

Appendix K – Benefit Cost Analysis Results

Inland Topography Analysis Results

| Requirements | Quality Level | Update Frequency | Total Reported Future Annual Benefits | Total Reduced Value Future Annual Benefits | Net Total Future Annual Benefits | Net Reduced Value Future Annual Benefits | Acquisition Costs Per Year | Benefit/Cost Ratio Full | Benefit/Cost Ratio Reduced Value | Return on Investment Full | Return on Investment Reduced Value | Total Cost Once Over |
|-------------------|---------------|------------------|---------------------------------------|--|----------------------------------|--|----------------------------|-------------------------|----------------------------------|---------------------------|------------------------------------|----------------------|
| Uniform QL and UF | QL0HD | Annual | \$9,989,136,959 | \$9,849,885,006 | \$6,639,217,786 | \$6,499,965,832 | \$3,349,919,173 | 2.98 | 2.94 | 0.02 | 0.02 | \$3,349,919,173 |
| Uniform QL and UF | QL0HD | 2-3 years | \$9,989,136,959 | \$9,231,526,934 | \$8,649,169,289 | \$7,891,559,265 | \$1,339,967,669 | 7.45 | 6.89 | 0.06 | 0.06 | \$3,349,919,173 |
| Uniform QL and UF | QL0HD | 4-5 years | \$9,989,136,959 | \$8,796,217,240 | \$9,244,710,476 | \$8,051,790,757 | \$744,426,483 | 13.42 | 11.82 | 0.12 | 0.11 | \$3,349,919,174 |
| Uniform QL and UF | QL0HD | 6-10 years | \$9,989,136,959 | \$7,233,625,057 | \$9,570,397,062 | \$6,814,885,160 | \$418,739,897 | 23.86 | 17.27 | 0.23 | 0.16 | \$3,349,919,176 |
| Uniform QL and UF | QL0HD | >10 years | \$9,989,136,959 | \$6,187,168,029 | \$9,765,809,014 | \$5,963,840,084 | \$223,327,945 | 44.73 | 27.70 | 0.44 | 0.27 | \$3,349,919,175 |
| Uniform QL and UF | QL0 | Annual | \$9,989,136,959 | \$9,625,204,510 | \$7,310,758,057 | \$6,946,825,608 | \$2,678,378,901 | 3.73 | 3.59 | 0.03 | 0.03 | \$2,678,378,901 |
| Uniform QL and UF | QL0 | 2-3 years | \$9,989,136,959 | \$9,006,846,438 | \$8,917,785,398 | \$7,935,494,878 | \$1,071,351,561 | 9.32 | 8.41 | 0.08 | 0.07 | \$2,678,378,900 |
| Uniform QL and UF | QL0 | 4-5 years | \$9,989,136,959 | \$8,571,536,744 | \$9,393,941,647 | \$7,976,341,433 | \$595,195,311 | 16.78 | 14.40 | 0.16 | 0.13 | \$2,678,378,900 |
| Uniform QL and UF | QL0 | 6-10 years | \$9,989,136,959 | \$7,008,944,561 | \$9,654,339,596 | \$6,674,147,199 | \$334,797,363 | 29.84 | 20.93 | 0.29 | 0.20 | \$2,678,378,896 |
| Uniform QL and UF | QL0 | >10 years | \$9,989,136,959 | \$5,962,487,533 | \$9,810,578,365 | \$5,783,928,940 | \$178,558,593 | 55.94 | 33.39 | 0.55 | 0.32 | \$2,678,378,895 |
| Uniform QL and UF | QL1HD | Annual | \$9,989,136,959 | \$9,376,530,860 | \$7,759,461,925 | \$7,146,855,826 | \$2,229,675,034 | 4.48 | 4.21 | 0.03 | 0.03 | \$2,229,675,033 |
| Uniform QL and UF | QL1HD | 2-3 years | \$9,989,136,959 | \$8,758,172,788 | \$9,097,266,945 | \$7,866,302,774 | \$891,870,013 | 11.20 | 9.82 | 0.10 | 0.09 | \$2,229,675,033 |
| Uniform QL and UF | QL1HD | 4-5 years | \$9,989,136,959 | \$8,322,863,094 | \$9,493,653,618 | \$7,827,379,753 | \$495,483,341 | 20.16 | 16.80 | 0.19 | 0.16 | \$2,229,675,030 |
| Uniform QL and UF | QL1HD | 6-10 years | \$9,989,136,959 | \$6,760,270,911 | \$9,710,427,579 | \$6,481,561,532 | \$278,709,379 | 35.84 | 24.26 | 0.35 | 0.23 | \$2,229,675,032 |
| Uniform QL and UF | QL1HD | >10 years | \$9,989,136,959 | \$5,713,813,883 | \$9,840,491,956 | \$5,565,168,880 | \$148,645,002 | 67.20 | 38.44 | 0.66 | 0.37 | \$2,229,675,030 |
| Uniform QL and UF | QL1 | Annual | \$9,989,136,959 | \$8,949,542,397 | \$8,204,561,378 | \$7,164,966,816 | \$1,784,575,581 | 5.60 | 5.01 | 0.05 | 0.04 | \$1,784,575,581 |
| Uniform QL and UF | QL1 | 2-3 years | \$9,989,136,959 | \$8,331,184,326 | \$9,275,306,726 | \$7,617,354,093 | \$713,830,233 | 13.99 | 11.67 | 0.13 | 0.11 | \$1,784,575,580 |
| Uniform QL and UF | QL1 | 4-5 years | \$9,989,136,959 | \$7,895,874,632 | \$9,592,564,607 | \$7,499,302,281 | \$396,572,351 | 25.19 | 19.91 | 0.24 | 0.19 | \$1,784,575,580 |

| Requirements | Quality Level | Update Frequency | Total Reported Future Annual Benefits | Total Reduced Value Future Annual Benefits | Net Total Future Annual Benefits | Net Reduced Value Future Annual Benefits | Acquisition Costs Per Year | Benefit/Cost Ratio Full | Benefit/Cost Ratio Reduced Value | Return on Investment Full | Return on Investment Reduced Value | Total Cost Once Over |
|--------------------------------|---|--|---------------------------------------|--|----------------------------------|--|----------------------------|-------------------------|----------------------------------|---------------------------|------------------------------------|----------------------|
| Uniform QL and UF | QL1 | 6-10 years | \$9,989,136,959 | \$6,333,282,449 | \$9,766,065,011 | \$6,110,210,501 | \$223,071,948 | 44.78 | 28.39 | 0.44 | 0.27 | \$1,784,575,576 |
| Uniform QL and UF | QL1 | >10 years | \$9,989,136,959 | \$5,286,825,420 | \$9,870,165,253 | \$5,167,853,715 | \$118,971,705 | 83.96 | 44.44 | 0.83 | 0.43 | \$1,784,575,575 |
| Uniform QL and UF | QL2 | Annual | \$9,989,136,959 | \$7,936,429,722 | \$9,032,705,746 | \$6,979,998,509 | \$956,431,213 | 10.44 | 8.30 | 0.09 | 0.07 | \$956,431,213 |
| Uniform QL and UF | QL2 | 2-3 years | \$9,989,136,959 | \$7,318,071,650 | \$9,606,564,474 | \$6,935,499,165 | \$382,572,485 | 26.11 | 19.13 | 0.25 | 0.18 | \$956,431,213 |
| Uniform QL and UF | QL2 | 4-5 years | \$9,989,136,959 | \$6,882,761,956 | \$9,776,596,689 | \$6,670,221,687 | \$212,540,270 | 47.00 | 32.38 | 0.46 | 0.31 | \$956,431,211 |
| Uniform QL and UF | QL2 | 6-10 years | \$9,989,136,959 | \$5,320,169,773 | \$9,869,583,057 | \$5,200,615,872 | \$119,553,902 | 83.55 | 44.50 | 0.83 | 0.44 | \$956,431,208 |
| Uniform QL and UF | QL2 | >10 years | \$9,989,136,959 | \$4,273,712,745 | \$9,925,374,878 | \$4,209,950,664 | \$63,762,081 | 156.66 | 67.03 | 1.56 | 0.66 | \$956,431,200 |
| 3DEP Status Quo | QL5 AK, QL2 elsewhere | 6-10 years | \$9,975,584,390 | \$4,543,046,465 | \$9,883,044,696 | \$4,450,506,771 | \$92,539,693 | 107.80 | 49.09 | 1.07 | 0.48 | \$740,317,544 |
| 3DEP NextGen | QL2 AK, QL1 elsewhere | 4-5 years | \$9,989,136,959 | \$7,862,334,502 | \$9,639,779,628 | \$7,512,977,171 | \$349,357,331 | 28.59 | 22.51 | 0.28 | 0.22 | \$1,572,107,990 |
| Mixed QLS | Coastal QL1, based on the raster elsewhere | 4-5 years | \$9,989,136,959 | \$7,441,119,272 | \$9,776,178,044 | \$7,228,160,357 | \$212,958,915 | 46.91 | 34.94 | 0.46 | 0.34 | |
| Mixed update frequencies | QL2 | Coastal 2 years, based on the raster elsewhere | \$9,989,136,959 | \$5,812,430,121 | \$9,830,521,654 | \$5,653,814,817 | \$158,615,305 | 62.98 | 36.64 | 0.62 | 0.36 | |
| Mixed update frequencies | QL2 | Urban/coastal 2-3 years, 4-5 years elsewhere | \$9,989,136,959 | \$7,328,465,585 | \$9,711,759,753 | \$7,051,088,379 | \$277,377,206 | 36.01 | 26.42 | 0.35 | 0.25 | |
| Mixed update frequencies | QL1 | Coastal 2 years, based on the raster elsewhere | \$9,989,136,959 | \$6,318,986,459 | \$9,693,623,318 | \$6,023,472,818 | \$295,513,641 | 33.80 | 21.38 | 0.33 | 0.20 | |
| Mixed QLS & update frequencies | Urban, forested, coastal QL1; QL2 elsewhere | Urban/coastal 2-3 years, 4-5 years elsewhere | \$9,989,136,959 | \$7,691,914,300 | \$9,539,593,192 | \$7,242,370,534 | \$449,543,767 | 22.22 | 17.11 | 0.21 | 0.16 | |

