Attachment 5: Western Bays Solar Farm Referral Application – Anticipated and known adverse effects

Effect	Summary of anticipated and known effects
Landscape and visual effects and Glint and Glare effects	A Landscape and Visual Effects Memorandum is provided at **Attachment 6**. This assessment outlines that the Project has been deliberately sited to avoid sensitive landscape overlays and sets out the known and anticipated landscape, visual and glint and glare effects associated with the Project. By way of summary: During the construction phase there will be temporary adverse effects on the character of the landscape due to land use change, vehicle movement, and increased infrastructure in the rural environment. Effects will be localised and reduce with distance from the site and screening. During operation, the Project will have a localised effect on landscape character which will reduce in the context of the wider landscape (i.e., beyond 300m-500m). The visual effects assessment demonstrates that the key changes in views will occur from limited locations in proximity to the Site, such as residential dwellings located along Karangahape Road, and for users of this road. Visual effects on the wider audience will largely be due to the transmission line which are common within rural landscapes. Mitigation planting around the site boundary is proposed which will mitigate landscape and visual effects. The Glint and Glare assessment has identified that potential glare effects from dwellings and on road users are able to be effectively mitigated by either existing landform and vegetation or proposed visual mitigation planting, with areas of additional planting recommended where glare effects have been identified on specific sections of road. With these measures in place, the Project is not anticipated to result in any significant adverse effects on landscape character, natural character, or visual amenity. All effects are localised effects, confined to the immediate site context and closest public road interfaces.
Ecology effects (excluding bats)	An Ecological Effects Memorandum is provided at **Attachment 7**. By way of summary: The completion of a preliminary ecological constraints assessment and baseline fauna surveys (Beca Ltd, 2024, 2025) has made sure that adverse ecological effects associated with the installation of solar panels and associated infrastructure, the construction of the transmission line, and the construction of the GIP have been avoided and minimised as far as practicable through design and asset location. The Site contains very little native vegetation and no watercourses and has operated as a dairy farm since the 1960s. One small, induced wetland is present and will be retained. Significant Natural Area (SNA) vegetation within the south-east corner of the site will also be retained. Potential construction phase and operational adverse effects identified as requiring management as a result of the Project are limited to: • Injury and/or mortality of native fauna • Erosion and deposition of suspended sediments into receiving environments • Avian injury or fatalities due to solar and transmission infrastructure (including collision and electrocution risks) Management measures proposed to address these effects include:

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	• Pre-clearance nest surveys • Preparation of an Incidental Discovery Protocol for lizards • Best practice erosion and sediment control • Design mitigation such as adequate panel spacing, use of anti-reflective coating on panels and SNA vegetation buffers • Fatality (carcass) monitoring The anticipated adverse effects of the Project on ecological values are expected to be able to be managed primarily through avoidance and minimisation. The overall adverse effects of the Project on ecological values will be Low and not significant with the recommended design and management measures implemented.
Ecological effects on bats	Actual and potential effects of the Project on long-tailed bats have been considered and an Effects on Bats Memorandum is provided at **Attachment 8**. The actual and potential effects on long-tailed bats include vegetation clearance/ tree removal, potential disturbance (namely noise and light) both during construction and operation and long-term habitat modification. It is noted that the habitats being impacted are already highly modified. While the management framework has not been finalised at this point in the Project it will include a range of measures, including: • Habitat avoidance where habitat is assessed as having high value. • Implementing DOC Bat Roost Protocols • Providing setbacks from solar infrastructure • Limiting artificial lighting at night • Limiting construction timing to reduce potential disturbance from construction when bats are active. • Undertaking mitigation planting. The implementation of a selection of the management options outlined above will enable the anticipated adverse effects of the Project on bats to be managed to Low - Moderate levels, avoiding significant adverse effects.
Acoustic effects	It is anticipated that operational noise from the solar farm will comply with the relevant noise limits at all receivers and that construction noise will also largely comply. It is accordingly anticipated that operation and construction vibration effects will be negligible. In line with industry best practice, the construction of the Project will be managed by way of a Construction Noise and Vibration Management Plan.
Transport effects	Karangahape Road is a sealed, rural, low volume 100km/hour road, typically between 5m to 6m wide. SH32 adjacent to Karangahape Road and the proposed GIP access is a Limited Access Route, typically with a carriageway width of 6m to 7m plus shoulders. Road widening is likely required in places on Karangahape Road to enable construction traffic and also localised vegetation removal/earthworks may be required to provide for improved sight lines on SH32 GIP access. Operational traffic volumes are expected to be low. While an increase in construction traffic is anticipated during the delivery of large components and materials to the site, any adverse traffic effects are expected to be appropriately managed through the implementation of a Construction Traffic Management Plan. This plan would address site access design, traffic routing, delivery timing, safety measures, and coordination with relevant road controlling authorities.

