



# Pier Substructure

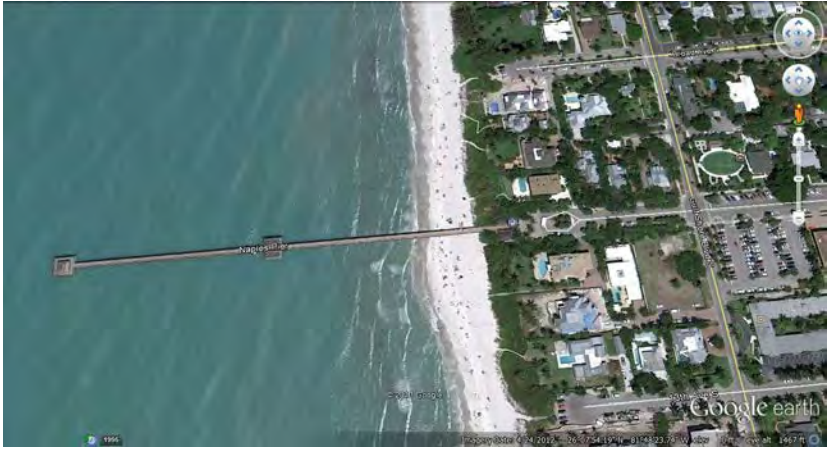

## City of Naples / Naples Pier



| Pier Substructure        |                               | Status    |        | Comments                                            |
|--------------------------|-------------------------------|-----------|--------|-----------------------------------------------------|
|                          |                               | No Issues | Issues |                                                     |
| <b>Decking Underside</b> |                               |           |        |                                                     |
| 1                        | Crack                         | X         |        | Rare                                                |
| 2                        | Fiber split                   |           | X      | About 25% of fiber split-through                    |
| 3                        | Decay                         |           | X      | 85% of decay of the exposed decking surface         |
| 4                        | Algae, Fungi                  |           | X      | Almost all underside, except new replacement boards |
| <b>Stringers</b>         |                               |           |        |                                                     |
| 1                        | Crack, split, decay           | X         |        | Rare                                                |
| 2                        | Algae, Fungi                  | X         |        | Mild growth in some locations                       |
| <b>Hardware</b>          |                               |           |        |                                                     |
| 1                        | Totally consumed by corrosion |           | X      | About 10% of the pier hardware                      |
| 2                        | Severe corrosion              |           | X      | About 35% of the pier of the pier hardware          |
| 3                        | Mild corrosion                |           | X      | About 55% of the pier hardware                      |
| <b>Other</b>             |                               |           |        |                                                     |
| 1                        | Concrete pier                 | X         |        | Sound                                               |
| 2                        | Beach access stair            |           | X      | May require total rebuilding.                       |
| 2                        | Pipe/conduit and strapping    |           | X      | Require repair/replacement                          |

### General Description:

Due to the high percentage of severe corrosion, and in some cases, total obliteration of connection hardware, structural integrity of critical components of the pier such as guardrail may be questionable. Equally critical is how well the substructural frame will be able to resist wind loading in future storms, with many of its connectors either consumed by or well within the advanced stage of corrosion.



The condition of the decking underside appears to be much better than the top. Replacement of split, shrunk, decaying and well-worn boards is not only functional but psychological and aesthetic to the users as well. The same can be said about rebuilding a new beach access stair which will convey to the users a sense of safety and pleasing aesthetic to match the beautiful setting of a beach.



| Photo                                                                                | Descriptions/Comments                                                             |
|--------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|
|    | <p><b>Description:</b> Aerial view of the Naples Pier.</p>                        |
|  | <p><b>Description:</b> View of the Naples Pier from the beach, looking South.</p> |



| Photo                                                                                | Descriptions/Comments                                                                                        |
|--------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------|
|    | <p><i><b>Description:</b></i> View of the section of Naples Pier bridging over the beach, looking South.</p> |
|  | <p><i><b>Description:</b></i> View of the pier seaward side, looking Southwest.</p>                          |

| Photo                                                                                | Descriptions/Comments                                                                                                                              |
|--------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------|
|    | <p><i><u>Description:</u></i> Restrooms facility and the entrance to the pier are within the cluster of the coconut trees; looking Northeast.</p>  |
|  | <p><i><u>Description:</u></i> View of the South elevation of the pier leading section from the entrance and over the beach; looking Northeast.</p> |




| Photo                                                                                | Descriptions/Comments                                                                                                                                                                        |
|--------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|    | <p><b><i>Description:</i></b> View of the seaward side elevation of the pier. Note the food concession facility in the foreground above the deck and the seaward end shelter beyond.</p>     |
|  | <p><b><i>Description:</i></b> View of the rectangular precast concrete bent and the deck and railing at Pier #2. Pier #1 is to the right immediately behind the Male Restroom rear wall.</p> |



| Photo                                                                               | Descriptions/Comments                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
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|   | <p><b>Description:</b> View of the decking underside in between Pier# 2 and Pier #3. The underside surface and the stringers appear to be in satisfactory condition. Note water piping and electrical conduits strapped to the stringers.</p>                                                                                                                                                                                                                                                     |
|  | <p><b>Issue:</b> Electrical conduits and small water pipes are strapped to the stringers with plastic straps or in some cases plastic hangers. Note the corroding washers and complete loss of hex-nuts, of both of the thru-bolt connectors, to corrosion, at the base of a rail post over Pier #3. The anchor bolt and clip angle appear to have completely corroded away as well.</p> <p><b>Resolution:</b> Perform regular inspection and replace severely corroded washers and hex-nuts.</p> |



| Photo                                                                                | Descriptions/Comments                                                                                                                                                                                                                                                                                                                                                                                                                   |
|--------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|    | <p><b>Description:</b> The thru-bolt connectors at the base of this rail post on the outside appear to be sound and free from corrosion, with the exception of the single nail in the middle.</p>                                                                                                                                                                                                                                       |
|  | <p><b>Issue:</b> View of the decking underside between the deck board span, looking back at Pier #3. Deck board underside and stringers appear satisfactory. There is an area of concrete spall along the edge of the pile cap beyond. Note water piping on right and electrical conduit on left.</p> <p><b>Resolution:</b> Patch the spall spot with epoxy concrete to prevent further corrosion of the pile cap reinforcing bars.</p> |



| Photo                                                                                | Descriptions/Comments                                                                                                                                                                                                                                                                                                                          |
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|    | <p><b><u>Issue:</u></b> The rail post thru-bolt connectors and anchor bolt/ clip angle assembly on this side are undergoing severe corrosion as well.</p> <p><b><u>Resolution:</u></b> Perform regular inspection and replace severely corroded washers and hex-nuts. In some case the galvanized clip angle may need replacement as well.</p> |
|  | <p><b><u>Issue:</u></b> View of an inside stringer anchor bolt/clip angle assembly which is normally buried under the beach sand causing accelerated corrosion of the metal hardware.</p> <p><b><u>Resolution:</u></b> Regular inspection and replacement of deteriorated hardware is required.</p>                                            |