Inland Bathymetry Analysis Results

| Requirements | Quality Level | Update Frequency | Total Reported Future Annual Benefits | Total Reduced Value Future Annual Benefits | Net Total Future Annual Benefits | Net Reduced Value Future Annual Benefits | Acquisition Costs Per Year | Benefit/Cost Ratio Full | Benefit/Cost Ratio Reduced Value | Return on Investment Full | Return on Investment Reduced Value |
|---|---------------|------------------|---------------------------------------|--|----------------------------------|--|----------------------------|-------------------------|----------------------------------|---------------------------|------------------------------------|
| All sonar areas | QL0B | Annual | \$804,671,632 | \$793,564,592 | -\$2,673,120,890 | -\$2,684,227,930 | \$3,477,792,522 | 0.23 | 0.23 | -0.01 | -0.01 |
| All sonar areas | QL0B | 2-3 years | \$804,671,632 | \$792,857,541 | -\$586,445,377 | -\$598,259,468 | \$1,391,117,009 | 0.58 | 0.57 | 0 | 0 |
| All sonar areas | QL0B | 4-5 years | \$804,671,632 | \$743,569,600 | \$31,828,849 | -\$29,273,183 | \$772,842,783 | 1.04 | 0.96 | 0 | 0 |
| All sonar areas | QL0B | 6-10 years | \$804,671,632 | \$643,882,019 | \$369,947,566 | \$209,157,954 | \$434,724,065 | 1.85 | 1.48 | 0.01 | 0 |
| All sonar areas | QL0B | >10 years | \$804,671,632 | \$530,702,160 | \$572,818,797 | \$298,849,325 | \$231,852,835 | 3.47 | 2.29 | 0.02 | 0.01 |
| All lidar areas | QL2B | Annual | \$57,832,847 | \$57,118,209 | \$31,339,356 | \$30,624,719 | \$26,493,491 | 2.18 | 2.16 | 0.01 | 0.01 |
| All lidar areas | QL2B | 2-3 years | \$57,832,847 | \$56,924,500 | \$47,235,451 | \$46,327,103 | \$10,597,396 | 5.46 | 5.37 | 0.04 | 0.04 |
| All lidar areas | QL2B | 4-5 years | \$57,832,847 | \$51,356,063 | \$51,945,405 | \$45,468,621 | \$5,887,442 | 9.82 | 8.72 | 0.09 | 0.08 |
| All lidar areas | QL2B | 6-10 years | \$57,832,847 | \$44,336,231 | \$54,521,161 | \$41,024,544 | \$3,311,686 | 17.46 | 13.39 | 0.16 | 0.12 |
| All lidar areas | QL2B | >10 years | \$57,832,847 | \$36,978,269 | \$56,066,614 | \$35,212,036 | \$1,766,233 | 32.74 | 20.94 | 0.32 | 0.2 |
| Combined - all sonar and lidar areas | QL0B + QL2B | Annual | \$862,504,479 | \$850,682,801 | -\$2,641,781,534 | -\$2,653,603,212 | \$3,504,286,012 | 0.25 | 0.24 | -0.01 | -0.01 |
| Combined - all sonar and lidar areas | QL0B + QL2B | 2-3 years | \$862,504,479 | \$849,782,041 | -\$539,209,926 | -\$551,932,364 | \$1,401,714,405 | 0.62 | 0.61 | 0 | 0 |
| Combined - all sonar and lidar areas | QL0B + QL2B | 4-5 years | \$862,504,479 | \$794,925,663 | \$83,774,254 | \$16,195,438 | \$778,730,225 | 1.11 | 1.02 | 0 | 0 |
| Combined - all sonar and lidar areas | QL0B + QL2B | 6-10 years | \$862,504,479 | \$688,218,250 | \$424,468,727 | \$250,182,499 | \$438,035,752 | 1.97 | 1.57 | 0.01 | 0.01 |
| Combined - all sonar and lidar areas | QL0B + QL2B | >10 years | \$862,504,479 | \$567,680,429 | \$628,885,411 | \$334,061,361 | \$233,619,067 | 3.69 | 2.43 | 0.03 | 0.01 |
| Only large lakes 50+ sq mi | QL0B | Annual | \$149,667,011 | \$147,474,311 | \$66,641,447 | \$64,448,747 | \$83,025,563 | 1.80 | 1.78 | 0.0080 | 0.0078 |
| Only large lakes 50+ sq mi | QL0B | 2-3 years | \$149,667,011 | \$147,412,256 | \$116,456,785 | \$114,202,031 | \$33,210,225 | 4.51 | 4.44 | 0.0351 | 0.0344 |
| Only large lakes 50+ sq mi | QL0B | 4-5 years | \$149,667,011 | \$140,152,940 | \$131,216,885 | \$121,702,815 | \$18,450,125 | 8.11 | 7.60 | 0.0711 | 0.0660 |
| Only large lakes 50+ sq mi | QL0B | 6-10 years | \$149,667,011 | \$122,231,915 | \$139,288,815 | \$111,853,719 | \$10,378,195 | 14.42 | 11.78 | 0.1342 | 0.1078 |
| Only large lakes 50+ sq mi | QL0B | >10 years | \$149,667,011 | \$100,366,769 | \$144,131,973 | \$94,831,732 | \$5,535,038 | 27.04 | 18.13 | 0.2604 | 0.1713 |
| Large plus medium lakes 10-50+ sq mi | QL0B | Annual | \$254,889,425 | \$251,315,814 | -\$167,640,756 | -\$171,214,366 | \$422,530,181 | 0.60 | 0.59 | -0.0040 | -0.0041 |
| Large plus medium lakes 10-50+ sq mi | QL0B | 2-3 years | \$254,889,425 | \$251,138,622 | \$85,877,353 | \$82,126,550 | \$169,012,072 | 1.51 | 1.49 | 0.0051 | 0.0049 |
| Large plus medium lakes 10-50+ sq mi | QL0B | 4-5 years | \$254,889,425 | \$236,890,303 | \$160,993,829 | \$142,994,707 | \$93,895,596 | 2.71 | 2.52 | 0.0171 | 0.0152 |
| Large plus medium lakes 10-50+ sq mi | QL0B | 6-10 years | \$254,889,425 | \$205,824,052 | \$202,073,153 | \$153,007,780 | \$52,816,273 | 4.83 | 3.90 | 0.0383 | 0.0290 |
| Large plus medium lakes 10-50+ sq mi | QL0B | >10 years | \$254,889,425 | \$169,401,335 | \$226,720,746 | \$141,232,656 | \$28,168,679 | 9.05 | 6.01 | 0.0805 | 0.0501 |
| All lakes | QL0B | 6-10 years | \$658,680,211 | \$529,465,980 | \$262,464,912 | \$133,250,682 | \$396,215,299 | 1.66 | 1.34 | 0.0066 | 0.0034 |
| Sonar only in navigable channels (rivers) | QL0B | 6-10 years | \$50,149,501 | \$37,487,772 | \$41,766,330 | \$29,104,601 | \$8,383,171 | 5.98 | 4.47 | 0.0498 | 0.0347 |
| Sonar in non-navigable rivers | QL0B | 6-10 years | \$95,841,920 | \$76,928,267 | \$65,716,324 | \$46,802,671 | \$30,125,596 | 3.18 | 2.55 | 0.0218 | 0.0155 |

