Appendix A

Beach Morphology Report

Sandy Lane - Beach Improvement and Shoreline Stabilization

Shoreline Structures Report

July 20, 2026 | 13670.301.R2.Rev0

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Sandy Lane - Beach Improvement and Shoreline Stabilization

Shoreline Structures Report

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Revision	Date	Status	Comments	Prepared	Reviewed	Approved
Rev0	July 20,2026	Final	For Client Review	CBF	DCW	DCW

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1. Introduction

This report is part of the Coastal Impact Assessment prepared by Baird. The purpose of the Beach Morphology Study is to characterize the prevailing beach conditions and trends. We combined multiple sets of measured surface elevations as the basis for this analysis.

The data covers the land surface starting from the back of each and extending seaward to the sub-tidal zone as shown in Figure 1.1. This includes part of the sea floor. The dataset includes surface elevation field measurements and LIDAR data from Baird and from the CZMU. Measurements are arrayed along the shoreline study area and at proposed structure locations. Figure 1.1 shows the survey locations.

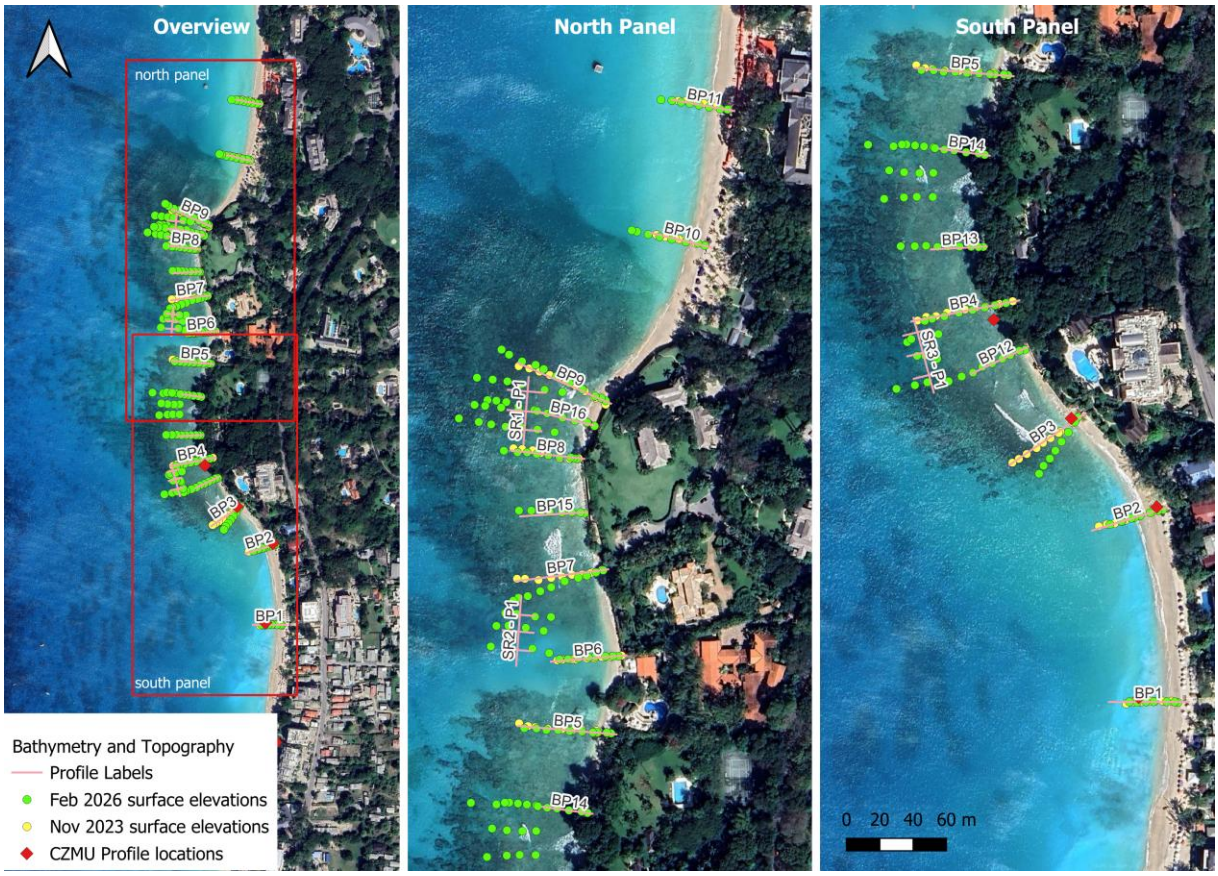


Figure 1.1: Elevation measurements map

2. Data Collection

Field measurements took place on November 11th, 2023, February 7th and 8th 2026 by a licensed surveyor, multiple chainmen and a support boat. The survey was conducted with a total station and prism poles. Images of the survey process are shown in Figure 2.1. CZMU field measurement data was provided for the location shown in red in Figure 2.1. This surface data is from 1988 to 2025.

The remotely sensed LIDAR data was captured and post processed in 2015 by the CZMU as part of their Coastal Risk Assessment and Management Program (CRMP). It covers the entire island with a 2m x 2m grid that extends out to the -40m contour.



Figure 2.1: Bathymetry and topography survey

3. Analysis

The data sets were combined and interrogated using GIS software to from surface elevations for 2015, 2023 and 2026. All data sets are referenced to the Barbados National Grid 1938 EPSG:32292 coordinate system, and to Lamont vertical datum. In both cases the units are meters with negative numbers indicating values of elevation below Lamont datum.

Baird established 15 profile locations based on the extent of the site, important shoreline features and existing profile location from older datasets. They are named BP1 to BP15 and are shown in Figure 2.1above. Baird produced plots of horizontal distance vs vertical elevation at each profile. These are shown in Figure 4.1 to Figure 4.11 below.

Four parameters were used to characterize the profiles and establish morphology trends. We calculated values for the 4 parameters for each of the 3 data sets, at each of the 15 profiles. This formed the basis for statistical assessment of the parameters and how they changed over the data sets. These changes are representative of beach morphology.

These three datasets are indicative. They are snapshots each taken on a single day. They do not cover the full range of changes to the configurations of the beach as experienced over the 11-year period. They show long term trends in beach dimensions.