| Photo                                                                                | Descriptions/Comments                                                                                                                                                                                                                                                                                                                                                                                             |
|--------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|    | <p><b><u>Issue:</u></b> The rail post thru-bolt connectors and anchor bolt/ clip angle assembly on this side are undergoing severe corrosion as well. Note the top thru-bolt washer and hex-nut have been corroded away.</p> <p><b><u>Resolution:</u></b> Perform regular inspection and replace severely corroded washers and hex-nuts. In some case the galvanized clip angle may need replacement as well.</p> |
|  | <p><b><u>Issue:</u></b> View of an inside stringer anchor bolt/clip angle assembly which is normally buried under the wet beach sand and debris causing accelerated corrosion of the metal hardware.</p> <p><b><u>Resolution:</u></b> Regular inspection and replacement of deteriorated hardware is required.</p>                                                                                                |



| Photo                                                                                | Descriptions/Comments                                                                                                                                                                                               |
|--------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|    | <p><b><u>Issue:</u></b> See preceding issue.</p> <p><b><u>Resolution:</u></b> See preceding resolution.</p>                                                                                                         |
|  | <p><b><u>Description:</u></b> General view of the decking underside and the substructure, looking seaward at Pier #4. Note the water piping and electrical conduits. Also note random horizontal cross-bracing.</p> |



| Photo                                                                                | Descriptions/Comments                                                                                                                                                                                                                                                                                                                                                                                                                |
|--------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|    | <p><b>Description:</b> General view of the decking underside and the substructure, looking seaward at Pier #5. Note the water piping and electrical conduits. Also note random horizontal cross-bracing. Note the accumulation of wet beach sand and debris falling from the foot traffic on either side of the stringer splice burying the anchor bolt/clip angle assembly causing accelerated corrosion of the metal hardware.</p> |
|  | <p><b>Issue:</b> See preceding issue. Note the broken pipe straps leaving the conduit/pipe unsupported.</p> <p><b>Resolution:</b> Inspect and replace corroded metal hardware. Replace all broken plastic pipe straps and hangers to properly support the pipe/conduit.</p>                                                                                                                                                          |



| Photo                                                                                | Descriptions/Comments                                                                                                                                                                                                   |
|--------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|    | <p><b><u>Issue:</u></b> See preceding issue.</p> <p><b><u>Resolution:</u></b> Inspect and replace corroded metal hardware. Replace all broken plastic pipe straps and hangers to properly support the pipe/conduit.</p> |
|  | <p><b><u>Issue:</u></b> See preceding issue.</p> <p><b><u>Resolution:</u></b> Inspect and replace corroded metal hardware. Replace all broken plastic pipe straps and hangers to properly support the pipe/conduit.</p> |





| Photo                                                                                | Descriptions/Comments                                                                                                                                                                                                   |
|--------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|    | <p><b><u>Issue:</u></b> See preceding issue.</p> <p><b><u>Resolution:</u></b> See preceding resolution.</p>                                                                                                             |
|  | <p><b><u>Issue:</u></b> See preceding issue.</p> <p><b><u>Resolution:</u></b> Inspect and replace corroded metal hardware. Replace all broken plastic pipe straps and hangers to properly support the pipe/conduit.</p> |



| Photo                                                                                | Descriptions/Comments                                                                                                                                                                                                   |
|--------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|    | <p><b><u>Issue:</u></b> See preceding issue.</p> <p><b><u>Resolution:</u></b> Inspect and replace corroded metal hardware. Replace all broken plastic pipe straps and hangers to properly support the pipe/conduit.</p> |
|  | <p><b><u>Issue:</u></b> See preceding issue.</p> <p><b><u>Resolution:</u></b> Inspect and replace corroded metal hardware. Replace all broken plastic pipe straps and hangers to properly support the pipe/conduit.</p> |






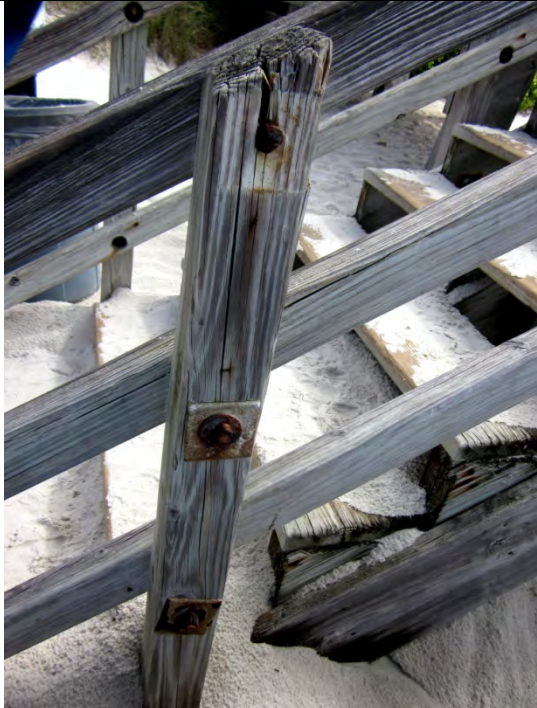
| Photo                                                                                | Descriptions/Comments                                                                                                                                                                                             |
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|    | <p><b>Description:</b> The rail post base thru-bolts display sign of corrosion which starts from the opposite side. The anchor bolt/clip angle assembly appears satisfactory.</p>                                 |
|  | <p><b>Description:</b> View on the exterior face of the splice assembly at Pier #5, where extra pairs of thru-bolt are used to stiffen up the outside stringer before the stair landing opening on the right.</p> |

| Photo                                                                                | Descriptions/Comments                                                                                                                                                                                                                                                                                           |
|--------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|   | <p><b><u>Issue:</u></b> View of the same assembly on the interior face, which reveals severe corrosion of almost all the thru-bolts.</p> <p><b><u>Resolution:</u></b> Inspect and replace corroded metal hardware. Replace all broken plastic pipe straps and hangers to properly support the pipe/conduit.</p> |
|  | <p><b><u>Description:</u></b> View of an identical splice assembly at Pier #6, past the stair landing opening, where extra pairs of thru-bolt are used to stiffen up the outside stringer past the stair landing opening on the left.</p>                                                                       |





| Photo                                                                                | Descriptions/Comments                                                                                                                                                                                                                                                                                         |
|--------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|    | <p><b><u>Issue:</u></b> View of the same assembly on the inside face, which reveals severe corrosion of almost all the thru-bolts.</p> <p><b><u>Resolution:</u></b> Inspect and replace corroded metal hardware. Replace all broken plastic pipe straps and hangers to properly support the pipe/conduit.</p> |
|  | <p><b><u>Description:</u></b> View of the stair and railing located along the North side deck rail, between Pier #5 and Pier #6, providing pedestrian access to the beach.</p>                                                                                                                                |



| Photo                                                                                | Descriptions/Comments                                                                                                                                                                                          |
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|    | <p><b>Description:</b> View of the East rail post/deck stringer/stair stringer assembly at the stair opening, between Pier #5 and Pier #6.</p>                                                                 |
|  | <p><b>Issue:</b> View of the rail posts/stair stringer/deck stringer thru-bolt connections on the inside face of the deck stringer.</p> <p><b>Resolution:</b> Inspect and replace corroded metal hardware.</p> |