Nearshore Bathymetry Analysis Results

| Requirements | Quality Level | Update Frequency | Total Reported Future Annual Benefits | Total Reduced Value Future Annual Benefits | Net Total Future Annual Benefits | Net Reduced Value Future Annual Benefits | Acquisition Costs Per Year | Benefit/Cost Ratio Full | Benefit/Cost Ratio Reduced Value | Return on Investment Full | Return on Investment Reduced Value |
|--|---------------|---|---------------------------------------|--|----------------------------------|--|----------------------------|-------------------------|----------------------------------|---------------------------|------------------------------------|
| Uniform QL and UF | QL2B | Annual | \$2,550,443,087 | \$2,537,591,783 | \$2,284,913,052 | \$2,272,061,747 | \$265,530,035 | 9.61 | 9.56 | 0.09 | 0.09 |
| Uniform QL and UF | QL2B | 2-3 years | \$2,550,443,087 | \$2,025,781,752 | \$2,444,231,073 | \$1,919,569,738 | \$106,212,014 | 24.01 | 19.07 | 0.23 | 0.18 |
| Uniform QL and UF | QL2B | 4-5 years | \$2,550,443,087 | \$1,713,643,971 | \$2,491,436,413 | \$1,654,637,297 | \$59,006,674 | 43.22 | 29.04 | 0.42 | 0.28 |
| Uniform QL and UF | QL2B | 6-10 years | \$2,550,443,087 | \$1,515,653,656 | \$2,517,251,833 | \$1,482,462,402 | \$33,191,254 | 76.84 | 45.66 | 0.76 | 0.45 |
| Uniform QL and UF | QL2B | >10 years | \$2,550,443,087 | \$1,392,624,929 | \$2,532,741,085 | \$1,374,922,926 | \$17,702,002 | 144.08 | 78.67 | 1.43 | 0.78 |
| Mixed update frequency | QL2B | Ports & harbors 5 years, elsewhere 10 years | \$2,550,443,087 | \$1,059,863,307 | \$2,523,344,274 | \$1,032,764,493 | \$27,098,813 | 94.12 | 39.11 | 0.93 | 0.38 |
| IWG-OCM 2021 Federal priority areas - BOEM | QL2B | Annual | \$182,134,436 | \$181,296,330 | \$87,150,925 | \$86,312,819 | \$94,983,511 | 1.92 | 1.91 | 0.01 | 0.01 |
| IWG-OCM 2021 Federal priority areas - BOEM | QL2B | 2-3 years | \$182,134,436 | \$177,429,336 | \$144,141,032 | \$139,435,932 | \$37,993,404 | 4.79 | 4.67 | 0.04 | 0.04 |
| IWG-OCM 2021 Federal priority areas - BOEM | QL2B | 4-5 years | \$182,134,436 | \$156,291,227 | \$161,026,989 | \$135,183,780 | \$21,107,447 | 8.63 | 7.4 | 0.08 | 0.06 |
| IWG-OCM 2021 Federal priority areas - BOEM | QL2B | 6-10 years | \$182,134,436 | \$132,646,530 | \$170,261,497 | \$120,773,591 | \$11,872,939 | 15.34 | 11.17 | 0.14 | 0.1 |
| IWG-OCM 2021 Federal priority areas - BOEM | QL2B | >10 years | \$182,134,436 | \$112,921,007 | \$175,802,202 | \$106,588,773 | \$6,332,234 | 28.76 | 17.83 | 0.28 | 0.17 |
| IWG-OCM 2021 Federal priority areas - DOE | QL2B | Annual | \$81,417,015 | \$81,011,778 | \$80,586,987 | \$80,181,750 | \$830,028 | 98.09 | 97.6 | 0.97 | 0.97 |
| IWG-OCM 2021 Federal priority areas - DOE | QL2B | 2-3 years | \$81,417,015 | \$61,145,766 | \$81,085,004 | \$60,813,755 | \$332,011 | 245.22 | 184.17 | 2.44 | 1.83 |
| IWG-OCM 2021 Federal priority areas - DOE | QL2B | 4-5 years | \$81,417,015 | \$51,005,063 | \$81,232,565 | \$50,820,613 | \$184,451 | 441.4 | 276.52 | 4.4 | 2.76 |
| IWG-OCM 2021 Federal priority areas - DOE | QL2B | 6-10 years | \$81,417,015 | \$45,758,079 | \$81,313,262 | \$45,654,325 | \$103,754 | 784.72 | 441.03 | 7.84 | 4.4 |
| IWG-OCM 2021 Federal priority areas - DOE | QL2B | >10 years | \$81,417,015 | \$43,049,532 | \$81,361,680 | \$42,994,197 | \$55,335 | 1,471.34 | 777.98 | 14.7 | 7.77 |
| IWG-OCM 2021 Federal priority areas - EPA | QL2B | Annual | \$20,652,278 | \$20,524,001 | \$16,953,001 | \$16,824,724 | \$3,699,277 | 5.58 | 5.55 | 0.05 | 0.05 |
| IWG-OCM 2021 Federal priority areas - EPA | QL2B | 2-3 years | \$20,652,278 | \$16,985,703 | \$19,172,567 | \$15,505,992 | \$1,479,711 | 13.96 | 11.48 | 0.13 | 0.1 |
| IWG-OCM 2021 Federal priority areas - EPA | QL2B | 4-5 years | \$20,652,278 | \$14,526,465 | \$19,830,217 | \$13,704,403 | \$822,062 | 25.12 | 17.67 | 0.24 | 0.17 |
| IWG-OCM 2021 Federal priority areas - EPA | QL2B | 6-10 years | \$20,652,278 | \$12,815,734 | \$20,189,869 | \$12,353,324 | \$462,410 | 44.66 | 27.72 | 0.44 | 0.27 |

