MEMO TO: Parvati Rotherham CC: Dan Kellow [2/5; 7/8; 19/8; 23/9/19]

FROM: David Wanty, Wanty Transportation Consultancy; CPEng, M.ITE

RM190124: Eastern Bays shared path (also RM WGN190301 re GRWC).

ISSUE DATE: 9/05/2019 REVISED: 19/8/19; 23/9/19 SITE VISITS: 2/5/19

EXECUTIVE SUMMARY

The reconsideration of the matters has involved investigation of background technical material relating to shared path widths, and has been aided by the provision of additional matter (that in hindsight would have been usefully provided in the first instance), in particular the statement relating to an earlier assessment that a "fall from height" barrier is not required to meet the Building Code. In my 19/8 review I recommended that an independent expert review this assessment and that irrespective the minimum 2.5 m be increased to nominally 2.85 m (with associated design changes if needed) to allow for an edge kerb or low level fence (or fall from height barrier) to be incorporated at the onset or potentially retrofitted. I opined that this along with the steps/area design (and other matters) could be dealt with at the detailed design stage.

In response to my review, Stantec have issued a Memorandum 4 dated September 2019 that now proposes a 1.1 m high safety barrier be provided where the drop-off exceeds 1 m (which they state coincides only with 3.5 m path widths), and "*A low level wooden barrier (ie. "wheel guard" type barrier) is proposed along other sections where there are drop-offs of less than a metre*." The latter is expected to comprise a narrow wooden edge strip, presumably occupying no more than 0.10 m width and low in height in which case I now consider that the revised 2.4 m minimum width will be sufficient. The former is likely to apply to much more than the stated "*total of between 700-800m of the shared path*" (refer new Section 5.1 below).

However there are four sections with 2.5 m path width where the drop-off likely exceeds 1 m. Accordingly I recommend that their width be increased to nominally 2.85 m in order to provide an effective 2.5 m width where a safety barrier is to be provided (as verified now or at the detailed design stage).

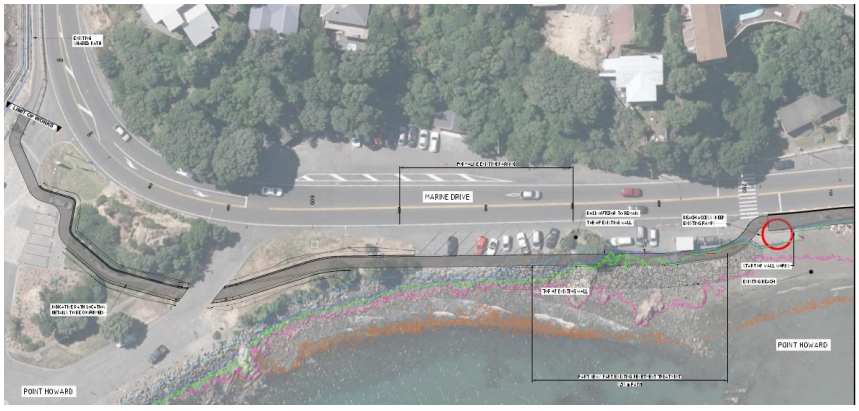
1. Background

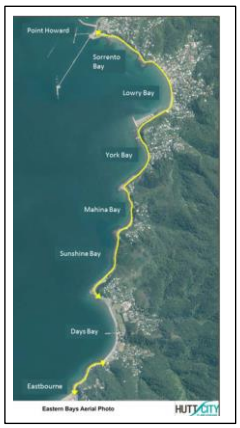
This is a review of the proposed shared path linking Eastbourne with Days Bays (southern section) and Days Bay with Point Howard (northern section) along the harbour foreshore.

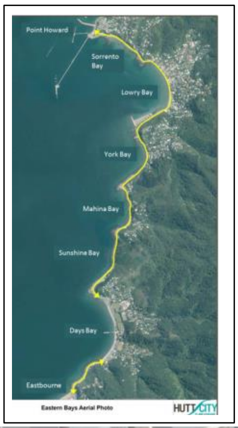
A link to the dropbox containing all the RC application documents was provided, from which the following were the key documents downloaded

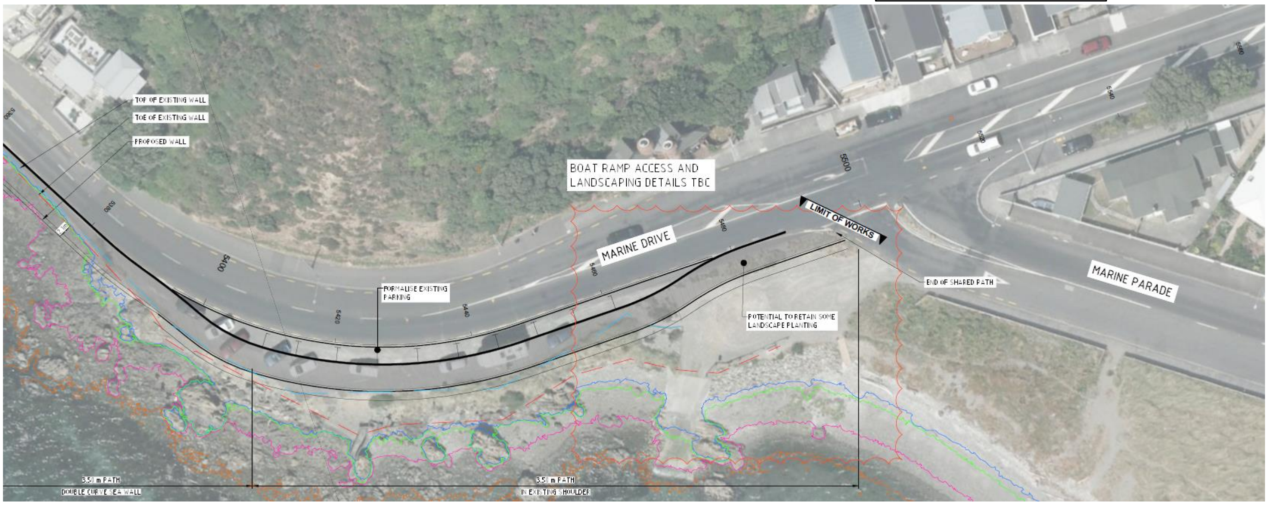
- 2 Eastern Bays shared path – AEE lodgement (176 page PDF by Stantec for HCC)
- App L Eastern Bays Transport Assessment lodgement (41 page PDF)
- App N Preliminary Design Plans REV J lodgement (23 page PDF, drawings undated)

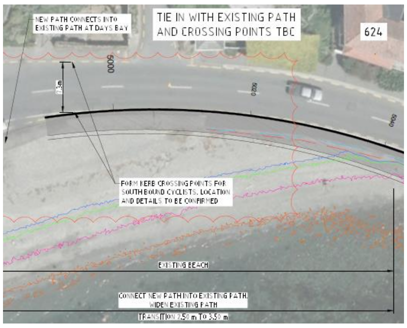
The Application documents include the following plan extracts:

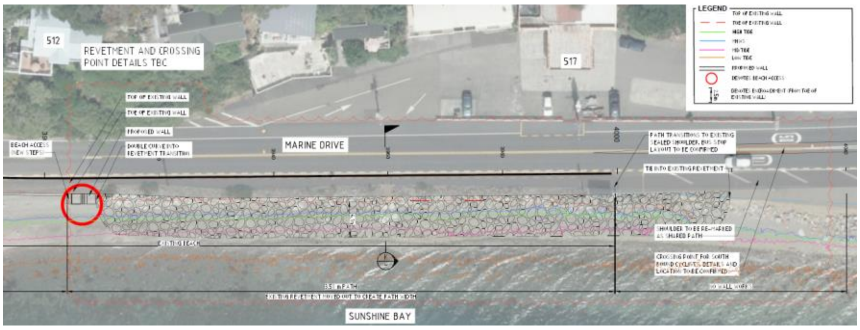


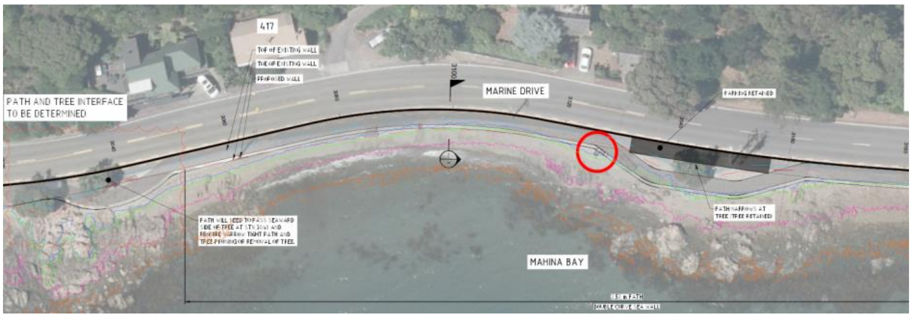




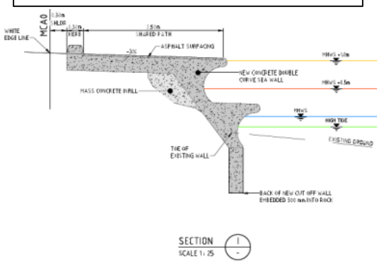


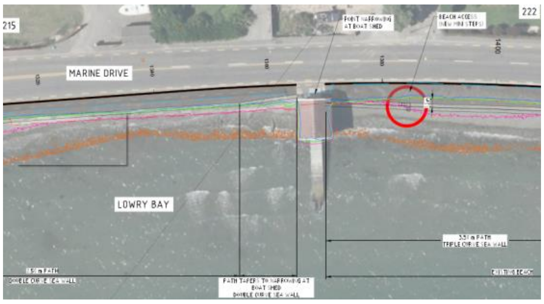


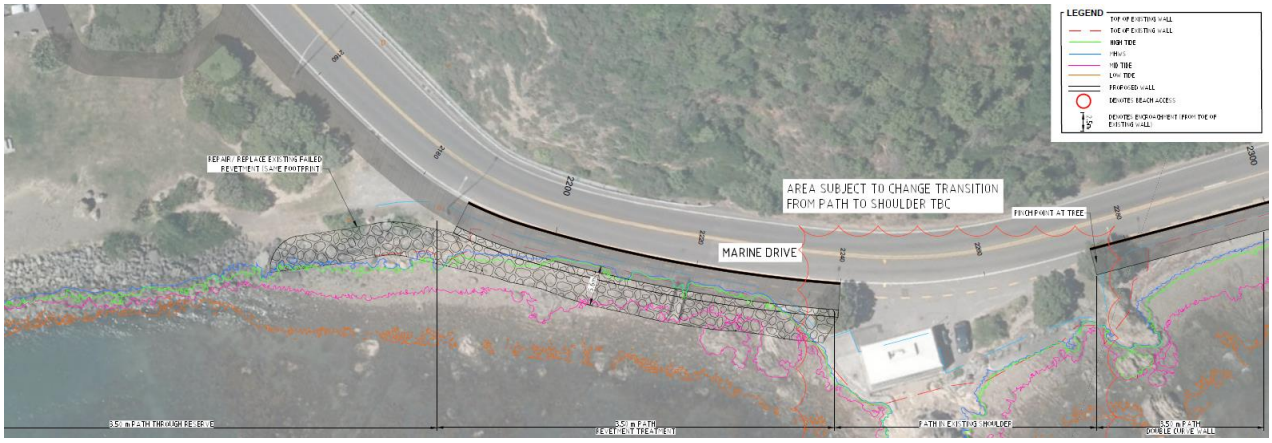




Typical new seawall profile







Other Appendices downloaded 2/5 (G; J; M; Q; R) and 13/5 (D; K; P; S) were not used in my 9 May review. On 7 August 2019 I was requested to respond further, and received via Dropbox the following documents

- Assessment – Recreation assessment [App K] peer review (13 page PDF by WSP Opus, 15/5/19)
- Shared Path Safety audit
- Final response (1+42 page PDF by Stantec for HCC dated 17/7/2019)
- Associated Stantec letter to GRWC cc HCC dated 22/7, and CentrePort written approval
- Copy of email 2/8/19 from GRWC suggesting Relief areas condition and raising concern over widths

Appendix L Tables 1-1 and 1-2 outline respectively the benefits, and the impacts and mitigation of the shared path which is expected to attract an assumed 200 new users. The impacts are mainly the temporary disruptive effects during construction and long term loss of some informal parking.

The Shared Path is proposed to be either 2.5 m wide (along the seawall) or 3.5 m wide along revetments and through reserves. In a few places it might be locally narrowed (less than 2.5 m) with such arrangements evidently to be confirmed (TBC) along with tie ins to the existing layout.

2. Options and Safety Audit

This review does not consider alternatives considered. It is presumed that a safety audit has been/is being undertaken or will be noting however that an audit requirement is not included in the proposed conditions.

Monitoring and the recording of incidents is proposed but these do not relate to road user safety including beach access from the shared path.

Kerb separators are shown in the photo below (Figure 3-11) off York Bay.

A concrete coastal edge treatment will be provided to create a consistent edging on the seaward side of the shared path, as shown in the photo.

Figure 3-11: Coastal Edge Treatment

No seaward side barrier is currently proposed[5].

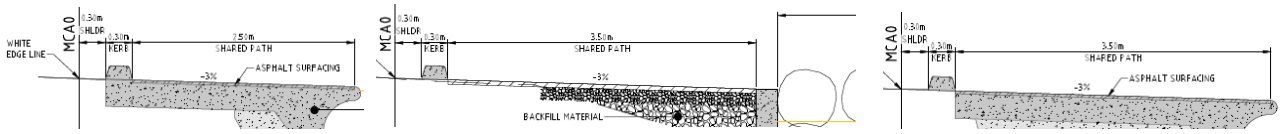
[5] The decision to not include edge protection was made by HCC when the section of York Bay was completed. While this has been reviewed as part of the current project, an assessment of the Building Code requirements was also completed, there remains no appetite by HCC or the community to provide a seaward side barrier due to the perceived interruption between the land and the coastal edge.

Appendix L Figure (1-1, 3-1)

A key matter of concern is that there is no barrier or additional width along the 2.5 m sections of the shared path on the seaward side with a drop of more than a metre to the beach, which means that the design does not meet a key requirement to afford protection to users (even though the existing situation similarly fails).

A preliminary inspection of documents (conditions, design features) did not reveal any detailed discussion of this point (or railings for the steps), but the decision not to provide a barrier was mentioned in section 3.5 of the (Appendix J) Design Features report, as reproduced above.

However the proposed "concrete coastal edge treatment" does not include any vertical element, preventing an errant skateboard or e-scooter for example (or their user) from going into the sea.



