

2012 CONSTRUCTION ENGINEERS WORKSHOP

A large steel truss bridge spans a wide river. The bridge features two prominent vertical towers supporting a central truss structure. A large ship is visible in the water below the bridge. The scene is captured from a low angle, emphasizing the scale of the bridge.

STRUCTURE BREAKOUT SESSION

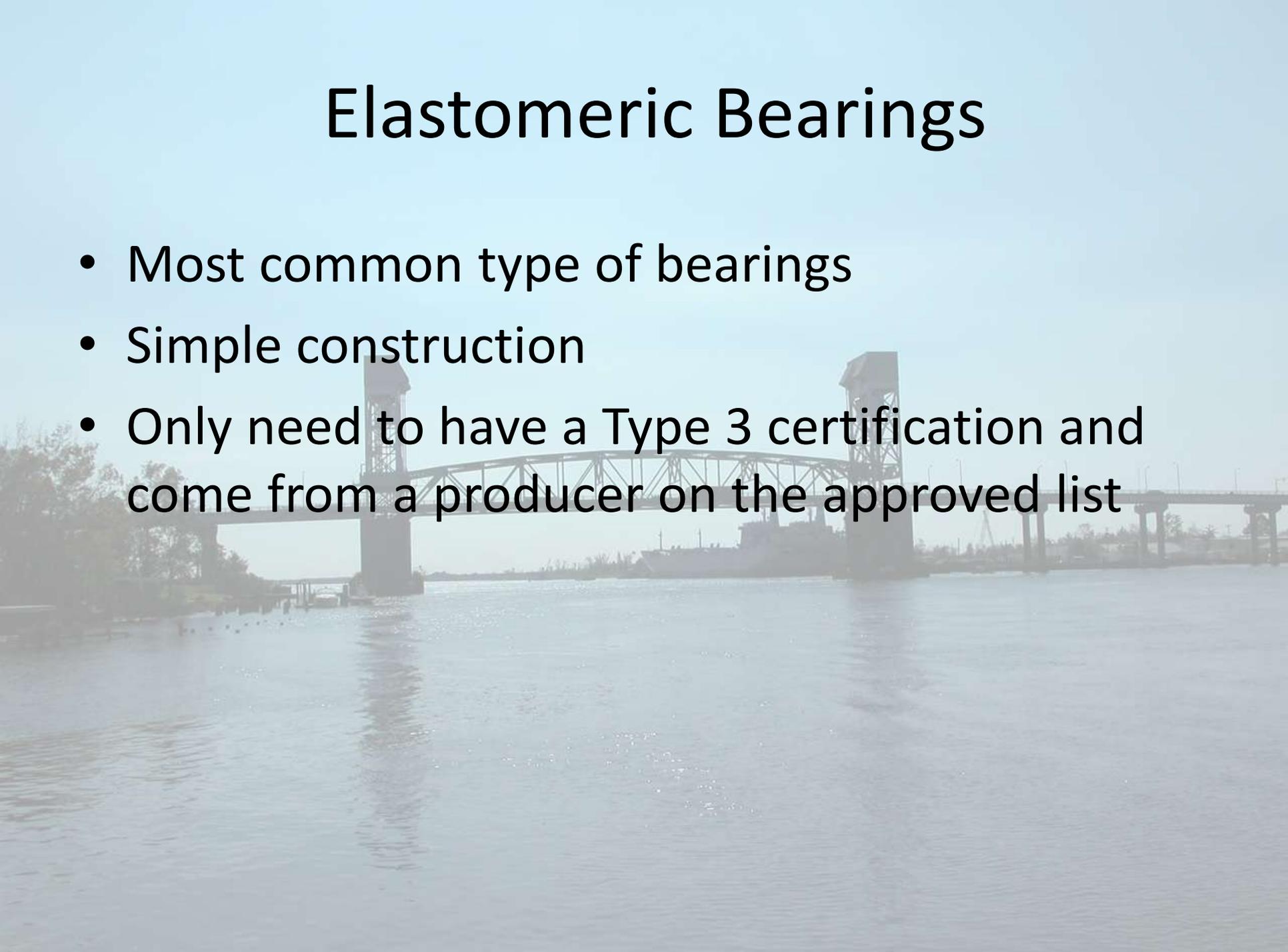
AGENDA

- Elastomeric Bearings
- MSE Walls
- Drilled Pier Investigations
- Pile Driving
- Division Let Projects
- New Vertical Barrier Rail
- FEMA Stream Requirements
- Sampling Rebar
- Structures Management Unit