| Requirements | Quality Level | Update Frequency | Total Reported Future Annual Benefits | Total Reduced Value Future Annual Benefits | Net Total Future Annual Benefits | Net Reduced Value Future Annual Benefits | Acquisition Costs Per Year | Benefit/Cost Ratio Full | Benefit/Cost Ratio Reduced Value | Return on Investment Full | Return on Investment Reduced Value |
|--|---------------|------------------|---------------------------------------|--|----------------------------------|--|----------------------------|-------------------------|----------------------------------|---------------------------|------------------------------------|
| IWG-OCM 2021 Federal priority areas - EPA | QL2B | >10 years | \$20,652,278 | \$11,555,674 | \$20,405,660 | \$11,309,055 | \$246,618 | 83.74 | 46.86 | 0.83 | 0.46 |
| IWG-OCM 2021 Federal priority areas - NOAA | QL2B | Annual | \$2,548,880,212 | \$2,536,035,730 | \$2,284,407,333 | \$2,271,562,851 | \$264,472,879 | 9.64 | 9.59 | 0.09 | 0.09 |
| IWG-OCM 2021 Federal priority areas - NOAA | QL2B | 2-3 years | \$2,548,880,212 | \$2,024,345,255 | \$2,443,091,060 | \$1,918,556,104 | \$105,789,152 | 24.09 | 19.14 | 0.23 | 0.18 |
| IWG-OCM 2021 Federal priority areas - NOAA | QL2B | 4-5 years | \$2,548,880,212 | \$1,712,367,064 | \$2,490,108,461 | \$1,653,595,313 | \$58,771,751 | 43.37 | 29.14 | 0.42 | 0.28 |
| IWG-OCM 2021 Federal priority areas - NOAA | QL2B | 6-10 years | \$2,548,880,212 | \$1,514,556,719 | \$2,515,821,102 | \$1,481,497,609 | \$33,059,110 | 77.1 | 45.81 | 0.76 | 0.45 |
| IWG-OCM 2021 Federal priority areas - NOAA | QL2B | >10 years | \$2,548,880,212 | \$1,391,681,805 | \$2,531,248,686 | \$1,374,050,280 | \$17,631,525 | 144.56 | 78.93 | 1.44 | 0.78 |
| IWG-OCM 2021 Federal priority areas- NPS | QL2B | Annual | \$147,447,980 | \$146,758,756 | \$123,270,067 | \$122,580,842 | \$24,177,913 | 6.1 | 6.07 | 0.05 | 0.05 |
| IWG-OCM 2021 Federal priority areas- NPS | QL2B | 2-3 years | \$147,447,980 | \$124,501,192 | \$137,776,815 | \$114,830,027 | \$9,671,165 | 15.25 | 12.87 | 0.14 | 0.12 |
| IWG-OCM 2021 Federal priority areas- NPS | QL2B | 4-5 years | \$147,447,980 | \$107,178,240 | \$142,075,111 | \$101,805,371 | \$5,372,870 | 27.44 | 19.95 | 0.26 | 0.19 |
| IWG-OCM 2021 Federal priority areas- NPS | QL2B | 6-10 years | \$147,447,980 | \$92,549,456 | \$144,425,741 | \$89,527,217 | \$3,022,239 | 48.79 | 30.62 | 0.48 | 0.3 |
| IWG-OCM 2021 Federal priority areas- NPS | QL2B | >10 years | \$147,447,980 | \$83,113,107 | \$145,836,120 | \$81,501,246 | \$1,611,861 | 91.48 | 51.56 | 0.9 | 0.51 |
| IWG-OCM 2021 Federal priority areas - USCG | QL2B | Annual | \$49,011,295 | \$48,751,181 | \$28,264,946 | \$28,004,832 | \$20,746,349 | 2.36 | 2.35 | 0.01 | 0.01 |
| IWG-OCM 2021 Federal priority areas - USCG | QL2B | 2-3 years | \$49,011,295 | \$47,767,004 | \$40,712,755 | \$39,468,464 | \$8,298,539 | 5.91 | 5.76 | 0.05 | 0.05 |
| IWG-OCM 2021 Federal priority areas - USCG | QL2B | 4-5 years | \$49,011,295 | \$42,251,187 | \$44,400,995 | \$37,640,887 | \$4,610,300 | 10.63 | 9.16 | 0.1 | 0.08 |
| IWG-OCM 2021 Federal priority areas - USCG | QL2B | 6-10 years | \$49,011,295 | \$35,612,674 | \$46,418,001 | \$33,019,380 | \$2,593,294 | 18.9 | 13.73 | 0.18 | 0.13 |
| IWG-OCM 2021 Federal priority areas - USCG | QL2B | >10 years | \$49,011,295 | \$30,299,052 | \$47,628,205 | \$28,915,962 | \$1,383,090 | 35.44 | 21.91 | 0.34 | 0.21 |
| IWG-OCM 2021 Federal priority areas - USDA | QL2B | Annual | \$74,751,800 | \$74,246,214 | \$44,235,498 | \$43,729,912 | \$30,516,303 | 2.45 | 2.43 | 0.01 | 0.01 |
| IWG-OCM 2021 Federal priority areas - USDA | QL2B | 2-3 years | \$74,751,800 | \$72,637,093 | \$62,545,279 | \$60,430,572 | \$12,206,521 | 6.12 | 5.95 | 0.05 | 0.05 |
| IWG-OCM 2021 Federal priority areas - USDA | QL2B | 4-5 years | \$74,751,800 | \$64,704,422 | \$67,970,400 | \$57,923,021 | \$6,781,401 | 11.02 | 9.54 | 0.1 | 0.09 |
| IWG-OCM 2021 Federal priority areas - USDA | QL2B | 6-10 years | \$74,751,800 | \$54,832,606 | \$70,937,263 | \$51,018,068 | \$3,814,538 | 19.6 | 14.37 | 0.19 | 0.13 |

| Requirements | Quality Level | Update Frequency | Total Reported Future Annual Benefits | Total Reduced Value Future Annual Benefits | Net Total Future Annual Benefits | Net Reduced Value Future Annual Benefits | Acquisition Costs Per Year | Benefit/Cost Ratio Full | Benefit/Cost Ratio Reduced Value | Return on Investment Full | Return on Investment Reduced Value |
|--|---------------|-----------------------|---------------------------------------|--|----------------------------------|--|----------------------------|-------------------------|----------------------------------|---------------------------|------------------------------------|
| IWG-OCM 2021 Federal priority areas - USDA | QL2B | >10 years | \$74,751,800 | \$46,314,061 | \$72,717,380 | \$44,279,641 | \$2,034,420 | 36.74 | 22.77 | 0.36 | 0.22 |
| IWG-OCM 2021 Federal priority areas - USGS | QL2B | Annual | \$2,510,287,689 | \$2,497,618,489 | \$2,265,783,251 | \$2,253,114,051 | \$244,504,437 | 10.27 | 10.22 | 0.09 | 0.09 |
| IWG-OCM 2021 Federal priority areas - USGS | QL2B | 2-3 years | \$2,510,287,689 | \$1,986,780,713 | \$2,412,485,914 | \$1,888,978,938 | \$97,801,775 | 25.67 | 20.31 | 0.25 | 0.19 |
| IWG-OCM 2021 Federal priority areas - USGS | QL2B | 4-5 years | \$2,510,287,689 | \$1,679,233,232 | \$2,455,953,369 | \$1,624,898,913 | \$54,334,319 | 46.2 | 30.91 | 0.45 | 0.3 |
| IWG-OCM 2021 Federal priority areas - USGS | QL2B | 6-10 years | \$2,510,287,689 | \$1,486,498,553 | \$2,479,724,634 | \$1,455,935,498 | \$30,563,055 | 82.13 | 48.64 | 0.81 | 0.48 |
| IWG-OCM 2021 Federal priority areas - USGS | QL2B | >10 years | \$2,510,287,689 | \$1,367,920,884 | \$2,493,987,393 | \$1,351,620,588 | \$16,300,296 | 154 | 83.92 | 1.53 | 0.83 |
| Satellite Derived Bathymetry 2m GSD | QL3B | Once only (>10 years) | \$2,550,443,087 | \$1,074,882,091 | \$2,548,963,171 | \$1,073,402,174 | \$1,479,917 | 1,723.37 | 726.31 | 17.22 | 7.25 |
| Satellite Derived Bathymetry 5m GSD | QL4B | Once only (>10 years) | \$2,550,443,087 | \$812,020,818 | \$2,549,904,936 | \$811,482,666 | \$538,152 | 4,739.27 | 1,508.91 | 47.38 | 15.08 |
| Satellite Derived Bathymetry 10m GSD | QL4B | Once only (>10 years) | \$2,550,443,087 | \$812,020,818 | \$2,550,160,558 | \$811,738,288 | \$282,530 | 9,027.17 | 2,874.11 | 90.26 | 28.73 |
| Uniform QL and UF, no Pacific Island Territories | QL2B | Annual | \$2,549,973,870 | \$2,537,124,503 | \$2,285,172,387 | \$2,272,323,020 | \$264,801,483 | 9.63 | 9.58 | 0.09 | 0.09 |
| Uniform QL and UF, no Pacific Island Territories | QL2B | 2-3 years | \$2,549,973,870 | \$2,025,336,605 | \$2,444,053,277 | \$1,919,416,011 | \$105,920,593 | 24.07 | 19.12 | 0.23 | 0.18 |
| Uniform QL and UF, no Pacific Island Territories | QL2B | 4-5 years | \$2,549,973,870 | \$1,713,239,852 | \$2,491,129,096 | \$1,654,395,078 | \$58,844,774 | 43.33 | 29.11 | 0.42 | 0.28 |
| Uniform QL and UF, no Pacific Island Territories | QL2B | 6-10 years | \$2,549,973,870 | \$1,515,298,737 | \$2,516,873,684 | \$1,482,198,551 | \$33,100,185 | 77.04 | 45.78 | 0.76 | 0.45 |
| Uniform QL and UF, no Pacific Island Territories | QL2B | >10 years | \$2,549,973,870 | \$1,392,330,435 | \$2,532,320,438 | \$1,374,677,002 | \$17,653,432 | 144.45 | 78.87 | 1.43 | 0.78 |