| Photo                                                                               | Descriptions/Comments                                                                                                                                                                        |
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|   | <p><b><i>Description:</i></b> View of the West rail post/deck stringer/stair stringer assembly at the stair opening, between Pier #5 and Pier #6. Note Pier #6 immediately to the right.</p> |
|  | <p><b><i>Description:</i></b> Typical view of the stair railing.</p>                                                                                                                         |




| Photo                                                                                | Descriptions/Comments                                                                                                                                                                                            |
|--------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|    | <p><b><i>Description:</i></b> Typical view of the stair railing. Note the pedestrian lighting fixture mount.</p>                                                                                                 |
|  | <p><b><i>Issue:</i></b> Almost all of the stair assembly thru-bolt connections display severe corrosion of the metal hardware.</p> <p><b><i>Resolution:</i></b> Inspect and replace corroded metal hardware.</p> |



| Photo                                                                                | Descriptions/Comments                                                                                                                                                                                                                                                                                                                                                                                                                |
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|    | <p><b><i>Issue:</i></b> Stair stringer/deck stringer vertical connection assembly display severe corrosion of the metal hardware.</p> <p><b><i>Resolution:</i></b> Inspect and replace corroded metal hardware. To ensure structural soundness and durability, and to provide users a sense of safety and aesthetic, the entire stair may have to be rebuilt with better corrosion and weather resistant materials in near term.</p> |
|  | <p><b><i>Issue:</i></b> See preceding issue.</p> <p><b><i>Resolution:</i></b> See preceding resolution.</p>                                                                                                                                                                                                                                                                                                                          |

| Photo                                                                                | Descriptions/Comments                                                                                                                                                    |
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|    | <p><b><u>Issue:</u></b> See preceding issue.</p> <p><b><u>Resolution:</u></b> See preceding resolution.</p>                                                              |
|  | <p><b><u>Issue:</u></b> See preceding issue. Note the surface mount pedestrian louvered lighting fixture.</p> <p><b><u>Resolution:</u></b> See preceding resolution.</p> |





| Photo                                                                               | Descriptions/Comments                                                                                       |
|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------|
|   | <p><b><u>Issue:</u></b> See preceding issue.</p> <p><b><u>Resolution:</u></b> See preceding resolution.</p> |
|  | <p><b><u>Issue:</u></b> See preceding issue.</p> <p><b><u>Resolution:</u></b> See preceding resolution.</p> |





| Photo                                                                                | Descriptions/Comments                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
|--------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|    | <p><b><u>Issue:</u></b> View of repeated pattern of severe corrosion of thru-bolt and anchor bolt assembly due to near-constant wetness condition on top of the pile cap and the lack of direct sunlight and airflow to help accelerate drying of all components under the decking.</p> <p><b><u>Resolution:</u></b> Remove and replace substructure connection metal hardware with better corrosion resistant metal hardware, preferably stainless steel type, when the deck boards are due for removal and replacement.</p> |
|  | <p><b><u>Issue:</u></b> See preceding issue.</p> <p><b><u>Resolution:</u></b> See preceding resolution.</p>                                                                                                                                                                                                                                                                                                                                                                                                                   |

| Photo                                                                                | Descriptions/Comments                                                                                                                                                                                                                                                                                                                  |
|--------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|    | <p><b><u>Issue:</u></b> The stress caused by the movement of the main power supply conduit is beyond the working strength of these thin plastic pipe straps.</p> <p><b><u>Resolution:</u></b> Provide new plastic pipe straps with better working strength and durability (i.e. more material thickness/cross-section, mass, etc).</p> |
|  | <p><b><u>Description:</u></b> Typical view of the substructure framing and the condition of the decking underside in the vicinity of Pier # 7.</p>                                                                                                                                                                                     |

| Photo                                                                                | Descriptions/Comments                                                                                                                                                                                                                                                                                                                                                                                                                                          |
|--------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|    | <p><b><u>Issue:</u></b> The movement of the deck under wind gust can pull pipe/conduit out of its joint and/or rip a pipe segment out of its strapping.</p> <p><b><u>Resolution:</u></b> Repair or replace all broken and loose pipe/conduit fitting and wiring when the deck boards are due for removal and replacement. Provide proper and durable pipe/conduit straps and hangers to ensure firm attachment and support against periodic dynamic loads.</p> |
|  | <p><b><u>Issue:</u></b> See preceding issue for metal hardware from Pier # 7 and beyond.</p> <p><b><u>Resolution:</u></b> See preceding resolution.</p>                                                                                                                                                                                                                                                                                                        |







| Photo                                                                                | Descriptions/Comments                                                                                       |
|--------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------|
|    | <p><b><u>Issue:</u></b> See preceding issue.</p> <p><b><u>Resolution:</u></b> See preceding resolution.</p> |
|  | <p><b><u>Issue:</u></b> See preceding issue.</p> <p><b><u>Resolution:</u></b> See preceding resolution.</p> |



| Photo                                                                                | Descriptions/Comments                                                                                                                                                                                                                                                                           |
|--------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|    | <p><b><u>Issue:</u></b> Pier #8. See preceding issue.</p> <p><b><u>Resolution:</u></b> See preceding resolution.</p>                                                                                                                                                                            |
|  | <p><b><u>Issue:</u></b> See preceding issue. Note hex-nuts and washers have corroded away and cleared from the end of the rail post thru-bolts causing potential faulty structural connections.</p> <p><b><u>Resolution:</u></b> Require immediate close inspection and repair/replacement.</p> |

| Photo                                                                                | Descriptions/Comments                                                                                       |
|--------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------|
|   | <p><b><u>Issue:</u></b> See preceding issue.</p> <p><b><u>Resolution:</u></b> See preceding resolution.</p> |
|  | <p><b><u>Issue:</u></b> See preceding issue.</p> <p><b><u>Resolution:</u></b> See preceding resolution.</p> |



| Photo                                                                                | Descriptions/Comments                                                                                                                                                                                                                                                                                                                  |
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|    | <p><b><i>Issue:</i></b> Pier #9. See preceding issue. Note the two hex-nuts and a washer have corroded away and cleared from the end of the rail post thru-bolts causing potential faulty structural connections.</p> <p><b><i>Resolution:</i></b> Require immediate close inspection and repair/replacement.</p>                      |
|  | <p><b><i>Issue:</i></b> The stress caused by the movement of the main power supply conduit is beyond the working strength of these thin plastic pipe straps.</p> <p><b><i>Resolution:</i></b> Provide new plastic pipe straps with better working strength and durability (i.e. more material thickness/cross-section, mass, etc).</p> |



| Photo                                                                                | Descriptions/Comments                                                                                                                               |
|--------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------|
|    | <p><i><b>Description:</b></i> Typical view of the substructure framing and the condition of the decking underside between Pier #9 and Pier#10.</p>  |
|  | <p><i><b>Description:</b></i> Typical view of the substructure framing and the condition of the decking underside between Pier #10 and Pier#11.</p> |

