APPENDIX A

PHOTOGRAPHS

Photo 1 – West Dock Deck Surface

Photo 2 – West Dock Below Deck

Photo 3 – Typical Pile with Minor Damage

Photo 4 – Bent 2 Pile D (80% Section Loss)

Photo 5 – Bent 2 Pile C (Mechanical Split)

Photo 6 – Bent 10 (Splitting and Crushing)

Photo 7 – Bent 11 (Mechanical Damage)

Photo 8 – Soil Undermining Bulkhead Wall

Photo 9 – Northwest Dolphin Corroded and Buckled Pile

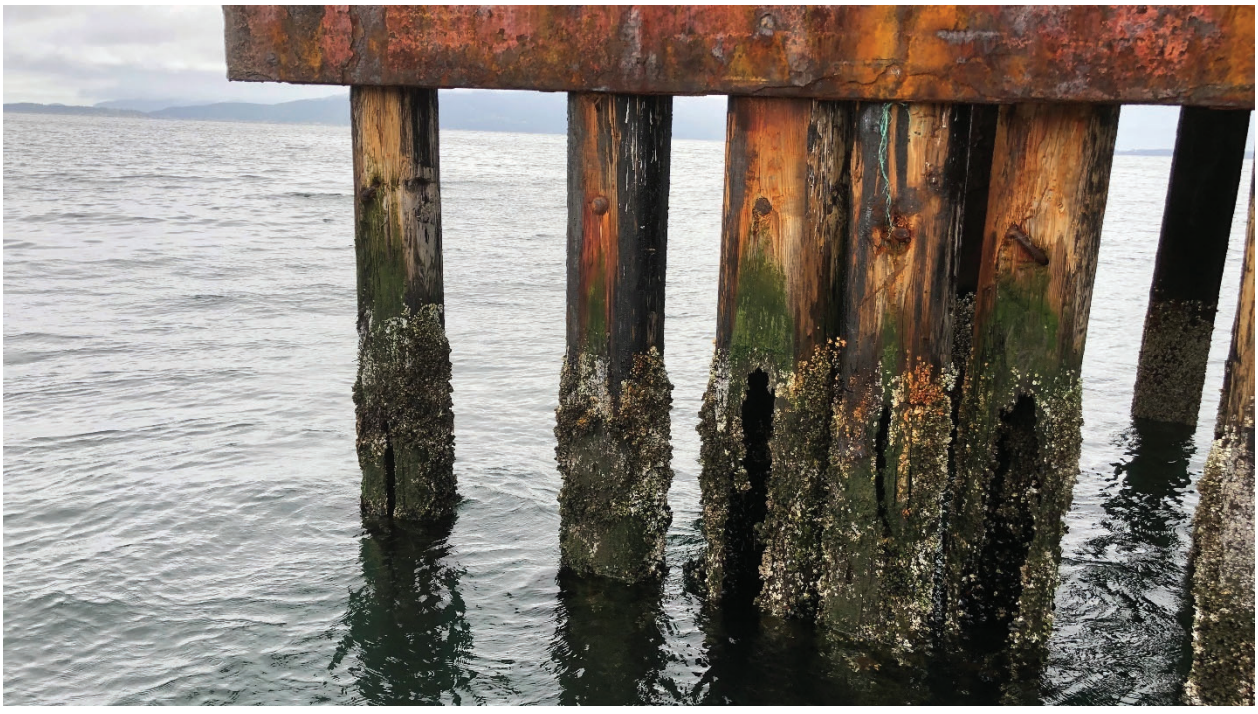

Photo 10 – Northwest Dolphin Fender Piles

Photo 11 – Southwest Dolphin

Photo 12 – Ecology Wall

Photo 13 – West Marine Walkway

Photo 14 – Marine Railway

Photo 15 – Rotted Timber Tie

APPENDIX B

ELEMENT LEVEL DAMAGE RATING SYSTEM

Table 2-4. Damage Rating for Timber Elements*

Damage Rating		Existing Damage*	Exclusions (defections requiring elevation to next higher damage rating[s])
NI	Not Inspected	Not inspected, inaccessible, or passed by[b]	
ND	No Defects	• Sound surface material	
MN	Minor	• Checks, splits, and gouges less than 0.5 inches wide • Evidence of marine borers or fungal decay	Minor damage not appropriate if • Loss of section • Marine borer infestation • Displacements, loss of bearing, or connections
MD	Moderate	• Remaining diameter loss up to 15% • Checks and splits wider than 0.5 inches • Cross section area loss up to 25% • Corroded hardware • Evidence of marine borer or fungal decay, with loss of section	Moderate damage not appropriate if • Displacements, loss of bearing or connections
MJ	Major	• Remaining diameter loss 15% to 30% • Checks and splits through full depth of cross section • Cross section area loss 25% to 50%; heavily corroded hardware • Displacements and misalignments at connections	Major damage not appropriate if • Partial or complete breakage
SV	Severe	• Remaining diameter loss more than 30% • Cross section loss more than 50% • Loss of connections and/or fully nonbearing condition • Partial or complete breakage	

*Taken from ASCE Waterfronts Facilities Inspection and Assessment Manual No 130, 2015
a = any defect listed is sufficient to identify relevant damage grade.
b = if not inspected due to inaccessibility or passed by, note as such.

Table 2-5. Damage Rating for Steel Elements*

Damage Rating		Existing Damage*	Exclusions (defections requiring elevation to next higher damage rating[s])
NI	Not Inspected	Not inspected, inaccessible, or passed by[b]	
ND	No Defects	• Protective coating or wrap intact • Light surface rust • No apparent loss of material	
MN	Minor	• Protective coating or wrap damaged and loss of thickness up to 15% of nominal at any location • Less than 50% of perimeter or circumference affected by corrosion at any elevation or cross section • Loss of thickness up to 15% of nominal at any location	Minor damage not appropriate if • Changes in straight line configuration or local buckling • Corrosion loss exceeding fabrication tolerances at any location