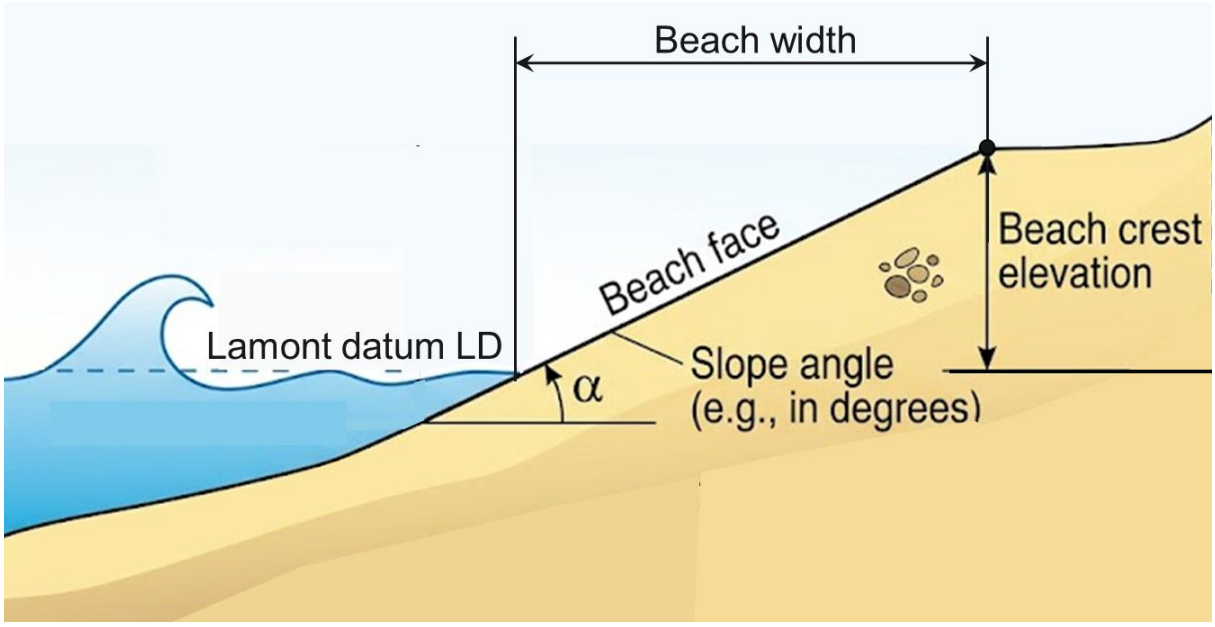


Figure 3.1: beach profile parameters

3.1 Beach Width

This is defined as the horizontal distance from the landward start point of the beach profile to the point at which the surface elevation intersects with 0 mLD. For this assessment we consider 0 mLD to be the water line. Beach widths, differences and statistics are listed in Table 3.1, Table 3.2 and Table 3.3. beach width and difference in beach width between time periods are shown for each profile. There is no beach width calculated for BP8 in 2023. All the surface elevations recorded are below the lamont datum. This also means there is no change in beach width for this profile. Fourteen of the fifteen profiles recorded net decrease in beach width between 2015 and 2026. The maximum beach width recorded was 20.6 m at

BP10 in 2015 and the smallest beach width was 1.5 m at BP7 in 2026. The average beach width was 13.8 m in 2015 and decreased to 6.6 m in 2026.

Table 3.1: beach width BP1 to BP6

	BP1		BP2		BP3		BP4		BP5		BP6	
Year	W [m]	Diff [m]	W [m]	Diff [m]	W [m]	Diff [m]	W [m]	Diff [m]	W [m]	Diff [m]	W [m]	Diff [m]
2015	8.3	0.0	17.0	0.0	16.5	0.0	15.7	0.0	17.9	0.0	12.6	0.0
2023	9.7	1.4	16.2	-0.8	7.3	-9.1	4.5	-11.2	11.9	-6.0	9.9	-2.6
2026	7.1	-2.6	8.4	-7.8	2.5	-4.8	5.2	0.8	11.7	-0.2	5.2	-4.7

Table 3.2: Beach Width BP7 to BP11, average

	BP7		BP8		BP9		BP10		BP11		Avg	
Year	W [m]	Diff [m]	W [m]	Diff [m]	W [m]	Diff [m]	W [m]	Diff [m]	W [m]	Diff [m]	W [m]	Diff [m]
2015	13.0	0.0	4.4	0.0	10.3	0.0	20.6	0.0	15.8	0.0	13.8	0.0
2023	5.4	-7.6	n/a	n/a	5.9	-4.4	13.0	-7.6	10.5	-5.3	9.4	-4.4
2026	1.5	-3.9	2.9	n/a	4.2	-1.8	13.3	0.3	10.0	-0.5	6.6	-2.9

Table 3.3: beach width statistics

Statistic	Value	Unit	Profile
max	20.6	m	BP10
min	1.5	m	BP7
max decrease	-11.2	m	BP4
max increase	1.4	m	BP1

The CZMU has a profile station at BP2 that recorded surface elevations from 1988 to 2025. In their data repository this location is referenced as Paynes Bay (M). This data is separate from the remote sensing and Baird fieldwork because the format is different. It is the longest available data set and includes 98 profiles over 37 years. Figure 3.2: Beach with time series. Figure 3.2 is a plot of the beach widths and the dates they occurred. This demonstrates trend of reducing beach width over four decades.

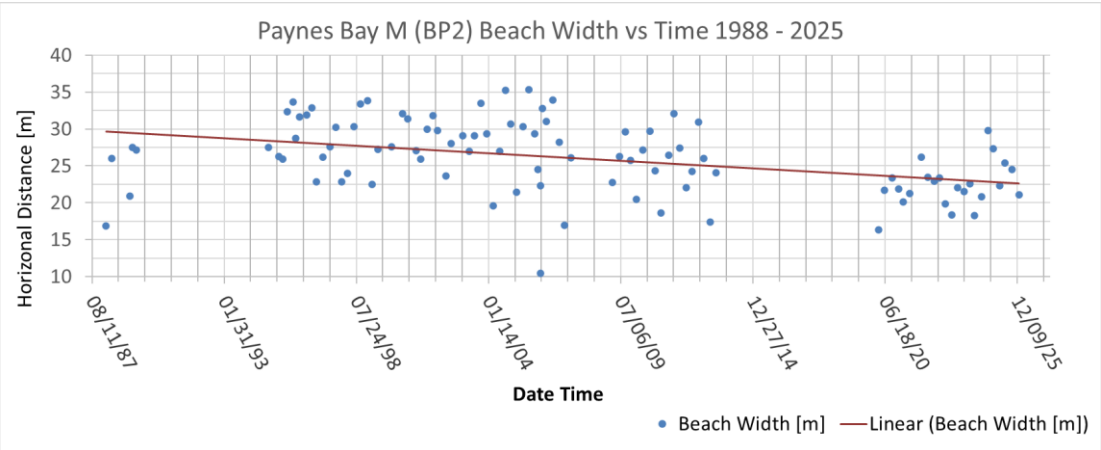


Figure 3.2: Beach with time series

3.2 Crest Elevation

This is the highest elevation recorded on the profile. This typically occurs at the landward end of the profile and is expressed in meters relative to Lamont. Negative elevation values are lower than 0 mLD. Crest elevations, differences and statistics are listed in Table 3.4, Table 3.5 and Table 3.6. The maximum crest elevation recorded was +2.6 mLD at BP5 in 2015 and the minimum was -0.2 mLD at BP8 in 2023. The average crest elevation decreased from 1.6 mLD in 2015 to 1 mLD in 2026.

