



TUMBY BAY JETTY

WSCAM Assessment INSPECTION REPORT

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1 Introduction

Infrastructure Consulting (IC) has been engaged by the District Council of Tumby Bay (DCTB) to undertake a structural inspection and provide remediation recommendations for the Tumby Bay Jetty located at Tumby Bay, South Australia.

The inspection was undertaken in accordance with the requirements of a basic visual assessment as outlined in the Ports Australia 'Wharf Structures Condition Assessment Manual' (WSCAM). In addition to the requirements of a basic visual assessment, targeted detailed inspection was included in certain sections of the jetty.

Due to the nature of the inspection requested, IC have not engaged divers for this inspection. The dive report from 2020 which was organised by this office as a part of the Jetties Pilot Program was used as a reference for the ratings. This however does not take into consideration after storm effects and the inspection data is not current.

The scope of this inspection was to inspect the structure up to bent 36 (approximately 220m along the jetty). This has been requested by DCTB as the jetty after bent 36 is likely to be demolished due to the degradation of the structure from that point seawards. The inspection of the jetty structure was conducted over the 21st-22nd of November 2023 with DCTB providing the boat for inspection of the jetty underside. IC also conducted inspection of the top surface of the structure, and elements exposed during low tide. The weather was overcast for the majority with moderate wind at the time of inspection. Tide information for Tumby Bay is not available hence, tide information for Port Lincoln during the inspection is shown in the table below:

Date	Time	Tide (m)
21/11/2023	05:52	1.11
	18:40	0.50
22/11/2023	02:48	0.92
	07:34	0.89
	11:10	0.95
	18:38	0.50

1.1 Location

Tumby Bay Jetty is located 40 minutes north of Port Lincoln and 7 hours west of the Adelaide CBD situated in the state of South Australia. It is located on the shore of Spencer Gulf in Eyre Peninsula. Refer to Figure 1 - Figure 3 for locality of the Tumby Bay Jetty.

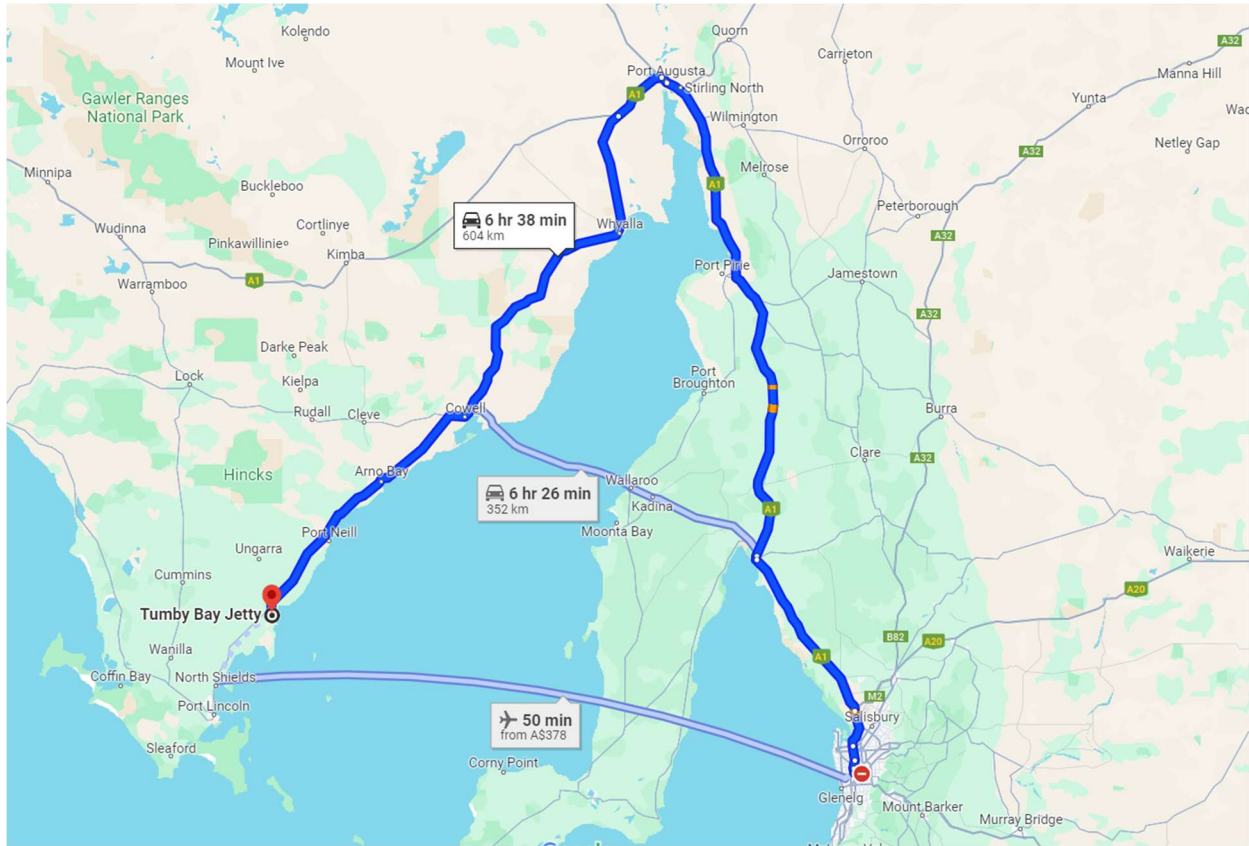


Figure 1: Location of Tumby Bay Jetty from Adelaide CBD

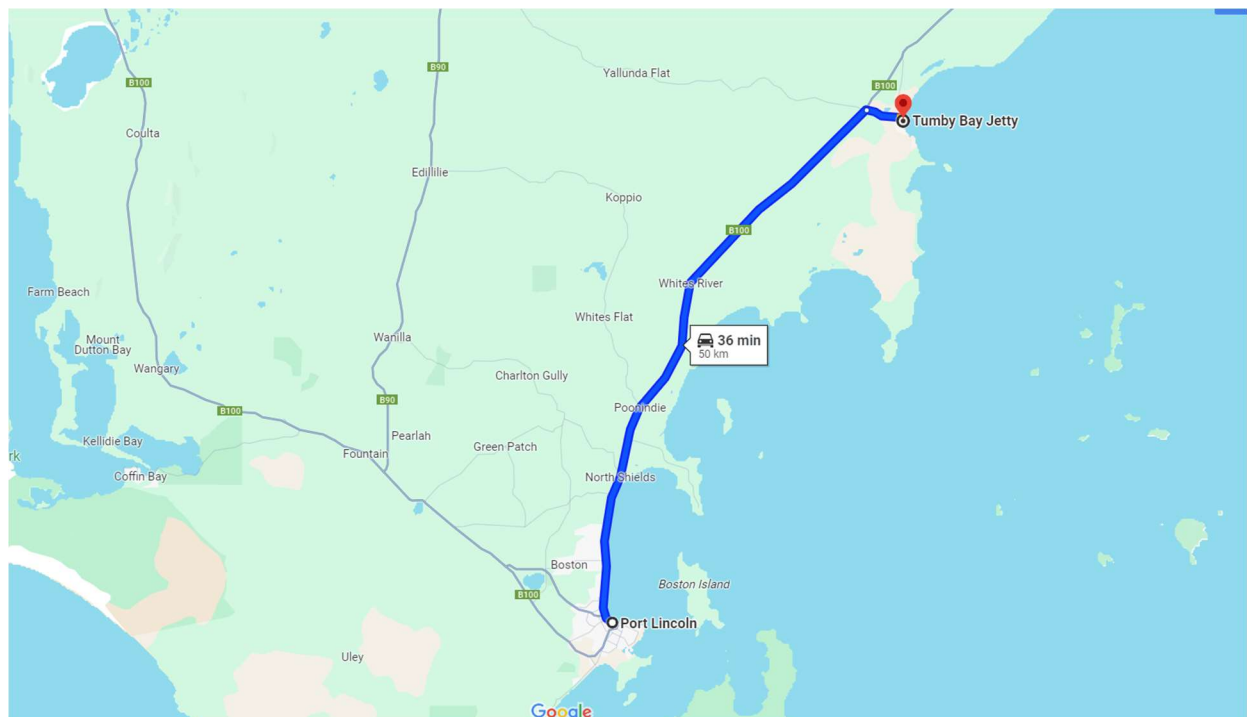


Figure 2 Location of Tumby Bay Jetty from Port Lincoln, South Australia



Figure 3: Tumby Bay Jetty

1.2 General Structure Description and Background

The Tumby Bay Jetty was constructed in 1908-1909 to perform the commercial function met by the original jetty constructed in 1874. In 1972 the State Government declared that the jetty was no longer required to operate as a commercial jetty, having survived a proposal at the time to substantially demolish the structure, it has functions as a recreational jetty since. This current jetty measures approximately 350m in length. Due to a storm event on 4th of October 2022, some elements of the current jetty were damaged. The DCTB closed the jetty off from public access due to safety concerns of the structure. Due to this closure, DCTB engaged IC to conduct a WSCAM inspection that would provide jetty remediation options and associated costings.

The jetty consists of the following elements:

- Timber piles which vary in diameter throughout the jetty.
- 200x200x16 Steel SHS sections as sister piles.
- Concrete encased timber piles.
- The timber crossheads vary in size but generally have sectional dimensions of 300mm x 150mm.
- The timber deck planks are standard jetty decking dimensions of 75mm x 225mm with timber kerbs that are 100mm x 100mm in cross section.
- The timber girders vary in size but generally have sectional dimensions of 300mm x 150mm.
- Handrails consist of timber stanchions and steel rails.
- Concrete crosshead on bent.12 only.
- The cross braces throughout the structure are made up of 300x150mm timber sections generally.
- The timber corbels vary in size but generally have sectional dimensions of 300mm x 150mm.

Painted/galvanised steel light poles are located along the jetty.

A ladder is located at Bent 25, that is not currently in use by the general public because of the storm event.

The abutment of the jetty is formed of timber crossheads, timber and steel piles. The abutment is approximately 1m in height and now covered by a timber footpath.

The scope of this inspection consisted of 36 pile bents and an abutment. Bents 1-17 are two pile layouts. Bents 18-23 widen and are a three pile layout per bent. After bent 23, the widened section the jetty reverts back to a two pile layout from Bent 23-36. The piles comprise of timber and steel piles, some of these timber piles have undergone remediation at some point and the timbers piles have been encased in concrete. These timber piles that have been encased in concrete have been described as concrete piles throughout the WSCAM to differentiate from the timber piles.

A lower landing structure sits off the jetty between bents 21 and 23 is currently not in use. The landing structure comprises of:

- Steel SHS piles
- Timber deck planks
- Timber girders
- Timber kerbs
- Timber stair

Each of these elements share identical cross sections as the elements used on the main jetty.

2 Inspection methodology

2.1 Nomenclature

The standard WSCAM naming and numbering conventions have been adopted in this inspection. The lateral gridlines are represented by ascending numeric order, starting landward and increasing seaward. They align with the spacing of pile groups, referred to as 'Bents'. The longitudinal gridlines are based on individual pile rows and are assigned alpha values ascending left to right when viewed facing seaward.

Figure 4 and Figure 5 show the naming convention adopted for the Tumby Bay jetty. Figure 6 shows the nomenclature for the landing structure.

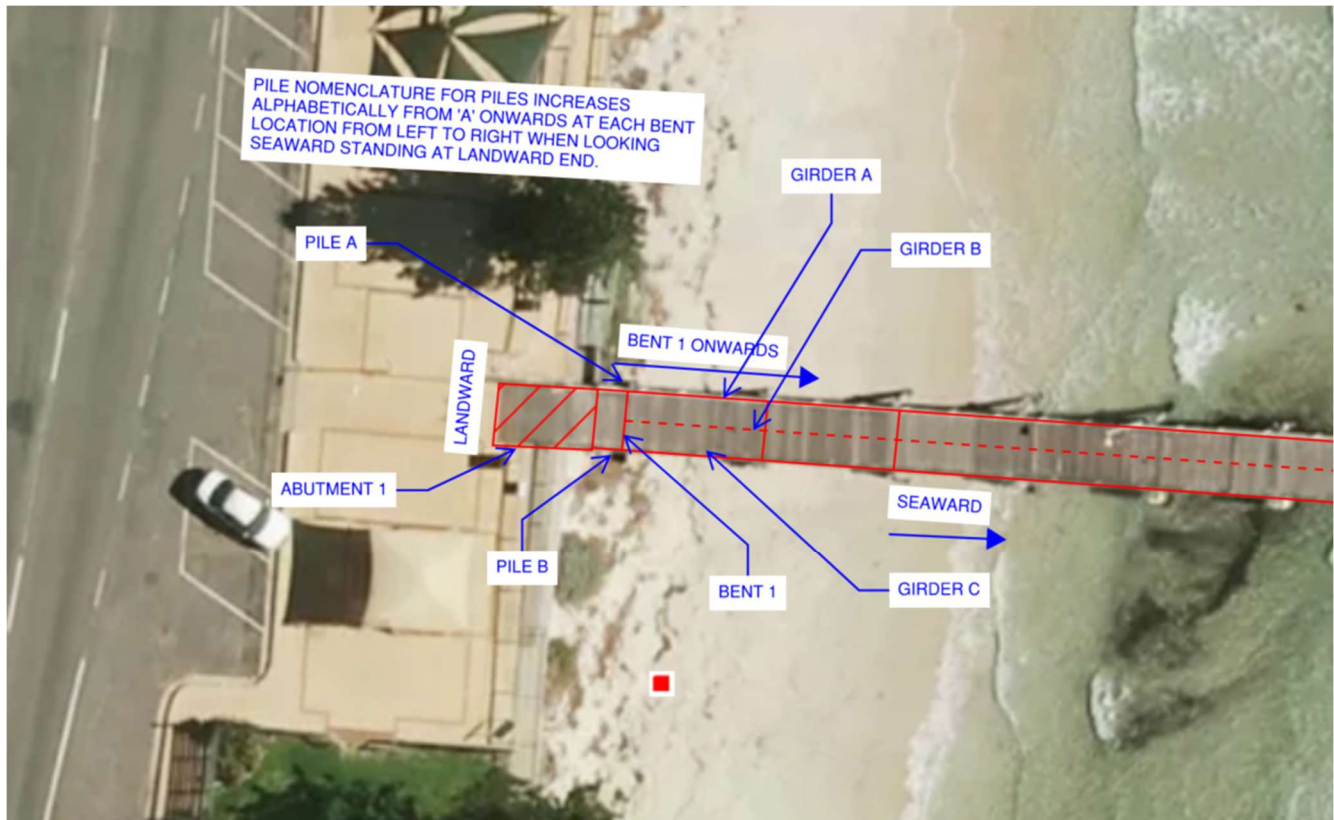


Figure 4: Tumby Jetty Inspection Nomenclature (Landward end)

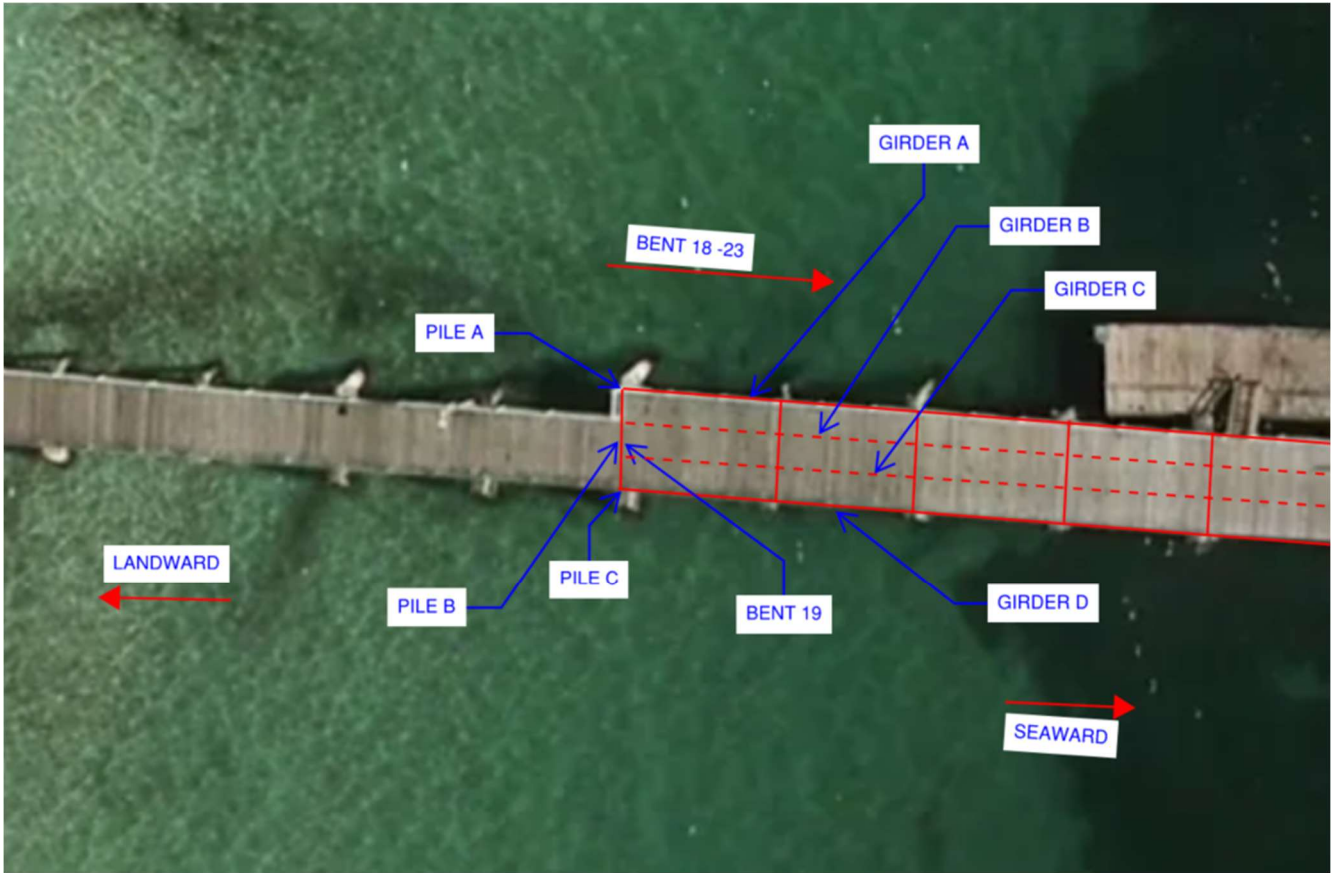


Figure 5: Tumby Bay Jetty Inspection Nomenclature (Seaward End)



Figure 6: Landing at Tumby Bay Jetty

The jetty component descriptions are based on the Department of Infrastructure standard drawing DRG S-6997, refer to Figure 7.

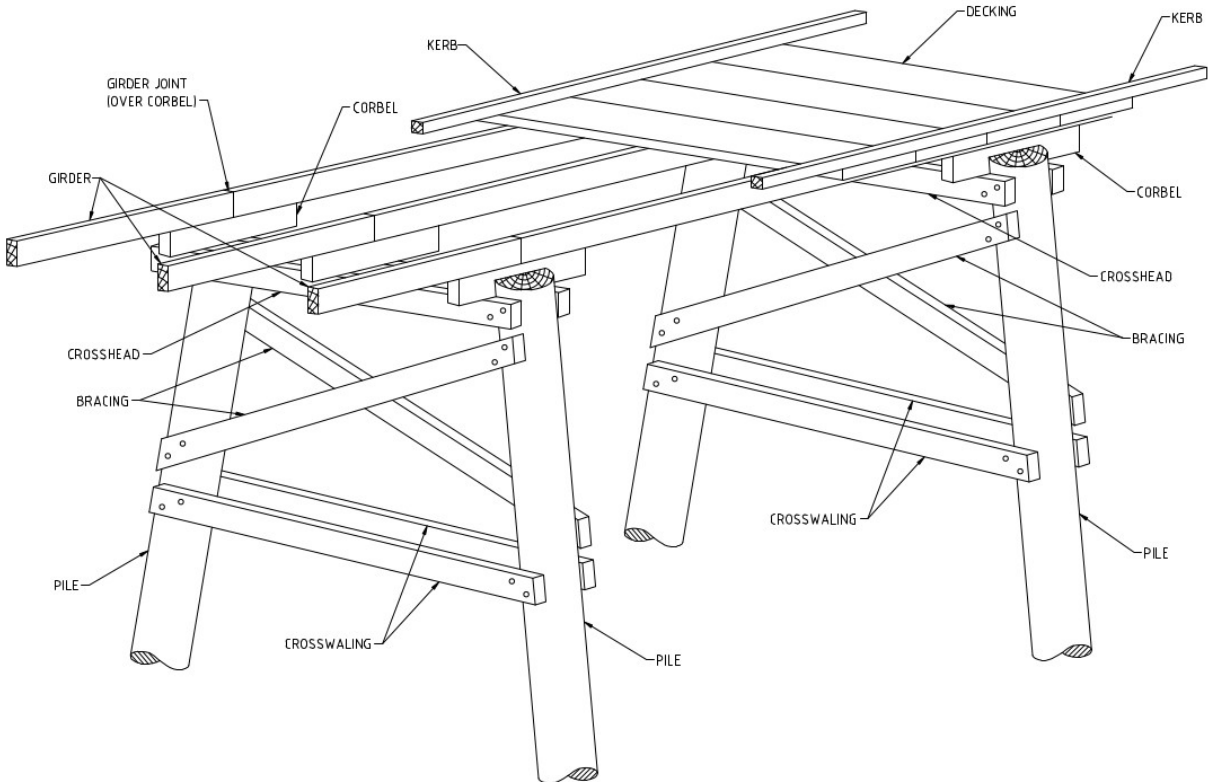


Figure 7: Typical General Arrangement Nomenclature

2.2 Design Life and Intervention Levels

In determining recommendations, Infrastructure Consulting has adopted the indicative design life approach discussed in the WSCAM. The condition ratings assigned are loosely linked to a percentage remaining design life. Figure 8 illustrates the basis for condition rating of timber elements as per the WSCAM. Figure 9 below shows the typical design life curve outlined in the WSCAM.

