

期中の評価個表

| 事業名 | 水源林造成事業 | 事業計画期間 | S 50～H 66 (最長 80 年間) | | | | | | |
|--------------------------------|---|--------|-----------------------------|---------|---------------|---------|--------------|------------|------|
| 事業実施地区名 | 関東整備局 昭和 50 年度契約地 | 事業実施主体 | 独立行政法人森林総合研究所 森林農地整備センター | | | | | | |
| 事業の概要・目的 | <p>当事業は、福島県南会津郡南会津町外 17 市町村の民間による造林が困難な奥地水源地域において水源をかん養するため、独立行政法人森林総合研究所が分収造林契約の当事者となって、急速かつ計画的に森林の造成を行うことを目的としている。</p> <p>具体的には、水源かん養保安林及び同予定地のうち、無立木地、散生地、粗悪林相地等において、独立行政法人森林総合研究所が費用負担者となって造林地所有者、造林者と分収造林契約を締結し、新植・下刈・除伐・保育間伐など森林整備のための費用負担及び事業実行に関する技術指導を行い、水源林を造成するものである。</p> <ul style="list-style-type: none"> ・主な事業内容：契約件数 30 件、植栽面積 570ha ・総事業費：2,420,810 千円 (平成 17 年度の評価時点：2,348,687 千円) | | | | | | | | |
| ① 費用対効果分析の算定基礎となった要因の変化等 | <p>当事業の費用対効果分析における主な効果は、水源かん養便益であり、植栽や保育により森林を造成し、洪水防止、流域貯水、水質浄化に寄与する効果である。また、山地保全便益については、森林を造成し土砂流出や山腹崩壊等の防止に寄与する効果である。</p> <p>前回の評価時の植栽面積は 572ha であり、現時点植栽面積は 570ha である。なお、現時点における費用対効果分析の結果は以下のとおりである。</p> <table style="margin-left: auto; margin-right: auto;"> <tr> <td>総便益 (B)</td> <td>14,540,328 千円</td> </tr> <tr> <td>総費用 (C)</td> <td>7,774,416 千円</td> </tr> <tr> <td>分析結果 (B/C)</td> <td>1.87</td> </tr> </table> | | | 総便益 (B) | 14,540,328 千円 | 総費用 (C) | 7,774,416 千円 | 分析結果 (B/C) | 1.87 |
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| 総費用 (C) | 7,774,416 千円 | | | | | | | | |
| 分析結果 (B/C) | 1.87 | | | | | | | | |
| ② 森林・林業情勢、農山漁村の状況その他の社会経済情勢の変化 | <p>関係県における民有林の未立木地面積は、昭和 45 年の 76,979ha から平成 19 年の 144,361ha と増加傾向にあり、引き続き森林造成が必要である。</p> <p>また、関係県における私有林の不在村者所有森林面積は、昭和 45 年の 308,444ha から平成 17 年の 492,542ha と増加傾向にあり、林業就業者は、昭和 45 年の 31,142 人から平成 17 年の 7,368 人と減少し、平成 17 年の 65 才以上の割合は 3 割と高齢化も進行している。さらに、林業産出額は、昭和 46 年の 188,454 百万円から平成 17 年の 96,750 百万円、生産林業所得も昭和 46 年の 85,901 百万円から平成 17 年 51,870 百万円と減少している。これらのことから、地域の森林の管理水準の低下が危惧される。</p> | | | | | | | | |
| ③ 事業の進捗状況 | <p>植栽木の生育状況 (注 1) は、スギ 33.6 年生で樹高 13.4 m、胸高直径 18.8 cm、1ha 当たり材積 258 m³ となっている。</p> <p>なお、雪害等によって広葉樹林化した林分及び植栽木の生育が遅れている林分の占める割合は、植栽面積の 11 % である。</p> <p>また、適期の保育作業の計画的な実施により人工林としての景観の向上に配慮するとともに、作業道開設等においては景観と調和する間伐材等木材を利用した工法の採用を進めている。</p> <p>(注 1) 林齢別の生育状況を林齢別面積で加重平均したもので、広葉樹林化した林分 (広葉樹等の後生天然性樹木が過半を占める林分) 及び植栽木の生育が遅れている林分 (植栽木の樹高、1ha 当たり材積がいずれも収穫予測表の 5 等地の数値を 10 % 以上下回る林分) を含む。</p> | | | | | | | | |
| ④ 関連事業の整備状況 | <p>会津新潟地区の契約面積のうち、72 % が信濃川水系広神ダム、阿賀野川水系旭ダム等に係る流域 (集水区域) 内に位置している。会津新潟地区以外の契約面積のうち、34 % が相模川水系相模ダム、利根川水系湯西川ダム等に係る流域 (集水区域) 内に位置し、59% が簡易水道等の取水施設に係る流域 (集水区域) 内に位置している。</p> | | | | | | | | |

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|----------------------|---|
| ⑤ 地元（受益者、地方公共団体等）の意向 | 植栽地は周辺の平均的な森林と同様の生育をしており、所在市町村及び契約相手方（造林地所有者、造林者）は水源かん養等の機能発揮への期待が大きく、引き続き適期の保育作業の計画的な実施を要望している。 |
| ⑥ 事業コスト縮減等の可能性 | 植栽後、寒害等によって、広葉樹林化した一部の林分については、侵入広葉樹の育成に重点をおいた施業へ変更し、また、植栽木の生育が遅れている一部の林分については、植栽木の成長を見守りつつ、当分の間必要最小限の保育等にとどめている。 また、間伐の実施に当たっては、契約相手方（造林地所有者、造林者）の理解を得るなかで間伐木の選木及び間伐手法を工夫（列状間伐や間伐率を最大限に適用した強度な間伐等）することによりコスト縮減に努めることとしている。 |
| ⑦ 代替案の実現可能性 | 該当なし。 |
| 第三者委員会の意見 | |
| 評価結果（案）及び事業の実施方針 | <ul style="list-style-type: none"> ・必要性： 地域の森林の管理水準の低下が危惧されること等から、水源林造成事業による事業の必要性が認められる。 ・効率性： 植栽後、雪害等によって、広葉樹林化した一部の林分については、侵入広葉樹の育成に重点をおいた施業へ変更し、また、植栽木の生育が遅れている一部の林分については、植栽木の成長を見守りつつ、当分の間必要最小限の保育等にとどめるなど事業の実施に当たりコスト縮減に努めていることから、事業の効率性が認められる。 ・有効性： 適期の保育作業の計画的な実施など、適切な森林整備が行われており、水源かん養などの水土保全機能を十分発揮していることから、事業の有効性が認められる。 <p>事業の実施方針</p> |

事業名: 水源林造成事業
 施行箇所: 関東整備局 昭和50年度契約地

3,899,798 千円

1 水源かん養便益
 (1) 洪水防止便益

$$B = \sum_{t=1}^{T-1} \frac{t}{T \times (1+i)^t} + \sum_{t=T}^Y \frac{1}{(1+i)^t} \times (f_1 - f_2) \times \alpha \times A \times U \times 360$$

- 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) 75
 A: 事業対象区域面積(ha) 570
 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 | 570 | 52,252 | 7% | 3,483 | 13,760 |
| 2 | -34 | S51 | 3.79 | 570 | 52,252 | 13% | 6,967 | 26,405 |
| 3 | -33 | S52 | 3.65 | 570 | 52,252 | 20% | 10,450 | 38,144 |
| 4 | -32 | S53 | 3.51 | 570 | 52,252 | 27% | 13,934 | 48,908 |
| 5 | -31 | S54 | 3.37 | 570 | 52,252 | 33% | 17,417 | 58,696 |
| 6 | -30 | S55 | 3.24 | 570 | 52,252 | 40% | 20,901 | 67,718 |
| 7 | -29 | S56 | 3.12 | 570 | 52,252 | 47% | 24,384 | 76,079 |
| 8 | -28 | S57 | 3.00 | 570 | 52,252 | 53% | 27,868 | 83,603 |
| 9 | -27 | S58 | 2.88 | 570 | 52,252 | 60% | 31,351 | 90,291 |
| 10 | -26 | S59 | 2.77 | 570 | 52,252 | 67% | 34,835 | 96,492 |
| 11 | -25 | S60 | 2.67 | 570 | 52,252 | 73% | 38,318 | 102,309 |
| 12 | -24 | S61 | 2.56 | 570 | 52,252 | 80% | 41,801 | 107,012 |
| 13 | -23 | S62 | 2.46 | 570 | 52,252 | 87% | 45,285 | 111,401 |
| 14 | -22 | S63 | 2.37 | 570 | 52,252 | 93% | 48,768 | 115,581 |
| 15 | -21 | H 1 | 2.28 | 570 | 52,252 | 100% | 52,252 | 119,134 |
| 16 | -20 | H 2 | 2.19 | 570 | 52,252 | 100% | 52,252 | 114,432 |
| 17 | -19 | H 3 | 2.11 | 570 | 52,252 | 100% | 52,252 | 110,251 |
| 18 | -18 | H 4 | 2.03 | 570 | 52,252 | 100% | 52,252 | 106,071 |
| 19 | -17 | H 5 | 1.95 | 570 | 52,252 | 100% | 52,252 | 101,891 |
| 20 | -16 | H 6 | 1.87 | 570 | 52,252 | 100% | 52,252 | 97,711 |
| 21 | -15 | H 7 | 1.80 | 570 | 52,252 | 100% | 52,252 | 94,053 |
| 22 | -14 | H 8 | 1.73 | 570 | 52,252 | 100% | 52,252 | 90,396 |
| 23 | -13 | H 9 | 1.67 | 570 | 52,252 | 100% | 52,252 | 87,261 |
| 24 | -12 | H 10 | 1.60 | 570 | 52,252 | 100% | 52,252 | 83,603 |
| 25 | -11 | H 11 | 1.54 | 570 | 52,252 | 100% | 52,252 | 80,468 |
| 26 | -10 | H 12 | 1.48 | 570 | 52,252 | 100% | 52,252 | 77,333 |
| 27 | -9 | H 13 | 1.42 | 570 | 52,252 | 100% | 52,252 | 74,198 |
| 28 | -8 | H 14 | 1.37 | 570 | 52,252 | 100% | 52,252 | 71,585 |
| 29 | -7 | H 15 | 1.32 | 570 | 52,252 | 100% | 52,252 | 68,972 |
| 30 | -6 | H 16 | 1.27 | 570 | 52,252 | 100% | 52,252 | 66,360 |
| 31 | -5 | H 17 | 1.22 | 570 | 52,252 | 100% | 52,252 | 63,747 |
| 32 | -4 | H 18 | 1.17 | 570 | 52,252 | 100% | 52,252 | 61,135 |
| 33 | -3 | H 19 | 1.12 | 570 | 52,252 | 100% | 52,252 | 58,522 |
| 34 | -2 | H 20 | 1.08 | 570 | 52,252 | 100% | 52,252 | 56,432 |
| 35 | -1 | H 21 | 1.04 | 570 | 52,252 | 100% | 52,252 | 54,342 |
| 36 | 0 | H 22 | 1.00 | 570 | 52,252 | 100% | 52,252 | 52,252 |
| 37 | 1 | H 23 | 0.96 | 570 | 52,252 | 100% | 52,252 | 50,162 |
| 38 | 2 | H 24 | 0.92 | 570 | 52,252 | 100% | 52,252 | 48,072 |
| 39 | 3 | H 25 | 0.89 | 570 | 52,252 | 100% | 52,252 | 46,504 |
| 40 | 4 | H 26 | 0.85 | 570 | 52,252 | 100% | 52,252 | 44,414 |
| 41 | 5 | H 27 | 0.82 | 570 | 52,252 | 100% | 52,252 | 42,847 |
| 42 | 6 | H 28 | 0.79 | 570 | 52,252 | 100% | 52,252 | 41,279 |
| 43 | 7 | H 29 | 0.76 | 570 | 52,252 | 100% | 52,252 | 39,711 |
| 44 | 8 | H 30 | 0.73 | 570 | 52,252 | 100% | 52,252 | 38,144 |
| 45 | 9 | H 31 | 0.70 | 570 | 52,252 | 100% | 52,252 | 36,576 |
| 46 | 10 | H 32 | 0.68 | 570 | 52,252 | 100% | 52,252 | 35,531 |
| 47 | 11 | H 33 | 0.65 | 570 | 52,252 | 100% | 52,252 | 33,964 |
| 48 | 12 | H 34 | 0.62 | 570 | 52,252 | 100% | 52,252 | 32,396 |
| 49 | 13 | H 35 | 0.60 | 570 | 52,252 | 100% | 52,252 | 31,351 |
| 50 | 14 | H 36 | 0.58 | 570 | 52,252 | 100% | 52,252 | 30,306 |
| 51 | 15 | H 37 | 0.56 | 570 | 52,252 | 100% | 52,252 | 29,261 |
| 52 | 16 | H 38 | 0.53 | 570 | 52,252 | 100% | 52,252 | 27,993 |
| 53 | 17 | H 39 | 0.51 | 570 | 52,252 | 100% | 52,252 | 26,648 |
| 54 | 18 | H 40 | 0.49 | 570 | 52,252 | 100% | 52,252 | 25,603 |
| 55 | 19 | H 41 | 0.47 | 570 | 52,252 | 100% | 52,252 | 24,558 |
| 56 | 20 | H 42 | 0.46 | 570 | 52,252 | 100% | 52,252 | 24,036 |
| 57 | 21 | H 43 | 0.44 | 570 | 52,252 | 100% | 52,252 | 22,991 |
| 58 | 22 | H 44 | 0.42 | 570 | 52,252 | 100% | 52,252 | 21,946 |
| 59 | 23 | H 45 | 0.41 | 570 | 52,252 | 100% | 52,252 | 21,423 |
| 60 | 24 | H 46 | 0.39 | 570 | 52,252 | 100% | 52,252 | 20,378 |
| 61 | 25 | H 47 | 0.38 | 570 | 52,252 | 100% | 52,252 | 19,856 |
| 62 | 26 | H 48 | 0.36 | 570 | 52,252 | 100% | 52,252 | 18,811 |
| 63 | 27 | H 49 | 0.35 | 570 | 52,252 | 100% | 52,252 | 18,288 |
| 64 | 28 | H 50 | 0.33 | 570 | 52,252 | 100% | 52,252 | 17,243 |
| 65 | 29 | H 51 | 0.32 | 570 | 52,252 | 100% | 52,252 | 16,721 |
| 66 | 30 | H 52 | 0.31 | 570 | 52,252 | 100% | 52,252 | 16,198 |
| 67 | 31 | H 53 | 0.30 | 570 | 52,252 | 100% | 52,252 | 15,676 |
| 68 | 32 | H 54 | 0.29 | 570 | 52,252 | 100% | 52,252 | 15,153 |
| 69 | 33 | H 55 | 0.27 | 570 | 52,252 | 100% | 52,252 | 14,108 |
| 70 | 34 | H 56 | 0.26 | 570 | 52,252 | 100% | 52,252 | 13,585 |
| 71 | 35 | H 57 | 0.25 | 570 | 52,252 | 100% | 52,252 | 13,063 |
| 72 | 36 | H 58 | 0.24 | 570 | 52,252 | 100% | 52,252 | 12,540 |
| 73 | 37 | H 59 | 0.23 | 570 | 52,252 | 100% | 52,252 | 12,018 |
| 74 | 38 | H 60 | 0.23 | 570 | 52,252 | 100% | 52,252 | 12,018 |
| 75 | 39 | H 61 | 0.22 | 570 | 52,252 | 100% | 52,252 | 11,495 |
| 76 | 40 | H 62 | 0.21 | 570 | 52,252 | 100% | 52,252 | 10,973 |
| 77 | 41 | H 63 | 0.20 | 570 | 52,252 | 100% | 52,252 | 10,450 |
| 78 | 42 | H 64 | 0.19 | 570 | 52,252 | 100% | 52,252 | 9,928 |
| 79 | 43 | H 65 | 0.19 | 570 | 52,252 | 100% | 52,252 | 9,928 |
| 80 | 44 | H 66 | 0.18 | 570 | 52,252 | 100% | 52,252 | 9,405 |
| 合計(便益額) | | | | | | | | 3,899,798 |

