Suite 116 - 117
25 Solent Circuit
Baulkham Hills
NSW 2153

23 April 2021

Mr Bradley James
Principal Case Manager
Office of the Independent Planning Commission NSW
Level 3, 201 Elizabeth Street
Sydney NSW 2000
**(by email: Bradley.James@ipcn.nsw.gov.au)**

Dear Mr James,

**Re: SSDA 10431 Moorebank Precinct West Stage 3 - IPC Public Meeting: Response to IPC Questions Raised**

We are writing on behalf of the applicant (SIMTA) regarding State significant development application (SSDA) 10431 Moorebank Precinct West Stage 3 (MPW 3) in response to matters raised in an email from the IPC (Bradley James; 21 April 2021) to Richard Johnson (Aspect Environmental), being:

1. Does the 16.6m AHD level include structural and/or uncompacted fill? Applicant to reissue note.
2. Applicant to review importation of fill across the development and comment on a potential condition reducing maximum importation of fill from 22,000m$^3$ to a level closer to the maximum reached to date – bearing in mind that Stage2 / Stage 3 overlap is now less likely (see recommended condition A8).
3. Question from Site Inspection – Applicant to comment on the potential penetration of PFAS by tree roots. Applicant to comment on how this would be managed.

This letter will also respond to questions raised by the Independent Planning Commission (IPC) at the Public Meeting held on 19 April 2021 to provide further information in relation to:

4. Out of Hours Works (OOHW), particularly with regard to public benefit.

The information provided in this letter is intended to inform the IPC in determination of the SSDA 10431 MPW 3 Proposal.

## 1. Clarification of proposed finished surface level of 16.6 mAHD

As discussed during the Public Meeting, please find Attachment A, which was provided to DPIE in March 2019 to support the MPW Stage 2 assessment. The correspondence

clarifies the calculation of unconsolidated / structural fill material to provide context to the finished surface levels, and includes Figure R44.2(a) from RMS' Guide to QA Specification R44 Earthworks. This figure has been extracted from the correspondence and is provided below as an annotated representation to demonstrate the application of clean and engineered fill, and surface/pavement materials for MPW Stage 3.