MD	Moderate	• Protective coating or wrap damaged and loss thickness 15% to 30% of nominal at any location • More than 50% of perimeter or circumference affected by corrosion at any elevation or cross section • Loss of thickness 15% to 30% of nominal at any location	Moderate damage not appropriate if • Changes in straight line configuration or local buckling • Loss of thickness exceeding 30% of nominal at any location
MJ	Major	• Protective coating or wrap damaged and loss of nominal thickness 30% to 50% at any location • Partial loss of flange edges or visible reduction of wall thickness on pipe walls • Loss of nominal thickness 30% to 50% at any location	Major damage not appropriate if • Changes in straight line configuration or local buckling • Perforations or loss of wall thickness exceeding 50% of nominal at any location
SV	Severe	• Protective coating or wrap damaged and loss of wall thickness exceeding 50% of nominal at any location • Structural bends or buckling, breakage, and displacements at supports, lose or loss connection • Loss of wall thickness exceeding 50% of nominal at any location	

*Taken from ASCE Waterfronts Facilities Inspection and Assessment Manual No 130, 2015
a = any defect listed is sufficient to identify relevant damage grade.
b = if not inspected due to inaccessibility or passed by, note as such

Table 2-6. Damage Rating for Reinforced Concrete Elements*

Damage Rating		Existing Damage*	Exclusions (defections requiring elevation to next higher damage rating[s])
NI	Not Inspected	Not inspected, inaccessible, or passed by[b]	
ND	No Defects	Good original hard surface, hard material, sound	
MN	Minor	• Mechanical abrasion or impact spalls up to 1 inch in depth • Occasional corrosion stains or small pop-out corrosion spalls • General cracks up to 1/16" in width	Minor damage not appropriate if • Structural damage • Corrosion cracks • Chemical deterioration[c]
MD	Moderate	• Structural cracks up to 1/16" in width • Corrosion cracks up to 1/4" in width • Chemical deterioration: random cracks up to 1/16" in width; "soft" concrete and/or rounding of corners up to 1" deep • Mechanical abrasion or impact spalls greater than 1" in depth	Moderate damage not appropriate if • Structural breakage and/or spalls • Exposed reinforcement • Loss of cross section due to chemical deterioration beyond rounding of corner edges
MJ	Major	• Structural cracks 1/16" to 1/4" in width and partial breakage (through section cracking with structural spalls) • Corrosion cracks wider than 1/4" and open or closed corrosion spalls (excluding pop-outs) • Multiple cracks and disintegration of surface layer due to chemical deterioration • Mechanical abrasion or impact spalls exposing the reinforcement	Major damage not appropriate if • Loss of cross section exceeding 30% due to any cause
SV	Severe	• Structural cracks wider than 1/4" or complete breakage • Complete loss of concrete cover due to corrosion of reinforcing steel with more than 30% of diameter loss for any main reinforcing bar • Loss of bearing and displacement at connections • Loss of concrete cover (exposed steel) due to chemical deterioration • Loss of more than 30% of cross section due to any cause	

