

25 August 2023

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Environmental Planning and Approvals Manager – Major Projects
Transgrid

Via email: ██████████

Dear ██████████,

Re: Biodiversity Offset Delivery Strategy (BODS) – Offset delivery estimates July 2024 – July 2026 (Niche ref: 7433)

Niche Environment and Heritage Pty Ltd (Niche) was commissioned by Transgrid to provide a Biodiversity Offset Delivery Strategy (BODS) for the HumeLink project (the project). The strategy is a key part in reducing the offset costs associated with the project.

This letter provides advice regarding the expected costs associated with the current HumeLink offset obligation based on implementation of the BODS and the additional measures specified herein. These costs should be viewed as illustrative and preliminary best estimates according to the assumptions and limitations noted herein. It is understood that the cost estimates will be used to inform the Australian Energy Regulator (AER).

The upper estimate for offset costs from the project has been calculated at \$583M. This estimate incorporates:

- Provision for a route change within the Green Hills section of the alignment (6% discount)
- Additional impacts beyond those currently assessed which increase the project's final offset liability including additional access tracks, compounds and expansion of the Easement Clearance Zone into Hazard Tree Zone (20% increase)
- Contingencies relating to credit pricing and impact assessment assumptions that may need to be negotiated with the BCD (16% increase).

The upper estimate is also predicated on discharging offset liabilities entirely through payment into the Biodiversity Conservation Fund (BCF), which is the most expensive biodiversity offset acquittal option.

A lower estimate has been calculated at \$428M which incorporates successful implementation of all components of the BODS, including feasible measures to first reduce the offset requirement followed by the establishment of biodiversity stewardship sites and use of offset acquittal options to economise credit retirement.

Allowance for contingencies is considered well justified given known planned changes to the design, the potential for escalation in credit prices and the risk that the NSW Department of Planning and Environment does not accept approach to determination of credits for certain species.

Transgrid is fully committed to the creation of five biodiversity stewardship sites and other cost-saving measures outlined within this document and the BODS for the project. In addition, an offset strategy which includes a reasonable undertaking to actively pursue and create biodiversity stewardship sites will be important for the project's approval and ongoing regulator support.

The budget estimate for the 2024-2026 financial years, based on successful implementation of all components of the BODS is therefore estimated at **\$428M**. We note this does not provide any allowance for items such as capital gains tax associated with the establishment of biodiversity stewardship sites which may be significant.

I trust that the information and supporting calculations presented in this letter report provide the information you require for the project. Don't hesitate to contact us should require anything further.

Yours sincerely,

[Redacted Signature]

[Redacted Title]

Manager – Natural Capital - Niche Environment and Heritage

Mobile: [Redacted]

Clearing scenario and project stage used for offset estimates

An Environmental Impact Assessment (EIS) and Biodiversity Development Assessment Report (BDAR) for the Humelink project (the latter prepared by Niche) was lodged with the NSW Department of Planning and Environment (DPE) in August 2023 for anticipated public exhibition in September 2023. The quantum of offsets required for the project as outlined within this memorandum is informed by the BDAR and underpinning datasets as well as clearing prescriptions for the project. Since lodgement of the BDAR, an increase in clearing requirements has been identified. This increase is due to:

- The need for additional access tracks and compounds to be included within the design, however based on an approximate 20% increase of these design elements (which are typically situated in lower biodiversity value areas or areas not requiring offsetting) a 7.5% increase to the offset cost has been anticipated.
- A shift of all Hazard Tree Zone clearing areas to Easement Clearing Zone areas (where 80% of the values would be removed) would increase the loss of biodiversity values in these areas by 70% resulting in approximately a 12.5% anticipated increase in offset cost.

The extent of these additional clearing requirements was not known at the time of BDAR development. The additional clearing will be included within an amended BDAR for the project submitted in early 2024 and is incorporated into the calculations in Table 1 below.