Elastomeric Bearings

- Most common type of bearings
- Simple construction
- Only need to have a Type 3 certification and come from a producer on the approved list



Elastomeric Bearings

- Problem first noted in October 2011



Elastomeric Bearings

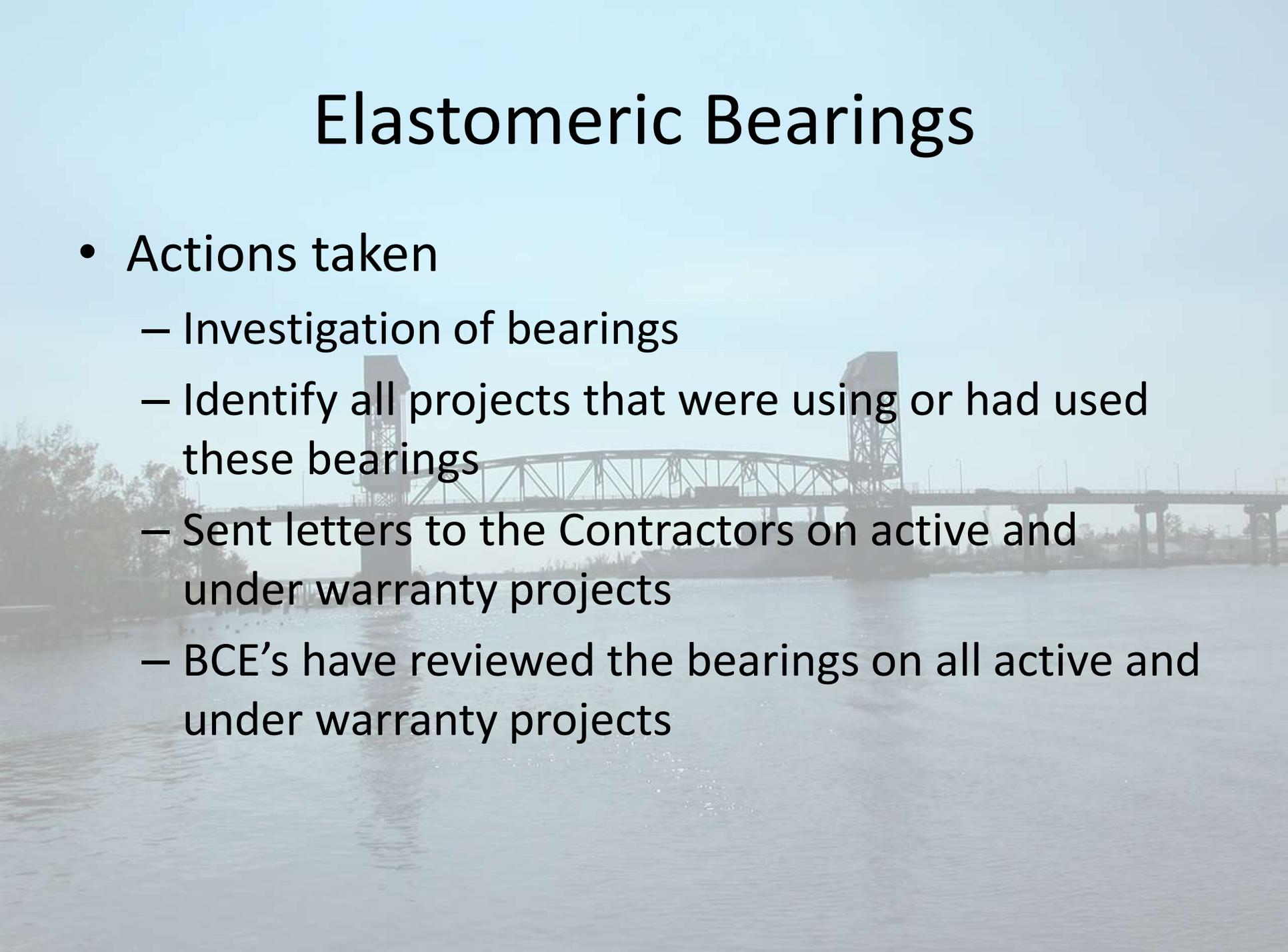
- Delgado Bearings with exposed shim plates



