



Shelly Bay Road Upgrades

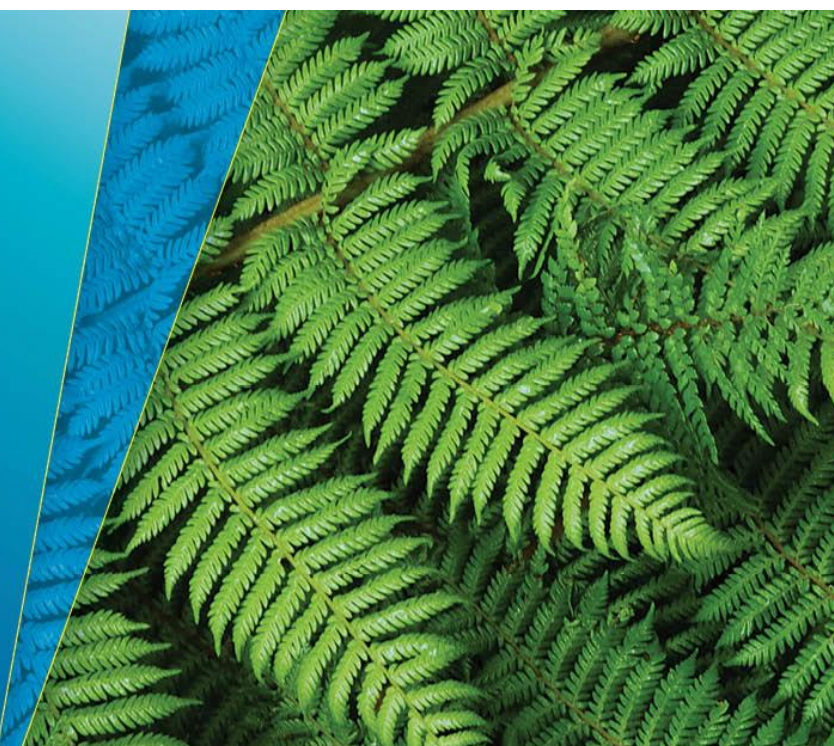
Additional opportunities: Feasibility assessment

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Table of contents

| | | |
|------------|--|----|
| 1 | Introduction | 1 |
| | 1.1 Project purpose | 1 |
| | 1.2 Project area | 2 |
| 2 | Background | 3 |
| | 2.1 Site context | 3 |
| | 2.2 Shelly Bay development | 3 |
| | 2.2.1 Trip generation | 3 |
| | 2.2.2 Required works on Shelly Bay Road under the consent | 4 |
| | 2.2.3 Development agreement | 5 |
| | 2.3 T+T options assessment report | 5 |
| 3 | Corridor improvements | 5 |
| | 3.1 Options previously considered | 6 |
| | 3.2 Interventions considered in this report | 6 |
| | 3.2.1 Reduced speed limit | 7 |
| | 3.2.2 Traffic calming | 7 |
| | 3.2.3 Pedestrian crossings | 8 |
| | 3.2.4 Wider path | 9 |
| | 3.2.5 Path protection | 9 |
| | 3.2.6 Planting | 9 |
| | 3.2.7 Fall from heights protection | 10 |
| | 3.2.8 Path markings and textures | 11 |
| | 3.2.9 Seating and pause points | 11 |
| | 3.2.10 Historical and cultural design elements and conveying cultural narratives | 12 |
| | 3.2.11 Improved access to the water's edge | 12 |
| | 3.2.12 Parking | 12 |
| | 3.3 Width requirements | 13 |
| | 3.4 Outcomes | 13 |
| 4 | Feasibility assessment: available corridor width | 14 |
| | 4.1 Base information | 14 |
| | 4.2 Assessment parameters | 14 |
| | 4.3 Limitations | 15 |
| | 4.4 Results | 15 |
| 5 | Next steps | 16 |
| 6 | Applicability | 18 |
| Appendix A | Drawings: Feasibility assessment | |

1 Introduction

A resource consent has been granted to The Wellington Company Limited (The Wellington Company) for a housing and public space development at Shelly Bay. The resource consent included works to upgrade Shelly Bay Road. Wellington City Council (WCC) has entered into a development agreement with The Wellington Company, under which WCC has an opportunity to progress road upgrade works that improve upon the minimum consented road works.

Tonkin & Taylor Ltd (T+T) have been engaged by WCC to explore opportunities to provide transport and amenity improvements as an addition to the consented road works. This report outlines those improvement opportunities and locations where local widening could be achieved to accommodate the improvements. This work has been carried out in accordance with T+T's offer of service dated 25 July 2022.

1.1 Project purpose

The resource consent granted to The Wellington Company included works to upgrade Shelly Bay Road, comprising a 6 m-wide carriageway (two 3 m-wide traffic lanes) and a 1.0 to 1.5 m-wide width for use by pedestrians and cyclists (referred to as the minimum consented road works). At a Council meeting on 27 September 2017, Wellington City Councillors resolved that Council officers were to further investigate the upgrade of Shelly Bay Road, "comprising options that more closely align to Waka Kotahi New Zealand Transport Agency (Waka Kotahi) guidance as a minimum and the Great Harbour Way plan as an aspiration."

WCC has entered into a development agreement with The Wellington Company. Under the agreement, there is a constraint on the timeframe to upgrade the road in order to meet the developer's resource consent requirements. The key commercial terms specify that Council have 24 months from the execution of the agreement (December 2021) to "make significant progress toward delivering the road."

In response to the Council resolution, T+T was engaged to prepare an options assessment report (*Shelly Bay Road Upgrades: Options Assessment Report*, version 3 issued June 2022). That assessment found that, given the timeframe restrictions, there are no options to upgrade the Shelly Bay Road that both meet minimum Waka Kotahi standards and could be delivered within the consent timeframes.

Councillors have now requested that Council officers consider opportunities that provide a road environment that improves upon the minimum consented road works, but do not necessarily meet Waka Kotahi minimum guidance. In response to this request, this report provides a feasibility assessment that has been carried out in two stages:

- 1 Identification of transport and amenity improvements that can be made as an addition to the minimum consented road works. The assessment has not considered improvements other than transport and amenity improvements (for example, improvements such as ecological enhancement or increasing the resiliency of the road).
- 2 Identification of locations where there is opportunity for local widening beyond the consented corridor, considering two scenarios:
 - a Widening opportunities without the need for additional structures; and
 - b Widening opportunities with the strategic integration of structures to provide additional width without significant cost or triggering the need for an additional resource consent.

This report is not a technical assessment of:

- The suitability of Shelly Bay Road to provide access to the development (both during construction and after the development is completed); or
- The effects of traffic associated with the Shelly Bay development (both construction traffic and increased traffic volumes once the development is completed) on Shelly Bay Road or the wider road network.

1.2 Project area

The project route under assessment is approximately 2.3 km long, extending along Shelly Bay Road. The southern extent of the project is the Miramar Avenue/Cobham Drive intersection, not including the intersection. The northern extent of the route is the southern end of Shelly Bay, not including the bay itself. The extent of the project area is as shown in Figure 1.1.



Figure 1.1: Project area (project route shown in red; coastal areas outside of the project scope are highlighted in yellow)

2 Background

2.1 Site context

The project route is a 2.3 km length of Shelly Bay Road along the Wellington Harbour coastline. The width of the existing formed road varies between approximately 6 m and 7 m, with two traffic lanes (one in each direction) and short sections of narrow shoulders. There is a footpath on the western side of the road from the Miramar Avenue/Cobham Drive intersection for a length of approximately 450 m. Beyond this, there are no provisions for pedestrians or cyclists. The road is constrained by the existing topography, with the coast located immediately to the west and steep hillside to the east.

In February 2019, the average daily traffic flow on Shelly Bay Road was approximately 2,540 vehicles per day. In January 2022, following extended periods of COVID-19 restrictions and lockdowns that have had an impact on daily traffic movements, the average daily traffic flow had reduced to approximately 2,000 vehicles per day. On average, the vehicle volumes on weekends are higher than on weekdays; the weekday versus weekend traffic flows are provided in Table 2.1.

Table 2.1: Average daily traffic (ADT) flow and vehicle speed¹

| Time period | Weekday ADT | Weekend ADT | 7-day ADT | 7-day 85 th percentile speed |
|---------------|-------------|-------------|-----------|---|
| February 2019 | 2,060 | 3,760 | 2,540 | 50 km/h |
| January 2022 | 1,930 | 2,170 | 2,000 | 47 km/h |

The long-term impact of restrictions and lockdowns on traffic volumes is not yet fully understood; therefore, for our assessment process we have considered the traffic volumes from both 2019 and 2022.

2.2 Shelly Bay development

At Shelly Bay, located at the northern extent of the Shelly Bay Road project area, there is a relatively flat area between the coast and the steep slopes where Shelly Bay wharf and former Royal New Zealand Air Force buildings and structures are located. In 2017², a resource consent was granted to The Wellington Company to redevelop properties at this location. Currently, access to the site is primarily from the south, via Shelly Bay Road.