Timber

CONDITION RATING	GENERIC DESCRIPTION	EXPECTED REM. LIFE (% of original design life)	RECOMMENDED ACTIONS
1	New with no visible defects/damage.	100	No repairs required. Re-inspection at next scheduled inspection may be considered.
2	As new. Minor splits and checks, no measurable section loss.	55-99	No repairs required. Re-inspection at next scheduled inspection may be considered
3	Minor marine organism attack and pipe rot, decay or necking resulting in up to 5% of section area loss. There may be minor splits or checks evident.	40-54	Planned and preventative maintenance works may be considered.
4	Moderate pipe rot, decay, marine organism attack or necking resulting in up to 5-20% of cross section loss. There may be moderate splits or checks evident.	25-39	Further testing; reactive maintenance and some minor upgrades may be considered.
5	Heavy marine organism attack, evidence of termite activity, pipe rot, decay or necking resulting in up to 20-35% section loss. Major splits or checks evident.	15-24	Structural assessment is recommended. Further investigation may be required to inform the structural assessment. Maintenance; upgrade or rehabilitation works may be considered.
6	Severe marine organism or termite attack, pipe/ surface rot, decay or necking resulting in up to 35-50% section loss. Major splits or checks evident in critical zones mid and end spans.	1-14	Structural assessment is recommended. Further investigation may be required to inform the structural assessment. Rehabilitation or renewal works may be considered.
7	Severe marine organism or termite attack, pipe/surface rot, decay or necking resulting in greater than 50% section loss. Component has failed.	0	Rehabilitation required immediately or replace component/asset.. Structural assessment is recommended where rehabilitation works are to be undertaken. Further investigation may be required to inform the structural assessment.

Figure 8: Generic Condition Rating for Timber Structures (WSCAM 2022)

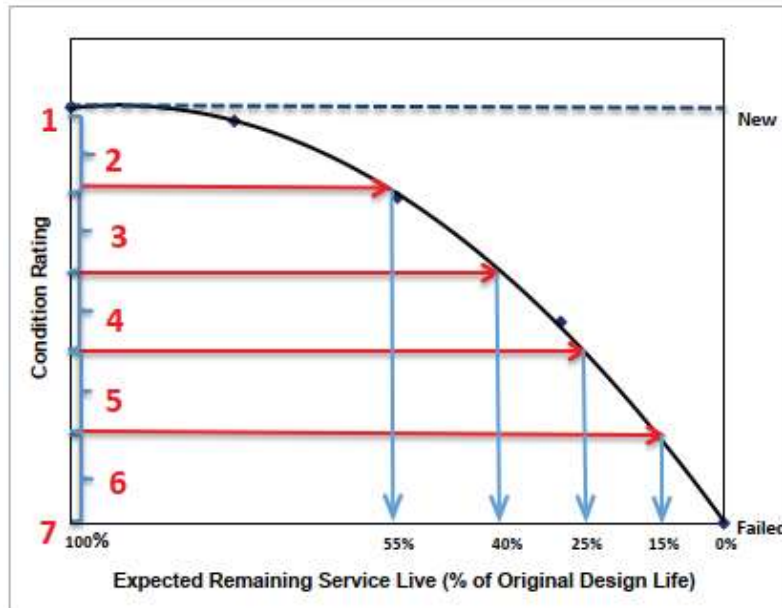


Figure 9: Indicative Design Life Curve (WSCAM 2022)

For timber wharf structures, the 'as-new' design life of any element is typically taken as 30 years (in accordance with DIT Master Specifications). A rating 4 asset element therefore has between 7.5 and 12 years of serviceable design life remaining. This has been adopted as the cut-off point for maintenance recommendations. Assets with a rating of 4 or better do not attract maintenance recommendations, except in the case of a safety issue. Rating 5 and above asset elements require some maintenance intervention, with the priority of action increasing with the rating, and criticality of the asset. Refer to Figure 10 for an example of the maintenance rating as specified in the WSCAM. The latest edition of the WSCAM released in 2022 has updated the maintenance rating system, the new maintenance rating system is shown below and was applied to this inspection.

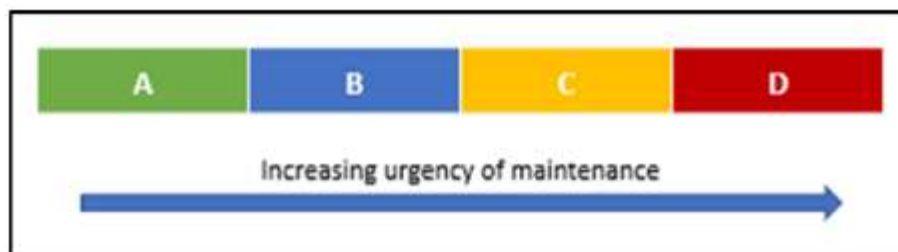


Figure 10: Example Maintenance Rating (WSCAM 2022)

The ratings correspond to the following maintenance requirements:

- A. No maintenance expected to be required in the next three years.
- B. Maintenance will be required in 1–3 years.
- C. Maintenance required within 12 months.
- D. Immediate maintenance required.

Figure 11: Maintenance Rating Description (WSCAM 2022)

3 Observations

The sections that follow are a summary of the observations made during the inspection. The full WSCAM inspection record is provided in Appendix A – WSCAM Record.

3.1 General Observations

The Tumby Bay Jetty was observed to be in fair-poor condition. The superstructure is in generally fair-poor condition, with sub-structure being generally fair-poor condition. The condition of the jetty is typical for a structure of its age and type.

3.1.1 Substructure

During previous repair works, 20 of the timber piles between bents 1-36 have been encased with concrete as a means of strengthening works. The majority of the concrete encased timber piles are in a fair condition when inspected above water during IC's inspection. Evidence of concrete spalling and exposed reinforcement to the top of these repair works is evident on some of the piles. During the dive inspection completed in April 2020, the divers noted that the concrete casings do not extend to the full length, leaving the base of these piles between the casing and the seabed exposed. This exposed section of timber pile has continued to form necking and rot as per the dive comments. The addition of the casing also increases the cross section of the element, increasing the wave load attracted during storm events. The combination of the increased loading, section loss in the exposed section are likely to be reasons for some of the concrete encased timber piles failing along the length of the jetty.

Majority of the timber piles that have not been sister piled are experiencing varying degrees of rot, necking and splits/checks. Splits through the middle of the timber piles were observed throughout IC's inspection and these generally originate at the crosshead connections bolts. Based on previous divers comments, section loss, necking and marine borer activity was noted below water level. The findings through inspections indicated that the majority of timber piles were a condition rating 5 or 6. These can be referred to in the WSCAM report located in Appendix A.

Steel SHS sister piles have previously been installed at some locations due to failed or deteriorated timber piles. These steel piles are in good condition with damage limited to breakdown of protective coating and corrosion in the splash zone, steel thickness tests were not conducted on site. However, from visual inspection there is no signs of significant corrosion that would lead to section loss at the time of the inspection. This is common throughout the jetty structures due to the constant wetting and drying that occurs in this zone.

Crossheads generally are in good condition throughout the structure, with the main defect being splitting at the ends due to connection bolts to the timber piles. It is likely that the rating of cross heads would improve once steel sister piling is completed, as this will move the load path away from the connection splitting and the new connections would be formed in the good timber sections of the crosshead.

Timber cross bracings are typically in poor condition throughout the structure, with many already having failed. Many of the remaining bents of cross bracing are experiencing rot to the lower ends that sit within the tidal zone around the connection points. This rot has softened the timber and severe section loss is occurring with a reduction in strength around the connection. At many locations it was observed that the cross braces were either removed for installation of concrete piles and were never replaced or the braces have been removed due to rot issues and never replaced. The other defect noted during the WSCAM inspection was the connection of the cross braces at locations where steel sister piles have been installed. No bracing has been installed back to the steel sister piles, leaving the piles to now cantilever the forces from the seabed. Although the cross braces are in poor condition or missing throughout, it is likely that the cross braces are only engaged in extreme weather conditions, where the jetty is not used by the public.

There is a lower landing structure located between bents 21 and 23. The piles supporting the landing are generally in fair condition with surface corrosion present.

3.1.2 Superstructure

The majority of the timber corbels are fair to poor condition, with the main defect being vertical splitting. This is likely due to the short length of the member allowing for splits originating at the connection bolts to reach the ends of the member. This defect is common in all timber jetties that contain corbels throughout South Australia.

The girders are in fair to poor condition throughout the structure, with rot and splits observed generally along the top of the members. During the inspection, a 6mm diameter steel rod was used to penetrate the top of the timber girders to check for severity of rot. Spot tests revealed that severe rot has happened on many girders. These have been given a rating of 6. It should be noted that not all sections of girders are able to be tested due to spacing of deck members. The girders rated 5 or 6 due to the rotting and splitting on top also exhibit longitudinal cracks and splits due to rot at the bottom of the girder. Some girders have undergone inward deflections due to jetty movement. These have been rated 6. It is suggested that the girders rated 5 be replaced if works in the same bay are being undertaken.

Decking is in fair condition throughout as is the timber kerbing on the jetty. Some deck members will require replacement due to splitting, section loss and surface roughness. The main defect to the decking throughout the structure is rot to the surface that causes roughness to the walking surface. There is no risk to structural integrity of the jetty deck. Alignment of some kerb sections at the junctions was observed and noted. This is due to movement of the kerbs due to connections becoming loose. From above, twisting of the jetty deck is noticeable and is likely due to the failed piles allowing elements to deflect before transferring load via other load paths.

The jetty has two types of handrail systems in use. The left hand side (LHS) of the jetty has timber stanchions, steel handrail and steel cable mid-rail. The right hand side (RHS) handrail is the typical Monowills style system, some sections of the jetty between bents 26 and 41 have no handrailing. The RHS handrail on the jetty is undergoing minor surface corrosion generally at the infill rail connection to the stanchion ball joint. The LHS handrail is generally in good condition. The post has become loose and has rotated at some locations. This is to be addressed by remediating the connections to the jetty structure.

Other miscellaneous structures on the jetty, such as ladders, light poles, signs and fish plates, were generally found to be in good condition. There are three ladders on the jetty structure with one ladder located on bent 25, second one located at the lower landing to jetty connection to enable users to go down to the landing. The landing has a dive ladder at the eastern end of the landing.

The landing kerbs and decking are in a fair condition with minor splitting and cracking observed. Some section loss of the deck was observed which is to be monitored for further damage and replaced as needed.

3.2 Piles

The jetty consists of 21 original round timber piles, 37 steel sister piles and 20 concrete encased timber piles up to bent 36. The timber piles vary in diameter along the length of the jetty, the steel piles are 200SHS16, and the diameter of the timber piles that are encased in concrete was not measured during the inspection. Refer to Figure 12 for WSCAM condition ratings of the different types of piles.

The concrete piles are typically rated 4 based on above water inspection. However, it is likely that the piles could be in a worse condition rating below water, primarily between the seabed and where the concrete casing have terminated short. This section of timber pile is exposed to the elements of the marine environment and susceptible to rot and borer attack. As these piles are mostly in groups at bents, failure of the piles will result in significant damage to the jetty structure. During the inspection it was noted that 1 concrete pile at bent 12 has undergone significant spalling and section loss as the pile is exposed to elements due to the original sleeve missing. The reinforcement has undergone corrosion visible in the Figure 13: . Other concrete piles have also failed in recent years, causing significant structural damage to the jetty. Due to this, it is recommended that all concrete encased timber piles be replaced with sister piles.

Approximately 50% of the timber piles have already been replaced with steel sister piles. The remainder of the timber piles are in fair-poor condition. The main defects are cracking, splitting and rot above water surface. Below the water surface the piles are undergoing pipe rot and necking usually at the location of the connection of cross bracing. Referring the previous diver's reports, it is pointed out that marine borer attack has happened below the water surface at the seabed region.

The 200SHS16 steel piles that have been used to replace timber piles previously are in a good to fair condition. The main defect noted during the inspection for steel piles, is the breakdown of the protective coating and corrosion in the tidal zone. During the inspection, no thickness testing was performed, however, from visual inspection, there were no signs of section loss.

The following figures represent details of the piles inspected:

- Figure 14 represents a typical condition rating 4 timber pile with moderate pipe rot, splits or cracks.
- Figure 15 represents a typical defect for a condition rating 5 timber pile, notably necking of the pile.
- Figure 16 represents a typical condition rating 6 timber pile, with severe necking at the base in tidal zone.
- Figure 17 represents a condition rating 7 pile, where the pile is missing and redundant piles are visible.
- Figure 18 represents a typical condition rating 4 steel pile with minor protective coating loss.
- Figure 19 represents a typical condition rating 5 steel pile with moderate surface corrosion.
- Figure 20 represents a typical condition rating 4 concrete encased timber pile, with no significant damage visible.
- Figure 21 represents a typical condition rating 5 concrete encased timber pile, where the pile is has visible spalling and separation visible at top of pile.
- Figure 13 represents a condition rating 6 concrete encased timber pile, where the pile has undergone significant spalling and section loss with corrosion to reinforcement visible.
- Figure 22 represents a condition rating 7 pile, where the pile has failed and dropped.

Component	Total No.	Condition Rating						
		1	2	3	4	5	6	7
Concrete Piles	20				15	1	1	3
					75%	5%	5%	15%
Steel Piles	38				29	8		1
					76%	21%		2%
Timber Piles	20				8	9	3	
					40%	45%	15%	

Figure 12: Condition Rating Summary (Piles)



Figure 13: Pile 12A at bent 12, looking from north and south respectively. Condition 6 concrete pile



Figure 14: Typical Condition '4' Timber Pile

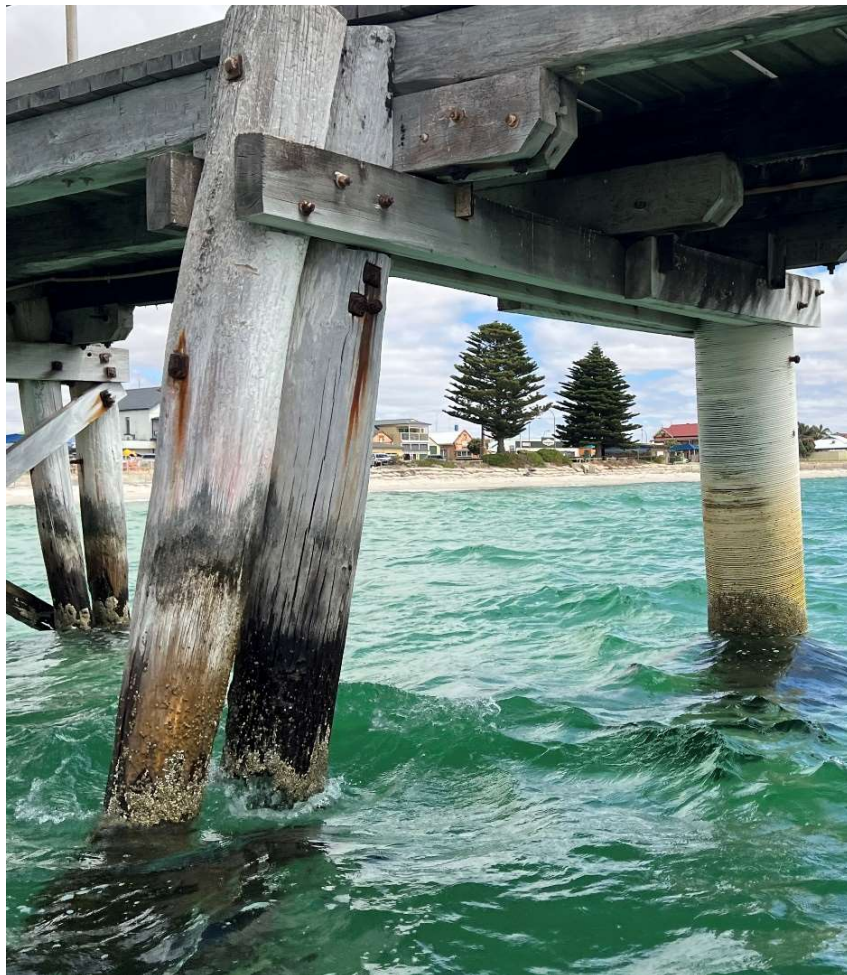


Figure 15: Typical Condition '5' Timber Pile



Figure 16: Typical Condition '6' Timber Pile

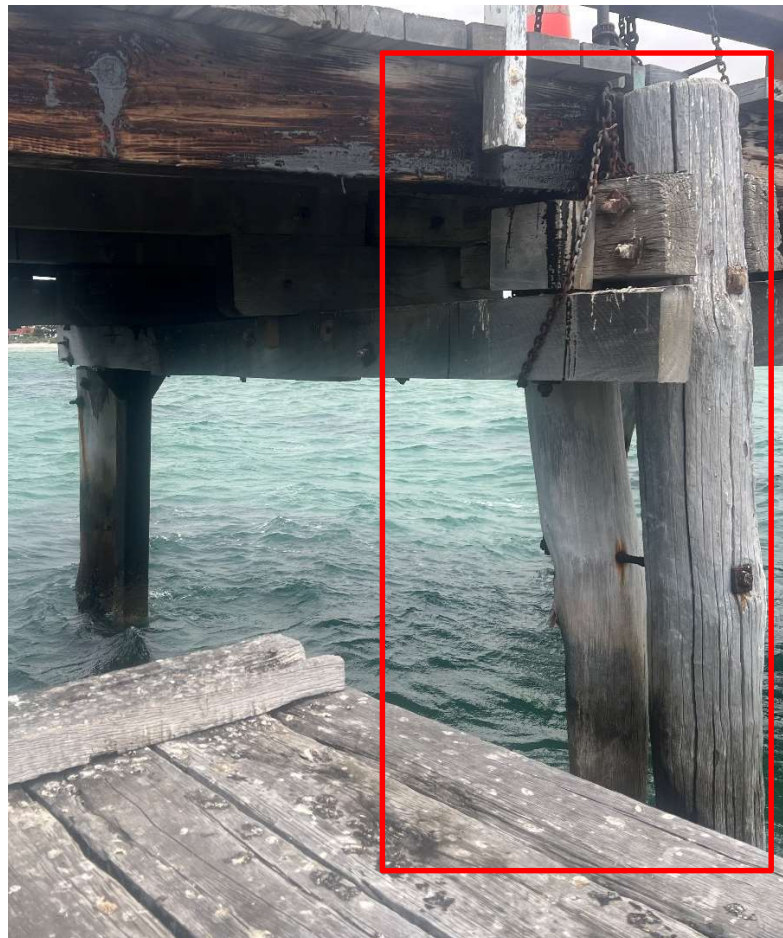


Figure 17: Missing pile at bent 21, redundant piles visible in photo. Condition '7' Timber Pile



Figure 18 Typical Condition '4' Steel Pile



Figure 19 Typical Condition '5' Steel Pile



Figure 20 Typical Condition '4' Concrete Encased Pile



Figure 21 Typical Condition '5' Concrete Encased Timber Pile



Figure 22 Typical Condition '7' Concrete encased timber pile

3.3 Crossheads

Cross heads were typically observed to be in fair condition throughout the structure. Varying degrees of weathering, and some splitting and checking were present in the ends of members at the connections to the original timber piles. The crosshead at bent 12 is a concrete crosshead that has undergone significant spalling, exposed reinforcement is present and section loss to the reinforcement is visible (rating 6). At bent 18, landside and seaside crossheads have split and sheared at connections because of the failed pile at northern end of the bent. It is suggested that the crossheads be replaced like for like when the steel sister pile at the location is adopted. The ratings of other crossheads are likely to improve when the ratings 6-7 piles are replaced.

The following figures represent details of the crossheads inspected:

- Figure 23 represents typical condition ratings of all crossheads in the jetty structure comprised in the scope.
- Figure 24 represents a typical condition rating 4 timber crosshead.
- Figure 25 represents a typical condition rating 5 timber crosshead.
- Figure 26 represents a typical condition rating 6 timber crosshead.
- Figure 27 represents a typical condition rating 7 timber crosshead.
- Figure 28 represents a typical condition rating 6 concrete crosshead.

Component	Total No.	Condition Rating						
		1	2	3	4	5	6	7
Timber Crosshead	72				62	4	4	2
					86%	6%	6%	2%
Concrete Crosshead	1						1	
							100%	

Figure 23: Condition Rating Summary (Crosshead)



Figure 24: Typical Condition Rating '4' Crosshead



Figure 25: Typical condition '5' Crosshead



Figure 26: Typical condition '6' Crosshead



Figure 27 Typical condition '7' Crosshead



Figure 28 Typical condition '6' concrete crosshead

3.4 Girders

Girders were observed to be typically in fair to poor condition throughout the structure. The majority of girders have weathering, checks, splits and severe rot to the top of the member. During the inspection, a 6mm diameter steel rod was used to penetrate the top of the timber girders to check for severity of rot or splits. These tests revealed that severe rot has occurred on a significant amount of girders, some of these girders appear to be in fair condition from the underside. Any girders found with significant rot from the probing were given a condition rating of 6, girders with less severe rot, but still enough for the rod to penetrate were given a rating of 5.

The following figures represent details of the girders inspected:

- Figure 29 represents typical condition ratings of all girders in the jetty structure comprised in the scope.
- Figure 30 represents a typical condition rating 4 girder.
- Figure 31 represents a typical condition rating 5 girder.
- Figure 32 represents a typical condition rating 6 girder.
- Figure 33 represents a typical condition rating 7 girder.

Component	Total No.	Condition Rating						
		1	2	3	4	5	6	7
Girder	114				43	25	45	1
					37.7%	21.9%	39.4%	1%

Figure 29: Condition Rating Summary of Girders



Figure 30: Typical condition '4' girder



Figure 31: Typical condition '5' girder



Figure 32 Typical condition '6' girder



Figure 33 Typical condition '7' girder

3.5 Crossbraces

The cross braces were found to be in poor condition throughout the structure. The common defect noted during the inspection was rot to the lower ends of the cross braces at the connection points. This is common throughout jetty structures and cross braces due to the lower ends residing within the tidal zone. These timber sections have undergone rot with section loss evident on some bents around the connection bolts into the timber piles. Many cross braces have already failed. There were instances noted during the inspection where crossbraces were removed during installation of concrete casing to timber piles or while steel piles were installed but they were not replaced or reinstated. There also have been instances where the crossbraces are either connected unconventionally to steel piles or are not connected at all. The steel rod has been welded to the steel piles, which does not provide a good load path for lateral loads. Crossbraces should be reinstated with a clamped bracket as used on recent jetty upgrades throughout South Australia.