Table 3.4: Crest elevation BP1 to BP6

	BP1		BP2		BP3		BP4		BP5		BP6	
Year	ele [mLD]	Diff [mLD]	ele [mLD]	Diff [mLD]	ele [mLD]	Diff [mLD]	ele [mLD]	Diff [mLD]	ele [mLD]	Diff [mLD]	ele [mLD]	Diff [mLD]
2015	1.3	0.0	1.2	0.0	0.9	0.0	1.4	0.0	2.6	0.0	1.8	0.0
2023	1.4	0.0	1.8	0.7	1.2	0.3	0.7	-0.7	1.0	-1.5	0.5	-1.3
2026	2.0	0.6	1.3	-0.5	0.8	-0.4	0.6	-0.1	1.2	0.2	0.5	0.0

Table 3.5: Crest elevation BP7 to BP11, average

	BP7		BP8		BP9		BP10		BP11		Avg	
Year	ele [mLD]	Diff [mLD]	ele [mLD]	Diff [mLD]	ele [mLD]	Diff [mLD]	ele [mLD]	Diff [mLD]	ele [mLD]	Diff [mLD]	ele [mLD]	Diff [mLD]
2015	1.5	0.0	0.5	0.0	1.4	0.0	2.5	0.0	2.3	0.0	1.6	0.0
2023	0.6	-0.9	-0.2	-0.7	1.0	-0.4	2.0	-0.4	2.0	-0.3	1.1	-0.5
2026	0.2	-0.4	0.0	0.2	0.5	-0.5	1.9	-0.1	1.9	-0.1	1.0	-0.1

Table 3.6: Crest elevation statistics

statistic	value	unit	profile
Max	2.6	mLD	BP5
Min	-0.2	mLD	BP8
Max decrease	-1.5	mLD	BP5
Max increase	0.7	mLD	BP2

3.3 Slope Angle

This is the angle of inclination of the beach surface. Beach profiles are non-linear. For this assessment the slope angle is calculated as the straight line that best represents the overall slope of the profile from the crest down to the sub-tidal zone. The angle of inclination is expressed in degrees [°] relative to horizontal. This is illustrated in Figure 3.1. The slope angles, differences and statistics are listed in Table 3.7, Table 3.8 and Table 3.9. The maximum slope angle recorded was 10.9° at BP1 in 2026 and the minimum slope angle recorded was 4.8° at BP8 in 2023 and 2026. The average slope angle increased from 7.5° in 2015 to 8.1° in 2026.

Table 3.7: Slope angle BP1 to BP6

	BP1		BP2		BP3		BP4		BP5		BP6	
Year	Slp °	Diff °	Slp °	Diff °	Slp °	Diff °	Slp °	Diff °	Slp °	Diff °	Slp °	Diff °
2015	8.4	0.0	5.2	0.0	6.2	0.0	5.6	0.0	8.6	0.0	5.5	0.0
2023	8.4	0.0	6.5	1.3	7.9	1.6	9.9	4.3	8.0	-0.6	9.2	3.8
2026	10.9	2.5	9.7	3.2	9.4	1.5	7.5	-2.4	8.5	0.4	9.0	-0.3

Table 3.8: crest elevation BP7 to BP11, average

	BP7		BP8		BP9		BP10		BP11		Avg	
Year	Slp °	Diff °	Slp °	Diff °	Slp °	Diff °	Slp °	Diff °	Slp °	Diff °	Slp °	Diff °
2015	6.9	0.0	13.5	0.0	9.8	0.0	6.7	0.0	9.0	0.0	7.5	0.0
2023	6.8	-0.1	4.8	-8.7	8.8	-1.0	8.5	1.8	7.0	-2.0	8.1	0.6
2026	6.8	-0.1	4.8	0.0	8.1	-0.7	7.9	-0.7	8.8	1.8	8.1	0.0

Table 3.9: slope angle statistics

statistic	value	unit	profile
Max	10.9	°	BP1
Min	4.8	°	BP8
Max decrease	4.9	°	BP4
Max increase	-2.9	°	BP2, BP11

3.4 Sand Volume

This is the volume of sand at the beach profile, at the time of the survey, and is expressed in cubic meters [m^3]. This is calculated by estimating the cross-sectional area under the profile line and multiplying it by the shoreline length. The area under the graph calculated to a maximum horizontal distance of 30m and sand layer base elevation of -1 mLD. To determine the shoreline length assigned to each profile the running length between the subject profile and the two adjacent profiles is measured and half of that distance is allocated to the subject profile. The maximum sand volume recorded was 5287 m^3 at BP10 in 2015 and the minimum was 449 m^3 recorded at BP8. The average volume decreased from 2428 m^3 in 2015 to 1912 m^3 in 2026.

Table 3.10: sand volume BP1 to BP6

	BP1	L [m]	BP2	L [m]	BP3	L [m]	BP4	L [m]	BP5	L [m]	BP6	L [m]
		56		91		77		112		92.5		48
	Vol [m3]	Diff [m3]	Vol [m3]	Diff [m3]	Vol [m3]	Diff [m3]	Vol [m3]	Diff [m3]	Vol [m3]	Diff [m3]	Vol [m3]	Diff [m3]
2015	2079	0	2799	0	2037	0	3447	0	2758	0	2830	0
2023	1969	-110	4378	1579	1912	-124	2758	-689	1969	-789	1817	-1013
2026	3093	1125	4906	527	1542	-370	2097	-661	2171	202	864	-954

Table 3.11: sand volume BP7 to BP11, average

	BP7	L [m]	BP8	L [m]	BP9	L [m]	BP10	L [m]	BP11	L [m]	Avg	
		44		37		72		91		37		
Year	Vol [m3]	Diff [m3]	Vol [m3]	Diff [m3]	Vol [m3]	Diff [m3]	Vol [m3]	Diff [m3]	Vol [m3]	Diff [m3]	Vol [m3]	Diff [m3]
2015	1259	0	622	0	2041	0	5287	0	1551	0	2428	0
2023	674	-586	449	-173	1331	-711	3482	-1805	1045	-507	1980	-448
2026	511	-162	467	18	1084	-247	3111	-370	1190	145	1912	-68

Table 3.12: sand volume statistics

statistic	value	unit	profile
Max	5287	m3	BP10
Min	449	m3	BP8
Max decrease	-1805	m3	BP11
Max increase	1579	m3	BP2