We have not completed a technical assessment of the effects of the development on the road network, including the suitability of Shelly Bay Road to access the development site. This was assessed in a transport assessment report³ for the development, completed by Stantec in 2019.

All of the information we have provided about the development has been sourced from publicly available documents.

2.2.1 Trip generation

The Wellington Company's proposal will see the subdivision of the site to provide residential accommodation, a boutique hotel, commercial and community activities, and public open spaces. Plans for the development include up to 352 new residential units, consisting of multi-level

¹ Vehicle volumes and speeds sourced from WCC traffic count data

² A resource consent was issued to The Wellington Company in 2017. In 2018, the Court of Appeal repealed the resource consent. Documentation was lodged for the reconsideration of the resource consent, and the consent was approved again in 2019.

³ *Transportation Assessment Report: Shelly Bay Masterplan* (Stantec, April 2019)

apartment buildings, townhouses, and individual dwellings. The development will generate increased travel demand on Shelly Bay Road to access the site.

In their transport assessment report from 2019, Stantec estimated the projected increase in motor vehicle trips that the development would generate. The assessment considered the effects of site traffic from the development on Shelly Bay Road and Miramar Avenue. In the assessment, Stantec found that the development would increase motor vehicle volumes by around 3,500 vehicles per day, resulting in traffic volumes of 5,500 to 6,040 vehicles per day⁴ on Shelly Bay Road. Their assessment concluded that Shelly Bay Road would be able to accommodate this increased traffic flow without requiring any upgrades for vehicle traffic.

In the report, Stantec anticipated that the proposed upgrade to Shelly Bay Road would support an increase in active mode demand on Shelly Bay Road (with the provision of a “dedicated shared pedestrian and cycle path” along the route). However, their trip generation assessment did not provide projected pedestrian and cyclist volumes based on the impacts from the development.

2.2.2 Required works on Shelly Bay Road under the consent

As part of the resource consent granted for the development, there is a requirement for the developer to complete road works on Shelly Bay Road. In 2016, Calibre prepared a service feasibility report⁵ for WCC to confirm the ability to appropriately service the proposed development at Shelly Bay. As a part of their study, Calibre assessed the current road access to Shelly Bay. They stated that, following the construction of the Shelly Bay development, “the primary function of [Shelly Bay Road] would be to ‘move,’ so only needs to have traffic lanes and appropriately allow for pedestrian/cycle traffic.”

In concept plans for Shelly Bay Road, Calibre allowed for two 3 m-wide traffic lanes and a 1.0 to 1.5 m-wide “pedestrian/cycle lane” as a minimum requirement. They concluded that, while the specified design may not be compliant with the WCC Code of Practice, it would “be of a scale and standard that sufficiently and appropriately caters for the development proposal.” This concept design represents the minimum required road works on Shelly Bay Road under the resource consent for the development, illustrated in Figure 2.1.

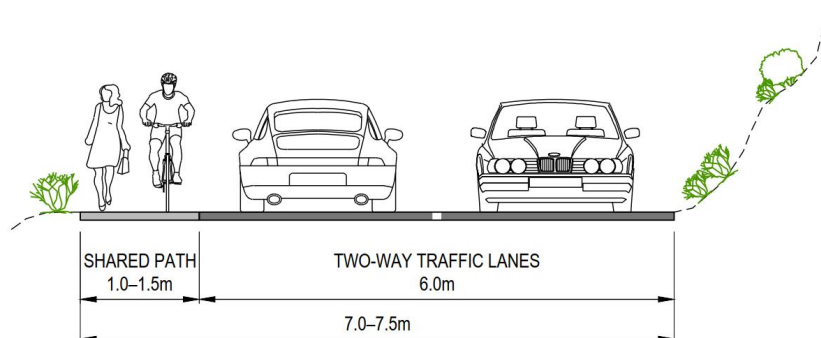


Figure 2.1: Indicative cross section of the minimum consented road works for the development

In April 2019, Stantec completed a transport assessment of the proposed development for The Wellington Company. In the report, they concluded that improvements were warranted on Shelly Bay Road to improve amenity for pedestrians and cyclists (for both existing users and future demand generated by the development). Stantec referred to the servicing feasibility report prepared by Calibre for the recommended pedestrian and cyclist improvements.

⁴ Based on vehicle volumes recorded in February 2019 and January 2022

⁵ *Shelly Bay, Wellington: Servicing Feasibility* (Calibre Consulting, September 2016)

In July 2019, Envelope Engineering prepared a memo⁶ for The Wellington Company on engineering matters, which included an updated set of preliminary design plans for the road upgrades based on Calibre's concept plans. The memo stated that discussions to date had indicated the path would be crushed gravel/chip and that no kerb was proposed to allow stormwater to continue to run off the existing road.

2.2.3 Development agreement

WCC has entered into a development agreement with The Wellington Company, under which:

- The developer has agreed not to commence its consented road works until Council has completed a community engagement process and come to a decision about the upgrade of the road;
- If Council decides to progress road upgrade works that differ from the developer's consented road upgrade, Council must notify the developer. The delivery of the road works will need to occur within specific timeframes so that Council's road works meet the requirements of the developer's resource consent; and
- If Council decides to do a road upgrade that is not feasible within the timeframes required under the consent, the developer will proceed with its consented road upgrade and Council will need to complete its road works afterwards.

As such, the developer's resource consent and the development agreement place a constraint on the timeframe for the road upgrade.

2.3 T+T options assessment report

In response to Wellington City Councillors' resolution to further investigate the upgrade of Shelly Bay Road, "comprising options that more closely align to Waka Kotahi guidance as a minimum and the Great Harbour Way plan as an aspiration," T+T was engaged to prepare an options assessment report (*Shelly Bay Road Upgrades: Options Assessment Report*, version 3 issued June 2022).

That assessment found that any option that would require significant widening of the road corridor would have significant effects on delivery timeframes due to increased consent requirements and design complexity compared to the consented works. Additionally, any option that would not meet the requirements for the minimum consented road works (for example, only one traffic lane instead of two) would need to be reconsented and would also push out beyond the delivery timeframes. Both of these scenarios would push delivery timeframes beyond those specified under the development agreement.

Given these restrictions, the report found that there were no options that both met minimum Waka Kotahi standards and could be delivered within the development agreement timeframes. The conclusion was that any upgrade above and beyond the minimum consented road works would need to be completed after the developer has completed their consented road upgrade.

3 Corridor improvements

This assessment considers options to improve the Shelly Bay Road corridor that meet the following conditions:

- Options that would improve the environment on Shelly Bay Road to make it safer and more inviting for pedestrians, cyclists, and other road users. The assessment was limited to consideration of transport and amenity improvements for road users. It did not consider

⁶ *Memo: Response on engineering matters – Minute 5 Shelly Bay* (Envelope Engineering, July 2019)

improvements outside of this scope, such as providing ecological enhancements or increasing the resilience of the road.

- Options that can be implemented as an addition to the minimum consented works being delivered by the developer. The assessment did not consider options that would fundamentally alter the road facility being delivered by the developer.

3.1 Options previously considered

In a previous phase of work, T+T completed an assessment that considered options to provide an environment on Shelly Bay Road that would be safer and more inviting for pedestrians, cyclists, and other road users. The options considered various cross section arrangements for the corridor that would meet Waka Kotahi minimum standards. The options included a combination of the following facilities:

- Footpath and cycle lanes
- Separated path
- Shared path
- Footpath only with shared traffic lanes for cyclists
- Two-way unrestricted traffic lanes
- Time-restricted traffic lanes
- Traffic lanes with pinch points (one-way traffic-calming devices)
- One one-way traffic lane
- One one-way traffic lane with tidal flow
- No traffic lanes (i.e., road closed to motor traffic)

The full assessment, including all the options that were considered, is documented in *Shelly Bay Road Upgrades: Options Assessment Report* (version 3 issued June 2022).

3.2 Interventions considered in this report

This assessment includes identification of transport and amenity improvements that can be made as an addition to the minimum consented road works being delivered by the developer. The types of interventions considered included:

- Safety interventions that can be applied along the whole length of the corridor
- Safety interventions that are applied at localised points
- Amenity improvements
- Improvements to provide better access to and through the corridor area

The following are the interventions that were identified:

- Reduced speed limit
- Traffic calming
- Pedestrian crossings
- Wider path
- Path protection
- Planting
- Fall from heights protection
- Path markings and textures

- Seating and pause points
- Historical and cultural design elements
- Improved access to the water's edge
- Parking

The sections below provide descriptions of these interventions and examples of how they may be implemented.

3.2.1 Reduced speed limit

The current speed limit on Shelly Bay Road is 40 km/h. However, the 85th percentile speed on the road is 47 km/h⁷. There is an opportunity to reduce the speed limit to 30 km/h in conjunction with other speed reducing measures (see Section 3.2.2 below). Lower speeds provide a safer environment for all road users, in particular vulnerable users like pedestrians and cyclists. They also help to make roads a more pleasant and relaxed place for everyone.