*Taken from ASCE Waterfronts Facilities Inspection and Assessment Manual No 130, 2015
a = any defect listed is sufficient to identify relevant damage grade.
b = if not inspected due to inaccessibility or passed by, note as such.
c = Chemical deterioration: sulfate attack, alkali-silica reaction, alkali-aggregate reaction, alkali-carbonate reaction ettringite distress, or other chemical/concrete deterioration.

Table 2-8. Damage Rating for Mooring Hardware*

Damage Rating		Existing Damage*	Exclusions (defections requiring elevation to next higher damage rating[s])
NI	Not Inspected	Not inspected, inaccessible, or passed by[b]	
ND	No Defects	• Material sound, surfaces smooth without indications of corrosion, surface coating in good condition, connections sound • Bolt countersinks grouted or sealed	No Defects Rating not appropriate if • Surface coatings worn or damaged • Visible corrosion on fasteners
MN	Minor	• Fitting has surface corrosion over 10% to 25% of area • Minor wear marks or pitting on surface of fittings are less than 1/8” deep • Fasteners have corrosion with less than 25% loss of section	Minor damage not appropriate if • Deep pits, gouges, or wear on fitting surfaces • Any noticeable loss of section of fastener threads, if visible
MD	Moderate	• Fitting had moderate surface corrosion with loose scale over less than 50% of its area • Significant surface wear marks or pitting on fitting are up to 1/4” deep • Fasteners have corrosion with less than 25% loss of section	Moderate damage not appropriate if • Loose scale on fasteners • Inability to remove fasteners due to heavy corrosion, if accessible
MJ	Major	• Fitting has surface corrosion with loose scale over 50% or more of its surface area and/or less than 25% section loss • Significant surface wear marks or pitting on fitting 1/4” deep or greater • Fasteners have corrosion with loose scale or loss of section greater than 25%	Major damage not appropriate if • Displaced, damaged, or broken fitting components • Loose or missing fasteners
SV	Severe	• Fitting has heavy surface corrosion and loose scale with greater than 25% loss of section at critical areas of the fitting • Structural displacement, deformation, or rotation of the fitting are present; fitting components are broken, cracked or delaminated • Loose, broken, or missing fasteners	

*Taken from ASCE Waterfronts Facilities Inspection and Assessment Manual No 130, 2015
a = any defect listed is sufficient to identify relevant damage grade.
b = if not inspected due to inaccessibility or passed by, note as such.

Table 2-9. Damage Rating for Mooring Foundations*

Damage Rating		Existing Damage*	Exclusions (defections requiring elevation to next higher damage rating[s])
NI	Not Inspected	Not inspected, inaccessible, or passed by[b]	
ND	No Defects	• Good original hard surface, hard material, sound	No Defects Rating not appropriate if • Weathering on timber, steel, or composite fenders • Hairline cracks in concrete elements
MN	Minor	• Timber Foundations: Weathered timber; evidence of fungal decay; minor checks, splits, and gouges up to 1/4” wide • Steel Foundations: Weathering of steel coating, light surface corrosion • Concrete Foundations: No significant section loss to load bearing areas, hairline cracking of the concrete due to corrosion of the mooring hardware • Composites: Weathered surfaces	Minor damage not appropriate if • Load-bearing areas around mooring hardware not sound • Displacement, loss of bearing, or connections • Fungal decay, insect infestation with or adjacent to the bearing area on timber elements • Corrosion loss exceeding fabrication tolerances at any location • Structural damage or corrosion cracking on concrete elements
MD	Moderate	• Timber cracked and checked up to 1/2” wide; weathered surfaces; fungal decay under or adjacent to the mooring hardware, with loss of section (max 1”) • Corrosion of steel with less than 10% to 25% section loss at any location • Noticeable cracking of concrete, larger than hairline but no loss of interlock	Moderate damage not appropriate if • Displacements, loss of bearing, or connections • Changes in straight-line configuration or local buckling • Loss of thickness exceeding 30% of nominal at any location for steel elements • Structural breakage, spalls, or corrosion cracks in concrete • Chemical deterioration or “softening” of concrete elements
MJ	Major	• Timber cracked and checked greater than 1/2” wide, weathered; fungal decay present (max 3” depth); up to 25% loss of bearing • Steel corrosion with 25% to 50% section loss at any location • Noticeable cracking of concrete, resulting in loss of interlock • Composite elements cracked or split	Major damage not appropriate if • Breakage or displacements of any element • Exposed steel strands in prestressed concrete elements • Perforations or loss of section exceeding 50% of steel elements