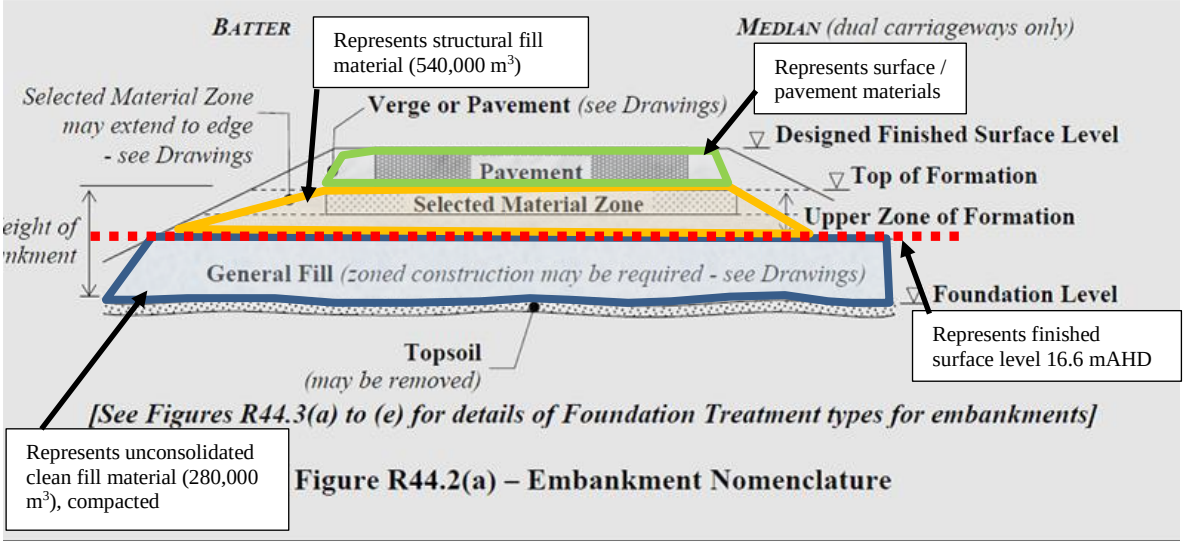



**Figure R44.2(a) – Embankment Nomenclature**

Unconsolidated clean fill material (i.e. virgin excavated natural material (VENM) and excavated natural material (ENM)) (280,000 $m^3$) will be placed on the site and compacted to achieve the final ground levels upon which the formation elements of the development are placed. This is generally represented by the 'General Fill' element of the diagram. Structural fill material (540,000 $m^3$) will be placed over the compacted clean fill material to provide a geotechnically suitable pad for structural elements, including warehouses. Surface or pavement materials will provide the finished surface levels for stormwater, and levels from which the building height will be calculated.

The finished surface level of the filled sections of the site at 16.6 m AHD (per SSD 5066 MOD 1 Condition of Consent (CoC B19) is represented by the dotted red line, as shown in the figure above.

## 2. Importation of fill material

The total amount of imported fill material (across the MPW and MPE precincts) is capped at 22,000 $m^3$ per day, in accordance with MPW Stage 2 CoC A9.

Imported clean fill material arrives at the site in a non-compacted form by heavy vehicles and is measured as it passes over a weighbridge to record the tonnage received to site. This measured weight is converted to a volume by applying a conversion factor to the imported material of 2.2 $t/m^3$. The conversion factor is based

on the characterisation of the material, noting that conversion rates between tonnes and $m^3$ for say, homogenous fill material, or for road base, would be quite different.

Details of imported fill material to the intermodal precinct is provided in the table below.

| Site | Approved Daily Fill Importation Cap ($m^3$) | Current Average Daily Fill Importation (tonnes) | Current Average Daily Fill Importation ($m^3$) [1] | Maximum Daily Fill Importation (tonnes) | Maximum Daily Fill Importation ($m^3$) [1] |
|---|---|---|---|---|---|
| MPW | 22,000 | 7,594 | 3,452 | 22,838 | 10,875 |
| MPE | | 1,281 | 582 | 3,412 | 1,551 |

Notes:
1. Converted from tonnes to $m^3$ using a conversion factor of 2.2 t/$m^3$.

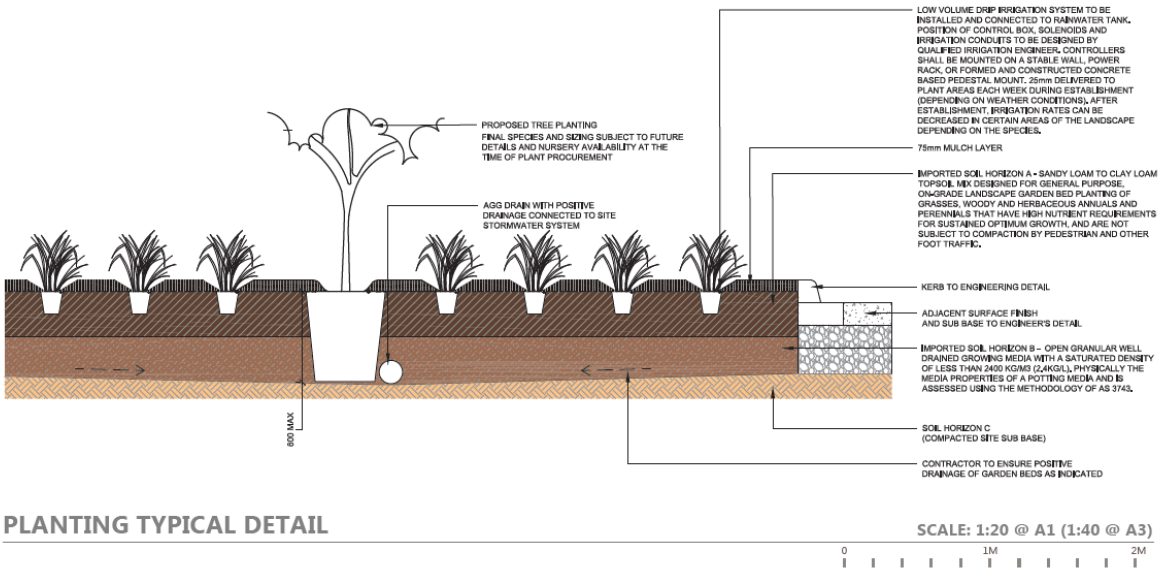
Import requirements for the SSD 7628 MPE Stage 2 Moorebank Avenue Upgrade Works (MAUW) and Moorebank Avenue Diversion Road (MADR), and MPW Stage 2 development works are likely to continue until approximately 2023. The intention is to import fill progressively across the site, to avoid ground level disparity impacting soil erosion control and stormwater management. A situation where there is vertical disparity between the MPW Stage 2 operations area (i.e. such as the approved Woolworths pad) and MPW Stage 3 construction area, compounded by the requirement to establish the entire perimeter road and OSDs to finished ground levels would, in the absence of fill into MPW Stage 3, risk creating a dam effect and drainage issues in the southern portion of the site.