3.2.2 Traffic calming

Traffic calming uses design tools to reduce traffic speeds and restrict the flow of traffic. There is already some existing traffic calming on Shelly Bay Road in the form of speed cushions. However, these measures are limited and are not achieving the desired motor vehicle speeds. The following additional tools could be used to further reduce vehicle speeds:

- Pinch points: Pinch points slow down motor vehicles by restricting the road to a single lane for short sections. This requires opposing drivers to take turns passing through. The operation is similar to a one-way bridge. See Figure 3.1 for an example diagram of a pinch point using traffic islands.
- Vertical deflection: Vertical changes in the road encourage drivers to slow down. The vertical deflection tools could include speed bumps, raised tables, and/or additional speed cushions. See Figure 3.2 for an example of a vertical deflection device.

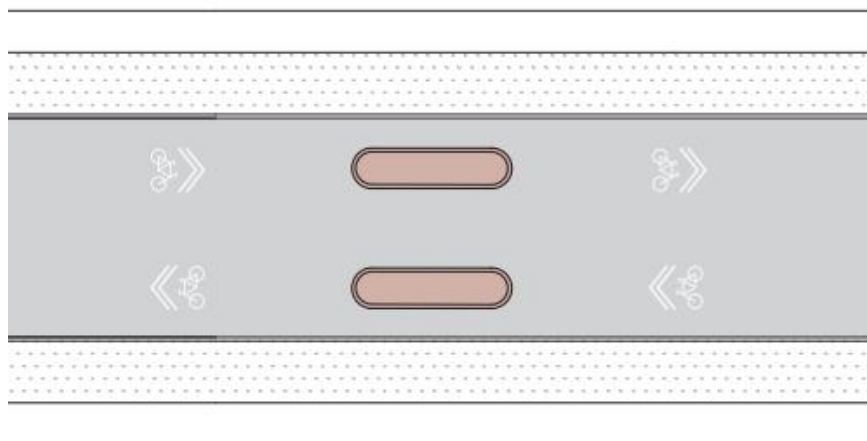


Figure 3.1: Example diagram of a pinch point using traffic islands to narrow the road width, leaving a bypass for cyclists (Source: Auckland Transport, Local Path Design Guide)

⁷ Vehicle speeds from January 2022, sourced from WCC traffic count data



Figure 3.2: Example of vertical deflection (Source: Waka Kotahi, Cycling Network Guidance)

3.2.3 Pedestrian crossings

The main facility for pedestrians will be a path located along the seaward side of the road. This provides better access to the coast and aligns with the vision for the Great Harbour Way to provide a route immediately beside the harbour edge. However, there are some facilities located on the landward side of the corridor, such as recreational paths and properties, where there is a desire for pedestrians to cross the road. Formal pedestrian crossings could be provided at these locations; further assessment would be needed to determine safe placement of crossing points and the most appropriate crossing type.



Figure 3.3: Example of a pedestrian zebra crossing (Source: Waka Kotahi, Pedestrian Network Guidance)

3.2.4 Wider path

The path is constrained to a width of 1.0 to 1.5 m, as per the consent minimum requirements. Waka Kotahi guidance⁸ specifies that the absolute minimum wider for a recreational shared path is 3.0 m. This provides sufficient width for path users to safely pass each other. Where more width is available, the path could be widened to provide more space for people using it.

3.2.5 Path protection

The minimum consented road works propose a shared path flush with the road and no physical separation from the motor traffic, such as a kerb or some other physical separator. A physical separator between the path and motor traffic would provide protection for path users and restrict motor vehicles from entering the path, improving the safety of the path.

Physical separation can be provided through a vertical separation between the path and the road (for example, a kerb) or a horizontal raised separator. No kerb is proposed for the developer's road upgrade to allow stormwater to continue to run off the existing road, which avoids potentially significant costs associated with constructing a new stormwater system. Instead, horizontal separators would be more suitable for the Shelly Bay Road coastal environment as they can be designed with gaps to accommodate stormwater flow.

In accordance with Waka Kotahi guidance, a minimum width of 0.75 m would be needed for a horizontal separator. This provides sufficient width for a narrow separator (0.3 m), shy space⁹ for cyclists (0.25 m), and shy space for motor vehicles (0.2 m).



Figure 3.4: Example physical separators to provide protection (Source: Waka Kotahi, Cycling Network Guidance)

3.2.6 Planting

Where extra width remains, this space could be filled with additional coastal vegetation to enhance the natural environment. The planting could also be placed between the path and the motor traffic to serve as a physical separator (refer Section 3.2.5).

⁸Waka Kotahi, Cycling Network Guidance

⁹ Raised separators create a "shy space" for road users. Cyclists and drivers travelling next to a raised separator will give the edge of the separator a wide berth. For separators 50-600mm high, Waka Kotahi guidance recommends allowing an extra 0.25m of path width for cyclist shy space and at least an extra 0.2m for motor vehicle shy space.



Figure 3.5: Example of coastal planting (Source: Wellington City Council)

3.2.7 Fall from heights protection

On some sections of Shelly Bay Road, the developer's proposed path will be next to a coastal edge with a vertical drop from the path to the ground (for example, where the path is on top of a seawall). This creates a fall hazard for pedestrians and cyclists on the path. Where there is a vertical drop, fall from heights protection can be provided to reduce the risk to path users. There are multiple treatments that can be used to provide fall protection, such as clear zones, walls, and barrier fences.

The required width to provide fall from height protection varies depending on the treatment. The treatment option that would require the least amount of width would be to install a barrier. This would require approximately 0.5 m of additional width, which would include a 0.3 m clearance width from the barrier for cyclists¹⁰.



Figure 3.6: Example of fall from heights protection on a path (Source: 100% Pure New Zealand)

¹⁰ Austroads, Guide to Road Design Part 6A: Paths for Walking and Cycling

3.2.8 Path markings and textures

Using pavement markings and varying textures on paths can give road users important information to support the transport movements and indicate the intended use of space. They can help to delineate space for different modes of transport, indicate priority, and assist in minimising conflict between road users. Different pavement marking and textures could be used on the road corridor to help define road space.



Figure 3.7: Example of pavement markings and textures on a shared path (Source: Waka Kotahi, Cycling Network Guidance)

3.2.9 Seating and pause points

Where space allows, seating and pause points could be provided for people to stop and rest along Shelly Bay Road. These rest areas could include things such as benches, seating walls, and lookout areas.



Figure 3.8: Example pause point (Source: Wellington City Council)

3.2.10 Historical and cultural design elements and conveying cultural narratives

Shelly Bay has a rich history, from when mana whenua first settled to its role as a defence base. There are opportunities to share these stories along the path and/or reflect the cultural aspects of the area into the design of the path. This could be achieved through a combination of design elements integrated into the path (such as markings and engravings) and physical features added along the road corridor (such as interpretation panels and sculptures).



Figure 3.9: Example cultural design element (Source: Wellington City Council)

3.2.11 Improved access to the water's edge

The natural coastal areas along Shelly Bay Road are busy spots for recreation and connecting with the natural environment. There may be opportunities to improve access to the water's edge.



Figure 3.10: Example access to the water's edge (Source: Wellington City Council)

3.2.12 Parking

The coastline is a popular spot for recreational activities. Informal parking areas along Shelly Bay Road are well used by people accessing the water's edge. Concept plans for the consent design indicate that these informal parking areas will be removed. Where there is enough space, there may be the opportunity to retain some on-street parking.

Where parking is provided on the coastal side of the corridor, between the traffic lane and the path, a buffer space should be provided between the parking and the path. This buffer space would provide space for people entering and exiting vehicles and would mitigate the risk of car doors opening across the path, potentially in front of path users. In accordance with Waka Kotahi guidance, a minimum width of 2.6 m would be needed to accommodate parking on the coastal side of the road. This would allow for a minimum of 1.9 m for parallel parking¹¹ and 0.7 m for a buffer¹² between the parking and the path.

3.3 Width requirements

The additional width required for the identified interventions varies from no width requirements up to 2.6 m. The width required for each of the interventions is summarised in Table 3.1.

Table 3.1: Required additional corridor width for each intervention

| Intervention | Required additional corridor width |
|---|------------------------------------|
| Reduced speed limit | None |
| Traffic calming | None |
| Pedestrian crossings | None ¹ |
| Wider path | 0.1m to 2.5m + |
| Path protection | 0.75m to 1.45m |
| Planting | 0.5m + |
| Fall from heights protection | 0.5m + |
| Path markings and textures | None |
| Seating and pause points | 1m + |
| Historical and cultural design elements and conveying cultural narratives | None ² |
| Improved access to the water's edge | Varies ³ |
| Parking | 2.6m + |

1 – Pedestrian crossings require no additional width; however, a pedestrian facility (footpath, shared path, etc.) is required on both sides of the crossing.

2 – Historical and cultural design elements integrated into the path would not require additional corridor width. However, where there is additional width, physical features could be added along the corridor (such as interpretation panels and sculptures).

3 – There are multiple structures that could be constructed to provide access to the water's edge, and the structure will need to extend beyond the road corridor to provide access to the water. The required width will vary depending on multiple factors, including the type of access provided, the height difference between the path and the water's edge, etc.