The clearing scenario and prescriptions outlined within the EIS and BDAR documentation incorporate the following key elements:

- Vegetation clearing within an easement typically of 70m width but up to 130m in width.
- An indicative disturbance footprint being an area that would be temporarily or permanently cleared during project construction and operation. This includes land within and adjacent to the proposed transmission line corridor subject to varying levels of physical disturbance (which influences offset requirements), as follows:
 - Total Clearing Zone (TCZ); lands subject to total clearing and ground disturbance. Permanent structures such as transmission line structures, access tracks and substations would be situated within these lands as well as temporary brake and winch sites.
 - Easement Clearing Zone (ECZ); includes lands within the proposed transmission line easement where clearing and ongoing maintenance of tall growing vegetation would be undertaken. Earthworks are not required within this zone except in limited circumstances.
 - Hazard Tree Zone (HTZ); includes lands within and immediately adjacent to the transmission line easement where selective tree removal, trimming or lopping would be undertaken to manage any risk of damage to transmission lines and structures in the event of tree fall.

The different clearing zones and their extent of native vegetation clearing are tabled below.

Table 1: Clearing zones and their extent in relation to impacts on native vegetation after additional impacts have been estimated from the current BDAR

Clearing type/zone	Hectares of native vegetation cleared (ha)	Proportion of total clearing
HTZ	142	18%
ECZ	180	22%
TCZ	487	60%
Total	809	100%

Figure 1 provides a graphic representation of clearing zones in different parts of the project area.