Damage Rating		Existing Damage*	Exclusions (defections requiring elevation to next higher damage rating[s])
SV	Severe	• Displacement/yielding of any members • Loss of full bearing or fitting under hardware • Fungal decay of timber members (greater than 3” depth) • Significant corrosion of steel members with greater than 50% section loss at any location • Cracking or spalling concrete based under hardware • Composite broken or damaged	

*Taken from ASCE Waterfronts Facilities Inspection and Assessment Manual No 130, 2015
a = any defect listed is sufficient to identify relevant damage grade.
b = if not inspected due to inaccessibility or passed by, note as such.
c = Chemical deterioration: sulfate attack, alkali-silica reaction, alkali-aggregate reaction, alkali-carbonate reaction ettringite distress, or other chemical/concrete deterioration.

Table 2-10. Damage Rating for Fender Piles*

Damage Rating		Existing Damage*	Exclusions (defections requiring elevation to next higher damage rating[s])
NI	Not Inspected	Not inspected, inaccessible, or passed by[b]	
ND	No Defects	• Good original surface, sound, no defects observed	No Defects Rating not appropriate if • Surface coatings worn or damaged
MN	Minor	• Light abrasion less than 1/2" deep, light (surface) fungal decay, minimal marine borer activity observed (less than 5% section loss) • Weathering of steel coating, surface corrosion with no significant pitting • Hairline cracking of concrete • Weathered composite elements	Minor damage not appropriate if • "Softening" of concrete
MD	Moderate	• Timber cracked and checked up to 1/2" wide, fungal decay (max 1" depth), abrasion up to 2" deep, loss of section due to marine borers less than 10% • Corrosion of steel with up to 25% localized section loss • Noticeable cracking of concrete but with no less loss of interlock	Moderate damage not appropriate if • "Softening" of concrete (up to 1") • Prestressed concrete fender piles (with low effective prestress) are expected to crack under load; therefore, should be rated minor if no corrosion and the cracks are closed
MJ	Major	• Timber cracked and checked greater than 1/2" wide, fungal decay (max 3" depth), abrasion damage greater than 2" depth, loss of section due to marine borers between 10% to 25% • Corrosion of steel elements with 25% to 50% localized section loss, localized buckling of a flange • Noticeable cracking of concrete with loss of interlock, softening of the concrete greater than 1" deep • Composite elements cracked or split	
SV	Severe	• Fungal decay on timber members (greater than 3" depth), loss of section due to marine borers (more than 25% of section broken) • Significant corrosion of steel members with more than 50% localized section loss, broken or yielded • Broken, exposed reinforcing steel or prestressing strands, spalling of concrete, or softening of concrete (greater than 3" deep) • Composite elements broken	

*Taken from ASCE Waterfronts Facilities Inspection and Assessment Manual No 130, 2015
a = any defect listed is sufficient to identify relevant damage grade.
b = if not inspected due to inaccessibility or passed by, note as such.

Table 2-12. Damage Rating for Rubber Fender Elements*

Damage Rating		Existing Damage*	Exclusions (defections requiring elevation to next higher damage rating[s])
NI	Not Inspected	Not inspected, inaccessible, or passed by[b]	
ND	No Defects	• Good original surface, sound • Connections intact and tight	No Defects Rating not appropriate if • Noticeable abrasion or wear of rubber surface
MN	Minor	• Small gouges or surface defects present less than 10% of nominal depth • Connection intact, tight with light corrosion (less than 10% section loss at any location)	Minor damage not appropriate if • Surface cracking or degradation of rubber components
MD	Moderate	• Gouges, wear, or tears less than 25% of nominal depth • Rubber damaged at the connectors of connection plates • Connections loose, a bolt missing, or corrosion with 10% to 25% section loss at any location	Moderate damage not appropriate if • Permanent deformation or misalignment of rubber elements
MJ	Major	• Cracks, gouges, or tears between 25% and 50% of nominal depth • Rubber torn at the connectors or connection plates • Connections loose, two bolts missing, or corrosion with 25% to 50% section loss at any location	Major damage not appropriate if • Rubber element is split or torn through
SV	Severe	• Cracks, gouges, or tears greater than 50% of nominal depth • Rubber torn through at the connectors or connection plates • Connections with loose or missing bolts, or corrosion with greater than 50% section loss at any location	