Offshore Bathymetry Analysis Results

| Requirements | Quality Level | Update Frequency | Total Reported Future Annual Benefits | Total Reduced Value Future Annual Benefits | Net Total Future Annual Benefits | Net Reduced Value Future Annual Benefits | Acquisition Costs Per Year | Benefit/Cost Ratio Full | Benefit/Cost Ratio Reduced Value | Return on Investment Full | Return on Investment Reduced Value |
|--|---------------|------------------|---------------------------------------|--|----------------------------------|--|----------------------------|-------------------------|----------------------------------|---------------------------|------------------------------------|
| Uniform QL and UF | Order 1a | Annual | \$163,838,863 | \$159,905,054 | -\$6,871,901,695 | -\$6,875,835,504 | \$7,035,740,559 | 0.02 | 0.02 | -0.0098 | -0.0098 |
| Uniform QL and UF | Order 1a | 2-3 years | \$163,838,863 | \$154,911,149 | -\$2,650,457,360 | -\$2,659,385,073 | \$2,814,296,223 | 0.06 | 0.06 | -0.0094 | -0.0094 |
| Uniform QL and UF | Order 1a | 4-5 years | \$163,838,863 | \$141,691,388 | -\$1,399,659,038 | -\$1,421,806,513 | \$1,563,497,901 | 0.10 | 0.09 | -0.0090 | -0.0091 |
| Uniform QL and UF | Order 1a | 6-10 years | \$163,838,863 | \$120,295,801 | -\$715,628,706 | -\$759,171,767 | \$879,467,569 | 0.19 | 0.14 | -0.0081 | -0.0086 |
| Uniform QL and UF = Full Bottom Coverage | Order 1a | >10 years | \$163,838,863 | \$103,925,435 | -\$305,210,507 | -\$365,123,935 | \$469,049,370 | 0.35 | 0.22 | -0.0065 | -0.0078 |
| 0-40m depth only | Order 1a | >10 years | \$54,623,881 | \$33,952,911 | -\$245,581,415 | -\$266,252,384 | \$300,205,295.22 | 0.18 | 0.11 | -0.0082 | -0.0089 |
| 40-200m depth only | Order 1a | 6-10 years | \$57,133,420 | \$36,160,725 | -\$82,518,504 | -\$103,491,199 | \$139,651,923.94 | 0.41 | 0.26 | -0.0059 | -0.0074 |
| HHM: Navigationally significant areas | Order 1a | 4-5 years | \$57,822,031 | \$54,858,500 | -\$320,799,572 | -\$323,763,103 | \$378,621,603 | 0.15 | 0.14 | -0.0085 | -0.0086 |
| HHM: Desired Survey Score = 100 (Object Detection) | Order 1a | 2-3 years | \$573,406 | \$562,175 | -\$14,561,316 | -\$14,572,547 | \$15,134,722 | 0.04 | 0.04 | -0.0096 | -0.0096 |
| HHM: Desired Survey Score = 80 (Complete Coverage) | Order 1a | 4-5 years | \$17,950,516 | \$15,559,436 | -\$223,763,685 | -\$226,154,764 | \$241,714,201 | 0.07 | 0.06 | -0.0093 | -0.0094 |
| HHM: Desired Survey Score = 30 (Partial Bottom Coverage) | Order 1a | 6-10 years | \$61,312,527 | \$45,303,413 | -\$389,576,970 | -\$405,586,084 | \$450,889,497 | 0.14 | 0.10 | -0.0086 | -0.0090 |
| HHM: Desired Survey Score = 10 (Lesser) | Order 1a | >10 years | \$82,353,616 | \$52,701,595 | -\$64,922,352 | -\$94,574,374 | \$147,275,969 | 0.56 | 0.36 | -0.0044 | -0.0064 |
| HHM: Hydro Gap = 0 (No gap) | Order 1a | 6-10 years | \$92,025,752 | \$67,789,093 | -\$346,054,600 | -\$370,291,259 | \$438,080,352 | 0.21 | 0.15 | -0.0079 | -0.0085 |
| HHM: Hydro Gap = 0.1-25 (Small gap) | Order 1a | 6-10 years | \$50,104,445 | \$36,754,270 | -\$135,748,129 | -\$149,098,304 | \$185,852,574 | 0.27 | 0.20 | -0.0073 | -0.0080 |
| HHM: Hydro Gap = 25.1-50 (Medium gap) | Order 1a | 6-10 years | \$14,847,594 | \$10,867,406 | -\$177,441,264 | -\$181,421,452 | \$192,288,858 | 0.08 | 0.06 | -0.0092 | -0.0094 |