事業名: 水源林造成事業
 施行箇所: 関東整備局 昭和50年度契約地

1,689,871 千円

1 水源かん養便益
 (2) 流域貯水便益

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

- A: 事業対象区域面積 (ha) 570
 P: 年間平均降雨量 (mm/年) 1,741
 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/㎡/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

| 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 | 570 | 22,642 | 7% | 1,509 | 5,962 |
| 2 | -34 | S51 | 3.79 | 570 | 22,642 | 13% | 3,019 | 11,442 |
| 3 | -33 | S52 | 3.65 | 570 | 22,642 | 20% | 4,528 | 16,529 |
| 4 | -32 | S53 | 3.51 | 570 | 22,642 | 27% | 6,038 | 21,193 |
| 5 | -31 | S54 | 3.37 | 570 | 22,642 | 33% | 7,547 | 25,434 |
| 6 | -30 | S55 | 3.24 | 570 | 22,642 | 40% | 9,057 | 29,344 |
| 7 | -29 | S56 | 3.12 | 570 | 22,642 | 47% | 10,566 | 32,967 |
| 8 | -28 | S57 | 3.00 | 570 | 22,642 | 53% | 12,076 | 36,227 |
| 9 | -27 | S58 | 2.88 | 570 | 22,642 | 60% | 13,585 | 39,125 |
| 10 | -26 | S59 | 2.77 | 570 | 22,642 | 67% | 15,095 | 41,812 |
| 11 | -25 | S60 | 2.67 | 570 | 22,642 | 73% | 16,604 | 44,333 |
| 12 | -24 | S61 | 2.56 | 570 | 22,642 | 80% | 18,114 | 46,371 |
| 13 | -23 | S62 | 2.46 | 570 | 22,642 | 87% | 19,623 | 48,273 |
| 14 | -22 | S63 | 2.37 | 570 | 22,642 | 93% | 21,132 | 50,084 |
| 15 | -21 | H 1 | 2.28 | 570 | 22,642 | 100% | 22,642 | 51,624 |
| 16 | -20 | H 2 | 2.19 | 570 | 22,642 | 100% | 22,642 | 49,586 |
| 17 | -19 | H 3 | 2.11 | 570 | 22,642 | 100% | 22,642 | 47,774 |
| 18 | -18 | H 4 | 2.03 | 570 | 22,642 | 100% | 22,642 | 45,963 |
| 19 | -17 | H 5 | 1.95 | 570 | 22,642 | 100% | 22,642 | 44,152 |
| 20 | -16 | H 6 | 1.87 | 570 | 22,642 | 100% | 22,642 | 42,340 |
| 21 | -15 | H 7 | 1.80 | 570 | 22,642 | 100% | 22,642 | 40,755 |
| 22 | -14 | H 8 | 1.73 | 570 | 22,642 | 100% | 22,642 | 39,171 |
| 23 | -13 | H 9 | 1.67 | 570 | 22,642 | 100% | 22,642 | 37,812 |
| 24 | -12 | H 10 | 1.60 | 570 | 22,642 | 100% | 22,642 | 36,227 |
| 25 | -11 | H 11 | 1.54 | 570 | 22,642 | 100% | 22,642 | 34,869 |
| 26 | -10 | H 12 | 1.48 | 570 | 22,642 | 100% | 22,642 | 33,510 |
| 27 | -9 | H 13 | 1.42 | 570 | 22,642 | 100% | 22,642 | 32,152 |
| 28 | -8 | H 14 | 1.37 | 570 | 22,642 | 100% | 22,642 | 31,019 |
| 29 | -7 | H 15 | 1.32 | 570 | 22,642 | 100% | 22,642 | 29,887 |
| 30 | -6 | H 16 | 1.27 | 570 | 22,642 | 100% | 22,642 | 28,755 |
| 31 | -5 | H 17 | 1.22 | 570 | 22,642 | 100% | 22,642 | 27,623 |
| 32 | -4 | H 18 | 1.17 | 570 | 22,642 | 100% | 22,642 | 26,491 |
| 33 | -3 | H 19 | 1.12 | 570 | 22,642 | 100% | 22,642 | 25,359 |
| 34 | -2 | H 20 | 1.08 | 570 | 22,642 | 100% | 22,642 | 24,453 |
| 35 | -1 | H 21 | 1.04 | 570 | 22,642 | 100% | 22,642 | 23,548 |
| 36 | 0 | H 22 | 1.00 | 570 | 22,642 | 100% | 22,642 | 22,642 |
| 37 | 1 | H 23 | 0.96 | 570 | 22,642 | 100% | 22,642 | 21,736 |
| 38 | 2 | H 24 | 0.92 | 570 | 22,642 | 100% | 22,642 | 20,831 |
| 39 | 3 | H 25 | 0.89 | 570 | 22,642 | 100% | 22,642 | 20,151 |
| 40 | 4 | H 26 | 0.85 | 570 | 22,642 | 100% | 22,642 | 19,246 |
| 41 | 5 | H 27 | 0.82 | 570 | 22,642 | 100% | 22,642 | 18,566 |
| 42 | 6 | H 28 | 0.79 | 570 | 22,642 | 100% | 22,642 | 17,887 |
| 43 | 7 | H 29 | 0.76 | 570 | 22,642 | 100% | 22,642 | 17,208 |
| 44 | 8 | H 30 | 0.73 | 570 | 22,642 | 100% | 22,642 | 16,529 |
| 45 | 9 | H 31 | 0.70 | 570 | 22,642 | 100% | 22,642 | 15,849 |
| 46 | 10 | H 32 | 0.68 | 570 | 22,642 | 100% | 22,642 | 15,396 |
| 47 | 11 | H 33 | 0.65 | 570 | 22,642 | 100% | 22,642 | 14,717 |
| 48 | 12 | H 34 | 0.62 | 570 | 22,642 | 100% | 22,642 | 14,038 |
| 49 | 13 | H 35 | 0.60 | 570 | 22,642 | 100% | 22,642 | 13,585 |
| 50 | 14 | H 36 | 0.58 | 570 | 22,642 | 100% | 22,642 | 13,132 |
| 51 | 15 | H 37 | 0.56 | 570 | 22,642 | 100% | 22,642 | 12,679 |
| 52 | 16 | H 38 | 0.53 | 570 | 22,642 | 100% | 22,642 | 12,000 |
| 53 | 17 | H 39 | 0.51 | 570 | 22,642 | 100% | 22,642 | 11,547 |
| 54 | 18 | H 40 | 0.49 | 570 | 22,642 | 100% | 22,642 | 11,095 |
| 55 | 19 | H 41 | 0.47 | 570 | 22,642 | 100% | 22,642 | 10,642 |
| 56 | 20 | H 42 | 0.46 | 570 | 22,642 | 100% | 22,642 | 10,415 |
| 57 | 21 | H 43 | 0.44 | 570 | 22,642 | 100% | 22,642 | 9,982 |
| 58 | 22 | H 44 | 0.42 | 570 | 22,642 | 100% | 22,642 | 9,510 |
| 59 | 23 | H 45 | 0.41 | 570 | 22,642 | 100% | 22,642 | 9,283 |
| 60 | 24 | H 46 | 0.39 | 570 | 22,642 | 100% | 22,642 | 8,830 |
| 61 | 25 | H 47 | 0.38 | 570 | 22,642 | 100% | 22,642 | 8,604 |
| 62 | 26 | H 48 | 0.36 | 570 | 22,642 | 100% | 22,642 | 8,151 |
| 63 | 27 | H 49 | 0.35 | 570 | 22,642 | 100% | 22,642 | 7,925 |
| 64 | 28 | H 50 | 0.33 | 570 | 22,642 | 100% | 22,642 | 7,472 |
| 65 | 29 | H 51 | 0.32 | 570 | 22,642 | 100% | 22,642 | 7,245 |
| 66 | 30 | H 52 | 0.31 | 570 | 22,642 | 100% | 22,642 | 7,019 |
| 67 | 31 | H 53 | 0.30 | 570 | 22,642 | 100% | 22,642 | 6,793 |
| 68 | 32 | H 54 | 0.29 | 570 | 22,642 | 100% | 22,642 | 6,566 |
| 69 | 33 | H 55 | 0.27 | 570 | 22,642 | 100% | 22,642 | 6,113 |
| 70 | 34 | H 56 | 0.26 | 570 | 22,642 | 100% | 22,642 | 5,887 |
| 71 | 35 | H 57 | 0.25 | 570 | 22,642 | 100% | 22,642 | 5,660 |
| 72 | 36 | H 58 | 0.24 | 570 | 22,642 | 100% | 22,642 | 5,434 |
| 73 | 37 | H 59 | 0.23 | 570 | 22,642 | 100% | 22,642 | 5,208 |
| 74 | 38 | H 60 | 0.23 | 570 | 22,642 | 100% | 22,642 | 5,208 |
| 75 | 39 | H 61 | 0.22 | 570 | 22,642 | 100% | 22,642 | 4,981 |
| 76 | 40 | H 62 | 0.21 | 570 | 22,642 | 100% | 22,642 | 4,755 |
| 77 | 41 | H 63 | 0.20 | 570 | 22,642 | 100% | 22,642 | 4,528 |
| 78 | 42 | H 64 | 0.19 | 570 | 22,642 | 100% | 22,642 | 4,302 |
| 79 | 43 | H 65 | 0.19 | 570 | 22,642 | 100% | 22,642 | 4,302 |
| 80 | 44 | H 66 | 0.18 | 570 | 22,642 | 100% | 22,642 | 4,076 |
| 合計 (便益額) | | | | | | | | 1,689,871 |

1 水源かん養便益
 (3) 水質浄化便益

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

$$u = \frac{U_x \times Q_x + U_y \times Q_y}{Q_x + Q_y}$$

- 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) 570
- P: 年間平均降雨量(mm/年) 1,741
- 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(UxとUyを用いてQxとQy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

