70% ~ 100% | 6,952 | 5,714 |
| 44 | 13 | 28 | 0.79 | 1,684.1 | 7,173 | 70% ~ 100% | 6,973 | 5,511 |
| 45 | 14 | 29 | 0.76 | 1,690.6 | 7,200 | 70% ~ 100% | 6,999 | 5,318 |
| 46 | 15 | 30 | 0.73 | 1,698.7 | 7,234 | 70% ~ 100% | 7,032 | 5,138 |
| 47 | 16 | 31 | 0.70 | 1,708.0 | 7,275 | 70% ~ 100% | 7,072 | 4,968 |
| 48 | 17 | 32 | 0.68 | 1,717.4 | 7,316 | 70% ~ 100% | 7,112 | 4,805 |
| 49 | 18 | 33 | 0.65 | 1,727.3 | 7,359 | 70% ~ 100% | 7,155 | 4,648 |
| 50 | 19 | 34 | 0.62 | 1,737.8 | 7,405 | 70% ~ 100% | 7,200 | 4,497 |
| 51 | 20 | 35 | 0.60 | 1,748.7 | 7,452 | 70% ~ 100% | 7,247 | 4,352 |
| 52 | 21 | 36 | 0.58 | 1,495.9 | 6,331 | 70% ~ 100% | 6,125 | 3,537 |
| 53 | 22 | 37 | 0.56 | 1,507.4 | 6,381 | 70% ~ 100% | 6,174 | 3,428 |
| 54 | 23 | 38 | 0.53 | 982.3 | 4,054 | 70% ~ 100% | 3,847 | 2,054 |
| 55 | 24 | 39 | 0.51 | 991.3 | 4,093 | 70% ~ 100% | 3,885 | 1,995 |
| 56 | 25 | 40 | 0.49 | 667.0 | 2,856 | 70% ~ 100% | 2,447 | 1,298 |
| 57 | 26 | 41 | 0.47 | 673.4 | 2,883 | 70% ~ 100% | 2,474 | 1,174 |
| 58 | 27 | 42 | 0.46 | 659.5 | 2,821 | 70% ~ 100% | 2,411 | 1,100 |
| 59 | 28 | 43 | 0.44 | 666.6 | 2,852 | 70% ~ 100% | 2,441 | 1,071 |
| 60 | 29 | 44 | 0.42 | 674.4 | 2,885 | 70% ~ 100% | 2,474 | 1,044 |
| 61 | 30 | 45 | 0.41 | 481.0 | 1,828 | 70% ~ 100% | 1,616 | 656 |
| 62 | 31 | 46 | 0.39 | 487.6 | 1,856 | 70% ~ 100% | 1,644 | 641 |
| 63 | 32 | 47 | 0.38 | 498.2 | 1,901 | 70% ~ 100% | 1,688 | 633 |
| 64 | 33 | 48 | 0.36 | 412.1 | 1,517 | 70% ~ 100% | 1,300 | 469 |
| 65 | 34 | 49 | 0.35 | 423.3 | 1,561 | 70% ~ 100% | 1,342 | 465 |
| 66 | 35 | 50 | 0.33 | 437.0 | 1,616 | 70% ~ 100% | 1,393 | 464 |
| 67 | 36 | 51 | 0.32 | 453.2 | 1,681 | 70% ~ 100% | 1,452 | 466 |
| 68 | 37 | 52 | 0.31 | 470.1 | 1,748 | 70% ~ 100% | 1,514 | 467 |
| 69 | 38 | 53 | 0.30 | 229.8 | 1,018 | 70% ~ 100% | 1,018 | 302 |
| 70 | 39 | 54 | 0.29 | 29.6 | 131 | 70% ~ 100% | 131 | 37 |
| 71 | 40 | 55 | 0.27 | 30.2 | 134 | 70% ~ 100% | 134 | 37 |
| 合計 (便益額) | | | | | | 70% ~ 100% | | 274,208 |

