East Devon District Council

Notes of meeting of the Steering Group for the Sidmouth Beach Management Scheme, held at Kennaway House Sidmouth on 10 May 2018

Attendance list at end of document. The meeting started at 10am and completed at 11.45am.

1. Welcome and introduction

1.1. The Chairman welcomed everyone present and advised the Steering Group that he would continue to be the Chairman of the group.

2. Notes of the 15 March 2018

2.1. The notes of the previous meeting held a reference to the 10 January 2018 notes which is corrected to:
"[redacted] emailed the steering group the previous afternoon, asking that the following are noted from the meeting of 10 January 2018: In answer to a question RHDHV said they were using the estimate of the future erosion rate at Pennington Point provided by the previous consultants and they were not aware of concerns that had been expressed about that estimate at the time. **Action** It was agreed that[redacted] would provide relevant information for [redacted] to forward to RHDHV."

2.2. The relevant information is appended in full to these minutes. This information has now been provided to RHDHV. RHDHV confirmed that they would take into account the sensitivity of erosion rates and update the project as necessary

2.3. [redacted] expressed his concern that the notes of previous meetings were not sufficient in covering the points that had repeatedly been made on a number of issues – such as no or incorrect information from the former consultants being passed on to RHDHV, and costs being unproven for the long offshore breakwater scheme that was rejected on cost grounds.

2.4. The Clerk of Sidmouth Town Council reminded the Group that minutes were not a verbatim record, but a summary of the main issues and discussion on them. The Chairman requested that minutes from the meeting were circulated promptly to the Steering Group after the meeting, rather than when the agenda for the next meeting was published, in order to allow Group members to comment promptly if they had concerns about accuracy.

2.5. The Chairman assured the group that work undertaken by the previous consultants had been passed onto RHDHV and that, through their own work, they had found similar data. It was important for the Group to now look forward to the next phase of the project in order to reach everyone's goal of improved flood and coastal protection for Sidmouth and reduced erosion at East beach.

3. Outline business case phase programme summary

3.1. Representatives of Royal Haskoning DHV reminded the Steering Group of the key dates of the project leading to the planned build in 2021. Since the Group last met, work on Phase two covered:

- Completed refinement and appraisal of options
- Started the outline design of the preferred option
- Staging of the public exhibition and availability of information online
- Started production of the Environmental Statement as part of the EIA

3.2. Next stages were:

- Complete outline design during May
- Complete Environmental Statement in June
- Produce the Outline Business Case in July

3.3. The group were shown a number of visual representations of the existing beach and the issues around it of erosion and wave overtopping along the extent of the area; these images are appended to the minutes. Images of the BMP proposed shingle nourishment and existing structures, with explanations of expected shingle movement from this proposal were also explained.

3.4. Steering Group members raised questions on these presentations, with comments including:

- The angle of the cliff at East beach would become more shallow following continued erosion from rain affecting the top of the cliff;
- How overtopping could be impacted by the width of the beach – the proposal provided an approximate 10m width of beach. Modelling had been undertaken to determine what difference a wider beach would make, but this did not make a significant difference to the expected overtopping;
- Once the work was completed, there would be some shingle recycling that occurred naturally for the east beach from the town beach, as long as the town beach was regularly replenished. Frequency of replenishment is being considered, based on expected wave patterns and cost implications;
- Getting shingle to the site for replenishment would be evaluated on cost basis – the most economic means would be used;
- The extending of the existing groynes with a T shaped end had been considered as part of the BMP options appraisal, but had been rejected;
- Splash wall design was important to get right in terms of balancing the job it had to do with access to the beach and acceptable aesthetics;
- Impact of raising splash sea wall height on the design plan for Port Royal. An observation was made that since the last groyne was introduced, the area for fishermen to use had reduced to a narrow beach – The BMP considered the shortening of training wall for better maintenance access to east beach. The current work was considered undesirable as it is likely to further reduce the maximum amount of beach held, therefore a maintenance ramp was being considered for access. This ramp could be

angled into the land and the form is being considered which could be permeable;
- A representative of the Sidmouth fishermen hypothesised that if the cliff falls east of the new groyne occur, it will lead to more sand on the beach area and ultimately a sand bar for fishermen to cross;
- Design needs to consider the beach design at the mouth river to ensure it does not cause additional problems such as increased flood risk;
- Need to dispel myths and rumours, and focus communication to convince the local community that an increase in splash wall height is necessary and is an opportunity to improve the appearance of the area;
- Key to include access requirements in design stage – this was confirmed as part of the outline design;
- Consider ways of providing information to the public, by means of social media, websites, FAQs.