Elastomeric Bearings

- Delgato Bearings removed from the approved list
- National Structural Bearings were noticed to be very similar to Delgato Bearings
- National Structural Bearings were also removed from the approved list

Elastomeric Bearings



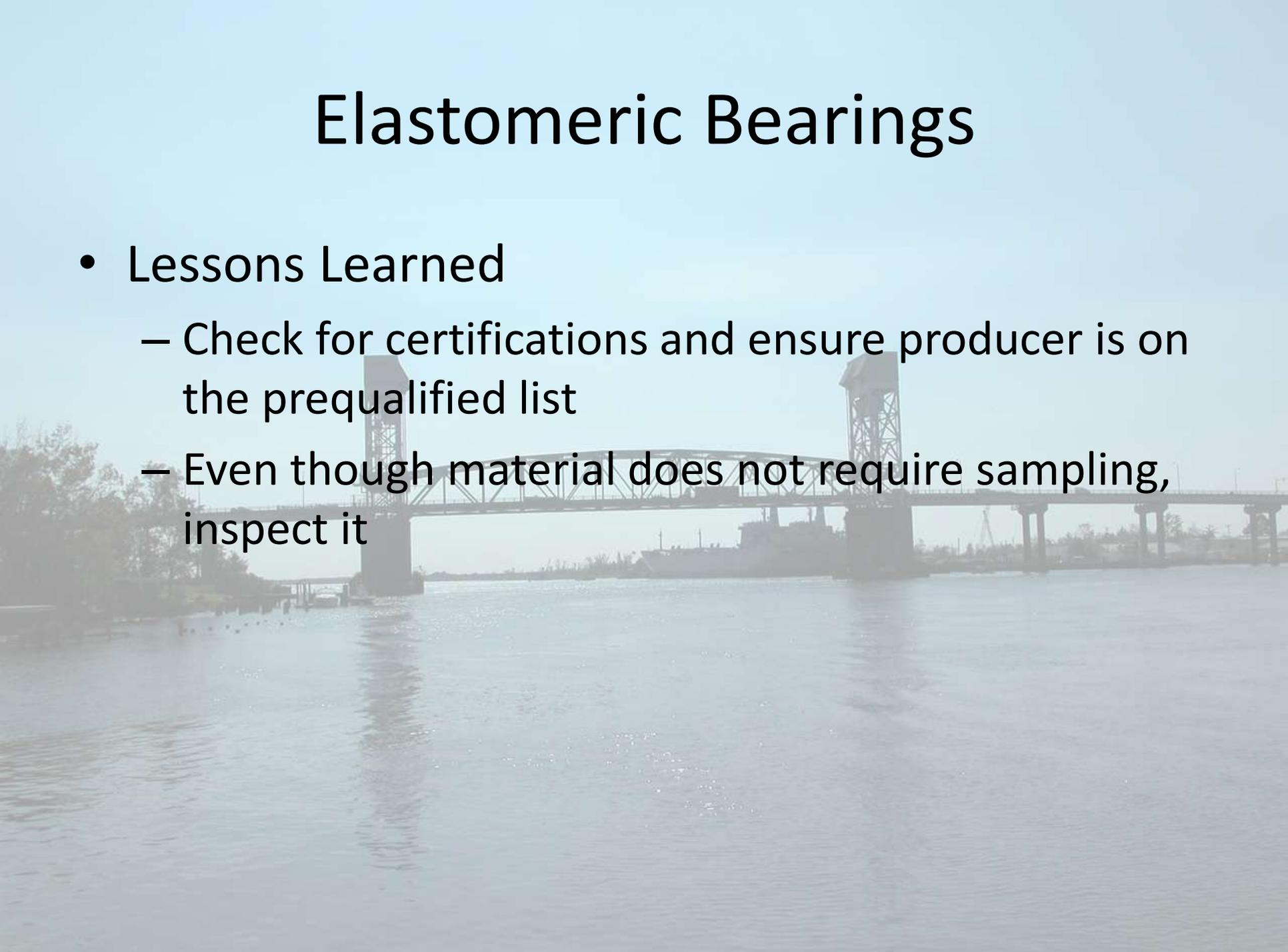
- Actions taken
 - Investigation of bearings
 - Identify all projects that were using or had used these bearings
 - Sent letters to the Contractors on active and under warranty projects
 - BCE's have reviewed the bearings on all active and under warranty projects