7 森林の総合利用便益
(2) ふれあい機会創出便益

468,531 千円

$$B = \sum_{t=T+1}^Y \frac{Tt \times Qt \times @1}{(1+i)^t} + \sum_{t=T+1}^Y \frac{Kt \times Qt \times @2}{(1+i)^t}$$

| | | | |
|-----|------------------------|------------------------|--------------------------------|
| T: | 整備期間(年) | | 6 |
| Y: | 評価期間(年) | | 46 |
| Tt: | 林道を整備した場合の森林への到達時間(分) | | 15.6 |
| @1: | 車種別の時間価値原単価(円/台・分) | 乗用車 バス | 40.1 374.27 |
| Kt: | 林道を整備した場合の森林への到達距離(km) | | 10.4 |
| @2: | 車種別の走行経費原単価(円/台・km) | 乗用車 バス | 15 55 |
| Qt: | 森林等を利用する者の交通量(台/年) | 40km/h 山地 40km/h 山地 | 乗用車 9210 ~ 17870 バス 30 ~ 60 |

便益算出表 (単位:千円)

| 評価期間 | 経過年 | 年度 | 割引係数 | 車種 (乗用車・バス) | 年効果額 | 効果発生割合 | 年発生効果額 = x | 現在価値 = x |
|---------|-----|----|------|----------------|--------|--------|---------------|-------------|
| 1 | 0 | 2 | 2.19 | | | | | |
| 2 | 0 | 3 | 2.11 | | | | | |
| 3 | 0 | 4 | 2.03 | | | | | |
| 4 | 0 | 5 | 1.95 | | | | | |
| 5 | 0 | 6 | 1.87 | | | | | |
| 6 | 0 | 7 | 1.80 | | | | | |
| 7 | 1 | 8 | 1.73 | 9210~17930 | 7,430 | 100% | 7,430 | 12,866 |
| 8 | 2 | 9 | 1.67 | 9210~17930 | 7,430 | 100% | 7,430 | 12,371 |
| 9 | 3 | 10 | 1.60 | 9210~17930 | 7,430 | 100% | 7,430 | 11,895 |
| 10 | 4 | 11 | 1.54 | 9210~17930 | 7,430 | 100% | 7,430 | 11,438 |
| 11 | 5 | 12 | 1.48 | 9210~17930 | 14,427 | 100% | 14,427 | 21,356 |
| 12 | 6 | 13 | 1.42 | 9210~17930 | 14,427 | 100% | 14,427 | 20,535 |
| 13 | 7 | 14 | 1.37 | 9210~17930 | 14,427 | 100% | 14,427 | 19,745 |
| 14 | 8 | 15 | 1.32 | 9210~17930 | 14,427 | 100% | 14,427 | 18,986 |
| 15 | 9 | 16 | 1.27 | 9210~17930 | 14,427 | 100% | 14,427 | 18,255 |
| 16 | 10 | 17 | 1.22 | 9210~17930 | 14,427 | 100% | 14,427 | 17,553 |
| 17 | 11 | 18 | 1.17 | 9210~17930 | 14,427 | 100% | 14,427 | 16,878 |
| 18 | 12 | 19 | 1.12 | 9210~17930 | 14,427 | 100% | 14,427 | 16,229 |
| 19 | 13 | 20 | 1.08 | 9210~17930 | 14,427 | 100% | 14,427 | 15,605 |
| 20 | 14 | 21 | 1.04 | 9210~17930 | 14,427 | 100% | 14,427 | 15,005 |
| 21 | 15 | 22 | 1.00 | 9210~17930 | 14,427 | 100% | 14,427 | 14,427 |
| 22 | 16 | 23 | 0.96 | 9210~17930 | 14,427 | 100% | 14,427 | 13,873 |
| 23 | 17 | 24 | 0.92 | 9210~17930 | 14,427 | 100% | 14,427 | 13,339 |
| 24 | 18 | 25 | 0.89 | 9210~17930 | 14,427 | 100% | 14,427 | 12,826 |
| 25 | 19 | 26 | 0.85 | 9210~17930 | 14,427 | 100% | 14,427 | 12,333 |
| 26 | 20 | 27 | 0.82 | 9210~17930 | 14,427 | 100% | 14,427 | 11,858 |