4. Recent public exhibition

4.1. The exhibition was held on 19 April 2018, attracting 150 visitors, 100 website views (as at time of reporting), and 17 articles and mentions on media. 70 written comments were received at the exhibition. Verbal comments and written submissions covered the following issues:
- Splash wall
- Current defences
- Creation of harbour
- Culture and amenity
- East cliff drainage
- Timescales
- Cost
- Cliff erosion
- Impact on tourism

4.2. Overall RHDHV felt that the feedback was positive. Some members of the Group who attended the exhibition also shared their experience.

4.3. The splash wall was discussed further, with comments including:
- Installing a plain face wall was not acceptable, despite being an engineering solution – it could incorporate variations of alignment, seating, planting and aesthetically pleasing design;
- A permanent installation was preferable to a temporary installation as it was safer to deploy;
- Potential designs and options had been put online, and the exhibition had also sought views on what elements of design were preferred;
- The final design of the splash wall would have to go through the planning process, which offered another opportunity to comment on the proposed structure;

- Option of a return splash wall should be considered, alongside what level of overtopping was acceptable and what could easily drain away once the splash wall had been breached;
- RHDHV confirmed that there were no viable alternative options to raising the splash wall to prevent future wave overtopping. Extending the existing groynes and creating a wider beach has been considered, but this would be cost prohibitive;
- Markers on site would be helpful in order to assist people in visualising the proposal;
- Timing of the construction of the splash wall could be considered to delay its deployment, but many Group members felt that it would be better to undertake this in the early stages of the proposal in order to best protect as soon as possible against possible storm impact.

4.4. The Chairman stressed that the splash wall was the most sensitive issue for many in the local community and therefore work had to be done on communication to convince the public of the need for the changes. The Group needed to consider methods of communication to improve the current situation of messages being clouded by rumours and speculation. There was also a need to remind the community of what options had been assessed in the past and their reasons for being discounted.

5. **Any other business**

5.1. [redacted] explained to the Steering Group his information on the future erosion rate at Pennington Point being used by RHDHV that was based on the work of the previous consultants, and the rates provided by Devon County Council from surveys in 2012 and 2015 that were significantly different. The information, as referenced under paragraphs 2.1 and 2.2, is appended to these minutes.

6. **Date of next meeting**

6.1. A preliminary date is set for 5 July 2018 but would be confirmed to the Steering Group.

Attendance list

Steering group members present:

[redacted]

Memo
To: [redacted]
From: [redacted]
Date: 15 March 2018
Subject: Coastal Process report June 2015 – Check on measurement of cliff top recession between 2012 and 2015 using Devon CC's land-based cliff surveys.

[redacted],

At the last SG meeting it emerged that Royal Haskoning were using the estimate of the future erosion rate at Pennington Point in CH2M Hill's (Halcrow's) June 2015 Baseline Coastal Process report and in their Economics Report, for their more detailed work, and they were not aware of the concern that had been expressed about this estimate during the development of the BMP by CH2M Hill. It was agreed that I would remind you of this so you could forward it to RH so they were fully informed.

1. Background

Because there was a risk that Sidmouth's existing coastal defences (the sea wall, the beach, the rock groynes and breakwaters) could be outflanked due to erosion at Pennington Point, the Sidmouth and East Beach BMP was produced with the aims of maintaining the standard of service of the existing coastal defences and reducing the erosion rate at Pennington Point (PP) in an integrated, justifiable and sustainable way.

The timing and the economic justification of works to reduce the rate of erosion at PP are dependent on an estimate of the future erosion rate(s)[1] at PP (i.e. the higher rate the sooner the works are needed and the greater are the benefits over the lifetime of the scheme, 100 years). Because of this and because the regulatory process is stringent it was important to produce this estimate with the highest level of confidence possible and with the minimum amount of scientific uncertainty.

[1] 'rate(s)' is use here because: IF the future annual erosion rate of the cliffs to the east of the R Sid at PP is due mainly to waves from the SW quadrant , THEN over time as the cliffs recede into the lea of the hard defenses to the west of the R Sid, the annual rate will reduce. Amongst other things this would be typical of crenulate bay formation. Because the annual rate at PP is likely to reduce over time, the timing of erosion protection works at PP to reduce the risk of the existing defenses from being outflanked needs to take this 'reducing rate' into account. Serious consideration should be given as to whether or not a crenulate bay is forming.