Figure 35 depicts a typical rating '7' pile. Note the unconventional connection type to the pile.

Component	Total No.	Condition Rating						
		1	2	3	4	5	6	7
Cross Braces	16	0	0	0	0	0	0	16
								100%

Figure 34: Condition Rating Summary (Bracing)



Figure 35 Typical Condition '7' crossbrace. Seaside crossbrace missing

3.6 Corbels

Corbels were found to be in good to poor condition throughout the structure. The corbels generally didn't show any signs of significant rot. However, due to the short length of the timber members, vertical splits originating at the bolt locations have joined up and split the entire length.

Component	Total No.	Condition Rating						
		1	2	3	4	5	6	7
Corbel	109	0	0	0	52	32	24	1
		0%	0%	0%	48%	29%	22%	1%

Figure 36: Condition Rating Summary (Timber Corbel)



Figure 37 Typical condition '4' Corbel (same corbel-both sides shown)



Figure 38 Typical condition '5' Corbel (same corbel-both sides shown)



Figure 39 Typical condition '6' Corbel (same corbel-both sides shown)



Figure 40 Typical condition '7' corbel

3.7 Decking and Kerb

Decking and kerbs were observed to be typically in fair condition throughout the superstructure. The surface to the decking has deteriorated in places due to rot of the timber, causing minor section loss in some areas and a roughened surface. During the inspection, several deck units were identified with a rating of 5, primarily due to section loss, splits or deck spikes that protruded, posing a tripping hazard. It is recommended that deck spikes be reinstated, and deck units be replaced that have section loss or produce an uneven traffic surface.

Component	Total No. (of bays)	Condition Rating						
		1	2	3	4	5	6	7
Decking	36	0	0	0	14	22	0	0
		0%	0%	0%	39%	61%	0%	0%

Figure 41: Condition Rating Summary (Timber Decking)

Component	Total No.	Condition Rating						
		1	2	3	4	5	6	7
Kerb	72	0	0	0	71	1	0	0
		0%	0%	0%	99%	1%	0%	0%

Figure 42: Condition Rating Summary (Timber Kerb)

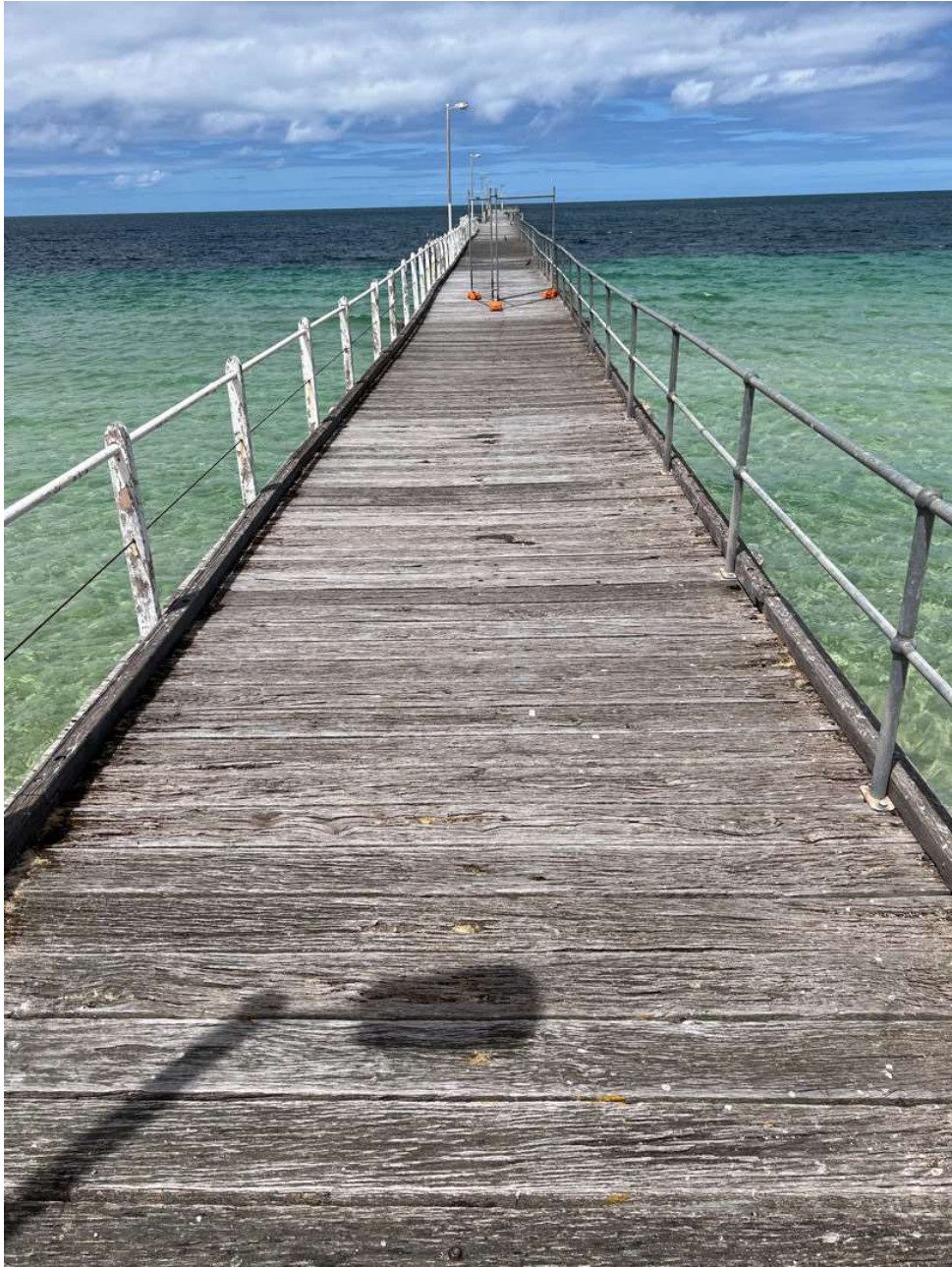


Figure 43 Typical condition '4' decking



Figure 44 Typical condition '5' decking



Figure 45: Typical Condition '4' Kerb

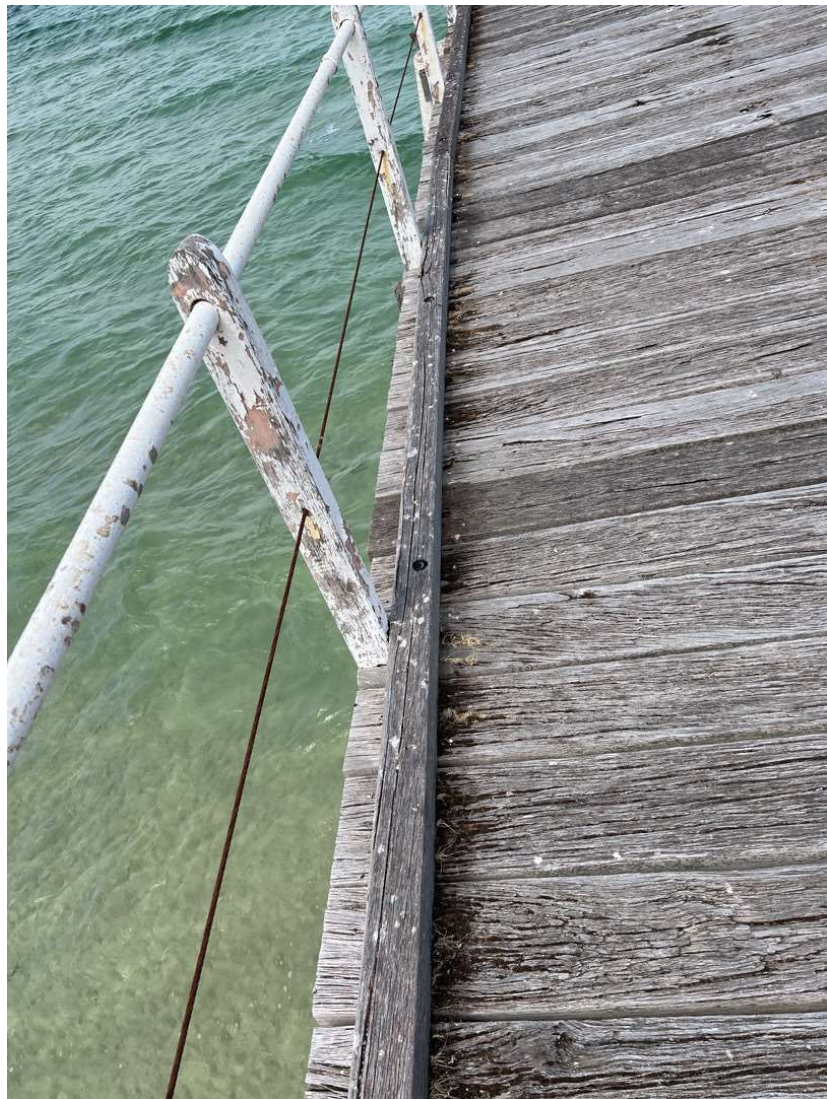


Figure 46: Typical Condition '5' Kerb

3.8 Handrails

The handrails were observed to be in fair condition. Minor surface corrosion and breakdown of the protective coating was observed in some areas of handrailing. Figure 47 shows a typical image of the handrail on the RHS of the jetty. Figure 49 represents LHS of the jetty.



Figure 47: Typical condition '4' of handrail – LHS of the jetty



Figure 48 Typical condition '5' of handrail – LHS of the jetty



Figure 49: Typical condition '4' of handrail – RHS of the jetty

3.9 Lighting

The 6 light poles on the Tumbay Bay Jetty were observed to be in good condition, with one defect noted to the bent 11 lighting connection to the girder which was severely corroded.

Refer to typical photo in Figure 51.

Component	Total No.	Condition Rating						
		1	2	3	4	5	6	7
Lighting	6		1	0	4		1	
			17%		66%		17%	

Figure 50: Condition Rating Summary (Lighting)



Figure 51 Typical condition '4' Lightpole



Figure 52 Bent 11 Lightpole corroded connection, rated 6

3.10 Miscellaneous

Miscellaneous items cover Seating, Ladders and Brackets supporting services. The lower landing structure is considered a part of the miscellaneous as it is separate from the jetty, only being connected to the jetty via stairs.

There are three ladders along the jetty between bents 1- 36. One ladder is located between bent 24 and 25. This ladder is in a fair condition and no significant damages were observed.

The second ladder is connecting the landing with the jetty and this stair is in a fair condition with no significant damage observed.

The third ladder is located on the landing serving purpose as a dive ladder and is in a good condition.

The sign on bent 26 is rated 4 and no issues were found.

Component	Total No.	Condition Rating						
		1	2	3	4	5	6	7
Ladders	3				3			

Figure 53: Condition Rating Summary (Miscellaneous)

The lower landing structure is in a fair-poor condition.

The steel piles are in a fair condition. The main defect noted during the inspection for steel piles, is the breakdown of the protective coating and corrosion in the tidal zone.

The girders are in a fair condition, and they have weathering, checks, minor splits and it is suspected that there is rot to the top of the member given the condition of the girders on the jetty.

The surface to the decking has slightly deteriorated in places due to rot of the timber, causing minor section loss in some areas and a roughened surface.

The kerbing is in a fair-poor condition with sections of kerb missing and section loss observed. There are minor checks, splits on the kerbs.

Component	Total No.	Condition Rating						
		1	2	3	4	5	6	7
Kerb	6					3	2	1
Deck	2					2		
Girder	4					4		
Steel Pile	6					6		

Figure 54: Lower Landing Condition Ratings



Figure 55: Lower Landing Dive Ladder



Figure 56: Jetty and Lower Landing Stair



Figure 57: Jetty Ladder between bent 24 and 25

4 Recommendations

All repair recommendations below are to be completed in reference to DIT Marine Master Specification MA-JW-C1 Timber Jetty Works and DIT standard drawing No S-6997, Jetty Construction. These recommendations represent all recommended maintenance and repairs on the jetty, regardless of criticality. Refer to the detailed WSCAM inspection report for maintenance ratings.

The following recommendations capture majority of the inspected elements that are a rating condition 5 or more.

There are a number of critical issues observed during the inspection which need to be addressed to ensure that the jetty is safe for use by the general public.

- Three piles rated 7, which have already failed.
- 2 crossheads have failed already with a rating of 7. 4 crossheads with a rating of 6 having severe rot on top.
- Some handrail sections on LHS of the jetty have shifted out of alignment due to the jetty movement.

The following sections will list out the recommendations for the following options:

1. Minimum initial spend to open the jetty with reactive maintenance expected over the 15-year lease.
2. Optimum remediation spend to open the jetty and minimise maintenance costs over the 15-year lease.

4.1 Option 1: Minimum Initial Spend

4.1.1 Piles

The following is recommended:

- Replace all rating 6 & 7 Piles
- Replace all concrete encased timber piles (all condition ratings)
- Replace all rating 4 & 5 timber piles in 10 years.
- Blast clean and paint condition rating 5 steel piles in 10 years.

4.1.2 Crossheads

The following is recommended:

- Replace all crossheads that are rating 6 & 7.
- If piles replaced on crosshead with rating 6 & 7, it may not require replacement
- Replace all rating 5 crossheads in 10 years time.

4.1.3 Crossbrace

- Replace all cross bracing rating 6 & 7.
- Connect bracing back to steel piles with clamp bracket

Cross bracing may not be required for all bents; however this requires detailed structural analysis to determine. In the absence of this analysis, the recommendation is to replace cross bracing at each bent rated 6 and above.

4.1.4 Girders

The following is recommended:

- Repair all girders rated 6 & 7.
- Replace all rating 5 girders in 10 years time.

4.1.5 Handrail

The following is recommended:

- Monitor condition of steel handrails and stanchion joints for rust and if deemed necessary, clean the surface with a wire brush, and re-apply protective coating.
- The timber post fence is in a good condition barring a few locations where the steel handrail has rusted and buckled. It is suggested that the handrail be replaced with the same section.

4.1.6 Decking

The following is recommended:

- Monitor decking and replace deck units with major splits, checks and section loss.
- Expected the allowance for up to 50% of deck units lifted to be replaced due to splitting, rot etc.
- Replace further 50% of deck units in 10 years time.

4.1.7 Corbels

The following is recommended:

- Replace rating 6 & 7 Corbels.
- Replace all rating 5 corbels in 10 years time.

4.1.8 Miscellaneous

It is recommended that the members of the landing that are rating 6 & 7 be replaced.

4.2 Option 2: Optimum Remediation

4.2.1 Piles

The following is recommended:

- Replace all rating 4, 5, 6 & 7 timber Piles
- Replace all concrete encased timber piles (all condition ratings)
- Blast clean and paint condition rating 5 steel piles.

4.2.2 Crossheads

The following is recommended:

- Replace all crossheads that are rating 5, 6 & 7.
- If piles replaced on crosshead with rating 5, 6 & 7, it may not require replacement

4.2.3 Crossbrace

- Replace all cross bracing rating 5, 6 & 7.
- Connect bracing back to steel piles with clamp bracket

Cross bracing may not be required for all bents; however this requires detailed structural analysis to determine. In the absence of this analysis, the recommendation is to replace cross bracing at each bent rated 6 and above.

4.2.4 Girders

The following is recommended:

- Repair all girders rated 5, 6 & 7.

4.2.5 Handrail

The following is recommended:

- Monitor condition of steel handrails and stanchion joints for rust and if deemed necessary, clean the surface with a wire brush, and re-apply protective coating.
- The timber post fence is in a good condition barring a few locations where the steel handrail has rusted and buckled. It is suggested that the handrail be replaced with the same section.

4.2.6 Decking & Kerbing

The following is recommended:

- Replace decking over bents 1-36.
- Replace all kerbing over bents 1-36

4.2.7 Corbels

The following is recommended:

- Replace rating 5, 6 & 7 Corbels.

4.2.8 Miscellaneous

It is recommended that the members of the landing that are rating 5, 6 & 7 be replaced.

5 Costings

The following are costings for each of the recommended options, prices have been built up based upon the actual costs of recent works completed at Port Neill, with references to quantity surveyor estimates completed for DIT as part of the Jetty Pilot Project.

These estimates consider an inherent allowance for the cost of procurement, cost to open the bent up and cost of installation. Costs for project management have not been allowed for in the fees below, and it is assumed the project management will be completed by the District Council of Tumby Bay. Costs have been escalated to 2025, with the maintenance costs of option 1 being in 2025 costing. It is expected that in 10 years time, the cost will have risen and will be required to be taken into account.

5.1 Option 1: Minimum Initial Spend

The following assumptions have been made to build up the minimum initial spend:

- 20% more girders have been allowed for, as it is expected some additional girders will be identified for replacement during repair works.
- 20% more corbels have been allowed for, as it is expected some additional corbels will be identified for replacement during repair works.
- 20% more crossheads have been allowed for, as it is expected some additional crossheads will be identified for replacement during repair works.
- Escalated costs assume 16% total inflation based on the following figures:
 - o 2023 = 6%
 - o 2024 = 5%
 - o 2025 = 5%
- 35% contingency has been applied prior to escalated prices, and on top of the additional 20% of girders, corbels and crossheads.
- Expected that in 10 years time another campaign of repairs will be conducted on condition rating 5 elements.
- Condition element 4 timber piles are expected to be replaced in the 10 year maintenance campaign. Other condition rating 4 elements are unlikely to require replacement, as the WSCAM remaining life calculation is conservative for timber members. Elements out of the water will degrade at a slower rate.

Item	Action	Number of Items	Cost per Item	Cost Total
INITIAL COSTS				
Project Costs				
Design Fee		1 Ea	\$100,000.00	\$100,000.00
Insurance		1 Ea	\$10,000.00	\$10,000.00
Construction Phase Services		1 Ea	\$80,000.00	\$80,000.00
Construction Costs				
Contractor Mob/demob/equip/design		1 Ea	\$252,807.33	\$252,807.33
Corbel	Procurement	30 Ea	\$665.47	\$19,964.10
	Installation	30 Ea	\$1,694.55	\$50,836.50
Crossbrace	Procurement	72 Ea	\$1,690.84	\$121,740.48
	Installation	72 Ea	\$1,694.55	\$122,007.60
Crosshead	Procurement	8 Ea	\$1,315.19	\$10,521.52
	Installation	8 Ea	\$2,098.02	\$16,784.16
Girder	Procurement	56 Ea	\$2,079.27	\$116,439.12
	Installation	56 Ea	\$2,349.02	\$131,545.12
Handrailing	Procurement	1 bent	\$1,029.00	\$1,029.00
	Installation	1 bent	\$168.00	\$168.00

Deck (Narrow)	Procurement	13 Bent	\$33,300.00	\$432,900.00
	Installation	13 Bent	\$30,260.00	\$393,380.00
Deck (wide)	Procurement	1 Bent	\$49,950.00	\$49,950.00
	Installation	1 Bent	\$30,260.00	\$30,260.00
Concrete Pile Replacement	Procurement/installation	20 Ea	\$15,000.00	\$300,000.00
Timber Pile Replacement	Procurement/installation	4 Ea	\$15,000.00	\$60,000.00
Bent Opening/closing	Installation	27 Bent	\$7,920.66	\$213,857.82
Bolt Retightening		1 Ea	\$70,000.00	\$70,000.00
TOTAL				\$2,584,190.75
35% contingency				\$904,466.76
TOTAL (with contingency)				\$3,488,657.51
Escalated to 2025 Total (16% inflation)				\$4,046,842.71
<u>MAINTENANCE COST AT 10 YEARS</u>				
Design Fee		1 Ea	\$100,000.00	\$100,000.00
Insurance		1 Ea	\$10,000.00	\$10,000.00
Construction Phase Services		1 Ea	\$80,000.00	\$80,000.00
WSCAM Inspection (above water)		2 Ea	\$13,000.00	\$26,000.00
WSCAM Dive Inspection		2 Ea	\$24,000.00	\$48,000.00
Contractor Mob/demob/equip/design		1 Ea	\$252,807.33	\$252,807.33
Corbel	Procurement	39 Ea	\$665.47	\$25,953.33
	Installation	39 Ea	\$1,694.55	\$66,087.45
Crosshead	Procurement	5 Ea	\$1,315.19	\$6,575.95
	Installation	5 Ea	\$2,098.02	\$10,490.10
Girder	Procurement	30 Ea	\$2,079.27	\$62,378.10
	Installation	30 Ea	\$2,349.02	\$70,470.60
Deck (Narrow)	Procurement	18 Bent	\$33,300.00	\$599,400.00
	Installation	18 Bent	\$30,260.00	\$544,680.00
Deck (Wide)	Procurement	4 Bent	\$49,950.00	\$199,800.00
	Installation	4 Bent	\$30,260.00	\$121,040.00
Timber Pile Replacement	Procurement/installation	16 Ea	\$15,000.00	\$240,000.00
Steel Pile Painting	Installation	8 Ea	\$10,000.00	\$80,000.00
Bent Opening/closing	Installation	20 Bent	\$7,920.66	\$158,413.20
Bolt Retightening		1 Ea	\$70,000.00	\$70,000.00
TOTAL				\$2,772,096.06
35% contingency				\$970,233.62
TOTAL (with contingency)				\$3,742,329.68
Escalated to 2025 Total (16% inflation)				\$4,341,102.43
TOTAL OPTION 1 COST (Escalated to 2025)				\$8,387,945.14

5.2 Option 2: Optimum Remediation

The following assumptions have been made to build up the minimum initial spend:

- 20% more girders have been allowed for, as it is expected some additional girders will be identified for replacement during repair works.
- 20% more corbels have been allowed for, as it is expected some additional corbels will be identified for replacement during repair works.
- 20% more crossheads have been allowed for, as it is expected some additional crossheads will be identified for replacement during repair works.
- Escalated costs assume 16% total inflation based on the following figures:
 - o 2023 = 6%
 - o 2024 = 5%
 - o 2025 = 5%
- 35% contingency has been applied prior to escalated prices, and on top of the additional 20% of girders, corbels and crossheads.
- Condition element 4 timber piles are expected to be replaced in order to prevent degradation within the next 15 years. Other condition rating 4 elements are unlikely to require replacement, as the WSCAM remaining life calculation is conservative for timber members. Elements out of the water will degrade at a slower rate.

