6.15 Waste

The potential waste generated by construction and operation of the project and the proposed waste management approach for the project was provided in Section 8.5 of the EIS. This section has been prepared to identify and assess the potential construction, operation and cumulative waste impacts of the amended project, including an assessment of the proposed changes against the impacts documented in the EIS.

This section should be read in conjunction with Section 8.5 of the EIS.

6.15.1 Assessment methodology

Potential waste streams for the project as described in the EIS were identified via a desktop assessment and potential waste types and quantities were estimated by reviewing the construction and operational activities for the project, as well as relevant guidelines and waste generated by similar projects. The desktop assessment has been updated to account for the amended construction and operational activities presented in **Chapter 3** and **Chapter 4**.

6.15.2 Construction waste

The likely waste streams that have the potential to be generated by the project as described in the EIS is outlined in Table 8-51 of the EIS. The construction of the amended project would not be substantially altered as a result of the construction changes presented in **Chapter 4**. As such, the amended project is not anticipated to generate additional waste streams. The likely waste generated under each of these waste streams is discussed below.

6.15.2.1 Excavation

The earthwork quantities for the amended project as compared to those for the project as described in the EIS are provided in **Table 4-3**. In summary, an additional 734,000 cubic metres of cut material would be excavated for the amended project. This is an increase of about 52 per cent from the project as described in the EIS. As the amended project would require a greater quantity of fill material than the quantity of excavation material that would be generated during construction, surplus excavated material would be minimal and consistent with that described in the EIS.

Wherever possible, excavated material for the amended project would be stockpiled and re-used onsite, as described in the EIS. As the amended project would require a greater quantity of fill material than the quantity of excavation material that would be generated during construction. It is therefore anticipated that all excavated material that is suitable for reuse would be used within the amended project.

Where excavated material cannot be reused onsite, it would be managed in order of priority identified in Section 8.5.3 of the EIS:

- Transfer to other TfNSW projects for reuse in accordance with the NSW EPA's excavated public road resource recovery exemption
- Transfer to an approved TfNSW stockpile site for reuse on a future project only if a specific project was identified before stockpiling and statutory/regulatory requirements under the *Protection of the Environment Operations Act 1997* (NSW) (POEO Act) are met. If a project cannot be identified the material would not be stockpiled
- Transport off site for reuse by a third party in accordance with relevant NSW EPA resource recovery exemption or to a NSW EPA licensed waste recovery facility
- Dispose at an accredited materials recycling or waste disposal facility.

6.15.2.2 Stockpile management

Large stockpiles for the project as described in the EIS would be located at AF 1, AF 2 and AF 3. In addition, the amended project would require new stockpiles at AF 9, AF 10 and AF 11. **Table 6-62** provides the anticipated stockpile volumes, and where these volumes have changed from those estimated for the project as described in the EIS.

In summary, while the quantities of waste stored within AF 1, AF 2 and AF 3 would not substantially increase, additional stockpiles present at AF 8, AF 10 and AF 13 would increase the total stockpiled waste to 2,227,000 cubic metres. This is an increase of 368,000 cubic metres (about 20 per cent) from the stockpile volumes for the project as described in the EIS.

The stockpile management and spoil transport procedures outlined in Section 8.5.3 of the EIS would not be changed as a result of the construction updates described in **Chapter 4** and so would continue to apply to the amended project.

Table 6-62 Estimated stockpile volumes

Stockpiled waste	Estimated stockpile volume (cubic metres) [1]		
	As per the EIS	Amended project	Change between the project as per the EIS and the amended project
AF 1	60,000	60,000	0
AF 2	1,466,000	1,468,000	2,000
AF 3	333,000	333,000	0
AF 9	NA	233,000	233,000
AF 10	NA	41,000	41,000
AF 11	NA	92,000	92,000
Total	**1,859,000**	**2,227,000**	**An increase of 368,000**

[1] *These estimated stockpile volumes were incorrectly stated as being per waste stream in the EIS. As the waste streams stored in each stockpile would vary during construction, this table presents the worst case estimate stockpile volume for large stockpiles at each ancillary facility*

6.15.2.3 Waste disposal locations

The amended project would require a greater quantity of fill material than the quantity of excavation material that would be generated during construction. It is therefore anticipated that all excavated material that is suitable for reuse would be used within the amended project. The remaining material that is determined unsuitable for reuse would be transported offsite for reuse, recycling or disposal at an appropriately licensed facility. Where excavated material is deemed unsuitable for reuse or emplacement due to contamination, it would be taken to a waste facility licensed to accept the waste. This would be consistent with the project as described in the EIS.

The selection of waste disposal and recovery facilities would be dependent on the nature and volume of waste streams generated and the capacity of the receiving facilities at the time of the waste generation.

6.15.2.4 Potential impacts

Without the implementation of appropriate environmental management measures, waste generated by the amended project has the potential to result in the following impacts:

- Excessive material being directed to landfill due to inadequate collection, reuse, and recycling
- Impacts on human health resulting associated with various types of waste being generated and stored onsite, with the potential for misclassification or mishandling resulting in potential cross contamination
- Environmental impacts from the incorrect storage, classification, transport and disposal of waste
- Dust impacts due to incorrect storage, handling, transport and disposal of spoil
- Noise impacts associated with waste disposal and stockpile management
- Traffic impact associated with the inadequate removal and transport of waste offsite.

Given that the proposed construction updates described in **Chapter 4** would not substantially change the volumes, types or management of construction-generated waste, the risk of the above impacts would be minor. This is consistent with those described in the EIS.

6.15.3 Operational waste

Waste generated by the operation of the project would be limited and would be from maintenance and minor repair works. Given that maintenance and minor repair works would not be substantially changed as a result of the proposed design changes presented in **Chapter 4**, the operational waste streams and impacts of the amended project would remain consistent with those described in the EIS and would be minimal.

6.15.4 Cumulative impacts

6.15.4.1 Construction impacts

As the amended project is expected to have a fill deficit, disposal of excavated material is not relevant to cumulative impacts with the exception of contaminated material. If the construction of any of the road or rail projects assessed is anticipated to have a surplus of excavated material, it may be possible to use that fill material for the construction of the M12 Motorway, reducing the total quantity of reusable material generated by projects across Sydney that is sent to landfill. The western Sydney area has sufficient capacity for waste management facilities to accept waste from the concurrent or overlapping construction of multiple projects. As a result, cumulative construction waste impacts for the amended project would be consistent with those described in the EIS and are considered to be minor.

6.15.4.2 Operational impacts

The operation of the amended project and any other road and rail projects in its vicinity would be minimal and would be able to be handled by the waste management market in western Sydney. As a result, cumulative construction waste impacts of the amended project would be consistent with those described in the EIS and are considered to be minor.

6.15.5 Environmental management measures

The environmental management measures identified for the project as described in the EIS (see Section 8.5.6 of the EIS) are considered appropriate to manage the waste impacts associated with the amended project. The amended project would not require any additional or amended environmental management measures.