4. Profile Plots

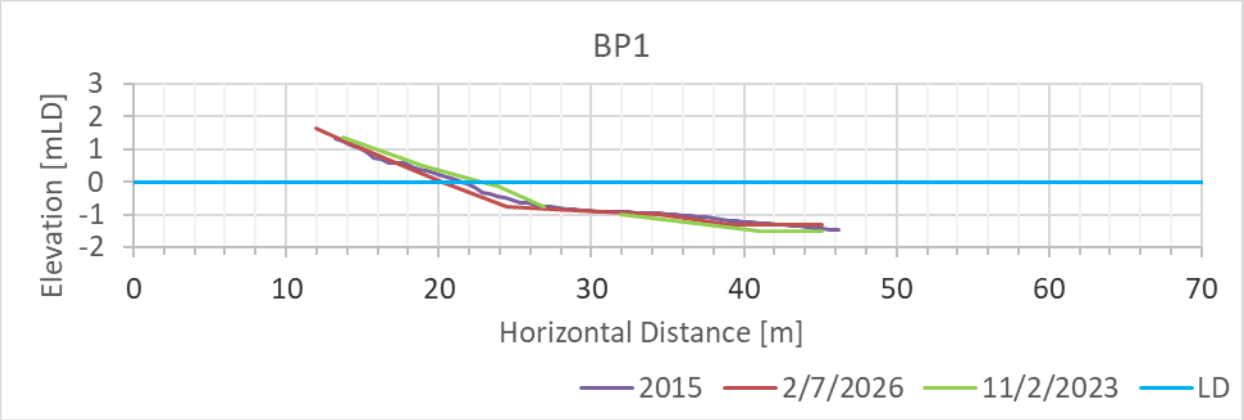


Figure 4.1: BP1

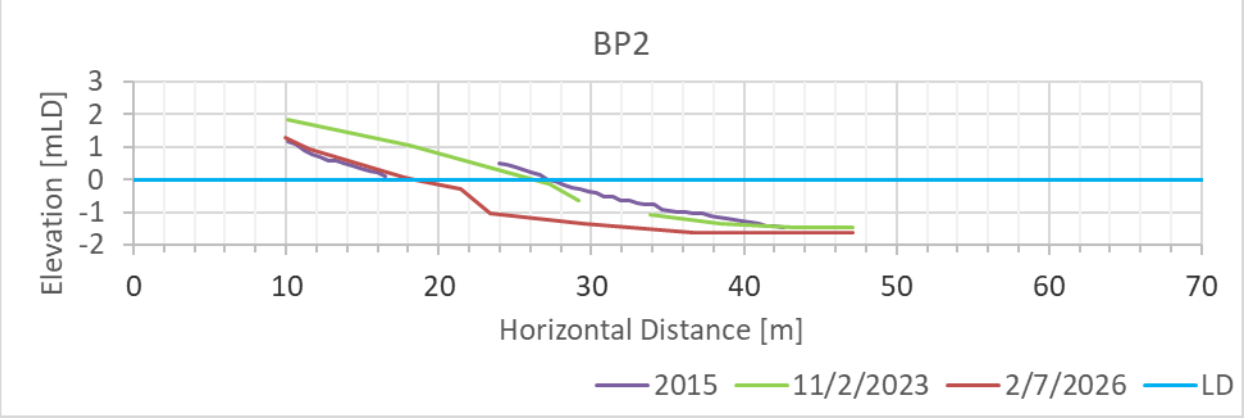


Figure 4.2: BP2

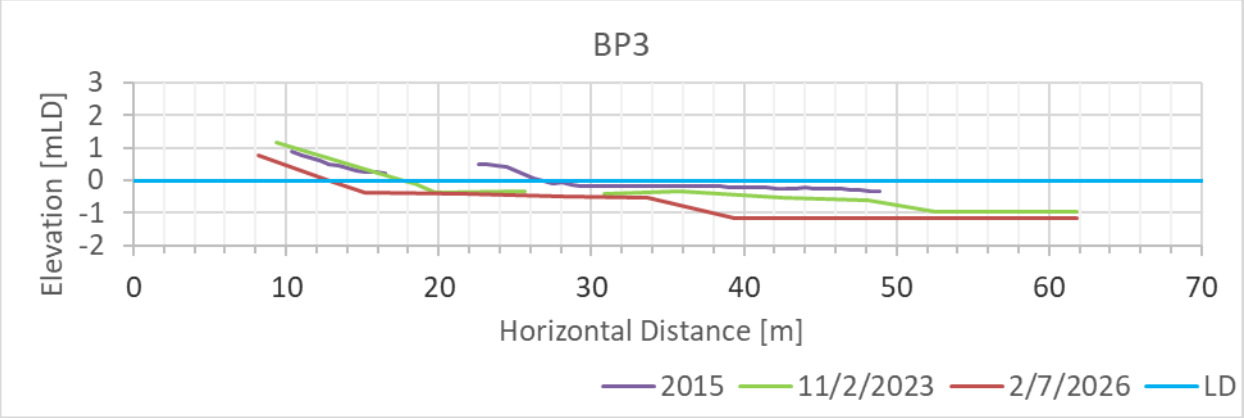


Figure 4.3: BP3

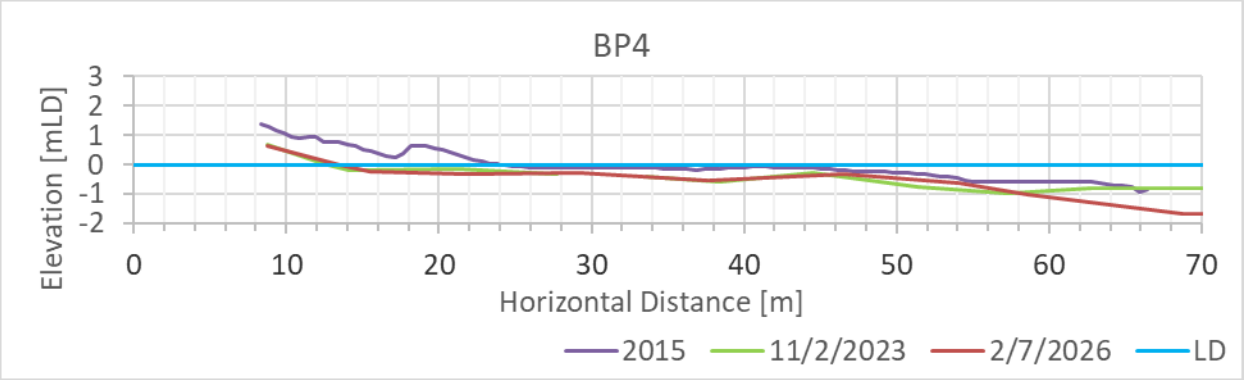


Figure 4.4: BP4

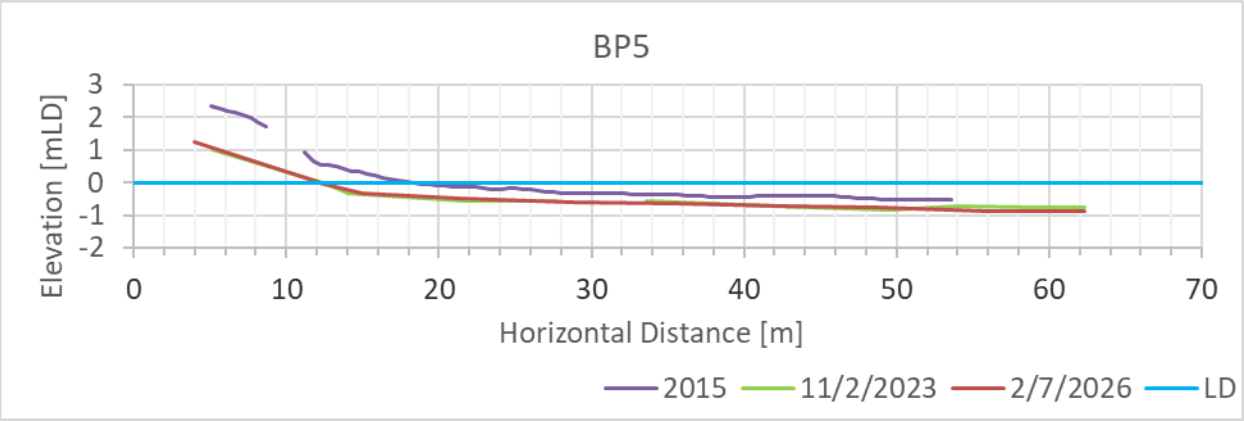


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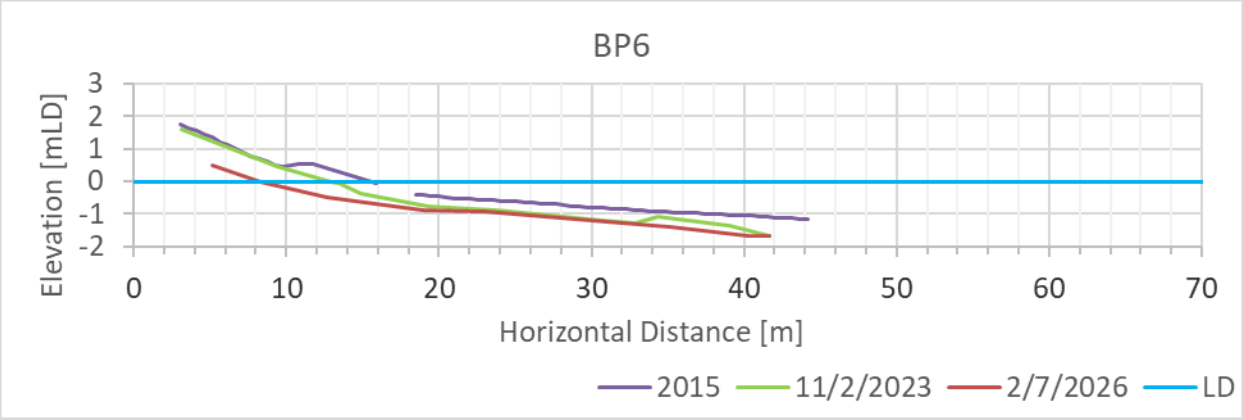