Elastomeric Bearings

- Actions taken
 - Inspection reports have been generated for questionable bearings
 - All manufacturers, even those on the current pre-qualified list, must be prequalified by July 1, 2012
 - Must provide a copy of their Quality Control Manual along with required documentation
 - A representative of M & T will visit the production facilities prior to prequalification

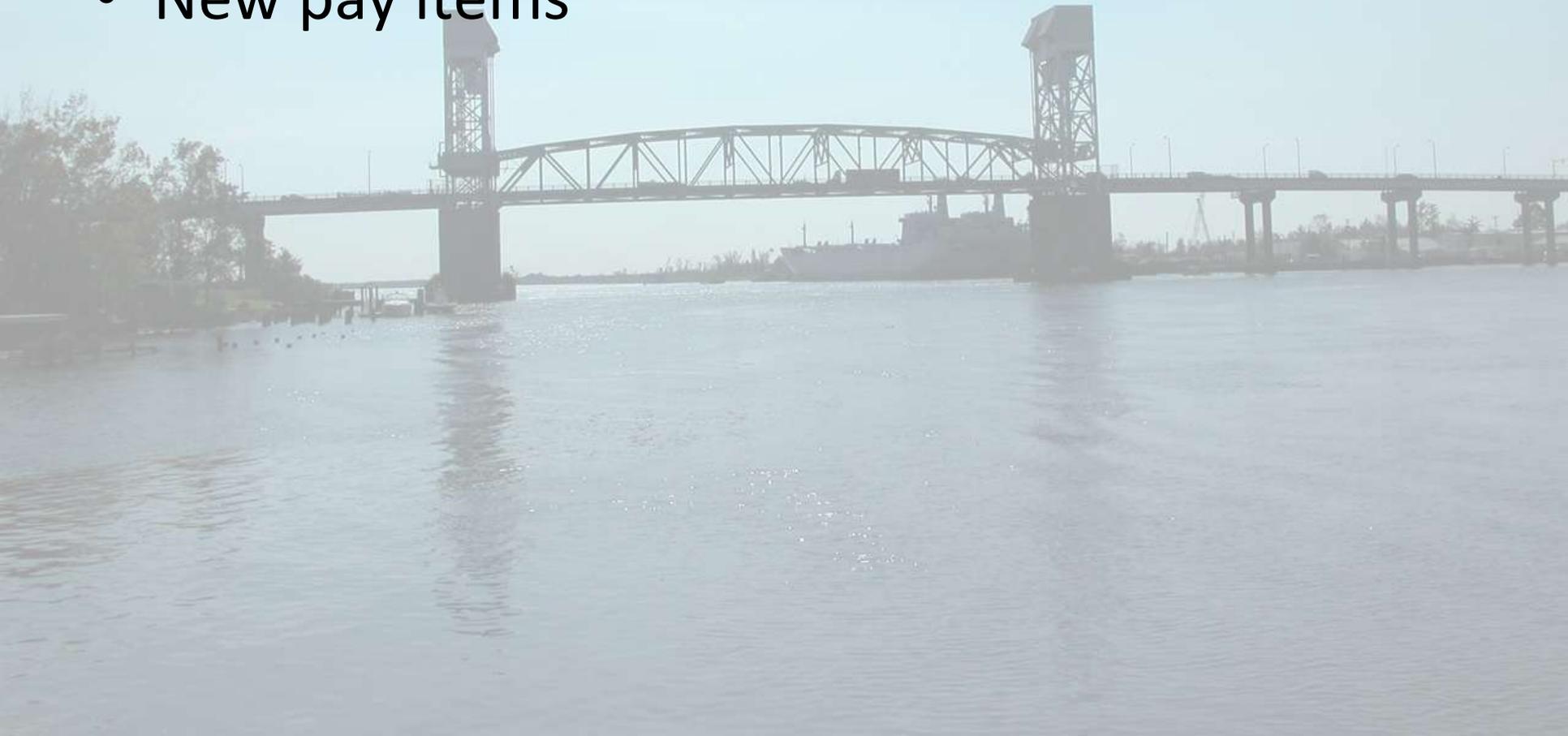
Elastomeric Bearings

A large steel truss bridge spans a wide river. The bridge has two prominent towers supporting the main span. A large ship is visible in the water below the bridge. The background shows a clear sky and some trees on the left bank.