Historic cliff recession and erosion rates were researched using Ordinance Survey maps and aerial photography to produce an estimate for the future erosion rate. The methodology used[2] and results of this work are in the Baseline Coastal Process report (BCP) dated June 2015, which recommended monitoring of the cliffs at PP to improve the estimate.

If my memory serves me right the long-term average annual erosion rate between 1950 and 2015 (for Pennington Point) in the Baseline Coastal Process report was 0.19m/year and this rate was used in the Economics report and in the Options Appraisals.

2. Existing monitoring.

In December 2015 it was discovered that Devon County Council had carried out land-based surveys of the cliffs at Pennington Point in 2012 and 2015. Because this was monitoring which already existed it was thought it should be used, as recommended in the BCP report, to check CH2M Hill's measurements of recession at PP and possible improve confidence in their June 2015 estimate of the future erosion rate for Pennington Point.

A note – ***"Comparison of recession rates at Pennington Point for 2012 to 2915 (TB 14/01/16)"*** was produced as a first step in this process. This note is reproduced in full in Appendix 1. The comparison was done as an initial check to see if there were any significant differences between the measurements of cliff top recession given in Table B1[3] of Appendix B in the Baseline Coastal Process report (reproduced in Appendix 1) and the measurements of recession taken from DCC's land survey.

DCC's survey ran from the existing rock revetment at Pennington Point to a point c40m east thereof. This survey coincided with transects T30 and T31 in the BCP report, which made a spatial comparison straightforward.

DCC's surveys were carried out in September 2012 and October 2015. Table B1 gives offsets measured from the landward end of each transect (the 'fixed datum' in Fig 5-1 of the BCP report) to the cliff top for 2012

[2] S 5.3.2 of Baseline Coastal process report June 2015 – offsets to cliff top were measured from the landward end of each transect.

[3] The measurements in Table B1 are explained in s5.3.2 of the CP report.

and 2015[4]. These measurements were taken from aerial photographs, taken in 2012 and 2015. The months in which the photographs were taken is not given in Table B1. Consideration should be given to finding this out so the temporal comparison, and hence the erosion rate between the 2012 and 2015 photographs can be ascertained, and properly compared with the rate calculated from the DCC's surveys which are known to be 3.08 years apart.

The rates of recession at PP between 2012 and 2015 in Appendix 1 are:

- Coastal Process report data from Table B1 (transect method) = 0.57m/year
- DCC survey (transect method) = 1.4m/year
- DCC survey (area method) 2.32 m/year
- Long term average 1950 to 2015 = 0.19m/year. I recall this rate was used in the economics report and in the options appraisals

In addition the following **comparison of the actual measurements** of recession along transects 30 and 31, between 2012 and 2015, are of note because they give an indication of the robustness of the measurements of historic cliff recession in Table B1 of the Baseline Coastal Process report.

Transect 30 - According to data from Table B1 the cliff top 'recession' along transect 30 between 2012 and 2015 is 13.1m-14m = **-0.9m of recession, i.e. 0.9m of accretion** compared with….

a. **2.6m of recession** along the same transect, according to DCC's survey AND
b. 102.7sq m/23m = **4.46m of recession**, according to DCC's survey, using the area method,

Transect 31 - According to data from Table B1 the cliff top 'recession' along transect 31 between 2012 and 2015 is 13.5m-9.2m = **4.3m of recession** compared with…

a. **6m of recession** along the same transect, according to DCC's survey AND
b. 157sq m/16 m= **9.81m of recession,** according to DCC's survey using the area method.

This check on the measurements of recession in Table B1 , using DCC's topographical surveys, shows transects 30 and 31 are not representative

[4] NB the units in the 'Total Change' columns of Table B1 are negative where landward cliff recession has occurred. So for example: '-10.4' means the cliff receded 10.4m, landwards.

of recession at Pennington point between 2012 and 2015 and the area method for measuring recession is more representative.

Also the fact that the measurements in Table B1 show 0.9m of accretion at the cliff top at transect 30, begs the questions…. Why is this? and … What is the quality of all the measurements in Table B1?

It's now 2018, 3 years after DCC's last survey in 2015. Another survey, similar to DCC's, would give good quality monitoring for 2012, 2015 and 2018. I recommend another survey and further analysis to improve confidence in the estimate of future erosion rates at PP.