Figure 4.6: BP6

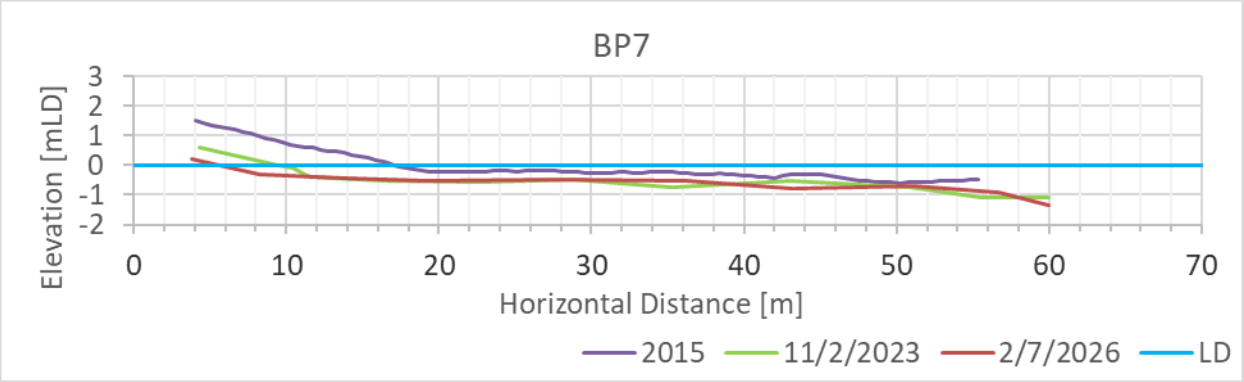


Figure 4.7: BP7

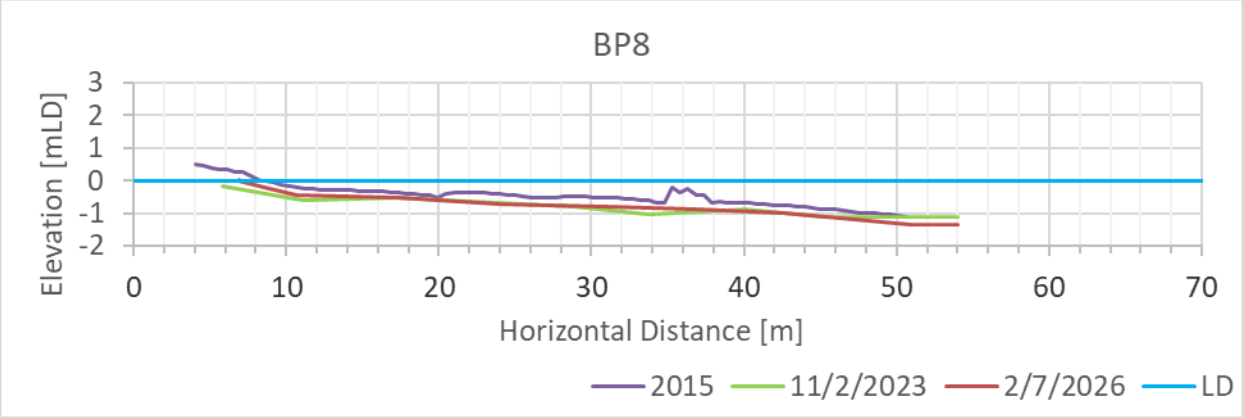


Figure 4.8: BP8

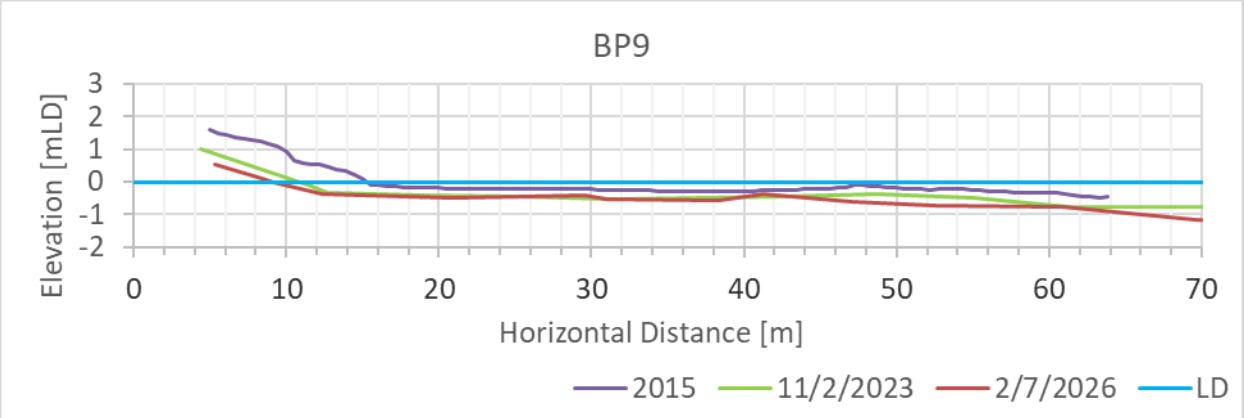


Figure 4.9: BP9

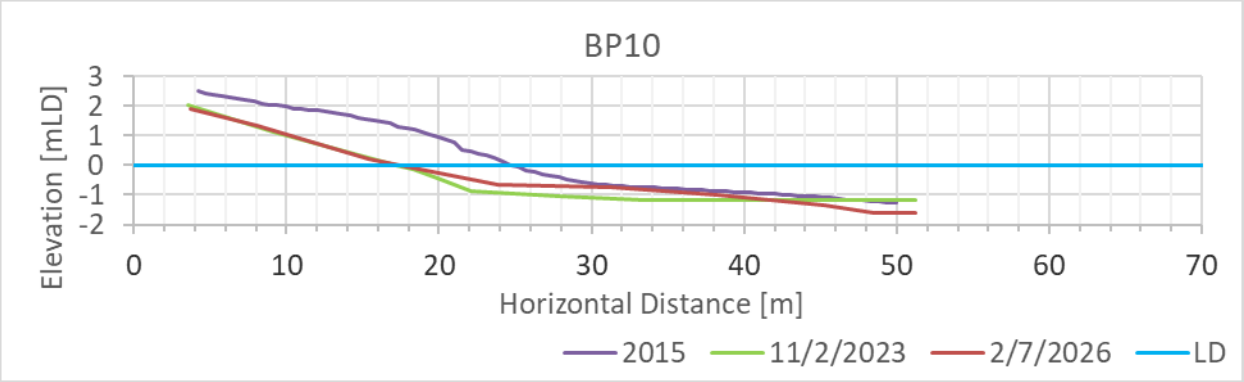


Figure 4.10: BP10

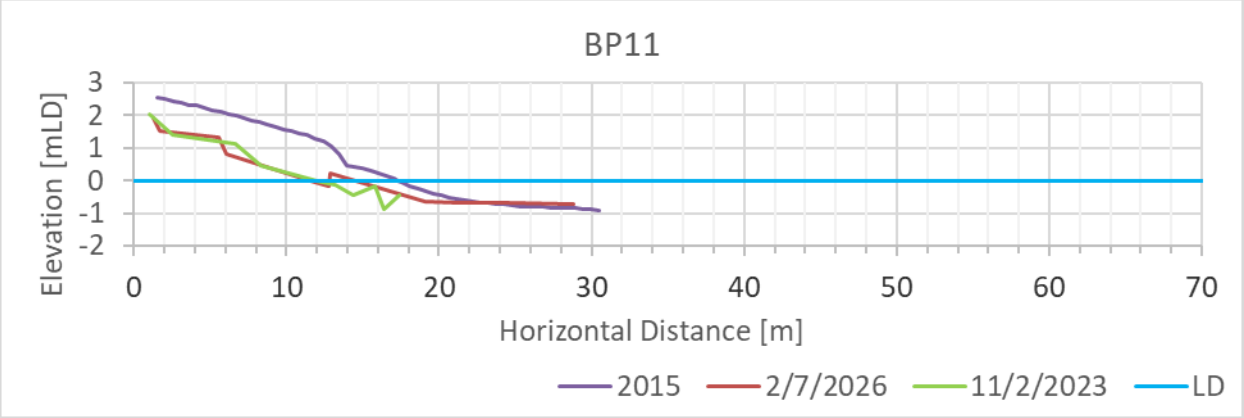


Figure 4.11: BP11

Appendix B

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Revision	Date	Status	Comments	Prepared	Reviewed	Approved
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1. Introduction

This report is part of the Coastal Impact Assessment prepared by Baird. The inspection covers 550m of shoreline divided into parcels based on the cadastral information provided by the high-water mark surveys shown in Appendix E of the Coastal Impact Assessment Report. The survey identifies eight parcels which were each inspected in four visits between February 7th – 11th 2026. An overview of the entire shoreline and the parcels are shown in Figure 1.1.

Baird staff inspected the shoreline structures at each parcel. We assigned damage ratings to each feature and assessed functionality based on visual observation. Lateral access and overtopping were used as the performance criteria for the shoreline features and evaluated for each parcel. This was a level 1, general visual tactile inspection as described in the ASCE Waterfront Facilities Inspection and Assessment Manual [1]. Baird inspected these shoreline features previously as part of the permit application report for this project [2].



Figure 1.1: Overview of land parcels

2. Lot 4

The shoreline features a watercourse, stairs, wall and boulders as shown in Figure 2.1.



Figure 2.1: Lot 4 shoreline structures

There is a watercourse located at the northern boundary of lot. This is shown in Figure 2.2. The catchment area extends inland beyond the study area. The water course is defined by wall and chain-link fence on either side. We observed no defects in the concrete and chain link elements of the watercourse. Sand has accumulated in the watercourse. The sand deposit extends inland and slopes down from the highest point of the beach at the mouth of the watercourse The water course was not flowing at the time of the visit. The general direction of flow is illustrated in blue.

The wall along the shoreline is capped with a chain link fence. We observed no defects in the wall. The exposed edge of the plaster and the change in surface color define areas that were previously buried in beach and have now become exposed as the sand on the beach reduces. The previous beach crest along the edge of the wall is shown in red in Figure 2.2.

The private property has one access point on the shoreline. This a flight of stairs from the private green space down to the beach. The stairs are functional and include a handrail. The stairs are in the swash zone and exposed to wave action. This is shown in Figure 2.3. We observed no defects in the stairs.