- Lessons Learned
 - Check for certifications and ensure producer is on the prequalified list
 - Even though material does not require sampling, inspect it

MSE WALLS

- Use of fine aggregate for backfill
- New pay items



MSE WALLS

- Effective with the January 2012 letting, the PSP for MSE walls was changed allowing the use of fine aggregate backfill on certain walls
- Fine aggregate can be used on all walls except those walls subject to scour, walls that support or are adjacent to railroads, walls with design heights of greater than 35 ft or have internal acute corners less than 45 degrees

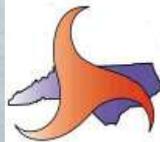


MECHANICALLY STABILIZED EARTH WALL FINE AGGREGATE SAMPLING AND TESTING PROCEDURES



Materials and Tests Unit

January 9, 2012



North Carolina Department of Transportation

MSE Wall Fine Aggregate Sampling and Testing Procedures

- <http://www.ncdot.org/doh/operations/materials/pdf/fasmpmanual.pdf>
- Procedures only apply to fine aggregate. Course aggregate only needs to meet gradation requirements
- Material must come from an approved source covered by QC/QA Program

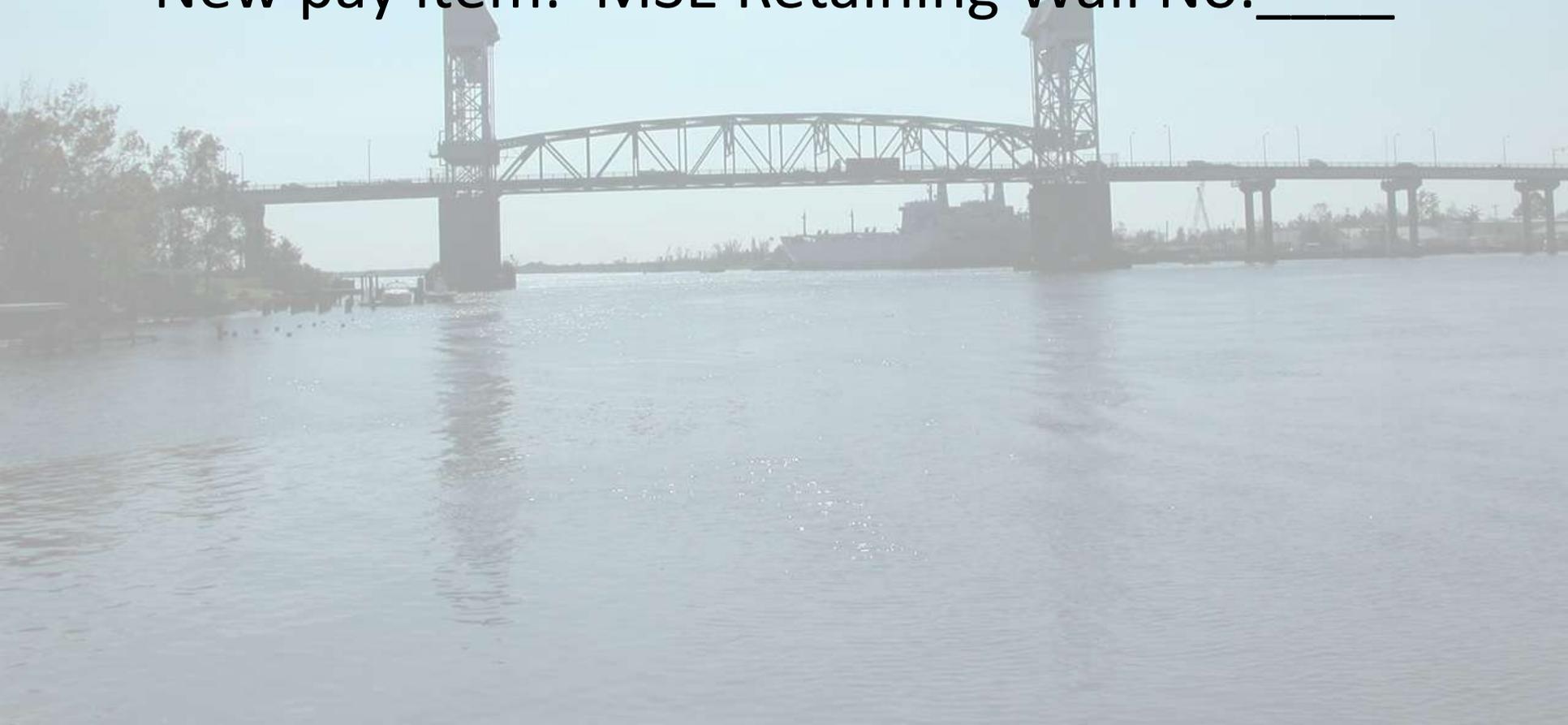
MSE Wall Fine Aggregate Sampling and Testing Procedures

