

NJDOT Bridge Preventive Maintenance: Commitment Fulfilled



NEW JERSEY DEPARTMENT OF TRANSPORTATION
GERALD P. OLIVETO, P.E.
ASIM F. ZAMAN, P.E



Outline

New Jersey & NJDOT Overview

Bridge Preventive Maintenance Contract Overview

Statistics of Success of the BPMC program

Back to the Bridges

What's Next

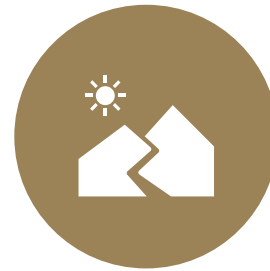
New Jersey, What Exit?



8.9 MILLION PEOPLE IN
8,729 MI²



39,000 MILES OF
PUBLIC ROADWAYS



3,000 MILES OF STATE
AND US HIGHWAYS



500 MILES OF
INTERSTATE HIGHWAYS

New Jersey Bridges Everywhere

6,542 Highway carrying
bridges



2,545 State Maintained
Highway Carrying Bridges

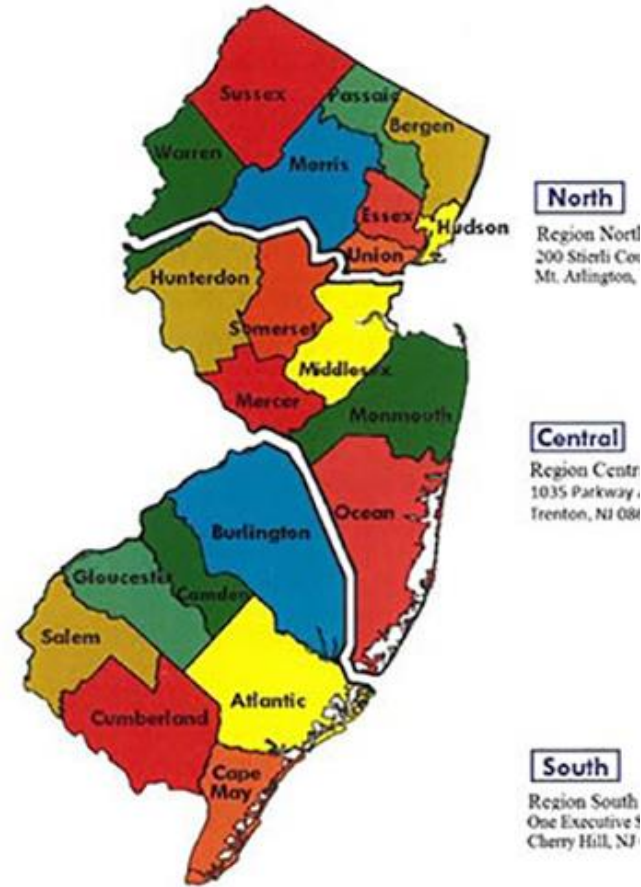


117 Orphan Bridges



17 Operational
Drawbridges

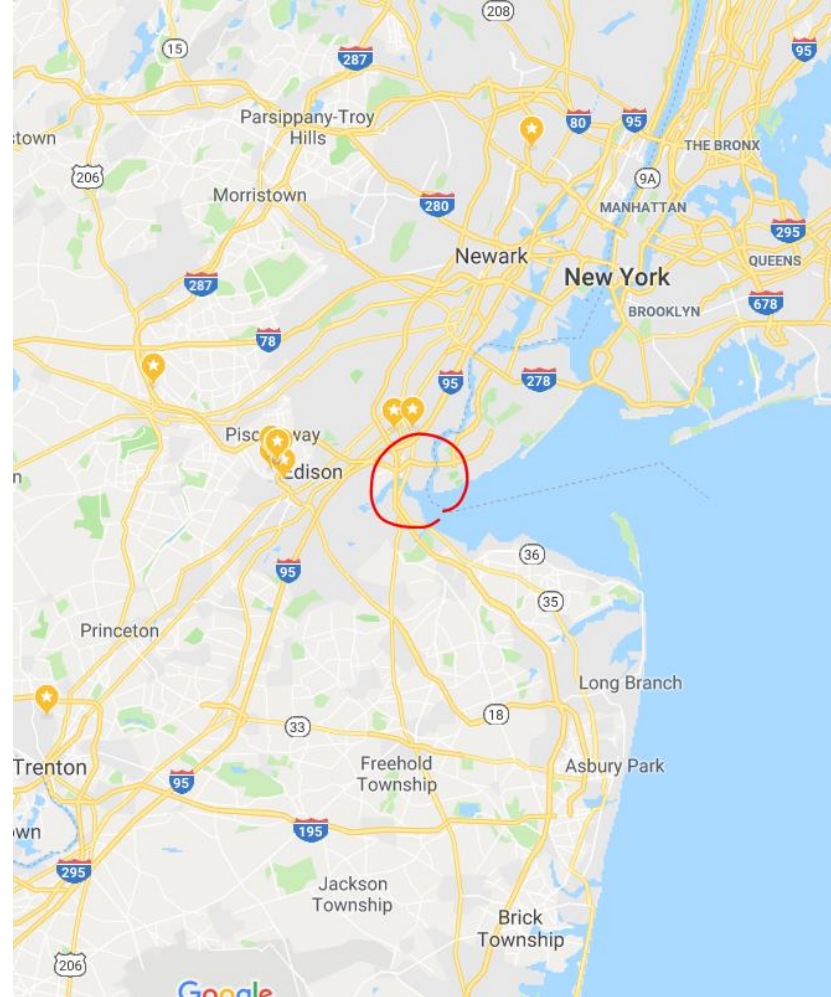




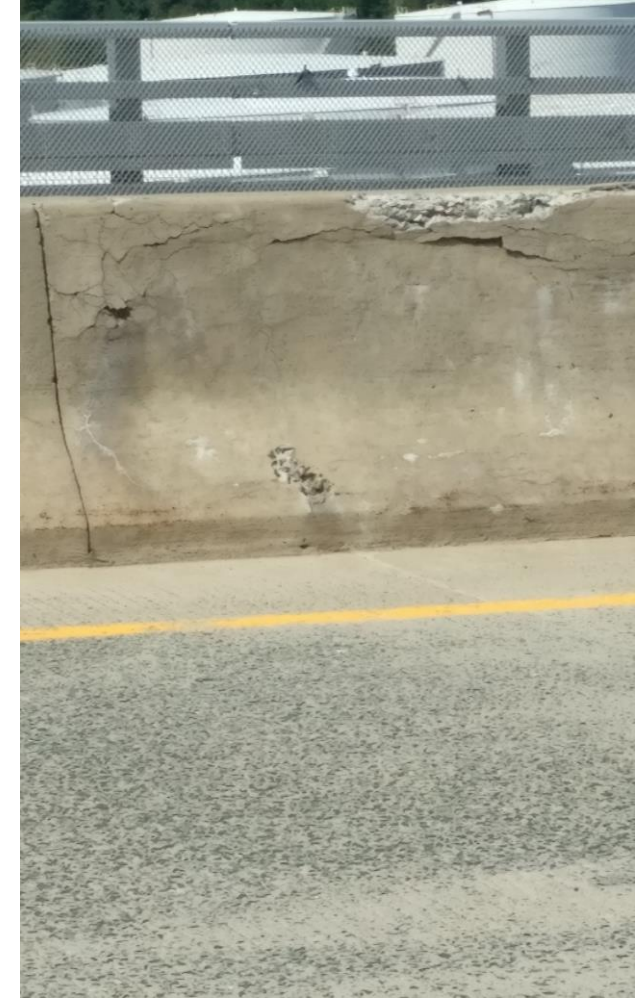
New Jersey Department of Transportation

NJDOT's Preventive Maintenance Program

WHAT DO WE DO?