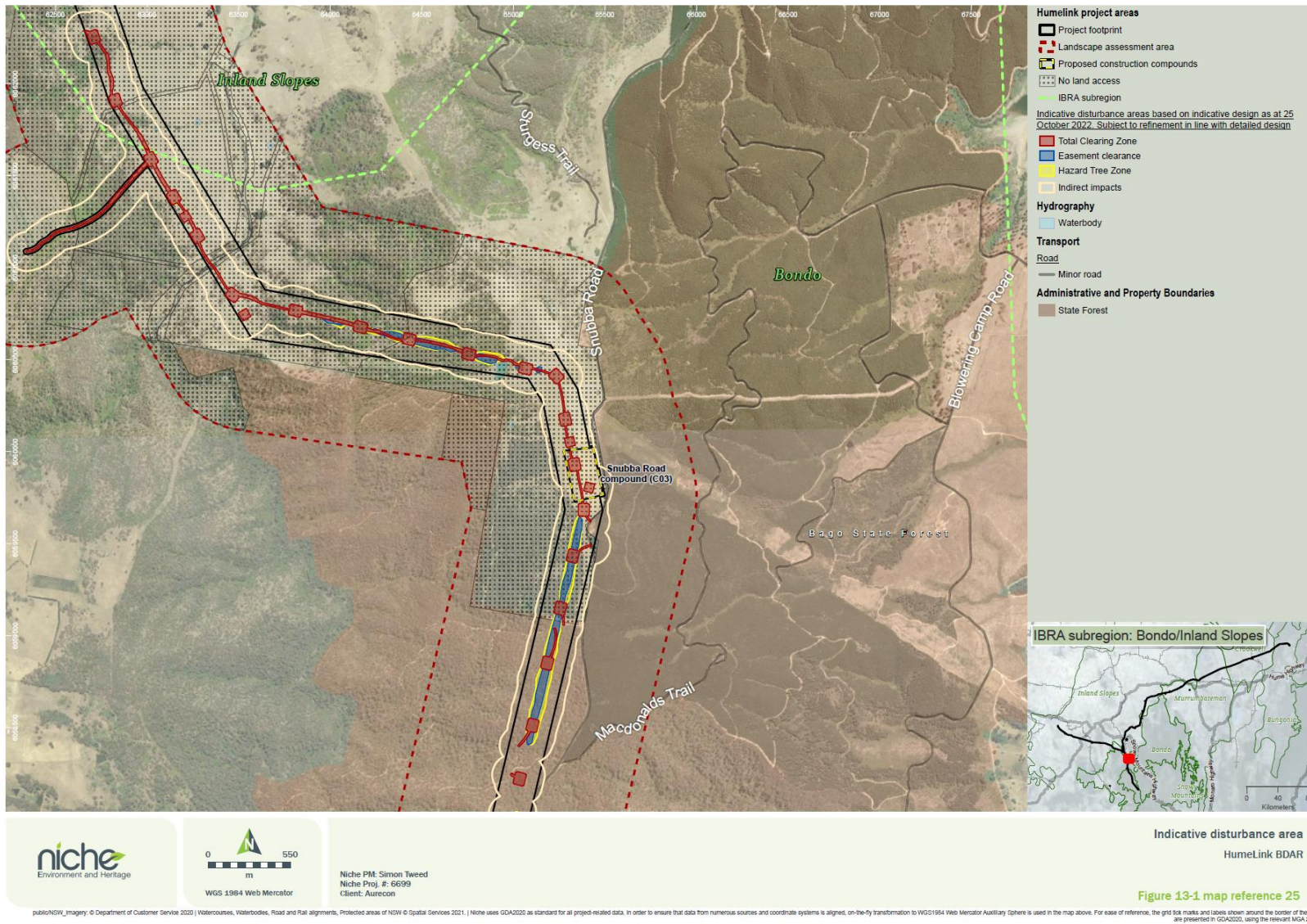


Figure 1: Clearing zones within the Humelink project area in June 2023

Estimates of offset costs

Two feasible scenarios have been evaluated to identify the upper and lower cost range respectively for satisfying the current HumeLink offset liability as dictated by the current indicative disturbance footprint at the time of this submission.

Scenario 1 - Payment into the NSW Biodiversity Conservation Fund (BCF)

Niche has been provided with price estimates from the BCT to retire the relevant credit types (species and ecosystem) to acquit the projects biodiversity offset obligation through the Biodiversity Conservation Fund (BCF – hereafter referred to as the fund). Payment into the fund at the nominated BCT price is almost always the most expensive option to satisfy an offset obligation and therefore upper cost limits are informed by this option. Payments into the fund may be advised for particular entities at different stages of the offset strategy where certainty or time constraints dictate this course of action or once other options have ceased to be comparatively cheaper.

The current estimate of offset liability under Scenario 1 without any allowances for contingencies and based on payment into the fund is approximately \$509M. A monthly indexation¹ will be applied to the base prices informing this estimate. Addition of a risk contingency (16%) to cover a worst-case scenario would increase the offset cost to **\$583M**. Key assumptions underpinning this contingency are explained in detail below.

Key assumptions for contingency

- Does not account for the removal of any price caps on credits that were >\$5,000/credit within the BOPC prior to its removal (these credits have been capped at a 20% increase until October 2023). This has been factored into the contingency cost as a **3% increase** (for ecosystem credits and species credits) (based on an assumed 50% increase for the 6% of credits affected by the cap). The 50% increase is based on average observed increases in credit costs for PCTs that were not limited by the cap.
- Assumes BCT estimate price does not increase once a quote is available upon submission of EIS. This has been factored into the contingency cost as a **3% increase** (for ecosystem credits and species credits). The increase allows for some credits to fluctuate in price based on updated data used by the BCT in their credit pricing models. A select number of species may experience changes in their categorisation or weighting values which are variables that feed into the pricing model used by the BCT. The percentage increase reflects our knowledge of the proportion of species likely to be impacted by change of categorisation and weighting within a relatively short time period of 6 months.
- Assumes the BCD accepts current approach to determination of credits for a range of species particularly count species. This has been factored into the contingency cost as a **10% increase** (for species credits). The 10% increase is based on 6% of the current offset requirement being attributable to count plant species for which credit calculation methods are identified as

¹ The monthly indexation published by the BCT is currently 0.5% which is applied to the base credit price. This is not explicitly factored into contingencies as it represents inflationary costs. This advice is intended to be relevant to this point in time.

particularly subjective. In addition, there may be some requirement to provide additional credits (ecosystem and species credits) based on indirect impacts from the project. These impacts are difficult to quantify, however based on previous experience and the nature of the project a 4% increase could be expected.