| Requirements | Quality Level | Update Frequency | Total Reported Future Annual Benefits | Total Reduced Value Future Annual Benefits | Net Total Future Annual Benefits | Net Reduced Value Future Annual Benefits | Acquisition Costs Per Year | Benefit/Cost Ratio Full | Benefit/Cost Ratio Reduced Value | Return on Investment Full | Return on Investment Reduced Value |
|---|---------------|------------------|---------------------------------------|--|----------------------------------|--|----------------------------|-------------------------|----------------------------------|---------------------------|------------------------------------|
| HHM: Hydro Gap = 50.1-75 (Medium large gap) | Order 1a | 6-10 years | \$2,060,228 | \$1,490,461 | -\$20,518,308 | -\$21,088,075 | \$22,578,536 | 0.09 | 0.07 | -0.0091 | -0.0093 |
| HHM: Hydro Gap = >75 (Large gap) | Order 1a | 6-10 years | \$3,265,692 | \$2,384,736 | -\$27,015,013 | -\$27,895,969 | \$30,280,705 | 0.11 | 0.08 | -0.0089 | -0.0092 |
| Fill bathy gap analysis gaps | Order 1a | 6-10 years | \$90,126,646 | \$66,749,420 | -\$97,834,801 | -\$121,212,027 | \$187,961,447 | 0.48 | 0.36 | -0.0052 | -0.0064 |
| 10-20m depth | Order 1a | Annual | \$37,279,379 | \$36,636,023 | -\$2,704,683,545 | -\$2,705,326,901 | \$2,741,962,924 | 0.01 | 0.01 | -0.0099 | -0.0099 |
| 10-20m depth | Order 1a | 2-3 years | \$37,279,379 | \$36,505,324 | -\$1,059,505,790 | -\$1,060,279,845 | \$1,096,785,169 | 0.03 | 0.03 | -0.0097 | -0.0097 |
| 10-20m depth | Order 1a | 4-5 years | \$37,279,379 | \$31,865,927 | -\$572,045,715 | -\$577,459,166 | \$609,325,094 | 0.06 | 0.05 | -0.0094 | -0.0095 |
| 10-20m depth | Order 1a | 6-10 years | \$37,279,379 | \$27,099,482 | -\$305,465,986 | -\$315,645,883 | \$342,745,365 | 0.11 | 0.08 | -0.0089 | -0.0092 |
| 10-20m depth | Order 1a | >10 years | \$37,279,379 | \$23,093,114 | -\$145,518,149 | -\$159,704,413 | \$182,797,528 | 0.20 | 0.13 | -0.0080 | -0.0087 |
| 20-40m depth | Order 1a | Annual | \$17,344,501 | \$16,960,221 | -\$1,743,772,002 | -\$1,744,156,281 | \$1,761,116,503 | 0.01 | 0.01 | -0.0099 | -0.0099 |
| 20-40m depth | Order 1a | 2-3 years | \$17,344,501 | \$16,773,991 | -\$687,102,100 | -\$687,672,610 | \$704,446,601 | 0.02 | 0.02 | -0.0098 | -0.0098 |
| 20-40m depth | Order 1a | 4-5 years | \$17,344,501 | \$15,228,671 | -\$374,014,721 | -\$376,130,551 | \$391,359,223 | 0.04 | 0.04 | -0.0096 | -0.0096 |
| 20-40m depth | Order 1a | 6-10 years | \$17,344,501 | \$12,682,468 | -\$202,795,061 | -\$207,457,094 | \$220,139,562 | 0.08 | 0.06 | -0.0092 | -0.0094 |
| 20-40m depth | Order 1a | >10 years | \$17,344,501 | \$10,859,796 | -\$100,063,265 | -\$106,547,970 | \$117,407,766 | 0.15 | 0.09 | -0.0085 | -0.0091 |
| 40-100m depth | Order 1a | Annual | \$36,060,268 | \$35,593,525 | -\$1,670,413,010 | -\$1,670,879,752 | \$1,706,473,278 | 0.02 | 0.02 | -0.0098 | -0.0098 |
| 40-100m depth | Order 1a | 2-3 years | \$36,060,268 | \$35,227,971 | -\$646,529,042 | -\$647,361,339 | \$682,589,311 | 0.05 | 0.05 | -0.0095 | -0.0095 |
| 40-100m depth | Order 1a | 4-5 years | \$36,060,268 | \$33,025,391 | -\$343,156,015 | -\$346,190,892 | \$379,216,284 | 0.10 | 0.09 | -0.0090 | -0.0091 |
| 40-100m depth | Order 1a | 6-10 years | \$36,060,268 | \$26,714,399 | -\$177,248,891 | -\$186,594,760 | \$213,309,159 | 0.17 | 0.13 | -0.0083 | -0.0087 |
| 40-100m depth | Order 1a | >10 years | \$36,060,268 | \$22,756,576 | -\$77,704,616 | -\$91,008,309 | \$113,764,885 | 0.32 | 0.20 | -0.0068 | -0.0080 |
| 100-500m depth | Order 1a | Annual | \$28,332,979 | \$27,899,456 | -\$462,062,962 | -\$462,496,484 | \$490,395,941 | 0.06 | 0.06 | -0.0094 | -0.0094 |
| 100-500m depth | Order 1a | 2-3 years | \$28,332,979 | \$27,604,418 | -\$167,825,397 | -\$168,553,958 | \$196,158,376 | 0.14 | 0.14 | -0.0086 | -0.0086 |
| 100-500m depth | Order 1a | 4-5 years | \$28,332,979 | \$25,778,207 | -\$80,643,896 | -\$83,198,668 | \$108,976,875 | 0.26 | 0.24 | -0.0074 | -0.0076 |
| 100-500m depth | Order 1a | 6-10 years | \$28,332,979 | \$20,928,314 | -\$32,966,513 | -\$40,371,177 | \$61,299,492 | 0.46 | 0.34 | -0.0054 | -0.0066 |
| 100-500m depth | Order 1a | >10 years | \$28,332,979 | \$17,932,453 | -\$4,360,083 | -\$14,760,609 | \$32,693,062 | 0.87 | 0.55 | -0.0013 | -0.0045 |
| >500m depth | Order 1a | Annual | \$44,821,735 | \$42,815,827 | -\$290,970,175 | -\$292,976,083 | \$335,791,910 | 0.13 | 0.13 | -0.0087 | -0.0087 |
| >500m depth | Order 1a | 2-3 years | \$44,821,735 | \$38,799,444 | -\$89,495,029 | -\$95,517,320 | \$134,316,764 | 0.33 | 0.29 | -0.0067 | -0.0071 |
| >500m depth | Order 1a | 4-5 years | \$44,821,735 | \$35,793,189 | -\$29,798,689 | -\$38,827,234 | \$74,620,424 | 0.60 | 0.48 | -0.0040 | -0.0052 |
| >500m depth | Order 1a | 6-10 years | \$44,821,735 | \$32,871,137 | \$2,847,746 | -\$9,102,851 | \$41,973,988 | 1.07 | 0.78 | 0.0007 | -0.0022 |
| >500m depth | Order 1a | >10 years | \$44,821,735 | \$29,283,494 | \$22,435,607 | \$6,897,367 | \$22,386,127 | 2.00 | 1.31 | 0.0100 | 0.0031 |

| Requirements | Quality Level | Update Frequency | Total Reported Future Annual Benefits | Total Reduced Value Future Annual Benefits | Net Total Future Annual Benefits | Net Reduced Value Future Annual Benefits | Acquisition Costs Per Year | Benefit/Cost Ratio Full | Benefit/Cost Ratio Reduced Value | Return on Investment Full | Return on Investment Reduced Value |
|--|---------------|------------------|---------------------------------------|--|----------------------------------|--|----------------------------|-------------------------|----------------------------------|---------------------------|------------------------------------|
| IWG-OCM 2021 Federal priority areas - BOEM | Order 1a | Annual | \$69,017,736 | \$67,894,333 | -\$2,897,190,140 | -\$2,898,313,543 | \$2,966,207,875 | 0.02 | 0.02 | -0.0098 | -0.0098 |
| IWG-OCM 2021 Federal priority areas - BOEM | Order 1a | 2-3 years | \$69,017,736 | \$66,051,430 | -\$1,117,465,415 | -\$1,120,431,720 | \$1,186,483,150 | 0.06 | 0.06 | -0.0094 | -0.0094 |
| IWG-OCM 2021 Federal priority areas - BOEM | Order 1a | 4-5 years | \$69,017,736 | \$61,265,811 | -\$590,139,570 | -\$597,891,495 | \$659,157,306 | 0.10 | 0.09 | -0.0090 | -0.0091 |
| IWG-OCM 2021 Federal priority areas - BOEM | Order 1a | 6-10 years | \$69,017,736 | \$50,529,107 | -\$301,758,249 | -\$320,246,877 | \$370,775,984 | 0.19 | 0.14 | -0.0081 | -0.0086 |
| IWG-OCM 2021 Federal priority areas - BOEM | Order 1a | >10 years | \$69,017,736 | \$43,261,736 | -\$128,729,456 | -\$154,485,456 | \$197,747,192 | 0.35 | 0.22 | -0.0065 | -0.0078 |
| IWG-OCM 2021 Federal priority areas - DOE | Order 1a | Annual | \$758,148 | \$742,385 | -\$7,074,667 | -\$7,090,430 | \$7,832,816 | 0.10 | 0.09 | -0.0090 | -0.0091 |
| IWG-OCM 2021 Federal priority areas - DOE | Order 1a | 2-3 years | \$758,148 | \$741,223 | -\$2,374,978. | -\$2,391,903 | \$3,133,126 | 0.24 | 0.24 | -0.0076 | -0.0076 |
| IWG-OCM 2021 Federal priority areas - DOE | Order 1a | 4-5 years | \$758,148 | \$685,227 | -\$982,477 | -\$1,055,398 | \$1,740,626 | 0.44 | 0.39 | -0.0056 | -0.0061 |
| IWG-OCM 2021 Federal priority areas - DOE | Order 1a | 6-10 years | \$758,148 | \$581,548 | -\$220,954 | -\$397,554 | \$979,102 | 0.77 | 0.59 | -0.0023 | -0.0041 |
| IWG-OCM 2021 Federal priority areas - DOE | Order 1a | >10 years | \$758,148 | \$508,595 | \$235,961 | -\$13,592 | \$522,188 | 1.45 | 0.97 | -0.0045 | -0.0003 |
| IWG-OCM 2021 Federal priority areas - EPA | Order 1a | Annual | \$1,508,223 | \$1,480,781 | -\$53,565,985 | -\$53,593,427 | \$55,074,208 | 0.03 | 0.03 | -0.0097 | -0.0097 |
| IWG-OCM 2021 Federal priority areas - EPA | Order 1a | 2-3 years | \$1,508,223 | \$1,475,908 | -\$20,521,460 | -\$20,553,775 | \$22,029,683 | 0.07 | 0.07 | -0.0093 | -0.0093 |
| IWG-OCM 2021 Federal priority areas - EPA | Order 1a | 4-5 years | \$1,508,223 | \$1,360,655 | -\$10,730,490 | -\$10,878,057 | \$12,238,713 | 0.12 | 0.11 | -0.0088 | -0.0089 |
| IWG-OCM 2021 Federal priority areas - EPA | Order 1a | 6-10 years | \$1,508,223 | \$1,127,149 | -\$5,376,053 | -\$5,757,127 | \$6,884,276 | 0.22 | 0.16 | -0.0078 | -0.0084 |