The difference in the measurements of recession along transects 30 and 31, between 2012 and 2015 in Table B1 of the Coastal Process report, and the measurements taken from DCC's survey are large. Because they are large the reason for the differences should be investigated further and the impact on Royal Haskoning's work should be assessed to see if they are significant.

I also recommend, as I did in Jan. 2016, that my comparison is checked.

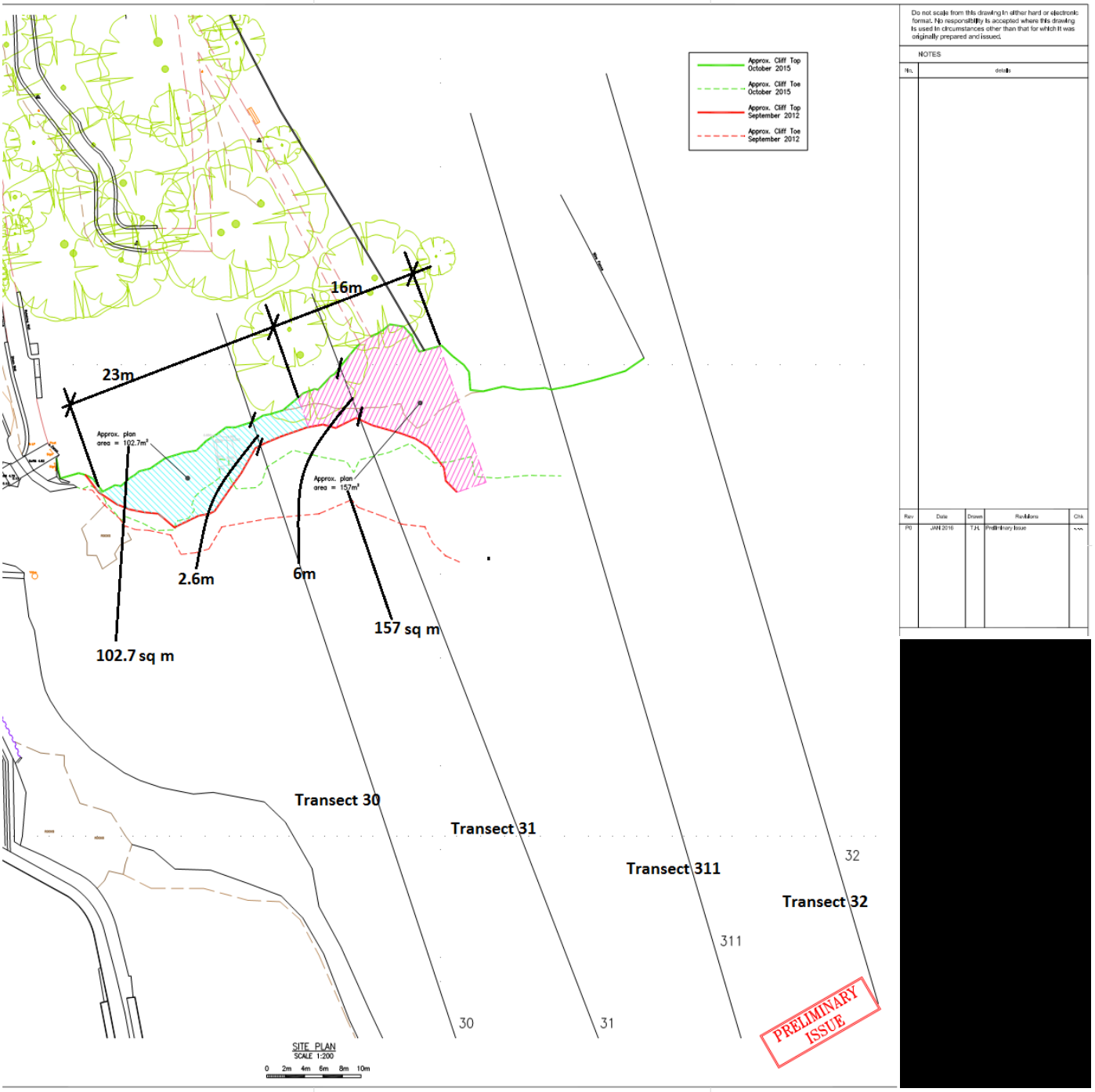
Please forward this to RH and let me know what they think, thanks.

If there are any queries I'd be pleased to help,
Regards,
[redacted]

Appendix 1

Comparison of recession rates at Pennington Point for 2012 to 2015

(TB 14/01/16).