Item	Action	Number of Items	Cost per Item	Cost Total
Project Costs				
Design Fee		1	\$100,000.00	\$100,000.00
Insurance		1	\$10,000.00	\$10,000.00
Construction Phase Services		1	\$80,000.00	\$80,000.00
WSCAM Inspection (above water)		2	\$13,000.00	\$26,000.00
WSCAM Dive Inspection		2	\$24,000.00	\$48,000.00
Construction Costs				
Contractor Mob/demob/equip/design		1 Ea	\$252,807.33	\$252,807.33
Corbel	Procurement	69 Ea	\$665.47	\$45,917.43
	Installation	69 Ea	\$1,694.55	\$116,923.95
Crossbrace	Procurement	72 Ea	\$1,690.84	\$121,740.48
	Installation	72 Ea	\$1,694.55	\$122,007.60
Crosshead	Procurement	12 Ea	\$1,315.19	\$15,782.28
	Installation	12 Ea	\$2,098.02	\$25,176.24
Girder	Procurement	86 Ea	\$2,079.27	\$178,817.22
	Installation	86 Ea	\$2,349.02	\$202,015.72
Handrailing	Procurement	1 Bent	\$1,029.00	\$1,029.00
	Installation	1 Bent	\$168.00	\$168.00
Deck (Narrow)	Procurement	31 Bent	\$33,300.00	\$1,032,300.00
	Installation	31 Bent	\$30,260.00	\$938,060.00
Deck (Wide)	Procurement	5 Bent	\$49,950.00	\$249,750.00
	Installation	5 Bent	\$30,260.00	\$151,300.00
Concrete Pile Replacement	Procurement/installation	20 Ea	\$15,000.00	\$300,000.00
Timber Pile Replacement	Procurement/installation	20 Ea	\$15,000.00	\$300,000.00
Steel Pile Painting	Installation	8 Ea	\$10,000.00	\$80,000.00
Bent Opening/closing	Installation	36 Bent	\$7,920.66	\$285,143.76
Bolt Retightening		1 Ea	\$70,000.00	\$70,000.00
TOTAL				\$4,752,939.01
35% contingency				\$1,663,528.65
TOTAL (with contingency)				\$6,416,467.66
Escalated to 2025 Total (16% inflation)				\$7,443,102.49

Appendix A – WSCAM Record (Jetty)

WSCAM (LEVEL 2) JETTY CONDITION ASSESSMENT - INPUT TABLE

Bent or Bay	Bent or Bay Number	Element Reference	Jetty Element	Material Type	Structural Load Path	WSCAM Condition Rating (average for grouped assessment)	Worse Case WSCAM Condition Rating for Group	Photo	Detailed Photo	Comments	Defect Causing Condition Rating	WSCAM Maintenance Rating	WSCAM Maintenance Rating Description	Priority	Remedial Action
Bay	0 Group		Abutment	Timber	Primary	4		"0-Abutment, Abutment", "0-Abutment-1", "0-Abutment, Abutment-2", "0-Abutment, Abutment-3"							
Bay	1 A		Handrailing	Timber	Primary	4		1-A-Handrailing							
Bay	1 B		Handrailing	Part Timber & Steel	Primary	4		1-B-Handrailing, 1-B-Handrailing-1		Corrosion observed at post junctions					to be cleaned and painted to reduce chances of rust
Bay	1 A		Kerb	Timber	Primary	4		1-A-Kerb							
Bay	1 B		Kerb	Timber	Primary	4		1-B-Kerb							
Bay	1 Group		Decking	Timber	Primary	4		1-Decking		Some bolts to girder missing					
Bay	1 A		Girder	Timber	Primary	5		"1-A-Girder, Girder", "1-A-Girder, Girder-1"		Rotting, cracks and splits observed	Rot/decay	B	Maintenance will be required in 1-3 years.		Replace like for like
Bay	1 B		Girder	Timber	Primary	6		"1-B-Girder, Girder", "1-B-Girder, Girder-1"		Severe rot to top of girder, twisting, cracking and splitting observed	Rot/decay	C	Maintenance required within 12 months.		Replace like for like
Bay	1 C		Girder	Timber	Primary	5		"1-C-Girder, Girder"		Minor splits observed	Split/check	B	Maintenance will be required in 1-3 years.		Replace like for like
Bent	1 A		Corbel	Timber	Primary	4		"1-A-Corbel, Corbel"							
Bent	1 B		Corbel	Timber	Primary	5		"1-B-Corbel, Corbel"	"1-B-Corbel, Corbel-1"	Vertical split in corbel and rot	Split/check	C	Maintenance required within 12 months.		Replace like for like
Bent	1 C		Corbel	Timber	Primary	4		"1-C-Corbel, Corbel"							
Bent	1 L		Crosshead	Timber	Primary	5		1-Landside-Crosshead, 1-Landside-Crosshead-1		End connection corroded, minor section loss at pile A end	Rot/decay	B	Maintenance will be required in 1-3 years.		Replace like for like
Bent	1 S		Crosshead	Timber	Primary	6		1-Seaside-Crosshead, 1-Seaside-Crosshead-1		Vertical split in crosshead, section loss due to rot observed	Rot/decay	C	Maintenance required within 12 months.		Replace like for like
Bent	1 Group		Crossbrace		Primary	X									
Bent	1 Group		Crosswalling		Primary	X									
Bent	1 A		Steel Pile	Steel	Primary	4		1-A-Steel Pile, 1-A-Steel Pile-1		Pile - 4, Bracket - 5, corrosion observed		B	Maintenance will be required in 1-3 years.		Monitor connection, clean with wire brush and paint to
Bent	1 B		Other Pile	Concrete	Primary	4		1-B-Concrete Pile							
Bay	2 A		Handrailing	Timber	Primary	4		2-A-Handrailing							
Bay	2 B		Handrailing		Primary	4		2-B-Handrailing							
Bay	2 A		Kerb	Timber	Primary	4		2-A-Kerb	2-A-Kerb-1						
Bay	2 B		Kerb	Timber	Primary	4		2-B-Kerb							
Bay	2 Group		Decking	Timber	Primary	5		2-Decking	2-Decking, 1, 2-Decking-2	Section loss at certain locations as shown in detailed photos, cracks in deck surface	Weathering	B	Maintenance will be required in 1-3 years.		Monitor section loss, decking to be replaced if section lo

OFFICE USE ONLY
CODE
Abutment
Handrailing
Handrailing
Kerb
Kerb
Decking
Girder
Girder
Girder
Corbel
Corbel
Corbel
Crosshead
Crosshead
Crossbrace
Crosswalling
Pile
Pile
Handrailing
Handrailing
Kerb
Kerb
Decking

WSCAM (LEVEL 2) JETTY CONDITION ASSESSMENT - INPUT TABLE

Bent or Bay	Bent or Bay Number	Element Reference	Jetty Element	Material Type	Structural Load Path	WSCAM Condition Rating (average for grouped assessment)	Worse Case WSCAM Condition Rating for Group	Photo	Detailed Photo	Comments	Defect Causing Condition Rating	WSCAM Maintenance Rating	WSCAM Maintenance Rating Description	Priority	Remedial Action
Bay	2 A		Girder	Timber	Primary	6			2-A-Girder	Severe rot to top of girder, severe cracking and rot observed in girder	C		Maintenance required within 12 months.		Replace like for like
Bay	2 B		Girder	Timber	Primary	6			2-B-Girder,2-B-Girder-1	Severe rot to top of girder, cracking and splitting observed at base of girder	C		Maintenance required within 12 months.		Replace like for like
Bay	2 C		Girder	Timber	Primary	6			2-C-Girder,2-C-Girder-1	Rot and splits observed in girder	C		Maintenance required within 12 months.		Replace like for like
Bent	2 A		Corbel	Timber	Primary	6			2-A-Corbel	Vertical split through centre of corbel	C		Maintenance required within 12 months.		Replace like for like
Bent	2 B		Corbel	Timber	Primary	6			2-B-Corbel	Vertical split through corbel	C		Maintenance required within 12 months.		Replace like for like
Bent	2 C		Corbel	Timber	Primary	4			"2-C-Corbel, Corbel"						
Bent	2 L		Crosshead	Timber	Primary	6			2-Landside-Crosshead	Horizontal splits through crosshead at both ends, corroded end connection bolts	C		Maintenance required within 12 months.		Replace like for like
Bent	2 S		Crosshead	Timber	Primary	5			2-Seaside-Crosshead	Cracking and splitting observed in member	B		Maintenance will be required in 1-3 years.		Replace like for like
Bent	2 Group		Crossbrace		Primary	x									
Bent	2 Group		Crosswalling		Primary	x									
Bent	2 A		Timber Pile	Timber	Primary	4			2-A-Timber Pile,2-A-Timber Pile-1						
Bent	2 B		Timber Pile	Timber	Primary	4			2-B-Timber Pile,2-B-Timber Pile-1						
Bay	3 A		Handrailing	Timber	Primary	4			3-A-Handrailing						
Bay	3 B		Handrailing	Steel	Primary	4			3-B-Handrailing	Rusting around handrail post junctions					Clean surface rust with wire brush and apply paint to red
Bay	3 A		Kerb	Timber	Primary	4			3-A-Kerb						
Bay	3 B		Kerb	Timber	Primary	4			3-B-Kerb	Minor cracking and splitting observed in kerb					
Bay	3 Group		Decking	Timber	Primary	4			3-Decking	Localised cracking and splitting of decking					
Bay	3 A		Girder	Timber	Primary	5			3-A-Girder	Splitting and cracking observed, minor rot	B		Maintenance will be required in 1-3 years.		Replace like for like
Bay	3 B		Girder	Timber	Primary	6			3-B-Girder	Severe rot to top of girder, splitting and cracking observed in member	B		Maintenance will be required in 1-3 years.		Replace like for like
Bay	3 C		Girder	Timber	Primary	5			3-C-Girder	Rotting to top of girder, minor cracks and splits observed to bottom of girder	B		Maintenance will be required in 1-3 years.		Replace like for like
Bent	3 A		Corbel	Timber	Primary	6			3-A-Corbel	Vertical split through corbel, member still supporting girders	C		Maintenance required within 12 months.		Replace like for like
Bent	3 B		Corbel	Timber	Primary	5			3-B-Corbel	Vertical split through corbel has started to increase	B		Maintenance will be required in 1-3 years.		Replace like for like
Bent	3 C		Corbel	Timber	Primary	6			3-C-Corbel	Vertical splitting through corbel	C		Maintenance required within 12 months.		Replace like for like

OFFICE USE ONLY
CODE
Girder
Girder
Girder
Corbel
Corbel
Corbel
Crosshead
Crosshead
Crossbrace
Crosswalling
Pile
Pile
Handrailing
Handrailing
Kerb
Kerb
Decking
Girder
Girder
Girder
Corbel
Corbel
Corbel

WSCAM (LEVEL 2) JETTY CONDITION ASSESSMENT - INPUT TABLE

Bent or Bay	Bent or Bay Number	Element Reference	Jetty Element	Material Type	Structural Load Path	WSCAM Condition Rating (average for grouped assessment)	Worse Case WSCAM Condition Rating for Group	Photo	Detailed Photo	Comments	Defect Causing Condition Rating	WSCAM Maintenance Rating	WSCAM Maintenance Rating Description	Priority	Remedial Action
Bent	3 L		Crosshead	Timber	Primary	4			3--Landside-Crosshead	Minor splitting and cracking observed to bottom of girder, rot issues					
Bent	3 S		Crosshead	Timber	Primary	4			3--Seaside-Crosshead	Splitting and cracking observed to bottom of girder, rot issues					
Bent	3 Group		Crossbrace		Primary	X									
Bent	3 Group		Crosswalling		Primary	X									
Bent	3 A		Timber Pile	Timber	Primary	4			3-A--Timber Pile						
Bent	3 B		Timber Pile	Timber	Primary	4			3-B--Timber Pile						
Bay	4 A		Handrailing	Timber	Primary	4			4-A--Handrailing						
Bay	4 B		Handrailing	Steel	Primary	4			4-B--Handrailing						
Bay	4 A		Kerb	Timber	Primary	4			4-A--Kerb	Splitting and cracking observed					
Bay	4 B		Kerb	Timber	Primary	4			4-B--Kerb	4-B--Kerb-1	Splitting and cracking observed				
Bay	4 Group		Decking	Timber	Primary	5			4--Decking	4--Decking-1,4--Decking-2,4--Decking-3,4--Decking-4	Splitting and cracking observed, rotting in decking	B	Maintenance will be required in 1-3 years.	Replace decking like for like as deemed necessary for deck	
Bay	4 A		Girder	Timber	Primary	6			4-A--Girder	Severe rot to top of girder, cracking caused due to rotting observed in girder	Rot/decay	C	Maintenance required within 12 months.	Replace like for like	
Bay	4 B		Girder	Timber	Primary	6			4-B--Girder	Splitting and cracking observed to bottom of girder, rot issues	Spill/check	C	Maintenance required within 12 months.	Replace like for like	
Bay	4 C		Girder	Timber	Primary	6			4-C--Girder	Splitting and cracking observed to bottom of girder, rot issues	Spill/check	C	Maintenance required within 12 months.	Replace like for like	
Bent	4 A		Corbel	Timber	Primary	5			4-A--Corbel	Vertical splitting through corbel and twisting observed	Spill/check	B	Maintenance will be required in 1-3 years.	Replace like for like	
Bent	4 B		Corbel	Timber	Primary	5			4-B--Corbel	Vertical splitting through corbel observed	Spill/check	B	Maintenance will be required in 1-3 years.	Replace like for like	
Bent	4 C		Corbel	Timber	Primary	4			4-C--Corbel						
Bent	4 L		Crosshead	Timber	Primary	4			4--Landside-Crosshead	Minor splitting at ends of member					
Bent	4 S		Crosshead	Timber	Primary	4			4--Seaside-Crosshead	Minor section loss at base of crosshead near Southern end					
Bent	4 Group		Crossbrace		Primary	X									
Bent	4 Group		Crosswalling		Primary	X									
Bent	4 A		Steel Pile	Steel	Primary	5			4-A--Steel Pile	Corrosion in pile surface throughout	Surface corrosion/speckled rust	B	Maintenance will be required in 1-3 years.	Blast clean surface of pile, apply protection layer to prevent rusting	
Bent	4 B		Steel Pile	Steel	Primary	4			4-B--Steel Pile						

OFFICE USE ONLY
CODE
Crosshead
Crosshead
Crossbrace
Crosswalling
Pile
Pile
Handrailing
Handrailing
Kerb
Kerb
Decking
Girder
Girder
Girder
Corbel
Corbel
Corbel
Crosshead
Crosshead
Crossbrace
Crosswalling
Pile
Pile

WSCAM (LEVEL 2) JETTY CONDITION ASSESSMENT - INPUT TABLE

Bent or Bay	Bent or Bay Number	Element Reference	Jetty Element	Material Type	Structural Load Path	WSCAM Condition Rating (average for grouped assessment)	Worse Case WSCAM Condition Rating for Group	Photo	Detailed Photo	Comments	Defect Causing Condition Rating	WSCAM Maintenance Rating	WSCAM Maintenance Rating Description	Priority	Remedial Action
Bay		5 A	Handrailing	Timber	Primary	4		5-A--Handrailing							
Bay		5 B	Handrailing	Steel	Primary	4		5-B--Handrailing							
Bay		5 A	Kerb	Timber	Primary	4		5-A--Kerb							
Bay		5 B	Kerb	Timber	Primary	4		5-B--Kerb	5-B--Kerb-1	Kerbs have moved out of alignment, can pose as a tripping hazard					
Bay		5 Group	Decking	Timber	Primary	5		5--Decking	5--Decking-1,5--Decking-2,5--Decking-3,5--Decking-4,5--Decking-5,5--Decking-6	Splitting, cracking and section loss at few locations along decking bay, deck bolt has come out at one location, these may pose as a tripping hazard	Weathering	B	Maintenance will be required in 1-3 years.		Loose bolt to be reinstalled, monitor deck loss and replace
Bay		5 A	Girder	Timber	Primary	6		5-A--Girder		Severe rot to top of girder, splitting and cracking observed to bottom of girder, rot issues	Rot/decay	C	Maintenance required within 12 months.		Replace like for like
Bay		5 B	Girder	Timber	Primary	6		5-B--Girder		Severe rot to top of girder, splitting and cracking observed to bottom of girder, rot issues	Rot/decay	C	Maintenance required within 12 months.		Replace like for like
Bay		5 C	Girder	Timber	Primary	5		5-C--Girder		Deflection in girder, rot issues observed	Weathering	B	Maintenance will be required in 1-3 years.		Replace like for like
Bent		5 A	Corbel	Timber	Primary	5		5-A--Corbel		Vertical and horizontal splitting through corbel observed	Split/check	B	Maintenance will be required in 1-3 years.		Replace like for like
Bent		5 B	Corbel	Timber	Primary	4		5-B--Corbel							
Bent		5 C	Corbel	Timber	Primary	5		5-C--Corbel	5-C--Corbel,5-C--Corbel-1	Vertical splitting through corbel observed	Split/check	B	Maintenance will be required in 1-3 years.		Replace like for like
Bent		5 L	Crosshead	Timber	Primary	4		5--Landside-Crosshead							
Bent		5 S	Crosshead	Timber	Primary	4		5--Seaside-Crosshead							
Bent		5 Group	Crossbrace		Primary	X									
Bent		5 Group	Crosswalling		Primary	X									
Bent		5 A	Steel Pile	Steel	Primary	4		5-A--Steel Pile							
Bent		5 B	Other Pile	Concrete	Primary	4		5-B--Concrete Pile							
Bay		6 A	Handrailing	Timber	Primary	4		6-A--Handrailing							
Bay		6 B	Handrailing	Steel	Primary	4		6-B--Handrailing							
Bay		6 A	Kerb	Timber	Primary	5		6-A--Kerb	6-A--Kerb-1,6-A--Kerb-2	Splitting and cracking in member, will deteriorate further	Split/check	B	Maintenance will be required in 1-3 years.		Monitor for further damage and replace if damage worse
Bay		6 B	Kerb	Timber	Primary	4		6-B--Kerb	6-B--Kerb-1	Minor cracking and splitting in kerb, out of alignment					
Bay		6 Group	Decking	Timber	Primary	5		6--Decking	6--Decking-1,6--Decking-2,6--Decking-3,6--Decking-4,6--Decking-5,6--Decking-6,6--Decking-7,6--Decking-8,6--Decking-9						
Bay		6 A	Girder	Timber	Primary	5		6-A--Girder	6-A--Girder-1	Splitting and cracking observed to bottom of girder, rot issues, covered in asphaltic material	Split/check	B	Maintenance will be required in 1-3 years.		Replace like for like

OFFICE USE ONLY
CODE
Handrailing
Handrailing
Kerb
Kerb
Decking
Girder
Girder
Girder
Corbel
Corbel
Corbel
Crosshead
Crosshead
Crossbrace
Crosswalling
Pile
Pile
Handrailing
Handrailing
Kerb
Kerb
Decking
Girder

WSCAM (LEVEL 2) JETTY CONDITION ASSESSMENT - INPUT TABLE

Bent or Bay	Bent or Bay Number	Element Reference	Jetty Element	Material Type	Structural Load Path	WSCAM Condition Rating (average for grouped assessment)	Worse Case WSCAM Condition Rating for Group	Photo	Detailed Photo	Comments	Defect Causing Condition Rating	WSCAM Maintenance Rating	WSCAM Maintenance Rating Description	Priority	Remedial Action
Bay	6 B		Girder	Timber	Primary	4			6-B-Girder						
Bay	6 C		Girder	Timber	Primary	4			6-C-Girder						
Bent	6 A		Corbel	Timber	Primary	4			6-A-Corbel,6-A-Corbel-1						
Bent	6 B		Corbel	Timber	Primary	5			6-B-Corbel,6-B-Corbel-1	Vertical splitting through corbel observed		B	Maintenance will be required in 1-3 years.		Replace like for like
Bent	6 C		Corbel	Timber	Primary	6			6-C-Corbel,6-C-Corbel-1	Vertical splitting through corbel observed		C	Maintenance required within 12 months.		Replace like for like
Bent	6 L		Crosshead	Timber	Primary	4			6-Landside-Crosshead						
Bent	6 S		Crosshead	Timber	Primary	4			6-Seaside-Crosshead						
Bent	6 Group		Crossbrace		Primary	X									
Bent	6 Group		Crosswalling		Primary	X									
Bent	6 A		Steel Pile	Steel	Primary	5			6-A-Steel Pile,6-A-Steel Pile-1	Minor surface corrosion in the splash zone of pile, connections		B	Maintenance will be required in 1-3 years.		Blast clean surface of pile where corrosion is happening, apply protective coating to
Bent	6 B		Other Pile	Concrete	Primary	4			6-B-Concrete Pile						
Bay	7 A		Handrailing	Timber	Primary	4			7-A-Handrailing						
Bay	7 B		Handrailing	Timber	Primary	4			7-B-Handrailing	Minor corrosion at junctions with posts					Clean rust and apply protective coating to prevent further
Bay	7 A		Kerb	Timber	Primary	4			7-A-Kerb 7-A-Kerb-1	Splitting and cracking in kerb					
Bay	7 B		Kerb	Timber	Primary	4			7-B-Kerb						
Bay	7 Group		Decking	Timber	Primary	5			7-Decking 7-Decking-1,7-Decking-2,7-Decking-3,7-Decking-4,7-Decking-5						
Bay	7 A		Girder	Timber	Primary	4			7-A-Girder						
Bay	7 B		Girder	Timber	Primary	4			7-B-Girder						
Bay	7 C		Girder	Timber	Primary	4			7-C-Girder						
Bent	7 A		Corbel	Timber	Primary	6			7-A-Corbel	Vertical splitting through corbel observed		C	Maintenance required within 12 months.		Replace like for like
Bent	7 B		Corbel	Timber	Primary	4			7-B-Corbel						
Bent	7 C		Corbel	Timber	Primary	6			7-C-Corbel	Vertical splitting through corbel observed		C	Maintenance required within 12 months.		Replace like for like
Bent	7 L		Crosshead	Timber	Primary	4			7-Landside-Crosshead						