| Photo                                                                                | Descriptions/Comments                                                                                                                                                                                                                                                                                                                                                                                 |
|--------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|    | <p><b>Description:</b> Typical view of the substructure framing and the condition of the decking underside in the vicinity of Pier #11.</p>                                                                                                                                                                                                                                                           |
|  | <p><b>Issue:</b> The stress caused by the movement of the main power supply conduit is beyond the working strength of these thin plastic pipe straps. Note the conduit has dropped away from its strapping alongside the stringer.</p> <p><b>Resolution:</b> Provide new plastic pipe straps with better working strength and durability (i.e. more material thickness/cross-section, mass, etc).</p> |







| Photo                                                                               | Descriptions/Comments                                                                                                                                                                                                                                                                                                                  |
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|   | <p><b><u>Issue:</u></b> The stress caused by the movement of the main power supply conduit is beyond the working strength of these thin plastic pipe straps.</p> <p><b><u>Resolution:</u></b> Provide new plastic pipe straps with better working strength and durability (i.e. more material thickness/cross-section, mass, etc).</p> |
|  | <p><b><u>Issue:</u></b> The stress caused by the movement of the main power supply conduit is beyond the working strength of these thin plastic pipe straps.</p> <p><b><u>Resolution:</u></b> Provide new plastic pipe straps with better working strength and durability (i.e. more material thickness/cross-section, mass, etc).</p> |



| Photo                                                                                | Descriptions/Comments                                                                                                                                                                                                                                                                                                                                       |
|--------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|    | <p><b><i>Issue:</i></b> Pier #11-Pier #12. The stress caused by the movement of the main power supply conduit is beyond the working strength of these thin plastic pipe straps.</p> <p><b><i>Resolution:</i></b> Provide new plastic pipe straps with better working strength and durability (i.e. more material thickness/cross-section, mass, etc).</p>   |
|  | <p><b><i>Issue:</i></b> Pier #11 – Pier #12. The stress caused by the movement of the main power supply conduit is beyond the working strength of these thin plastic pipe straps.</p> <p><b><i>Resolution:</i></b> Provide new plastic pipe straps with better working strength and durability (i.e. more material thickness/cross-section, mass, etc).</p> |

| Photo                                                                                | Descriptions/Comments                                                                                                                                                                                                                                                                                                                                       |
|--------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|    | <p><b><u>Issue:</u></b> Pier #11 – Pier #12. The stress caused by the movement of the main power supply conduit is beyond the working strength of these thin plastic pipe straps.</p> <p><b><u>Resolution:</u></b> Provide new plastic pipe straps with better working strength and durability (i.e. more material thickness/cross-section, mass, etc).</p> |
|  | <p><b><u>Description:</u></b> Typical view of the substructure framing and the condition of the decking in the vicinity of Pier #12. Note the multiple replacement boards besides the old boards.</p>                                                                                                                                                       |





| Photo                                                                                | Descriptions/Comments                                                                                                                                                                                                                                                                                                                                                                                                          |
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|    | <p><b><i>Issue:</i></b> Pier # 12. The stress caused by the movement of the main power supply conduit is beyond the working strength of these thin plastic pipe straps. Note the conduit has dropped away from its strapping alongside the stringer.</p> <p><b><i>Resolution:</i></b> Provide new plastic pipe straps with better working strength and durability (i.e. more material thickness/cross-section, mass, etc).</p> |
|  | <p><b><i>Description:</i></b> Typical view of the substructure framing and the condition of the decking in the vicinity of Pier #12. Note the multiple replacement boards besides the old boards.</p>                                                                                                                                                                                                                          |



| Photo                                                                               | Descriptions/Comments                                                                                                                                                                                                                                                                                                                                                                                                                    |
|-------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|   | <p><b><i>Issue:</i></b> Pier #12 – Pier #13. The stress caused by the movement of the main power supply conduit is beyond the working strength of these thin plastic pipe straps. Note the conduit has dropped away from its strapping alongside the stringer.</p> <p><b><i>Resolution:</i></b> Provide new plastic pipe straps with better working strength and durability (i.e. more material thickness/cross-section, mass, etc).</p> |
|  | <p><b><i>Description:</i></b> Typical view of the substructure framing and the condition of the decking between Pier #12 and Pier #13. Note the multiple replacement boards besides the old boards.</p>                                                                                                                                                                                                                                  |

| Photo                                                                               | Descriptions/Comments                                                                                                                                                                                                                                                                                                                                                                                 |
|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|   | <p><b>Description:</b> Typical view of the substructure framing and the condition of the decking between Pier #12 and Pier #13. The old deck boards display fiber splitting. The lack of direct sunlight and airflow in moisture rich environment cause the proliferation of algae below deck.</p>                                                                                                    |
|  | <p><b>Issue:</b> The stress caused by the movement of the main power supply conduit is beyond the working strength of these thin plastic pipe straps. Note the conduit has dropped away from its strapping alongside the stringer.</p> <p><b>Resolution:</b> Provide new plastic pipe straps with better working strength and durability (i.e. more material thickness/cross-section, mass, etc).</p> |







| Photo                                                                               | Descriptions/Comments                                                                                                                                                                                                                                                                                                                                          |
|-------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|   | <p><b>Description:</b> Typical view of the substructure framing and the condition of the decking between Pier #12 and Pier #13. The old deck boards display fiber splitting. The lack of direct sunlight and airflow in moisture rich deck underside proliferate algae growth.</p>                                                                             |
|  | <p><b>Issue:</b> View of the condition of the decking underside between Pier #12 and Pier# 13. Note the main power conduit dropped away from its strapping along the inside stringer above.</p> <p><b>Resolution:</b> Provide new plastic pipe straps with better working strength and durability (i.e. more material thickness/cross-section, mass, etc).</p> |

| Photo                                                                               | Descriptions/Comments                                                                                                                                       |
|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------|
|   | <p><b><i>Description:</i></b> Typical view of the substructure framing and the condition of the decking underside from Pier #13 left opening backward.</p>  |
|  | <p><b><i>Description:</i></b> Typical view of the substructure framing and the condition of the decking underside from Pier #13 right opening backward.</p> |



| Photo                                                                               | Descriptions/Comments                                                                                                                                      |
|-------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------|
|   | <p><b><i>Description:</i></b> Typical view of the substructure framing and the condition of the decking underside from Pier #13 left opening seaward.</p>  |
|  | <p><b><i>Description:</i></b> Typical view of the substructure framing and the condition of the decking underside from Pier #13 right opening seaward.</p> |





| Photo                                                                                | Descriptions/Comments                                                                                                                                              |
|--------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|    | <p><i><u>Description:</u></i> View over Pier #7.</p>                                                                                                               |
|  | <p><i><u>Description:</u></i> Typical view of the substructure framing and the condition of the decking underside from Pier #7. Note a board with split fiber.</p> |



| Photo                                                                                | Descriptions/Comments                                                                                                               |
|--------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------|
|    | <p><i><u>Description:</u></i> View over Pier #8.</p>                                                                                |
|  | <p><i><u>Description:</u></i> Typical view of the substructure framing and the condition of the decking underside from Pier #8.</p> |





| Photo                                                                                | Descriptions/Comments                                                                                                        |
|--------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------|
|    | <p><i>Description:</i> View over Pier #9.</p>                                                                                |
|  | <p><i>Description:</i> Typical view of the substructure framing and the condition of the decking underside from Pier #9.</p> |





| Photo                                                                                | Descriptions/Comments                                                                                                                                              |
|--------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|    | <p><i><u>Description:</u></i> View over Pier #10.</p>                                                                                                              |
|  | <p><i><u>Description:</u></i> Typical view of the substructure framing and the condition of the decking underside from Pier #10. Note boards with split fiber.</p> |



| Photo                                                                                | Descriptions/Comments                                                                                                                |
|--------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------|
|    | <p><i><u>Description:</u></i> View over Pier #11.</p>                                                                                |
|  | <p><i><u>Description:</u></i> Typical view of the substructure framing and the condition of the decking underside from Pier #11.</p> |