| 27 | 21 | 28 | 0.79 | 9210~17930 | 14,427 | 100% | 14,427 | 11,402 |
| 28 | 22 | 29 | 0.76 | 9210~17930 | 14,427 | 100% | 14,427 | 10,964 |
| 29 | 23 | 30 | 0.73 | 9210~17930 | 14,427 | 100% | 14,427 | 10,542 |
| 30 | 24 | 31 | 0.70 | 9210~17930 | 14,427 | 100% | 14,427 | 10,137 |
| 31 | 25 | 32 | 0.68 | 9210~17930 | 14,427 | 100% | 14,427 | 9,747 |
| 32 | 26 | 33 | 0.65 | 9210~17930 | 14,427 | 100% | 14,427 | 9,372 |
| 33 | 27 | 34 | 0.62 | 9210~17930 | 14,427 | 100% | 14,427 | 9,011 |
| 34 | 28 | 35 | 0.60 | 9210~17930 | 14,427 | 100% | 14,427 | 8,665 |
| 35 | 29 | 36 | 0.58 | 9210~17930 | 14,427 | 100% | 14,427 | 8,331 |
| 36 | 30 | 37 | 0.56 | 9210~17930 | 14,427 | 100% | 14,427 | 8,011 |
| 37 | 31 | 38 | 0.53 | 9210~17930 | 14,427 | 100% | 14,427 | 7,703 |
| 38 | 32 | 39 | 0.51 | 9210~17930 | 14,427 | 100% | 14,427 | 7,407 |
| 39 | 33 | 40 | 0.49 | 9210~17930 | 14,427 | 100% | 14,427 | 7,122 |
| 40 | 34 | 41 | 0.47 | 9210~17930 | 14,427 | 100% | 14,427 | 6,848 |
| 41 | 35 | 42 | 0.46 | 9210~17930 | 14,427 | 100% | 14,427 | 6,585 |
| 42 | 36 | 43 | 0.44 | 9210~17930 | 14,427 | 100% | 14,427 | 6,331 |
| 43 | 37 | 44 | 0.42 | 9210~17930 | 14,427 | 100% | 14,427 | 6,088 |
| 44 | 38 | 45 | 0.41 | 9210~17930 | 14,427 | 100% | 14,427 | 5,854 |
| 45 | 39 | 46 | 0.39 | 9210~17930 | 14,427 | 100% | 14,427 | 5,628 |
| 46 | 40 | 47 | 0.38 | 9210~17930 | 14,427 | 100% | 14,427 | 5,412 |
| 47 | 0 | 0 | 0.00 | | | | | |
| 48 | 0 | 0 | 0.00 | | | | | |
| 49 | 0 | 0 | 0.00 | | | | | |
| 50 | 0 | 0 | 0.00 | | | | | |
| 51 | 0 | 0 | 0.00 | | | | | |
| 52 | 0 | 0 | 0.00 | | | | | |
| 53 | 0 | 0 | 0.00 | | | | | |
| 54 | 0 | 0 | 0.00 | | | | | |
| 55 | 0 | 0 | 0.00 | | | | | |
| 56 | 0 | 0 | 0.00 | | | | | |
| 57 | 0 | 0 | 0.00 | | | | | |
| 58 | 0 | 0 | 0.00 | | | | | |
| 59 | 0 | 0 | 0.00 | | | | | |
| 60 | 0 | 0 | 0.00 | | | | | |
| 61 | 0 | 0 | 0.00 | | | | | |
| 62 | 0 | 0 | 0.00 | | | | | |
| 63 | 0 | 0 | 0.00 | | | | | |
| 64 | 0 | 0 | 0.00 | | | | | |
| 65 | 0 | 0 | 0.00 | | | | | |
| 66 | 0 | 0 | 0.00 | | | | | |
| 67 | 0 | 0 | 0.00 | | | | | |
| 68 | 0 | 0 | 0.00 | | | | | |
| 69 | 0 | 0 | 0.00 | | | | | |
| 70 | 0 | 0 | 0.00 | | | | | |
| 71 | 0 | 0 | 0.00 | | | | | |
| 72 | 0 | 0 | 0.00 | | | | | |
| 73 | 0 | 0 | 0.00 | | | | | |
| 74 | 0 | 0 | 0.00 | | | | | |
| 75 | 0 | 0 | 0.00 | | | | | |
| 合計(便益額) | | | | | | | | 468,531 |