OFFICE USE ONLY
CODE
Girder
Girder
Corbel
Corbel
Corbel
Crosshead
Crosshead
Crossbrace
Crosswalling
Pile
Pile
Handrailing
Handrailing
Kerb
Kerb
Decking
Girder
Girder
Girder
Corbel
Corbel
Corbel
Crosshead

WSCAM (LEVEL 2) JETTY CONDITION ASSESSMENT - INPUT TABLE

Bent or Bay	Bent or Bay Number	Element Reference	Jetty Element	Material Type	Structural Load Path	WSCAM Condition Rating (average for grouped assessment)	Worse Case WSCAM Condition Rating for Group	Photo	Detailed Photo	Comments	Defect Causing Condition Rating	WSCAM Maintenance Rating	WSCAM Maintenance Rating Description	Priority	Remedial Action
Bent	7 S		Crosshead	Timber	Primary	4			7-Seaside-Crosshead						
Bent	7 Group		Crossbrace		Primary	x									
Bent	7 Group		Crosswalling		Primary	x									
Bent	7 A		Other Pile	Concrete	Primary	4			7-A-Concrete Pile						
Bent	7 B		Other Pile	Concrete	Primary	4			7-B-Concrete Pile						
Bay	8 A		Handrailing	Timber	Primary	4		8-A-Handrailing							
Bay	8 B		Handrailing	Steel	Primary	4		8-B-Handrailing							
Bay	8 A		Kerb	Timber	Primary	4		8-A-Kerb		Cracking and Splitting through the kerb					
Bay	8 B		Kerb	Timber	Primary	4		8-B-Kerb	8-B-Kerb-1	Splitting and cracking observed, bolts at end of kerb coming off	C	Maintenance required within 12 months.		Bolt to be replaced	
Bay	8 Group		Decking	Timber	Primary	4		8-Decking	8-Decking-1						
Bay	8 A		Girder	Timber	Primary	4			8-A-Girder,8-A-Girder-1						
Bay	8 B		Girder	Timber	Primary	4			8-B-Girder,8-B-Girder-1						
Bay	8 C		Girder	Timber	Primary	4			8-C-Girder,8-C-Girder-1						
Bent	8 A		Corbel	Timber	Primary	4			8-A-Corbel,8-A-Corbel-1	Vertical split through member starting to generate					
Bent	8 B		Corbel	Timber	Primary	4			8-B-Corbel,8-B-Corbel-1	Vertical split through member starting to generate					
Bent	8 C		Corbel	Timber	Primary	4			8-C-Corbel,8-C-Corbel-1	Vertical split through member starting to generate					
Bent	8 L		Crosshead	Timber	Primary	4			8-Landside-Crosshead	Minor rot					
Bent	8 S		Crosshead	Timber	Primary	4			8-Seaside-Crosshead						
Bent	8 Group		Crossbrace		Primary	x									
Bent	8 Group		Crosswalling		Primary	x									
Bent	8 A		Steel Pile	Steel	Primary	4			8-A-Steel Pile						
Bent	8 B		Timber Pile	Timber	Primary	5			8-B-Timber Pile	30% section loss at base of pile-diver comments referred	Necking	B	Maintenance will be required in 1-3 years.	Replace with steel sister pile	
Bay	9 A		Handrailing		Primary	4		9-A-Handrailing							

OFFICE USE ONLY
CODE
Crosshead
Crossbrace
Crosswalling
Pile
Pile
Handrailing
Handrailing
Kerb
Kerb
Decking
Girder
Girder
Girder
Corbel
Corbel
Corbel
Crosshead
Crosshead
Crossbrace
Crosswalling
Pile
Pile
Handrailing

WSCAM (LEVEL 2) JETTY CONDITION ASSESSMENT - INPUT TABLE

Bent or Bay	Bent or Bay Number	Element Reference	Jetty Element	Material Type	Structural Load Path	WSCAM Condition Rating (average for grouped assessment)	Worse Case WSCAM Condition Rating for Group	Photo	Detailed Photo	Comments	Defect Causing Condition Rating	WSCAM Maintenance Rating	WSCAM Maintenance Rating Description	Priority	Remedial Action
Bay	9 B		Handrailing	Steel	Primary	4		9-B-Handrailing							
Bay	9 A		Kerb	Timber	Primary	4		9-A-Kerb							
Bay	9 B		Kerb	Timber	Primary	4		9-B-Kerb	9-B-Kerb-1,9-B-Kerb-2	Cracking and splitting of member					
Bay	9 Group		Decking	Timber	Primary	5		9-Decking	9-Decking-1,9-Decking-2,9-Decking-3,9-Decking-4,9-Decking-5,9-Decking-6	Moderate cracking and splitting through decking		B	Maintenance will be required in 1-3 years.		Replace like for like
Bay	9 A		Girder	Timber	Primary	4		9-A-Girder		Minor cracking through girder					
Bay	9 B		Girder	Timber	Primary	4		9-B-Girder							
Bay	9 C		Girder	Timber	Primary	4		9-C-Girder							
Bent	9 A		Corbel	Timber	Primary	4		9-A-Corbel							
Bent	9 B		Corbel	Timber	Primary	4		9-B-Corbel							
Bent	9 C		Corbel	Timber	Primary	4		9-C-Corbel							
Bent	9 L		Crosshead	Timber	Primary	4		9-Landside-Crosshead							
Bent	9 S		Crosshead	Timber	Primary	4		9-Seaside-Crosshead							
Bent	9 Group		Crossbrace		Primary	X									
Bent	9 Group		Crosswalling		Primary	X									
Bent	9 A		Timber Pile	Timber	Primary	4		9-A-Timber Pile,9-A-Timber Pile-1							
Bent	9 B		Timber Pile	Timber	Primary	5		9-B-Timber Pile,9-B-Timber Pile-1		25% section loss at base of pile-diver comments referred		B	Maintenance will be required in 1-3 years.		Replace with steel sister pile
Bay	10 A		Handrailing	Steel	Primary	4		10-A-Handrailing							
Bay	10 B		Handrailing	Steel	Primary	4		10-B-Handrailing							
Bay	10 A		Kerb	Timber	Primary	4		10-A-Kerb	10-A-Kerb-1	Minor cracking at bolt location to underside of kerb					
Bay	10 B		Kerb	Timber	Primary	4		10-B-Kerb							
Bay	10 Group		Decking	Timber	Primary	5		10-Decking	10-Decking-1,10-Decking-2,10-Decking-3,10-Decking-4,10-Decking-5,10-Decking-6,10-Decking-7	Moderate splitting and cracking through decking		B	Maintenance will be required in 1-3 years.		Monitor checks, splits and section loss, replace like for like
Bay	10 A		Girder	Timber	Primary	5		10-A-Girder		Rot to top of girder, cracking and splits to girder		B	Maintenance will be required in 1-3 years.		Replace like for like
Bay	10 B		Girder	Timber	Primary	4		10-B-Girder,10-B-Girder-1							

OFFICE USE ONLY
CODE
Handrailing
Kerb
Kerb
Decking
Girder
Girder
Girder
Corbel
Corbel
Corbel
Crosshead
Crosshead
Crossbrace
Crosswalling
Pile
Pile
Handrailing
Handrailing
Kerb
Kerb
Decking
Girder
Girder

WSCAM (LEVEL 2) JETTY CONDITION ASSESSMENT - INPUT TABLE

Bent or Bay	Bent or Bay Number	Element Reference	Jetty Element	Material Type	Structural Load Path	WSCAM Condition Rating (average for grouped assessment)	Worse Case WSCAM Condition Rating for Group	Photo	Detailed Photo	Comments	Defect Causing Condition Rating	WSCAM Maintenance Rating	WSCAM Maintenance Rating Description	Priority	Remedial Action
Bay	10 C		Girder	Timber	Primary	4			10-C-Girder						
Bent	10 A		Corbel	Timber	Primary	4			10-A-Corbel,10-A-Corbel-1						
Bent	10 B		Corbel	Timber	Primary	6			10-B-Corbel,10-B-Corbel-1	Vertical splitting through corbel observed		C	Maintenance required within 12 months.		Replace like for like
Bent	10 C		Corbel	Timber	Primary	6			10-C-Corbel,10-C-Corbel-1	Vertical splitting through corbel observed		C	Maintenance required within 12 months.		Replace like for like
Bent	10 L		Crosshead	Timber	Primary	4			10-Landside-Crosshead						
Bent	10 S		Crosshead	Timber	Primary	4			10-Seaside-Crosshead						
Bent	10 Group		Crossbrace		Primary	X									
Bent	10 Group		Crosswalling		Primary	X									
Bent	10 A		Other Pile	Concrete	Primary	4			10-A-Concrete Pile						
Bent	10 B		Steel Pile	Steel	Primary	4			10-B-Steel Pile						
Bay	11 A		Handrailing		Primary	4			11-A-Handrailing						
Bay	11 B		Handrailing	Steel	Primary	4			11-B-Handrailing						
Bay	11 A		Kerb	Timber	Primary	4			11-A-Kerb						
Bay	11 B		Kerb	Timber	Primary	4			11-B-Kerb						
Bay	11 Group		Decking	Timber	Primary	5			11-Decking	11-Decking-1,11-Decking-2,11-Decking-3,11-Decking-4	Minor cracking and splitting through deck				
Bay	11 A		Girder	Timber	Primary	6			11-A-Girder	Severe rot to top of girder		C	Maintenance required within 12 months.		Replace like for like
Bay	11 B		Girder	Timber	Primary	6			11-B-Girder,11-B-Girder-1	Severe rot to top of girder		C	Maintenance required within 12 months.		Replace like for like
Bay	11 C		Girder	Timber	Primary	4			11-C-Girder						
Bent	11 A		Corbel	Timber	Primary	7			11-A-Corbel,11-A-Corbel-1	Vertical splitting through corbel observed. Section of corbel missing		D	Immediate maintenance required.		Replace like for like
Bent	11 B		Corbel	Timber	Primary	6			11-B-Corbel,11-B-Corbel-1	Vertical splitting through corbel observed		C	Maintenance required within 12 months.		Replace like for like
Bent	11 C		Corbel	Timber	Primary	6			11-C-Corbel,11-C-Corbel-1	Vertical splitting through corbel observed		C	Maintenance required within 12 months.		Replace like for like
Bent	11 L		Crosshead	Timber	Primary	4			11-Landside-Crosshead						
Bent	11 S		Crosshead	Timber	Primary	4			11-Seaside-Crosshead						

OFFICE USE ONLY
00012
Girder
Corbel
Corbel
Corbel
Corbel
Crosshead
Crosshead
Crossbrace
Crosswalling
Pile
Pile
Handrailing
Handrailing
Kerb
Kerb
Decking
Girder
Girder
Girder
Corbel
Corbel
Corbel
Crosshead
Crosshead

WSCAM (LEVEL 2) JETTY CONDITION ASSESSMENT - INPUT TABLE

Bent or Bay	Bent or Bay Number	Element Reference	Jetty Element	Material Type	Structural Load Path	WSCAM Condition Rating (average for grouped assessment)	Worse Case WSCAM Condition Rating for Group	Photo	Detailed Photo	Comments	Defect Causing Condition Rating	WSCAM Maintenance Rating	WSCAM Maintenance Rating Description	Priority	Remedial Action
Bent	11	Group	Crossbrace	Timber	Primary	7			11--Crossbrace,11--Crossbrace-1	Cross Brace missing at seaside and landside bracing has rotten and broken off at half length	Weathering				
Bent	11	Group	Crosswalling		Primary	x									
Bent	11	A	Timber Pile	Timber	Primary	6			11-A--Timber Pile	Severe necking observed at base of pile	Necking	C	Maintenance required within 12 months.		Replace with steel sister pile
Bent	11	B	Timber Pile	Timber	Primary	6			11-B--Timber Pile	Necking and rot observed at base of pile	Necking	C	Maintenance required within 12 months.		Replace with steel sister pile
Bay	12	A	Handrailing	Timber	Primary	4		12-A--Handrailing							
Bay	12	B	Handrailing	Steel	Primary	4		12-B--Handrailing							
Bay	12	A	Kerb	Timber	Primary	4		12-A--Kerb	12-A--Kerb-1						
Bay	12	B	Kerb	Timber	Primary	4		12-B--Kerb	12-B--Kerb-1						
Bay	12	Group	Decking	Timber	Primary	4		12--Decking	12--Decking-1,12--Decking-2,12--Decking-3,12--Decking-4,12--Decking-5,12--Decking-6,12--Decking-7						
Bay	12	A	Girder	Timber	Primary	6			12-A--Girder	Severe rot through top of girder, splitting and cracking through bottom of girder	Rot/decay	C	Maintenance required within 12 months.		Replace like for like
Bay	12	B	Girder	Timber	Primary	6			12-B--Girder,12-B--Girder-1	Severe rot through top of girder, splitting and cracking through bottom of girder	Rot/decay	C	Maintenance required within 12 months.		Replace like for like
Bay	12	C	Girder	Timber	Primary	6			12-C--Girder	Severe rot through top of girder, splitting and cracking through bottom of girder	Rot/decay	C	Maintenance required within 12 months.		Replace like for like
Bent	12	A	Corbel		Primary	x									
Bent	12	B	Corbel		Primary	x									
Bent	12	C	Corbel		Primary	x									
Bent	12	L	Crosshead	Concrete	Primary	6			12--Landside-Crosshead	Significant section loss and spalling of concrete	Delamination/spalling	C	Maintenance required within 12 months.		Replace like for like
Bent	12	S	Crosshead	Concrete	Primary	6			12--Seaside-Crosshead	Significant section loss and spalling of concrete	Delamination/spalling	C	Maintenance required within 12 months.		Replace like for like
Bent	12	Group	Crossbrace		Primary	x									
Bent	12	Group	Crosswalling		Primary	x									
Bent	12	A	Other Pile	Concrete	Primary	6			12-A--Concrete Pile,12-A--Concrete Pile-1	Heavily spalled concrete, section loss, reinforcement possible corroded, if any used	Delamination/spalling	C	Maintenance required within 12 months.		Replace with steel sister pile
Bent	12	B	Other Pile	Concrete	Primary	5			12-B--Concrete Pile,12-B--Concrete Pile-1	Spalling of concrete observed at top of pile,	Delamination/spalling	B	Maintenance will be required in 1-3 years.		Monitor and replace with steel sister pile
Bay	13	A	Handrailing	Timber	Primary	4		13-A--Handrailing							
Bay	13	B	Handrailing	Steel	Primary	4		13-B--Handrailing							

OFFICE USE ONLY
CODE
Crossbrace
Crosswalling
Pile
Pile
Handrailing
Handrailing
Kerb
Kerb
Decking
Girder
Girder
Girder
Corbel
Corbel
Corbel
Crosshead
Crosshead
Crossbrace
Crosswalling
Pile
Pile
Handrailing
Handrailing

WSCAM (LEVEL 2) JETTY CONDITION ASSESSMENT - INPUT TABLE

Bent or Bay	Bent or Bay Number	Element Reference	Jetty Element	Material Type	Structural Load Path	WSCAM Condition Rating (average for grouped assessment)	Worse Case WSCAM Condition Rating for Group	Photo	Detailed Photo	Comments	Defect Causing Condition Rating	WSCAM Maintenance Rating	WSCAM Maintenance Rating Description	Priority	Remedial Action
Bay	13 A		Kerb	Timber	Primary	4		13-A-Kerb	13-A-Kerb-1						
Bay	13 B		Kerb	Timber	Primary	4		13-B-Kerb	13-B-Kerb-1,13-B-Kerb-2						
Bay	13 Group		Decking	Timber	Primary	4		13-Decking	13-Decking-1,13-Decking-2,13-Decking-3,13-Decking-4						
Bay	13 A		Girder	Timber	Primary	4			13-A-Girder,13-A-Girder-1						
Bay	13 B		Girder	Timber	Primary	4			13-B-Girder,13-B-Girder-1						
Bay	13 C		Girder	Timber	Primary	3			13-C-Girder	Rotting to top of girder, section loss along top of girder observed	Rot/decay	B	Maintenance will be required in 1-3 years.		Replace like for like
Bent	13 A		Corbel	Timber	Primary	6			13-A-Corbel,13-A-Corbel-1	Vertical splitting through corbel observed	Split/check	C	Maintenance required within 12 months.		Replace like for like
Bent	13 B		Corbel	Timber	Primary	5			13-B-Corbel,13-B-Corbel-1	Vertical splitting through corbel observed	Split/check	C	Maintenance required within 12 months.		Replace like for like
Bent	13 C		Corbel	Timber	Primary	6			13-C-Corbel,13-C-Corbel-1	Vertical splitting through corbel observed	Split/check	C	Maintenance required within 12 months.		Replace like for like
Bent	13 L		Crosshead	Timber	Primary	4			13-Landside-Crosshead						
Bent	13 S		Crosshead	Timber	Primary	4			13-Seaside-Crosshead						
Bent	13 Group		Crossbrace		Primary	X									
Bent	13 Group		Crosswalling		Primary	X									
Bent	13 A		Other Pile	Concrete	Primary	4			13-A-Concrete Pile						
Bent	13 B		Other Pile	Concrete	Primary	4			13-B-Concrete Pile						
Bay	14 A		Handrailing	Timber	Primary	4		14-A-Handrailing							
Bay	14 B		Handrailing	Steel	Primary	4		14-B-Handrailing							
Bay	14 A		Kerb	Timber	Primary	4		14-A-Kerb	14-A-Kerb-1,14-A-Kerb-2,14-A-Kerb-3	Splitting and cracking observed in kerb, missing bolt at kerb junction					Replace missing bolt to the kerb
Bay	14 B		Kerb	Timber	Primary	4		14-B-Kerb	14-B-Kerb-1	Minor splitting and cracking in kerb observed at kerb junction					
Bay	14 Group		Decking	Timber	Primary	5		14-Decking	14-Decking-1,14-Decking-2,14-Decking-3,14-Decking-4,14-Decking-5						
Bay	14 A		Girder	Timber	Primary	6			14-A-Girder,14-A-Girder-1	Severe rot to top of girder, splitting and cracking observed to bottom of girder, rot issues	Rot/decay	C	Maintenance required within 12 months.		Replace like for like
Bay	14 B		Girder	Timber	Primary	4			14-B-Girder,14-B-Girder-1						
Bay	14 C		Girder	Timber	Primary	6			14-C-Girder	Severe rot to top of girder, splitting and cracking observed to bottom of girder, rot issues	Rot/decay	C	Maintenance required within 12 months.		Replace like for like

OFFICE USE ONLY
CODE
Kerb
Kerb
Decking
Girder
Girder
Girder
Corbel
Corbel
Corbel
Crosshead
Crosshead
Crossbrace
Crosswalling
Pile
Pile
Handrailing
Handrailing
Kerb
Kerb
Decking
Girder
Girder
Girder

WSCAM (LEVEL 2) JETTY CONDITION ASSESSMENT - INPUT TABLE

Bent or Bay	Bent or Bay Number	Element Reference	Jetty Element	Material Type	Structural Load Path	WSCAM Condition Rating (average for grouped assessment)	Worse Case WSCAM Condition Rating for Group	Photo	Detailed Photo	Comments	Defect Causing Condition Rating	WSCAM Maintenance Rating	WSCAM Maintenance Rating Description	Priority	Remedial Action
Bent	14 A		Corbel	Timber	Primary	4			14-A--Corbel,14-A--Corbel-1						
Bent	14 B		Corbel	Timber	Primary	5			14-B--Corbel,14-B--Corbel-1	Vertical splitting through corbel observed		B	Maintenance will be required in 1-3 years.		Replace like for like
Bent	14 C		Corbel	Timber	Primary	4			14-C--Corbel,14-C--Corbel-1						
Bent	14 L		Crosshead	Timber	Primary	4			14--Landside-Crosshead						
Bent	14 S		Crosshead	Timber	Primary	4			14--Seaside-Crosshead	Minor cracking through crosshead observed					
Bent	14 Group		Crossbrace		Primary	X									
Bent	14 Group		Crosswalling		Primary	X									
Bent	14 A		Steel Pile	Steel	Primary	4			14-A--Steel Pile	Minor surface corrosion observed					If corrosion increases, blast clean surface to remove surf
Bent	14 B		Other Pile	Concrete	Primary	4			14-B--Concrete Pile						
Bay	15 A		Handrailing	Timber	Primary	4			15-A--Handrailing						
Bay	15 B		Handrailing	Steel	Primary	4			15-B--Handrailing						
Bay	15 A		Kerb	Timber	Primary	4			15-A--Kerb	Minor splitting and cracking observed in kerb					
Bay	15 B		Kerb	Timber	Primary	4			15-B--Kerb-1	Minor splitting and cracking observed in kerb					
Bay	15 Group		Decking	Timber	Primary	4			15--Decking-1,15--Decking-2,15--Decking-3						
Bay	15 A		Girder	Timber	Primary	6			15-A--Girder	Severe rot to top of girder, splitting and cracking observed to bottom of girder, rot issues	Rot/decay	C	Maintenance required within 12 months.		Replace like for like
Bay	15 B		Girder	Timber	Primary	6			15-B--Girder	Severe rot to top of girder, splitting and cracking observed to bottom of girder, rot issues	Rot/decay	C	Maintenance required within 12 months.		Replace like for like
Bay	15 C		Girder	Timber	Primary	6			15-C--Girder	Severe rot to top of girder, splitting and cracking observed to bottom of girder, rot issues	Rot/decay	C	Maintenance required within 12 months.		Replace like for like
Bent	15 A		Corbel	Timber	Primary	5			15-A--Corbel,15-A--Corbel-1,15-A--Corbel-2	Vertical splitting through one end of corbel observed	Split/check	B	Maintenance will be required in 1-3 years.		Replace like for like
Bent	15 B		Corbel	Timber	Primary	5			15-B--Corbel,15-B--Corbel-1	Vertical splitting through corbel observed	Split/check	B	Maintenance will be required in 1-3 years.		Replace like for like
Bent	15 C		Corbel	Timber	Primary	5			15-C--Corbel,15-C--Corbel-1,15-C--Corbel-2	Vertical splitting through corbel observed	Split/check	B	Maintenance will be required in 1-3 years.		Replace like for like
Bent	15 L		Crosshead	Timber	Primary	4			15--Landside-Crosshead						
Bent	15 S		Crosshead	Timber	Primary	4			15--Seaside-Crosshead						
Bent	15 Group		Crossbrace	Timber	Primary	7			15--Crossbrace,15--Crossbrace-1	Seaside brace not connected to timber and steel pile, landside brace not connected to timber sister pile and has rotten	Weathering				