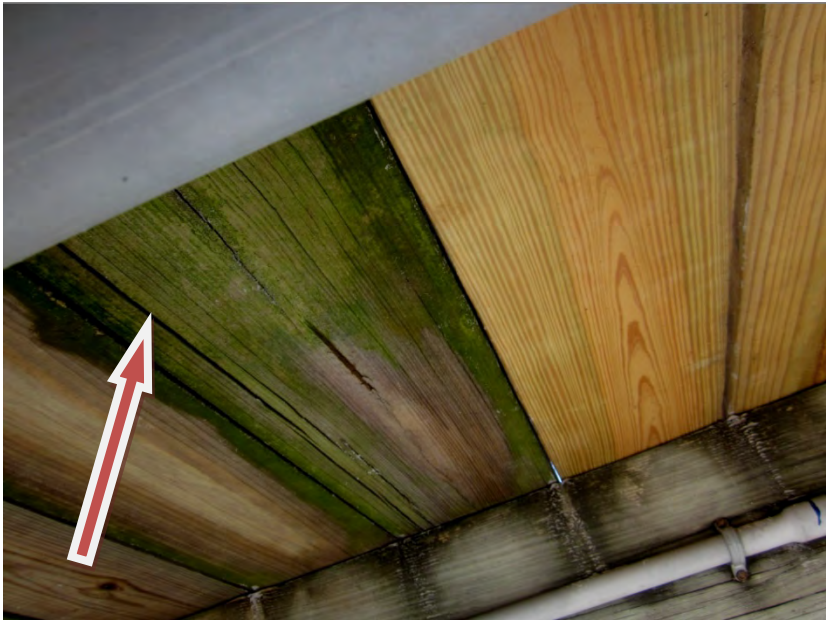
| Photo                                                                                | Descriptions/Comments                                                                                                                |
|--------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------|
|    | <p><b><u>Description:</u></b> Typical view of the substructure framing and the condition of the decking underside from Pier #11.</p> |
|  | <p><b><u>Description:</u></b> View over Pier #12.</p>                                                                                |





| Photo                                                                                | Descriptions/Comments                                                                                                                                                  |
|--------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|    | <p><b><i>Description:</i></b> Typical view of the substructure framing and the condition of the decking underside at Pier #12. Note multiple replacement boards.</p>   |
|  | <p><b><i>Description:</i></b> Typical view of the substructure framing and the condition of the decking underside from Pier #12. Note multiple replacement boards.</p> |



| Photo                                                                                | Descriptions/Comments                                                                                                                                                 |
|--------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|    | <p><i><u>Description:</u></i> View over Pier #13.</p>                                                                                                                 |
|  | <p><i><u>Description:</u></i> Typical view of the substructure framing and the condition of the decking underside from Pier #7. Note algae growth between boards.</p> |





| Photo                                                                                | Descriptions/Comments                                                                                                                                                                                                                          |
|--------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|    | <p><i><u>Description:</u></i> View over Pier #14.</p>                                                                                                                                                                                          |
|  | <p><i><u>Description:</u></i> Typical view of the substructure framing and the condition of the decking underside from Pier #7. Note a board with split fiber and covered with algae which accelerates wood decay. Note replacement board.</p> |





| Photo                                                                                | Descriptions/Comments                                                                                                                                                  |
|--------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|    | <p><i><u>Description:</u></i> View over Pier #15.</p>                                                                                                                  |
|  | <p><i><u>Description:</u></i> Typical view of the substructure framing and the condition of the decking underside from Pier #15. Note multiple replacement boards.</p> |



| Photo                                                                                | Descriptions/Comments                                                                                                                                                              |
|--------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|    | <p><i><u>Description:</u></i> View over Pier #16.</p>                                                                                                                              |
|  | <p><i><u>Description:</u></i> Typical view of the substructure framing and the condition of the decking underside from Pier #16. Note proliferation of algae between the gaps.</p> |





| Photo                                                                                | Descriptions/Comments                                                                                                                                                                                                                   |
|--------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|    | <p><i>Description:</i> View over Pier #17.</p>                                                                                                                                                                                          |
|  | <p><i>Description:</i> Typical view of the substructure framing and the condition of the decking underside from Pier #17. Note proliferation of algae between the gaps. The board on the right is beginning to decay from the edge.</p> |





| Photo                                                                                | Descriptions/Comments                                                                                                                                                                                                                                            |
|--------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|    | <p><i>Description:</i> View over Pier #18.</p>                                                                                                                                                                                                                   |
|  | <p><i>Description:</i> Typical view of the substructure framing and the condition of the decking underside from Pier #18. Note proliferation of algae between the gaps. Note multiple replacement boards. Also note some loose cross-bracing hanging beyond.</p> |

| Photo                                                                                | Descriptions/Comments                                                                                                                                                                                                                                                                                                                                                         |
|--------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|    | <p><i>Description:</i> View over Pier #19.</p>                                                                                                                                                                                                                                                                                                                                |
|  | <p><i>Description:</i> Typical view of the substructure framing and the condition of the decking underside from Pier #16. Note the fiber split in the middle board despite its fresh appearance. The start of algae growth within the split indicates that moisture is migrating through the split from top to bottom. This is where wood decay is naturally taking root.</p> |



| Photo                                                                                | Descriptions/Comments                                                                                                                                                                                                                                                                                                                                                 |
|--------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|    | <p><b>Description:</b> View over Pier #20. As the pier begins to go over water seaward, the impact of the sea environment is increasingly harsh on wood and metal hardware. Note the sign of decay on the board immediately to the left of the post. Note a decaying board on the left.</p>                                                                           |
|  | <p><b>Issue:</b> The connection assembly on the pier is the most vulnerable to sea spray that brings split and decay on wood, and promotes accelerated corrosion of metal hardware.</p> <p><b>Resolution:</b> Perform regular inspection and replace severely corroded washers and hex-nuts. In some case the galvanized clip angle may need replacement as well.</p> |





| Photo                                                                               | Descriptions/Comments                                                                                                                                                                                                                                                                                                                                                                                                                        |
|-------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|   | <p><b><u>Description:</u></b> View over Pier #21.</p>                                                                                                                                                                                                                                                                                                                                                                                        |
|  | <p><b><u>Issue:</u></b> In stormy day and high waves the deck is being washed in sea spray for the duration. Note the boards are soggy from such weather event.</p> <p><b><u>Resolution:</u></b> Perform periodic inspection of the utility piping below deck. Repair/replace/remove broken piping. Provide new plastic pipe straps with better working strength and durability (i.e. more material thickness/cross-section, mass, etc).</p> |