9 維持管理費縮減便益

3,772.012 千円

$$B = \sum_{t=1}^Y \frac{(C_o - C_t) \times L_t}{(1 + i)^t}$$

| | | |
|-----|----------------------------|----------------|
| Y: | 評価期間(年) | 71 |
| Co: | 林道舗装等を実施しない場合の維持管理費(円/m・年) | 800 ~ 1,767 |
| Ct: | 林道舗装等を実施した場合の維持管理費(円/m・年) | 99 ~ 138 |
| Lt: | 維持管理費の縮減の対象となる林道の延長(m) | 2,173 ~ 11,649 |

便益算出表

| 評価期間 | 経過年 | 年度 | 割引係数 | 年効果額 | 効果発生割合 | (単位:千円) | |
|---------|-----|----|------|--------|--------|---------------|-------------|
| | | | | | | 年発生効果額 = x | 現在価値 = x |
| 1 | 0 | 48 | 4.27 | 10,795 | 100% | 10,795 | 3,544 |
| 2 | 0 | 49 | 4.10 | 10,795 | 100% | 10,795 | 6,816 |
| 3 | 0 | 50 | 3.95 | 10,795 | 100% | 10,795 | 9,830 |
| 4 | 0 | 51 | 3.79 | 14,335 | 100% | 14,335 | 20,360 |
| 5 | 0 | 52 | 3.65 | 14,335 | 100% | 14,335 | 22,606 |
| 6 | 0 | 53 | 3.51 | 14,335 | 100% | 14,335 | 24,650 |
| 7 | 0 | 54 | 3.37 | 14,335 | 100% | 14,335 | 26,503 |
| 8 | 0 | 55 | 3.24 | 14,335 | 100% | 14,335 | 28,177 |
| 9 | 0 | 56 | 3.12 | 14,335 | 100% | 14,335 | 29,683 |
| 10 | 0 | 57 | 3.00 | 14,335 | 100% | 14,335 | 31,031 |
| 11 | 0 | 58 | 2.88 | 14,335 | 100% | 14,335 | 32,232 |
| 12 | 0 | 59 | 2.77 | 22,888 | 100% | 22,888 | 57,006 |
| 13 | 0 | 60 | 2.67 | 22,888 | 100% | 22,888 | 57,027 |
| 14 | 0 | 61 | 2.56 | 22,888 | 100% | 22,888 | 54,834 |
| 15 | 0 | 62 | 2.46 | 22,888 | 100% | 22,888 | 52,725 |
| 16 | 0 | 63 | 2.37 | 42,592 | 100% | 42,592 | 97,395 |
| 17 | 0 | 1 | 2.28 | 50,758 | 100% | 50,758 | 94,978 |
| 18 | 0 | 2 | 2.19 | 50,758 | 100% | 50,758 | 92,603 |
| 19 | 0 | 3 | 2.11 | 50,758 | 100% | 50,758 | 90,271 |
| 20 | 0 | 4 | 2.03 | 50,758 | 100% | 50,758 | 87,980 |
| 21 | 0 | 5 | 1.95 | 60,806 | 100% | 60,806 | 105,305 |
| 22 | 0 | 6 | 1.87 | 60,806 | 100% | 60,806 | 102,347 |
| 23 | 0 | 7 | 1.80 | 60,806 | 100% | 60,806 | 99,461 |
| 24 | 0 | 8 | 1.73 | 74,472 | 100% | 74,472 | 120,311 |
| 25 | 0 | 9 | 1.67 | 74,472 | 100% | 74,472 | 116,655 |
| 26 | 0 | 10 | 1.60 | 74,472 | 100% | 74,472 | 113,102 |
| 27 | 0 | 11 | 1.54 | 74,472 | 100% | 74,472 | 109,650 |
| 28 | 0 | 12 | 1.48 | 74,472 | 100% | 74,472 | 106,296 |
| 29 | 0 | 13 | 1.42 | 74,472 | 100% | 74,472 | 103,038 |
| 30 | 0 | 14 | 1.37 | 74,472 | 100% | 74,472 | 99,873 |
| 31 | 0 | 15 | 1.32 | 74,472 | 100% | 74,472 | 96,032 |
| 32 | 1 | 16 | 1.27 | 80,016 | 100% | 80,016 | 99,354 |