3.4 Outcomes

Each of the identified interventions takes a different approach to improve the road corridor environment. Interventions were selected if they would provide better transport or amenity outcomes, which included consideration of safety, access, and amenity improvements. Table 3.2 outlines which interventions correspond to improved outcomes across these three areas of improvement.

¹¹ Waka Kotahi, Manual of Traffic Signs and Markings

¹² Waka Kotahi, Cycling Network Guidance

Table 3.2: Impacts of the interventions on the road corridor

| Intervention | Improves safety? | | Improves access? | Improves amenity? |
|---|------------------|--------------------|------------------|-------------------|
| | For path users | For motor vehicles | | |
| Reduced speed limit | ü | ü | û | ü |
| Traffic calming | ü | ü | û | ü |
| Pedestrian crossings | ü | û | ü | ü |
| Wider path | ü | û | ü | ü |
| Path protection | ü | û | û | û |
| Planting | û ¹ | û | û | ü |
| Fall from heights protection | ü | û | û | û |
| Path markings and textures | ü | û | û | û |
| Seating and pause points | û | û | ü | ü |
| Historical and cultural design elements and conveying cultural narratives | û | û | û | ü |
| Improved access to the water's edge | û | û | ü | ü |
| Parking | û | û | ü | û |

1 – Planting could improve safety for path users if it is placed between the path and the traffic lane to serve as a physical separator for path protection.

4 Feasibility assessment: available corridor width

The existing corridor width available on Shelly Bay Road varies along the length of the road. The existing formed road width varies between approximately 6 m and 7 m. The existing available corridor width (beyond the formed road) varies between 7 m and more than 10 m. A high-level feasibility assessment was undertaken to identify:

- Opportunities to widen the formed road without the need for additional structures, and;
- Opportunities to widen the formed road with the strategic integration of structures to provide additional width without significant cost or triggering the need for additional resource consent.

4.1 Base information

The following base information was used to complete the feasibility assessment of the available corridor width:

- A topographic survey of the road corridor, supplied by Spencer Holmes on 4 May 2022; and
- The most recent design of the developer's upgrade for Shelly Bay Road, supplied by Envelope Engineering in file *1098-01-SBR-300-Roading-BASEPLAN.dwg* on 22 July 2022.

4.2 Assessment parameters

The following parameters were used to assess the extent of the existing corridor width:

- The seaward side of the proposed 1.0 m-to-1.5 m-wide path was taken as the extent of works for the developer's design.

- The assessment only considered additional corridor width where it was available or could be achieved along the seaward side of the road. This is due to the following:
 - The assessment only considered interventions that could be added onto the developer's proposed design. Therefore, as the alignment of the road has been dictated by the developer's proposed design this is considered fixed for the purpose of this assessment.
 - Any interventions that require extra width would need be implemented next to or on the path on the seaward side of the road to provide value.

As a result, opportunities to gain extra corridor width by pushing landward were not considered, as it would not be beneficial or would require realignment of the road to gain the useable space on the seaward side of the road.

- When assessing the available corridor width, it was assumed that retaining structures would not be needed where there was a level difference of up to 0.2 m between the existing ground (based on available survey data) and proposed ground surface. It was assumed that the ground could be regraded to support the formed road without a retaining structure for ground level differences of this magnitude. This is a high-level assumption based on the limited available information and could vary by up to 100% or more of the assumed 0.2 m, subject to location. The uncertainties associated with this approach are outlined in Section 4.3 and further consideration will be needed through a more detailed design process.

4.3 Limitations

This feasibility assessment of the available road corridor width was high level only. At this stage, there are several unknowns and limited design considerations, which result in the following uncertainties in the assessment:

- The information supplied in the design files for the developer's design was limited to 2D information. As a result, our assessment required an estimation of the finished levels for the back of the proposed path. To estimate this, the levels for the proposed centreline were taken as the existing ground level. The back of the proposed path was estimated by applying a consistent 2% crossfall from the proposed centreline to the back of the path. However, the corridor and path may be constructed using a different crossfall than what has been assumed for this assessment;
- There is a level of inaccuracy in the topographic survey. The survey was undertaken using 3D laser scanning. Using this method, it is likely that the survey picked up vegetation in some locations that would alter the ground model extracted from the survey data;
- Ground investigations have not been carried out on Shelly Bay Road. As a result, the ground conditions are unknown, which creates uncertainty in how close the road can be constructed to the coastal edge without requiring additional structures. It is likely that in some locations the existing available corridor width is more or less than identified at this stage; and
- The existing structures supporting the coastal edge have been assumed to be in adequate condition to support the proposed works without any remediation.

4.4 Results

The results of the feasibility assessment, including how much additional width is available in planform along the corridor, are communicated on the plans provided in Appendix A. These plans show:

- The existing additional corridor width without the need for additional structures; and
- Locations where there is an opportunity to gain additional width with the strategic integration of structures without significant cost or triggering the need for additional resource consent.

The available width along the corridor has been assessed based on width bands. These ranges were selected so the lower and upper bounds of the width ranges align to the minimum widths required for different interventions. The selected width ranges are as follows:

- <0.5 m
- 0.5 m to 0.75 m
- 0.75 m to 1.0 m
- 1.0 m to 2.6 m
- >2.6 m

The achievable interventions within each width range are summarised in Table 4.1.

It is important to note that not all of the interventions achievable within a particular width range could be implemented at the same location. For example, where there is 0.5 m to 0.75 m of additional width, either path protection or fall from heights protection could be achieved; they cannot both be accommodated within the 0.5 m to 0.75 m additional width.

Table 4.1: Achievable interventions in each corridor width range

| Intervention | Intervention achievable within the width band ^{1?} | | | | |
|---|---|---------------|---------------|--------------|------|
| | <0.5m | 0.5m to 0.75m | 0.75m to 1.0m | 1.0m to 2.6m | >2.6 |
| Reduced speed limit | ü | ü | ü | ü | ü |
| Traffic calming | ü | ü | ü | ü | ü |
| Pedestrian crossings | ü | ü | ü | ü | ü |
| Wider path | ü | ü | ü | ü | ü |
| Path protection | û | ü | ü | ü | ü |
| Planting | û | ü | ü | ü | ü |
| Fall from heights protection | û | ü | ü | ü | ü |
| Path markings and textures | ü | ü | ü | ü | ü |
| Seating and pause points | û | û | û | ü | ü |
| Historical and cultural design elements and conveying cultural narratives | ü | ü | ü | ü | ü |
| Improved access to the water's edge ² | ü | ü | ü | ü | ü |
| Parking | û | û | û | û | ü |

1 – Additional width available beyond the extent of work for the developer's proposed works

2 – There are multiple structures that could be constructed to provide access to the water's edge, and the structure will need to extend beyond the road corridor to provide access to the water. The required width will vary depending on multiple factors, including the type of access provided, the height difference between the path and the water's edge, etc.

5 Next steps

At this stage, the feasibility assessment has been limited to identifying what improvements could be made and the potential locations where they could be accommodated. This assessment did not include consideration of which interventions should be implemented and where they should be. If WCC decides to progress this work and provide upgrades to the consented works being delivered by the developer, the next steps will be to identify the following:

- Which interventions should be implemented to best achieve WCC's desired outcomes for Shelly Bay Road; and
- Where the interventions should be implemented.

These decisions will be subject to project objectives, timeframe constraints, and budget limitations. Further detail will be required to have more certainty in the available corridor width, which will likely require site investigations.

6 Applicability

This report has been prepared for the exclusive use of our client Wellington City Council, with respect to the particular brief given to us and it may not be relied upon in other contexts or for any other purpose, or by any person other than our client, without our prior written agreement.

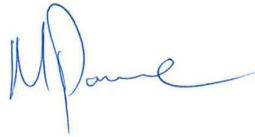
Tonkin & Taylor Ltd
Environmental and Engineering Consultants

Report prepared by:



.....
Janine Sziklasi
Transportation Engineer

Report reviewed by:



.....
Michael Paine
Senior Civil and Coastal Engineer

Report reviewed by:



.....
James Dyer
Principal Transport Planner

Authorised for Tonkin & Taylor Ltd by:



.....
Chris Purchas
Project Director

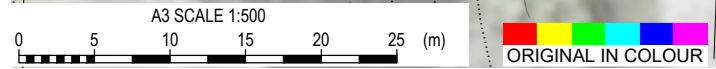
JASZ
\\ttgroup.local\corporate\wellington\tt projects\1014113\1014113.3000\issueddocuments\20220819 1014113.3000_shelly bay road
upgrades_additional opportunities - feasibility assessment _v3.docx

Appendix A Drawings: Feasibility assessment

- T+T drawings 1014113.3000_110-122



NOTES:
 1. CORRIDOR WIDENING WORKS MAY REQUIRE THE INSTALLATION, UPGRADE, OR REPLACEMENT OF EXISTING EDGE PROTECTION ON THE SEAWARD SIDE OF THE ROAD CORRIDOR.
 2. ALL DIMENSIONS IN METRES UNLESS NOTED OTHERWISE.
 3. AERIAL PHOTO SOURCED FROM WELLINGTON 0.10m URBAN AERIAL PHOTOS (2017), LICENSED BY LINZ FOR RE-USE UNDER THE CREATIVE COMMONS ATTRIBUTION 4.0 NEW ZEALAND LICENCE (CC BY 4.0). ACCESSED 05/06/2020.
 4. COORDINATE DATUM: NZGD2000, NEW ZEALAND TRANSVERSE MERCATOR (NZTM2000).
 VERTICAL DATUM: NEW ZEALAND VERTICAL DATUM (NZVD2016).
 5. TOPO SURVEY SUPPLIED BY SPENCER HOLMES. REF FILE S22-0137-T1A.dwg. RECEIVED 04/05/2022.
 6. DEVELOPER'S DESIGN SUPPLIED BY ENVELOPE ENGINEERING. REF FILE 1098-01-SBR-300-Roading-BASEPLAN.dwg. DATED 25/07/2021. REV P1. RECEIVED 25/07/2022.