| Photo                                                                                | Descriptions/Comments                                                                                                                                                                                                                                                                                                                                                 |
|--------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|    | <p><b>Description:</b> View over Pier #22. Note a decaying board to the left.</p>                                                                                                                                                                                                                                                                                     |
|  | <p><b>Issue:</b> The connection assembly on the pier is the most vulnerable to sea spray that brings split and decay on wood, and promotes accelerated corrosion of metal hardware.</p> <p><b>Resolution:</b> Perform regular inspection and replace severely corroded washers and hex-nuts. In some case the galvanized clip angle may need replacement as well.</p> |





| Photo                                                                               | Descriptions/Comments                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
|-------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|   | <p><b><u>Issue:</u></b> The connection assembly on the pier is the most vulnerable to sea spray that brings split and decay on wood, and promotes accelerated corrosion of metal hardware. Split/cracks in wood at the connection not only weaken the structural components but make it possible for sea spray to infiltrate connector holes, and subsequently corrodes the metal hardware from inside out.</p> <p><b><u>Resolution:</u></b> Perform regular inspection and replace severely corroded washers and hex-nuts. In some case the galvanized clip angle may need replacement as well.</p> |
|  | <p><b><u>Issue:</u></b> It's obvious that there's no connections strength left at the base of this one rail post. Also it appears that the anchor bolt/clip angle assembly can no longer be relied upon to hold down the stringer to the pile cap during wind uplift.</p> <p><b><u>Resolution:</u></b> Immediately inspect/remove/replace all deteriorated metal hardware.</p>                                                                                                                                                                                                                       |





| Photo                                                                               | Descriptions/Comments                                                                                                                                                                                                                                                                                                                                                                                                                  |
|-------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|   | <p><b>Description:</b> View over Pier #23.</p>                                                                                                                                                                                                                                                                                                                                                                                         |
|  | <p><b>Issue:</b> Sea spray took a heavy toll on metal hardware on the pile cap. The structural integrity and safety of the guardrail system on this part of the pier is questionable, not to mention the structural strength at the connection of the stringers to the pile cap to guard against wind uplift in future storm events.</p> <p><b>Resolution:</b> Immediately inspect/remove/replace all deteriorated metal hardware.</p> |



| Photo                                                                               | Descriptions/Comments                                                                                                                               |
|-------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------|
|   | <p><b><u>Description:</u></b> View over Pier #24.</p>                                                                                               |
|  | <p><b><u>Issue:</u></b> Similar pattern of rail post and thru-bolt connection issue.</p> <p><b><u>Resolution:</u></b> See preceding resolution.</p> |





| Photo                                                                                | Descriptions/Comments                                                                                                                                                                                                                                                                                                  |
|--------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|    | <p><b><u>Issue:</u></b> Similar pattern of rail post and thru-bolt connection issue.</p> <p>Note the middle thru-bolt connecting the rail post to the top part of the stringer is missing. The base has a wide split fiber from top bolt to bottom end.</p> <p><b><u>Resolution:</u></b> See preceding resolution.</p> |
|  | <p><b><u>Issue:</u></b> See preceding issue. This pair is only for mounting pedestrian lighting.</p> <p><b><u>Resolution:</u></b> See preceding resolution.</p>                                                                                                                                                        |





| Photo                                                                               | Descriptions/Comments                                                                                                                                                                                              |
|-------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|   | <p><i><u>Description:</u></i> View over Pier #25.</p>                                                                                                                                                              |
|  | <p><i><u>Description:</u></i> Close-up view of the anchor bolt/clip angle assembly connecting the stringer to the pile cap. Note the hex-head lag screws fastening the rail post clip angle to the deck board.</p> |



| Photo                                                                                | Descriptions/Comments                                                                                                                                                                                                                                                                           |
|--------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|    | <p><b><u>Issue:</u></b> Similar pattern of rail post and thru-bolt connection issue.</p> <p>Note corrosion of the exposed adjustable-slot may preclude the provision that allows for stringer's lateral movement and adjustment.</p> <p><b><u>Resolution:</u></b> See preceding resolution.</p> |
|  | <p><b><u>Description:</u></b> View over Pier #26.</p>                                                                                                                                                                                                                                           |





| Photo                                                                                | Descriptions/Comments                                                                                                                                                                                                                                  |
|--------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|    | <p><b><u>Issue:</u></b> Similar pattern of rail post and thru-bolt connection issue.</p> <p>Even horizontal connection hardware is not spared by corrosion from sea spray at this post.</p> <p><b><u>Resolution:</u></b> See preceding resolution.</p> |
|  | <p><b><u>Description:</u></b> View over Pier #27.</p>                                                                                                                                                                                                  |





| Photo                                                                                | Descriptions/Comments                                                                                                                               |
|--------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------|
|    | <p><b><u>Issue:</u></b> Similar pattern of rail post and thru-bolt connection issue.</p> <p><b><u>Resolution:</u></b> See preceding resolution.</p> |
|  | <p><b><u>Description:</u></b> View over Pier #28.</p>                                                                                               |



| Photo                                                                               | Descriptions/Comments                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
|-------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|   | <p><b><u>Issue:</u></b> Similar pattern of rail post and thru-bolt connection issue.</p> <p>Even horizontal connection hardware is not spared by corrosion from sea spray at this post.</p> <p><b><u>Resolution:</u></b> See preceding resolution.</p>                                                                                                                                                                                                                    |
|  | <p><b><u>Description:</u></b> Gaps between rail post and rail may look like an ideal spot to temporarily hold and/or hide a still-lit cigarette butt. Here is one of such location which accidentally caught on fire (possibly unnoticed burn) leaving a charred hollow as evidence on the post.</p> <p>Prohibiting smoking on the pier may be the ideal policy to safeguard against fire hazard by still-lit cigarette butts lodged in the wood cracks and crevices.</p> |



| Photo                                                                                | Descriptions/Comments                                                                                                                               |
|--------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------|
|    | <p><b><u>Issue:</u></b> Similar pattern of rail post and thru-bolt connection issue.</p> <p><b><u>Resolution:</u></b> See preceding resolution.</p> |
|  | <p><b><u>Description:</u></b> View over Pier #29.</p>                                                                                               |





| Photo                                                                                | Descriptions/Comments                                                                                                                               |
|--------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------|
|    | <p><b><u>Issue:</u></b> Similar pattern of rail post and thru-bolt connection issue.</p> <p><b><u>Resolution:</u></b> See preceding resolution.</p> |
|  | <p><b><u>Description:</u></b> View over Pier #30.</p>                                                                                               |