- Contractor must perform testing and supply Type 4 certification for chemical, physical and gradation requirements
- RE to obtain verification samples



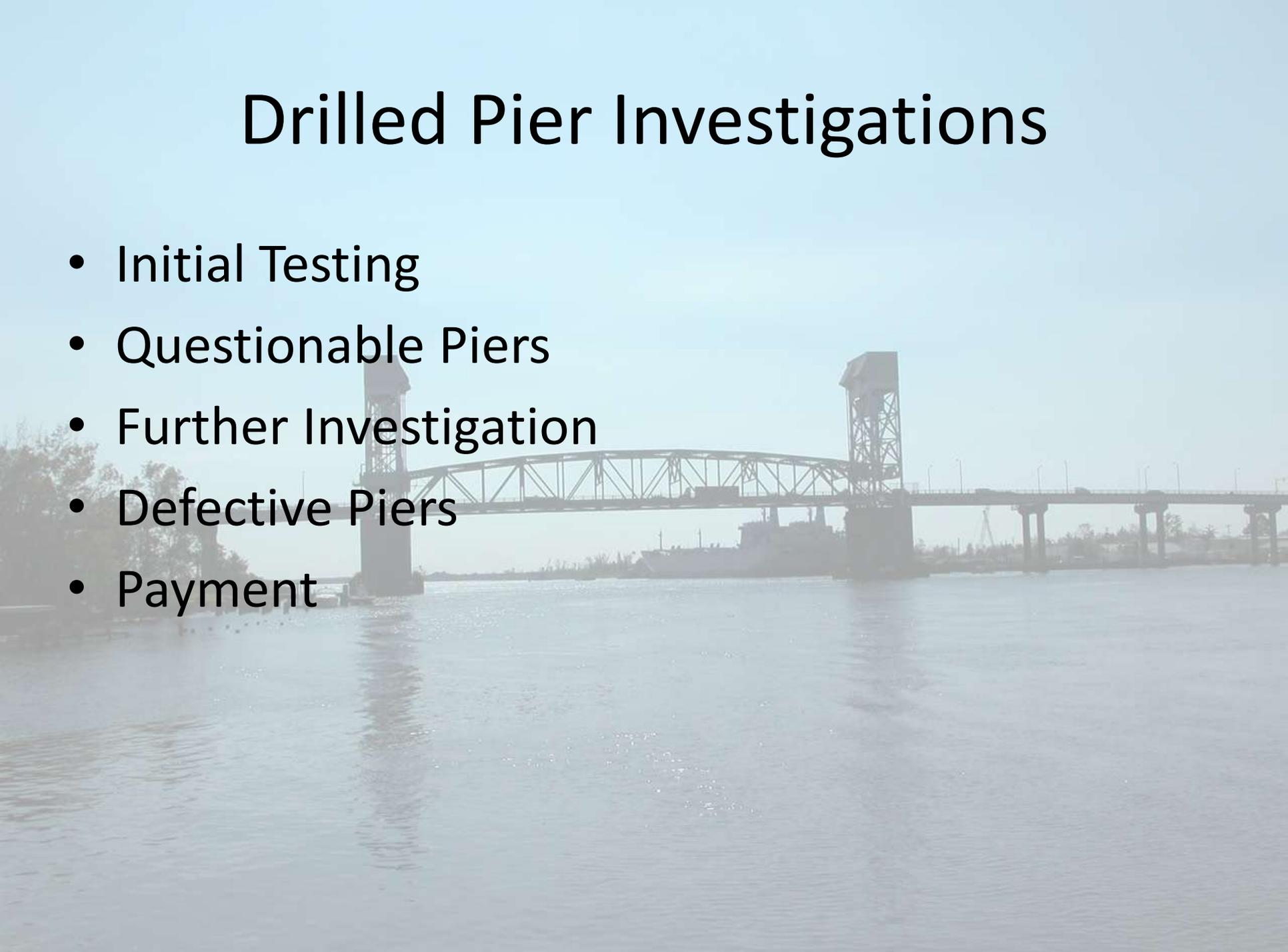
MSE Walls

- Old pay item: MSE Retaining Walls
- New pay item: MSE Retaining Wall No. _____



Drilled Pier Investigations

- Initial Testing
- Questionable Piers
- Further Investigation
- Defective Piers
- Payment