Table 2: Humelink offset liability cost if paying into the NSW Biodiversity Conservation Fund

Staged cost estimate for payment into BCF	Cost (\$)
Species credit - BDAR submitted August 2023 (base price)	\$315,245,374
Ecosystem credit - BDAR submitted August 2023 (base price)	\$54,898,349
Species credit - Green Hills route reduction	\$297,745,374
Ecosystem credit - Green Hills route reduction	\$50,898,349
Species credit - additional clearing (add 20%)	\$357,294,449
Ecosystem credit - additional clearing (add 20%)	\$61,078,019
Species credit - contingency addition (add 16%)	\$414,461,560
Ecosystem credit - contingency addition (add 6%)	\$64,742,700
Addition of risk premium (11.1%) current standard	\$53,191,673
Addition of delivery fee (10.5%) average of quotes to date	\$50,316,447
Total Scenario 1 BCF charge fee	\$582,712,381

Scenario 2 – Mixed model: Stewardship site creation supported with market trading and payment into the NSW BCF

Step 1 – Review of existing data, consultation and further survey (prior to approval: amended BDAR report)

Review of existing data, consultation and further survey is expected to reduce the offset requirement for the species credit component of the project by 10% when the BCF fund payment prices are considered. This would be brought about by complete removal of certain species from the offset requirement or partial removal.

1. Example pathways to offset cost reduction prior to project consent, associated with the 10% predicted reduction, are provided below: A review of existing survey data and methods to calculate offset requirements for threatened fauna species is in progress. The review is expected to result in a reduction in the overall project credit liability by approximately 3%.
2. Consultation with species experts (BCD or others) to remove or partially remove target species (example provided below) expected to result in reduction of the overall credit liability by approximately 2%;

The Striped Legless Lizard is a threatened species presently generating an offset requirement of \$7M for the project. Recent engagement with a recognised species expert (Rob Speirs) for the species has indicated that the BAM is conservative in its requirements for assessment for this species. The consulted expert is working with the regulator to review habitat requirements for the species and is confident that they will accept a reduced area of assumed presence for the species. The expert will be engaged to certify a process of revision of the species polygon for this project which is considered to result in at least a 50% reduction in the size of the polygon.

3. Survey effort in September 2023 would focus on high-cost species representing a large portion of the overall offset cost. For example, the top ten contributors to species credit costs are responsible for 45% of the total species credit cost. There would be additional reductions for the remaining species estimated to achieve a 5% reduction in species credits.

Following implementation of Step 1 the revised lower limit cost, based on the previously calculated total cost to pay into the BCF plus allowance for contingencies, would be reduced from \$583M to \$524M.

Step 2 – Review of existing data, consultation and further survey (post consent)

Limitations exist regarding the amount of survey that can be conducted for the project prior to lodgement of an amended BDAR. These limitations primarily relate to land access and required survey timing for impacted threatened species. These limitations will abate post consent for the project which will allow for additional survey both prior to and during construction to enable reconciliation of the approved credit liability and reduction of associated cost. The extent to which this can be achieved is dependent on the flexibility of consent conditions, however the mechanism to reduce the credit liability during this phase has been established during PEC projects.

The approach to additional surveys during this timeframe will be similar to Step 1 and it is anticipated that a further 15% reduction in species credit costs will occur as a result of this measure. Following implementation of Steps 1 and 2, the revised lower limit cost, based on the previously calculated total cost to pay into the BCF plus allowance for contingencies, would be reduced from \$524M to \$446M.

Step 3 - Stewardship site creation

Scenarios have been generated to inform how an optimised approach to securing offsets as outlined within the project's Biodiversity Offset Delivery Strategy (BODS) would result in offset cost savings. Modelled scenarios predict how stewardship site creation on targeted lands would successively decrease the project's credit liability and compares the cost of this process with payments into the BCF. A number of different landscapes would be targeted for Stewardship site creation to reflect the landscapes impacted by the project (e.g. good condition grazing land, forested areas and alpine areas).

Creation of Stewardship sites to generate credits required for a project is almost always the cheapest way to satisfy an offset obligation. Numerous credit types can be created over the same patch of land according to this method, which is one of the reasons why this practice is generally cheaper than payments into the BCF.