| 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 | 570 | 38,654 | 7% | 2,577 | 10,179 |
| 2 | -34 | S51 | 3.79 | 570 | 38,654 | 13% | 5,154 | 19,533 |
| 3 | -33 | S52 | 3.65 | 570 | 38,654 | 20% | 7,731 | 28,218 |
| 4 | -32 | S53 | 3.51 | 570 | 38,654 | 27% | 10,308 | 36,180 |
| 5 | -31 | S54 | 3.37 | 570 | 38,654 | 33% | 12,885 | 43,422 |
| 6 | -30 | S55 | 3.24 | 570 | 38,654 | 40% | 15,462 | 50,096 |
| 7 | -29 | S56 | 3.12 | 570 | 38,654 | 47% | 18,039 | 56,280 |
| 8 | -28 | S57 | 3.00 | 570 | 38,654 | 53% | 20,616 | 61,847 |
| 9 | -27 | S58 | 2.88 | 570 | 38,654 | 60% | 23,193 | 66,794 |
| 10 | -26 | S59 | 2.77 | 570 | 38,654 | 67% | 25,769 | 71,381 |
| 11 | -25 | S60 | 2.67 | 570 | 38,654 | 73% | 28,346 | 75,685 |
| 12 | -24 | S61 | 2.56 | 570 | 38,654 | 80% | 30,923 | 79,164 |
| 13 | -23 | S62 | 2.46 | 570 | 38,654 | 87% | 33,500 | 82,411 |
| 14 | -22 | S63 | 2.37 | 570 | 38,654 | 93% | 36,077 | 85,503 |
| 15 | -21 | H 1 | 2.28 | 570 | 38,654 | 100% | 38,654 | 88,132 |
| 16 | -20 | H 2 | 2.19 | 570 | 38,654 | 100% | 38,654 | 84,653 |
| 17 | -19 | H 3 | 2.11 | 570 | 38,654 | 100% | 38,654 | 81,560 |
| 18 | -18 | H 4 | 2.03 | 570 | 38,654 | 100% | 38,654 | 78,468 |
| 19 | -17 | H 5 | 1.95 | 570 | 38,654 | 100% | 38,654 | 75,376 |
| 20 | -16 | H 6 | 1.87 | 570 | 38,654 | 100% | 38,654 | 72,283 |
| 21 | -15 | H 7 | 1.80 | 570 | 38,654 | 100% | 38,654 | 69,578 |
| 22 | -14 | H 8 | 1.73 | 570 | 38,654 | 100% | 38,654 | 66,872 |
| 23 | -13 | H 9 | 1.67 | 570 | 38,654 | 100% | 38,654 | 64,552 |
| 24 | -12 | H 10 | 1.60 | 570 | 38,654 | 100% | 38,654 | 61,847 |
| 25 | -11 | H 11 | 1.54 | 570 | 38,654 | 100% | 38,654 | 59,277 |
| 26 | -10 | H 12 | 1.48 | 570 | 38,654 | 100% | 38,654 | 57,208 |
| 27 | -9 | H 13 | 1.42 | 570 | 38,654 | 100% | 38,654 | 54,889 |
| 28 | -8 | H 14 | 1.37 | 570 | 38,654 | 100% | 38,654 | 52,956 |
| 29 | -7 | H 15 | 1.32 | 570 | 38,654 | 100% | 38,654 | 51,024 |
| 30 | -6 | H 16 | 1.27 | 570 | 38,654 | 100% | 38,654 | 49,091 |
| 31 | -5 | H 17 | 1.22 | 570 | 38,654 | 100% | 38,654 | 47,158 |
| 32 | -4 | H 18 | 1.17 | 570 | 38,654 | 100% | 38,654 | 45,225 |
| 33 | -3 | H 19 | 1.12 | 570 | 38,654 | 100% | 38,654 | 43,293 |
| 34 | -2 | H 20 | 1.08 | 570 | 38,654 | 100% | 38,654 | 41,747 |
| 35 | -1 | H 21 | 1.04 | 570 | 38,654 | 100% | 38,654 | 40,200 |
| 36 | 0 | H 22 | 1.00 | 570 | 38,654 | 100% | 38,654 | 38,654 |
| 37 | 1 | H 23 | 0.96 | 570 | 38,654 | 100% | 38,654 | 37,108 |
| 38 | 2 | H 24 | 0.92 | 570 | 38,654 | 100% | 38,654 | 35,562 |
| 39 | 3 | H 25 | 0.89 | 570 | 38,654 | 100% | 38,654 | 34,402 |
| 40 | 4 | H 26 | 0.85 | 570 | 38,654 | 100% | 38,654 | 32,856 |
| 41 | 5 | H 27 | 0.82 | 570 | 38,654 | 100% | 38,654 | 31,696 |
| 42 | 6 | H 28 | 0.79 | 570 | 38,654 | 100% | 38,654 | 30,537 |
| 43 | 7 | H 29 | 0.76 | 570 | 38,654 | 100% | 38,654 | 29,377 |
| 44 | 8 | H 30 | 0.73 | 570 | 38,654 | 100% | 38,654 | 28,218 |
| 45 | 9 | H 31 | 0.70 | 570 | 38,654 | 100% | 38,654 | 27,058 |
| 46 | 10 | H 32 | 0.68 | 570 | 38,654 | 100% | 38,654 | 26,285 |
| 47 | 11 | H 33 | 0.65 | 570 | 38,654 | 100% | 38,654 | 25,125 |
| 48 | 12 | H 34 | 0.62 | 570 | 38,654 | 100% | 38,654 | 23,966 |
| 49 | 13 | H 35 | 0.60 | 570 | 38,654 | 100% | 38,654 | 23,193 |
| 50 | 14 | H 36 | 0.58 | 570 | 38,654 | 100% | 38,654 | 22,419 |
| 51 | 15 | H 37 | 0.56 | 570 | 38,654 | 100% | 38,654 | 21,646 |
| 52 | 16 | H 38 | 0.53 | 570 | 38,654 | 100% | 38,654 | 20,487 |
| 53 | 17 | H 39 | 0.51 | 570 | 38,654 | 100% | 38,654 | 19,714 |
| 54 | 18 | H 40 | 0.49 | 570 | 38,654 | 100% | 38,654 | 18,941 |
| 55 | 19 | H 41 | 0.47 | 570 | 38,654 | 100% | 38,654 | 18,167 |
| 56 | 20 | H 42 | 0.46 | 570 | 38,654 | 100% | 38,654 | 17,781 |
| 57 | 21 | H 43 | 0.44 | 570 | 38,654 | 100% | 38,654 | 17,008 |
| 58 | 22 | H 44 | 0.42 | 570 | 38,654 | 100% | 38,654 | 16,235 |
| 59 | 23 | H 45 | 0.41 | 570 | 38,654 | 100% | 38,654 | 15,848 |
| 60 | 24 | H 46 | 0.39 | 570 | 38,654 | 100% | 38,654 | 15,075 |
| 61 | 25 | H 47 | 0.38 | 570 | 38,654 | 100% | 38,654 | 14,689 |
| 62 | 26 | H 48 | 0.36 | 570 | 38,654 | 100% | 38,654 | 13,916 |
| 63 | 27 | H 49 | 0.35 | 570 | 38,654 | 100% | 38,654 | 13,529 |
| 64 | 28 | H 50 | 0.33 | 570 | 38,654 | 100% | 38,654 | 12,756 |
| 65 | 29 | H 51 | 0.32 | 570 | 38,654 | 100% | 38,654 | 12,369 |
| 66 | 30 | H 52 | 0.31 | 570 | 38,654 | 100% | 38,654 | 11,983 |
| 67 | 31 | H 53 | 0.30 | 570 | 38,654 | 100% | 38,654 | 11,596 |
| 68 | 32 | H 54 | 0.29 | 570 | 38,654 | 100% | 38,654 | 11,210 |
| 69 | 33 | H 55 | 0.27 | 570 | 38,654 | 100% | 38,654 | 10,437 |
| 70 | 34 | H 56 | 0.26 | 570 | 38,654 | 100% | 38,654 | 10,050 |
| 71 | 35 | H 57 | 0.25 | 570 | 38,654 | 100% | 38,654 | 9,664 |
| 72 | 36 | H 58 | 0.24 | 570 | 38,654 | 100% | 38,654 | 9,277 |
| 73 | 37 | H 59 | 0.23 | 570 | 38,654 | 100% | 38,654 | 8,890 |
| 74 | 38 | H 60 | 0.23 | 570 | 38,654 | 100% | 38,654 | 8,990 |
| 75 | 39 | H 61 | 0.22 | 570 | 38,654 | 100% | 38,654 | 8,504 |
| 76 | 40 | H 62 | 0.21 | 570 | 38,654 | 100% | 38,654 | 8,117 |
| 77 | 41 | H 63 | 0.20 | 570 | 38,654 | 100% | 38,654 | 7,731 |
| 78 | 42 | H 64 | 0.19 | 570 | 38,654 | 100% | 38,654 | 7,344 |
| 79 | 43 | H 65 | 0.19 | 570 | 38,654 | 100% | 38,654 | 7,344 |
| 80 | 44 | H 66 | 0.18 | 570 | 38,654 | 100% | 38,654 | 6,958 |
| 合計(便益額) | | | | 570 | 38,654 | 100% | 38,654 | 2,884,941 |

事業名: 水源林造成事業
 施行箇所: 関東整備局 昭和50年度契約地

4,598,330 千円

2 山地保全便益
 (1) 土砂流出防止便益

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

- 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) 570
 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 | 570 | 61,611 | 7% | 4,107 | 16,224 |
| 2 | -34 | S51 | 3.79 | 570 | 61,611 | 13% | 8,215 | 31,134 |
| 3 | -33 | S52 | 3.65 | 570 | 61,611 | 20% | 12,322 | 44,976 |
| 4 | -32 | S53 | 3.51 | 570 | 61,611 | 27% | 16,430 | 57,668 |
| 5 | -31 | S54 | 3.37 | 570 | 61,611 | 33% | 20,537 | 69,210 |
| 6 | -30 | S55 | 3.24 | 570 | 61,611 | 40% | 24,644 | 79,848 |
| 7 | -29 | S56 | 3.12 | 570 | 61,611 | 47% | 28,752 | 89,705 |
| 8 | -28 | S57 | 3.00 | 570 | 61,611 | 53% | 32,859 | 98,578 |
| 9 | -27 | S58 | 2.88 | 570 | 61,611 | 60% | 36,967 | 106,464 |
| 10 | -26 | S59 | 2.77 | 570 | 61,611 | 67% | 41,074 | 113,775 |
| 11 | -25 | S60 | 2.67 | 570 | 61,611 | 73% | 45,182 | 120,635 |
| 12 | -24 | S61 | 2.56 | 570 | 61,611 | 80% | 49,289 | 126,180 |
| 13 | -23 | S62 | 2.46 | 570 | 61,611 | 87% | 53,396 | 131,355 |
| 14 | -22 | S63 | 2.37 | 570 | 61,611 | 93% | 57,504 | 136,284 |
| 15 | -21 | H 1 | 2.28 | 570 | 61,611 | 100% | 61,611 | 140,473 |
| 16 | -20 | H 2 | 2.19 | 570 | 61,611 | 100% | 61,611 | 134,928 |
| 17 | -19 | H 3 | 2.11 | 570 | 61,611 | 100% | 61,611 | 130,000 |
| 18 | -18 | H 4 | 2.03 | 570 | 61,611 | 100% | 61,611 | 125,071 |
| 19 | -17 | H 5 | 1.95 | 570 | 61,611 | 100% | 61,611 | 120,142 |
| 20 | -16 | H 6 | 1.87 | 570 | 61,611 | 100% | 61,611 | 115,213 |
| 21 | -15 | H 7 | 1.80 | 570 | 61,611 | 100% | 61,611 | 110,300 |
| 22 | -14 | H 8 | 1.73 | 570 | 61,611 | 100% | 61,611 | 106,587 |
| 23 | -13 | H 9 | 1.67 | 570 | 61,611 | 100% | 61,611 | 102,891 |
| 24 | -12 | H 10 | 1.60 | 570 | 61,611 | 100% | 61,611 | 99,578 |
| 25 | -11 | H 11 | 1.54 | 570 | 61,611 | 100% | 61,611 | 94,881 |
| 26 | -10 | H 12 | 1.48 | 570 | 61,611 | 100% | 61,611 | 91,185 |
| 27 | -9 | H 13 | 1.42 | 570 | 61,611 | 100% | 61,611 | 87,488 |
| 28 | -8 | H 14 | 1.37 | 570 | 61,611 | 100% | 61,611 | 84,407 |
| 29 | -7 | H 15 | 1.32 | 570 | 61,611 | 100% | 61,611 | 81,327 |
| 30 | -6 | H 16 | 1.27 | 570 | 61,611 | 100% | 61,611 | 78,246 |
| 31 | -5 | H 17 | 1.22 | 570 | 61,611 | 100% | 61,611 | 75,166 |
| 32 | -4 | H 18 | 1.17 | 570 | 61,611 | 100% | 61,611 | 72,085 |
| 33 | -3 | H 19 | 1.12 | 570 | 61,611 | 100% | 61,611 | 69,005 |
| 34 | -2 | H 20 | 1.08 | 570 | 61,611 | 100% | 61,611 | 66,540 |
| 35 | -1 | H 21 | 1.04 | 570 | 61,611 | 100% | 61,611 | 64,076 |
| 36 | 0 | H 22 | 1.00 | 570 | 61,611 | 100% | 61,611 | 61,611 |
| 37 | 1 | H 23 | 0.96 | 570 | 61,611 | 100% | 61,611 | 59,147 |
| 38 | 2 | H 24 | 0.92 | 570 | 61,611 | 100% | 61,611 | 56,682 |
| 39 | 3 | H 25 | 0.89 | 570 | 61,611 | 100% | 61,611 | 54,834 |
| 40 | 4 | H 26 | 0.85 | 570 | 61,611 | 100% | 61,611 | 52,370 |
| 41 | 5 | H 27 | 0.82 | 570 | 61,611 | 100% | 61,611 | 50,521 |
| 42 | 6 | H 28 | 0.79 | 570 | 61,611 | 100% | 61,611 | 48,673 |
| 43 | 7 | H 29 | 0.76 | 570 | 61,611 | 100% | 61,611 | 46,824 |
| 44 | 8 | H 30 | 0.73 | 570 | 61,611 | 100% | 61,611 | 44,976 |
| 45 | 9 | H 31 | 0.70 | 570 | 61,611 | 100% | 61,611 | 43,128 |
| 46 | 10 | H 32 | 0.68 | 570 | 61,611 | 100% | 61,611 | 41,896 |
| 47 | 11 | H 33 | 0.65 | 570 | 61,611 | 100% | 61,611 | 40,047 |
| 48 | 12 | H 34 | 0.62 | 570 | 61,611 | 100% | 61,611 | 38,199 |
| 49 | 13 | H 35 | 0.60 | 570 | 61,611 | 100% | 61,611 | 36,967 |
| 50 | 14 | H 36 | 0.58 | 570 | 61,611 | 100% | 61,611 | 35,734 |
| 51 | 15 | H 37 | 0.56 | 570 | 61,611 | 100% | 61,611 | 34,502 |
| 52 | 16 | H 38 | 0.53 | 570 | 61,611 | 100% | 61,611 | 32,654 |
| 53 | 17 | H 39 | 0.51 | 570 | 61,611 | 100% | 61,611 | 31,422 |
| 54 | 18 | H 40 | 0.49 | 570 | 61,611 | 100% | 61,611 | 30,189 |
| 55 | 19 | H 41 | 0.47 | 570 | 61,611 | 100% | 61,611 | 28,957 |
| 56 | 20 | H 42 | 0.46 | 570 | 61,611 | 100% | 61,611 | 28,341 |
| 57 | 21 | H 43 | 0.44 | 570 | 61,611 | 100% | 61,611 | 27,109 |
| 58 | 22 | H 44 | 0.42 | 570 | 61,611 | 100% | 61,611 | 25,877 |
| 59 | 23 | H 45 | 0.41 | 570 | 61,611 | 100% | 61,611 | 25,261 |
| 60 | 24 | H 46 | 0.39 | 570 | 61,611 | 100% | 61,611 | 24,028 |
| 61 | 25 | H 47 | 0.38 | 570 | 61,611 | 100% | 61,611 | 23,412 |
| 62 | 26 | H 48 | 0.36 | 570 | 61,611 | 100% | 61,611 | 22,180 |
| 63 | 27 | H 49 | 0.35 | 570 | 61,611 | 100% | 61,611 | 21,564 |
| 64 | 28 | H 50 | 0.33 | 570 | 61,611 | 100% | 61,611 | 20,332 |
| 65 | 29 | H 51 | 0.32 | 570 | 61,611 | 100% | 61,611 | 19,716 |
| 66 | 30 | H 52 | 0.31 | 570 | 61,611 | 100% | 61,611 | 19,099 |
| 67 | 31 | H 53 | 0.30 | 570 | 61,611 | 100% | 61,611 | 18,483 |
| 68 | 32 | H 54 | 0.29 | 570 | 61,611 | 100% | 61,611 | 17,867 |
| 69 | 33 | H 55 | 0.27 | 570 | 61,611 | 100% | 61,611 | 16,635 |
| 70 | 34 | H 56 | 0.26 | 570 | 61,611 | 100% | 61,611 | 16,019 |
| 71 | 35 | H 57 | 0.25 | 570 | 61,611 | 100% | 61,611 | 15,403 |
| 72 | 36 | H 58 | 0.24 | 570 | 61,611 | 100% | 61,611 | 14,787 |
| 73 | 37 | H 59 | 0.23 | 570 | 61,611 | 100% | 61,611 | 14,171 |
| 74 | 38 | H 60 | 0.23 | 570 | 61,611 | 100% | 61,611 | 14,171 |
| 75 | 39 | H 61 | 0.22 | 570 | 61,611 | 100% | 61,611 | 13,554 |
| 76 | 40 | H 62 | 0.21 | 570 | 61,611 | 100% | 61,611 | 12,938 |
| 77 | 41 | H 63 | 0.20 | 570 | 61,611 | 100% | 61,611 | 12,322 |
| 78 | 42 | H 64 | 0.19 | 570 | 61,611 | 100% | 61,611 | 11,706 |
| 79 | 43 | H 65 | 0.19 | 570 | 61,611 | 100% | 61,611 | 11,706 |
| 80 | 44 | H 66 | 0.18 | 570 | 61,611 | 100% | 61,611 | 11,090 |
| 合計(便益額) | | | | | | | | 4,598,330 |