Rt. 35 Victory Bridge Comparison



Damage, without Preventive Action



Damage, Without Preventive Action

How we select our bridges



Structural Evaluation Bridge Ratings >5



Heat Map of Work Orders



Corridor Completion



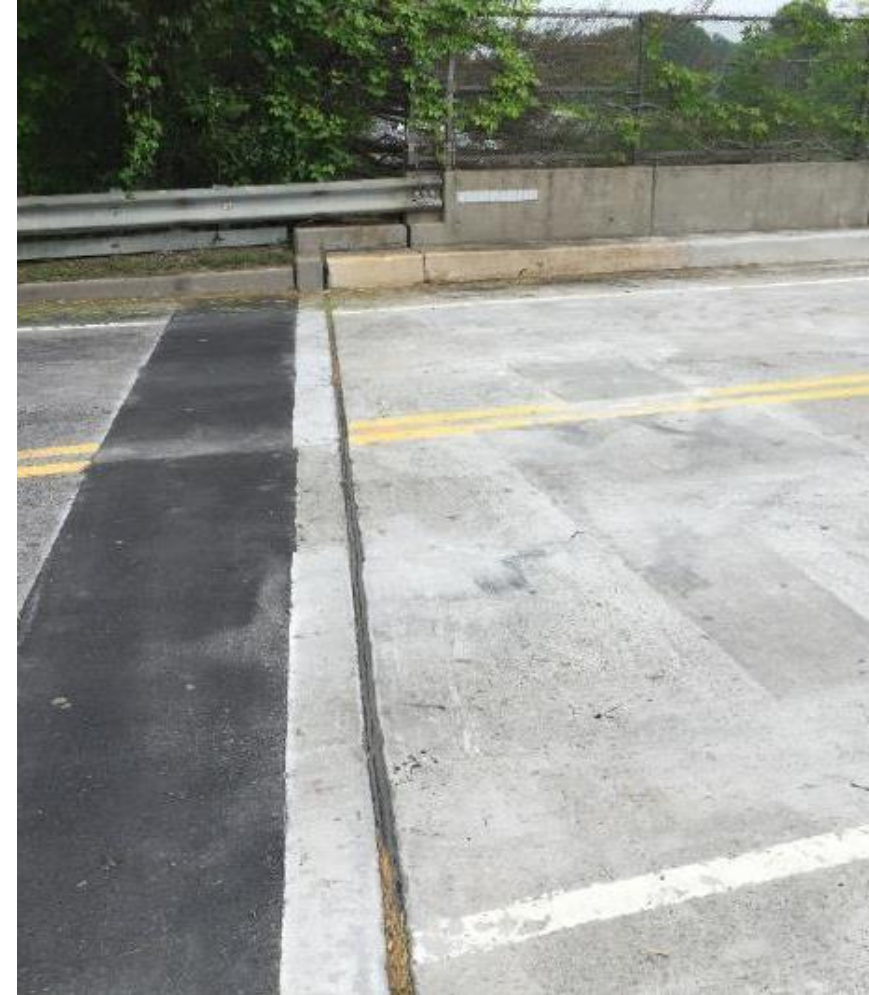
Header Repair



Curb Repair