OFFICE USE ONLY
CODE
Corbel
Corbel
Corbel
Corbel
Crosshead
Crosshead
Crossbrace
Crosswalling
Pile
Pile
Handrailing
Handrailing
Kerb
Kerb
Decking
Girder
Girder
Girder
Corbel
Corbel
Corbel
Crosshead
Crosshead
Crossbrace

WSCAM (LEVEL 2) JETTY CONDITION ASSESSMENT - INPUT TABLE

Bent or Bay	Bent or Bay Number	Element Reference	Jetty Element	Material Type	Structural Load Path	WSCAM Condition Rating (average for grouped assessment)	Worse Case WSCAM Condition Rating for Group	Photo	Detailed Photo	Comments	Defect Causing Condition Rating	WSCAM Maintenance Rating	WSCAM Maintenance Rating Description	Priority	Remedial Action
Bent	15 Group		Crosswalling		Primary	X									
Bent	15 A		Timber Pile	Timber	Primary	5			15-A-Timber Pile	Vertical splits and cracks through sister pile, section loss observed along base of pile at tidal zone.	B		Maintenance will be required in 1-3 years.		Monitor damage and replace with steel sister pile
Bent	15 B		Steel Pile	Steel	Primary	4			15-B-Steel Pile						
Bay	16 A		Handrailing	Timber	Primary	4			16-A-Handrailing						
Bay	16 B		Handrailing	Steel	Primary	4			16-B-Handrailing						
Bay	16 A		Kerb	Timber	Primary	4			16-A-Kerb						
Bay	16 B		Kerb	Timber	Primary	4			16-B-Kerb						
Bay	16 Group		Decking	Timber	Primary	4			16-Decking-1,16-Decking-2,16-Decking-3,16-Decking-4,16-Decking-5,16-Decking-6						
Bay	16 A		Girder	Timber	Primary	5			16-A-Girder,16-A-Girder-1	Minor crack and rot observed through girder	B		Maintenance will be required in 1-3 years.		Replace like for like
Bay	16 B		Girder	Timber	Primary	6			16-B-Girder,16-B-Girder-1	Severe rot to top of girder, minor cracking to base of girder	C		Maintenance required within 12 months.		Replace like for like
Bay	16 C		Girder	Timber	Primary	6			16-C-Girder,16-C-Girder-1	Severe rot to top of girder	C		Maintenance required within 12 months.		Replace like for like
Bent	16 A		Corbel	Timber	Primary	6			16-A-Corbel,16-A-Corbel-1	Vertical splitting and section loss through corbel observed	C		Maintenance required within 12 months.		Replace like for like
Bent	16 B		Corbel	Timber	Primary	4			16-B-Corbel,16-B-Corbel-1	Vertical split through corbel has started at one end, chances of increasing further to both ends.					
Bent	16 C		Corbel	Timber	Primary	6			16-C-Corbel,16-C-Corbel-1	Severe vertical splitting through corbel observed	C		Maintenance required within 12 months.		Replace like for like
Bent	16 L		Crosshead	Timber	Primary	4			16-Landside-Crosshead						
Bent	16 S		Crosshead	Timber	Primary	4			16-Seaside-Crosshead						
Bent	16 Group		Crossbrace		Primary	X									
Bent	16 Group		Crosswalling		Primary	X				Water observed in water, not in use as Pile A has concreting done around timber pile					
Bent	16 A		Other Pile	Concrete	Primary	4			16-A-Concrete Pile						
Bent	16 B		Timber Pile	Timber	Primary	5			16-B-Timber Pile	Necking and section loss at base of pile in tidal zone	B		Maintenance will be required in 1-3 years.		Replace with steel sister pile when member is not struct
Bay	17 A		Handrailing	Timber	Primary	4			17-A-Handrailing						
Bay	17 B		Handrailing	Steel	Primary	4			17-B-Handrailing	Clean surface rust with wire brush and apply paint to reduce rusting					
Bay	17 A		Kerb	Timber	Primary	4			17-A-Kerb-1	Splitting through kerb at junction					

OFFICE USE ONLY
CODE
Crosswalling
Pile
Pile
Handrailing
Handrailing
Kerb
Kerb
Decking
Girder
Girder
Girder
Corbel
Corbel
Corbel
Crosshead
Crosshead
Crossbrace
Crosswalling
Pile
Pile
Handrailing
Handrailing
Kerb

WSCAM (LEVEL 2) JETTY CONDITION ASSESSMENT - INPUT TABLE

Bent or Bay	Bent or Bay Number	Element Reference	Jetty Element	Material Type	Structural Load Path	WSCAM Condition Rating (average for grouped assessment)	Worse Case WSCAM Condition Rating for Group	Photo	Detailed Photo	Comments	Defect Causing Condition Rating	WSCAM Maintenance Rating	WSCAM Maintenance Rating Description	Priority	Remedial Action
Bay	17 B		Kerb	Timber	Primary	4		17-B-Kerb							
Bay	17 Group		Decking	Timber	Primary	5		17-Decking	17-Decking-1,17-Decking-2,17-Decking-3,17-Decking-4,17-Decking-5						
Bay	17 A		Girder	Timber	Primary	5		17-A-Girder		Splitting and cracking observed to bottom of girder, rot issues		B	Maintenance will be required in 1-3 years.		Replace like for like
Bay	17 B		Girder	Timber	Primary	4		17-B-Girder,17-B-Girder-1							
Bay	17 C		Girder	Timber	Primary	6		17-C-Girder		Severe rot to top of girder, splitting and cracking observed to bottom of girder, rot issues		C	Maintenance required within 12 months.		Replace like for like
Bent	17 A		Corbel	Timber	Primary	4		17-A-Corbel,17-A-Corbel-1							
Bent	17 B		Corbel	Timber	Primary	4		17-B-Corbel,17-B-Corbel-1							
Bent	17 C		Corbel	Timber	Primary	6		17-C-Corbel,17-C-Corbel-1		Vertical splitting through corbel observed		C	Maintenance required within 12 months.		Replace like for like
Bent	17 L		Crosshead	Timber	Primary	4		17-Landside-Crosshead							
Bent	17 S		Crosshead	Timber	Primary	4		17-Seaside-Crosshead							
Bent	17 Group		Crossbrace	Timber	Primary	7		17-Crossbrace		Landside crossbrace missing, seaside crossbrace connection to steel sister pile not visible, not connected to original timber pile anymore					
Bent	17 Group		Crosswalling		Primary	X									
Bent	17 A		Timber Pile	Timber	Primary	6		17-A-Timber Pile		Minor necking observed in the tidal zone from photos, splitting and section loss as per diver comments		C	Maintenance required within 12 months.		Replace with steel sister pile
Bent	17 B		Steel Pile	Steel	Primary	4		17-B-Steel Pile							
Bay	18 A		Handrailing	Timber	Primary	4		18-A-Handrailing							
Bay	18 B		Handrailing	Steel	Primary	4		18-B-Handrailing							
Bay	18 A		Kerb	Timber	Primary	4		18-A-Kerb	18-A-Kerb-1	Split through kerb section					
Bay	18 B		Kerb	Timber	Primary	4		18-B-Kerb							
Bay	18 Group		Decking	Timber	Primary	5		18-Decking	18-Decking-1,18-Decking-2,18-Decking-3,18-Decking-4,18-Decking-5,18-Decking-6,18-Decking-7,18-Decking-8,18-Decking-9	Moderate cracking and splitting through decking		B	Maintenance will be required in 1-3 years.		Replace like for like
Bay	18 A		Girder	Timber	Primary	4		18-A-Girder		Minor cracking through girder					
Bay	18 B		Girder	Timber	Primary	4		18-B-Girder,18-B-Girder-1		Minor cracks and rot stains to girder					
Bay	18 C		Girder	Timber	Primary	6		18-C-Girder		Severe rot to top of girder, splitting and cracking observed to bottom of girder, rot issues		C	Maintenance required within 12 months.		Replace like for like
Bent	18 A		Corbel	Timber	Primary	4		18-A-Corbel,18-A-Corbel-1		Corbel is in good condition, however it has failed due to movement in pile. The corbel can be reused.					

OFFICE USE ONLY
CODE
Kerb
Decking
Girder
Girder
Girder
Corbel
Corbel
Corbel
Crosshead
Crosshead
Crossbrace
Crosswalling
Pile
Pile
Handrailing
Handrailing
Kerb
Kerb
Decking
Girder
Girder
Girder
Corbel

WSCAM (LEVEL 2) JETTY CONDITION ASSESSMENT - INPUT TABLE

Bent or Bay	Bent or Bay Number	Element Reference	Jetty Element	Material Type	Structural Load Path	WSCAM Condition Rating (average for grouped assessment)	Worse Case WSCAM Condition Rating for Group	Photo	Detailed Photo	Comments	Defect Causing Condition Rating	WSCAM Maintenance Rating	WSCAM Maintenance Rating Description	Priority	Remedial Action
Bent	18 B		Corbel	Timber	Primary	4			18-B-Corbel,18-B-Corbel-1						
Bent	18 C		Corbel	Timber	Primary	5			18-C-Corbel,18-C-Corbel-1	Vertical splitting through corbel observed	B	Maintenance will be required in 1-3 years.		Replace like for like	
Bent	18 D		Corbel	Timber	Primary	5			18-D-Corbel,18-D-Corbel-1	Vertical splitting through corbel observed	B	Maintenance will be required in 1-3 years.		Replace like for like	
Bent	18 L		Crosshead	Timber	Primary	7			18-Landside-Crosshead	New timber crosshead bolted to existing has failed due to twisting caused by pile movement. The new crosshead has twisted and sheared off at bolt connection location to existing crosshead.	D	Immediate maintenance required.		Pile to be remediated with steel sister pile and crosshead	
Bent	18 S		Crosshead	Timber	Primary	7			18-Seaside-Crosshead	New timber crosshead bolted to pile has pulled out due to twisting caused by pile movement. The crosshead is not connected to the concrete pile at the time of inspection.	D	Immediate maintenance required.		Pile to be remediated with steel sister pile and crosshead	
Bent	18 Group		Crossbrace		Primary	X									
Bent	18 Group		Crosswalling		Primary	X									
Bent	18 A		Other Pile	Concrete	Primary	7			18-A-Concrete Pile	Pile failed and has dropped and twisted. This is a concrete pile encased in timber pile. The failure might have happened at the base of the pile where the concrete casing does not extend to.	D	Immediate maintenance required.		Replace pile with steel sister pile	
Bent	18 B		Timber Pile	Timber	Primary	5			18-B-Timber Pile,18-B-Timber Pile-1	Rotting and necking observed	B	Maintenance will be required in 1-3 years.		Replace with steel sister pile	
Bent	18 C		Steel Pile	Steel	Primary	4			18-C-Steel Pile						
Bay	19 A		Handrailing	Timber	Primary	4			19-A-Handrailing						
Bay	19 B		Handrailing	Steel	Primary	4			19-B-Handrailing						
Bay	19 A		Kerb	Timber	Primary	4			19-A-Kerb						
Bay	19 B		Kerb	Timber	Primary	4			19-B-Kerb						
Bay	19 Group		Decking	Timber	Primary	5			19-Decking	Moderate splitting and cracking through decking	B	Maintenance will be required in 1-3 years.		Monitor checks, splits and section loss, replace like for like	
Bay	19 A		Girder	Timber	Primary	4			19-A-Girder,19-A-Girder-1						
Bay	19 B		Girder	Timber	Primary	4			19-B-Girder,19-B-Girder-1						
Bay	19 C		Girder	Timber	Primary	4			19-C-Girder,19-C-Girder-1						
Bay	19 D		Girder	Timber	Primary	5			19-D-Girder,19-D-Girder-1	Minor cracking through girder	B	Maintenance will be required in 1-3 years.		Replace like for like	
Bent	19 A		Corbel	Timber	Primary	4			19-A-Corbel,19-A-Corbel-1						
Bent	19 B		Corbel	Timber	Primary	5			19-B-Corbel,19-B-Corbel-1	Horizontal cracking through corbel	B	Maintenance will be required in 1-3 years.		Replace like for like	
Bent	19 C		Corbel	Timber	Primary	4			19-C-Corbel,19-C-Corbel-1	Minor cracking through corbel observed					
Bent	19 D		Corbel	Timber	Primary	5			19-D-Corbel,19-D-Corbel-1	Vertical cracking through landside end of corbel observed	B	Maintenance will be required in 1-3 years.		Replace like for like	

OFFICE USE ONLY
CODE
Corbel
Corbel
Corbel
Crosshead
Crosshead
Crossbrace
Crosswalling
Pile
Pile
Pile
Handrailing
Handrailing
Kerb
Kerb
Decking
Girder
Girder
Girder
Girder
Corbel
Corbel
Corbel
Corbel

WSCAM (LEVEL 2) JETTY CONDITION ASSESSMENT - INPUT TABLE

Bent or Bay	Bent or Bay Number	Element Reference	Jetty Element	Material Type	Structural Load Path	WSCAM Condition Rating (average for grouped assessment)	Worse Case WSCAM Condition Rating for Group	Photo	Detailed Photo	Comments	Defect Causing Condition Rating	WSCAM Maintenance Rating	WSCAM Maintenance Rating Description	Priority	Remedial Action
Bent	19 L		Crosshead	Timber	Primary	4			19-Landside-Crosshead						
Bent	19 S		Crosshead	Timber	Primary	4			19-Seaside-Crosshead						
Bent	19 Group		Crossbrace		Primary	X									
Bent	19 Group		Crosswalling		Primary	X									
Bent	19 A		Other Pile	Concrete	Primary	4			19-A-Concrete Pile						
Bent	19 B		Steel Pile	Steel	Primary	4			19-B-Steel Pile						
Bay	20 A		Handrailing	Timber	Primary	5		20-A-Handrailing	20-A-Handrailing-1,20-A-Handrailing-2	Steel handrailing has corroded and buckled	Corrosion with loss of cross-sectional area	B	Maintenance will be required in 1-3 years.	Replace the damaged steel section and apply protective	
Bay	20 B		Handrailing	Steel	Primary	4		20-B-Handrailing							
Bay	20 A		Kerb	Timber	Primary	4		20-A-Kerb	20-A-Kerb-1	Cracking and splitting observed through kerb section					
Bay	20 B		Kerb	Timber	Primary	4		20-B-Kerb							
Bay	20 Group		Decking	Timber	Primary	5		20-Decking	20-Decking-1,20-Decking-2,20-Decking-3,20-Decking-4,20-Decking-5	Moderate cracking and splitting through decking	Split/check	B	Maintenance will be required in 1-3 years.	Replace like for like	
Bay	20 A		Girder	Timber	Primary	4			20-A-Girder						
Bay	20 B		Girder	Timber	Primary	4			20-B-Girder,20-B-Girder-1						
Bay	20 C		Girder	Timber	Primary	4			20-C-Girder						
Bay	20 D		Girder	Timber	Primary	4			20-D-Girder						
Bent	20 A		Corbel	Timber	Primary	4			20-A-Corbel,20-A-Corbel-1						
Bent	20 B		Corbel	Timber	Primary	4			20-B-Corbel,20-B-Corbel-1						
Bent	20 C		Corbel	Timber	Primary	5			20-C-Corbel,20-C-Corbel-1	Vertical splitting through corbel observed	Split/check	B	Maintenance will be required in 1-3 years.	Replace like for like	
Bent	20 L		Crosshead	Timber	Primary	4			20-Landside-Crosshead						
Bent	20 S		Crosshead	Timber	Primary	4			20-Seaside-Crosshead						
Bent	20 Group		Crossbrace	Timber	Primary	3				Crossbrace missing on both sides	Other				
Bent	20 Group		Crosswalling		Primary	X									
Bent	20 A		Timber Pile	Timber	Primary	5			20-A-Timber Pile	Splitting and section loss through the pile	Split/check	C	Maintenance required within 12 months.	Replace with steel sister pile	

OFFICE USE ONLY
CODE
Crosshead
Crosshead
Crossbrace
Crosswalling
Pile
Pile
Handrailing
Handrailing
Kerb
Kerb
Decking
Girder
Girder
Girder
Girder
Corbel
Corbel
Corbel
Crosshead
Crosshead
Crossbrace
Crosswalling
Pile

WSCAM (LEVEL 2) JETTY CONDITION ASSESSMENT - INPUT TABLE

Bent or Bay	Bent or Bay Number	Element Reference	Jetty Element	Material Type	Structural Load Path	WSCAM Condition Rating (average for grouped assessment)	Worse Case WSCAM Condition Rating for Group	Photo	Detailed Photo	Comments	Defect Causing Condition Rating	WSCAM Maintenance Rating	WSCAM Maintenance Rating Description	Priority	Remedial Action
Bent	20 B		Steel Pile	Steel	Primary	5			20-B--Steel Pile	Surface corrosion on top		B	Maintenance will be required in 1-3 years.		Blast clean the surface of the steel to remove rust, apply protective coating to reduce further rust
Bent	20 C		Steel Pile	Steel	Primary	4			20-C--Steel Pile						
Bay	21 A		Handrailing	Timber	Primary	4		21-A--Handrailing	21-A--Handrailing-1	Clean surface rust with wire brush and apply paint to reduce rusting					
Bay	21 B		Handrailing		Primary	x									
Bay	21 A		Kerb	Timber	Primary	4		21-A--Kerb	21-A--Kerb-1	Minor splitting and cracking					
Bay	21 B		Kerb	Timber	Primary	4		21-B--Kerb							
Bay	21 Group		Decking	Timber	Primary	5		21--Decking	21--Decking-1,21--Decking-2,21--Decking-3,21--Decking-4,21--Decking-5,21--Decking-6,21--Decking-7	Moderate cracking and splitting through decking	Split/check	B	Maintenance will be required in 1-3 years.		Replace like for like
Bay	21 A		Girder	Timber	Primary	4		21-A--Girder							
Bay	21 B		Girder	Timber	Primary	4		21-B--Girder							
Bay	21 C		Girder	Timber	Primary	4		21-C--Girder							
Bay	21 D		Girder	Timber	Primary	4		21-D--Girder							
Bent	21 A		Corbel	Timber	Primary	4		21-A--Corbel		Typical corbel has not been used. Unconventional blocking between girder and crosshead used. Essentially acting as a corbel.					
Bent	21 B		Corbel	Timber	Primary	4		21-B--Corbel							
Bent	21 C		Corbel	Timber	Primary	5		21-C--Corbel		Vertical splitting through corbel observed	Split/check	B	Maintenance will be required in 1-3 years.		Replace like for like
Bent	21 D		Corbel	Timber	Primary	5		21-D--Corbel		Vertical splitting through corbel observed	Split/check	B	Maintenance will be required in 1-3 years.		Replace like for like
Bent	21 L		Crosshead	Timber	Primary	5		21--Landside-Crosshead		Splitting at southern ends of the crosshead	Split/check	B	Maintenance will be required in 1-3 years.		Replace like for like
Bent	21 S		Crosshead	Timber	Primary	4		21--Seaside-Crosshead							
Bent	21 Group		Crossbrace		Primary	x									
Bent	21 Group		Crosswalling		Primary	x									
Bent	21 A		Steel Pile	Steel	Primary	7		21-A--Timber Pile		Pile has been demolished and only redundant piles stay at bent 21a currently	Other	D	Immediate maintenance required.		Replace with a steel sister pile
Bent	21 B		Steel Pile	Steel	Primary	4		21-B--Steel Pile							
Bay	22 A		Handrailing		Primary	4		22-A--Handrailing							
Bay	22 B		Handrailing		Primary	x									

OFFICE USE ONLY
CODE
Pile
Pile
Handrailing
Handrailing
Kerb
Kerb
Decking
Girder
Girder
Girder
Girder
Corbel
Corbel
Corbel
Corbel
Crosshead
Crosshead
Crossbrace
Crosswalling
Pile
Pile
Handrailing
Handrailing