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) 22,828
 A: 事業対象区域面積(ha) 570
 R: 流域内崩壊率 0.0083
 N: 雨量比=50年確率日雨量/既往最大日雨量 0.9200
 H: 平均崩壊深(m) 1.2
 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

| 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 | 570 | 0 | 0% | 0 | 0 |
| 2 | -34 | S51 | 3.79 | 570 | 0 | 0% | 0 | 0 |
| 3 | -33 | S52 | 3.65 | 570 | 0 | 0% | 0 | 0 |
| 4 | -32 | S53 | 3.51 | 570 | 0 | 0% | 0 | 0 |
| 5 | -31 | S54 | 3.37 | 570 | 0 | 0% | 0 | 0 |
| 6 | -30 | S55 | 3.24 | 570 | 0 | 0% | 0 | 0 |
| 7 | -29 | S56 | 3.12 | 570 | 0 | 0% | 0 | 0 |
| 8 | -28 | S57 | 3.00 | 570 | 0 | 0% | 0 | 0 |
| 9 | -27 | S58 | 2.88 | 570 | 0 | 0% | 0 | 0 |
| 10 | -26 | S59 | 2.77 | 570 | 0 | 0% | 0 | 0 |
| 11 | -25 | S60 | 2.67 | 570 | 1,885 | 100% | 1,885 | 5,033 |
| 12 | -24 | S61 | 2.58 | 570 | 1,885 | 100% | 1,885 | 4,826 |
| 13 | -23 | S62 | 2.48 | 570 | 1,885 | 100% | 1,885 | 4,637 |
| 14 | -22 | S63 | 2.37 | 570 | 1,885 | 100% | 1,885 | 4,467 |
| 15 | -21 | H 1 | 2.28 | 570 | 1,885 | 100% | 1,885 | 4,298 |
| 16 | -20 | H 2 | 2.19 | 570 | 1,885 | 100% | 1,885 | 4,128 |
| 17 | -19 | H 3 | 2.11 | 570 | 1,885 | 100% | 1,885 | 3,977 |
| 18 | -18 | H 4 | 2.03 | 570 | 1,885 | 100% | 1,885 | 3,827 |
| 19 | -17 | H 5 | 1.95 | 570 | 1,885 | 100% | 1,885 | 3,676 |
| 20 | -16 | H 6 | 1.87 | 570 | 1,885 | 100% | 1,885 | 3,525 |
| 21 | -15 | H 7 | 1.80 | 570 | 1,885 | 100% | 1,885 | 3,393 |
| 22 | -14 | H 8 | 1.73 | 570 | 1,885 | 100% | 1,885 | 3,261 |
| 23 | -13 | H 9 | 1.67 | 570 | 1,885 | 100% | 1,885 | 3,148 |
| 24 | -12 | H 10 | 1.60 | 570 | 1,885 | 100% | 1,885 | 3,016 |
| 25 | -11 | H 11 | 1.54 | 570 | 1,885 | 100% | 1,885 | 2,903 |
| 26 | -10 | H 12 | 1.48 | 570 | 1,885 | 100% | 1,885 | 2,790 |
| 27 | -9 | H 13 | 1.42 | 570 | 1,885 | 100% | 1,885 | 2,677 |
| 28 | -8 | H 14 | 1.37 | 570 | 1,885 | 100% | 1,885 | 2,582 |
| 29 | -7 | H 15 | 1.32 | 570 | 1,885 | 100% | 1,885 | 2,488 |
| 30 | -6 | H 16 | 1.27 | 570 | 1,885 | 100% | 1,885 | 2,394 |
| 31 | -5 | H 17 | 1.22 | 570 | 1,885 | 100% | 1,885 | 2,300 |
| 32 | -4 | H 18 | 1.17 | 570 | 1,885 | 100% | 1,885 | 2,205 |
| 33 | -3 | H 19 | 1.12 | 570 | 1,885 | 100% | 1,885 | 2,111 |
| 34 | -2 | H 20 | 1.08 | 570 | 1,885 | 100% | 1,885 | 2,036 |
| 35 | -1 | H 21 | 1.04 | 570 | 1,885 | 100% | 1,885 | 1,960 |
| 36 | 0 | H 22 | 1.00 | 570 | 1,885 | 100% | 1,885 | 1,885 |
| 37 | 1 | H 23 | 0.96 | 570 | 1,885 | 100% | 1,885 | 1,810 |
| 38 | 2 | H 24 | 0.92 | 570 | 1,885 | 100% | 1,885 | 1,734 |
| 39 | 3 | H 25 | 0.89 | 570 | 1,885 | 100% | 1,885 | 1,678 |
| 40 | 4 | H 26 | 0.85 | 570 | 1,885 | 100% | 1,885 | 1,602 |
| 41 | 5 | H 27 | 0.82 | 570 | 1,885 | 100% | 1,885 | 1,546 |
| 42 | 6 | H 28 | 0.79 | 570 | 1,885 | 100% | 1,885 | 1,489 |
| 43 | 7 | H 29 | 0.76 | 570 | 1,885 | 100% | 1,885 | 1,433 |
| 44 | 8 | H 30 | 0.73 | 570 | 1,885 | 100% | 1,885 | 1,376 |
| 45 | 9 | H 31 | 0.70 | 570 | 1,885 | 100% | 1,885 | 1,319 |
| 46 | 10 | H 32 | 0.68 | 570 | 1,885 | 100% | 1,885 | 1,282 |
| 47 | 11 | H 33 | 0.65 | 570 | 1,885 | 100% | 1,885 | 1,225 |
| 48 | 12 | H 34 | 0.62 | 570 | 1,885 | 100% | 1,885 | 1,169 |
| 49 | 13 | H 35 | 0.60 | 570 | 1,885 | 100% | 1,885 | 1,131 |
| 50 | 14 | H 36 | 0.58 | 570 | 1,885 | 100% | 1,885 | 1,093 |
| 51 | 15 | H 37 | 0.56 | 570 | 1,885 | 100% | 1,885 | 1,056 |
| 52 | 16 | H 38 | 0.53 | 570 | 1,885 | 100% | 1,885 | 999 |
| 53 | 17 | H 39 | 0.51 | 570 | 1,885 | 100% | 1,885 | 961 |
| 54 | 18 | H 40 | 0.49 | 570 | 1,885 | 100% | 1,885 | 924 |
| 55 | 19 | H 41 | 0.47 | 570 | 1,885 | 100% | 1,885 | 886 |
| 56 | 20 | H 42 | 0.46 | 570 | 1,885 | 100% | 1,885 | 867 |
| 57 | 21 | H 43 | 0.44 | 570 | 1,885 | 100% | 1,885 | 829 |
| 58 | 22 | H 44 | 0.42 | 570 | 1,885 | 100% | 1,885 | 792 |
| 59 | 23 | H 45 | 0.41 | 570 | 1,885 | 100% | 1,885 | 773 |
| 60 | 24 | H 46 | 0.39 | 570 | 1,885 | 100% | 1,885 | 735 |
| 61 | 25 | H 47 | 0.38 | 570 | 1,885 | 100% | 1,885 | 716 |
| 62 | 26 | H 48 | 0.36 | 570 | 1,885 | 100% | 1,885 | 678 |
| 63 | 27 | H 49 | 0.35 | 570 | 1,885 | 100% | 1,885 | 660 |
| 64 | 28 | H 50 | 0.33 | 570 | 1,885 | 100% | 1,885 | 622 |
| 65 | 29 | H 51 | 0.32 | 570 | 1,885 | 100% | 1,885 | 603 |
| 66 | 30 | H 52 | 0.31 | 570 | 1,885 | 100% | 1,885 | 584 |
| 67 | 31 | H 53 | 0.30 | 570 | 1,885 | 100% | 1,885 | 565 |
| 68 | 32 | H 54 | 0.29 | 570 | 1,885 | 100% | 1,885 | 547 |
| 69 | 33 | H 55 | 0.27 | 570 | 1,885 | 100% | 1,885 | 509 |
| 70 | 34 | H 56 | 0.26 | 570 | 1,885 | 100% | 1,885 | 490 |
| 71 | 35 | H 57 | 0.25 | 570 | 1,885 | 100% | 1,885 | 471 |
| 72 | 36 | H 58 | 0.24 | 570 | 1,885 | 100% | 1,885 | 452 |
| 73 | 37 | H 59 | 0.23 | 570 | 1,885 | 100% | 1,885 | 434 |
| 74 | 38 | H 60 | 0.23 | 570 | 1,885 | 100% | 1,885 | 434 |
| 75 | 39 | H 61 | 0.22 | 570 | 1,885 | 100% | 1,885 | 415 |
| 76 | 40 | H 62 | 0.21 | 570 | 1,885 | 100% | 1,885 | 396 |
| 77 | 41 | H 63 | 0.20 | 570 | 1,885 | 100% | 1,885 | 377 |
| 78 | 42 | H 64 | 0.19 | 570 | 1,885 | 100% | 1,885 | 358 |
| 79 | 43 | H 65 | 0.19 | 570 | 1,885 | 100% | 1,885 | 358 |
| 80 | 44 | H 66 | 0.18 | 570 | 1,885 | 100% | 1,885 | 339 |
| 合計(便益額) | | | | | | | | 122,260 |

事業名: 水源林造成事業
 施行箇所: 関東整備局 昭和50年度契約地

643,999 千円

3 環境保全便益
 (1) 炭素固定便益
 ① 樹木固定分

スギ

$$B = \sum_{t=1}^Y \frac{V_2 - V_1}{Y \times (1+i)^t} \times D \times BEF \times (1+R) \times 0.5 \times \frac{44}{12} \times U$$