Deck Repair



Joint Re-Seal



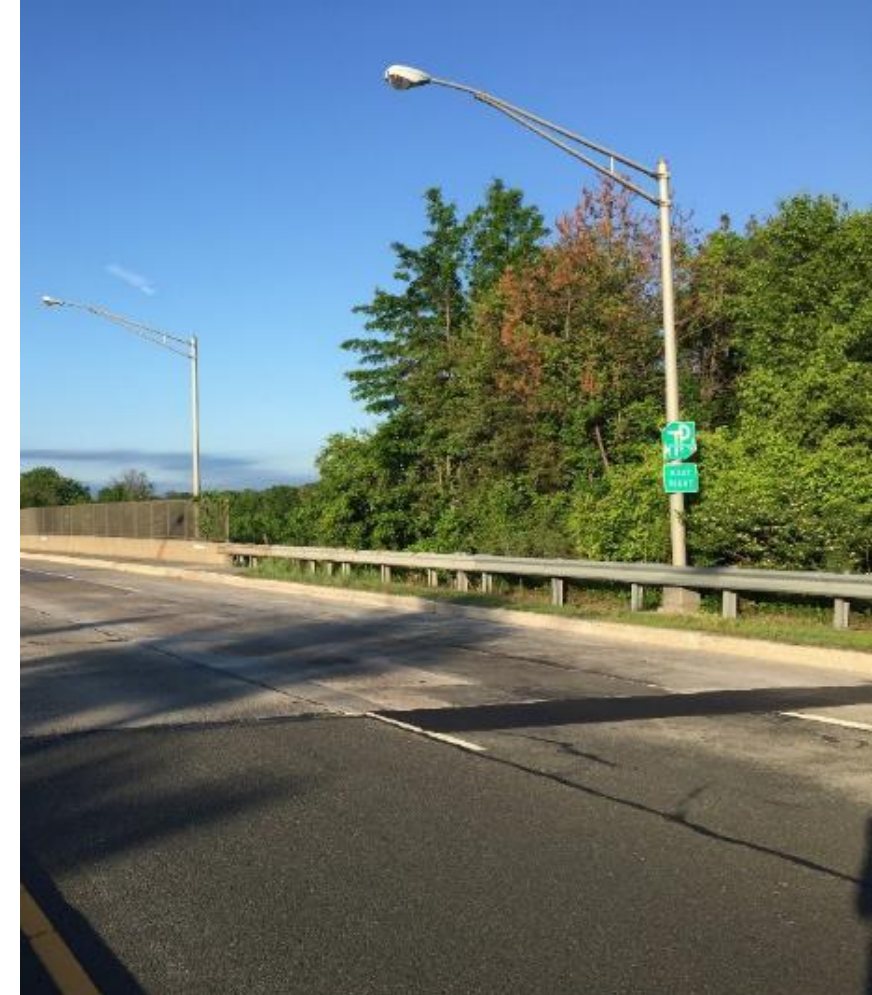
Sidewalk Installation



Deck Crack Sealing



Deck Corrosion Inhibitor



Approach Slab Repairs



Hot Mix Asphalt Patch



Fence Installation



Traffic Line Re-Striping



Installation of Reflective Delineators