The height of the kerb separators was not dimensionalised but is understood to be 150 mm. As this is corresponds to the pedal clearance of my 26" mountain bike they should preferably be lower since if inadvertently struck a rider could potentially be thrown out of alignment or even over the edge.

Section 3.3.1 mentions handrails for the steps (without saying what the height threshold requirement is):

- Handrail likely to be in very limited locations where height requires it.

3. Traffic and Safety review

3.1. Transport compliance

The Application AEE considers how the proposal complies with the Regional Plan and aspects of the District Plan. With respect to District Plan Transport Rule 14A 5.1 it states (section 8.6.3)

> *The proposal complies with the standards listed in Appendix Transport 1 and 2, and therefore is a permitted activity.*

My review of each design element is appended (refer chapter 6).

4. May 2019 Conclusion and Recommendations

In terms of the District Plan the idea of the shared path is sound and meets Council objectives in catering for and encouraging travel by alternative/active modes.

A number of recommendations and suggestions have been made; it is recommended also that a formal safety audit be undertaken at the detailed design stage and pre/post opening.

It is **strongly recommended** that Council formally approve dispensation for not providing a protective barrier along the shared path seaward side, for reasons that have evidently been previously considered. It is **recommended** to include a monitoring condition for incidents involving road users using the shared path and beach access steps, and any events of scooter, skateboards etc going off the shared path or conflicts with bus stop patrons, boat access patrons, people parking *et al.*

5. September 2019 Further consideration

This further review related to the response by Stantec to my August 2019 review.

5.1. Safety Barrier location

Memorandum 4 stated (slightly edited).

> A full height barrier of 1100mm is proposed at four locations where the drop-off is greater than 1 metre, which is estimated as a total of between 700-800m of the shared path. The final location and lengths will be confirmed during the detailed design.
>
> - Gill Road to Whiorau Reserve: ST1790-1955 (3.5m wide path) [165 m, double curve, 3.5 m]
> - York Bay north: ST2330-2420 (3.5m wide path) [90 m, double curve, 3.5 m]
> - Between Mahina & Sunshine: ST3530-3680 (3.5m wide path) [150 m, double curve, 3.5 m]
> - Windy Point: ST5050-5395 (3.5m wide path) [345 m, double/triple curve, 3.5 m]

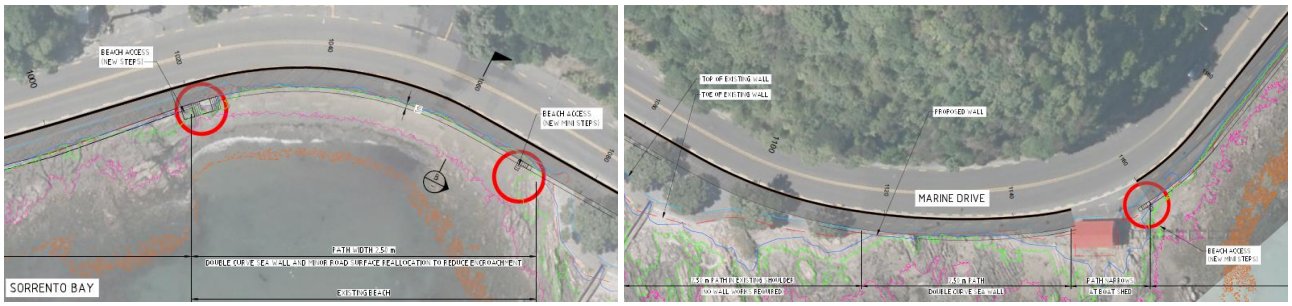
The design of the barrier or railing will be confirmed during detailed design. It will meet the Code and will be of a durable material to withstand the coastal conditions.

Comparing with my table (some path widths corrected) and sections of double or triple curve (generic presumed drop-off more than 1 m) not included above, comprise as follows:

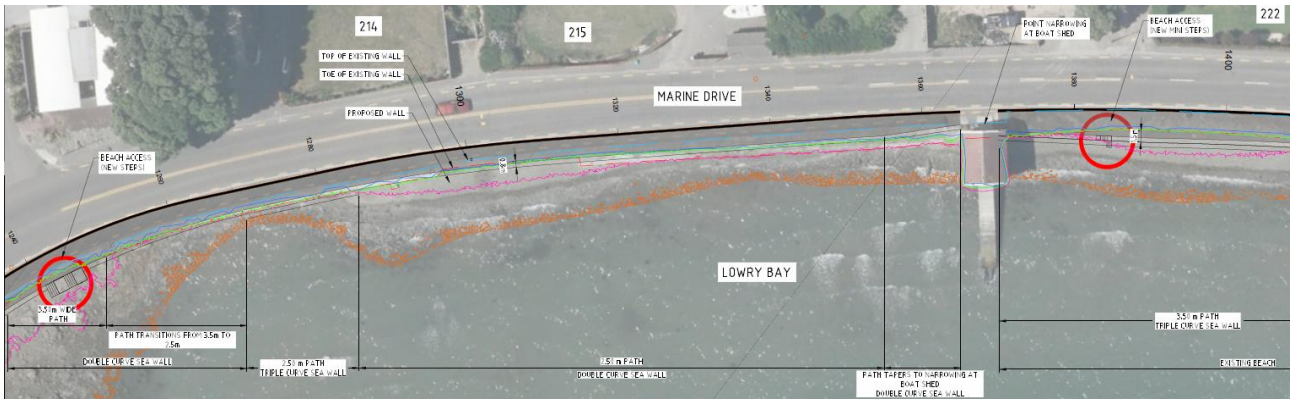
- 705-1000 3.5 m, double curve (295 m)
- 1010-1080 **2.5** m, double curve (70 m)
- 1115-1150 **2.5** m, double curve (35 m)
- 1260-1365 **2.5** m, double/triple (105 m)
- 1410-1535 3.5 m, double/triple (125 m)
- 2275-2330 3.5 m, double curve (in effect a 55 m extension to the York Bay north section)
- 2420-2570 3.5 m, double curve (in effect a 150 m extension to the York Bay north section
- 3035-3340 3.5 m, double curve (305 m)
- 3470-3530 3.5 m, double curve (a 60 m extension to Between Mahina &Sunshine section)
- 3690-3910 **2.5** m, double curve (a 230 m extension to Between Mahina &Sunshine section)

From the above it is clear that there are four potential sections with drop-off exceeding 1 metre that have less than 3.5 m width, contrary to what Stantec have stated.

The Sorrento Bay section (refer cross section B) and north of the boat shed are likely to have a drop-off exceeding 1 metre so these two sections should be included in the first instance and should thus be widened to accommodate the safety barrier while retaining at least 2.5 m path width.



The Lowry Bay section from the proposed steps to the existing boat shed is likely to have a drop-off exceeding 1 metre so this section should be included in the first instance and should thus be widened to accommodate the safety barrier while retaining at least 2.5 m path width.



Cross section J at CH3740 reveals the drop-off is more than 1 metre and so this section should be included and should thus be widened to accommodate the safety barrier while retaining at least 2.5 m path width.