Boulders are placed at the seaward edge of the wall. There is major damage to the boulder layer. The boulders are isolated, weathered and displaced. There is inconsistent structural contact between adjacent boulders. They were previously buried in the beach and are now exposed. The boulders are in the swash zone and obstruct lateral access along the shoreline. This is shown in Figure 2.3.



Figure 2.2: Watercourse (left) and wall and boulders (right)



Figure 2.3: Stairs (left) and pedestrians (right)

3. Lot 5

This shoreline features a walkway, two stairs, and a chain link fence. This is shown in Figure 3.1.



Figure 3.1: Lot 5 overview

Boulders are placed along the full length of Lot 5. The boulders are grouted together. The boulder layer is severely damaged. The boulders are undermined, displaced, isolated and completely missing. This structure is not functional. Changes in cross-section are evident throughout. This illustrated in Figure 3.2 and Figure 3.3.

The walkway is parallel to the shoreline. It is intended for pedestrian access to the top of the boulder wall with steps on either end. The walkway presents a significant fall and slip hazard to users. The walkway width accommodates single file pedestrian movement and has an exposed shear drop on its seaward edge. The walking surface was wet and smooth at the time of the inspection. There is a gap between the elevation of the beach surface and the elevation of the stairs making the entire walkway and the stairs inaccessible. This is shown in Figure 3.3 The walkway and stairs are moderately damaged and not functional.

There is a chain link fence at the edge of the walkway. This is shown in Figure 3.2. We observed no defects on the fence, and it is functional.

The boulder wall and walkway are overtopped during energetic wave events. We observed this during the site inspection. The deposits of sand and lack of vegetation on the green space landward of the walkway are indicative of overtopping. This is shown in Figure 3.4

The inaccessible walkway and boulder wall have obstructed lateral access. During the inspection we observed pedestrians walking along the seaward edge of the boulder wall which presents another set of hazards. This is shown in Figure 3.5. This is particularly hazardous during energetic events.



Figure 3.2: Holes and displacement in boulder layers



Figure 3.3: Holes and displacement in boulder layer (right) and gap in elevation between beach and stairs (right)



Figure 3.4: Boulder wall overtopping and walkway



Figure 3.5: Pedestrian access at Lot 5 February 11th, 2026

4. Lot 6

The shoreline feature at Lot 6 includes a wall, gabions and stairs.