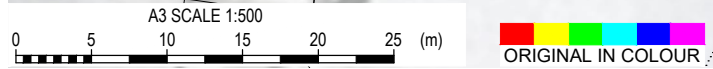


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|--------------------------|------|----------|
| PROJECT No. 1014113.3000 | | |
| DESIGNED | JASZ | Aug.22 |
| DRAWN | LIWA | Aug.22 |
| CHECKED | MAPP | 19.08.22 |
| C.PURCHAS | | 19.08.22 |
| APPROVED | DATE | |

| | | | |
|------------|---|---------|-------------------|
| CLIENT | WELLINGTON CITY COUNCIL | | |
| PROJECT | SHELLY BAY ROAD, MAUPUIA | | |
| TITLE | ADDITIONAL OPPORTUNITIES: FEASIBILITY ASSESSMENT SITE PLAN - SHEET 1 OF 13 | | |
| SCALE (A3) | 1:500 | FIG No. | 1014113.3000-F110 |
| REV | 1 | | |



- NOTES:
- CORRIDOR WIDENING WORKS MAY REQUIRE THE INSTALLATION, UPGRADE, OR REPLACEMENT OF EXISTING EDGE PROTECTION ON THE SEAWARD SIDE OF THE ROAD CORRIDOR.
 - ALL DIMENSIONS IN METRES UNLESS NOTED OTHERWISE.
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VERTICAL DATUM: NEW ZEALAND VERTICAL DATUM (NZVD2016).
 - TOPO SURVEY SUPPLIED BY SPENCER HOLMES. REF FILE S22-0137-T1A.dwg. RECEIVED 04/05/2022.
 - DEVELOPER'S DESIGN SUPPLIED BY ENVELOPE ENGINEERING. REF FILE 1098-01-SBR-300-Roading-BASEPLAN.dwg. DATED 25/07/2021. REV P1. RECEIVED 25/07/2022.

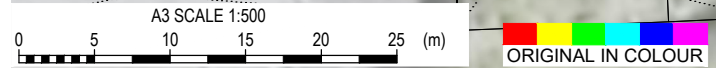


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|--------------------------|------|----------|
| PROJECT No. 1014113.3000 | | |
| DESIGNED | JASZ | Aug.22 |
| DRAWN | LIWA | Aug.22 |
| CHECKED | MAPP | 19.08.22 |
| C.PURCHAS | | 19.08.22 |
| APPROVED | DATE | |

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|------------|---|---------|-------------------|
| CLIENT | WELLINGTON CITY COUNCIL | | |
| PROJECT | SHELLY BAY ROAD, MAUPUA | | |
| TITLE | ADDITIONAL OPPORTUNITIES: FEASIBILITY ASSESSMENT SITE PLAN - SHEET 2 OF 13 | | |
| SCALE (A3) | 1:500 | FIG No. | 1014113.3000-F111 |
| REV | | | 1 |



NOTES:
 1. CORRIDOR WIDENING WORKS MAY REQUIRE THE INSTALLATION, UPGRADE, OR REPLACEMENT OF EXISTING EDGE PROTECTION ON THE SEAWARD SIDE OF THE ROAD CORRIDOR.
 2. ALL DIMENSIONS IN METRES UNLESS NOTED OTHERWISE.
 3. AERIAL PHOTO SOURCED FROM WELLINGTON 0.10m URBAN AERIAL PHOTOS (2017), LICENSED BY LINZ FOR RE-USE UNDER THE CREATIVE COMMONS ATTRIBUTION 4.0 NEW ZEALAND LICENCE (CC BY 4.0). ACCESSED 05/06/2020.
 4. COORDINATE DATUM: NZGD2000, NEW ZEALAND TRANSVERSE MERCATOR (NZTM2000).
 VERTICAL DATUM: NEW ZEALAND VERTICAL DATUM (NZVD2016).
 5. TOPO SURVEY SUPPLIED BY SPENCER HOLMES. REF FILE S22-0137-T1A.dwg. RECEIVED 04/05/2022.
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| PROJECT No. 1014113.3000 | | |
| DESIGNED | JASZ | Aug.22 |
| DRAWN | LIWA | Aug.22 |
| CHECKED | MAPP | 19.08.22 |
| C.PURCHAS | | 19.08.22 |
| APPROVED | DATE | |

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|------------|---|---------|-------------------|
| CLIENT | WELLINGTON CITY COUNCIL | | |
| PROJECT | SHELLY BAY ROAD, MAUPTIA | | |
| TITLE | ADDITIONAL OPPORTUNITIES: FEASIBILITY ASSESSMENT SITE PLAN - SHEET 3 OF 13 | | |
| SCALE (A3) | 1:500 | FIG No. | 1014113.3000-F112 |
| REV | 1 | | |



LEGEND

- PROPERTY BOUNDARY
- - - 25 --- GROUND CONTOURS (25.0m)
- GROUND CONTOURS (5.0m)
- - - - - MHWS (0.5m NZVD2016)

EXISTING

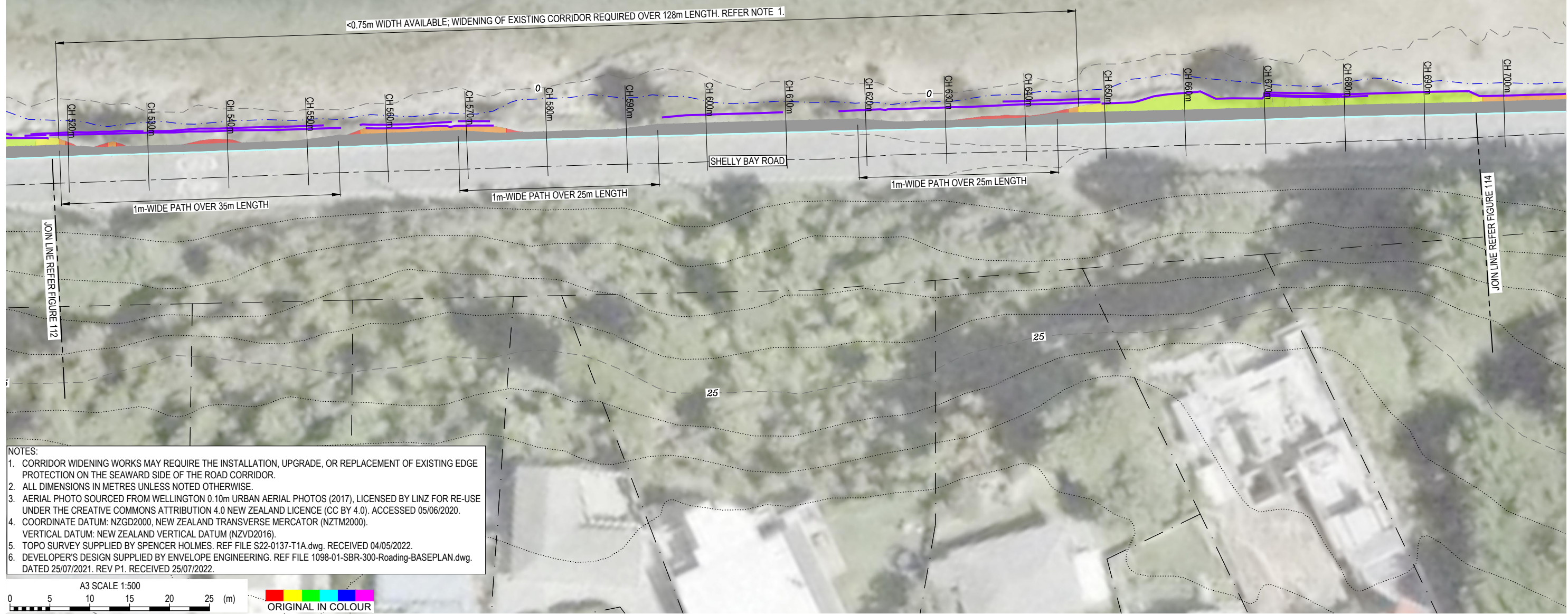
- EXISTING TOP OF KERB
- EXISTING SEAWALL

DEVELOPER'S PROPOSED DESIGN

- PROPOSED WHITE EDGE LINE
- PROPOSED PATH

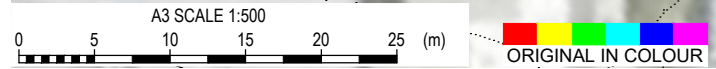
AVAILABLE CORRIDOR WIDTH

- <0.5m
- 0.5m - 0.75m
- 0.75m - 1.0m
- 1.0m - 2.6m
- >2.6m



NOTES:

1. CORRIDOR WIDENING WORKS MAY REQUIRE THE INSTALLATION, UPGRADE, OR REPLACEMENT OF EXISTING EDGE PROTECTION ON THE SEAWARD SIDE OF THE ROAD CORRIDOR.
2. ALL DIMENSIONS IN METRES UNLESS NOTED OTHERWISE.
3. AERIAL PHOTO SOURCED FROM WELLINGTON 0.10m URBAN AERIAL PHOTOS (2017), LICENSED BY LINZ FOR RE-USE UNDER THE CREATIVE COMMONS ATTRIBUTION 4.0 NEW ZEALAND LICENCE (CC BY 4.0). ACCESSED 05/06/2020.
4. COORDINATE DATUM: NZGD2000, NEW ZEALAND TRANSVERSE MERCATOR (NZTM2000).
VERTICAL DATUM: NEW ZEALAND VERTICAL DATUM (NZVD2016).
5. TOPO SURVEY SUPPLIED BY SPENCER HOLMES. REF FILE S22-0137-T1A.dwg. RECEIVED 04/05/2022.
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| PROJECT No. 1014113.3000 | | CLIENT WELLINGTON CITY COUNCIL |
| DESIGNED JASZ Aug.22 | DRAWN LIWA Aug.22 | PROJECT SHELLY BAY ROAD, MAUPUIA |
| CHECKED MAPP 19.08.22 | C.PURCHAS 19.08.22 | TITLE ADDITIONAL OPPORTUNITIES: FEASIBILITY ASSESSMENT SITE PLAN - SHEET 4 OF 13 |
| APPROVED | DATE | SCALE (A3) 1:500 |
| | | FIG No. 1014113.3000-F113 |
| | | REV 1 |



LEGEND

- PROPERTY BOUNDARY
- - - 25 --- GROUND CONTOURS (25.0m)
- GROUND CONTOURS (5.0m)
- - - - - MHWS (0.5m NZVD2016)

EXISTING

- EXISTING TOP OF KERB
- EXISTING SEAWALL

DEVELOPER'S PROPOSED DESIGN

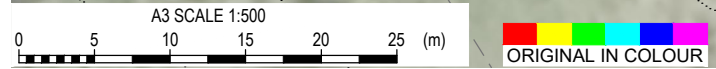
- PROPOSED WHITE EDGE LINE
- PROPOSED PATH

AVAILABLE CORRIDOR WIDTH

- <0.5m
- 0.5m - 0.75m
- 0.75m - 1.0m
- 1.0m - 2.6m
- >2.6m



- NOTES:**
1. CORRIDOR WIDENING WORKS MAY REQUIRE THE INSTALLATION, UPGRADE, OR REPLACEMENT OF EXISTING EDGE PROTECTION ON THE SEAWARD SIDE OF THE ROAD CORRIDOR.
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| DESIGNED | JASZ | Aug.22 | PROJECT SHELLY BAY ROAD, MAUPUIA | | |
| DRAWN | LIWA | Aug.22 | | | |
| CHECKED | MAPP | 19.08.22 | | | |
| C.PURCHAS 19.08.22 | | | TITLE ADDITIONAL OPPORTUNITIES: FEASIBILITY ASSESSMENT SITE PLAN - SHEET 5 OF 13 | | |
| APPROVED DATE | | | SCALE (A3) 1:500 | FIG No. 1014113.3000-F114 | REV 1 |



LEGEND

- PROPERTY BOUNDARY
- - - 25 --- GROUND CONTOURS (25.0m)
- GROUND CONTOURS (5.0m)
- - - - - MHWS (0.5m NZVD2016)

EXISTING

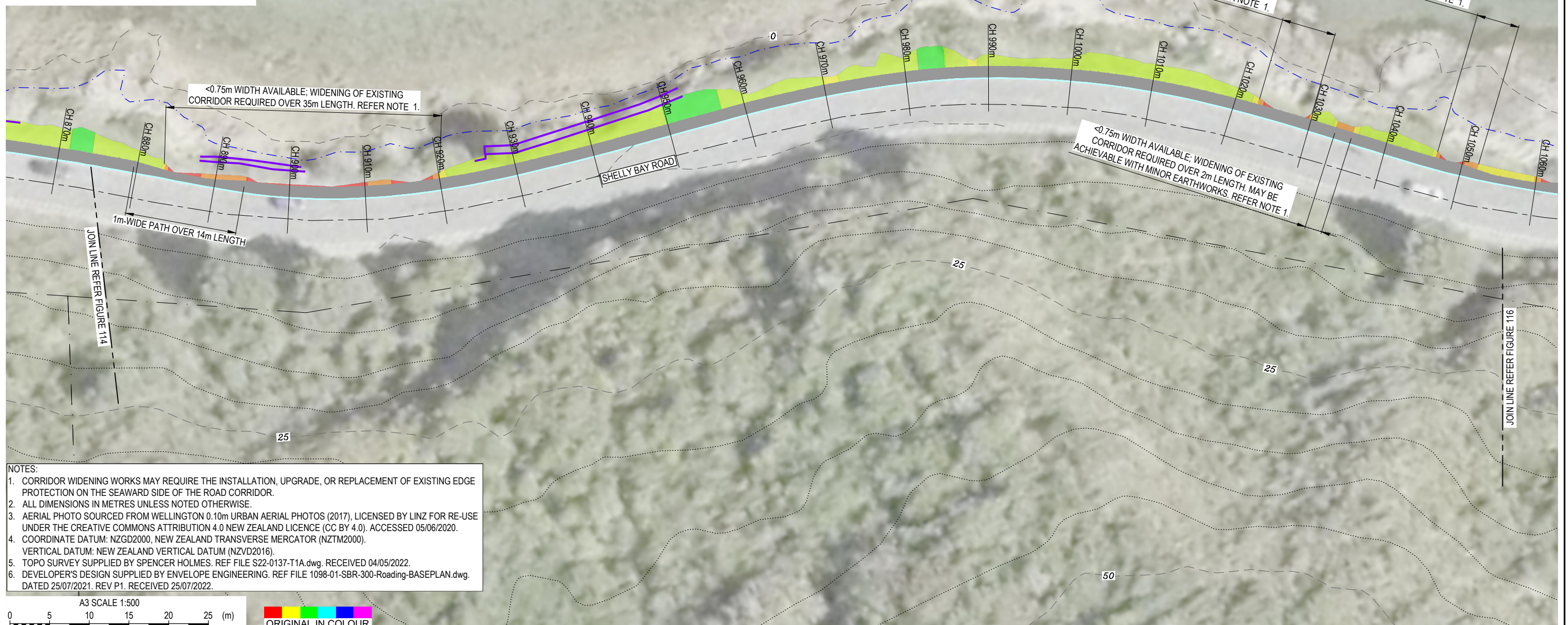
- EXISTING TOP OF KERB
- EXISTING SEAWALL

DEVELOPER'S PROPOSED DESIGN

- PROPOSED WHITE EDGE LINE
- PROPOSED PATH

AVAILABLE CORRIDOR WIDTH

- <0.5m
- 0.5m - 0.75m
- 0.75m - 1.0m
- 1.0m - 2.6m
- >2.6m



- NOTES:**
1. CORRIDOR WIDENING WORKS MAY REQUIRE THE INSTALLATION, UPGRADE, OR REPLACEMENT OF EXISTING EDGE PROTECTION ON THE SEAWARD SIDE OF THE ROAD CORRIDOR.
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VERTICAL DATUM: NEW ZEALAND VERTICAL DATUM (NZVD2016).
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| PROJECT No. 1014113.3000 | | | CLIENT WELLINGTON CITY COUNCIL |
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| DRAWN | LIWA | Aug.22 | |
| CHECKED | MAPP | 19.08.22 | |
| C.PURCHAS 19.08.22 | | | TITLE ADDITIONAL OPPORTUNITIES: FEASIBILITY ASSESSMENT SITE PLAN - SHEET 6 OF 13 |
| APPROVED | DATE | | SCALE (A3) 1:500 |
| | | | FIG No. 1014113.3000-F115 |
| | | | REV 1 |



LEGEND

- PROPERTY BOUNDARY
- - - 25 --- GROUND CONTOURS (25.0m)
- GROUND CONTOURS (5.0m)
- - - - - MHWS (0.5m NZVD2016)