In addition the shared path is incorporated in the existing shoulder along an existing seawall as follows:

- 3440-3470 nominal 3.5 path in existing shoulder alongside existing “revetment” - okay

6. August 2019 Further consideration

This further review was to assess the adequacy of information and whether I agreed or disagreed with the assessment. In particular The HCC RC planner specifically requested

> *In addition please comment specifically on the adequacy of the width of the path where it reduces to 2.5m. This has been a focus of the review from WSP Opus and thinking ahead I am sure Commissioners will want your assessment of this matter. Please note the suggested condition of consent contained in the email from GWRC to the applicant and provide comment on this.*

To assist in this further review from the App N engineering plans (Rev J) I have tabulated August 2018 Rev J design details, including noting where beach access steps are provided and seawall type (if applicable).

Ref	Approx. chainage	Location	Path width	Seawall	Steps	Notes
	530-610	Point Howard carpark	??	n/a	n/a	Actual path length is longer
	610-705	To Zebra	2.5 m	Revetment	Existing at 705	
	705-1000	From Zebra	3.5	Double curve	New at 825	Guardrail removed
	1000-1020	Sorrento Bay transition	3.5-2.5	Double curve		
	1020-1060		2.5	Double curve	New at 1020	Road minor relocation
	1060-1080		2.5	Double curve	Mini at 1070	
	1080-1115		2.5	n/a		
	1115-1150		2.5	Double curve		
	1150-1160	Boat shed	~2 -3.5	n/a	Mini at 1160	
	1160-1250	Lowry Bay	3.5	Double/triple	New at 1245	
	1250-1270	Lowry Bay transition	3.5-2.5	Double curve		
	1270-1285		2.5	Triple curve		
	1285-1355		2.5	Double curve		
	1355-1365		2.5-1½	Double curve		
	1365-1370	Boat shed	~1½	(boat ramp)		
	1370-1420		1½-3.5	Triple curve	Mini at 1385	
	1420-1525		3.5	Double curve		
	1525-1545		3.5-2.5	Double curve		
	1545-1550	Cheviot Rd bus shelter	~2		Timber steps	
	1550-1745	Cheviot Rd-Taumaru Ave	3.5	Single curve		
	1745-1960		3.5	Double curve		
	1960-2000	Whiorau Reserve	2.5?	n/a		Actual path length is longer
	2000-2145	Whiorau Reserve	3.0/3.5	n/a		Actual path length is longer
	2145-2170	Whiorau Reserve	3.5	n/a		
	2170-2240		3.5	Revetment		
	2240-2275	Club house	(3.5)	n/a		Path in existing shoulder Pinch point at tree(s)
	2275-2330		3.5	Double curve		
	2330-2420		3.5	Triple curve	Mini at 2420	Taungata Rd bus shelter relocated north (not shown)
	2420-2570		3.5	Double curve	Ramp at 2510	
	2570-2910	York Bay ex. shared path	?	n/a		No plans or aerial provided
	2910-3020		3.5	Revetment		Bus shelter at 2895
	3020-3050		3.5-2.5	Double curve		Path detour around a tree
	3050-3125		2.5	Double curve	Mini at 3125	
	3125-3165	Mahina Bay	2.5	Double curve		Detour for tree. Parking
	3165-3340		2.5	Double curve	Ramp at 3235 Mini at 3310	Relocate Mahina Rd bus shelter. Guardrail removed
	3340-3400		3.5	Double curve		
	3400-3440		3.5	Revetment		
	3440-3470					Path in existing shoulder

Ref	Approx. chainage	Location	Path width	Seawall	Steps	Notes
	3470-3680		3.5	Double curve	Mini at 3525	
	3680-3700		3.5-2.5	Double curve		Pinch point at 2 trees
	3700-3905		2.5	Double curve	New at 3820	
	3905-3910		2.5	Double curve	New at 3905	
	3910-3930		2.5-3.5	Revetment		
	3930-4000	Challenge petrol station	3.5	Revetment		
	4000-4020		3.5-3?	Revetment		
	4020-4040		3-2.5?	n/a		Cycle median refuge island Remark sh'lder as shared path
	4040-4980	Days Bay				No plans or aerial provided
	4980-5040		2.5-3.5	Double curve		Connect to ex. Days Bay path. Install kerb crossing ~4990
	5040-5290		3.5	Double curve	Mini at 5200	
	5290-5370		3.5	Triple curve		
	5370-5410		3.5	Double curve		
	5410-5500	Immediately north of Marine Parade	3.5	n/a	Existing boat ramp access off corner area	Path in existing shoulder with 9 parking spaces – see my earlier suggested changes.
	5500-5520	Marine Parade Y/T intn	n/a	n/a		No works but I recommended some improvements earlier

Analysis of the above, making some coarse correction adjustments for the shared path where it deviates from Marine Drive indicates the following:

- Northern roadside section (1.75 km) 60% with 3.5 m width (3% transition to/from 2.5 m)
- Central roadside section (1.13 km) 43% with 3.5 m width (10% transition to/from 2.5 m)
- Southern roadside section (0.52 km) 88% with 3.5 m width (12% transition to/from 2.5 m)

For Whiorau reserve the plans in one instance state a 3.5 m path will be provided through it but elsewhere it annotates 3.0 m and the northern part appears to be the existing path which is narrower and winding. The path crosses one driveway; it also has an approx. 5 m stem to the parking area near the boat trailer parking area.
The shared path through Point Howard also appears to be narrower than 3 metres. It crosses two driveways and has a kink around the car parking area to be marked.

The 17/7/2019 Stantec response to GWRC includes: *The short lengths of 2.5m width (less than 10% of the entire project) are also provided only in places where crowding is not anticipated to eventuate… The longest length of 2.5m path is approximately 300m* [3050-3340] *and within this section there are multiple* [3] *beach access points that users can stop and exit off the path to rest and relax without blocking the path for users.*

But as is evident from the table the percentage of the entire length at 2.5 m (or less) width is not less than 10% but is considerably more; the shared path is described however as 4.4 km and not 3.4 km as above.

6.1. Relief areas

The GRWC letter included the following suggested condition.

> *In light of concerns raised above, may I make a suggestion that the applicant consider proposing an additional consent condition or amending proposed condition 14 (engineering plans and specifications) with wording to the effect of:*
>
> *"As part of detailed design, in consultation with GWRC, the consent holder will/shall deliberately design relief areas along the project. Relief areas shall be supported by appropriate modelling to inform both the frequency and size of relief areas."*

I infer from the letter that the concerns principally related to the area at the top of beach access (narrow) steps, with no deliberate thought in the design to this landing area (e.g. at Sorrento Bay, CH1020 and 1070).

I surmise the thinking is that a group of beach users could be waiting here to go down the steps individually and that the area is insufficient for separation from the main shared path. Beach users could be carrying all sorts of gear including fishing rods, kayaks and even a child in a stroller, and railings to be provided (no detail provided) will reduce the available space (the steps are shown as x metres wide).

The 17/7/2019 responses from Stantec on relief area and beach access steps was as follows

While refuge/pause points have not formally been incorporated into the preliminary design, there are many opportunities where the path widens where people can pause. These areas include bus stops/shelters, rocky headlands, access points (steps and ramps), Whiorau Reserve and Days Bay. The standard steps have a platform on the same level as the path and give people the opportunity of pausing out of the main thoroughfare of the shared path (refer to the Design Features Report, Appendix J, section 3.3.1 of the resource consent application).

The refuge/pause points are located as follows:

Refuge/pause point	Location (chainage)	Comment
Access steps and ramps	Refer to Tables 5-1 to 5-6 of the resource consent application	17 beach access points can be used as refuges/pause points
Bus shelters/stops	1550; 2420; 2900; 3330;	Bus shelters offer places to sit or pause along the path.
Headlands/rocky outcrops	1080-1120; 2240-2280; 3130-3160; 3440-3470; 5400-5500	Headlands offer wide areas that are located off the path that offer places to pause, pull off with prams, admire the view, children can play on rocks etc.