Replacement of Structure ID Plates



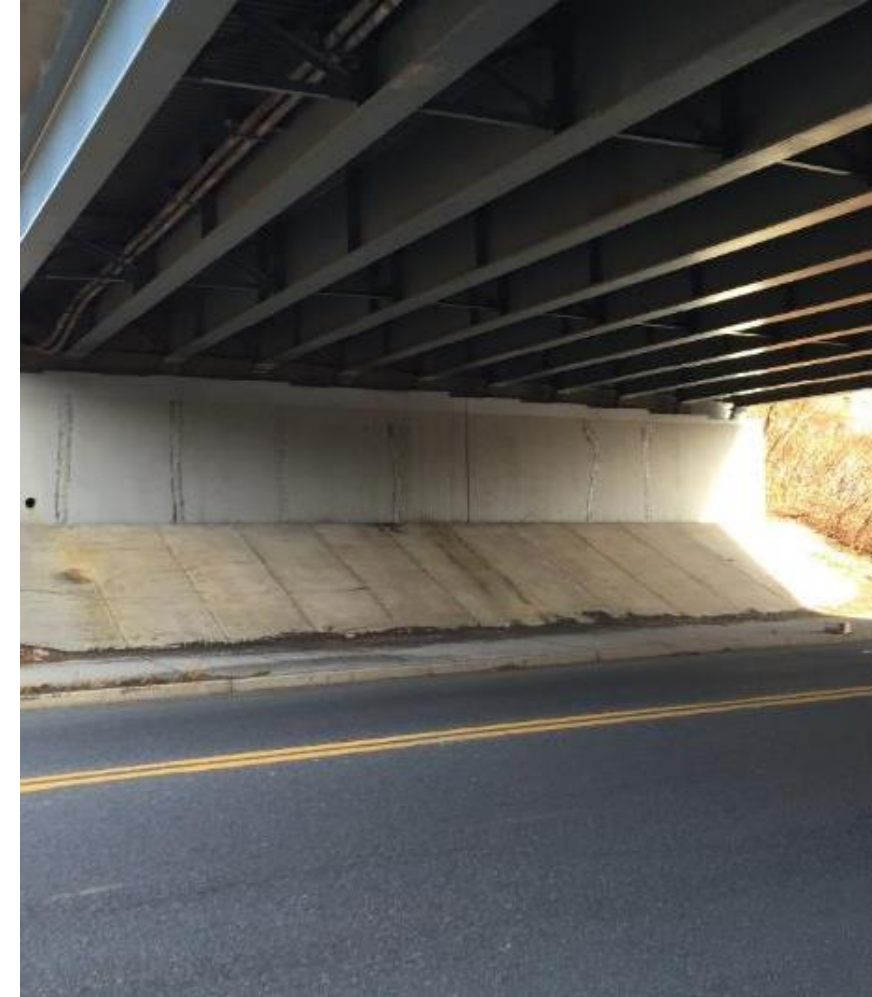
Substructure Concrete Repair



Fiber Reinforced Carbon Wrap



Waterproofing Epoxy



Pressure Injection Substructure Crack Sealing



Bearing Lubrication

By The Numbers

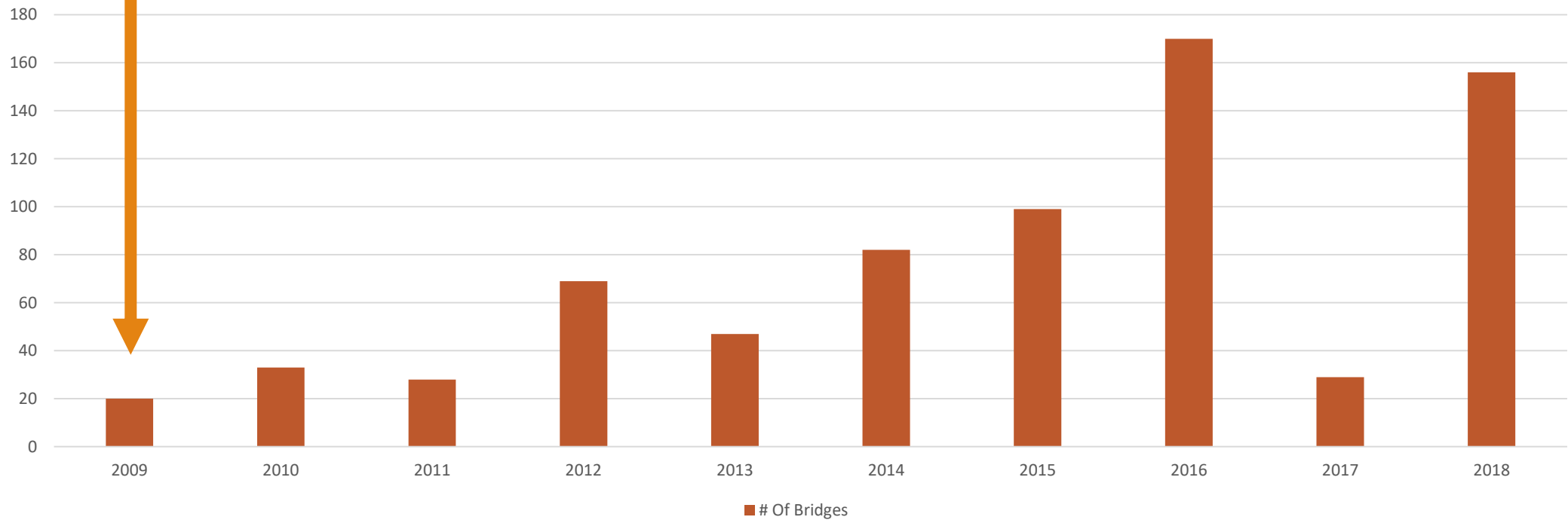
HOW MUCH HAVE WE DONE?