- 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 85,106
- 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 169,889
- Y: 評価期間(年) 80
- D: 容積密度(t/m3) 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年以上 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 | 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 | スギ 84,783 | 7,239 | 100% | 7,239 | 28,593 |
| 2 | -34 | S51 | 3.79 | スギ 84,783 | 7,239 | 100% | 7,239 | 27,435 |
| 3 | -33 | S52 | 3.65 | スギ 84,783 | 7,239 | 100% | 7,239 | 26,422 |
| 4 | -32 | S53 | 3.51 | スギ 84,783 | 7,239 | 100% | 7,239 | 25,409 |
| 5 | -31 | S54 | 3.37 | スギ 84,783 | 7,239 | 100% | 7,239 | 24,395 |
| 6 | -30 | S55 | 3.24 | スギ 84,783 | 7,239 | 100% | 7,239 | 23,454 |
| 7 | -29 | S56 | 3.12 | スギ 84,783 | 7,239 | 100% | 7,239 | 22,585 |
| 8 | -28 | S57 | 3.00 | スギ 84,783 | 7,239 | 100% | 7,239 | 21,717 |
| 9 | -27 | S58 | 2.88 | スギ 84,783 | 7,239 | 100% | 7,239 | 20,848 |
| 10 | -26 | S59 | 2.77 | スギ 84,783 | 7,239 | 100% | 7,239 | 20,052 |
| 11 | -25 | S60 | 2.67 | スギ 84,783 | 7,239 | 100% | 7,239 | 19,328 |
| 12 | -24 | S61 | 2.56 | スギ 84,783 | 7,239 | 100% | 7,239 | 18,531 |
| 13 | -23 | S62 | 2.46 | スギ 84,783 | 7,239 | 100% | 7,239 | 17,808 |
| 14 | -22 | S63 | 2.37 | スギ 84,783 | 7,239 | 100% | 7,239 | 17,156 |
| 15 | -21 | H 1 | 2.28 | スギ 84,783 | 7,239 | 100% | 7,239 | 16,505 |
| 16 | -20 | H 2 | 2.19 | スギ 84,783 | 7,239 | 100% | 7,239 | 15,853 |
| 17 | -19 | H 3 | 2.11 | スギ 84,783 | 7,239 | 100% | 7,239 | 15,274 |
| 18 | -18 | H 4 | 2.03 | スギ 84,783 | 7,239 | 100% | 7,239 | 14,695 |
| 19 | -17 | H 5 | 1.95 | スギ 84,783 | 7,239 | 100% | 7,239 | 14,116 |
| 20 | -16 | H 6 | 1.87 | スギ 84,783 | 7,239 | 100% | 7,239 | 13,537 |
| 21 | -15 | H 7 | 1.80 | スギ 84,783 | 5,671 | 100% | 5,671 | 10,208 |
| 22 | -14 | H 8 | 1.73 | スギ 84,783 | 5,671 | 100% | 5,671 | 9,811 |
| 23 | -13 | H 9 | 1.67 | スギ 84,783 | 5,671 | 100% | 5,671 | 9,471 |
| 24 | -12 | H 10 | 1.60 | スギ 84,783 | 5,671 | 100% | 5,671 | 9,074 |
| 25 | -11 | H 11 | 1.54 | スギ 84,783 | 5,671 | 100% | 5,671 | 8,734 |
| 26 | -10 | H 12 | 1.48 | スギ 84,783 | 5,671 | 100% | 5,671 | 8,393 |
| 27 | -9 | H 13 | 1.42 | スギ 84,783 | 5,671 | 100% | 5,671 | 8,053 |
| 28 | -8 | H 14 | 1.37 | スギ 84,783 | 5,671 | 100% | 5,671 | 7,770 |
| 29 | -7 | H 15 | 1.32 | スギ 84,783 | 5,671 | 100% | 5,671 | 7,486 |
| 30 | -6 | H 16 | 1.27 | スギ 84,783 | 5,671 | 100% | 5,671 | 7,202 |
| 31 | -5 | H 17 | 1.22 | スギ 84,783 | 5,671 | 100% | 5,671 | 6,919 |
| 32 | -4 | H 18 | 1.17 | スギ 84,783 | 5,671 | 100% | 5,671 | 6,635 |
| 33 | -3 | H 19 | 1.12 | スギ 84,783 | 5,671 | 100% | 5,671 | 6,352 |
| 34 | -2 | H 20 | 1.08 | スギ 84,783 | 5,671 | 100% | 5,671 | 6,125 |
| 35 | -1 | H 21 | 1.04 | スギ 84,783 | 5,671 | 100% | 5,671 | 5,898 |
| 36 | 0 | H 22 | 1.00 | スギ 84,783 | 5,671 | 100% | 5,671 | 5,671 |
| 37 | 1 | H 23 | 0.96 | スギ 84,783 | 5,671 | 100% | 5,671 | 5,444 |
| 38 | 2 | H 24 | 0.92 | スギ 84,783 | 5,671 | 100% | 5,671 | 5,218 |
| 39 | 3 | H 25 | 0.89 | スギ 84,783 | 5,671 | 100% | 5,671 | 5,047 |
| 40 | 4 | H 26 | 0.85 | スギ 84,783 | 5,671 | 100% | 5,671 | 4,821 |
| 41 | 5 | H 27 | 0.82 | スギ 84,783 | 5,671 | 100% | 5,671 | 4,650 |
| 42 | 6 | H 28 | 0.79 | スギ 84,783 | 5,671 | 100% | 5,671 | 4,480 |
| 43 | 7 | H 29 | 0.76 | スギ 84,783 | 5,671 | 100% | 5,671 | 4,310 |
| 44 | 8 | H 30 | 0.73 | スギ 84,783 | 5,671 | 100% | 5,671 | 4,140 |
| 45 | 9 | H 31 | 0.70 | スギ 84,783 | 5,671 | 100% | 5,671 | 3,970 |
| 46 | 10 | H 32 | 0.68 | スギ 84,783 | 5,671 | 100% | 5,671 | 3,856 |
| 47 | 11 | H 33 | 0.65 | スギ 84,783 | 5,671 | 100% | 5,671 | 3,686 |
| 48 | 12 | H 34 | 0.62 | スギ 84,783 | 5,671 | 100% | 5,671 | 3,516 |
| 49 | 13 | H 35 | 0.60 | スギ 84,783 | 5,671 | 100% | 5,671 | 3,403 |
| 50 | 14 | H 36 | 0.58 | スギ 84,783 | 5,671 | 100% | 5,671 | 3,289 |
| 51 | 15 | H 37 | 0.56 | スギ 84,783 | 5,671 | 100% | 5,671 | 3,176 |
| 52 | 16 | H 38 | 0.53 | スギ 84,783 | 5,671 | 100% | 5,671 | 3,006 |
| 53 | 17 | H 39 | 0.51 | スギ 84,783 | 5,671 | 100% | 5,671 | 2,892 |
| 54 | 18 | H 40 | 0.49 | スギ 84,783 | 5,671 | 100% | 5,671 | 2,779 |
| 55 | 19 | H 41 | 0.47 | スギ 84,783 | 5,671 | 100% | 5,671 | 2,665 |
| 56 | 20 | H 42 | 0.46 | スギ 84,783 | 5,671 | 100% | 5,671 | 2,609 |
| 57 | 21 | H 43 | 0.44 | スギ 84,783 | 5,671 | 100% | 5,671 | 2,495 |
| 58 | 22 | H 44 | 0.42 | スギ 84,783 | 5,671 | 100% | 5,671 | 2,382 |
| 59 | 23 | H 45 | 0.41 | スギ 84,783 | 5,671 | 100% | 5,671 | 2,325 |
| 60 | 24 | H 46 | 0.39 | スギ 84,783 | 5,671 | 100% | 5,671 | 2,212 |
| 61 | 25 | H 47 | 0.38 | スギ 84,783 | 5,671 | 100% | 5,671 | 2,155 |
| 62 | 26 | H 48 | 0.36 | スギ 84,783 | 5,671 | 100% | 5,671 | 2,042 |
| 63 | 27 | H 49 | 0.35 | スギ 84,783 | 5,671 | 100% | 5,671 | 1,985 |
| 64 | 28 | H 50 | 0.33 | スギ 84,783 | 5,671 | 100% | 5,671 | 1,871 |
| 65 | 29 | H 51 | 0.32 | スギ 84,783 | 5,671 | 100% | 5,671 | 1,815 |
| 66 | 30 | H 52 | 0.31 | スギ 84,783 | 5,671 | 100% | 5,671 | 1,758 |
| 67 | 31 | H 53 | 0.30 | スギ 84,783 | 5,671 | 100% | 5,671 | 1,701 |
| 68 | 32 | H 54 | 0.29 | スギ 84,783 | 5,671 | 100% | 5,671 | 1,645 |
| 69 | 33 | H 55 | 0.27 | スギ 84,783 | 5,671 | 100% | 5,671 | 1,531 |
| 70 | 34 | H 56 | 0.26 | スギ 84,783 | 5,671 | 100% | 5,671 | 1,475 |
| 71 | 35 | H 57 | 0.25 | スギ 84,783 | 5,671 | 100% | 5,671 | 1,418 |
| 72 | 36 | H 58 | 0.24 | スギ 84,783 | 5,671 | 100% | 5,671 | 1,361 |
| 73 | 37 | H 59 | 0.23 | スギ 84,783 | 5,671 | 100% | 5,671 | 1,304 |
| 74 | 38 | H 60 | 0.23 | スギ 84,783 | 5,671 | 100% | 5,671 | 1,304 |
| 75 | 39 | H 61 | 0.22 | スギ 84,783 | 5,671 | 100% | 5,671 | 1,248 |
| 76 | 40 | H 62 | 0.21 | スギ 84,783 | 5,671 | 100% | 5,671 | 1,191 |
| 77 | 41 | H 63 | 0.20 | スギ 84,783 | 5,671 | 100% | 5,671 | 1,134 |
| 78 | 42 | H 64 | 0.19 | スギ 84,783 | 5,671 | 100% | 5,671 | 1,078 |
| 79 | 43 | H 65 | 0.19 | スギ 84,783 | 5,671 | 100% | 5,671 | 1,078 |
| 80 | 44 | H 66 | 0.18 | スギ 84,783 | 5,671 | 100% | 5,671 | 1,021 |
| 合計(便益額) | | | | | | | | 643,999 |

事業名: 水源林造成事業
 施行箇所: 関東整備局 昭和50年度契約地

174,915 千円

3 環境保全便益
 (1) 炭素固定便益
 ① 樹木固定分

$$B = \sum_{t=1}^Y \frac{V_2 - V_1}{Y \times (1+i)^t} \times D \times BEF \times (1+R) \times 0.5 \times \frac{44}{12} \times U$$

- 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 17,713
- 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 35,425
- Y: 評価期間(年) 80
- D: 容積密度(t/m3) 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 1.55
樹齢20年超 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

| 評価期間 | 経過年 | 年度 | 割引係数 ① | V2-V1(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 |
|---------|-----|------|-----------|-----------|--------|-----------|-------------|-----------------|---------------|
| | | | | 樹種名 | ヒノキ | | | | |
| 1 | -35 | S50 | 3.95 | | 17,713 | 1,951 | 100% | 1,951 | 7,705 |
| 2 | -34 | S51 | 3.79 | | 17,713 | 1,951 | 100% | 1,951 | 7,393 |
| 3 | -33 | S52 | 3.65 | | 17,713 | 1,951 | 100% | 1,951 | 7,120 |
| 4 | -32 | S53 | 3.51 | | 17,713 | 1,951 | 100% | 1,951 | 6,847 |
| 5 | -31 | S54 | 3.37 | | 17,713 | 1,951 | 100% | 1,951 | 6,574 |
| 6 | -30 | S55 | 3.24 | | 17,713 | 1,951 | 100% | 1,951 | 6,320 |
| 7 | -29 | S56 | 3.12 | | 17,713 | 1,951 | 100% | 1,951 | 6,086 |
| 8 | -28 | S57 | 3.00 | | 17,713 | 1,951 | 100% | 1,951 | 5,862 |
| 9 | -27 | S58 | 2.88 | | 17,713 | 1,951 | 100% | 1,951 | 5,618 |
| 10 | -26 | S59 | 2.77 | | 17,713 | 1,951 | 100% | 1,951 | 5,404 |
| 11 | -25 | S60 | 2.67 | | 17,713 | 1,951 | 100% | 1,951 | 5,208 |
| 12 | -24 | S61 | 2.56 | | 17,713 | 1,951 | 100% | 1,951 | 4,994 |
| 13 | -23 | S62 | 2.46 | | 17,713 | 1,951 | 100% | 1,951 | 4,799 |
| 14 | -22 | S63 | 2.37 | | 17,713 | 1,951 | 100% | 1,951 | 4,623 |
| 15 | -21 | H 1 | 2.28 | | 17,713 | 1,951 | 100% | 1,951 | 4,448 |
| 16 | -20 | H 2 | 2.19 | | 17,713 | 1,951 | 100% | 1,951 | 4,272 |
| 17 | -19 | H 3 | 2.11 | | 17,713 | 1,951 | 100% | 1,951 | 4,116 |
| 18 | -18 | H 4 | 2.03 | | 17,713 | 1,951 | 100% | 1,951 | 3,960 |
| 19 | -17 | H 5 | 1.95 | | 17,713 | 1,951 | 100% | 1,951 | 3,804 |
| 20 | -16 | H 6 | 1.87 | | 17,713 | 1,951 | 100% | 1,951 | 3,648 |
| 21 | -15 | H 7 | 1.80 | | 17,713 | 1,951 | 100% | 1,951 | 3,492 |
| 22 | -14 | H 8 | 1.73 | | 17,713 | 1,951 | 100% | 1,951 | 3,336 |
| 23 | -13 | H 9 | 1.67 | | 17,713 | 1,951 | 100% | 1,951 | 3,180 |
| 24 | -12 | H 10 | 1.60 | | 17,713 | 1,951 | 100% | 1,951 | 3,024 |
| 25 | -11 | H 11 | 1.54 | | 17,713 | 1,951 | 100% | 1,951 | 2,868 |
| 26 | -10 | H 12 | 1.48 | | 17,713 | 1,951 | 100% | 1,951 | 2,712 |
| 27 | -9 | H 13 | 1.42 | | 17,713 | 1,951 | 100% | 1,951 | 2,556 |
| 28 | -8 | H 14 | 1.37 | | 17,713 | 1,951 | 100% | 1,951 | 2,400 |
| 29 | -7 | H 15 | 1.32 | | 17,713 | 1,951 | 100% | 1,951 | 2,244 |
| 30 | -6 | H 16 | 1.27 | | 17,713 | 1,951 | 100% | 1,951 | 2,088 |
| 31 | -5 | H 17 | 1.22 | | 17,713 | 1,951 | 100% | 1,951 | 1,932 |
| 32 | -4 | H 18 | 1.17 | | 17,713 | 1,951 | 100% | 1,951 | 1,776 |
| 33 | -3 | H 19 | 1.12 | | 17,713 | 1,951 | 100% | 1,951 | 1,620 |
| 34 | -2 | H 20 | 1.08 | | 17,713 | 1,951 | 100% | 1,951 | 1,464 |
| 35 | -1 | H 21 | 1.04 | | 17,713 | 1,951 | 100% | 1,951 | 1,308 |
| 36 | 0 | H 22 | 1.00 | | 17,713 | 1,951 | 100% | 1,951 | 1,152 |
| 37 | 1 | H 23 | 0.96 | | 17,713 | 1,951 | 100% | 1,951 | 996 |
| 38 | 2 | H 24 | 0.92 | | 17,713 | 1,951 | 100% | 1,951 | 840 |
| 39 | 3 | H 25 | 0.89 | | 17,713 | 1,951 | 100% | 1,951 | 684 |
| 40 | 4 | H 26 | 0.85 | | 17,713 | 1,951 | 100% | 1,951 | 528 |
| 41 | 5 | H 27 | 0.82 | | 17,713 | 1,951 | 100% | 1,951 | 372 |
| 42 | 6 | H 28 | 0.79 | | 17,713 | 1,951 | 100% | 1,951 | 216 |
| 43 | 7 | H 29 | 0.76 | | 17,713 | 1,951 | 100% | 1,951 | 60 |
| 44 | 8 | H 30 | 0.73 | | 17,713 | 1,951 | 100% | 1,951 | -156 |
| 45 | 9 | H 31 | 0.70 | | 17,713 | 1,951 | 100% | 1,951 | -312 |
| 46 | 10 | H 32 | 0.68 | | 17,713 | 1,951 | 100% | 1,951 | -468 |
| 47 | 11 | H 33 | 0.65 | | 17,713 | 1,951 | 100% | 1,951 | -624 |
| 48 | 12 | H 34 | 0.62 | | 17,713 | 1,951 | 100% | 1,951 | -780 |
| 49 | 13 | H 35 | 0.60 | | 17,713 | 1,951 | 100% | 1,951 | -936 |
| 50 | 14 | H 36 | 0.58 | | 17,713 | 1,951 | 100% | 1,951 | -1,092 |
| 51 | 15 | H 37 | 0.56 | | 17,713 | 1,951 | 100% | 1,951 | -1,248 |
| 52 | 16 | H 38 | 0.53 | | 17,713 | 1,951 | 100% | 1,951 | -1,404 |
| 53 | 17 | H 39 | 0.51 | | 17,713 | 1,951 | 100% | 1,951 | -1,560 |
| 54 | 18 | H 40 | 0.49 | | 17,713 | 1,951 | 100% | 1,951 | -1,716 |
| 55 | 19 | H 41 | 0.47 | | 17,713 | 1,951 | 100% | 1,951 | -1,872 |
| 56 | 20 | H 42 | 0.46 | | 17,713 | 1,951 | 100% | 1,951 | -2,028 |
| 57 | 21 | H 43 | 0.44 | | 17,713 | 1,951 | 100% | 1,951 | -2,184 |
| 58 | 22 | H 44 | 0.42 | | 17,713 | 1,951 | 100% | 1,951 | -2,340 |
| 59 | 23 | H 45 | 0.41 | | 17,713 | 1,951 | 100% | 1,951 | -2,496 |
| 60 | 24 | H 46 | 0.39 | | 17,713 | 1,951 | 100% | 1,951 | -2,652 |
| 61 | 25 | H 47 | 0.38 | | 17,713 | 1,951 | 100% | 1,951 | -2,808 |
| 62 | 26 | H 48 | 0.36 | | 17,713 | 1,951 | 100% | 1,951 | -2,964 |
| 63 | 27 | H 49 | 0.35 | | 17,713 | 1,951 | 100% | 1,951 | -3,120 |
| 64 | 28 | H 50 | 0.33 | | 17,713 | 1,951 | 100% | 1,951 | -3,276 |
| 65 | 29 | H 51 | 0.32 | | 17,713 | 1,951 | 100% | 1,951 | -3,432 |
| 66 | 30 | H 52 | 0.31 | | 17,713 | 1,951 | 100% | 1,951 | -3,588 |
| 67 | 31 | H 53 | 0.30 | | 17,713 | 1,951 | 100% | 1,951 | -3,744 |
| 68 | 32 | H 54 | 0.29 | | 17,713 | 1,951 | 100% | 1,951 | -3,900 |
| 69 | 33 | H 55 | 0.27 | | 17,713 | 1,951 | 100% | 1,951 | -4,056 |
| 70 | 34 | H 56 | 0.26 | | 17,713 | 1,951 | 100% | 1,951 | -4,212 |
| 71 | 35 | H 57 | 0.25 | | 17,713 | 1,951 | 100% | 1,951 | -4,368 |
| 72 | 36 | H 58 | 0.24 | | 17,713 | 1,951 | 100% | 1,951 | -4,524 |
| 73 | 37 | H 59 | 0.23 | | 17,713 | 1,951 | 100% | 1,951 | -4,680 |
| 74 | 38 | H 60 | 0.23 | | 17,713 | 1,951 | 100% | 1,951 | -4,836 |
| 75 | 39 | H 61 | 0.22 | | 17,713 | 1,951 | 100% | 1,951 | -4,992 |
| 76 | 40 | H 62 | 0.21 | | 17,713 | 1,951 | 100% | 1,951 | -5,148 |
| 77 | 41 | H 63 | 0.20 | | 17,713 | 1,951 | 100% | 1,951 | -5,304 |
| 78 | 42 | H 64 | 0.19 | | 17,713 | 1,951 | 100% | 1,951 | -5,460 |
| 79 | 43 | H 65 | 0.19 | | 17,713 | 1,951 | 100% | 1,951 | -5,616 |
| 80 | 44 | H 66 | 0.18 | | 17,713 | 1,951 | 100% | 1,951 | -5,772 |
| 合計(便益額) | | | | | | | | | 174,915 |