Given the requirement of SSD 7709 CoC B41 of restricting contiguous area development to 65 ha, it is not practicable to complete import on MPW Stage 2 prior to concurrent import being undertaken on MPW Stage 3.

3. Potential penetration of PFAS by tree roots

Roots of trees located within the MPW developable site would be very unlikely to penetrate potential per- and polyfluoroalkyl substances (PFAS) impacted areas, as:

- A fill zone of approximately 3.6 m generally overlays any potential remaining PFAS impacted site soils.
- Trees will be planted according to NATSPEC specifications, within individual holes excavated within imported soil horizon B (open granular well drained media). Given the excavated holes will be located above the soil horizon C, it is highly unlikely that tree roots would extend to a great depth into this highly compacted sub base material (refer to figure below). (Source: Urban Design Development Report, July 2020; Sheet PIWW-GNK-LN-DWG-400).




## 4. Out of Hours Works (OOHW)

Enabling Project activities to be undertaken out of hours will beneficially impact the local community as well as onsite construction workers, for the following reasons:

1. OOHW will enable construction vehicles to be off the roads during peak traffic hours, reducing potential safety risks to the community, peak traffic flows on local public roads, and congestion of the road network.
2. Enabling delivery of materials prior to the start of the day (i.e. say, prior to 5am) will improve mobilization of onsite works at the beginning of the day, as materials will be available for the start of works. This may also allow for a more even distribution of works during standard construction hours, meaning workers may be able to arrive to the site at more evenly distributed times, further reducing road congestion and interface with general traffic on public roads.
3. Concurrent construction activities undertaken during standard hours may occupy the same works space, thus increasing the potential safety risk to construction workers. OOHW would enable the delivery of construction activities within nearby works areas to an expanded timeframe, therefore enhancing safety outcomes by eliminating or reducing personnel and public exposure to serious hazards.
4. Enabling OOHW for construction activities such as concrete slab pours, internal fit-out works (i.e. temporary works compound area), and the like will reduce interference between internal and external construction activities, and potential impacts on surrounding (onsite) traffic and construction worker safety.
5. Construction of the internal road out of hours will distribute the disturbance to the verge and road footprint without interference to the construction works interface with onsite workers.

6. Local public and private infrastructure projects have seen increased competition for the availability of fill material. The ability to source and secure fill materials when available and deliver them to the site will enable the Project to progress more quickly, thus reducing overall Project schedule timelines and duration of general construction impacts to the local community.

The Applicant seeks to amend the proposed wording of draft CoC B20(i) which currently limits the application of the OOHW Protocol to activities associated with importation of fill material.

The proposed amendment is warranted to include additional types of works that are considered to have beneficial impacts on construction site safety, peak traffic flows on local public roads and the reduction in duration of construction activity.

Conclusion

This letter seeks to provide further information to clarify elements of the SSDA 10431 to:

1. Provide details regarding fill importation requirements, and clarify requirements for unconsolidated and structural fill material.
2. Advise that tree roots are highly unlikely to penetrate into PFAS impacted soils, due to the fill zone and the tree planting methodology to be implemented at the site.
3. Provide consideration of how OOHW would beneficially impact the local community as well as onsite construction workers, such that a broader set of OOHW activities on the MPW Stage 3 Site may be permissible, other than would otherwise be directly permissible under the presently worded Draft CoC B20(i).