The Recreation Assessment (Appendix K of the resource consent application) at page 11 states that: "*Beach access is provided over the proposed seawall at strategic and regular points at all beaches and at several sections of rocky coast. Sections of single seawall will be easily stepped over, and short sections of revetment similarly so. Ramps are maintained or provided anew at Point Howard Beach, Whiorau Reserve (immediately south of Lowry Bay), York Bay and Mahina Bay. Steps are proposed to be built parallel to the shared path, and will create sitting and hanging-out space off the path. They intrude further into coastal areas than the seawall, but less-so than perpendicular stairs, and are short, essential assets.*"

The proposed design provides a safe shared path for walkers/pedestrians/joggers and cyclists. It also provides safe access to the beaches by means of steps (standard sized steps and "mini steps") and ramps to launch boats and kayaks. Access to the beaches and rocky headlands from the shared path also provides for fishing and shellfishing.

The Design Features Report (Appendix J of the resource consent application) sets out design details of the steps and ramps in section 3.3.

The design avoids conflict with users through the following:

- Steps and ramps are placed parallel to the shared path to separate access from the main thoroughfare.
- Concrete kerb separators are placed between the shared path and the road carriageway.
- Providing additional seaward side space that is physically separated from traffic for vulnerable road users away from the carriageway.
- Suitable width of path to accommodate a safe place for people to cycle/walk.
- Signage and road markings as necessary to support use.

Again, the Shared Path Safety Audit, conducted by a cycleway design specialist did not identify any serious safety issues.

The 17 beach access points matches the number I had (does not include boat ramps). The design did not include details at a larger scale for the new steps or the new mini steps. The road safety audit report noted (as a Minor concern) that the 0.60 m width of the steps is too narrow and handrails should be considered. However it transpires in the Designers Comment that "*the mini-steps are in fact first and foremost a mitigation for penguins to provide access*"; HDC have decided to consider their design at later stages.

Accordingly I concur that more attention should be given to this matter and the railings, and while this matter could be addressed now it is not unreasonable to consider at the detailed design stage.

6.2. Provision of an edge barrier / safety barrier

Inspection of the Building Code handbook[1] infers that there should be a means to prevent the wheel of a mobility scooter from dropping over the side of the shared path, noting that mobility users by law have to use a footpath where provided.

Furthermore where the drop alongside a "building" such as a path is more than 1 metre a barrier should be provided. In a practical sense this has been taken to apply where the drop is also within 1 metre of the path (for example as was applied to the design of the shared path along Titahi Bay Road alongside Porirua Harbour which had been a NZTA UCP project, and was design to include planting at the bottom of the 1½ to 2 m coastal bank to limit the drop to less than 1 metre).

That no edge or safety barriers were provided along the 0.34 km York Bay shared path should be no reason not to conclude that they need not be provided for this over 4 km shared path in places where the drop off exceeds 1 metre and is in close proximity to the shared path.

Along the sections where there is revetment treatment an edge barrier kerb should at least be provided and potentially in a format amenable to post-fitting a fence railing if so desired later.

Along the seawall sections (single, double or triple curve) a barrier fence should be provided, presumably of at least 0.9 or 1.0 m height, and not a (low) post and chain fence as has been referred to in the Application. This will also apply to the proposed new steps, new mini steps, new pedestrian ramp and existing steps.

Both will impact on the shared path width physically (and possibly also the shy distance) and so the minimum width will need reconsideration.

CLAUSE F4—SAFETY FROM FALLING

Provisions

OBJECTIVE

F4.1 The objective of this provision is to safeguard people from injury caused by falling.

FUNCTIONAL REQUIREMENT

F4.2 *Buildings* shall be constructed to reduce the likelihood of accidental fall.

PERFORMANCE

F4.3.1 Where people could fall 1 metre or more from an opening in the external envelope or floor of a *building*, or from a sudden change of level within or associated with a *building*, a barrier shall be provided.

8.0 ANCILLARY

8.0.1 Applies to a *building* or use not for human habitation and which may be exempted from some amenity provisions, but which are required to comply with structural and safety-related aspects of the *building code*. Examples: a bridge, derrick, fence, free standing outdoor fireplace, jetty, mast, path, platform, pylon, retaining wall, tank, tunnel or dam.

CLAUSE D1—ACCESS ROUTES (continued)

Provisions

D1.3.4 An *accessible route*, in addition to the requirement of Clause D1.3.3, shall:

(e) Have means to prevent the wheel of a wheelchair dropping over the side of the *accessible route*,

(i) Have *handrails* on both sides of the *accessible route* when the slope of the route exceeds 1 in 20. The *handrails* shall be continuous along both sides of the stair, ramp and landing except where the *handrail* is interrupted by a doorway.

6.3. Shared path width

Appendix K gave useful information on appropriate shared path widths without elaborating on the expected levels of pedestrian, cyclist and other users. It included a table of how the existing walk/cycleway is perceived, stating "*Fifty-four percent of respondents stated that the current state of the path 'deterred' them from using it, and a similar number – 59% – described the path as unsafe or very unsafe (Table 6).*"

Effectively a minimum width of 3.0 m is proscribed, noting that for an 'absolute' minimal 2.5 m shared path *"An additional 0.5 m should be added to each edge if the path is bounded continuously or has fall hazards on either side."* It appears that the reduction from 3.5 m is based on a compromise with beach impacts and the lack of barrier provision appears to ignore Building Code requirements not necessarily appreciated.

[1] https://www.building.govt.nz/building-code-compliance/building-code-and-handbooks/building-code-handbook/

Also Appendix G alternative assessment outlined the options chosen and not pursued with Option 4: 2.5 m & Option 5: 3.5 m being the equal favourites that were carried on; a note on 3.0 m was given – see below.

Table 6: Perceptions of safety of the walk / cycleway Eastbourne Community Board 2014 (n=624)	
Sense of safety	Percent
Very safe	1
Mostly safe	33
Unsafe	43
Very unsafe	16
No response	6
Total	100%

Appendix G 7.2.3
3.0m wide: Initially this was considered as an option to be investigated and assessed. Ultimately it was discounted and not considered further. Working through the options there appeared little difference between 3.0m and 3.5m in terms of locations where physical works were required i.e. there were very few sections where 3.0m was already achievable and would require no physical work – so costs for the options were very similar, and so there was little to differentiate.
Early in the preliminary design process (and following public consultation on the IBC), based on the above assessment, the decision was made to proceed with a path of 3.5m width in the non-beach areas, and a 2.5m width path in beach locations to limit encroachment onto the beaches. There was reasonably broad agreement throughout the individual bays following 2017 consultation with this approach.

Appendix G also included Table 7-3 noting that Stantec considered that commuter cyclists were unlikely to use the shared path.