Modelling of scenarios is made difficult by uncertainties surrounding the ability and extent to which species credits can be created (including multiple species credits at the same site) prior to survey across a suite of properties which are not yet known. Therefore, Niche have designed scenarios based on a mixture of our current experience with stewardship site creation and assumptions that underpin the BCT's pricing data for threatened species (e.g. in relation to the typical extent of species credit habitat within a single Stewardship site).

As Stewardship sites are created and the offset liability reduced, the number of entities requiring offset credits is also reduced (species/trade groups are eliminated). Therefore it becomes more difficult to use all of the credits created at a site to contribute directly to the overall project offset requirements. For this analysis we have limited the use of Stewardship sites to five sites within different landscapes. Establishment of five sites (rather than a higher number) allows for a high level of confidence in regard to timelines required to identify and establish sites. Ultimately, the offset strategy seeks to employ the following rationale:

- Stewardship sites will be created until returns towards the project's specific offset requirement become limited to mostly one credit type (ecosystem/area species/count species).
- Diminishing returns will occur progressively with Stewardship site setup as highest cost target species are removed from the offset requirement and the number of species directly relevant to the offset requirement at a single site decreases. At least one Stewardship site should be established in three to four key landscapes. The nature of returns with additional stewardships sites will not be known until sites can be considered in more detail.

Stewardship site creation – cost and contribution to overall offset requirement

Allowance has been made for the creation of five stewardship sites via purchase of land then site setup. The average cost for site setup and payment of the site's total fund deposit is estimated at approximately \$6M. The average equivalent cost for payments into the fund per site is approximated at \$10M resulting in a saving of \$4M per Stewardship site. The highest priority sites are likely to deliver a higher saving than the lowest priority sites since certain higher priority species disproportionately contribute to the overall offset requirement.

Table 3: Guide to Stewardship site cost based on land purchase (limited residual land factored in)

Stewardship site purchase and establishment costs as well as allowance for credit retirement to full TFD amount	Cost per site	Assumptions/notes
Purchase of relevant site area: a 370 ha site @ \$5,000/ha (average land value across forest/grazing land)	\$1,850,000	Based on recommendation by Transgrid for land value. Note that this does not account for the requirement to purchase additional hectares that are not part of the Stewardship site area.
Premium 30%	\$555,000	This premium is added to address paying above- market price for highly desirable properties.
TFD cost	\$3,000,000	This is an estimate of the TFD value for the entire Stewardship site.
BSA establishment cost (include provision for preliminary and BSAR survey)	\$433,000	This includes an allowance for preliminary assessments carried out over additional sites that are not considered viable.
Targeted survey additions	\$75,000	Additional survey required to inform species credit species.
Real estate fees etc.	\$0	No allowance has been made for this as cost is unknown.
Stamp duty @ approximately 5%	\$120,000	Work has not been done to refine this estimate.
Capital gains	\$0	This should be investigated by Transgrid based on their specific tax situation. Timing of signing of agreements and credit retirement can influence CGT costs significantly.
Total cost	\$6,033,000	
Average equivalent cost per site for payment into BCF (for credits directly relevant to HumeLink project)	\$9,876,185	Average predicted fund payment cost across each of five x 370 ha stewardship sites. This is based on assumptions regarding the presence and extent of usable ecosystem credits and species within future Stewardship sites.

Key assumptions and limitations

- The size of a BSSAR site is estimated at 370 hectares per site – ultimately this will vary depending on available land and sizes of targeted properties. This size of site is achievable based on available property holding sizes in the likely target area for sites, which is extensive. Niche has worked extensively on BSA site establishment and this size of site is within the median range of BSA sites within the target areas. Larger sites may limit how many credits can be supplied that are directly applicable to the project and significantly smaller sites may limit efficiencies of scale for management cost calculation.
- Assumed ecosystem credit yields at BSA sites (4.5 credits/ha) is based on credit yields that are at the lower end of accepted averages for BSA sites according to Niche internal data sources and information available on the BCT’s website.

