



## STORMWATER ACCESS

### MT WELCOME, PUKERUA BAY

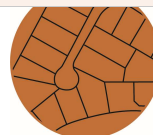
|               |                                          |              |                |
|---------------|------------------------------------------|--------------|----------------|
| TO            | Pukerua Property Group LP                | DATE         | 04 August 2026 |
| PROJECT NAME  | Mt Welcome                               | ENVELOPE REF | 1753-02        |
| ATTENTION     | William Dorset                           | FROM         | Kyle Dirse     |
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This memo responds to the maintenance access requirements for stormwater devices raised by Tiaki Wai, Greater Wellington and Porirua City Council in their section 53 comments. Envelope has designed access tracks to meet Tiaki Wai standards. The governing requirement and Envelope's response, by asset type, are set out in the table below

| ASSET TYPE       | ACCESS REQUIREMENT                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | ENVELOPE RESPONSE, BY FEATURE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
|------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Wetlands / ponds | 4 m wide access to and across the top of the wetland/pond, no steeper than 1V:5H, plus pedestrian access around the wetland. A forebay access ramp must be 4 m wide, no steeper than 1V:8H (or an accessible hardstand for a long-reach excavator on small wetlands). Inlets require the same 4 m / 1V:5H all-weather, truck-suitable access, with room for machinery, on public land or protected by an easement. A dedicated 4 m access is not automatically required at every outlet - intake-standard access applies where debris accumulation is likely or machinery-based maintenance is needed; otherwise safe pedestrian access is sufficient. | <b>Wetland A</b> <ul style="list-style-type: none"><li>Currently has 4 m wide access to and across the top, so complies.</li><li>4 m wide vehicle access to the culvert inlet at a 1 in 5 grade would be difficult, given the inlet is within the wetland. Access to the inlet is anticipated to be from the top of batter, for persons only; an excavator could also travel directly down the 1 in 2.5 batter slope to the inlet if required.</li><li>If vehicle access is essential, a bench could be designed approximately 1 m above the permanent water level; however, this would reduce the area of permanent water and of the wetland itself.</li><li>Access to the culvert outlet is anticipated to be from the top of batter, for persons only; an excavator could also travel directly down the 1 in 2.5 batter slope to the outlet if required.</li><li>If vehicle access to the culvert outlet is essential, a track could be cut into the existing contour down to the outlet; however, this would require cut batters steeper than 1 in 2 (the existing natural slope is 1 in 3), would require Geotech agreement, and would potentially compromise the existing natural wetland below Wetland A.</li></ul> |
|                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | <b>Wetland B</b> <ul style="list-style-type: none"><li>Main access is from the road; there is a 4m wide bench between RG-01 and the wetland.</li><li>Access to the inlets and outlets is anticipated to be from the top of batter, for persons only; an excavator could also travel directly down the 1 in 2 batter slope to the inlet if required.</li></ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |

#### ENVELOPE

James Smith Building, Level 1, 65 Cuba Street, Te Aro, Wellington 6011



| ASSET TYPE    | ACCESS REQUIREMENT                                                                                                                                                                                                                      | ENVELOPE RESPONSE, BY FEATURE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
|---------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|               |                                                                                                                                                                                                                                         | <b>Wetland C</b> <ul style="list-style-type: none"> <li>Has 7-8 m across the top, with the access track being 4-5 m wide, so complies.</li> <li>4m wide vehicle access to the culvert inlet at a 1 in 5 grade would be difficult, given the inlet is within the wetland. Access to the inlet is anticipated to be from the top of batter, for persons only; an excavator could also travel directly down the 1 in 2.5 batter slope to the inlet if required.</li> <li>If vehicle access is essential, a bench could be designed approximately 1 m above the permanent water level; however, this would reduce the area of permanent water and of the wetland itself.</li> <li>Vehicle access to the culvert outlet can be provided via the walkway network.</li> </ul>                                                                                                                                                                                                                                                              |
|               |                                                                                                                                                                                                                                         | <b>Wetland D</b> <ul style="list-style-type: none"> <li>The design is amended to provide 4m access to and across the top, so this will now comply.</li> <li>Access to the culvert inlet is only 1.2 m below the top, so specific vehicle access is not considered necessary.</li> <li>Access to the culvert outlet is anticipated to be from the top of batter, for persons only, as this is only a DN300 outlet; an excavator could also travel directly down the 1 in 2 batter slope to the outlet if required.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
|               |                                                                                                                                                                                                                                         | <b>Wetland E</b> <ul style="list-style-type: none"> <li>Has 5m width access across the top. Access to it is between 3.0 m and 5.0 m (part existing track, part proposed) – where existing track is present, this can be widened to a minimum of 4 m; this is already shown on the earthworks plans as “Minor Earthworks for Access Track”, so is covered.</li> <li>4m wide vehicle access to the culvert inlet at a 1 in 5 grade would be difficult, given the inlet is within the wetland. Access to the inlet is anticipated to be from the top of batter, for persons only; an excavator could also travel directly down the 1 in 3 batter slope to the inlet if required.</li> <li>If vehicle access is essential, a bench could be designed approximately 1 m above the permanent water level; however, this would reduce the area of permanent water and of the wetland itself.</li> <li>Vehicle access to the culvert outlet can be provided via the proposed easement to the covenant area south of the wetland.</li> </ul> |
| <b>Inlets</b> | All pipe/culvert intakes require an all-weather, 4 m wide access, no steeper than 1V:5H, suitable for trucks, with sufficient working space for machinery; on public land or protected by an easement. No exemption based on pipe size. | Inlet and culvert intakes are generally located within the retention wetlands, and are addressed individually in the Wetlands / ponds response above                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |



