12 SUMMARY OF ENVIRONMENTAL OUTCOMES

12.1 INTRODUCTION

12.1.1 An assessment of potential environmental impacts associated with the construction and operation phase of the Project has been conducted in accordance with the requirements of the EIA Study Brief and EIAO-TM.

12.1.2 This section summarises the key environmental outcomes associated with the Project, as well as environmentally friendly options adopted and key environmental problems avoided in the design of the Project.

12.2 ENVIRONMENTAL BENEFITS OF THE PROJECT

12.2.1 The Project will provide a new direct road link (referred to as the So Kwun Po Link (SKPL)) connecting San Wan Road in the north side and Pak Wo Road in the south side of So Kwun Po Interchange (SKPIC). The SKPL provides an alternative route between San Wan Road and Pak Wo Road, allowing a portion of traffic between San Wan Road and Pak Wo Road via the existing SKPIC to be diverted to this new SKPL. Upon commissioning of SKPL under this Project, accessibility between San Wan Road and Pak Wo Road, as well as northern and southern part of Fanling, in general, can be enhanced. Heavy traffic flows and traffic congestion in SKPIC especially during peak hours can potentially be reduced with operation of the Project. With the alleviation of the traffic problem, the air quality and noise impact on residential premises nearby SKPIC would also be improved as a result of the Project.

12.3 INCORPORATION OF ENVIRONMENTALLY FRIENDLY OPTIONS

12.3.1 Avoidance of environmental impacts is one of the main considerations throughout the elevation and development of alignment options. In case due to limitation of the actual site situation that environmental impacts could not be completely avoided, environmentally friendly alternatives or designs were taken as much as practicable for compliance with relevant EIA requirements. The following approaches to avoid environmental impacts have been suitably incorporated into the layout of the preferred alignment option, as discussed below.

Avoiding high road gradient at SKPL

12.3.2 The developed scheme of the Project has taken into account the need to reduce the road gradient at the proposed SKPL as far as practicable and to comply with the absolute maximum gradient of 8% as stipulated in *Transport Planning and Design Manual*. With a lower road gradient, vehicular emissions along the proposed SKPL could potentially be reduced during slope climbing.

12.4 ENVIRONMENTAL DESIGN RECOMMENDED

12.4.1 Other than initiatives to avoid environmental impacts as summarised in **Section 12.3**, further efforts have been exercised to minimise impacts. The need for any environmental designs

required to mitigate the associated impacts has also been identified and will be implemented, as appropriate. A summary of these approaches is given below:

- Adoption of environmentally friendly construction methods;
- Implementation of trip-ticket system; and
- Implementation of environmental monitoring and auditing system.

Adoption of Environmentally Friendly Construction Method

12.4.2 Quieter Construction Methods, QPME, provision of temporary movable noise barriers / enclosures and noise insulating fabric, and proper scheduling of works will be employed during construction as far as practicable to minimise the potential noise impact to the nearby sensitive receivers.

12.4.3 Construction works throughout the construction programme have been planned such that the extent of earthworks that may have the potential to generate fugitive dust emissions are reduced as far as practicable in order to minimise potential dust impact to the nearby sensitive receivers.

Implementation of Trip-Ticket System

12.4.4 In order to monitor, document and verify the disposal of C&D materials at landfills and public fill reception facilities and to control fly-tipping, a trip-ticket system for disposal of construction and demolition materials would be implemented. All dump trucks should be equipped with GPS or equivalent systems for monitoring their transportation routes and parking locations to prohibit illegal dumping and landfilling of C&D materials.

Implementation of Environmental Monitoring and Auditing System

12.4.5 In addition to the mitigation measures as described above (detailed Implementation Schedule of Recommended Mitigation Measures is provided in **Appendix 11.1**), a comprehensive environmental monitoring and auditing programme would be implemented to cover various aspects of concern. An independent environmental checker would also be employed to ensure that all the necessary mitigation measures are implemented in a timely and orderly manner.

12.5 KEY ENVIRONMENTAL PROBLEMS AVOIDED AND ENVIRONMENTALLY SENSITIVE AREAS PROTECTED

12.5.1 **Sections 12.3** and **12.4** have summarised the key approaches adopted in the current proposal to avoid, minimise and mitigate environmental impacts. Some of these approaches have contributed to avoiding a number of environmental problems and protecting a number of environmentally sensitive areas. The key environmental problems that have been avoided and any sensitive areas protected by these approaches are presented in **Table 12.1**.

Table 12.1 Summary of Key Environmental Problems Avoided and Sensitive Areas Protected

Design Approach	Environmental Problems Avoided and Sensitive Areas Protected
Adoption of environmentally friendly construction method (Section 2)	• Adoption of quiet piling method to minimise the construction noise impact on nearby sensitive receivers. • Earthworks are carried out in phases to minimise the construction dust impact to nearby sensitive receivers.

Design Approach	Environmental Problems Avoided and Sensitive Areas Protected
Avoidance of illegal dumping (Section 6)	• The recommended preventive measures would avoid/minimise the chance of illegal dumping.
Bird-friendly design for noise barriers (Section 8)	• Minimise potential bird collision.
Implementation of Environmental Monitoring and Auditing System (Section 11)	• Ensure all the recommended measures are properly in place and their effectiveness.

12.6 ESTIMATION OF POPULATION PROTECTED

12.6.1 Population and environmental sensitive areas in the vicinity of the Project site have been protected through the avoidance and/or minimisation of environmental impacts from the construction and operation of the Project. Population protected from air quality impacts include air sensitive receivers within 500m from the Project Boundary including residential buildings, commercial buildings, industrial buildings, cultural uses, educational uses, recreational uses, places of public worship, and government/institutional or community uses. Population protected from noise impacts include noise sensitive receivers within 300m from the Project Boundary including residential buildings. Population protected from water quality impacts include water sensitive receivers within 500m from the Project Boundary.