Table 7-3: Austroads Shared Path Widths (reproduced from Table 7.6 of Austroads: Cycling Aspects of Austroads Guides – AP-G88-14)

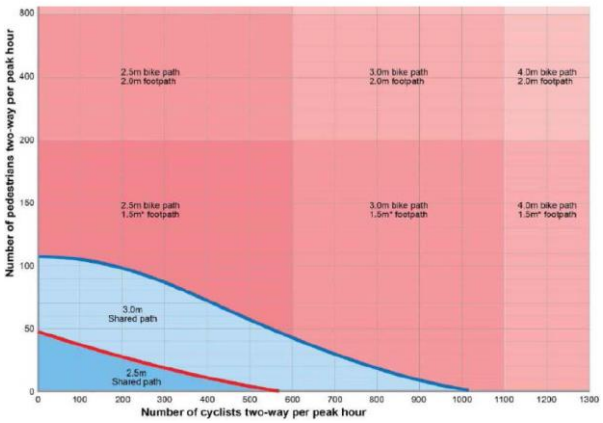
	Path width (m)		
	Local access path	**Commuter path**	**Recreational path**
Desirable minimum width	2.5	3.0	3.5
Minimum width – typical maximum	2.5[1]–3.0[2]	2.5[1]–4.0[2]	3.0[1]–4.0[2]

1 A lesser width should only to be adopted where cyclist volumes and operational speeds will remain low.
2 A greater width may be required where the numbers of cyclists and pedestrians are very high or there is a high probability of conflict between users (e.g. people walking dogs, roller bladers and skaters etc.).

Source: Austroads (2009f) Figure 7.4.

Two other key references from Appendix K referred to are reproduced below.

Figure 4: Austroads (2017) – Path widths for a 50/50 directional split



The Austroads standard is further detailed in the *Supplement to Austroads Guide to Road Design Part 6A: Pedestrian and Cyclist Paths* (2015), with the following guidelines:

Table 3: Austroads (2015) shared path width standards		
Path Width	**Type of path**	**Guidelines for appropriate use**
2.5 m	Recreational and regional commuter paths.	Overtakings and meetings between path users are likely and bicycle speeds are between 15 km/h and 25 km/h. This width may be appropriate for commuter and recreational paths within outer suburban areas and regional cities and towns.
3.0 m	Recreational and urban commuter paths where overtakings and meetings are frequent and bicycle speeds exceed 25 km/h. Larger clearances are required between path users.	In most circumstances, the minimum standard for new shared paths should be 3.0 m wide.
3.5 m		A 3.5 m path provides increased clearance between path users and may be used by cyclists to reduce the number of delayed overtakings.
4.0 m		A 4.0 m path provides increased clearance between path users and may be used by cyclists to reduce the number of delayed overtakings.

It was difficult to find what the current usage and estimated usage is for the proposed shared path. Table 23-1 of the main Application document stated "*Economic evaluation in the DBC has estimated an additional 200* [180?] *new users* [per day]." While footnote 29 of the main Application report stated "*Cyclist numbers were captured over 21day 24 hour per day survey in Sept 2017. They average (two-way) 63 cyclists per day. The maximum was 120 cyclists in a single day and the minimum was 15. Refer to Appendix L.*" Section 2.2 of Appendix L stated *The lack of existing provisions for pedestrians and cyclists is reflected within the number of current users along Marine Drive. A short term traffic survey was completed in 2015 on Marine Drive and indicated that approximately 80 cyclists use Marine Drive per day. Pedestrian survey count data is limited, with peak period counts in 2015 showing over 15 pedestrians in the morning peak at Sorrento Bay. A further longer term traffic survey was completed in September 2017 which showed typical use of approximately 110 cyclists per day in the vicinity of Point Howard … Refer Section 4.2* [should be 4.3] *for further details on existing users.*

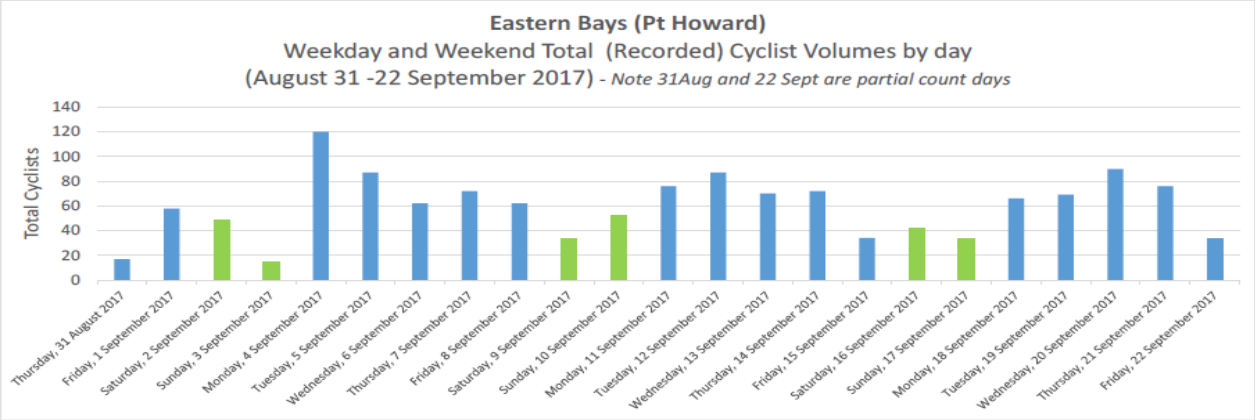


Figure 4-1: Eastern Bays (Point Howard) - Observed Cyclists Volumes 2017 (tube count survey)

Table 4-2: Estimated Existing and Future Usage

	Existing Use	Expected (new)	Total (existing and future)
Pedestrians /day	Up to 100	+60	Up to 160
Cyclists /day	110	+120 (50 local, 70 regional)	230
Total /day	Up to **210**	**+180**	Up to **390**

Cycling annual growth rate (3.5 m, RR340)
Opening to 15 years: 9.2%;
Year 15-30: 4.5% growth
Year 30 onwards: 2.1%

Pedestrian growth rate of 1.0% per annum

These daily flows when converted to peak hour flows would seem to suggest from Figure 4 that a shared path width of 2.5 m is sufficient (in a favourable situation) from a convenience viewpoint.

Despite that fact that widening to 3.0 m might be the same in cost as widening to 3.5 m, it presumably will result in less beach encroachment than 3.5 m, so considering all of the above (and further points below) it would seem reasonable to design for a 2.85 m minimum width which will allow inclusion of a barrier/fence (Council will consider edge kerbing or low fence at detailed design stage and hopefully seek independent expert advice if a "fall from height" barrier is required or not to meet the Building Code) along the seaward edge where a double or triple curve seawall is provided. Where there is revetment treatment an edge barrier/kerb (presumably with drainage slots) should be provided, noting also the WSP Opus idea that the concrete edge could be 0.35 m as a visual warning and such a width should be sufficient to accommodate a barrier and a slight additional shy line width provision (the separator kerbs are 0.30 m wide and probable 0.15 m high – same as an adult bicycle pedal clearance).