EXISTING

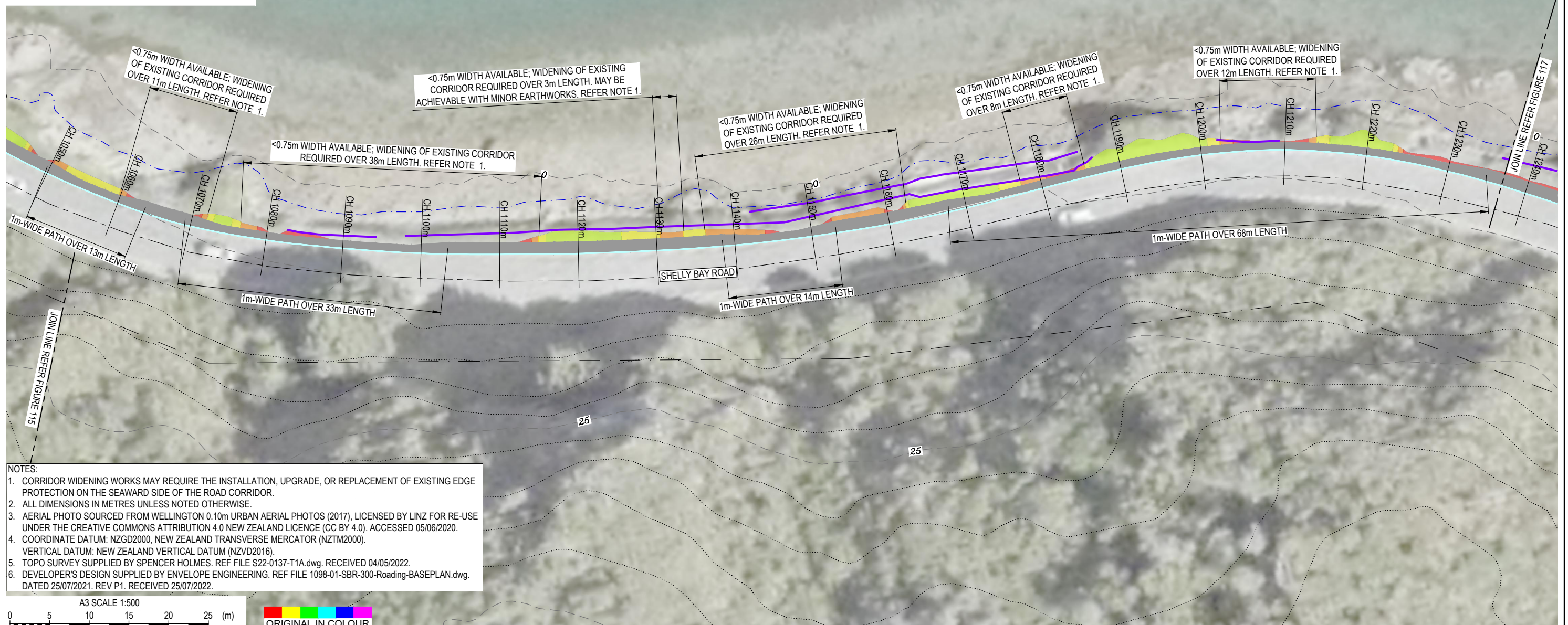
- EXISTING TOP OF KERB
- EXISTING SEAWALL

DEVELOPER'S PROPOSED DESIGN

- PROPOSED WHITE EDGE LINE
- PROPOSED PATH

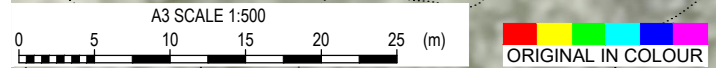
AVAILABLE CORRIDOR WIDTH

- <0.5m
- 0.5m - 0.75m
- 0.75m - 1.0m
- 1.0m - 2.6m
- >2.6m



NOTES:

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VERTICAL DATUM: NEW ZEALAND VERTICAL DATUM (NZVD2016).
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| PROJECT No. 1014113.3000 | | |
| DESIGNED | JASZ | Aug.22 |
| DRAWN | LIWA | Aug.22 |
| CHECKED | MAPP | 19.08.22 |
| C.PURCHAS | | 19.08.22 |
| APPROVED | DATE | |

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|------------|---|---------|-------------------|
| CLIENT | WELLINGTON CITY COUNCIL | | |
| PROJECT | SHELLY BAY ROAD, MAUPUIA | | |
| TITLE | ADDITIONAL OPPORTUNITIES: FEASIBILITY ASSESSMENT SITE PLAN - SHEET 7 OF 13 | | |
| SCALE (A3) | 1:500 | FIG No. | 1014113.3000-F116 |
| REV | 1 | | |



LEGEND

- PROPERTY BOUNDARY
- 25 GROUND CONTOURS (25.0m)
- GROUND CONTOURS (5.0m)
- MHWS (0.5m NZVD2016)

EXISTING

- EXISTING TOP OF KERB
- EXISTING SEAWALL

DEVELOPER'S PROPOSED DESIGN

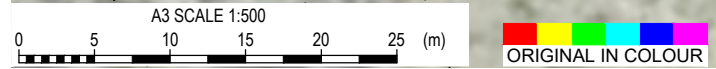
- PROPOSED WHITE EDGE LINE
- PROPOSED PATH

AVAILABLE CORRIDOR WIDTH

- <0.5m
- 0.5m - 0.75m
- 0.75m - 1.0m
- 1.0m - 2.6m
- >2.6m



- NOTES:**
- CORRIDOR WIDENING WORKS MAY REQUIRE THE INSTALLATION, UPGRADE, OR REPLACEMENT OF EXISTING EDGE PROTECTION ON THE SEAWARD SIDE OF THE ROAD CORRIDOR.
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 - TOPO SURVEY SUPPLIED BY SPENCER HOLMES. REF FILE S22-0137-T1A.dwg. RECEIVED 04/05/2022.
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| DRAWN | LIWA | Aug.22 | |
| CHECKED | MAPP | 19.08.22 | |
| C.PURCHAS 19.08.22 | | | TITLE ADDITIONAL OPPORTUNITIES: FEASIBILITY ASSESSMENT SITE PLAN - SHEET 8 OF 13 |
| APPROVED | DATE | | SCALE (A3) 1:500 |
| | | | FIG No. 1014113.3000-F117 |
| | | | REV 1 |



LEGEND

- PROPERTY BOUNDARY
- - - 25 --- GROUND CONTOURS (25.0m)
- GROUND CONTOURS (5.0m)
- - - - - MHWS (0.5m NZVD2016)

EXISTING

- EXISTING TOP OF KERB
- EXISTING SEAWALL

DEVELOPER'S PROPOSED DESIGN

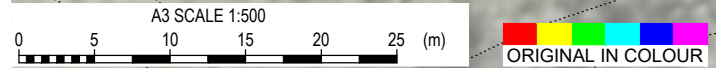
- PROPOSED WHITE EDGE LINE
- PROPOSED PATH

AVAILABLE CORRIDOR WIDTH

- <0.5m
- 0.5m - 0.75m
- 0.75m - 1.0m
- 1.0m - 2.6m
- >2.6m



- NOTES:**
1. CORRIDOR WIDENING WORKS MAY REQUIRE THE INSTALLATION, UPGRADE, OR REPLACEMENT OF EXISTING EDGE PROTECTION ON THE SEAWARD SIDE OF THE ROAD CORRIDOR.
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VERTICAL DATUM: NEW ZEALAND VERTICAL DATUM (NZVD2016).
 5. TOPO SURVEY SUPPLIED BY SPENCER HOLMES. REF FILE S22-0137-T1A.dwg. RECEIVED 04/05/2022.
 6. DEVELOPER'S DESIGN SUPPLIED BY ENVELOPE ENGINEERING. REF FILE 1098-01-SBR-300-Roading-BASEPLAN.dwg. DATED 25/07/2021. REV P1. RECEIVED 25/07/2022.



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| PROJECT No. 1014113.3000 | | | CLIENT WELLINGTON CITY COUNCIL |
| DESIGNED | JASZ | Aug.22 | PROJECT SHELLY BAY ROAD, MAUPUIA |
| DRAWN | LIWA | Aug.22 | |
| CHECKED | MAPP | 19.08.22 | TITLE ADDITIONAL OPPORTUNITIES: FEASIBILITY ASSESSMENT SITE PLAN - SHEET 9 OF 13 |
| C.PURCHAS | | 19.08.22 | SCALE (A3) 1:500 |
| APPROVED | DATE | | FIG No. 1014113.3000-F118 |
| | | | REV 1 |



LEGEND

- PROPERTY BOUNDARY
- GROUND CONTOURS (25.0m)
- GROUND CONTOURS (5.0m)
- MHWS (0.5m NZVD2016)