- Assumed species credit yields have been informed by the expected weighting categories applied to individual target species that constitute part of the offset requirement for the project. Some species occur widely over landscapes in which their habitats are present (e.g. Squirrel Gliders and Koalas). These species are predicted to be present within a suitable proportion (e.g. 50%) of the sites targeted for them. Conversely, some species occur in more select habitat niches which are typically limited in extent (e.g. Pink-tailed Worm-lizard amongst specific rocky outcrops). These species are predicted to be present within a suitable proportion (e.g. 10%) of the sites targeted for them.
- BSA establishment costs include the cost of conducting desktop and preliminary field survey of additional sites that would not actually be established. This step is required to verify whether a site holds the values for which it has been selected. Inevitably some properties will not support the identified values. Alternatively, some potential may become unviable due to sale negotiations.
- The analysis has assumed land purchase will be required at all sites.
- Areas of land supplementary to the Stewardship site agreement area (e.g. homestead or highly pasture improved grazing land) that might be required as part of a property purchase have not been factored into the above analysis, however have been included within the budget expenditure component of the analysis.
- No allowance has been made for capital gains tax requirements and tax advice is not provided.
- Land price estimates have been informed by information provided by Transgrid.

Following implementation of Step 3, the revised lower limit cost, based on the \$12.4M in net savings from establishment of 5 Stewardship sites (\$50M reduction in payments to the BCF less \$37M from purchase of land & site setup costs) would reduce from \$446M to \$433M.

Step 4 – Purchase of credits from the market

Data on credits currently available that are relevant to the Humelink project’s offset obligation has been investigated however has not been factored into the overall cost estimate based on limited current supply compared with the overall offset requirement. This option should not be ignored however as it is considered that credits can be purchased at a 25% discount from the market compared with the cost of paying into the BCF. The discount on credit pricing is informed by Niche’s experience in credit trading both for supply and demand clients. Credit-holders realise the value in selling in bulk to large projects and are therefore willing to sell at discounted pricing, which assists them in meeting their Total Fund Deposit (a requirement to commence payments for management back to the landholder). In addition, discounts often apply to bundling credit sales of more than one credit type. These factors are not considered by the BCT in setting their own credit pricing. Transgrid can take measures to stimulate market supply specifically for this project and this measure has been factored into and promoted as part of the BODS for the project. Based on the above it is assumed that 5% of the project’s current credit liability could be obtained at a 25% discount on BCF prices equating to a \$5.3M saving.

Following implementation of Step 4, the revised lower limit cost would reduce by a further \$5.3M to approximately \$428M. A monthly indexation² will be applied to the base prices informing this estimate.

² The monthly indexation published by the BCT is currently 0.5% which is applied to the base credit price. This is not explicitly factored into contingencies as it represents inflationary costs. This advice is intended to be relevant to this point in time.

Budget requirements for July 24 – July 26

Based on the projected offset cost analysis the creation of five stewardship sites has been allowed for prior to payment into the market and then the BCF.

The table below provides some guidance as to required costs for the offset program over July 2024-2026.

Table 4: Stepwise explanation of HumeLink offset liability cost for Scenario 2 with contingency

Stage of offset strategy	Liability – BCF values (\$)	Budget outlay required (\$)	Description
Starting obligation with contingency (16% for species and 6% for ecosystem credits)	\$582,712,381	N/A	Maximum value calculation based on BCF quote and payment to fund plus contingency fee.
Revised obligation based on pre-consent survey	\$524,441,142	Not allocated to offset budget	10% reduction from above number
Revised obligation based on post-consent survey	\$445,774,971	Not allocated to offset budget	15% reduction from above number
After Stewardship site creation (5 x sites)	\$396,374,971	\$37,000,000	This includes outlay for BSA lands (x5 @ 6M = 30M) AND additional associated land (\$7M).
After market purchases at discount rates	\$376,556,223	\$14,864,061	5% of remaining credits at 25% discount.
Payment to BCF		\$376,556,223	The residual amount to be paid into fund.
Total		\$428,420,284	