| Requirements | Quality Level | Update Frequency | Total Reported Future Annual Benefits | Total Reduced Value Future Annual Benefits | Net Total Future Annual Benefits | Net Reduced Value Future Annual Benefits | Acquisition Costs Per Year | Benefit/Cost Ratio Full | Benefit/Cost Ratio Reduced Value | Return on Investment Full | Return on Investment Reduced Value |
|--|---------------|------------------|---------------------------------------|--|----------------------------------|--|----------------------------|-------------------------|----------------------------------|---------------------------|------------------------------------|
| IWG-OCM 2021 Federal priority areas - EPA | Order 1a | >10 years | \$1,508,223 | \$941,048 | -\$2,163,391 | -\$2,730,566 | \$3,671,614 | 0.41 | 0.26 | -0.0059 | -0.0074 |
| IWG-OCM 2021 Federal priority areas - NOAA | Order 1a | Annual | \$132,555,487 | \$129,890,166 | -\$6,145,942,086 | -\$6,148,607,406 | \$6,278,497,573 | 0.02 | 0.02 | -0.0098 | -0.0098 |
| IWG-OCM 2021 Federal priority areas - NOAA | Order 1a | 2-3 years | \$132,555,487 | \$126,927,794 | -\$2,378,843,543 | -\$2,384,471,235 | \$2,511,399,029 | 0.05 | 0.05 | -0.0095 | -0.0095 |
| IWG-OCM 2021 Federal priority areas - NOAA | Order 1a | 4-5 years | \$132,555,487 | \$116,405,824 | -\$1,262,666,196 | -\$1,278,815,859 | \$1,395,221,683 | 0.10 | 0.08 | -0.0090 | -0.0092 |
| IWG-OCM 2021 Federal priority areas - NOAA | Order 1a | 6-10 years | \$132,555,487 | \$97,505,915 | -\$652,256,710 | -\$687,306,282 | \$784,812,197 | 0.17 | 0.12 | -0.0083 | -0.0088 |
| IWG-OCM 2021 Federal priority areas - NOAA | Order 1a | >10 years | \$132,555,487 | \$83,800,657 | -\$286,011,018 | -\$334,765,848 | \$418,566,505 | 0.32 | 0.20 | -0.0068 | -0.0080 |
| IWG-OCM 2021 Federal priority areas- NPS | Order 1a | Annual | \$10,403,884 | \$10,329,381 | -\$145,879,179 | -\$145,953,681 | \$156,283,062 | 0.07 | 0.07 | -0.0093 | -0.0093 |
| IWG-OCM 2021 Federal priority areas- NPS | Order 1a | 2-3 years | \$10,403,884 | \$10,316,450 | -\$52,109,341 | -\$52,196,775 | \$62,513,225 | 0.17 | 0.17 | -0.0083 | -0.0083 |
| IWG-OCM 2021 Federal priority areas- NPS | Order 1a | 4-5 years | \$10,403,884 | \$9,672,481 | -\$24,325,686 | -\$25,057,089 | \$34,729,569 | 0.30 | 0.28 | -0.0070 | -0.0072 |
| IWG-OCM 2021 Federal priority areas- NPS | Order 1a | 6-10 years | \$10,403,884 | \$7,770,169 | -\$9,131,499 | -\$11,765,214 | \$19,535,383 | 0.53 | 0.40 | -0.0047 | -0.0060 |
| IWG-OCM 2021 Federal priority areas- NPS | Order 1a | >10 years | \$10,403,884 | \$6,587,553 | -\$14,987 | -\$3,831,318 | \$10,418,871 | 1.00 | 0.63 | 0.0000 | -0.0037 |
| IWG-OCM 2021 Federal priority areas - USCG | Order 1a | Annual | \$4,201,872 | \$4,126,334 | -\$209,190,737 | -\$209,266,274 | \$213,392,608 | 0.02 | 0.02 | -0.0098 | -0.0098 |
| IWG-OCM 2021 Federal priority areas - USCG | Order 1a | 2-3 years | \$4,201,872 | \$4,077,915 | -\$81,155,172 | -\$81,279,129 | \$85,357,043 | 0.05 | 0.05 | -0.0095 | -0.0095 |
| IWG-OCM 2021 Federal priority areas - USCG | Order 1a | 4-5 years | \$4,201,872 | \$3,822,153 | -\$43,218,708 | -\$43,598,426 | \$47,420,580 | 0.09 | 0.08 | -0.0091 | -0.0092 |

| Requirements | Quality Level | Update Frequency | Total Reported Future Annual Benefits | Total Reduced Value Future Annual Benefits | Net Total Future Annual Benefits | Net Reduced Value Future Annual Benefits | Acquisition Costs Per Year | Benefit/Cost Ratio Full | Benefit/Cost Ratio Reduced Value | Return on Investment Full | Return on Investment Reduced Value |
|--|---------------|------------------|---------------------------------------|--|----------------------------------|--|----------------------------|-------------------------|----------------------------------|---------------------------|------------------------------------|
| IWG-OCM 2021 Federal priority areas - USCG | Order 1a | 6-10 years | \$4,201,872 | \$3,088,106 | -\$22,472,204 | -\$23,585,970 | \$26,674,076 | 0.16 | 0.12 | -0.0084 | -0.0088 |
| IWG-OCM 2021 Federal priority areas - USCG | Order 1a | >10 years | \$4,201,872 | \$2,634,148 | -\$10,024,302 | -\$11,592,026 | \$14,226,174 | 0.30 | 0.19 | -0.0070 | -0.0081 |
| IWG-OCM 2021 Federal priority areas - USDA | Order 1a | Annual | \$1,904,214 | \$1,866,656 | -\$90,742,975 | -\$90,780,533 | \$92,647,189 | 0.02 | 0.02 | -0.0098 | -0.0098 |
| IWG-OCM 2021 Federal priority areas - USDA | Order 1a | 2-3 years | \$1,904,214 | \$1,860,900 | -\$35,154,661 | -\$35,197,975 | \$37,058,875 | 0.05 | 0.05 | -0.0095 | -0.0095 |
| IWG-OCM 2021 Federal priority areas - USDA | Order 1a | 4-5 years | \$1,904,214 | \$1,648,635 | -\$18,684,050 | -\$18,939,629 | \$20,588,264 | 0.09 | 0.08 | -0.0091 | -0.0092 |
| IWG-OCM 2021 Federal priority areas - USDA | Order 1a | 6-10 years | \$1,904,214 | \$1,398,721 | -\$9,676,685 | -\$10,182,177 | \$11,580,899 | 0.16 | 0.12 | -0.0084 | -0.0088 |
| IWG-OCM 2021 Federal priority areas - USDA | Order 1a | >10 years | \$1,904,214 | \$1,172,285 | -\$4,272,265 | -\$5,004,194 | \$6,176,479 | 0.31 | 0.19 | -0.0069 | -0.0081 |
| IWG-OCM 2021 Federal priority areas - USGS | Order 1a | Annual | \$105,245,283 | \$103,714,487 | -\$2,988,188,582 | -\$2,989,719,377 | \$3,093,433,865 | 0.03 | 0.03 | -0.0097 | -0.0097 |
| IWG-OCM 2021 Federal priority areas - USGS | Order 1a | 2-3 years | \$105,245,283 | \$102,156,479 | -\$1,132,128,263 | -\$1,135,217,067 | \$1,237,373,546 | 0.09 | 0.08 | -0.0091 | -0.0092 |
| IWG-OCM 2021 Federal priority areas - USGS | Order 1a | 4-5 years | \$105,245,283 | \$94,252,836 | -\$582,184,465 | -\$593,176,912 | \$687,429,748 | 0.15 | 0.14 | -0.0085 | -0.0086 |
| IWG-OCM 2021 Federal priority areas - USGS | Order 1a | 6-10 years | \$105,245,283 | \$77,692,378 | -\$281,433,950 | -\$308,986,855 | \$386,679,233 | 0.27 | 0.20 | -0.0073 | -0.0080 |
| IWG-OCM 2021 Federal priority areas - USGS | Order 1a | >10 years | \$105,245,283 | \$66,374,272 | -\$100,983,641 | -\$139,854,653 | \$206,228,924 | 0.51 | 0.32 | -0.0049 | -0.0068 |
| Status quo | Order 1a | 100 years | \$163,838,864 | \$103,925,435 | \$93,481,458 | \$33,568,029 | \$70,357,406 | 2.33 | 1.48 | 0.0133 | 0.0048 |
| Uniform QL and UF = Full Bottom Coverage | Order 1a | 30 years | \$163,838,864 | \$103,925,435 | -\$70,685,822 | -\$130,599,250 | \$234,524,685 | 0.70 | 0.44 | -0.0030 | -0.0056 |