If you require further clarification regarding any points above, or matters raised during the public meeting, please let me know.

Kind regards

[redacted]

Richard Johnson
Director
Aspect Environmental
[redacted]

Attachment A – Additional Information Request MPW Stage 2 SSD 7709 Re: Importation of Fill (correspondence to DPE, 20 March 2019)

20 March 2019

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BAULKHAM HILLS, NSW 2153
ABN: 50 160 157 666

Dominic Crinnion
Team Leader
Ports and Water Assessments
Department of Planning and Environment

Level 29,
320 Pitt Street
Sydney, NSW, 2000

Sent by email: Dominic.Crinnion@planning.nsw.gov.au

**Additional Information Request MPW Stage 2 SSD 7709 Re: Importation of Fill**

Hi Dominic,

As requested, please find below the method used to define the amount of clean fill imported to site.

As previously raised with DP&E, and identified in the MPW Stage 2 SSD 7709 EIS (Arcadis, 2016), the importation of clean fill is required to achieve the final site levels for drainage to provide for subsurface infrastructure that enables an east to west gradient for drainage to the on-site storage detention basins (OSDs).

The placement of imported clean fill (defined as VENM or ENM) occurs as part of the general bulk earthworks phase to achieve the final ground level upon which the structural elements of the development are placed.

The volume of fill required to achieve this design ground level is the placed and compacted imported fill material (i.e. 1.6M $m^3$ of placed fill). The calculation of fill is based on engineering design drawings with fill requirement calculations measured on an in-situ, compacted basis. As presented in section 4.3.3 of the MPW Stage 2 SSD 7709 EIS (Arcadis, 2016).

We cannot provide an accurate volume for anything other than a final in-situ volume as assumptions on density of sourced fill may be erroneous where material sources change, or the sourced material is not homogeneous, by way of example.

Imported clean fill material arrives at site in a non-compacted form by heavy vehicles and is measured as it passes over a weighbridge to record the tonnage received to site. This measured weight is converted to a volume by applying a conversion factor to the imported material of 2.2t/$m^3$.

This conversion factor has been used to date as an average based on the source materials being received to the MPE site, where we have an observed variance of between 1.9 t/$m^3$ and 2.5t/$m^3$. This method has been presented to the ER and has been accepted. It has also been presented separately to the DP&E Compliance team (in respect of MPE) who have not found an issue with the approach.

In accordance with the draft conditions of consent and the Response to Submissions (RtS) (Arcadis 2017) mitigation measures, importation of fill to site during construction of the proposal is not to exceed a total of 22,000 $m^3$ per day as a cumulative value for the precinct (i.e. inclusive of MPE and MPW transportation movements). The EIS identifies the 1.6M $m^3$ of imported fill being received to site across works periods A and C and the placement of engineered fill to occur in works period E.

The EIS document *Appendix M Construction Traffic Impact Assessment* (CTIA), Section 3 (Arcadis 2016), identifies overlap between works periods B, C, D and E. The CTIA confirms and assesses placement of imported fill in works periods A and C and placement of engineered fill and ballast in works period E.

Works period C, which comprises the import of 1.2M $m^3$ of imported clean fill for bulk earthworks to establish final site level, extends beyond the projected timeframe for works period E and therefore the 22,000 $m^3$ per day precinct cap is equally applicable to the import of engineered fill and ballast. Reference CTIA Table 3-1 *Indicative construction Program* and Table A-1 *Works periods and activities* (Arcadis, 2016).

For clarity, the consideration of application of clean fill for bulk earthworks and engineered fill and ballast or other surface/pavement materials, is demonstrated schematically in the below figure from RMS' *Guide to QA Specification R44 Earthworks*.

