# 28. Proposed mitigation

The assessment of the Project's effects on the environment in Sections 10 to 26 of this AEE has identified a wide range of actual and potential effects on the environment, both positive and adverse. While many potential adverse effects will be avoided or at least significantly reduced at the detailed design phase of the Project, the effects assessment identified a range of adverse effects that will require remediation (for example during construction) and or mitigation to ensure that they are appropriately managed (for example during operation).

This section provides a discussion of the mitigation proposed to be implemented before, during and after Project construction, in order to adequately avoid, remedy or mitigate the Project's actual or potential effects. Where relevant, the proposed mitigation, remediation and monitoring measures summarised here have been included as recommended conditions for the designations or resource consents. Recommended conditions will form part of the suite of material to be considered by the Board of Inquiry.

## 28.1 Principles for project delivery

The following principles inform the basis for the development of the plans and proposed conditions that will influence delivery of the Project, including its construction, operation and maintenance:

- The proposed conditions of consent and designation are designed to provide ease of comprehension for the public, ease of administration for compliance monitoring by the Council and for ease of implementation by the contractor;
- All works will be undertaken to comply with current New Zealand standards and legislation, and NZTA standards, where appropriate;
- The construction and operation of the Project will use the best practicable option (BPO) to avoid, remedy or mitigate adverse effects;
- An integrated team approach will be adopted for the development of the design and the methods to avoid, remedy or mitigate actual and potential effects; and
- Each technical specialist, consultant, or contractor involved in the Project has equal responsibility to use the best endeavours to avoid, remedy or mitigate adverse effects.

In addition to these principles, the methods used require:

- Maintenance of on-going communication with the local authorities who will be responsible for monitoring and enforcing conditions placed on the designation and resource consents sought; and
- Maintenance of strong communication links with directly affected landowners, Tangata Whenua, key stakeholders, affected landowners, neighbours and the wider community.

## 28.2 Designation conditions

The conditions of designation will fall into two areas – (i) specific conditions and (ii) conditions relating to the methods to be used to achieve the specific standards. Some conditions will require further consideration through the outline plan of working process under s168A RMA, while others will not. For example, the requirement for an urban and landscape design framework (ULDF) will

be submitted to Council for consideration prior to any outline plan of work. This requirement will ensure that the appropriate framework is implemented prior to the detailed design of structures, which will be integral to the successful integration of urban design into the detailed design of the Project, which will be considered in the OPW.

The OPW is explained in Section 1.9 of this AEE.

## 28.3 Methods to avoid, remedy or mitigate potential effects

The assessment of alternatives (Section 10 – 26 of this AEE) discussed how the preferred alignment and proposed designation have already led to the avoidance and mitigation of effects, as evidenced (for example) by the avoidance of the recently rediscovered pa site at the south of the Project area, the bridging of larger watercourses and the shift in the indicative alignment to avoid the flood plain in the Carran Road Sector.

The following methods to remedy and mitigate the remaining actual and potential adverse effects are proposed:

- Designation and consent conditions specifying standards to be achieved or actions to be taken;
- Delivery mechanisms (including Management and/or Monitoring Plans) that require an authorisation by Council prior to proceeding to ensure compliance with a specified practice or standard; and
- OPW to identify how the conditions of designation and s176A can be achieved.

The Management Plan process will be used where there is a specified standard in the condition, where a clear outline of the tools that the contractor will use is necessary to demonstrate compliance. Management Plans will also be used where a process will be determined by the contractor as to how to achieve a condition. For example the contractor's submission of the Erosion and Sediment Control Plan will demonstrate how the conditions relating to sediment control will be achieved. Such Plans would need to be approved by the appropriate Council Manager. Subsequent site specific erosion and sediment control plans will demonstrate compliance with the ESCP and would require Manager certification, rather than a comprehensive review.

Outlined below is a scope of potential conditions that will be developed through the lodgement, submission and hearing process. The conditions are split between the three general stages of implementation – being pre-construction, construction and operation.

### 28.3.1 Pre-construction

Confirmation of performance/design relating to:

- Access and movement (traffic management);
- Erosion and sediment control measures;
- Stream and natural wetland works (including fish passages);
- Stormwater management systems (construction and operational);
- An urban and landscape design framework, including inputs from iwi liaison advisor and local residents;

- Culvert and bridging structures (especially in relation to 100 year event design, bed scour prevention);
- Protocol for increasing open area limits;
- Application of earthworks seasonal constraints;
- Protocol for stream classification (including habitat assessment);
- Protocol for notification to Watercare re elevated sediment discharging to the Mahurangi River;
- Methodology for removal of mud snails;
- Stakeholder and communication plan relating to construction activities;
- Long tail bat protocols;
- Management of land snails;
- Kauri die back protocols;
- Wetland restoration protocols; and
- Cultural heritage and archaeological management plan.

### 28.3.2 Construction

Management practices to address:

- Open area limits;
- Discharges from the precast concrete yard;
- Erosion and sediment control measures;
- Access and movement (internal roads, wheel wash, access controls to local roads and State highway);
- Cut and fill processes and locations;
- Stream and natural wetland works including rehabilitation to natural form and to support fish habitat;
- Stream diversion management regarding flow and channel stability;
- Stormwater management systems (construction and operational);
- Culvert and bridging structures;
- Landscaped and revegetated areas;
- Works near and within watercourses and/or wetlands and culvert installation;
- Dust management – especially construction traffic and rock breaking;
- Noise and vibration;
- Discovery of unpredicted environmental conditions or heritage areas;
- Integration of riparian planting with landscape plans and suitability of species for cultural harvest where appropriate;
- Stormwater design to achieve 75% TSS;
- Management of kauri removal;
- Wetland management (eg preventing vehicle access where practical) and restoration;
- Management of construction activity to avoid Ngā Pā o Te Hēmara Tauhia; and
- Pre-cast Yard Management Plan.

Reporting

- As built Plans of CESCPs;
- Routine monitoring of ecological values during construction including base sampling prior to construction;
- Submission of as built stormwater treatment devices to Council;
- As builts of bridge structure across Okahu Inlet; and
- Adaptive Monitoring programme and associated reporting.

### 28.3.3 Post construction

- Maintenance provisions for stormwater ponds;
- Maintenance provisions for operational noise mitigation measures (if any necessary); and
- Monitoring programme for limited period of new plantings, stream bank erosion.

The suite of conditions that will be populated and developed through the lodgement, submission and hearing process will demonstrate the Project commitment to the process above to ensure that the potential adverse effects that might arise from the construction, operation and maintenance of the new motorway will be adequately avoided, remedied or mitigated to a level necessary to achieve the purpose of the RMA.