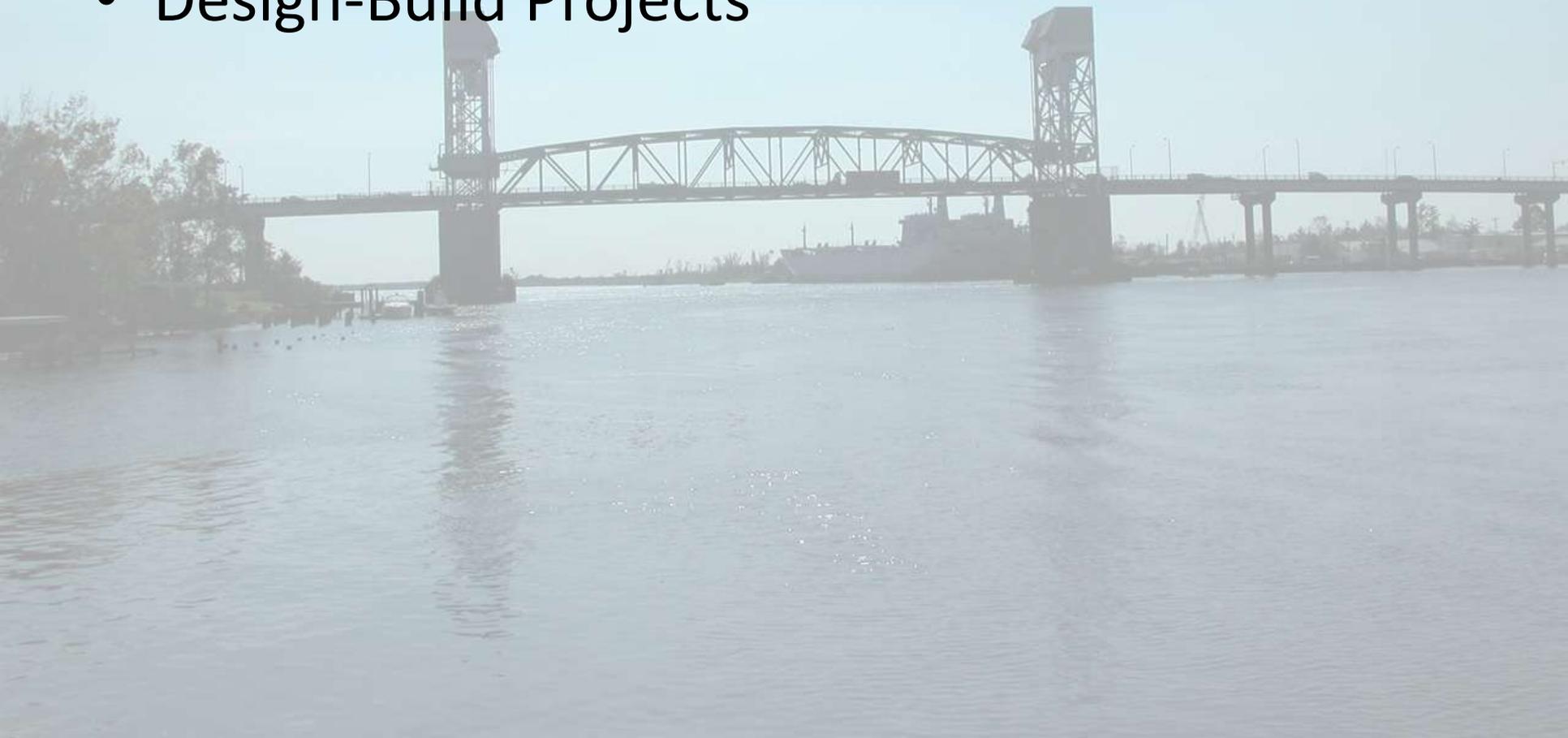
DIVISION LET PROJECTS

The background of the slide is a photograph of a large steel truss bridge spanning a wide river. The bridge has two prominent towers and a long deck. A large ship is visible in the water below the bridge. The sky is overcast and the water is calm.