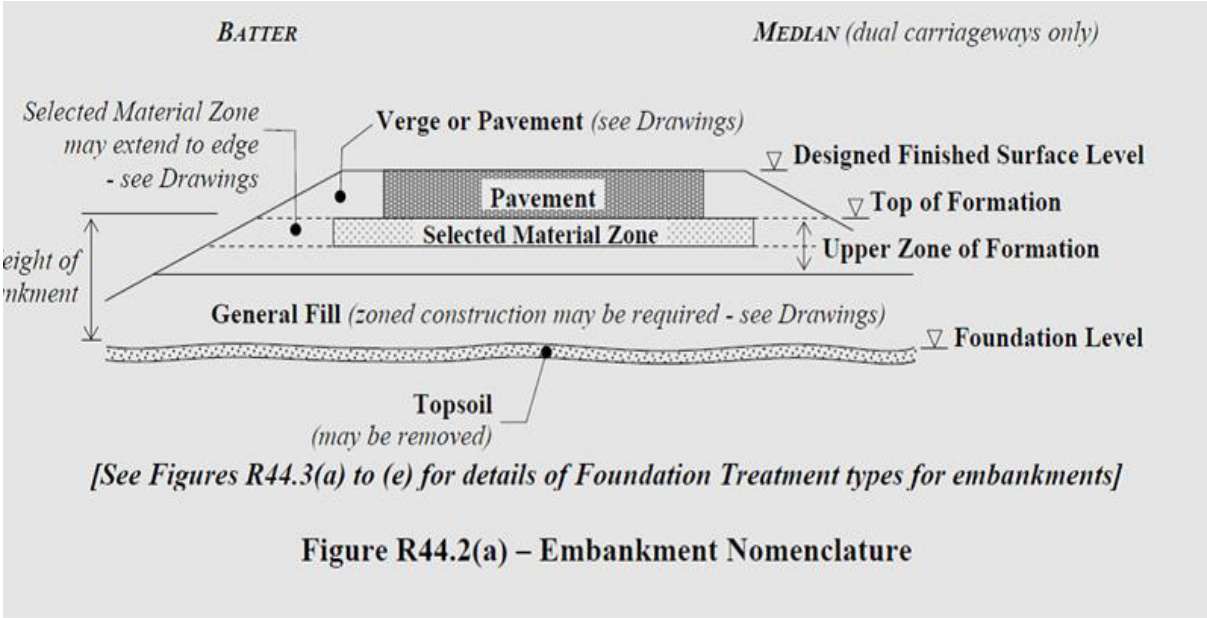


*Figure 1: Figure R44.2(a) from RMS' Guide to QA Specification R44 Earthworks*

Confirmation of volumes or tonnages for engineering fill and rail ballast to be imported is partly dependent on the confirmation of suitability of material able to be recovered from demolition stockpiles. It is also subject to detailed design.

By way of example of design influence, the rail link for MPW Stage 2 SSD 7709 changes from ballast to embedded track and ballast depth for freight rail may vary between 350 mm to 500 mm (reference TfNSW Standard THRTR00192ST Ballast, 6/10/2015). Detailed design will inform the final volume.

In terms of consideration of impact in the CTIA, comparatively, the assessed daily truck movements for works period C was 740 (1480 trips) and for works period E was 31 (62 trips). In accordance with the draft conditions of consent and the RtS Mitigation measures, heavy vehicle movements to and from site during construction is not to exceed a total of 22,000 $m^3$ per day as a cumulative value for the precinct (i.e. inclusive of MPE and MPW transportation movements).

In accordance with the identified overlap of works periods C and E and the identified mitigations, the total heavy vehicle movements for both works periods would be within the precinct cap of 22,000 $m^3$ per day.

An edit to the draft Condition B36 that provides a degree of flexibility in the application of the conversion factor of tonnes to $m^3$ is presented below for consideration by DP&E.

B36. The Applicant must:

(a) keep accurate weighbridge records ***(or other form of records as otherwise agreed with the Secretary)*** of the volume and type of fill imported to the site; and

(b) make these records available to the Department or EPA upon request.

for the purposes of (a) above, volume of fill is to be measured by applying a 2.2 t/m3 conversion factor to weighbridge records for imported fill, ***unless otherwise agreed with the Secretary***.

I trust this information provides the additional information being sought to inform the Department's assessment of MPW Stage 2 SSD 7709. If you have any questions or require further clarification, please do not hesitate to call.

Regards

[redacted]

Richard Johnson,
Director
[redacted]