*Taken from ASCE Waterfronts Facilities Inspection and Assessment Manual No 130, 2015
a = any defect listed is sufficient to identify relevant damage grade.
b = if not inspected due to inaccessibility or passed by, note as such.

Table 2-13. Damage Rating for Fender Panels*

Damage Rating		Existing Damage*	Exclusions (defections requiring elevation to next higher damage rating[s])
NI	Not Inspected	Not inspected, inaccessible, or passed by[b]	
ND	No Defects	• Good original surface • Connections intact • Backing panel sound • Support chains intact and in good condition	No Defects Rating not appropriate if • Coatings damaged • Visible surface corrosion
MN	Minor	• Small cracks or gouges (less than 10% of nominal) • 90% of panel connections intact • Backing frame with surface corrosion with no significant loss of section • Surface chains intact with light surface corrosion	Minor damage not appropriate if • Panels worn or damaged
MD	Moderate	• Cracks or gouges (less than 25% of nominal) • 75% of panel connections intact • Panels displaced from the backing panel • Backing frame corroded • Support chains intact, with less than 25% section loss	Moderate damage not appropriate if • Panels displaced or misaligned • Any loose or missing hardware
MJ	Major	• Cracks or gouges (less than 50% of nominal) • 50% of the panel connections intact or multiple panels displaced from the backing panel • Backing frame corroded or with loose scale, but panel substantially in place • Support chains heavily corroded with more than 25% section loss	Major damage not appropriate if • Panel/frame system sagging, misaligned, or with limited bearing
SV	Severe	• Cracks or gouges (more than 50% of nominal) • Less than 50% of the panel connections intact or multiple panels displaced from the backing panel • Backing frame heavily corroded with loose scale • Sagging/displacement of panel/frame system • Support chains heavily corroded with loose scale and/or missing or broken	

*Taken from ASCE Waterfronts Facilities Inspection and Assessment Manual No 130, 2015
a = any defect listed is sufficient to identify relevant damage grade.
b = if not inspected due to inaccessibility or passed by, note as such.

Table 2-14. Condition Assessment Ratings

Rating		Description
6	Good	No visible damage or only minor damage noted. Structural elements may show very minor deterioration, but no overstressing observed. No repairs are required.
5	Satisfactory	Limited minor to moderate defects or deterioration observed but no overstressing observed. No repairs are required.
4	Fair	All primary structural elements are sound but minor to moderate defects or deterioration observed. Localized areas of moderate to advanced deterioration may be present but do not significantly reduce the load-bearing capacity of the structure. Repairs are recommended, but the priority of the recommended repairs are low.
3	Poor	Advanced deterioration or overstressing observed on widespread portions of the structure but does not significantly reduce the load-bearing capacity of the structure. Repairs may need to be carried out with moderate urgency.
2	Serious	Advanced deterioration, overstressing, or breakage may have significantly affected the load-bearing capacity of the primary structural components. Local failures are possible, and loading restrictions may be necessary. Repairs may need to be carried out on a high-priority basis with urgency.
1	Critical	Very advanced deterioration, overstressing, or breakage has resulted in localized failure(s) of primary structural components. More widespread failures are possible or likely to occur, and load restrictions should be implemented as necessary. Repairs may need to be carried out on a very high-priority basis with strong urgency.