事業名: 水源林造成事業
 施行箇所: 関東整備局 昭和50年度契約地

109,105 千円

3 環境保全便益
 (1) 炭素固定便益
 ① 樹木固定分

マツ類

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

- 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) マツ類 9,520
- 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) マツ類 19,039
- Y: 評価期間(年) 80
- D: 容積密度(t/m3) マツ類 0.458
- 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 マツ類 1.51
 樹齢20年以上 マツ類 1.30
- 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) マツ類 0.30
- 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 マツ類 | 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 | 9,520 | 1,185 | 100% | 1,185 | 4,679 |
| 2 | -34 | S51 | 3.79 | 9,520 | 1,185 | 100% | 1,185 | 4,489 |
| 3 | -33 | S52 | 3.65 | 9,520 | 1,185 | 100% | 1,185 | 4,324 |
| 4 | -32 | S53 | 3.51 | 9,520 | 1,185 | 100% | 1,185 | 4,158 |
| 5 | -31 | S54 | 3.37 | 9,520 | 1,185 | 100% | 1,185 | 3,992 |
| 6 | -30 | S55 | 3.24 | 9,520 | 1,185 | 100% | 1,185 | 3,838 |
| 7 | -29 | S56 | 3.12 | 9,520 | 1,185 | 100% | 1,185 | 3,696 |
| 8 | -28 | S57 | 3.00 | 9,520 | 1,185 | 100% | 1,185 | 3,554 |
| 9 | -27 | S58 | 2.88 | 9,520 | 1,185 | 100% | 1,185 | 3,411 |
| 10 | -26 | S59 | 2.77 | 9,520 | 1,185 | 100% | 1,185 | 3,281 |
| 11 | -25 | S60 | 2.67 | 9,520 | 1,185 | 100% | 1,185 | 3,163 |
| 12 | -24 | S61 | 2.56 | 9,520 | 1,185 | 100% | 1,185 | 3,032 |
| 13 | -23 | S62 | 2.46 | 9,520 | 1,185 | 100% | 1,185 | 2,914 |
| 14 | -22 | S63 | 2.37 | 9,520 | 1,185 | 100% | 1,185 | 2,807 |
| 15 | -21 | H 1 | 2.28 | 9,520 | 1,185 | 100% | 1,185 | 2,701 |
| 16 | -20 | H 2 | 2.19 | 9,520 | 1,185 | 100% | 1,185 | 2,594 |
| 17 | -19 | H 3 | 2.11 | 9,520 | 1,185 | 100% | 1,185 | 2,489 |
| 18 | -18 | H 4 | 2.03 | 9,520 | 1,185 | 100% | 1,185 | 2,405 |
| 19 | -17 | H 5 | 1.95 | 9,520 | 1,185 | 100% | 1,185 | 2,310 |
| 20 | -16 | H 6 | 1.87 | 9,520 | 1,185 | 100% | 1,185 | 2,215 |
| 21 | -15 | H 7 | 1.80 | 9,520 | 1,016 | 100% | 1,016 | 1,829 |
| 22 | -14 | H 8 | 1.73 | 9,520 | 1,016 | 100% | 1,016 | 1,757 |
| 23 | -13 | H 9 | 1.67 | 9,520 | 1,016 | 100% | 1,016 | 1,687 |
| 24 | -12 | H 10 | 1.60 | 9,520 | 1,016 | 100% | 1,016 | 1,625 |
| 25 | -11 | H 11 | 1.54 | 9,520 | 1,016 | 100% | 1,016 | 1,564 |
| 26 | -10 | H 12 | 1.48 | 9,520 | 1,016 | 100% | 1,016 | 1,504 |
| 27 | -9 | H 13 | 1.42 | 9,520 | 1,016 | 100% | 1,016 | 1,443 |
| 28 | -8 | H 14 | 1.37 | 9,520 | 1,016 | 100% | 1,016 | 1,392 |
| 29 | -7 | H 15 | 1.32 | 9,520 | 1,016 | 100% | 1,016 | 1,341 |
| 30 | -6 | H 16 | 1.27 | 9,520 | 1,016 | 100% | 1,016 | 1,290 |
| 31 | -5 | H 17 | 1.22 | 9,520 | 1,016 | 100% | 1,016 | 1,239 |
| 32 | -4 | H 18 | 1.17 | 9,520 | 1,016 | 100% | 1,016 | 1,189 |
| 33 | -3 | H 19 | 1.12 | 9,520 | 1,016 | 100% | 1,016 | 1,138 |
| 34 | -2 | H 20 | 1.08 | 9,520 | 1,016 | 100% | 1,016 | 1,097 |
| 35 | -1 | H 21 | 1.04 | 9,520 | 1,016 | 100% | 1,016 | 1,057 |
| 36 | 0 | H 22 | 1.00 | 9,520 | 1,016 | 100% | 1,016 | 1,016 |
| 37 | 1 | H 23 | 0.96 | 9,520 | 1,016 | 100% | 1,016 | 975 |
| 38 | 2 | H 24 | 0.92 | 9,520 | 1,016 | 100% | 1,016 | 935 |
| 39 | 3 | H 25 | 0.89 | 9,520 | 1,016 | 100% | 1,016 | 904 |
| 40 | 4 | H 26 | 0.85 | 9,520 | 1,016 | 100% | 1,016 | 863 |
| 41 | 5 | H 27 | 0.82 | 9,520 | 1,016 | 100% | 1,016 | 833 |
| 42 | 6 | H 28 | 0.79 | 9,520 | 1,016 | 100% | 1,016 | 803 |
| 43 | 7 | H 29 | 0.76 | 9,520 | 1,016 | 100% | 1,016 | 772 |
| 44 | 8 | H 30 | 0.73 | 9,520 | 1,016 | 100% | 1,016 | 742 |
| 45 | 9 | H 31 | 0.70 | 9,520 | 1,016 | 100% | 1,016 | 711 |
| 46 | 10 | H 32 | 0.68 | 9,520 | 1,016 | 100% | 1,016 | 691 |
| 47 | 11 | H 33 | 0.65 | 9,520 | 1,016 | 100% | 1,016 | 660 |
| 48 | 12 | H 34 | 0.62 | 9,520 | 1,016 | 100% | 1,016 | 630 |
| 49 | 13 | H 35 | 0.60 | 9,520 | 1,016 | 100% | 1,016 | 610 |
| 50 | 14 | H 36 | 0.58 | 9,520 | 1,016 | 100% | 1,016 | 589 |
| 51 | 15 | H 37 | 0.56 | 9,520 | 1,016 | 100% | 1,016 | 569 |
| 52 | 16 | H 38 | 0.53 | 9,520 | 1,016 | 100% | 1,016 | 538 |
| 53 | 17 | H 39 | 0.51 | 9,520 | 1,016 | 100% | 1,016 | 518 |
| 54 | 18 | H 40 | 0.49 | 9,520 | 1,016 | 100% | 1,016 | 498 |
| 55 | 19 | H 41 | 0.47 | 9,520 | 1,016 | 100% | 1,016 | 477 |
| 56 | 20 | H 42 | 0.46 | 9,520 | 1,016 | 100% | 1,016 | 467 |
| 57 | 21 | H 43 | 0.44 | 9,520 | 1,016 | 100% | 1,016 | 447 |
| 58 | 22 | H 44 | 0.42 | 9,520 | 1,016 | 100% | 1,016 | 427 |
| 59 | 23 | H 45 | 0.41 | 9,520 | 1,016 | 100% | 1,016 | 417 |
| 60 | 24 | H 46 | 0.39 | 9,520 | 1,016 | 100% | 1,016 | 396 |
| 61 | 25 | H 47 | 0.38 | 9,520 | 1,016 | 100% | 1,016 | 386 |
| 62 | 26 | H 48 | 0.36 | 9,520 | 1,016 | 100% | 1,016 | 366 |
| 63 | 27 | H 49 | 0.35 | 9,520 | 1,016 | 100% | 1,016 | 356 |
| 64 | 28 | H 50 | 0.33 | 9,520 | 1,016 | 100% | 1,016 | 335 |
| 65 | 29 | H 51 | 0.32 | 9,520 | 1,016 | 100% | 1,016 | 325 |
| 66 | 30 | H 52 | 0.31 | 9,520 | 1,016 | 100% | 1,016 | 315 |
| 67 | 31 | H 53 | 0.30 | 9,520 | 1,016 | 100% | 1,016 | 305 |
| 68 | 32 | H 54 | 0.29 | 9,520 | 1,016 | 100% | 1,016 | 295 |
| 69 | 33 | H 55 | 0.27 | 9,520 | 1,016 | 100% | 1,016 | 274 |
| 70 | 34 | H 56 | 0.26 | 9,520 | 1,016 | 100% | 1,016 | 264 |
| 71 | 35 | H 57 | 0.25 | 9,520 | 1,016 | 100% | 1,016 | 254 |
| 72 | 36 | H 58 | 0.24 | 9,520 | 1,016 | 100% | 1,016 | 244 |
| 73 | 37 | H 59 | 0.23 | 9,520 | 1,016 | 100% | 1,016 | 234 |
| 74 | 38 | H 60 | 0.23 | 9,520 | 1,016 | 100% | 1,016 | 234 |
| 75 | 39 | H 61 | 0.22 | 9,520 | 1,016 | 100% | 1,016 | 223 |
| 76 | 40 | H 62 | 0.21 | 9,520 | 1,016 | 100% | 1,016 | 213 |
| 77 | 41 | H 63 | 0.20 | 9,520 | 1,016 | 100% | 1,016 | 203 |
| 78 | 42 | H 64 | 0.19 | 9,520 | 1,016 | 100% | 1,016 | 193 |
| 79 | 43 | H 65 | 0.19 | 9,520 | 1,016 | 100% | 1,016 | 193 |
| 80 | 44 | H 66 | 0.18 | 9,520 | 1,016 | 100% | 1,016 | 183 |
| 合計(便益額) | | | | | | | | 109,105 |