Notes

1. Halcrow aerial survey offsets 13.1, 14, 13.5 & 9.2 m for 2012 and 2015 (3 years apart) are from the coastal process report. These offsets were part of the data set in that report which was used to generate the long term average rate for CBU 7 (from 1950 to 2015), namely 0.19m/year, upon which the economics base line report is based.
2. DCC topographical survey was carried out in Sept 2012 and Oct 2015 (3.08 years apart)
3. This comparison indicates significant differences at Pennington Point, the critical location, which has a bearing on the timing of future works.
4. This comparison also indicates significant difference between the area method and the transect method that was used in the coastal process report to calculate the erosion rate of 0.19m/yr, used in the baseline economics report.
5. This comparison has been carried out to illustrate the uncertainties in measuring past erosion rates. Future monitoring has been proposed to deal with such uncertainties. The DCC survey and this comparison is, in effect, monitoring which already exists from 2012 to 2015. How should it be used?
6. This comparison should be checked by others.

CBU7 - Recession rates (m/year) for 2012 to 2015					
	Transect Method		Area Method		
Transects	Halcrow Aerial survey (Coastal Process report)	EDDC/DCC Topo. survey	Halcrow Aerial survey	EDDC/DCC Topo. survey	
T 30	(13.1 - 14) / 3 = -0.3	2.6 / 3.08 = 0.84	Not done	102.7 / (23 x 3.08) = 1.45	
T 31	(13.5 - 9.2) / 3 = 1.43	6 / 3.08 = 1.95	Not done	157 / (16x3.08) = 3.19	
					Long term average for 1950 to 2015 (Coastal Process report)
Pennington Point (T 31 & 31)	(-0.3 + 1.43) / 2 = **0.57m/yr**	(0.84+1.95) / 2 = **1.4m/yr**	Not done	(1.45 + 3.19) / 2 = **2.32m/yr**	**0.19m/year**