APPENDIX C

TABULATED FIELD DATA

Legend

Tag	Description
Conc	Concrete
MN	Minor damage
MD	Moderate damage
MJ	Major damage
SV	Severe damage
NI	Not Inspected

West Dock

Asset Information				Damage Information					Comments
Type	Material	Bent	Grid Line	Description	Approximate Size	From	To	Rating	
Pile	Timber	1	D					MN	
Pile	Timber	1	E					MN	
Pile	Timber	2	B					MN	
Pile	Timber	2	C	Mechanical Split	Entire length			MD	
Pile	Timber	2	D	80% section loss				SV	
Pile	Timber	2	E					MN	
Pile	Timber	3	C					MN	
Pile	Timber	3	D					MN	
Pile	Timber	4	B					MN	
Pile	Timber	4	E					MN	
Pile	Timber	5	A					MN	
Pile	Timber	5	B					MN	
Pile	Timber	5	C					MN	
Pile	Timber	5	D					MN	
Pile	Timber	5	E					MN	
Pile	Timber	7	A					MN	
Pile	Timber	9	C					MN	
Pile	Timber	9	E					MN	
Pile	Timber	11	B	Worn batter				MN	
Pile	Timber	11	B	2” deep split	4 ft long			MD	
Pile	Timber	11	D	Worn batter				MN	
Pile	Timber	11	E	2” deep split	4 ft long			MD	
Braces	Timber	8	A-C	Broken				SV	
Braces	Timber	8	C-E	70% section loss				SV	
Braces	Timber	9	A-C	Advanced deterioration				SV	
Braces	Timber	9	C-E	Broken				SV	
Braces	Timber	10	A-C	Advanced deterioration				SV	
Braces	Timber	10	C-E	Broken				SV	
Pile Cap	Timber	1	E	Checking	1” wide	E	Edge	MD	
Pile Cap	Timber	2	C	50% section loss with crushing		B	D	MJ	
Pile Cap	Timber	4	D	50% section loss		C	E	MJ	
Pile Cap	Timber	6	D	Soft core				MD	
Pile Cap	Timber	7	A	Checking	1” wide	Edge	A	MD	
Pile Cap	Timber	7	B	40% section loss with crushing		A	C	MJ	
Pile Cap	Timber	8	C	50% section loss		B	D	MJ	
Pile Cap	Timber	9	A	Some crushing				MD	
Pile Cap	Timber	10	B	Top broken and crushing		A	B	MJ	
Pile Cap	Timber	10	E	Splitting	< 0.5” wide			MN	
Pile Cap	Timber	11	B	Mechanical damage		A	C	MJ	

West Dock (Continued)

Asset Information				Damage Information					Comments
Type	Material	Bent	Grid Line	Description	Approximate Size	From	To	Rating	
Bulkhead Wall	Conc	0	C	Vertical crack				MN	Soil undermining bulkhead wall
Bulkhead Wall	Conc	0	D	Vertical Crack				MN	Soil undermining bulkhead wall
Decking	Timber			Worn elements in many spots around deck	1” worn away			MD	Worn regions allow for water to pool

Northwest Dolphin

Asset Information			Damage Information			Comments
Type	Material	Location	Description	Approximate Size	Rating	
Pile Cap	Conc	Entire cap	Minor cracking		MN	
Fender Panel	Steel	East Face	Surface Corrosion		MN	
Pile	Steel	W1[1]	Buckled and corroded through flange		SV	
Pile	Steel	W2[1]	Moderate corrosion.		MN	
Pile	Steel	W3[1]	Moderate corrosion.		MN	
Pile	Steel	W4[1]	Moderate corrosion.		MN	
Pile	Steel	W5[1]	Minor buckling from debris impact. Minor to moderate corrosion		MD	
Pile	Steel	C1[1]	Moderate corrosion.		MN	
Pile	Steel	C2[1]	Moderate corrosion.		MN	
Pile	Steel	C3[1]	Moderate corrosion.		MN	
Pile	Steel	C4[1]	Moderate corrosion.		MN	
Pile	Steel	E1[1]	Bent flange. Moderate corrosion		MD	
Pile	Steel	E2[1]	Moderate corrosion.		MN	
Pile	Steel	E3[1]	Moderate corrosion.		MN	
Fender Pile	Timber	1[2]	90% section loss		SV	
Fender Pile	Timber	2[2]	60% section loss		SV	
Fender Pile	Timber	3[2]	90% section loss		SV	
Fender Pile	Timber	4[2]	80% section loss		SV	
Fender Pile	Timber	5[2]	Broken		SV	
Fender Pile	Timber	6[2]	80% section loss		SV	
Fender Pile	Timber	7[2]	90% section loss		SV	
Fender Pile	Timber	8[2]			MD	