| Requirements | Quality Level | Update Frequency | Total Reported Future Annual Benefits | Total Reduced Value Future Annual Benefits | Net Total Future Annual Benefits | Net Reduced Value Future Annual Benefits | Acquisition Costs Per Year | Benefit/Cost Ratio Full | Benefit/Cost Ratio Reduced Value | Return on Investment Full | Return on Investment Reduced Value |
|--|----------------|--------------------------------|---------------------------------------|--|----------------------------------|--|----------------------------|-------------------------|----------------------------------|---------------------------|------------------------------------|
| NOMEK Strategy 40m depth and greater | Order 1a | Once only by 2030 (6-10 years) | \$54,623,881 | \$39,781,951 | -\$508,261,048 | -\$523,102,978 | \$562,884,929 | 0.10 | 0.07 | -0.0090 | -0.0093 |
| NOMEK Strategy 10-40m depth | Order 1a | Once only by 2040 (>10 years) | \$109,214,983 | \$69,972,524 | -\$31,488,413 | -\$70,730,872 | \$140,703,396 | 0.78 | 0.50 | -0.0022 | -0.0050 |
| Uniform QL and UF, with Cost Avoidance | Order 1a | Annual | \$7,406,631,091 | \$7,402,697,283 | \$370,890,532 | \$366,956,724 | \$7,035,740,559 | 1.05 | 1.05 | 0.0005 | 0.0005 |
| Uniform QL and UF, with Cost Avoidance | Order 1a | 2-3 years | \$3,151,904,883 | \$3,142,977,167 | \$337,608,660 | \$328,680,944 | \$2,814,296,223 | 1.12 | 1.12 | 0.0012 | 0.0012 |
| Uniform QL and UF, with Cost Avoidance | Order 1a | 4-5 years | \$1,879,505,179 | \$1,857,357,704 | \$316,007,278 | \$293,859,803 | \$1,563,497,901 | 1.20 | 1.19 | 0.0020 | 0.0019 |
| Uniform QL and UF, with Cost Avoidance | Order 1a | 6-10 years | \$1,169,495,561 | \$1,125,952,499 | \$290,027,992 | \$246,484,930 | \$879,467,569 | 1.33 | 1.28 | 0.0033 | 0.0028 |
| Uniform QL and UF, with Cost Avoidance | Order 1a | >10 years | \$739,956,777 | \$680,043,348 | \$270,907,407 | \$210,993,978 | \$469,049,370 | 1.58 | 1.45 | 0.0058 | 0.0045 |
| Uniform QL and UF, no Pacific Island Territories | Order 1a | Annual | \$155,881,203 | \$151,960,363 | -\$6,749,609,020 | -\$6,753,529,860 | \$6,905,490,223 | 0.02 | 0.02 | -0.01 | -0.01 |
| Uniform QL and UF, no Pacific Island Territories | Order 1a | 2-3 years | \$155,881,203 | \$147,778,446 | -\$2,606,314,886 | -\$2,614,417,643 | \$2,762,196,089 | 0.06 | 0.05 | -0.01 | -0.01 |
| Uniform QL and UF, no Pacific Island Territories | Order 1a | 4-5 years | \$155,881,203 | \$135,333,068 | -\$1,378,672,179 | -\$1,399,220,315 | \$1,534,553,383 | 0.1 | 0.09 | -0.01 | -0.01 |
| Uniform QL and UF, no Pacific Island Territories | Order 1a | 6-10 years | \$155,881,203 | \$114,559,500 | -\$707,305,074 | -\$748,626,778 | \$863,186,278 | 0.18 | 0.13 | -0.01 | -0.01 |
| Uniform QL and UF, no Pacific Island Territories | Order 1a | >10 years | \$155,881,203 | \$98,911,588 | -\$304,484,811 | -\$361,454,427 | \$460,366,015 | 0.34 | 0.21 | -0.01 | -0.01 |
| Uniform QL and UF | Order 2 > 100m | Annual | \$73,154,714 | \$64,636,971 | -\$107,133,270 | -\$115,651,014 | \$180,287,984 | 0.41 | 0.36 | -0.01 | -0.01 |
| Uniform QL and UF | Order 2 > 100m | 2-3 years | \$73,154,714 | \$60,325,549 | \$1,039,520 | -\$11,789,645 | \$72,115,194 | 1.01 | 0.84 | 0 | 0 |

| Requirements | Quality Level | Update Frequency | Total Reported Future Annual Benefits | Total Reduced Value Future Annual Benefits | Net Total Future Annual Benefits | Net Reduced Value Future Annual Benefits | Acquisition Costs Per Year | Benefit/Cost Ratio Full | Benefit/Cost Ratio Reduced Value | Return on Investment Full | Return on Investment Reduced Value |
|--|-------------------------|--------------------------------|---------------------------------------|--|----------------------------------|--|----------------------------|-------------------------|----------------------------------|---------------------------|------------------------------------|
| Uniform QL and UF | Order 2 > 100m | 4-5 years | \$73,154,714 | \$55,493,085 | \$33,090,718 | \$15,429,088 | \$40,063,997 | 1.83 | 1.39 | 0.01 | 0 |
| Uniform QL and UF | Order 2 > 100m | 6-10 years | \$73,154,714 | \$47,721,139 | \$50,618,716 | \$25,185,141 | \$22,535,998 | 3.25 | 2.12 | 0.02 | 0.01 |
| Uniform QL and UF | Order 2 > 100m | >10 years | \$73,154,714 | \$41,137,634 | \$61,135,515 | \$29,118,435 | \$12,019,199 | 6.09 | 3.42 | 0.05 | 0.02 |
| Uniform QL and UF with UxS as Force Multiplier | Order 2 with UxS > 100m | Annual | \$73,154,714 | \$64,636,971 | \$28,082,718 | \$19,564,975 | \$45,071,996 | 1.62 | 1.43 | 0.01 | 0 |
| Uniform QL and UF with UxS as Force Multiplier | Order 2 with UxS > 100m | 2-3 years | \$73,154,714 | \$60,325,549 | \$55,125,916 | \$42,296,751 | \$18,028,798 | 4.06 | 3.35 | 0.03 | 0.02 |
| Uniform QL and UF with UxS as Force Multiplier | Order 2 with UxS > 100m | 4-5 years | \$73,154,714 | \$55,493,085 | \$63,138,715 | \$45,477,085 | \$10,015,999 | 7.3 | 5.54 | 0.06 | 0.05 |
| Uniform QL and UF with UxS as Force Multiplier | Order 2 with UxS > 100m | 6-10 years | \$73,154,714 | \$47,721,139 | \$67,520,715 | \$42,087,139 | \$5,634,000 | 12.98 | 8.47 | 0.12 | 0.07 |
| Uniform QL and UF with UxS as Force Multiplier | Order 2 with UxS > 100m | >10 years | \$73,154,714 | \$41,137,634 | \$70,149,914 | \$38,132,835 | \$3,004,800 | 24.35 | 13.69 | 0.23 | 0.13 |
| NOMEK Strategy 10-40m depth with Cost Avoidance | Order 1a | Once only by 2030 (6-10 years) | \$617,072,528 | \$602,230,598 | \$54,187,600 | \$39,345,670 | \$562,884,929 | 1.1 | 1.07 | 0 | 0 |
| NOMEK Strategy 40m depth and greater with Cost Avoidance | Order 1a | Once only by 2040 (>10 years) | \$250,612,573 | \$211,370,114 | \$109,909,177 | \$70,666,718 | \$140,703,396 | 1.78 | 1.5 | 0.01 | 0.01 |