Figure 4.1: Lot 6 overview

The wall extends along the entire shoreline of this section. There is minor damage to the wall and it is functional. The reduction in beach surface elevation is evident in the color changes and exposed block units below the edge of the wall plaster. This is shown in Figure 4.2. The base of the wall is in the swash zone. These features were previously buried on the beach and are now exposed.

There is one access from private property to the shoreline with a staircase and handrails. The rails stop before the lowest step. There is minor damage to the stairs and they are not functional. There is a gap in elevation between the lowest step and the beach surface.

There is wire mesh used in gabion baskets along the base of the wall. This is shown in Figure 4.3. The gabions are in the swash zone at the base of the wall and exposed to wave action. The gabions are severely damaged. Most of the stones in the visible baskets have been displaced and the chain link is deformed and broken. The wire mesh is a hazard to beach users. The gabions are not functional.

The stairs, walls and gabions are all obstructing lateral access along the shoreline. The obstructions and wave breaking at the confined along the shoreline presents injury hazards to pedestrians. This is illustrated in Figure 4.4.



Figure 4.2: Elevation gap between the beach surface and stairs (left), wall (right)

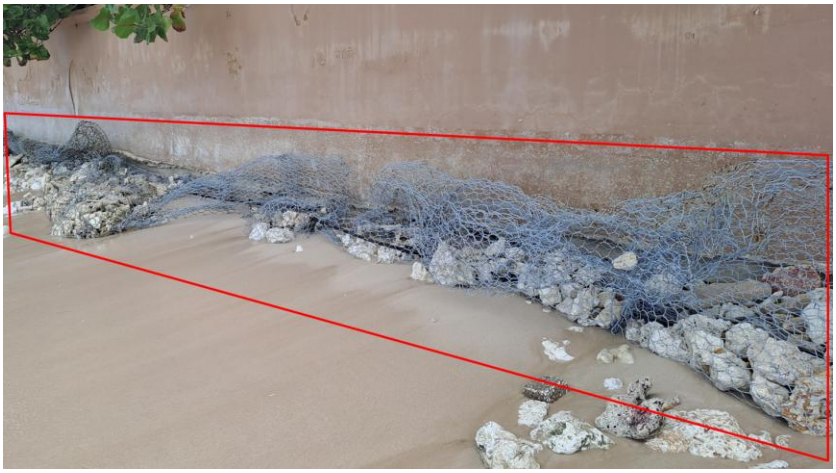


Figure 4.3: Gabions at Lot 6



Figure 4.4: Wave breaking on the wall (left) pedestrian access at Lot 6 February 11th, 2026 (right)

5. Lot 7

There are walls, stairs and trees along the shoreline at Lot 7. This is shown in Figure 5.1.



Figure 5.1: Lot 7 overview

The wall at Lot 7 covers the entire length of the shoreline. The base of the wall is exposed and undermined. It is in the swash zone. There is minor damage to the wall, and it is functional. As with the Lot 4 – 6, the reduction in beach elevation is evident. The base of the wall was previously buried and is now visible. There are sandbags and metal bars attached to the footing and are now in the swash zone. This is shown in Figure 5.2

There are two access points to the private property at Lot 7. Each access has stairs to the shoreline. There is minor damage to the stairs and they have handrails. The lowest steps are in the swash zone and are undermined. This is shown in Figure 5.3. The steps are not functional. There is a gap in elevation between the beach surface and the lowest steps. During the inspection we observed waves breaking and overtopping on the wall and stairs.

The tree on the shoreline is shown in Figure 5.4. It is undermined and exposed to wave breaking. The roots system is visible, and the seaward extend of the tree is leaning towards the sea.

Shoreline features and the reduced surface elevation on beach are obstructing lateral access. There are multiple obstructions along the shoreline including the steel protruding from the wall, the tree and deposits of cobbles in the swash zone.



Figure 5.2: Wall base with protruding steel bars (left), scoured wall base in the swash zone (right)



Figure 5.3: Stairs at Lot 7



Figure 5.4: Tree at the shoreline



Figure 5.5: Wave breaking on stairs at lot 7 (right), pedestrian access at Lot 7 February 10th, 2026

6. Lot 8

The shoreline along lot 8 features wall, fence, stairs and trees. This is shown in Figure 6.1



Figure 6.1: Lot 8 overview

The lot 8 wall is composite and has varied cross-sections. There is a fence on top of the wall, and both features extend throughout the shoreline of Lot 8. In some areas the wall is made of grouted stone and in other places masonry blocks. A section of the wall is built on the roots and trunks of trees. This is shown in Figure 6.2. The wall has major damage and is still functional. This damage is apparent at trees and transitions. The fence on top of the wall has moderate damage and is still functional.

There are two stairs on the shoreline. These are access points from private property to the shoreline. The staircase to the northern end of the lot has a handrail, no defects and is functional. On the staircase to the south, there is a gap in elevation between the last step and beach surface. This staircase has not handrail, is moderately damaged and not functional. Both stairs are shown in Figure 6.3.

There are three trees on the shoreline. The walls and fence are built on the trees indicating that the trees predate these features. The roots of the trees are visible and in the swash zone. The trees are leaning towards the sea and have displaced the wall and the fence. The trees are shown in Figure 6.3.

The features at Lot 8 were exposed to wave breaking and overtopping on February 10th, 2026. This is shown in Figure 6.4. As shown in Figure 6.5, lateral access is obstructed by the trees and the wall.



Figure 6.2: Walls at Lot 6



Figure 6.3: Stairs at the Lot 6 shoreline, north (left) and south (right)



Figure 6.4: Wave breaking and overtopping at Lot 8



Figure 6.5: Pedestrian access at Lot 8 February 10th, 2026

7. Lot 9

There are boulders, stairs, walls and a fence at the Lot 9 shoreline. Lot 8 and Lot 9 appear to be one operation.



Figure 7.1: Overview of Lot 9

Like Lot 8, the wall comprises a range of materials and cross-sections. The northern section is a boulder wall capped with a concrete section and a fence. This is shown in Figure 7.2. The southern section has two parallel walls next to each other. This is shown in Figure 7.3. and Figure 7.4. The seaward wall is a grouted stone. The landward wall is concrete with a fence on top. The wall to the north is moderately damaged and still functional. The walls to the south are severely damaged. There are large cracks and recesses in the grouted stone wall. It is near-shore, undermined and not functional. The concrete wall and fence landward of the grouted stone wall has major damage. The wall and fence are leaning. Multiple repaired cracks in the wall are visible.

There are two staircases for the access points from private property to the shoreline. These are shown in Figure 7.5. Both steps are not functional and severely damaged. The size and shape of the individual steps are inconsistent. There stairs have multiple cracks and no handrails.

As shown in Figure 7.6 the features at lot 9 obstructing lateral access. The grouted stone wall extends from the private property seaward to the nearshore. We also observed overtopping along the entire section during the inspection. This shown in Figure 7.7.



Figure 7.2: Composite boulder and concrete wall



Figure 7.3: Grouted stone wall at the southern end of Lot 9



Figure 7.4: Concrete wall and fence at the southern end of Lot 9



Figure 7.5: Stairs at lot 9



Figure 7.6: Pedestrian access at Lot 9 February 11th, 2026



Figure 7.7: Wave breaking and overtopping at Lot 9

8. Access

The public access is crown land. There are walls, trees, a walkway and a shower at this location. This is shown in Figure 8.1.