6.4. Response to request for commentary re 2.5 m shared path width

The 17/7/2019 responses from Stantec re safety audit was as follows

> One of the main objectives of the project is to improve safety for pedestrians, cyclists and other road users. Path width guidance and standards are set out in the Alternatives Assessment (refer to section 7.2.1 of Appendix G of the resource consent application). The guidance sets out a 2.5m shared path as being a minimum width. The Shared Path Safety Audit was undertaken by an independent technical expert cycleway designer and did not raise any issues about the 2.5m path width as a safety concern.
>
> Further discussion on the 2.5m wide path is outlined in section 2 of the Recreation Assessment, (Appendix K of the resource consent application).
>
> The narrow path is used only where there are exceptional reasons to do so and where achieving the full 3.5m width is considered non-feasible. We do not accept that 'other' effects should be excluded from this assessment, as all factors need to be considered in striking a balance across a multitude of requirements and constraints. User safety and comfort has been considered by the design team, HCC and through the independent safety audit and is considered to achieve the appropriate balance in highly constrained locations. The reduced path width proposed, in these circumstances is considered by the project team to be suitable, and an independent review has not deemed this as a safety concern. Further, the 2.5m wide path is considered adequate to cater for the predicted usage. Please refer to the Recreation Assessment for further details.
>
> The short lengths of 2.5m width (less than 10% of the entire project) are also provided only in places where crowding is not anticipated to eventuate. Where beaches are likely to be busy and the path forms part of the beach experience and are more likely to be crowded, there is a 3.5m width and beach nourishment. The longest length of 2.5m path is approximately 300m and within this section there are multiple beach access points that users can stop and exit off the path to rest and relax without blocking the path for users. Hutt City Council can also monitor these sections during busy use periods and if necessary erect signage that requests users not to block the narrower shared path sections.

Table 1 of VicRoads Cycle Notes 21 (August 2013) notes the acceptability of 2.5m wide two way shared paths. New Zealand examples of approximately 2.5m wide shared paths include Rolleston Avenue in Christchurch and Portobello Road in Dunedin.

Please note that feedback forms in the Recreation Assessment indicated a preference for a 2.5m wide path (48%), compared with 3.5m (25%); and the main motivation for a narrower path was avoiding encroachment onto beach areas for recreational amenity reasons.

6.5. Response to road safety audit

The 17/7/2019 responses from Stantec re safety audit (refer next section) was as follows

A road safety audit was undertaken by Beca in May 2018. It was noted that some comments were included where the safety implications were not clear due to insufficient detail for the stage of project (eg. lighting, signage and road markings, bus stops), items outside the scope of the audit such as existing issues not impacted by the project (eg. speed limits) or an opportunity for improved safety but not necessarily linked to the project itself.

Overall the findings identified moderate to minor risks all of which will be addressed in the detailed design. The three issues that were identified as "Significant" risks related to the potential conflict at the Whiorau Reserve, the road crossing at Sunshine Bay (Ch 4000) and the no fall protection for shared path users (refer to the response below). No serious issues were identified in the safety audit.

The alignment of the shared path through the Whiorau Reserve was amended in response to the auditor comment and is included as the Preliminary Design Plan (Rev J), in Appendix N of the resource consent application). As far as the road crossing is concerned, it is acknowledged this is a problematic area and option investigation is ongoing which has since included a further detailed landward side topographical survey to provide better clarity on the space available to allow more precise optioneering for this short section on the landward side. This will be addressed in the detailed design.

It is noted that no safety issues were raised around the width of the shared path. To ensure that the details in the audit are addressed, the final design will be subject to a consent condition and must be approved by GWRC.

A copy of the audit will be made available to the HCC planner.

In my earlier assessment (section 3.8) I had suggested adding streetlighting by the new steps opposite the Challenge petrol station in Sunshine Bay (CH 3940-4040)

The 17/7/2019 responses from Stantec re barrier provision and separator height was as follows:

The decision not to include a barrier on the seaward side was in response to consultation with the bay communities. The general feedback from the community was that barriers were not acceptable from an aesthetic point of view, and a perceived interruption between the land and the coastal edge. As per the safety audit responses, HCC will consider options further during later stages of the detailed design phase for low level options as suggested, including such items as barrier kerb or low level chain link fence in high risk locations. This will be further discussed with the bay communities.

The general feedback from the community during consultation was that barriers were not acceptable from an aesthetic point of view (see comments above). As per the safety audit responses, HCC will consider options further during later stages of the detailed design phase for low level options as suggested, including such items as barrier kerb or low level chain link fence in high risk locations. This will be further discussed with the bay communities.

It is our opinion that barriers/guardrails are an integral part of roads and are permitted under the District Plan (R13.3.1.37). This will be confirmed during final detailed design. However, they [kerb separators] are expected to be 150mm in height.

6.6. May 2018 Beca road safety audit

The above comments were written prior to receiving (14/8/2019) a copy of the road safety report undertaken by a Beca team before the Rev. J design plans were made.

The key aspects reproduced below relate to the provision of a barrier and the shared path width, plus useful background regarding the project tie-in with the existing situation in Days Bay.

3.1.2 No fall protection for shared path users **Significant**

There is no provision of a barrier or fence to prevent pedestrians and cyclists falling from the path into the water or rocks below. The path is likely to be used by vulnerable users such as young children who have less experience and can be easily distracted. The SAT understand the community are strongly opposed to a barrier that would inhibit the harbour views and change the environment. The SAT however believe a compromise could be made with a low level barrier or upstand that prevents someone from simply riding off the edge. The detail would need to be considered alongside introducing a snagging hazard for bicycle pedals, however we would see this as a lower risk than falling off the path.

Recommendation:
a. Include a barrier kerb or fence on the edge of the path where the fall is greater than 1m.
b. Retrofit a barrier kerb to the already completed section at York Bay.
c. Include a barrier or holding rail as part of the standard detail for the stairs and mini-stairs.

The Designers Comment included the statement "*The wall has been designed to provide a tiered solution avoiding a greater than 1m drop in any location."* No mention of consideration of a knock to the head and therefore potential of drowning (or subsequently if trapped underneath at high tide).

Client Decision:

A high level edge barrier has been strongly opposed by the local community previously. Furthermore, the design of the curved wall system is such that it does not require a fall from height barrier under the Building Code. Irrespective, the potential safety concerns are noted and HCC will further consider options during later stages of the detailed design phase for low level options as suggested, including such items as barrier kerb or low level chain link fence in high risk locations. This will be further discussed with the bay communities.

The previous shared path works in York Bay are outside of the scope of this project. However Council will further consider whether low level edge protection options should be retrofitted to provide a consistent edge treatment for the entire Eastern Bays shared path.

Regarding a barrier or handrail at the beach access points, as the designer notes, the project team have aimed to provide a design solution that avoids the need for such features given the risk of damage during storms. The auditors comments will be noted and reviewed further during the ongoing detailed design production.

This is the first time that I have become aware of the assessment that a "fall from height" barrier was deemed not to be required under the Building Code, which to my knowledge was not stated in the Application main report or its appendices although it is a crucial matter. Without knowing how this assessment was reached I would strongly urge that it be formally reviewed by an independent expert.

With respect to the shared path width the Applicant has noted that the 2.5 m usual minimum width was not a concern to the Auditors. Surprisingly there is no section in the Audit report that considers the shared path width which appears to be a glaring oversight but by inference of omission the auditors presumably considered that the width offered is safe even if a barrier edge or low level fence is subsequently provided.

In response to the matter of shared path continuity (Audit report 3.1.4), HCC responded

The sequencing of the construction of individual bays is being carefully considered. We intend to ensure that delivery staging provides as much continuity and coherence as possible. However, with staged implementation we recognise there will inevitably be a point where the facility ends somewhat abruptly, requiring careful management and possibly additional temporary works such as signage.

Council did not include Days Bay within the EB Shared Path scope of works for two reasons; there is no intention to construct a new seawall here and also given the local activity centre type nature of Days Bay. Council recognises there is a need to carefully consider the transitions at each end of Days Bay onto and off the new facility and will ensure this is included with the EB Shared Path project.

I accept that the project tie-ins can and will be examined more carefully at the detailed design stage.