| ASSET TYPE             | ACCESS REQUIREMENT                                                                                                                                                                                                                                                                                                                                                               | ENVELOPE RESPONSE, BY FEATURE                                                                                                                                                                                                                                                                                                                                                                                                                                     |
|------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Outlets                | A dedicated 4 m access is not automatically required at every outlet. Intake-standard access (4 m / 1V:5H) applies where debris accumulation is likely or machinery-based maintenance is needed; all-weather access is required where blockage could flood property. Otherwise, safe pedestrian access is sufficient provided inspection, cleaning and renewal remain practical. | Outlets from the stormwater network discharging into the retention wetlands are releasing treated water where debris is expected to have already been captured by the upstream raingarden. These outlets sit at the base of the embankments, with very little risk of blockage or of flooding adjoining property. A 4m access is not practicable given the terrain and the low risk these outlets present; pedestrian access is available and considered suitable |
| Culverts (non-wetland) | Culvert inlets require the same access as pipe intakes: 4 m wide, maximum 1V:5H, all-weather and truck-suitable, with sufficient space for machinery to remove debris. Full vehicle access to the outlet is only clearly required where debris or machinery-based maintenance is expected. Grilles are generally unnecessary unless there is a specific safety risk.             | A 4m wide 1V:5H access track can be provided to Culvert P38 Inlet.<br>Culvert P39 Inlet Invert level is 1.5m below the access track level, so specific vehicle access is not considered necessary.                                                                                                                                                                                                                                                                |



| ASSET TYPE  | ACCESS REQUIREMENT                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | ENVELOPE RESPONSE, BY FEATURE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
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| Raingardens | <p>Raingardens over 100 m<sup>2</sup> require vehicle access along at least 50% of the perimeter, including access to any dedicated inlet sediment deposition areas. For raingardens under 100 m<sup>2</sup>, no specific vehicle-access width, grade or perimeter-access requirement is prescribed. However, safe and practical access must be maintained to the raingarden and its inlets, outlets, overflows and underdrain inspection or flushing points. This may be provided from an adjoining road, hardstand or suitable shared path rather than a dedicated access track.</p> | <p>The raingarden access arrangements are considered suitable and consistent with Tiaki Wai's requirements. Raingardens exceeding 100 m<sup>2</sup> have vehicle access to approximately 50% or more of their perimeter, including from adjoining roads, reserves, trafficable paths and maintenance benches. Raingardens under 100 m<sup>2</sup> remain accessible for routine inspection and maintenance but are not subject to the specified 50% vehicle-access requirement. Final track widths, grades and construction details can be confirmed at Engineering Approval.</p> <p>RG-01 – Over 50% access via Road 01 and 3m wide access on North side of RG<br/> RG-02 – under 100m2<br/> RG-03 – Over 50% access via 3m wide walkway/trail<br/> RG-04 – Over 50% access via 3m wide walkway/trail and bench along Northern side.<br/> RG-05 – 50% access via Reserve and Road 13<br/> RG-06 – 40% via 3m wide bench and a further ~30% via 2m wide bench<br/> RG-07 – approx. 50% access via 3m wide bench<br/> RG-08 – approx. 50% access via 3m wide bench<br/> RG-09 – Over 50% Access via Road 05, and Access to Wetland D and 2m wide bench along Western side<br/> RG-10 – Under 100m2<br/> RG-11 – Under 100m2<br/> RG-12 – approx. 40% access via 3m wide walkway and 3m wide bench part way along eastern side with additional 21% access via 2m wide bench along NE side. Access also possible along SW side although cross-slope of 1:6.<br/> RG-13 – over 50% access via 3m wide bench along East &amp; South side<br/> RG-14 – Under 100m2<br/> RG-15 – approx. 50% access via 3m wide walkway/trail<br/> RG-16 – Under 100m2<br/> RG-17 – Over 50% access via 3m wide walkway/trail and bench along North side<br/> RG-18 – Under 100m2<br/> RG-19 – Under 100m2<br/> RG-20 – Over 50% access via bench on East &amp; South side<br/> RG-21 – Over 50% access via 3m wide bench along North &amp; East side as well as Road 20<br/> RG-22 – Over 50% access via Road 20, 3m wide bench along SE side and 2m wide bench along Western side<br/> RG-23 – approx. 42% access via 3m wide bench along West and North West side with additional access via Road 20 &amp; 25 at higher level.<br/> RG-24 – Over 50% access via Reserve and 2m wide bench on Western side<br/> RG-25 – approx. 50% access via 3m wide bench along West &amp; North (incorporating the walkway/trail) side<br/> RG-26, RG-27 &amp; RG-28 Under 100m2<br/> RG-29 – Over 50% access via 3-4m wide bench along West and South sides.</p> |