WSCAM (LEVEL 2) JETTY CONDITION ASSESSMENT - INPUT TABLE

Bent or Bay	Bent or Bay Number	Element Reference	Jetty Element	Material Type	Structural Load Path	WSCAM Condition Rating (average for grouped assessment)	Worse Case WSCAM Condition Rating for Group	Photo	Detailed Photo	Comments	Defect Causing Condition Rating	WSCAM Maintenance Rating	WSCAM Maintenance Rating Description	Priority	Remedial Action
Bay	22 A		Kerb	Timber	Primary	4		22-A-Kerb	22-A-Kerb-1,22-A-Kerb-2	Some part of the kerb was removed to allow for temporary works					
Bay	22 B		Kerb	Timber	Primary	4		22-B-Kerb	22-B-Kerb-1						
Bay	22 Group		Decking	Timber	Primary	5		22-Decking	22-Decking-1,22-Decking-2,22-Decking-3,22-Decking-4,22-Decking-5	Moderate cracking and splitting through decking		B	Maintenance will be required in 1-3 years.	Replace like for like	
Bay	22 A		Girder	Timber	Primary	4		22-A-Girder							
Bay	22 B		Girder	Timber	Primary	6		22-B-Girder		Severe rot to top of girder		C	Maintenance required within 12 months.	Replace like for like	
Bay	22 C		Girder	Timber	Primary	4		22-C-Girder	22-C-Girder-1						
Bay	22 D		Girder	Timber	Primary	5		22-D-Girder		Rotting and minor section loss close to ends, minor cracking		B	Maintenance will be required in 1-3 years.	Replace like to like	
Bent	22 A		Corbel	Timber	Primary	6		22-A-Corbel	22-A-Corbel-1	Non-typical corbel system is used, the member used as a corbel has significant cracking. However a second corbel at the same location is used which is in a satisfactory condition.	Other	D	Immediate maintenance required.	Replace corbel with like to like section.	
Bent	22 B		Corbel	Timber	Primary	5		22-B-Corbel	22-B-Corbel-1	Vertical splitting through corbel observed	Split/check	C	Maintenance required within 12 months.	Replace like for like	
Bent	22 C		Corbel	Timber	Primary	5		22-C-Corbel	22-C-Corbel-1	Vertical splitting through corbel observed	Split/check	C	Maintenance required within 12 months.	Replace like for like	
Bent	22 D		Corbel	Timber	Primary	5		22-D-Corbel	22-D-Corbel-1	Vertical splitting through corbel observed	Split/check	C	Maintenance required within 12 months.	Replace like for like	
Bent	22 L		Crosshead	Timber	Primary	4		22-Landside-Crosshead	22-Landside-Crosshead-1						
Bent	22 S		Crosshead	Timber	Primary	4		22-Seaside-Crosshead							
Bent	22 Group		Crossbrace		Primary	X									
Bent	22 Group		Crosswalling		Primary	X									
Bent	22 A		Timber Pile	Timber	Primary	4		22-A-Timber Pile	22-A-Timber Pile-1						
Bent	22 B		Other Pile	Concrete	Primary	4		22-B-Concrete Pile							
Bent	22 C		Steel Pile	Steel	Primary	4		22-C-Steel Pile	22-C-Steel Pile-1	Some surface corrosion on pile and cleats				Blast clean surface to remove surface rust, apply protect	
Bay	23 A		Handrailing		Primary	4		23-A-Handrailing	23-A-Handrailing-1,23-A-Handrailing-2						
Bay	23 B		Handrailing		Primary	X									
Bay	23 A		Kerb		Primary	4		23-A-Kerb							
Bay	23 B		Kerb		Primary	4		23-B-Kerb	23-B-Kerb-1						
Bay	23 Group		Decking	Timber	Primary	5		23-Decking	23-Decking-1,23-Decking-3						

OFFICE USE ONLY
CODE
Kerb
Kerb
Decking
Girder
Girder
Girder
Girder
Girder
Corbel
Corbel
Corbel
Corbel
Crosshead
Crosshead
Crossbrace
Crosswalling
Pile
Pile
Pile
Handrailing
Handrailing
Kerb
Kerb
Decking

WSCAM (LEVEL 2) JETTY CONDITION ASSESSMENT - INPUT TABLE

Bent or Bay	Bent or Bay Number	Element Reference	Jetty Element	Material Type	Structural Load Path	WSCAM Condition Rating (average for grouped assessment)	Worse Case WSCAM Condition Rating for Group	Photo	Detailed Photo	Comments	Defect Causing Condition Rating	WSCAM Maintenance Rating	WSCAM Maintenance Rating Description	Priority	Remedial Action
Bay	23 A		Girder	Timber	Primary	4			23-A-Girder,23-A-Girder-1						
Bay	23 B		Girder	Timber	Primary	5			23-B-Girder,23-B-Girder-1,23-B-Girder-2	Rotting to top of girder	Rot/decay	B	Maintenance will be required in 1-3 years.		Replace like for like
Bay	23 C		Girder	Timber	Primary	6			23-C-Girder	Severe rot to top of girder	Rot/decay	C	Maintenance required within 12 months.		Replace like for like
Bay	23 D		Girder	Timber	Primary	4			23-D-Girder,23-D-Girder-1						
Bent	23 A		Corbel	Timber	Primary	4			23-A-Corbel						
Bent	23 B		Corbel	Timber	Primary	5			23-B-Corbel	Vertical splitting through corbel observed	Split/check	B	Maintenance will be required in 1-3 years.		Replace like for like
Bent	23 C		Corbel	Timber	Primary	5		23-C-Corbel	23-C-Corbel-1,23-C-Corbel-2	Vertical splitting through corbel observed	Split/check	B	Maintenance will be required in 1-3 years.		Replace like for like
Bent	23 L		Crosshead	Timber	Primary	4			23-Landside-Crosshead						
Bent	23 S		Crosshead	Timber	Primary	4			23-Seaside-Crosshead						
Bent	23 Group		Crossbrace	Timber	Primary	7			23-Crossbrace	Crossbrace missing on both sides	Other				
Bent	23 Group		Crosswalling		Primary	x									
Bent	23 A		Timber Pile	Timber	Primary	4			23-A-Timber Pile,23-A-Timber Pile-1						
Bent	23 B		Steel Pile	Steel	Primary	4			23-B-Steel Pile,23-B-Steel Pile-1	Steel sister pile, existing timber pile not in use. Existing timber pile had a timber sister pile but is not in use now.					
Bent	23 C		Steel Pile	Steel	Primary	4			23-C-Steel Pile,23-C-Steel Pile-1	Sister Pile					
Bay	24 A		Handrailing		Primary	4		24-A-Handrailing							
Bay	24 B		Handrailing	Steel	Primary	4		24-B-Handrailing		Clean surface rust with wire brush and apply paint to reduce rusting					
Bay	24 A		Kerb	Timber	Primary	4		24-A-Kerb	24-A-Kerb-1						
Bay	24 B		Kerb	Timber	Primary	4		24-B-Kerb	24-B-Kerb-1						
Bay	24 Group		Decking	Timber	Primary	5		24-Decking	24-Decking-1,24-Decking-2,24-Decking-3						
Bay	24 A		Girder	Timber	Primary	5			24-A-Girder,24-A-Girder-1	Rot to top of girder, cracks and splits to bottom of girder	Rot/decay	B	Maintenance will be required in 1-3 years.		Replace like for like
Bay	24 B		Girder	Timber	Primary	4			24-B-Girder						
Bay	24 C		Girder	Timber	Primary	6			24-C-Girder	Severe rot to top of girder, splitting and cracking observed to bottom of girder, rot issues	Rot/decay	C	Maintenance required within 12 months.		Replace like for like
Bent	24 A		Corbel	Timber	Primary	5			24-A-Corbel,24-A-Corbel-1	Vertical splitting through corbel observed	Split/check	B	Maintenance will be required in 1-3 years.		Replace like for like

OFFICE USE ONLY

CODE

Girder

Girder

Girder

Girder

Corbel

Corbel

Corbel

Crosshead

Crosshead

Crossbrace

Crosswalling

Pile

Pile

Pile

Handrailing

Handrailing

Kerb

Kerb

Decking

Girder

Girder

Girder

Corbel

WSCAM (LEVEL 2) JETTY CONDITION ASSESSMENT - INPUT TABLE

Bent or Bay	Bent or Bay Number	Element Reference	Jetty Element	Material Type	Structural Load Path	WSCAM Condition Rating (average for grouped assessment)	Worse Case WSCAM Condition Rating for Group	Photo	Detailed Photo	Comments	Defect Causing Condition Rating	WSCAM Maintenance Rating	WSCAM Maintenance Rating Description	Priority	Remedial Action
Bent	24 B		Corbel	Timber	Primary	5			24-B-Corbel,24-B-Corbel-1	Vertical splitting through corbel observed		B	Maintenance will be required in 1-3 years.		Replace like for like
Bent	24 C		Corbel	Timber	Primary	6			24-C-Corbel,24-C-Corbel-1	Vertical splitting through corbel observed		B	Maintenance will be required in 1-3 years.		Replace like for like
Bent	24 L		Crosshead	Timber	Primary	4			24-Landside-Crosshead						
Bent	24 S		Crosshead	Timber	Primary	4			24-Seaside-Crosshead						
Bent	24 Group		Crossbrace		Primary	X									
Bent	24 Group		Crosswalling		Primary	X									
Bent	24 A		Other Pile	Concrete	Primary	4			24-A-Concrete Pile						
Bent	24 B		Steel Pile	Steel	Primary	5			24-B-Steel Pile	Surface corrosion observed		B	Maintenance will be required in 1-3 years.		Blast clean surface to eliminate surface rust, apply protective coating to resist rusting
Bay	25 A		Handrailing		Primary	4		25-A-Handrailing							
Bay	25 B		Handrailing	Steel	Primary	4		25-B-Handrailing							
Bay	25 A		Kerb		Primary	4		25-A-Kerb							
Bay	25 B		Kerb	Timber	Primary	4		25-B-Kerb	25-B-Kerb-1	Minor splitting and cracking observed in kerb					
Bay	25 Group		Decking	Timber	Primary	5		25-Decking	25-Decking-1,25-Decking-2,25-Decking-3,25-Decking-4						
Bay	25 A		Girder	Timber	Primary	6			25-A-Girder	Splitting at top of girder due to rot, splitting and cracking observed to bottom of girder, rot issues		C	Maintenance required within 12 months.		Replace like for like
Bay	25 B		Girder	Timber	Primary	4			25-B-Girder,25-B-Girder-1,25-B-Girder-2						
Bay	25 C		Girder	Timber	Primary	6			25-C-Girder,25-C-Girder-1	Severe rot to top of girder, splitting and cracking observed to bottom of girder, rot issues		C	Maintenance required within 12 months.		Replace like for like
Bay	25 D		Girder	Timber	Primary	7			25-D-Girder	Vertical splitting, cracks and splits through girder		D	Immediate maintenance required.		Replace like for like
Bent	25 A		Corbel	Timber	Primary	6			25-A-Corbel,25-A-Corbel-1	Vertical splitting through corbel observed		C	Maintenance required within 12 months.		Replace like for like
Bent	25 B		Corbel	Timber	Primary	6			25-B-Corbel,25-B-Corbel-1	Vertical splitting through corbel observed		B	Maintenance will be required in 1-3 years.		Replace like for like
Bent	25 C		Corbel	Timber	Primary	6			25-C-Corbel,25-C-Corbel-1	Vertical splitting through corbel observed		C	Maintenance required within 12 months.		Replace like for like
Bent	25 L		Crosshead	Timber	Primary	4			25-Landside-Crosshead						
Bent	25 S		Crosshead	Timber	Primary	4			25-Seaside-Crosshead						
Bent	25 Group		Crossbrace	Timber	Primary	8			25-Crossbrace	Crossbrace missing on both sides					

OFFICE USE ONLY
CODE
Corbel
Corbel
Crosshead
Crosshead
Crossbrace
Crosswalling
Pile
Pile
Handrailing
Handrailing
Kerb
Kerb
Decking
Girder
Girder
Girder
Girder
Corbel
Corbel
Corbel
Crosshead
Crosshead
Crossbrace

WSCAM (LEVEL 2) JETTY CONDITION ASSESSMENT - INPUT TABLE

Bent or Bay	Bent or Bay Number	Element Reference	Jetty Element	Material Type	Structural Load Path	WSCAM Condition Rating (average for grouped assessment)	Worse Case WSCAM Condition Rating for Group	Photo	Detailed Photo	Comments	Defect Causing Condition Rating	WSCAM Maintenance Rating	WSCAM Maintenance Rating Description	Priority	Remedial Action
Bent	25 Group		Crosswalling		Primary	X									
Bent	25 A		Steel Pile	Steel	Primary	4			25-A--Steel Pile						
Bent	25 B		Other Pile	Concrete	Primary	7			25-B--Concrete Pile	Pile failed at base	Rot/decay	D	Immediate maintenance required.		Replace with steel pile
Bay	26 A		Handrailing		Primary	4			26-A--Handrailing						
Bay	26 B		Handrailing		Primary	X			26-B--Handrailing						
Bay	26 A		Kerb	Timber	Primary	4			26-A--Kerb						
Bay	26 B		Kerb	Timber	Primary	4			26-B--Kerb						
Bay	26 Group		Decking	Timber	Primary	5			26--Decking-1,26--Decking-2,26--Decking-3,26--Decking-4,26--Decking-5,26--Decking-6	Moderate cracking and splitting through decking	Split/check	B	Maintenance will be required in 1-3 years.		Replace like for like
Bay	26 A		Girder	Timber	Primary	5			26-A--Girder,26-B--Girder-1	Split at top of girder, splitting and cracking observed at base of girder	Split/check	B	Maintenance will be required in 1-3 years.		Replace like for like
Bay	26 B		Girder	Timber	Primary	5			26-B--Girder,26-B--Girder-1	Girder rot visible and cracks running through center of the girder visible.	Rot/decay	B	Maintenance will be required in 1-3 years.		Repair like for like
Bay	26 C		Girder	Timber	Primary	6			26-C--Girder	Severe rot to top of girder	Rot/decay	C	Maintenance required within 12 months.		Replace like for like
Bent	26 A		Corbel	Timber	Primary	4			26-A--Corbel,26-A--Corbel-1						
Bent	26 B		Corbel	Timber	Primary	4			26-B--Corbel,26-B--Corbel-1						
Bent	26 C		Corbel	Timber	Primary	5			26-C--Corbel	Splitting and cracking observed in corbel	Split/check	B	Maintenance will be required in 1-3 years.		Replace like for like
Bent	26 L		Crosshead	Timber	Primary	4			26--Landside-Crosshead						
Bent	26 S		Crosshead	Timber	Primary	4			26--Seaside-Crosshead	Timber					
Bent	26 Group		Crossbrace	Timber	Primary	7				Crossbrace missing on both sides	Other				
Bent	26 Group		Crosswalling		Primary	X									
Bent	26 A		Timber Pile	Timber	Primary	5			26-A--Timber Pile	Cracks and Splits in pile, minor necking at base of pile	Split/check	B	Maintenance will be required in 1-3 years.		Monitor condition of pile and replace with steel sister pile
Bent	26 B		Steel Pile	Steel	Primary	4			26-B--Steel Pile	Minor surface rust					
Bay	27 A		Handrailing		Primary	4			27-A--Handrailing						
Bay	27 B		Handrailing		Primary	X									
Bay	27 A		Kerb	Timber	Primary	4			27-A--Kerb						

OFFICE USE ONLY
CODE
Crosswalling
Pile
Pile
Handrailing
Handrailing
Kerb
Kerb
Decking
Girder
Girder
Girder
Corbel
Corbel
Corbel
Crosshead
Crosshead
Crossbrace
Crosswalling
Pile
Pile
Handrailing
Handrailing
Kerb

WSCAM (LEVEL 2) JETTY CONDITION ASSESSMENT - INPUT TABLE

Bent or Bay	Bent or Bay Number	Element Reference	Jetty Element	Material Type	Structural Load Path	WSCAM Condition Rating (average for grouped assessment)	Worse Case WSCAM Condition Rating for Group	Photo	Detailed Photo	Comments	Defect Causing Condition Rating	WSCAM Maintenance Rating	WSCAM Maintenance Rating Description	Priority	Remedial Action
Bay	27 B		Kerb	Timber	Primary	4		27-B-Kerb							
Bay	27 Group		Decking	Timber	Primary	5		27-Decking	27-Decking-1,27-Decking-2,27-Decking-3						
Bay	27 A		Girder	Timber	Primary	5		27-A-Girder		Rotting to top of girder	Rot/decay	B	Maintenance will be required in 1-3 years.		Replace like for like
Bay	27 B		Girder	Timber	Primary	6		27-B-Girder		Severe rot to top of girder	Rot/decay	C	Maintenance required within 12 months.		Replace like for like
Bay	27 C		Girder	Timber	Primary	5		27-C-Girder		Rotting to top of girder, splits and cracking in bottom of girder	Rot/decay	C	Maintenance required within 12 months.		Replace like for like
Bent	27 A		Corbel	Timber	Primary	4		27-A-Corbel							
Bent	27 B		Corbel	Timber	Primary	4		27-B-Corbel,27-B-Corbel-1							
Bent	27 C		Corbel	Timber	Primary	5		27-C-Corbel		Vertical splitting through corbel observed	Split/check	B	Maintenance will be required in 1-3 years.		Replace like for like
Bent	27 L		Crosshead	Timber	Primary	4		27-Landside-Crosshead							
Bent	27 S		Crosshead	Timber	Primary	4		27-Seaside-Crosshead							
Bent	27 Group		Crossbrace	Timber	Primary	7		27-Crossbrace		Crossbrace missing on both sides	Other				
Bent	27 Group		Crosswalling		Primary	X									
Bent	27 A		Steel Pile	Steel	Primary	4		27-A-Steel Pile							
Bent	27 B		Other Pile	Concrete	Primary	4		27-B-Concrete Pile							
Bay	28 A		Handrailing	Timber	Primary	4		28-A-Handrailing							
Bay	28 B		Handrailing		Primary	X									
Bay	28 A		Kerb	Timber	Primary	4		28-A-Kerb							
Bay	28 B		Kerb	Timber	Primary	4		28-B-Kerb	28-B-Kerb-1	Minor splitting through kerb section					
Bay	28 Group		Decking	Timber	Primary	5		28-Decking	28-Decking-1,28-Decking-2,28-Decking-3,28-Decking-4,28-Decking-5,28-Decking-6,28-Decking-7	Splitting, cracking and section loss on deck top at various locations.	Split/check	B	Maintenance will be required in 1-3 years.		Replace like for like
Bay	28 A		Girder	Timber	Primary	5		28-A-Girder		Rot and rot related splits observed on girder	Rot/decay	B	Maintenance will be required in 1-3 years.		Replace like for like
Bay	28 B		Girder	Timber	Primary	6		28-B-Girder,28-B-Girder-1		Severe rot to top of girder	Rot/decay	C	Maintenance required within 12 months.		Replace like for like
Bay	28 C		Girder	Timber	Primary	6		28-C-Girder		Severe rot to top of girder	Rot/decay	C	Maintenance required within 12 months.		Replace like for like
Bent	28 A		Corbel	Timber	Primary	6		28-A-Corbel		Vertical splitting through corbel observed	Split/check	C	Maintenance required within 12 months.		Replace like for like

OFFICE USE ONLY
CODE
Kerb
Decking
Girder
Girder
Girder
Corbel
Corbel
Corbel
Crosshead
Crosshead
Crossbrace
Crosswalling
Pile
Pile
Handrailing
Handrailing
Kerb
Kerb
Decking
Girder
Girder
Girder
Corbel

WSCAM (LEVEL 2) JETTY CONDITION ASSESSMENT - INPUT TABLE

Bent or Bay	Bent or Bay Number	Element Reference	Jetty Element	Material Type	Structural Load Path	WSCAM Condition Rating (average for grouped assessment)	Worse Case WSCAM Condition Rating for Group	Photo	Detailed Photo	Comments	Defect Causing Condition Rating	WSCAM Maintenance Rating	WSCAM Maintenance Rating Description	Priority	Remedial Action
Bent	28 B		Corbel	Timber	Primary	5			28-B-Corbel,28-B-Corbel-1	Vertical splitting through corbel observed		B	Maintenance will be required in 1-3 years.		Replace like for like
Bent	28 C		Corbel	Timber	Primary	5			28-C-Corbel,28-C-Corbel-1	Vertical splitting through corbel observed		B	Maintenance will be required in 1-3 years.		Replace like for like
Bent	28 L		Crosshead	Timber	Primary	4			28-Landside-Crosshead	Minor cracks at bottom of crosshead and rot at ends of girder		B	Maintenance will be required in 1-3 years.		Replace like for like
Bent	28 S		Crosshead	Timber	Primary	4			28-Seaside-Crosshead						
Bent	28 Group		Crossbrace	Timber	Primary				28-Crossbrace	SS crossbrace missing, LS crossbrace not fixed to steel sister pile					
Bent	28 Group		Crosswalling		Primary	X									
Bent	28 A		Steel Pile	Steel	Primary	4			28-A-Steel Pile	Minor surface corrosion observed.					
Bent	28 B		Steel Pile	Steel	Primary	4			28-B-Steel Pile	Minor surface corrosion observed					
Bay	29 A		Handrailing	Timber	Primary	4		29-A-Handrailing							
Bay	29 B		Handrailing		Primary	X									
Bay	29 A		Kerb	Timber	Primary	4		29-A-Kerb	29-A-Kerb-1						
Bay	29 B		Kerb	Timber	Primary	4		29-B-Kerb							
Bay	29 Group		Decking	Timber	Primary	4		29-Decking	29-Decking-1,29-Decking-2,29-Decking-3	Splitting, cracking and section loss on deck top at locations below					
Bay	29 A		Girder	Timber	Primary	6			29-A-Girder	Severe rot to top of girder, minor cracking in girder at bottom		C	Maintenance required within 12 months.		Replace like for like
Bay	29 B		Girder	Timber	Primary	6			29-B-Girder,29-B-Girder-1	Severe rot to top of girder, minor cracking observed in girder		C	Maintenance required within 12 months.		Replace like for like
Bay	29 C		Girder	Timber	Primary	4			29-C-Girder						
Bent	29 A		Corbel	Timber	Primary	4			29-A-Corbel,29-A-Corbel-1						
Bent	29 B		Corbel	Timber	Primary	4			29-B-Corbel,29-B-Corbel-1						
Bent	29 C		Corbel	Timber	Primary	5			29-C-Corbel,29-C-Corbel-1	Vertical splitting through corbel observed		B	Maintenance will be required in 1-3 years.		Replace like for like
Bent	29 L		Crosshead	Timber	Primary	4			29-Landside-Crosshead						
Bent	29 S		Crosshead	Timber	Primary	4			29-Seaside-Crosshead						
Bent	29 Group		Crossbrace	Timber	Primary				29-Crossbrace	LS - Crosshead missing, SS crosshead not fixed to steel pile					
Bent	29 Group		Crosswalling		Primary	X									