6.7. Concluding remarks

The reconsideration of the matters has involved investigation of background technical material relating to shared path widths, and has been aided by the provision of additional matter (that in hindsight would have been usefully provided in the first instance), in particular the statement relating to an earlier assessment that a "fall from height" barrier is not required to meet the Building Code.

I recommend that an independent expert review this assessment and that irrespective the minimum 2.5 m be increased to nominally 2.85 m (with associated design changes if needed) to allow for an edge kerb or low level fence (or fall from height barrier) to be incorporated at the onset or potentially retrofitted. This along with the steps/area design (and other matters) can be dealt with at the detailed design stage.

7. July 2019 Detailed consideration

7.1. Point Howard

The intention is that a 2.5 m path will pass through the Point Howard area replacing an existing footpath with a kinked alignment where it crosses the gravel car parking area and crossing the rough concrete egress on an angle.

It is **recommended** that a raised coloured path be constructed to highlight it to motorists and also to better integrate with the start of the existing shared pathway that has an angled kerb partway across it that should be either removed or the path height raised in order to provide a flat transition. At the same time the encroaching flax bush should be removed and the cycle & pedestrian symbols remarked, and the cycle & pedestrian signs facing the sea re-orientated.

It is also **suggested** that a raised platform be provided on the entry (also used for egress, has many potholes at present) access with a plate over the existing kerb (there is a sump nearby to the southwest).

It is **recommended** that signage alerting motorists of pedestrians and cyclists should be provided, as well as signs indicating that pedestrians and cyclists should give way to motor vehicles, unless a zebra crossing is provided (which should be considered).

It is presume that the gravel parking area will be resurfaced in order to mark six spaces as intended, which might require some minor realignment of the angled kerb (or only mark five spaces).

It is **recommended** to also provide some formal bicycle parking, and perhaps some seating.

It is **suggested** to install a bicycle facility so riders can check their air pressure and pump tyres if need be and some other maintenance items.

7.2. Point Howard layby car parking areas

It is proposed to provide 8 marked 45 degree angled parking where presently informal 90 degree parking occurs. The inference is that this parking will be for motorists coming from the southeast; no wheel stops are proposed, only the shared path concrete separators.

Presently at the point 23.7 m from the marked bus stop the shoulder is approximately 1.7 m wide and available parking length approx. 4.9 m while at the western end 33 m away the shoulder is approximately 2.3 m with at least 6.9 m available parking length. The distance from the edgeline of the proposed 2.5 m shared path is approx. 7.7 and 7.2 m respectively.

Examination of Figure 2.2 of AS/NZS2890.1 reveals that for 45 angle parking where wheel stops are provided the marked distance C at right angles to the shared path should be 5.6/5.7 m (5.2 m for a high kerb/low wall and no wheel stops) while for 60 degree parking with a high kerb is should be 5.7 m.

Without wheel stops the front left of vehicles could protrude over the separators and encroach onto the 2.5 m shared path although the existing/new revetment unless the (9) separators were placed further from the shared path than currently shown.

It is also observed that the small area of planting with the "Welcome to Eastbourne Drive Carefully" sign hinders the sight visibility for motorists reversing out of the parking area.
It is **recommended** that the flax bush and sign (plus possibly also the Lions sign) be removed (it is assmed that the pohutukawa tree will remain , albeit significantly trimmed on the shared path seaward side).



7.3. Point Howard zebra crossing and steps

The plans show the 3.5 m shared path abruptly becoming 2.5 m in the immediate location of the existing triangular block island in which the black and white pole with belisha beacon and floodlight is placed, by the existing foreshore steps.

It is **recommended** that the island be retained but much shortened, retaining the first two kerb blocks (approx. 1.5 m length) but trimming the eastern five kerb blocks with 3.5 to 2.5 m width transitioning introduced (on the road side). It is **recommended** that a handrail should be provided for the new steps, given the height difference to the foreshore in this location by the bus stop and shelter.
It is **suggested** to extending the handrailing on the seaward side partly around the shared path S-bend.
It is **suggested** to install a hold rail on the northern side of the zebra crossing and potentially also on the southern side.



7.4. Whiorau Reserve

The proposal is widen the existing footpath through Whiorau Reserve, York Bay to 3.0 m width. A new 3.0 metre portion will extend across the end of the existing recessed parking for vehicles with a boat trailer making a sharp turn to a gap in the existing trees by the end of the existing wooden bollards (see photos).

Gap for proposed shared path

This will result in the need to remove the recently planted 2 metre high pohutukawa tree and nearby two flax bushes, plus trimming of the lower brnaches on the inside of the bend. It is assumed that the shared path might be aligned to be centred on an existing wooden bollard noting that the distance between the faces of ones on each side is 3.0 m, with trimming as need be on the bushes on either side nearer the road. It is **suggested** that additional bollards or a fence be provided on the outside of the sharp bend.

At the northern eastern end the existing footpath crosses the access road past a rubbish bin to a horseshoe bend, past a “dinghy” ramp, and later past a seat in the grass and a service utility cover near the road. The vegetation on the inside of the horseshoe bend will need trimming for sight visibility purposes and possibly also the slight bank. The nearby flax bush might also need to be removed on the assumption that the widening will be mainly on the southern inside, although some widening might be need on the north side to provide some clearance to the seat and avoiding the service cover as much as possible with easing of the bend onto the new 3.5 m shared path. The plans do not indicate that the nearby lamppost is to be relocated but it is **recommended** that the lamppost is relocated (with hazard markers provided), along with others that will otherwise be within the shared path.

7.5. Marine Parade intersection tie in

The proposal is initially to have a 3.5 m shared path immediately alongside Marine Dr at Marine Parade without any separation.

It is **suggested** instead that the existing narrow planting strip be retained as much as possible with the shared path set back the same distance as for the parallel parkign being formalised, thus better aligning with the existing footpath along Marine Drive south of Marine Parade and where pedestrians and cycles cross Marine Parade. It is **recommended** to provide a short link to a kerb drop (cut-down) for northbound cyclists along Marine Parade to access onto the shared path (plus cutdown on the Marine Parade sharp corner) and to modify the Marade Parade throat island. The access to the existing corner gravel area might then need to be widened if this area is to be retained for parking or else closed to vehicle traffic.

7.6. Days Bay tie in and Sunshine Bay tie in

The tie in at the southern end of Days Bay is approx. 15 m northeast of Waerenga Road (private, CH 5005) where the existing footpath is wider than that opposite Waerenga Road (which will be replaced with the transition to the 3.5 m shared path at approx. CH 5050).

It is **recommended** that a kerb drop (cut-down) could be provided in this vicinity.

The tie in at the southern end of Sunshine Bay opposite the Challenge service station occurs by the existing bus stop and shelter. The initial 3.5 m wide shared path immediately transitions alongside the modified revetment to 2.5 m alongside the new double curve seawall by new steps (CH 3905).

It is **suggested** to add lighting to the existing concrete pole by the proposed new steps (at end of the existing double yellow centreline), noting that it is unknown if this pole (and others) will be relocated.

7.7. Parallel parking and Other issues

At the two areas where parallel parking is proposed (near Marine Parade and Mahina Bay), it is **recommended** to introduce engineering measures to stop illegal end parking which might encroach onto the shared path or road (for example CH 5400-5410, and CH3130 & near 3160).

It is not known what signs are proposed but presumably these will include RG-26 signs etc.

Consideration (and upgrading) of Street lighting is noted in the application documents.