EXISTING

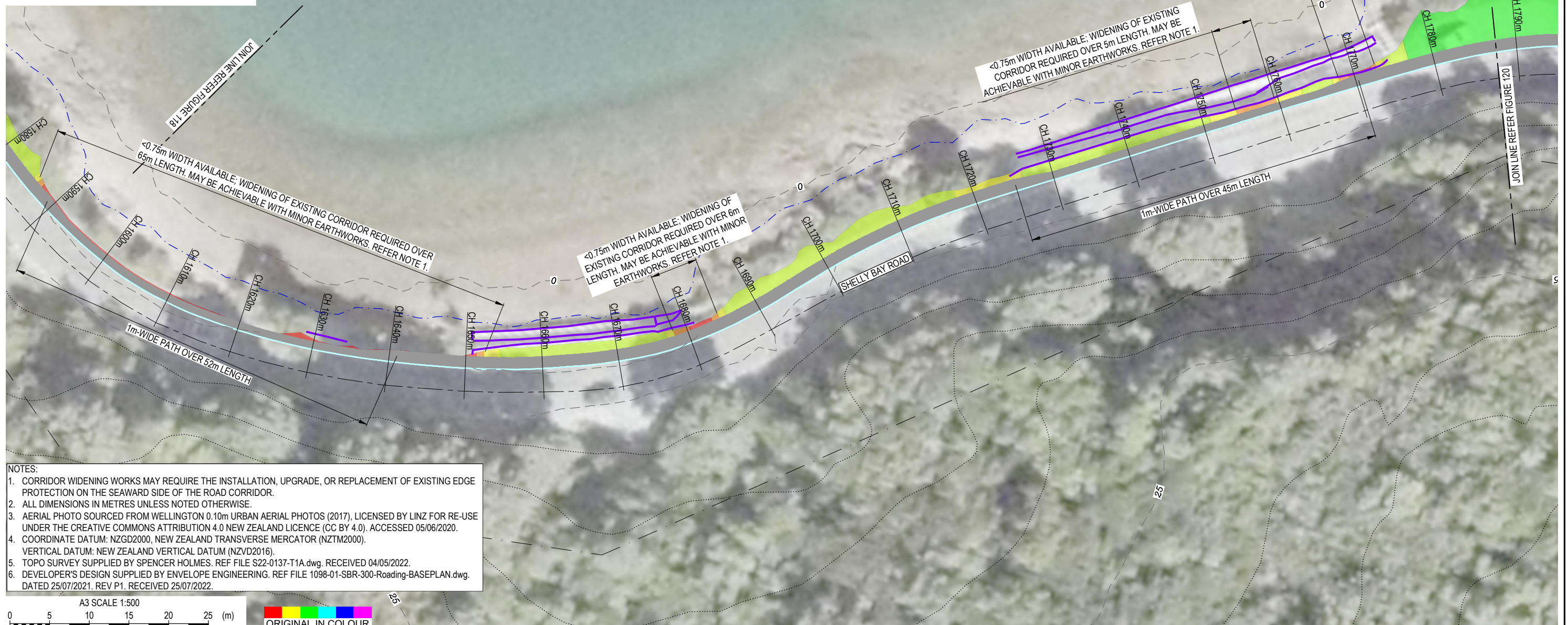
- EXISTING TOP OF KERB
- EXISTING SEAWALL

DEVELOPER'S PROPOSED DESIGN

- PROPOSED WHITE EDGE LINE
- PROPOSED PATH

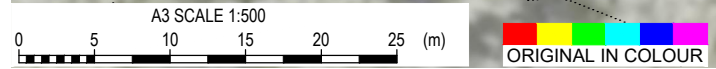
AVAILABLE CORRIDOR WIDTH

- <0.5m
- 0.5m - 0.75m
- 0.75m - 1.0m
- 1.0m - 2.6m
- >2.6m



NOTES:

- CORRIDOR WIDENING WORKS MAY REQUIRE THE INSTALLATION, UPGRADE, OR REPLACEMENT OF EXISTING EDGE PROTECTION ON THE SEAWARD SIDE OF THE ROAD CORRIDOR.
- ALL DIMENSIONS IN METRES UNLESS NOTED OTHERWISE.
- AERIAL PHOTO SOURCED FROM WELLINGTON 0.10m URBAN AERIAL PHOTOS (2017), LICENSED BY LINZ FOR RE-USE UNDER THE CREATIVE COMMONS ATTRIBUTION 4.0 NEW ZEALAND LICENCE (CC BY 4.0). ACCESSED 05/06/2020.
- COORDINATE DATUM: NZGD2000, NEW ZEALAND TRANSVERSE MERCATOR (NZTM2000).
VERTICAL DATUM: NEW ZEALAND VERTICAL DATUM (NZVD2016).
- TOPO SURVEY SUPPLIED BY SPENCER HOLMES. REF FILE S22-0137-T1A.dwg. RECEIVED 04/05/2022.
- DEVELOPER'S DESIGN SUPPLIED BY ENVELOPE ENGINEERING. REF FILE 1098-01-SBR-300-Roading-BASEPLAN.dwg. DATED 25/07/2021. REV P1. RECEIVED 25/07/2022.



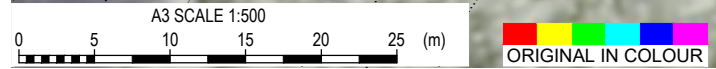
| | | |
|--------------------------|------|----------|
| PROJECT No. 1014113.3000 | | |
| DESIGNED | JASZ | Aug.22 |
| DRAWN | LIWA | Aug.22 |
| CHECKED | MAPP | 19.08.22 |
| C.PURCHAS 19.08.22 | | |
| APPROVED | DATE | |

| | | | |
|------------|--|---------|-------------------|
| CLIENT | WELLINGTON CITY COUNCIL | | |
| PROJECT | SHELLY BAY ROAD, MAUPUIA | | |
| TITLE | ADDITIONAL OPPORTUNITIES: FEASIBILITY ASSESSMENT SITE PLAN - SHEET 10 OF 13 | | |
| SCALE (A3) | 1:500 | FIG No. | 1014113.3000-F119 |
| REV | 1 | | |



NOTES:

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- ALL DIMENSIONS IN METRES UNLESS NOTED OTHERWISE.
- AERIAL PHOTO SOURCED FROM WELLINGTON 0.10m URBAN AERIAL PHOTOS (2017), LICENSED BY LINZ FOR RE-USE UNDER THE CREATIVE COMMONS ATTRIBUTION 4.0 NEW ZEALAND LICENCE (CC BY 4.0). ACCESSED 05/06/2020.
- COORDINATE DATUM: NZGD2000, NEW ZEALAND TRANSVERSE MERCATOR (NZTM2000).
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- TOPO SURVEY SUPPLIED BY SPENCER HOLMES. REF FILE S22-0137-T1A.dwg. RECEIVED 04/05/2022.
- DEVELOPER'S DESIGN SUPPLIED BY ENVELOPE ENGINEERING. REF FILE 1098-01-SBR-300-Roading-BASEPLAN.dwg. DATED 25/07/2021. REV P1. RECEIVED 25/07/2022.



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|--------------------------|------|----------|
| PROJECT No. 1014113.3000 | | |
| DESIGNED | JASZ | Aug.22 |
| DRAWN | LIWA | Aug.22 |
| CHECKED | MAPP | 19.08.22 |
| C.PURCHAS | | 19.08.22 |
| APPROVED | DATE | |

| | | | |
|------------|--|---------|-------------------|
| CLIENT | WELLINGTON CITY COUNCIL | | |
| PROJECT | SHELLY BAY ROAD, MAUPUA | | |
| TITLE | ADDITIONAL OPPORTUNITIES: FEASIBILITY ASSESSMENT SITE PLAN - SHEET 11 OF 13 | | |
| SCALE (A3) | 1:500 | FIG No. | 1014113.3000-F120 |
| REV | | | 1 |





LEGEND

- PROPERTY BOUNDARY
- - - 25 --- GROUND CONTOURS (25.0m)
- GROUND CONTOURS (5.0m)
- - - - - MHWS (0.5m NZVD2016)

EXISTING

- EXISTING TOP OF KERB
- EXISTING SEAWALL

DEVELOPER'S PROPOSED DESIGN

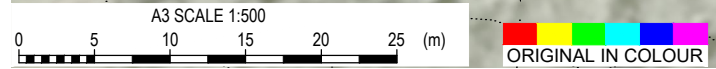
- PROPOSED WHITE EDGE LINE
- PROPOSED PATH

AVAILABLE CORRIDOR WIDTH

- <0.5m
- 0.5m - 0.75m
- 0.75m - 1.0m
- 1.0m - 2.6m
- >2.6m



- NOTES:**
- CORRIDOR WIDENING WORKS MAY REQUIRE THE INSTALLATION, UPGRADE, OR REPLACEMENT OF EXISTING EDGE PROTECTION ON THE SEAWARD SIDE OF THE ROAD CORRIDOR.
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| | | | |
|---------------------------------|-------------|----------|---|
| PROJECT No. 1014113.3000 | | | CLIENT WELLINGTON CITY COUNCIL |
| DESIGNED | JASZ | Aug.22 | PROJECT SHELLY BAY ROAD, MAUPUIA |
| DRAWN | LIWA | Aug.22 | |
| CHECKED | MAPP | 19.08.22 | |
| C.PURCHAS 19.08.22 | | | TITLE ADDITIONAL OPPORTUNITIES: FEASIBILITY ASSESSMENT SITE PLAN - SHEET 13 OF 13 |
| APPROVED | DATE | | SCALE (A3) 1:500 |
| | | | FIG No. 1014113.3000-F122 |
| | | | REV 1 |

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