1. Structural steel piles are labeled East (E), Central (C), and West (W), and numbered from south to north starting with #1
2. Fender Piles are numbered starting with #1 at the south end of the dolphin

Southwest Dolphin

Asset Information			Damage Information			Comments
Type	Material	Location	Description	Approximate Size	Rating	
Pile Cap	Conc	North Face	Minor cracking		MN	
Pile Cap	Conc	East Face	Minor cracking		MN	
Pile Cap	Conc	South Face	1/16” crack		MD	
Pile Cap	Conc	West Face	Minor cracking		MN	
Pile Cap	Conc	Top Face	Minor corrosion		MN	
Capstan	Conc	Top Pile Cap	Minor corrosion @ base		MN	
Pile	Steel	NW[1]	Minor corrosion		MN	
Pile	Steel	NC[1]	Minor corrosion.		MN	
Pile	Steel	NE[1]	Minor corrosion.		MN	
Pile	Steel	SE[1]	Minor corrosion.		MN	
Pile	Steel	SW[1]	Minor corrosion.		MN	

1. Structural steel piles are labeled East (E), Central (C), West (W), North (N), and South (S)

Southeast Dolphin

Asset Information			Damage Information			Comments
Type	Material	Location	Description	Approximate Size	Rating	
Pile Cap	Conc	North Face	Rust and cracking		MD	
Pile Cap	Conc	East Face	Long horizontal crack		MN	
Pile Cap	Conc	South Face			NI	Buried by soil
Pile Cap	Conc	West Face			NI	Buried by soil
Pile Cap	Conc	Top Face	Corrosion stains at contact points with mooring hardware		MN	
Capstan	Conc	Top Pile Cap	Minor corrosion @ base		MN	
Pile	Steel	NW[1]			NI	Buried by soil
Pile	Steel	NC[1]			NI	Buried by soil
Pile	Steel	NE[1]			NI	Buried by soil
Pile	Steel	SE[1]			NI	Buried by soil
Pile	Steel	SW[1]			NI	Buried by soil

1. Structural steel piles are labeled East (E), Central (C), West (W), North (N), and South (S)

West Marine Walkway

Asset Information			Damage Information			Comments
Type	Material	Location	Description	Approximate Size	Rating	
Piles	Timber	0	Large lateral displacements		MJ	
Pile	Timber	1			MN	
Pile	Timber	2			MN	
Pile	Timber	3			MN	
Pile	Timber	4			MN	
Pile	Timber	5	Large lateral displacements		MJ	
Pile	Timber	6			MN	
Pile	Timber	7	Broken		SV	
Pile	Timber	8			MN	
Pile	Timber	9			MN	
Pile	Timber	10	Large lateral displacements		MJ	
Pile	Timber	11			MN	
Pile	Timber	12			MN	
Pile	Timber	13			MN	
Pile	Timber	14			MN	
Pile	Timber	15			MN	
Pile	Timber	16			MN	
Pile	Timber	17			MN	
Pile	Timber	18			MN	
Pile	Timber	19			MN	
Pile	Timber	20			MN	
Pile	Timber	21			MN	
Guardrail	Timber	1 to 2	Broken		SV	
Guardrail	Timber	14 to 17	Broken off and missing		SV	
Decking	Timber	0	Warping		MJ	

1. Structural steel piles are numbered starting with #0 from south to north

NOTE: Elements were only visually inspected

Marine Railway

Asset Information			Damage Information			Comments
Type	Material	Location	Description	Approximate Size	Rating	
Beams	Steel	E to 20[23]	Marine growth and minor corrosion		MN	
Ties	Steel	1 to 20[2]	Marine growth and minor corrosion		MN	
Beam	Timber	(I)E-F[13]			MD	
Beam	Timber	(II)E-F[13]			MD	
Beam	Timber	(III)E-F[13]			MD	
Beam	Timber	(III)F-G[13]	10% section loss		MD	
Beam	Timber	(IV)E-F[13]			MJ	
Tie	Timber	(IV)C[13]	Moderate section loss at top of tie		MD	
Tie	Timber	(IV)D[13]	Moderate section loss at top of tie		MD	
Tie	Timber	(IV)E[13]	Major damage at top of tie		MJ	

1. Rail beams are numbered I to IV from west to east
2. Steel ties are numbered starting with 1 from south to north
3. Timber ties are lettered starting with A from north to south