- Low Strength Concrete
- Acceptance Letters – Deck & Rail and Final
- Progress Monitoring
- Claims
- Final Closeout
- Warranty Reviews

PILE DRIVING

- PDA's and Driving Criteria
- Design-Build Projects



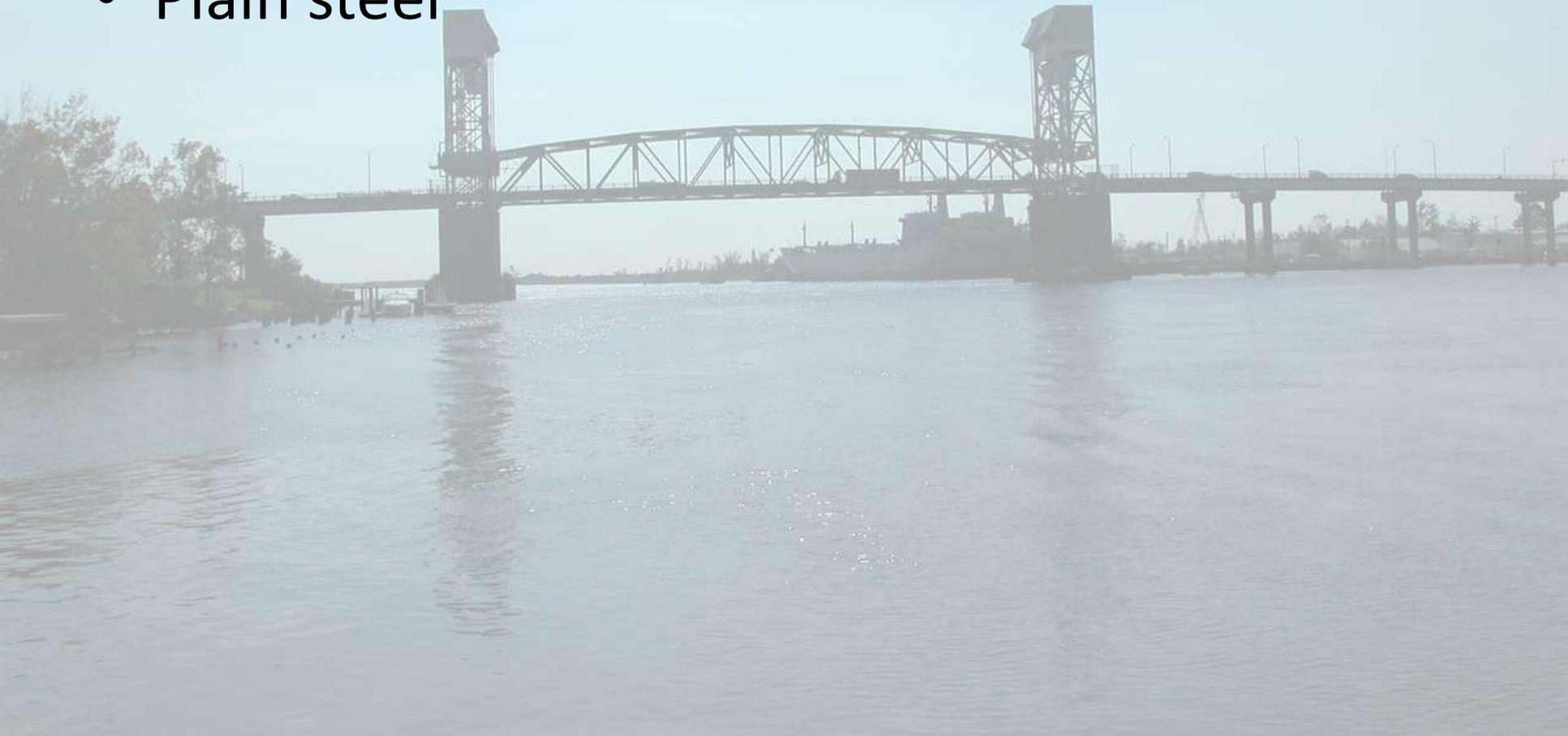
FEMA STREAM REQUIREMENTS

- Certification Blocks



REBAR SAMPLING

- Epoxy coated steel
- Plain steel



QUESTIONS?