			DISTANCE FROM DATUM							TOTAL CHANGE							MEAN ANNUAL RATE OF CHANGE (m/y				
Profile	CBU	Feature	1946	1950	1988	2006	2009	2012	2015	1946-1950	1950-1988	1988-2006	2006-2009	2009-2012	1946-2012	1950-2012	1946-1950	1950-1988	1988-2006	2006-2009	2009-2012
26	5	CT	*	17.2	*	*	*	*	*	*	*	*	*	*	*	*					
26	5	CB	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
26	5	SBW	*	*	*	65.8	67.8	43.5	*	*	*	*	2	-24.3	*	*	*	*	*	0.667	-8.1
27	5	CT	*	*	*	*	*	*	*	*	*	*	*	*	*	*					
27	5	CB	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
27	5	SBW	*	*	*	52.8	64.4	12.4	*	*	*	*	11.6	-52	*	*	*	*	*	3.867	-17.333
28	5	CT	*	*	*	*	*	*	*	*	*	*	*	*	*	*					
28	5	CB	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
28	5	SBW	*	*	*	43.9	59.7	8.7	*	*	*	*	15.8	-51	*	*	*	*	*	5.267	-17
29	5	CT	*	*	*	*	*	*	*	*	*	*	*	*	*	*					
29	5	CB	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
29	5	SBW	*	*	*	58.1	49.5	7.1	*	*	*	*	-8.6	-42.4	*	*	*	*	*	-2.87	-14.13
31	7	CT	41.7	31.3	39.7	30.4	22	13.5	9.2	-10.40	8.40	-9.30	-8.40	-8.50	-28.20	-17.80	-2.60		-0.52	-2.80	-2.83
31	7	CB	46.9	44.6	51.8	35.6	30.5	26.8	*	-2.30	7.20	-16.20	-5.10	-3.70	-20.10	-17.80	-0.58	0.19	-0.90	-1.70	-1.23
30	7	CT	26.2	29.9	26.9	23	17.6	13.1	14	3.70	-3.00	-3.90	-5.40	-4.50	-13.10	-16.80		-0.08	-0.22	-1.80	-1.50
30	7	CB	46.1	33.5	41.5	31.1	26	24.8	*	-12.60	8.00	-10.40	-5.10	-1.20	-21.30	-8.70	-3.15	0.21	-0.58	-1.70	-0.40
311	7	CT	52.8	45.7	49.1	54.3	36.3	35.7	30.6	-7.10	3.40	5.20	-18.00	-0.60	-17.10	-10.00	-1.78			-6.00	-0.20
311	7	CB	67.9	65.2	68.5	55.6	40.4	45.6	*	-2.70	3.30	-12.90	-15.20	5.20	-22.30	-19.60	-0.68	0.09	-0.72	-5.07	1.73
321	7	CT	34.2	48.5	50.3	41.1	34.1	34.4	36.4	14.30	1.80	-9.20	-7.00	0.30	0.20	-14.10			-0.51	-2.33	
321	7	CB	72	68.9	72.7	58.1	52.4	49.9	*	-3.10	3.80	-14.60	-5.70	-2.50	-22.10	-19.00	-0.78	0.10	-0.81	-1.90	-0.83
331	7	CT	48.6	47.5	50.4	48.3	47.5	48.6	49.8	-1.10	2.90	-2.10	-0.80	1.10	0.00	1.10	-0.28		-0.12	-0.27	
331	7	CB	75.9	72.8	77.5	71	66.1	64.8	*	-3.10		-6.50	-4.90	-1.30	-11.10	-8.00	-0.78	0.00	-0.36	-1.63	-0.43
341	7	CT	47.7	37	49.3	44.2	36.2	35.6	36.5	-10.70	12.30	-5.10	-8.00	-0.60	-12.10	-1.40	-2.68		-0.28	-2.67	-0.20
341	7	CB	78.7	75.3	78.3	73.7	70.1	67.7	*	-3.40		-4.60	-3.60	-2.40	-11.00	-7.60	-0.85	0.00	-0.26	-1.20	-0.80
342	7	CT	30	28.6	29.7	25.5	27.6	30	29.5	-1.40	1.10	-4.20	2.10	2.40	0.00	1.40	-0.35		-0.23		
342	7	CB	80.3	72.3	72.1	74.6	72.7	71	*	-8.00		2.50	-1.90	-1.70	-9.30	-1.30	-2.00	0.00	0.14	-0.63	-0.57
30	7	SBW	*	*	*	81	90.1	108.9	*	*	*	*	9.1	18.8	*	*	*	*	*	3.033	6.267
31	7	SBW	*	*	*	77.9	78.1	105.3	*	*	*	*	0.2	27.2	*	*	*	*	*	0.067	9.067
32	7	CB	66.7	65.7	67	49.5	46.1	43.3	*	-1.00	1.30	-17.50	-3.40	-2.80	-23.40	-22.40	-0.25	0.03	-0.97	-1.13	-0.93
33	7	CT	55.1	45.7	50.3	39.5	32.3	29.8	23.1	-9.40	4.60	-10.80	-7.20	-2.50	-25.30	-15.90	-2.35		-0.60	-2.40	-0.83
33	7	CB	71.7	68.7	71.3	58.9	56.9	54.8	*	-3.00	2.60	-12.40	-2.00	-2.10	-16.90	-13.90	-0.75	0.07	-0.69	-0.67	-0.70
32	7	CT	47.6	36.8	44.9	34.3	32.6	26.7	26.2	-10.80	8.10	-10.60	-1.70	-5.90	-20.90	-10.10	-2.70		-0.59	-0.57	-1.97
34	7	CB	74	68.4	74.5	68.5	63	64.2	*	-5.60	6.10	-6.00	-5.50	1.20	-9.80	-4.20	-1.40	0.16	-0.33	-1.83	0.40
34	7	CT	45.4	43.4	46.8	45.2	45.1	40	38.5	-2.00	3.40	-1.60	-0.10	-5.10	-5.40	-3.40	-0.50		-0.09	-0.03	-1.70
32	7	SBW	*	*	*	87.5	71.1	71.6	*	*	*	*	-16.4	0.5	*	*	*	*	*	-5.47	0.167
33	7	SBW	*	*	*	90.9	75.9	80.5	*	*	*	*	-15	4.6	*	*	*	*	*	-5.00	1.533
34	7	SBW	*	*	*	96.4	78.5	94.1	*	*	*	*	-17.9	15.6	*	*	*	*	*	-5.97	5.2
37	8	CT	29.5	35.7	27.2	27.4	31.7	27.9	*	6.20	-8.50	0.20	4.30	-3.80	-1.60	-7.80		-0.22			-1.27

Data set from Baseline Coastal Process report Appendix B Table B1.
'Distance from Datum' or offsets or 13.1, 14, 13.5 & 9.2 m in the CBU 7 table above come from lines 30/7/CT and 31/7/CT respectively, for columns 2012 and 2015