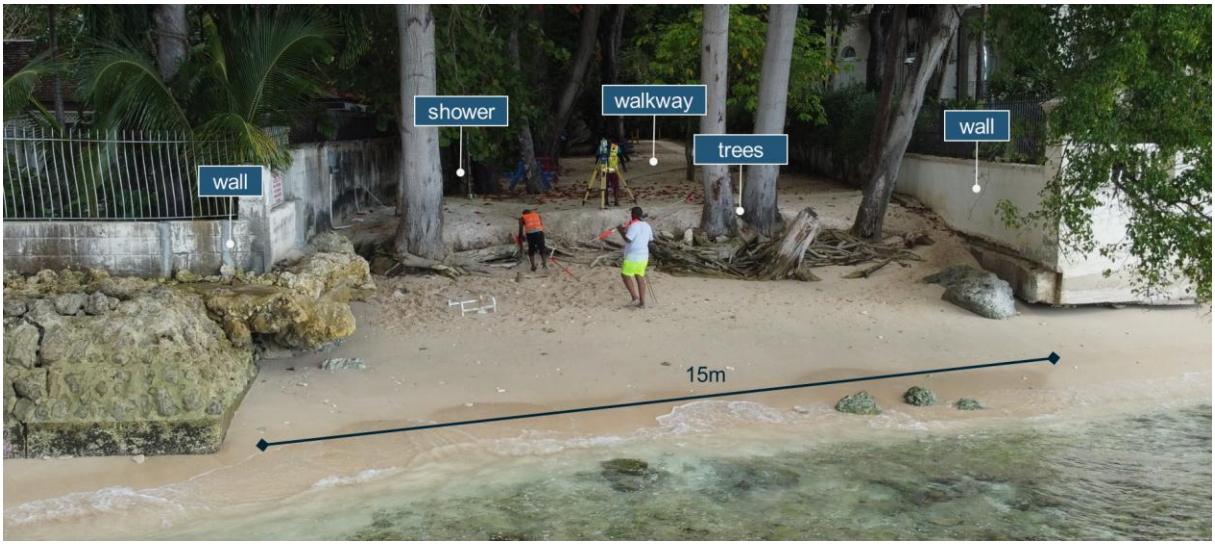


Figure 8.1: Overview of public access

The trees are the dominant feature at the shoreline. The trees are compromised. The root system is exposed and is the only sea defense structure visible at the shoreline. The remains of other destroyed trees are also visible. This is illustrated in Figure 8.2.

There is a paved walkway from Highway 1, along the access down to the shoreline. There are no defects on the paved walkway. There is a shear drop off at shoreline. This gap in elevation obstructs pedestrian access from the walkway to the shoreline.

The access area extending from the shoreline to Highway one includes picnic benches, trees and landscaping. This is shown in Figure 8.3. There is also a single-story building. These features are all functional and in good condition.

Lateral access is available at this location. We observed waves breaking on the trees during the site inspection. This is shown in Figure 8.4.




Figure 8.2: Trees at the shoreline (left), paved walkway at the public access




Figure 8.3: Public access area




Figure 8.4: Waves breaking at the public access (left), pedestrian access at the public access February 11th, 2026 (right)

9. One Sandy Lane

One Sandy Lane is the longest shoreline in the project area. It includes wall, stairs and a watercourse.



Figure 9.1: Overview of One Sandy Lane

The wall at One Sandy Lane runs along the entire shoreline. The base of the wall and the edge of the surface plaster are visible. There are minor defects on the wall including surface level notches and imperfections at the base. This shown in Figure 9.2. Despite the loss of sand at the base of the wall, it is functional.

There are two staircases for access points from One Sandy Lane to the shoreline. These are shown in Figure 9.3. There are no defects on the stairs. There is an elevation gap between the lowest step and the sand surface there are also no handrails. The stairs are not functional.

There is a watercourse located in the center of One Sandy Lane. This is shown in Figure 9.4. The catchment area extends inland beyond the study area. The water course is defined by concrete walls on either side. The seaward end of the southern wall is in the sea, and the base of this wall is visible. This is highlighted in red. There are minor defects to the watercourse, and it is functional. Sand has accumulated in the watercourse. The water course was not flowing at the time of the visit. The general direction of flow is illustrated in blue.

The wall is obstructing lateral access along the lowered beach surface. We observed waves breaking at the wall and stairs during the site inspection. This is shown in Figure 9.6



Figure 9.2: Wall at one Sandy Lane



Figure 9.3: Stair at One Sandy Lane



Figure 9.4: Watercourse at one Sandy Lane



Figure 9.5: Pedestrian access at Lot 9 February 11th, 2026



Figure 9.6: Wave break at One Sandy Lane

10. Conclusion

Shoreline features at Lots 4 – 9 have sustained major or severe damage. There is no purpose-built shoreline feature at public access. One Sandy Lane shoreline features have minor damage and are in better condition than the other section on the shoreline.

Walls and stairs are the most common features along the shoreline with seven of the eight locations having both features. In four locations there are multiple stairs. Both the walls and the stairs have varied levels of damage. The stairs are the most damaged feature in the project area.

Lateral access is the most common performance issue and is obstructed at seven of the eight locations. Overtopping was observed at four of the eight locations.

The legend the results are shown in Table 10.2. The results are shown in Table 10.1.

Table 10.1: Damage Condition and functionality of shoreline features

No	Parcel	Length	Damage condition of shoreline features							Performance	
		m	Wall	Fence	Stairs	Boulders	Water course	Walkway	Gabions	LA	OT
1	Lot 4	77	ND	ND	ND	MJ	ND	n/a	n/a	no	no
2	Lot 5	85	MD	ND	MD	SV	n/a	MD	n/a	no	yes
3	Lot 6	50	MN	n/a	MN	n/a	n/a	n/a	SV	no	no
4	Lot 7	44	MN	n/a	MN	n/a	n/a	n/a	n/a	no	yes
5	Lot 8	64	MJ	MD	MD	n/a	n/a	n/a	n/a	no	yes
6	Lot 9	72	SV	SV	SV	MD	n/a	n/a	n/a	no	yes
7	Public Access	15	n/a	n/a	n/a	n/a	n/a	ND	n/a	yes	no
8	“One Sandy Lane”	149	MN	n/a	ND	n/a	MN	n/a	n/a	no	no

Table 10.2: Legend for damage and functionality ratings

Damage rating	Abbreviation	Performance	Status	
No defects	ND	Lateral access (LA) available	yes	no
Minor Damage	MN	Overtopping (OT) observed	yes	no
Moderate Damage	MD			
Major Damage	MJ			
Severe Damage	SV			
Not available	n/a			

11. References

[1] American Society of Civil Engineers, "Waterfront Facilities Inspection and Assessment," American Society of Civil Engineers, Reston, Virginia, 2015.

[2] WF Baird & Associates , "Sandy Lane Lot 7 - Beach Improvement and Shoreline Permit Application Report," WF Baird & Associates , Bridgetown, 2024.