OFFICE USE ONLY
CODE
Corbel
Corbel
Crosshead
Crosshead
Crossbrace
Crosswalling
Pile
Pile
Handrailing
Handrailing
Kerb
Kerb
Decking
Girder
Girder
Girder
Corbel
Corbel
Corbel
Crosshead
Crosshead
Crossbrace
Crosswalling

WSCAM (LEVEL 2) JETTY CONDITION ASSESSMENT - INPUT TABLE

Bent or Bay	Bent or Bay Number	Element Reference	Jetty Element	Material Type	Structural Load Path	WSCAM Condition Rating (average for grouped assessment)	Worse Case WSCAM Condition Rating for Group	Photo	Detailed Photo	Comments	Defect Causing Condition Rating	WSCAM Maintenance Rating	WSCAM Maintenance Rating Description	Priority	Remedial Action
Bent	29 A		Steel Pile	Steel	Primary	4			29-A--Steel Pile	Minor surface corrosion					
Bent	29 B		Steel Pile	Steel	Primary	5			29-B--Steel Pile	Surface corrosion on pile		B	Maintenance will be required in 1-3 years.		Blast clean surface rust, apply protective coating to restrict corrosion
Bay	30 A		Handrailing	Timber	Primary	4			30-A--Handrailing						
Bay	30 B		Handrailing		Primary	x									
Bay	30 A		Kerb	Timber	Primary	4			30-A--Kerb						
Bay	30 B		Kerb	Timber	Primary	4			30-B--Kerb						
Bay	30 Group		Decking	Timber	Primary	4			30--Decking-1,30--Decking-2,30--Decking-3,30--Decking-4	Minor splitting and cracking					
Bay	30 A		Girder	Timber	Primary	6			30-A--Girder	Severe rot to top of girder		C	Maintenance required within 12 months.		Replace like for like
Bay	30 B		Girder	Timber	Primary	6			30-B--Girder,30-B--Girder-1	Severe rot to top of girder		C	Maintenance required within 12 months.		Replace like for like
Bay	30 C		Girder	Timber	Primary	5			30-C--Girder	Inward deflection of girder, minor cracks and splits		B	Maintenance will be required in 1-3 years.		Replace like for like
Bent	30 A		Corbel	Timber	Primary	4			30-A--Corbel						
Bent	30 B		Corbel	Timber	Primary	4			30-B--Corbel,30-B--Corbel-1						
Bent	30 C		Corbel	Timber	Primary	4			30-C--Corbel						
Bent	30 L		Crosshead	Timber	Primary	4			30--Landside-Crosshead						
Bent	30 S		Crosshead	Timber	Primary	4			30--Seaside-Crosshead						
Bent	30 Group		Crossbrace		Primary	x									
Bent	30 Group		Crosswalling		Primary	x									
Bent	30 A		Other Pile	Concrete	Primary	4			30-A--Concrete Pile						
Bent	30 B		Other Pile	Concrete	Primary	7			30-B--Concrete Pile	Pile appears out of alignment, diver comments refer to the base of pile not sleeved correctly and reinforcement exposed to borer growth and corrosion. Needs immediate attention.	Termite attack	D	Immediate maintenance required.		Replace with steel pile
Bay	31 A		Handrailing	Timber	Primary	4			31-A--Handrailing						
Bay	31 B		Handrailing		Primary	x									
Bay	31 A		Kerb	Timber	Primary	4			31-A--Kerb	Minor crack and split at junction					
Bay	31 B		Kerb		Primary	4			31-B--Kerb						

OFFICE USE ONLY
CODE
Pile
Pile
Handrailing
Handrailing
Kerb
Kerb
Decking
Girder
Girder
Girder
Corbel
Corbel
Corbel
Crosshead
Crosshead
Crossbrace
Crosswalling
Pile
Pile
Handrailing
Handrailing
Kerb
Kerb

WSCAM (LEVEL 2) JETTY CONDITION ASSESSMENT - INPUT TABLE

Bay or Bent	Bent or Bay Number	Element Reference	Jetty Element	Material Type	Structural Load Path	WSCAM Condition Rating (average for grouped assessment)	Worse Case WSCAM Condition Rating for Group	Photo	Detailed Photo	Comments	Defect Causing Condition Rating	WSCAM Maintenance Rating	WSCAM Maintenance Rating Description	Priority	Remedial Action
Bay	31	Group	Decking	Timber	Primary	5		31--Decking	31--Decking-1,31--Decking-2,31--Decking-3,31--Decking-4,31--Decking-5,31--Decking-6,31--Decking-7,31--Decking-8	cracking and splitting at various locations along deck span, may pose as a tripping hazard		B	Maintenance will be required in 1-3 years.		Replace like for like
Bay	31	A	Girder	Timber	Primary	4		31-A--Girder							
Bay	31	B	Girder	Timber	Primary	5		31-B--Girder		Rot and crack through bottom of girder along center line of member	Split/check	B	Maintenance will be required in 1-3 years.		Replace like for like
Bay	31	C	Girder	Timber	Primary	6		31-C--Girder		Severe rot along top of girder	Rot/decay	C	Maintenance required within 12 months.		Replace like for like
Bent	31	A	Corbel	Timber	Primary	4		31-A--Corbel,31-A--Corbel-1							
Bent	31	B	Corbel	Timber	Primary	4		31-B--Corbel,31-B--Corbel-1							
Bent	31	C	Corbel	Timber	Primary	6		31-C--Corbel,31-C--Corbel-1		Vertical splitting through corbel observed	Split/check	C	Maintenance required within 12 months.		Replace like for like
Bent	31	L	Crosshead	Timber	Primary	5		31--Landside-Crosshead		Splitting, cracking and section loss at ends of girders	Split/check	B	Maintenance will be required in 1-3 years.		Replace like for like
Bent	31	S	Crosshead	Timber	Primary	4		31--Seaside-Crosshead							
Bent	31	Group	Crossbrace	Timber	Primary	7		31--Crossbrace,31--Crossbrace-1		Crossbraces not fixed to steel, rot observed at ends of crossbrace	Physical damage				
Bent	31	Group	Crosswalling		Primary	x									
Bent	31	A	Steel Pile	Steel	Primary	4		31-A--Steel Pile							
Bent	31	B	Steel Pile	Steel	Primary	4		31-B--Steel Pile							
Bay	32	A	Handrailing	Timber	Primary	4		32-A--Handrailing							
Bay	32	B	Handrailing		Primary	x									
Bay	32	A	Kerb	Timber	Primary	4		32-A--Kerb	32-A--Kerb-1						
Bay	32	B	Kerb	Timber	Primary	4		32-B--Kerb	32-B--Kerb-1						
Bay	32	Group	Decking	Timber	Primary	4		32--Decking	32--Decking-1,32--Decking-2	Minor splitting and section loss to top of deck					
Bay	32	A	Girder	Timber	Primary	5		32-A--Girder		Splitting at top of girder	Split/check	B	Maintenance will be required in 1-3 years.		Replace like for like
Bay	32	B	Girder	Timber	Primary	6		32-B--Girder,32-B--Girder-1		Severe rot to top of girder	Rot/decay	C	Maintenance required within 12 months.		Replace like for like
Bay	32	C	Girder	Timber	Primary	6		32-C--Girder		Severe rot to top of girder	Rot/decay	C	Maintenance required within 12 months.		Replace like for like
Bent	32	A	Corbel	Timber	Primary	4		32-A--Corbel,32-A--Corbel-1							
Bent	32	B	Corbel	Timber	Primary	4		32-B--Corbel,32-B--Corbel-1							

OFFICE USE ONLY

CODE

Decking

Girder

Girder

Girder

Corbel

Corbel

Corbel

Crosshead

Crosshead

Crossbrace

Crosswalling

Pile

Pile

Handrailing

Handrailing

Kerb

Kerb

Decking

Girder

Girder

Girder

Corbel

Corbel

WSCAM (LEVEL 2) JETTY CONDITION ASSESSMENT - INPUT TABLE

Bent or Bay	Bent or Bay Number	Element Reference	Jetty Element	Material Type	Structural Load Path	WSCAM Condition Rating (average for grouped assessment)	Worse Case WSCAM Condition Rating for Group	Photo	Detailed Photo	Comments	Defect Causing Condition Rating	WSCAM Maintenance Rating	WSCAM Maintenance Rating Description	Priority	Remedial Action
Bent	32 C		Corbel	Timber	Primary	4			32-C--Corbel,32-C--Corbel-1						
Bent	32 L		Crosshead	Timber	Primary	4			32--Landside-Crosshead						
Bent	32 S		Crosshead	Timber	Primary	4			32--Seaside-Crosshead						
Bent	32 Group		Crossbrace	Timber	Primary	4			32--Crossbrace	LS crossbrace missing, SS crossbrace not connected to steel pile, rot observed at end connection to timber piles	Physical damage				
Bent	32 Group		Crosswalling		Primary	X									
Bent	32 A		Steel Pile	Steel	Primary	4			32-A--Steel Pile						
Bent	32 B		Steel Pile	Steel	Primary	4			32-B--Steel Pile						
Bay	33 A		Handrailing	Timber	Primary	4		33-A--Handrailing	33-A--Handrailing-1	Timber post has inclined due to jetty movement					
Bay	33 B		Handrailing		Primary	X									
Bay	33 A		Kerb		Primary	4		33-A--Kerb							
Bay	33 B		Kerb	Timber	Primary	4		33-B--Kerb	33-B--Kerb-1	Minor split through the kerb along central bolt locations					
Bay	33 Group		Decking	Timber	Primary	4		33--Decking	33--Decking-1						
Bay	33 A		Girder	Timber	Primary	4			33-A--Girder						
Bay	33 B		Girder	Timber	Primary	5			33-B--Girder,33-B--Girder-1	Crack through center of girder	Cracking	B	Maintenance will be required in 1-3 years.	Replace like for like	
Bay	33 C		Girder	Timber	Primary	6			33-C--Girder	Severe rot to top of girder	Rot/decay	C	Maintenance required within 12 months.	Replace like for like	
Bent	33 A		Corbel	Timber	Primary	4			33-A--Corbel						
Bent	33 B		Corbel	Timber	Primary	4			33-B--Corbel						
Bent	33 C		Corbel	Timber	Primary	6			33-C--Corbel,33-C--Corbel-1	Vertical splitting through corbel observed	Split/check	C	Maintenance required within 12 months.	Replace like for like	
Bent	33 L		Crosshead	Timber	Primary	4			33--Landside-Crosshead						
Bent	33 S		Crosshead	Timber	Primary	4			33--Seaside-Crosshead						
Bent	33 Group		Crossbrace	Timber	Primary	7			33--Crossbrace	LS- brace missing, SS brace not connected to steel	Physical damage				
Bent	33 Group		Crosswalling		Primary	X									
Bent	33 A		Steel Pile	Steel	Primary	5			33-A--Steel Pile	Moderate surface rusting on pile	Surface corrosion/speckled rust	C	Maintenance required within 12 months.	Blast clean surface of pile, re-apply protective coating to pile to resist rusting	

OFFICE USE ONLY
CODE
Corbel
Crosshead
Crosshead
Crossbrace
Crosswalling
Pile
Pile
Handrailing
Handrailing
Kerb
Kerb
Decking
Girder
Girder
Girder
Corbel
Corbel
Corbel
Crosshead
Crosshead
Crossbrace
Crosswalling
Pile

WSCAM (LEVEL 2) JETTY CONDITION ASSESSMENT - INPUT TABLE

Bent or Bay	Bent or Bay Number	Element Reference	Jetty Element	Material Type	Structural Load Path	WSCAM Condition Rating (average for grouped assessment)	Worse Case WSCAM Condition Rating for Group	Photo	Detailed Photo	Comments	Defect Causing Condition Rating	WSCAM Maintenance Rating	WSCAM Maintenance Rating Description	Priority	Remedial Action
Bent	33 B		Steel Pile	Steel	Primary	4			33-B--Steel Pile						
Bay	34 A		Handrailing		Primary	4		34-A--Handrailing							
Bay	34 B		Handrailing		Primary	X									
Bay	34 A		Kerb	Timber	Primary	4		34-A--Kerb							
Bay	34 B		Kerb	Timber	Primary	4		34-B--Kerb							
Bay	34 Group		Decking	Timber	Primary	4		34--Decking	34--Decking-1,34--Decking-2						
Bay	34 A		Girder	Timber	Primary	5		34-A--Girder		Splitting at top of girder		B	Maintenance will be required in 1-3 years.		Replace like for like
Bay	34 B		Girder	Timber	Primary	6		34-B--Girder		Severe rot to top of girder,		C	Maintenance required within 12 months.		Replace like for like
Bay	34 C		Girder	Timber	Primary	4		34-C--Girder							
Bent	34 A		Corbel	Timber	Primary	4		34-A--Corbel,34-A--Corbel-1							
Bent	34 B		Corbel	Timber	Primary	4		34-B--Corbel,34-B--Corbel-1							
Bent	34 C		Corbel	Timber	Primary	4		34-C--Corbel							
Bent	34 L		Crosshead	Timber	Primary	4		34--Landside-Crosshead							
Bent	34 S		Crosshead	Timber	Primary	4		34--Seaside-Crosshead							
Bent	34 Group		Crossbrace	Timber	Primary	7		34--Crossbrace,34--Crossbrace-1		LS and SS Crossbraces missing					
Bent	34 Group		Crosswalling		Primary	X									
Bent	34 A		Timber Pile	Timber	Primary	5		34-A--Timber Pile		Split through pile observed		B	Maintenance will be required in 1-3 years.		Replace with steel sister pile
Bent	34 B		Timber Pile	Timber	Primary	5		34-B--Timber Pile		Rot and cracking observed through piles		B	Maintenance will be required in 1-3 years.		Replace with steel sister pile
Bay	35 A		Handrailing		Primary	4		35-A--Handrailing							
Bay	35 B		Handrailing		Primary	X									
Bay	35 A		Kerb	Timber	Primary	4		35-A--Kerb							
Bay	35 B		Kerb	Timber	Primary	4		35-B--Kerb	35-B--Kerb-1	Split through centre of kerb					
Bay	35 Group		Decking	Timber	Primary	4		35--Decking	35--Decking-1,35--Decking-2,35--Decking-3,35--Decking-4	Moderate cracks and splits through kerb					

OFFICE USE ONLY
CODE
Pile
Handrailing
Handrailing
Kerb
Kerb
Decking
Girder
Girder
Girder
Corbel
Corbel
Corbel
Crosshead
Crosshead
Crossbrace
Crosswalling
Pile
Pile
Handrailing
Handrailing
Kerb
Kerb
Decking

WSCAM (LEVEL 2) JETTY CONDITION ASSESSMENT - INPUT TABLE

Bent or Bay	Bent or Bay Number	Element Reference	Jetty Element	Material Type	Structural Load Path	WSCAM Condition Rating (average for grouped assessment)	Worse Case WSCAM Condition Rating for Group	Photo	Detailed Photo	Comments	Defect Causing Condition Rating	WSCAM Maintenance Rating	WSCAM Maintenance Rating Description	Priority	Remedial Action
Bay	35 A		Girder	Timber	Primary	6			35-A-Girder	Severe rot to top of girder, cracks and splits at bottom of girder	Rot/decay	C	Maintenance required within 12 months.		Replace like for like
Bay	35 B		Girder	Timber	Primary	6			35-B-Girder,35-B-Girder-1	Severe rot to top of girder	Rot/decay	C	Maintenance required within 12 months.		Replace like for like
Bay	35 C		Girder	Timber	Primary	4			35-C-Girder						
Bent	35 A		Corbel	Timber	Primary	4			35-A-Corbel,35-A-Corbel-1						
Bent	35 B		Corbel	Timber	Primary	5			35-B-Corbel	Vertical splitting through corbel observed	Split/check	B	Maintenance will be required in 1-3 years.		Replace like for like
Bent	35 C		Corbel	Timber	Primary	4			35-C-Corbel,35-C-Corbel-1						
Bent	35 L		Crosshead	Timber	Primary	4			35-Landside-Crosshead						
Bent	35 S		Crosshead	Timber	Primary	4			35-Seaside-Crosshead						
Bent	35 Group		Crossbrace	Timber	Primary	7			35-Crossbrace,35-Crossbrace-1	Crossbraces not fixed to steel piles, excessive rot observed at ends of braces	Physical damage				
Bent	35 Group		Crosswalling		Primary	X									
Bent	35 A		Steel Pile	Steel	Primary	4			35-A-Steel Pile						
Bent	35 B		Steel Pile	Steel	Primary	4			35-B-Steel Pile						
Bay	36 A		Handrailing		Primary	4		36-A-Handrailing							
Bay	36 B		Handrailing		Primary	X									
Bay	36 A		Kerb	Timber	Primary	4		36-A-Kerb							
Bay	36 B		Kerb	Timber	Primary	4		36-B-Kerb							
Bay	36 Group		Decking	Timber	Primary	4		36-Decking	36-Decking-1,36-Decking-2						
Bay	36 A		Girder	Timber	Primary	6			36-A-Girder	Severe rot to top of girder	Rot/decay	C	Maintenance required within 12 months.		Replace like for like
Bay	36 B		Girder	Timber	Primary	4			36-B-Girder,36-B-Girder-1						
Bay	36 C		Girder	Timber	Primary	5			36-C-Girder	Splitting observed at top of girder, inward deflection of girder observed	Split/check	B	Maintenance will be required in 1-3 years.		Replace like for like
Bent	36 A		Corbel	Timber	Primary	4			36-A-Corbel						
Bent	36 B		Corbel	Timber	Primary	4			36-B-Corbel						
Bent	36 C		Corbel	Timber	Primary	4			36-C-Corbel						

OFFICE USE ONLY

CODE

Girder

Girder

Girder

Corbel

Corbel

Corbel

Corbel

Crosshead

Crosshead

Crossbrace

Crosswalling

Pile

Pile

Handrailing

Handrailing

Kerb

Kerb

Decking

Girder

Girder

Girder

Corbel

Corbel

Corbel

Appendix B – WSCAM Record (Landing)

WSCAM (LEVEL 2) JETTY CONDITION ASSESSMENT - INPUT TABLE

Bent or Bay	Bent or Bay Number	Element Reference	Jetty Element	Material Type	Structural Load Path	WSCAM Condition Rating (average for grouped assessment)	Worse Case WSCAM Condition Rating for Group	Photo	Detailed Photo	Comments	Dive Comments	Splash Zone reading (mm)	Low Water Zone reading (mm)	Seabed Zone reading (mm)	Defect Causing Condition Rating	WSCAM Maintenance Rating	WSCAM Maintenance Rating Description	Priority	Remedial Action	
Bay	1	A	Kerb	Timber	Primary	7				Overall -6. Missing kerb section near dive ladder - 7						C	Maintenance required within 12 months.		Replace like for like	
Bay	1	B	Kerb	Timber	Primary	6				Rot, checks and missing kerb section at start of kerb						C	Maintenance required within 12 months.		Replace like for like	
Bay	1	C	Kerb	Timber	Primary	6				Checks, splits and rot						C	Maintenance required within 12 months.		Replace like for like	
Bay	1	Group	Decking	Timber	Primary	5				Checks, splits, rot at various locations on decking						B	Maintenance will be required in 1-3 years.		Monitor for cracks and splits and replace as required	
Bay	1	A	Girder	Timber	Primary	5				Checks and general rust stains to girder						B	Maintenance will be required in 1-3 years.		Monitor for further damage and replace like for like as required	
Bay	1	B	Girder	Timber	Primary	5				Checks and Rotting in the girder						B	Maintenance will be required in 1-3 years.		Monitor for further damage and replace like for like as required	
Bent	1	A	Steel Pile	Steel	Primary	5				Corrosion on pile, organism attack						B	Maintenance will be required in 1-3 years.		Blast clean surface of pile to remove rust, re-apply protective layer to reduce chances of rust	
Bent	1	B	Steel Pile	Steel	Primary	5				Corrosion on pile						B	Maintenance will be required in 1-3 years.		Blast clean surface of pile to remove rust, re-apply protective layer to reduce chances of rust	
Bay	2	A	Kerb	Timber	Primary	5				Checks, splits						B	Maintenance will be required in 1-3 years.		Monitor for cracks and splits and replace as required	
Bay	2	B	Kerb	Timber	Primary	5				Splits and checks						B	Maintenance will be required in 1-3 years.		Monitor for cracks and splits and replace as required	
Bay	2	C	Kerb	Timber	Primary	5				Rots and checks						B	Maintenance will be required in 1-3 years.		Monitor for cracks and splits and replace as required	
Bay	2	Group	Decking	Timber	Primary	5				Rot, cracks and checks						B	Maintenance will be required in 1-3 years.		Monitor for cracks and splits and replace as required	
Bay	2	A	Girder	Timber	Primary	5				Splits in girder						B	Maintenance will be required in 1-3 years.		Monitor for further damage and replace like for like as required	
Bay	2	B	Girder	Timber	Primary	5				Rot and Splits in member						B	Maintenance will be required in 1-3 years.		Monitor for further damage and replace like for like as required	
Bent	2	A	Steel Pile	Steel	Primary	5				Corrosion on pile						B	Maintenance will be required in 1-3 years.		Blast clean surface of pile to remove rust, re-apply protective layer to reduce chances of rust	
Bent	2	B	Steel Pile	Steel	Primary	5				Corrosion on pile						B	Maintenance will be required in 1-3 years.		Blast clean surface of pile to remove rust, re-apply protective layer to reduce chances of rust	
Bent	3	A	Steel Pile	Steel	Primary	5				Corrosion and organism attack						B	Maintenance will be required in 1-3 years.		Blast clean surface of pile to remove rust, re-apply protective layer to reduce chances of rust	
Bent	3	B	Steel Pile	Steel	Primary	5				Corrosion and organism attack						B	Maintenance will be required in 1-3 years.		Blast clean surface of pile to remove rust, re-apply protective layer to reduce chances of rust	
Special	2	Group	Stair	Timber	Primary	4														
Special	1	Group	Dive Ladder	Steel	Primary	4														

OFFICE USE ONLY
CODEZ
Kerb
Kerb
Kerb
Decking
Girder
Girder
Pile
Pile
Kerb
Kerb
Kerb
Decking
Girder
Girder
Pile
Pile
Pile
Stair
Dive Ladder
0
0