| Photo                                                                                | Descriptions/Comments                                                                                                                                                                                                                                                                           |
|--------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|    | <p><b><u>Issue:</u></b> Similar pattern of rail post and thru-bolt connection issue.</p> <p>Note corrosion of the exposed adjustable-slot may preclude the provision that allows for stringer's lateral movement and adjustment.</p> <p><b><u>Resolution:</u></b> See preceding resolution.</p> |
|  | <p><b><u>Issue:</u></b> See preceding issue. This pair is only for mounting pedestrian lighting.</p> <p><b><u>Resolution:</u></b> See preceding resolution.</p>                                                                                                                                 |





| Photo                                                                                | Descriptions/Comments                                                                                                                               |
|--------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------|
|    | <p><b><u>Issue:</u></b> Similar pattern of rail post and thru-bolt connection issue.</p> <p><b><u>Resolution:</u></b> See preceding resolution.</p> |
|  | <p><b><u>Description:</u></b> View over Pier #31.</p>                                                                                               |







| Photo                                                                                | Descriptions/Comments                                                                                                                                     |
|--------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------|
|    | <p><b>Description:</b> View of, possibly, a tide gauge component of a weather monitoring station at the Northeast corner of the food concession pier.</p> |
|  | <p><b>Issue:</b> Similar pattern of rail post and thru-bolt connection issue.</p> <p><b>Resolution:</b> See preceding resolution.</p>                     |



| Photo                                                                                | Descriptions/Comments                                                                                                                                                                                                                                                                           |
|--------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|    | <p><b><u>Issue:</u></b> Similar pattern of rail post and thru-bolt connection issue.</p> <p>Note corrosion of the exposed adjustable-slot may preclude the provision that allows for stringer's lateral movement and adjustment.</p> <p><b><u>Resolution:</u></b> See preceding resolution.</p> |
|  | <p><b><u>Description:</u></b> Typical view of the substructure framing and the condition of the decking underside in the vicinity of Pier #32. Note the fiber split in the deck boards despite their fresh appearance. Pipe/conduit strapping is satisfactory.</p>                              |

| Photo                                                                               | Descriptions/Comments                                                                                                                                                                                                                                                                                                    |
|-------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|   | <p><b><u>Issue:</u></b> Similar pattern of rail post and thru-bolt connection issue.</p> <p><b><u>Resolution:</u></b> See preceding resolution.</p>                                                                                                                                                                      |
|  | <p><b><u>Description:</u></b> Typical view of the substructure framing and the condition of the decking underside in the vicinity of Pier #32. Note the fiber split in the deck board despite its fresh appearance. Close up on the part of the stringer indicates some level of wood surface decay is taking place.</p> |





| Photo                                                                                | Descriptions/Comments                                                                                                                                                                              |
|--------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|    | <p><b><u>Issue:</u></b> Similar pattern of rail post and thru-bolt connection issue.</p> <p><b><u>Resolution:</u></b> See preceding resolution.</p>                                                |
|  | <p><b><u>Issue:</u></b> View of the post-to-deck clip angle lag screw connection undergoing early corrosion beginning with washers.</p> <p><b><u>Resolution:</u></b> See preceding resolution.</p> |

| Photo                                                                                | Descriptions/Comments                                                                                                                               |
|--------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------|
|    | <p><b><u>Issue:</u></b> Similar pattern of rail post and thru-bolt connection issue.</p> <p><b><u>Resolution:</u></b> See preceding resolution.</p> |
|  | <p><b><u>Description:</u></b> View over Pier #32. Note horizontal connection hardware corrosion beginning with washers.</p>                         |



| Photo                                                                                | Descriptions/Comments                                                                                                                               |
|--------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------|
|    | <p><b><u>Issue:</u></b> Similar pattern of rail post and thru-bolt connection issue.</p> <p><b><u>Resolution:</u></b> See preceding resolution.</p> |
|  | <p><b><u>Issue:</u></b> Similar pattern of rail post and thru-bolt connection issue.</p> <p><b><u>Resolution:</u></b> See preceding resolution.</p> |





| Photo                                                                                | Descriptions/Comments                                                                                                                                                                              |
|--------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|    | <p><b><u>Issue:</u></b> Similar pattern of rail post and thru-bolt connection issue.</p> <p><b><u>Resolution:</u></b> See preceding resolution.</p>                                                |
|  | <p><b><u>Issue:</u></b> View of the post-to-deck clip angle lag screw connection undergoing early corrosion beginning with washers.</p> <p><b><u>Resolution:</u></b> See preceding resolution.</p> |

| Photo                                                                                | Descriptions/Comments                                                                                                                                                                                                                                                                           |
|--------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|    | <p><b><u>Issue:</u></b> Similar pattern of rail post and thru-bolt connection issue.</p> <p><b><u>Resolution:</u></b> See preceding resolution.</p>                                                                                                                                             |
|  | <p><b><u>Issue:</u></b> Similar pattern of rail post and thru-bolt connection issue.</p> <p>Note corrosion of the exposed adjustable-slot may preclude the provision that allows for stringer's lateral movement and adjustment.</p> <p><b><u>Resolution:</u></b> See preceding resolution.</p> |





| Photo                                                                                | Descriptions/Comments                                                                                                                                                                                                                                                                           |
|--------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|    | <p><b><u>Issue:</u></b> Similar pattern of rail post and thru-bolt connection issue.</p> <p>Note corrosion of the exposed adjustable-slot may preclude the provision that allows for stringer's lateral movement and adjustment.</p> <p><b><u>Resolution:</u></b> See preceding resolution.</p> |
|  | <p><b><u>Description:</u></b> Typical view of the substructure framing and the condition of the decking underside in the vicinity of Pier #31.</p>                                                                                                                                              |







| Photo                                                                               | Descriptions/Comments                                                                                                                         |
|-------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------|
|   | <p><b>Description:</b> Typical view of the substructure framing and the condition of the decking underside between Pier #31 and Pier #32.</p> |
|  | <p><b>Issue:</b> Similar pattern of rail post and thru-bolt connection issue.</p> <p><b>Resolution:</b> See preceding resolution.</p>         |

| Photo                                                                               | Descriptions/Comments                                                                                                                                                                             |
|-------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|   | <p><b><u>Description:</u></b> View over Pier #37. Metal hardware from here onward appears to generally fare much better than the previous stations possibly due to recent repair/replacement.</p> |
|  | <p><b><u>Description:</u></b> View over Pier #38.</p>                                                                                                                                             |



| Photo                                                                                | Descriptions/Comments                                                                                                                                                         |
|--------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|    | <p><b><u>Description:</u></b> Metal hardware from here onward appears to generally fare much better than the previous stations possibly due to recent repair/replacement.</p> |
|  | <p><b><u>Description:</u></b> View over Pier #39.</p>                                                                                                                         |





| Photo                                                                                | Descriptions/Comments                                                                                                                     |
|--------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------|
|    | <p><b><u>Description:</u></b> View of the underside at Pier #39. Note the rail post thru-bolt connectors display only mild corrosion.</p> |
|  | <p><b><u>Description:</u></b> View of the underside at Pier #39. Note the electrical junction box with missing cover.</p>                 |



| Photo                                                                               | Descriptions/Comments                                                                                                                                                         |
|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|  | <p><i><u>Description:</u></i> View over Pier #40.</p>                                                                                                                         |
|  | <p><i><u>Description:</u></i> Metal hardware from here onward appears to generally fare much better than the previous stations possibly due to recent repair/replacement.</p> |