| 33 | 2 | 17 | 1.22 | 80,016 | 100% | 80,016 | 95,532 |
| 34 | 3 | 18 | 1.17 | 80,016 | 100% | 80,016 | 91,858 |
| 35 | 4 | 19 | 1.12 | 80,016 | 100% | 80,016 | 88,325 |
| 36 | 5 | 20 | 1.08 | 80,016 | 100% | 80,016 | 84,928 |
| 37 | 6 | 21 | 1.04 | 80,016 | 100% | 80,016 | 81,662 |
| 38 | 7 | 22 | 1.00 | 80,016 | 100% | 80,016 | 78,521 |
| 39 | 8 | 23 | 0.96 | 80,016 | 100% | 80,016 | 75,501 |
| 40 | 9 | 24 | 0.92 | 80,016 | 100% | 80,016 | 72,597 |
| 41 | 10 | 25 | 0.89 | 80,016 | 100% | 80,016 | 69,805 |
| 42 | 11 | 26 | 0.85 | 80,016 | 100% | 80,016 | 67,120 |
| 43 | 12 | 27 | 0.82 | 80,016 | 100% | 80,016 | 64,538 |
| 44 | 13 | 28 | 0.79 | 76,476 | 100% | 76,476 | 60,440 |
| 45 | 14 | 29 | 0.76 | 76,476 | 100% | 76,476 | 58,116 |
| 46 | 15 | 30 | 0.73 | 76,476 | 100% | 76,476 | 55,881 |
| 47 | 16 | 31 | 0.70 | 76,476 | 100% | 76,476 | 53,731 |
| 48 | 17 | 32 | 0.68 | 76,476 | 100% | 76,476 | 51,665 |
| 49 | 18 | 33 | 0.65 | 76,476 | 100% | 76,476 | 49,678 |
| 50 | 19 | 34 | 0.62 | 76,476 | 100% | 76,476 | 47,767 |
| 51 | 20 | 35 | 0.60 | 76,476 | 100% | 76,476 | 45,930 |
| 52 | 21 | 36 | 0.58 | 67,924 | 100% | 67,924 | 39,224 |
| 53 | 22 | 37 | 0.56 | 67,924 | 100% | 67,924 | 37,716 |
| 54 | 23 | 38 | 0.53 | 57,129 | 100% | 57,129 | 30,502 |
| 55 | 24 | 39 | 0.51 | 57,129 | 100% | 57,129 | 29,328 |
| 56 | 25 | 40 | 0.49 | 37,424 | 100% | 37,424 | 18,474 |
| 57 | 26 | 41 | 0.47 | 37,424 | 100% | 37,424 | 17,763 |
| 58 | 27 | 42 | 0.46 | 37,424 | 100% | 37,424 | 17,080 |
| 59 | 28 | 43 | 0.44 | 37,424 | 100% | 37,424 | 16,423 |
| 60 | 29 | 44 | 0.42 | 37,424 | 100% | 37,424 | 15,791 |
| 61 | 30 | 45 | 0.41 | 27,376 | 100% | 27,376 | 11,107 |
| 62 | 31 | 46 | 0.39 | 27,376 | 100% | 27,376 | 10,680 |
| 63 | 32 | 47 | 0.38 | 27,376 | 100% | 27,376 | 10,269 |
| 64 | 33 | 48 | 0.36 | 13,710 | 100% | 13,710 | 4,945 |
| 65 | 34 | 49 | 0.35 | 13,710 | 100% | 13,710 | 4,755 |
| 66 | 35 | 50 | 0.33 | 13,710 | 100% | 13,710 | 4,572 |
| 67 | 36 | 51 | 0.32 | 13,710 | 100% | 13,710 | 4,396 |
| 68 | 37 | 52 | 0.31 | 13,710 | 100% | 13,710 | 4,227 |
| 69 | 38 | 53 | 0.30 | 13,710 | 100% | 13,710 | 4,065 |
| 70 | 39 | 54 | 0.29 | 13,710 | 100% | 13,710 | 3,908 |
| 71 | 40 | 55 | 0.27 | 5,544 | 100% | 5,544 | 1,520 |
| 合計(便益額) | | | | | | | 3,772,012 |