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	The substantive application would include appropriate mitigation measures to ensure traffic-related effects are minimised and that the safety and efficiency of the local transport network is maintained. Overall, it is considered that with mitigation, any anticipated or known adverse transport effects during both the construction and operation and maintenance phases of the Project will be negligible.
Effects on flooding and drainage	There are no watercourses affected by the Project. Current landcover (pasture) will be retained across most of the site. Due to this, there are no specific measures proposed to manage stormwater runoff from this area other than the maintenance of existing overland flow paths (using fords/culverts). Runoff from internal access roads and Power Conversion Storage Block (PCSB) roofs will be collected in swales and discharged to ground. For the Solar Farm Substation and O&M area, stormwater runoff will be collected and conveyed to a treatment, attenuation and soakage area. Given the above proposed design, the effects on flooding and drainage will be appropriately managed such that they are less than minor.
Earthworks / sedimentation effects	Earthworks would be required throughout the site for the construction of access tracks, localised levelling for solar installation, cable trenches, substation platforms, and associated infrastructure. These activities have the potential to generate sediment-laden runoff if not appropriately managed. Earthworks will be managed by way of an Erosion and Sediment Control Plan (ESCP). The ESCP would be developed in accordance with industry best practice, including relevant regional guidelines and standards. It would ensure sediment discharge is minimised through measures such as stabilised accessways, silt fencing, and progressive site stabilisation. There are no watercourses within the site. As such, the adverse effects of earthworks and sedimentation on the surrounding environment are expected to be appropriately managed and mitigated to avoid/minimise adverse effects on water quality of nearby waterbodies. Dust effects will also be able to be appropriately managed through controls during construction. Effects associated with earthworks are anticipated to be less than minor.
Groundwater take and use	A groundwater take and use consent is proposed to be sought for the construction and operation of the Project. There is an existing water take and use consent held by the owner of the site that supports the existing dairy operations which will be surrendered and replaced with a separate take and use consent for the Project. This may involve a phased transition through consent conditions. There are not anticipated to be any significant adverse effects.
Contaminated land	A Preliminary and Detailed Site Investigation has occurred. This has identified 28 discrete land use or activity features of contamination which are consistent with common farming practices. A Contaminated Soils Management and Remediation Plan sets out the proposed management, handling and remediation methodology to be implemented in accordance with industry best practice. These investigations and management measures would ensure that any anticipated adverse effects associated with contaminated land will be less than minor and appropriately managed such that the Project does not pose a risk to human health or the environment.
Cultural effects	Meridian recognises the importance of understanding and addressing the cultural values associated with the project location. Consultation with affected iwi and hapū has been ongoing since early in the Project development. A summary of

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	this consultation to date is provided in responses below. In addition to the ongoing consultation, a Cultural Impact Assessment (CIA) has been prepared by Ngāti Parekaawa, and will be finalised and included in the substantive application. Based on the CIA, Ngāti Parekaawa is of the opinion that the effects of potential impacts on cultural values can be avoided, remedied, or mitigated as appropriate by Meridian and Ngāti Parekaawa and that Ngāti Parekaawa conditionally supports the proposal (subject to recommendations). Meridian is committed to continuing engagement with tangata whenua throughout the development and implementation of the Project to ensure cultural values are appropriately considered and provided for.
Archaeological effects	Meridian has engaged an archaeologist to prepare a technical archaeological assessment for the project which included desk-top research and field surveys. This has also informed the Project design to date to avoid areas of potential archaeology. There are no confirmed/recorded archaeological sites, features, or deposits present within the current proposed project footprint. However, the western side of Lake Taupō remains poorly understood in the archaeological record and considering the scale of the project, a general archaeological authority is being sought to cover all earthworks during construction. This approach, recommended by the archaeologist, is considered best practice to manage potential effects on unknown subsurface archaeological material. In summary, archaeological effects are expected to be manageable, with appropriate oversight and mitigation through the HNZPT authority process such that there are no known or anticipated significant adverse effects.