事業名: 水源林造成事業
 施行箇所: 関東整備局 昭和50年度契約地

41,322 千円

3 環境保全便益
 (1) 炭素固定便益
 ① 樹木固定分

カラマツ

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

| | | | |
|--------|------------------------------------|-------------------|--------------|
| 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) | カラマツ | 4,356 |
| 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) | カラマツ | 8,679 |
| Y: | 評価期間(年) | | 80 |
| D: | 容積密度(t/m3) | カラマツ | 0.404 |
| 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 樹齢20年起 | 1.50 1.15 |
| 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) | カラマツ | 0.29 |
| 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 カラマツ | 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 | 4,323 | 468 | 100% | 468 | 1,849 |
| 2 | -34 | S51 | 3.79 | 4,323 | 468 | 100% | 468 | 1,775 |
| 3 | -33 | S52 | 3.65 | 4,323 | 468 | 100% | 468 | 1,709 |
| 4 | -32 | S53 | 3.51 | 4,323 | 468 | 100% | 468 | 1,643 |
| 5 | -31 | S54 | 3.37 | 4,323 | 468 | 100% | 468 | 1,578 |
| 6 | -30 | S55 | 3.24 | 4,323 | 468 | 100% | 468 | 1,517 |
| 7 | -29 | S56 | 3.12 | 4,323 | 468 | 100% | 468 | 1,461 |
| 8 | -28 | S57 | 3.00 | 4,323 | 468 | 100% | 468 | 1,405 |
| 9 | -27 | S58 | 2.88 | 4,323 | 468 | 100% | 468 | 1,349 |
| 10 | -26 | S59 | 2.77 | 4,323 | 468 | 100% | 468 | 1,297 |
| 11 | -25 | S60 | 2.67 | 4,323 | 468 | 100% | 468 | 1,250 |
| 12 | -24 | S61 | 2.56 | 4,323 | 468 | 100% | 468 | 1,199 |
| 13 | -23 | S62 | 2.46 | 4,323 | 468 | 100% | 468 | 1,152 |
| 14 | -22 | S63 | 2.37 | 4,323 | 468 | 100% | 468 | 1,110 |
| 15 | -21 | H 1 | 2.28 | 4,323 | 468 | 100% | 468 | 1,068 |
| 16 | -20 | H 2 | 2.19 | 4,323 | 468 | 100% | 468 | 1,025 |
| 17 | -19 | H 3 | 2.11 | 4,323 | 468 | 100% | 468 | 988 |
| 18 | -18 | H 4 | 2.03 | 4,323 | 468 | 100% | 468 | 950 |
| 19 | -17 | H 5 | 1.95 | 4,323 | 468 | 100% | 468 | 913 |
| 20 | -16 | H 6 | 1.87 | 4,323 | 468 | 100% | 468 | 876 |
| 21 | -15 | H 7 | 1.80 | 4,323 | 359 | 100% | 359 | 646 |
| 22 | -14 | H 8 | 1.73 | 4,323 | 359 | 100% | 359 | 621 |
| 23 | -13 | H 9 | 1.67 | 4,323 | 359 | 100% | 359 | 599 |
| 24 | -12 | H 10 | 1.60 | 4,323 | 359 | 100% | 359 | 574 |
| 25 | -11 | H 11 | 1.54 | 4,323 | 359 | 100% | 359 | 553 |
| 26 | -10 | H 12 | 1.48 | 4,323 | 359 | 100% | 359 | 531 |
| 27 | -9 | H 13 | 1.42 | 4,323 | 359 | 100% | 359 | 510 |
| 28 | -8 | H 14 | 1.37 | 4,323 | 359 | 100% | 359 | 492 |
| 29 | -7 | H 15 | 1.32 | 4,323 | 359 | 100% | 359 | 474 |
| 30 | -6 | H 16 | 1.27 | 4,323 | 359 | 100% | 359 | 456 |
| 31 | -5 | H 17 | 1.22 | 4,323 | 359 | 100% | 359 | 438 |
| 32 | -4 | H 18 | 1.17 | 4,323 | 359 | 100% | 359 | 420 |
| 33 | -3 | H 19 | 1.12 | 4,323 | 359 | 100% | 359 | 402 |
| 34 | -2 | H 20 | 1.08 | 4,323 | 359 | 100% | 359 | 388 |
| 35 | -1 | H 21 | 1.04 | 4,323 | 359 | 100% | 359 | 373 |
| 36 | 0 | H 22 | 1.00 | 4,323 | 359 | 100% | 359 | 359 |
| 37 | 1 | H 23 | 0.96 | 4,323 | 359 | 100% | 359 | 345 |
| 38 | 2 | H 24 | 0.92 | 4,323 | 359 | 100% | 359 | 330 |
| 39 | 3 | H 25 | 0.89 | 4,323 | 359 | 100% | 359 | 319 |
| 40 | 4 | H 26 | 0.85 | 4,323 | 359 | 100% | 359 | 305 |
| 41 | 5 | H 27 | 0.82 | 4,323 | 359 | 100% | 359 | 294 |
| 42 | 6 | H 28 | 0.79 | 4,323 | 359 | 100% | 359 | 284 |
| 43 | 7 | H 29 | 0.76 | 4,323 | 359 | 100% | 359 | 273 |
| 44 | 8 | H 30 | 0.73 | 4,323 | 359 | 100% | 359 | 262 |
| 45 | 9 | H 31 | 0.70 | 4,323 | 359 | 100% | 359 | 251 |
| 46 | 10 | H 32 | 0.68 | 4,323 | 359 | 100% | 359 | 244 |
| 47 | 11 | H 33 | 0.65 | 4,323 | 359 | 100% | 359 | 233 |
| 48 | 12 | H 34 | 0.62 | 4,323 | 359 | 100% | 359 | 223 |
| 49 | 13 | H 35 | 0.60 | 4,323 | 359 | 100% | 359 | 215 |
| 50 | 14 | H 36 | 0.58 | 4,323 | 359 | 100% | 359 | 208 |
| 51 | 15 | H 37 | 0.56 | 4,323 | 359 | 100% | 359 | 201 |
| 52 | 16 | H 38 | 0.53 | 4,323 | 359 | 100% | 359 | 190 |
| 53 | 17 | H 39 | 0.51 | 4,323 | 359 | 100% | 359 | 183 |
| 54 | 18 | H 40 | 0.49 | 4,323 | 359 | 100% | 359 | 176 |
| 55 | 19 | H 41 | 0.47 | 4,323 | 359 | 100% | 359 | 169 |
| 56 | 20 | H 42 | 0.46 | 4,323 | 359 | 100% | 359 | 165 |
| 57 | 21 | H 43 | 0.44 | 4,323 | 359 | 100% | 359 | 158 |
| 58 | 22 | H 44 | 0.42 | 4,323 | 359 | 100% | 359 | 151 |
| 59 | 23 | H 45 | 0.41 | 4,323 | 359 | 100% | 359 | 147 |
| 60 | 24 | H 46 | 0.39 | 4,323 | 359 | 100% | 359 | 140 |
| 61 | 25 | H 47 | 0.38 | 4,323 | 359 | 100% | 359 | 136 |
| 62 | 26 | H 48 | 0.36 | 4,323 | 359 | 100% | 359 | 129 |
| 63 | 27 | H 49 | 0.35 | 4,323 | 359 | 100% | 359 | 126 |
| 64 | 28 | H 50 | 0.33 | 4,323 | 359 | 100% | 359 | 118 |
| 65 | 29 | H 51 | 0.32 | 4,323 | 359 | 100% | 359 | 115 |
| 66 | 30 | H 52 | 0.31 | 4,323 | 359 | 100% | 359 | 111 |
| 67 | 31 | H 53 | 0.30 | 4,323 | 359 | 100% | 359 | 108 |
| 68 | 32 | H 54 | 0.29 | 4,323 | 359 | 100% | 359 | 104 |
| 69 | 33 | H 55 | 0.27 | 4,323 | 359 | 100% | 359 | 97 |
| 70 | 34 | H 56 | 0.26 | 4,323 | 359 | 100% | 359 | 93 |
| 71 | 35 | H 57 | 0.25 | 4,323 | 359 | 100% | 359 | 90 |
| 72 | 36 | H 58 | 0.24 | 4,323 | 359 | 100% | 359 | 86 |
| 73 | 37 | H 59 | 0.23 | 4,323 | 359 | 100% | 359 | 83 |
| 74 | 38 | H 60 | 0.23 | 4,323 | 359 | 100% | 359 | 83 |
| 75 | 39 | H 61 | 0.22 | 4,323 | 359 | 100% | 359 | 79 |
| 76 | 40 | H 62 | 0.21 | 4,323 | 359 | 100% | 359 | 75 |
| 77 | 41 | H 63 | 0.20 | 4,323 | 359 | 100% | 359 | 72 |
| 78 | 42 | H 64 | 0.19 | 4,323 | 359 | 100% | 359 | 68 |
| 79 | 43 | H 65 | 0.19 | 4,323 | 359 | 100% | 359 | 68 |
| 80 | 44 | H 66 | 0.18 | 4,323 | 359 | 100% | 359 | 65 |
| 合計(便益額) | | | | | | | | 41,322 |

事業名: 水源林造成事業
 施行箇所: 関東整備局 昭和50年度契約地

64,743 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 | 4,767 |
| 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 | 9,483 |
| Y: | 評価期間(年) | | 80 |
| D: | 容積密度(t/m3) | 広葉樹 | 0.586 |
| 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 樹齢20年超 | 1.39 1.28 |
| 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 | 4,715 | 684 | 100% | 684 | 2,702 |
| 2 | -34 | S51 | 3.79 | 4,715 | 684 | 100% | 684 | 2,592 |
| 3 | -33 | S52 | 3.65 | 4,715 | 684 | 100% | 684 | 2,496 |
| 4 | -32 | S53 | 3.51 | 4,715 | 684 | 100% | 684 | 2,401 |
| 5 | -31 | S54 | 3.37 | 4,715 | 684 | 100% | 684 | 2,305 |
| 6 | -30 | S55 | 3.24 | 4,715 | 684 | 100% | 684 | 2,216 |
| 7 | -29 | S56 | 3.12 | 4,715 | 684 | 100% | 684 | 2,134 |
| 8 | -28 | S57 | 3.00 | 4,715 | 684 | 100% | 684 | 2,052 |
| 9 | -27 | S58 | 2.88 | 4,715 | 684 | 100% | 684 | 1,970 |
| 10 | -26 | S59 | 2.77 | 4,715 | 684 | 100% | 684 | 1,895 |
| 11 | -25 | S60 | 2.67 | 4,715 | 684 | 100% | 684 | 1,826 |
| 12 | -24 | S61 | 2.56 | 4,715 | 684 | 100% | 684 | 1,751 |
| 13 | -23 | S62 | 2.46 | 4,715 | 684 | 100% | 684 | 1,683 |
| 14 | -22 | S63 | 2.37 | 4,715 | 684 | 100% | 684 | 1,621 |
| 15 | -21 | H 1 | 2.28 | 4,715 | 684 | 100% | 684 | 1,559 |
| 16 | -20 | H 2 | 2.19 | 4,715 | 684 | 100% | 684 | 1,498 |
| 17 | -19 | H 3 | 2.11 | 4,715 | 684 | 100% | 684 | 1,443 |
| 18 | -18 | H 4 | 2.03 | 4,715 | 684 | 100% | 684 | 1,388 |
| 19 | -17 | H 5 | 1.95 | 4,715 | 684 | 100% | 684 | 1,334 |
| 20 | -16 | H 6 | 1.87 | 4,715 | 684 | 100% | 684 | 1,279 |
| 21 | -15 | H 7 | 1.80 | 4,715 | 628 | 100% | 628 | 1,130 |
| 22 | -14 | H 8 | 1.73 | 4,715 | 628 | 100% | 628 | 1,086 |
| 23 | -13 | H 9 | 1.67 | 4,715 | 628 | 100% | 628 | 1,048 |
| 24 | -12 | H 10 | 1.60 | 4,715 | 628 | 100% | 628 | 1,004 |
| 25 | -11 | H 11 | 1.54 | 4,715 | 628 | 100% | 628 | 967 |
| 26 | -10 | H 12 | 1.48 | 4,715 | 628 | 100% | 628 | 929 |
| 27 | -9 | H 13 | 1.42 | 4,715 | 628 | 100% | 628 | 891 |
| 28 | -8 | H 14 | 1.37 | 4,715 | 628 | 100% | 628 | 860 |
| 29 | -7 | H 15 | 1.32 | 4,715 | 628 | 100% | 628 | 829 |
| 30 | -6 | H 16 | 1.27 | 4,715 | 628 | 100% | 628 | 797 |
| 31 | -5 | H 17 | 1.22 | 4,715 | 628 | 100% | 628 | 766 |
| 32 | -4 | H 18 | 1.17 | 4,715 | 628 | 100% | 628 | 734 |
| 33 | -3 | H 19 | 1.12 | 4,715 | 628 | 100% | 628 | 703 |
| 34 | -2 | H 20 | 1.08 | 4,715 | 628 | 100% | 628 | 678 |
| 35 | -1 | H 21 | 1.04 | 4,715 | 628 | 100% | 628 | 653 |
| 36 | 0 | H 22 | 1.00 | 4,715 | 628 | 100% | 628 | 628 |
| 37 | 1 | H 23 | 0.96 | 4,715 | 628 | 100% | 628 | 603 |
| 38 | 2 | H 24 | 0.92 | 4,715 | 628 | 100% | 628 | 578 |
| 39 | 3 | H 25 | 0.89 | 4,715 | 628 | 100% | 628 | 559 |
| 40 | 4 | H 26 | 0.85 | 4,715 | 628 | 100% | 628 | 534 |
| 41 | 5 | H 27 | 0.82 | 4,715 | 628 | 100% | 628 | 515 |
| 42 | 6 | H 28 | 0.79 | 4,715 | 628 | 100% | 628 | 496 |
| 43 | 7 | H 29 | 0.76 | 4,715 | 628 | 100% | 628 | 477 |
| 44 | 8 | H 30 | 0.73 | 4,715 | 628 | 100% | 628 | 458 |
| 45 | 9 | H 31 | 0.70 | 4,715 | 628 | 100% | 628 | 439 |
| 46 | 10 | H 32 | 0.68 | 4,715 | 628 | 100% | 628 | 427 |
| 47 | 11 | H 33 | 0.65 | 4,715 | 628 | 100% | 628 | 408 |
| 48 | 12 | H 34 | 0.62 | 4,715 | 628 | 100% | 628 | 389 |
| 49 | 13 | H 35 | 0.60 | 4,715 | 628 | 100% | 628 | 377 |
| 50 | 14 | H 36 | 0.58 | 4,715 | 628 | 100% | 628 | 364 |
| 51 | 15 | H 37 | 0.56 | 4,715 | 628 | 100% | 628 | 352 |
| 52 | 16 | H 38 | 0.53 | 4,715 | 628 | 100% | 628 | 333 |
| 53 | 17 | H 39 | 0.51 | 4,715 | 628 | 100% | 628 | 320 |
| 54 | 18 | H 40 | 0.49 | 4,715 | 628 | 100% | 628 | 308 |
| 55 | 19 | H 41 | 0.47 | 4,715 | 628 | 100% | 628 | 295 |
| 56 | 20 | H 42 | 0.46 | 4,715 | 628 | 100% | 628 | 289 |
| 57 | 21 | H 43 | 0.44 | 4,715 | 628 | 100% | 628 | 276 |
| 58 | 22 | H 44 | 0.42 | 4,715 | 628 | 100% | 628 | 264 |
| 59 | 23 | H 45 | 0.41 | 4,715 | 628 | 100% | 628 | 257 |
| 60 | 24 | H 46 | 0.39 | 4,715 | 628 | 100% | 628 | 245 |
| 61 | 25 | H 47 | 0.38 | 4,715 | 628 | 100% | 628 | 239 |
| 62 | 26 | H 48 | 0.36 | 4,715 | 628 | 100% | 628 | 226 |
| 63 | 27 | H 49 | 0.35 | 4,715 | 628 | 100% | 628 | 220 |
| 64 | 28 | H 50 | 0.33 | 4,715 | 628 | 100% | 628 | 207 |
| 65 | 29 | H 51 | 0.32 | 4,715 | 628 | 100% | 628 | 201 |
| 66 | 30 | H 52 | 0.31 | 4,715 | 628 | 100% | 628 | 195 |
| 67 | 31 | H 53 | 0.30 | 4,715 | 628 | 100% | 628 | 188 |
| 68 | 32 | H 54 | 0.29 | 4,715 | 628 | 100% | 628 | 182 |
| 69 | 33 | H 55 | 0.27 | 4,715 | 628 | 100% | 628 | 169 |
| 70 | 34 | H 56 | 0.26 | 4,715 | 628 | 100% | 628 | 163 |
| 71 | 35 | H 57 | 0.25 | 4,715 | 628 | 100% | 628 | 157 |
| 72 | 36 | H 58 | 0.24 | 4,715 | 628 | 100% | 628 | 151 |
| 73 | 37 | H 59 | 0.23 | 4,715 | 628 | 100% | 628 | 144 |
| 74 | 38 | H 60 | 0.23 | 4,715 | 628 | 100% | 628 | 144 |
| 75 | 39 | H 61 | 0.22 | 4,715 | 628 | 100% | 628 | 138 |
| 76 | 40 | H 62 | 0.21 | 4,715 | 628 | 100% | 628 | 132 |
| 77 | 41 | H 63 | 0.20 | 4,715 | 628 | 100% | 628 | 126 |
| 78 | 42 | H 64 | 0.19 | 4,715 | 628 | 100% | 628 | 119 |
| 79 | 43 | H 65 | 0.19 | 4,715 | 628 | 100% | 628 | 119 |
| 80 | 44 | H 66 | 0.18 | 4,715 | 628 | 100% | 628 | 113 |
| 合計(便益額) | | | | | | | | 64,743 |