| Photo                                                                                | Descriptions/Comments                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
|--------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|    | <p><b>Description:</b> View over Pier #41.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                              |
|  | <p><b>Issue:</b> In stormy day and high waves the deck is being washed in sea spray for the duration. Note the boards are soggy from such weather event. Note the small pipe/conduit appears to have been broken off.</p> <p><b>Resolution:</b> Perform periodic inspection of the utility piping below deck. Repair/replace/remove broken piping. Provide new plastic pipe straps with better working strength and durability (i.e. more material thickness/cross-section, mass, etc).</p> |





| Photo                                                                                | Descriptions/Comments                                                                                                                                                         |
|--------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|    | <p><i><u>Description:</u></i> View over Pier #42.</p>                                                                                                                         |
|  | <p><i><u>Description:</u></i> Metal hardware from here onward appears to generally fare much better than the previous stations possibly due to recent repair/replacement.</p> |



| Photo                                                                                | Descriptions/Comments                                                                                                                                                         |
|--------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|   | <p><b><u>Description:</u></b> Metal hardware from here onward appears to generally fare much better than the previous stations possibly due to recent repair/replacement.</p> |
|  | <p><b><u>Description:</u></b> View over Pier #44.</p>                                                                                                                         |




| Photo                                                                                | Descriptions/Comments                                                                                                                                                  |
|--------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|   | <p><b>Description:</b> View of the underside at Pier #44. Note the stringer anchor bolt/clip angle displays only mild corrosion.</p>                                   |
|  | <p><b>Description:</b> Metal hardware from here onward appears to generally fare much better than the previous stations possibly due to recent repair/replacement.</p> |





| Photo                                                                                | Descriptions/Comments                                                                                                                     |
|--------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------|
|    | <p><b><i>Description:</i></b> View of the underside at Pier #44. Note the rail post thru-bolt connectors display only mild corrosion.</p> |
|  | <p><b><i>Description:</i></b> View of the underside at Pier #44. Note the rail post thru-bolt connectors display only mild corrosion.</p> |

| Photo                                                                                | Descriptions/Comments                                                                                                                                                         |
|--------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|    | <p><i><u>Description:</u></i> View over Pier #45.</p>                                                                                                                         |
|  | <p><i><u>Description:</u></i> Metal hardware from here onward appears to generally fare much better than the previous stations possibly due to recent repair/replacement.</p> |

| Photo                                                                               | Descriptions/Comments                                                                                                                                                                                                                                                                                                                                                                                                          |
|-------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|   | <p><b>Description:</b> View over Pier #46.</p>                                                                                                                                                                                                                                                                                                                                                                                 |
|  | <p><b>Issue:</b> In stormy day and high waves the deck is being washed in sea spray for the duration. Note the boards are soggy from such weather event.</p> <p><b>Resolution:</b> Perform periodic inspection of the utility piping below deck. Repair/replace/remove broken piping. Provide new plastic pipe straps with better working strength and durability (i.e. more material thickness/cross-section, mass, etc).</p> |



| Photo                                                                                | Descriptions/Comments                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
|--------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|    | <p><b>Description:</b> View over Pier #47.</p>                                                                                                                                                                                                                                                                                                                                                                                                                           |
|  | <p><b>Issue:</b> In stormy day and high waves the deck is being washed in sea spray for the duration. Note the boards are soggy from such weather event. Note board with split fiber to the right.</p> <p><b>Resolution:</b> Perform periodic inspection of the utility piping below deck. Repair/replace/remove broken piping. Provide new plastic pipe straps with better working strength and durability (i.e. more material thickness/cross-section, mass, etc).</p> |



| Photo                                                                                | Descriptions/Comments                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
|--------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|   | <p><b>Description:</b> View over Pier #48.</p>                                                                                                                                                                                                                                                                                                                                                                                                                            |
|  | <p><b>Issue:</b> In stormy day and high waves the deck is being washed in sea spray for the duration. Note the boards are soggy from such weather event. Note board with split fiber in the center.</p> <p><b>Resolution:</b> Perform periodic inspection of the utility piping below deck. Repair/replace/remove broken piping. Provide new plastic pipe straps with better working strength and durability (i.e. more material thickness/cross-section, mass, etc).</p> |

| Photo                                                                               | Descriptions/Comments                          |
|-------------------------------------------------------------------------------------|------------------------------------------------|
|   | <p><u>Description:</u> View over Pier #49.</p> |
|  | <p><u>Description:</u> View over Pier #50.</p> |







| Photo                                                                               | Descriptions/Comments                                                                                                                     |
|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------|
|   | <p><i><u>Description:</u></i> View of the underside at Pier #50. Note the rail post thru-bolt connectors display only mild corrosion.</p> |
|  | <p><i><u>Description:</u></i> View over Pier #51.</p>                                                                                     |

| Photo                                                                                                                                                                                                                                                                                                                                                                                 | Descriptions/Comments                                 |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------|
|  A close-up photograph of a wooden pier railing. The railing consists of several horizontal wooden planks. A metal plate is attached to the railing, featuring a circular hole and the number '52' written on it. The wood shows signs of weathering and discoloration.                            | <p><i><u>Description:</u></i> View over Pier #52.</p> |
|  A photograph showing a view from a wooden pier. The railing is made of weathered wooden planks. A metal plate with the number '53' is visible on the railing. In the background, there is a body of water with a light greenish tint, possibly due to algae or sediment. The sky is not visible. | <p><i><u>Description:</u></i> View over Pier #53.</p> |



| Photo                                                                               | Descriptions/Comments                                                                                                                     |
|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------|
|  | <p><i><u>Description:</u></i> View of the underside at Pier #53. Note the rail post thru-bolt connectors display only mild corrosion.</p> |
|  | <p><i><u>Description:</u></i> View over Pier #54.</p>                                                                                     |




| Photo                                                                               | Descriptions/Comments                                                                                        |
|-------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------|
|   | <p><i><u>Description:</u></i> View over Pier #55.</p>                                                        |
|  | <p><i><u>Description:</u></i> View over Pier #57. Note the decaying board beside new replacement boards.</p> |

| Photo                                                                               | Descriptions/Comments                                 |
|-------------------------------------------------------------------------------------|-------------------------------------------------------|
|   | <p><i><u>Description:</u></i> View over Pier #58.</p> |
|  | <p><i><u>Description:</u></i> View over Pier #59.</p> |



| Photo                                                                                | Descriptions/Comments                                                                                                                                                         |
|--------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|    | <p><b><i>Description:</i></b> Metal hardware from here onward appears to generally fare much better than the previous stations possibly due to recent repair/replacement.</p> |
|  | <p><b><i>Description:</i></b> View over Pier #60. Note the decking displays severe wear and tear.</p>                                                                         |



| Photo                                                                              | Descriptions/Comments                                                                                                                     |
|------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------|
|  | <p><i><u>Description:</u></i> View of the underside at Pier #60. Note the rail post thru-bolt connectors display only mild corrosion.</p> |
|                                                                                    |                                                                                                                                           |