事業名: 水源林造成事業
 施行箇所: 関東整備局 昭和50年度契約地

197,007千円

3 環境保全便益
 (1) 炭素固定便益
 ② 森林土壌蓄積分

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

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

- 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) 0.566
- 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
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) 570
- 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 ① | 事業対象区域面積(ha) ② | 年効果額 ③ | 効果発生割合 ④ | 年発生効果額 ④=②×③ | 現在価値 ⑤=④×① |
|---------|-----|------|-----------|-------------------|-----------|-------------|-----------------|---------------|
| 1 | -35 | S50 | 3.95 | 570 | 2,007 | 100% | 2,007 | 7,929 |
| 2 | -34 | S51 | 3.79 | 570 | 2,007 | 100% | 2,007 | 7,608 |
| 3 | -33 | S52 | 3.65 | 570 | 2,007 | 100% | 2,007 | 7,327 |
| 4 | -32 | S53 | 3.51 | 570 | 2,007 | 100% | 2,007 | 7,046 |
| 5 | -31 | S54 | 3.37 | 570 | 2,007 | 100% | 2,007 | 6,765 |
| 6 | -30 | S55 | 3.24 | 570 | 2,007 | 100% | 2,007 | 6,504 |
| 7 | -29 | S56 | 3.12 | 570 | 2,007 | 100% | 2,007 | 6,263 |
| 8 | -28 | S57 | 3.00 | 570 | 2,007 | 100% | 2,007 | 6,022 |
| 9 | -27 | S58 | 2.88 | 570 | 2,007 | 100% | 2,007 | 5,781 |
| 10 | -26 | S59 | 2.77 | 570 | 2,007 | 100% | 2,007 | 5,561 |
| 11 | -25 | S60 | 2.67 | 570 | 2,007 | 100% | 2,007 | 5,360 |
| 12 | -24 | S61 | 2.56 | 570 | 2,007 | 100% | 2,007 | 5,139 |
| 13 | -23 | S62 | 2.46 | 570 | 2,007 | 100% | 2,007 | 4,938 |
| 14 | -22 | S63 | 2.37 | 570 | 2,007 | 100% | 2,007 | 4,758 |
| 15 | -21 | H 1 | 2.28 | 570 | 2,007 | 100% | 2,007 | 4,577 |
| 16 | -20 | H 2 | 2.19 | 570 | 2,007 | 100% | 2,007 | 4,396 |
| 17 | -19 | H 3 | 2.11 | 570 | 2,007 | 100% | 2,007 | 4,236 |
| 18 | -18 | H 4 | 2.03 | 570 | 2,007 | 100% | 2,007 | 4,075 |
| 19 | -17 | H 5 | 1.95 | 570 | 2,007 | 100% | 2,007 | 3,914 |
| 20 | -16 | H 6 | 1.87 | 570 | 2,007 | 100% | 2,007 | 3,754 |
| 21 | -15 | H 7 | 1.80 | 570 | 2,007 | 100% | 2,007 | 3,613 |
| 22 | -14 | H 8 | 1.73 | 570 | 2,007 | 100% | 2,007 | 3,473 |
| 23 | -13 | H 9 | 1.67 | 570 | 2,007 | 100% | 2,007 | 3,352 |
| 24 | -12 | H 10 | 1.60 | 570 | 2,007 | 100% | 2,007 | 3,212 |
| 25 | -11 | H 11 | 1.54 | 570 | 2,007 | 100% | 2,007 | 3,091 |
| 26 | -10 | H 12 | 1.48 | 570 | 2,007 | 100% | 2,007 | 2,971 |
| 27 | -9 | H 13 | 1.42 | 570 | 2,007 | 100% | 2,007 | 2,851 |
| 28 | -8 | H 14 | 1.37 | 570 | 2,007 | 100% | 2,007 | 2,750 |
| 29 | -7 | H 15 | 1.32 | 570 | 2,007 | 100% | 2,007 | 2,650 |
| 30 | -6 | H 16 | 1.27 | 570 | 2,007 | 100% | 2,007 | 2,549 |
| 31 | -5 | H 17 | 1.22 | 570 | 2,007 | 100% | 2,007 | 2,449 |
| 32 | -4 | H 18 | 1.17 | 570 | 2,007 | 100% | 2,007 | 2,349 |
| 33 | -3 | H 19 | 1.12 | 570 | 2,007 | 100% | 2,007 | 2,248 |
| 34 | -2 | H 20 | 1.08 | 570 | 2,007 | 100% | 2,007 | 2,168 |
| 35 | -1 | H 21 | 1.04 | 570 | 2,007 | 100% | 2,007 | 2,088 |
| 36 | 0 | H 22 | 1.00 | 570 | 2,007 | 100% | 2,007 | 2,007 |
| 37 | 1 | H 23 | 0.96 | 570 | 2,007 | 100% | 2,007 | 1,927 |
| 38 | 2 | H 24 | 0.92 | 570 | 2,007 | 100% | 2,007 | 1,847 |
| 39 | 3 | H 25 | 0.89 | 570 | 2,007 | 100% | 2,007 | 1,767 |
| 40 | 4 | H 26 | 0.85 | 570 | 2,007 | 100% | 2,007 | 1,708 |
| 41 | 5 | H 27 | 0.82 | 570 | 2,007 | 100% | 2,007 | 1,646 |
| 42 | 6 | H 28 | 0.79 | 570 | 2,007 | 100% | 2,007 | 1,586 |
| 43 | 7 | H 29 | 0.76 | 570 | 2,007 | 100% | 2,007 | 1,526 |
| 44 | 8 | H 30 | 0.73 | 570 | 2,007 | 100% | 2,007 | 1,465 |
| 45 | 9 | H 31 | 0.70 | 570 | 2,007 | 100% | 2,007 | 1,405 |
| 46 | 10 | H 32 | 0.68 | 570 | 2,007 | 100% | 2,007 | 1,365 |
| 47 | 11 | H 33 | 0.65 | 570 | 2,007 | 100% | 2,007 | 1,305 |
| 48 | 12 | H 34 | 0.62 | 570 | 2,007 | 100% | 2,007 | 1,245 |
| 49 | 13 | H 35 | 0.60 | 570 | 2,007 | 100% | 2,007 | 1,204 |
| 50 | 14 | H 36 | 0.58 | 570 | 2,007 | 100% | 2,007 | 1,164 |
| 51 | 15 | H 37 | 0.56 | 570 | 2,007 | 100% | 2,007 | 1,124 |
| 52 | 16 | H 38 | 0.53 | 570 | 2,007 | 100% | 2,007 | 1,064 |
| 53 | 17 | H 39 | 0.51 | 570 | 2,007 | 100% | 2,007 | 1,024 |
| 54 | 18 | H 40 | 0.49 | 570 | 2,007 | 100% | 2,007 | 984 |
| 55 | 19 | H 41 | 0.47 | 570 | 2,007 | 100% | 2,007 | 943 |
| 56 | 20 | H 42 | 0.46 | 570 | 2,007 | 100% | 2,007 | 923 |
| 57 | 21 | H 43 | 0.44 | 570 | 2,007 | 100% | 2,007 | 883 |
| 58 | 22 | H 44 | 0.42 | 570 | 2,007 | 100% | 2,007 | 843 |
| 59 | 23 | H 45 | 0.41 | 570 | 2,007 | 100% | 2,007 | 823 |
| 60 | 24 | H 46 | 0.39 | 570 | 2,007 | 100% | 2,007 | 783 |
| 61 | 25 | H 47 | 0.38 | 570 | 2,007 | 100% | 2,007 | 763 |
| 62 | 26 | H 48 | 0.36 | 570 | 2,007 | 100% | 2,007 | 723 |
| 63 | 27 | H 49 | 0.35 | 570 | 2,007 | 100% | 2,007 | 703 |
| 64 | 28 | H 50 | 0.33 | 570 | 2,007 | 100% | 2,007 | 662 |
| 65 | 29 | H 51 | 0.32 | 570 | 2,007 | 100% | 2,007 | 642 |
| 66 | 30 | H 52 | 0.31 | 570 | 2,007 | 100% | 2,007 | 622 |
| 67 | 31 | H 53 | 0.30 | 570 | 2,007 | 100% | 2,007 | 602 |
| 68 | 32 | H 54 | 0.29 | 570 | 2,007 | 100% | 2,007 | 582 |
| 69 | 33 | H 55 | 0.27 | 570 | 2,007 | 100% | 2,007 | 542 |
| 70 | 34 | H 56 | 0.26 | 570 | 2,007 | 100% | 2,007 | 522 |
| 71 | 35 | H 57 | 0.25 | 570 | 2,007 | 100% | 2,007 | 502 |
| 72 | 36 | H 58 | 0.24 | 570 | 2,007 | 100% | 2,007 | 482 |
| 73 | 37 | H 59 | 0.23 | 570 | 2,007 | 100% | 2,007 | 462 |
| 74 | 38 | H 60 | 0.23 | 570 | 2,007 | 100% | 2,007 | 462 |
| 75 | 39 | H 61 | 0.22 | 570 | 2,007 | 100% | 2,007 | 442 |
| 76 | 40 | H 62 | 0.21 | 570 | 2,007 | 100% | 2,007 | 422 |
| 77 | 41 | H 63 | 0.20 | 570 | 2,007 | 100% | 2,007 | 401 |
| 78 | 42 | H 64 | 0.19 | 570 | 2,007 | 100% | 2,007 | 381 |
| 79 | 43 | H 65 | 0.19 | 570 | 2,007 | 100% | 2,007 | 381 |
| 80 | 44 | H 66 | 0.18 | 570 | 2,007 | 100% | 2,007 | 361 |
| 合計(便益額) | | | | | | | | 197,007 |

事業名: 水源林造成事業
 施行箇所: 関東整備局 昭和50年度契約地

62,315 千円

4 木材生産等便益
 (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)

136,040

@: 山元立木価格(円/m3)

2,545

便益算出表

| 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 | 136,040 | 346,192 | 100% | 346,192 | 62,315 |
| 合計(便益額) | | | | 136,040 | 346,192 | 100% | 346,192 | 62,315 |

事業名: 水源林造成事業
 施行箇所: 関東整備局 昭和50年度契約地
 4 木材生産等便益
 (3) 木材生産確保・増進便益
 ① 森林整備分 七ノキ

44,418 千円

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

Y: 評価期間(年) 80
 Vt: t年後における伐採材積(m3) 26,618
 @: 山元立木価格(円/m3) 9,271

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 | 26,618 | 246,767 | 100% | 246,767 | 44,418 |
| 合計(便益額) | | | | | | | | 44,418 |

事業名: 水源林造成事業
 施行箇所: 関東整備局 昭和50年度契約地

4 木材生産等便益

3,219 千円

(3) 木材生産確保・増進便益

① 森林整備分 マツ類

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

Y: 評価期間(年)

80

Vt: t年後における伐採材積(m3)

13,800

@: 山元立木価格(円/m3)

1,296

便益算出表

| 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 | 13,800 | 17,883 | 100% | 17,883 | 3,219 |
| 合計(便益額) | | | | | | | | 3,219 |

事業名: 水源林造成事業
 施行箇所: 関東整備局 昭和50年度契約地
 4 木材生産等便益
 (3) 木材生産確保・増進便益
 ① 森林整備分 カラマツ

4,085 千円

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

Y: 評価期間(年) 80
 Vt: t年後における伐採材積(m3) 6,501
 @: 山元立木価格(円/m3) 3,491

便益算出表

| 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 | 2.58 | | | | 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 | 6,501 | 22,695 | 100% | 22,695 | 4,085 |
| 合計(便益額) | | | | | | | | 4,085 |