BPMC Program Bridges by Year

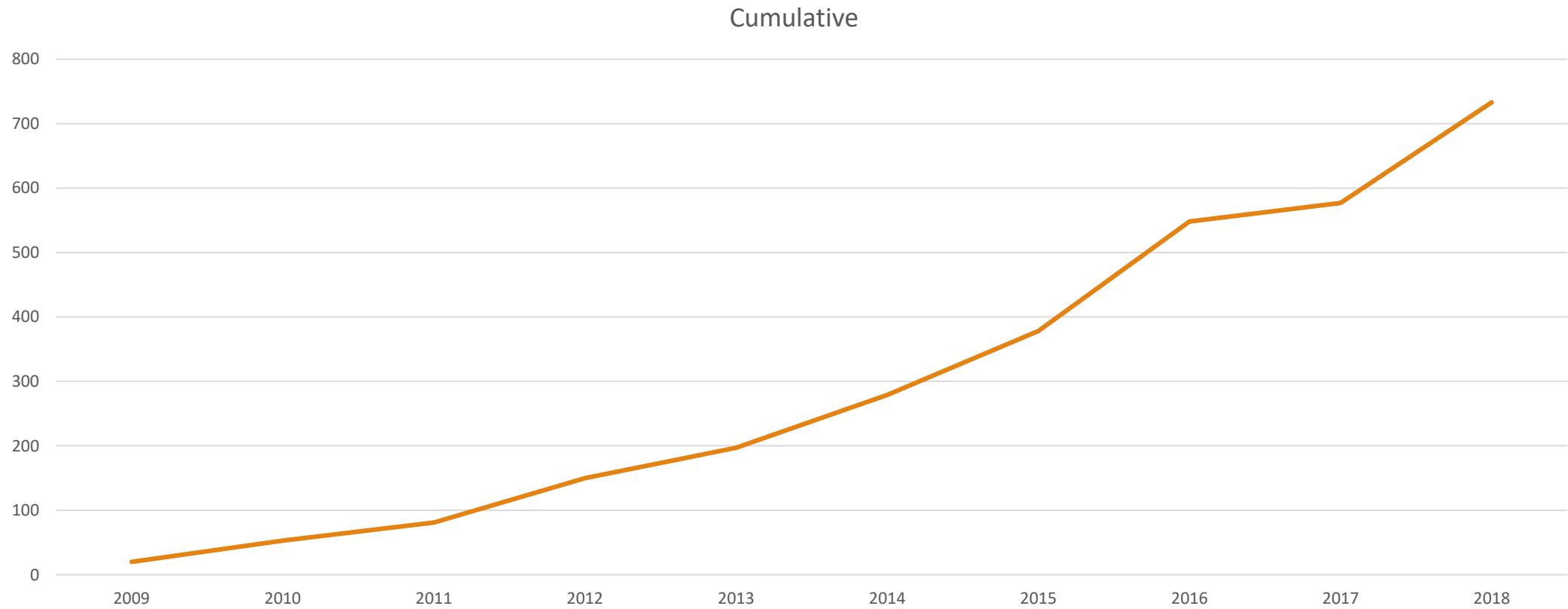
\$3 Million in Programming

Number Of Bridges

\$29 Million in Programming in 2020



Cumulative Bridges Worked On



How do we know it's
working?

NJDOT Work Order System



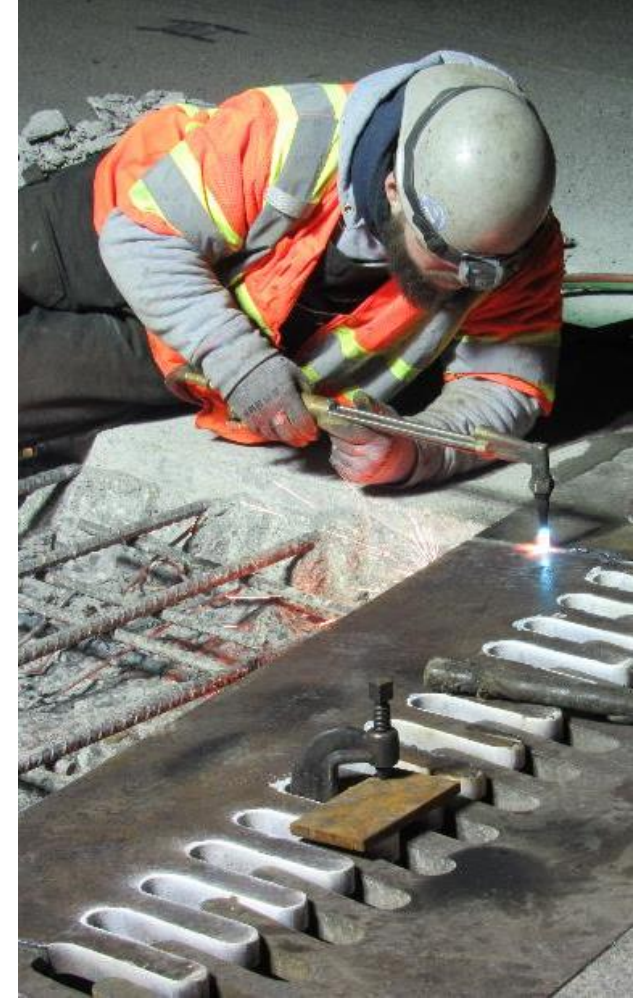
Emergencies **E** – Immediate Repair



Priority 1 **P1** – 30 Days to Repair



Priority 2 **P2** – Repair Required



Type E Emergency Repairs



Priority 1 Repairs – 30 Days



Priority 2 Repairs

Work orders at a manageable level with T&M (if and where directed) contract

Started the system in 2010

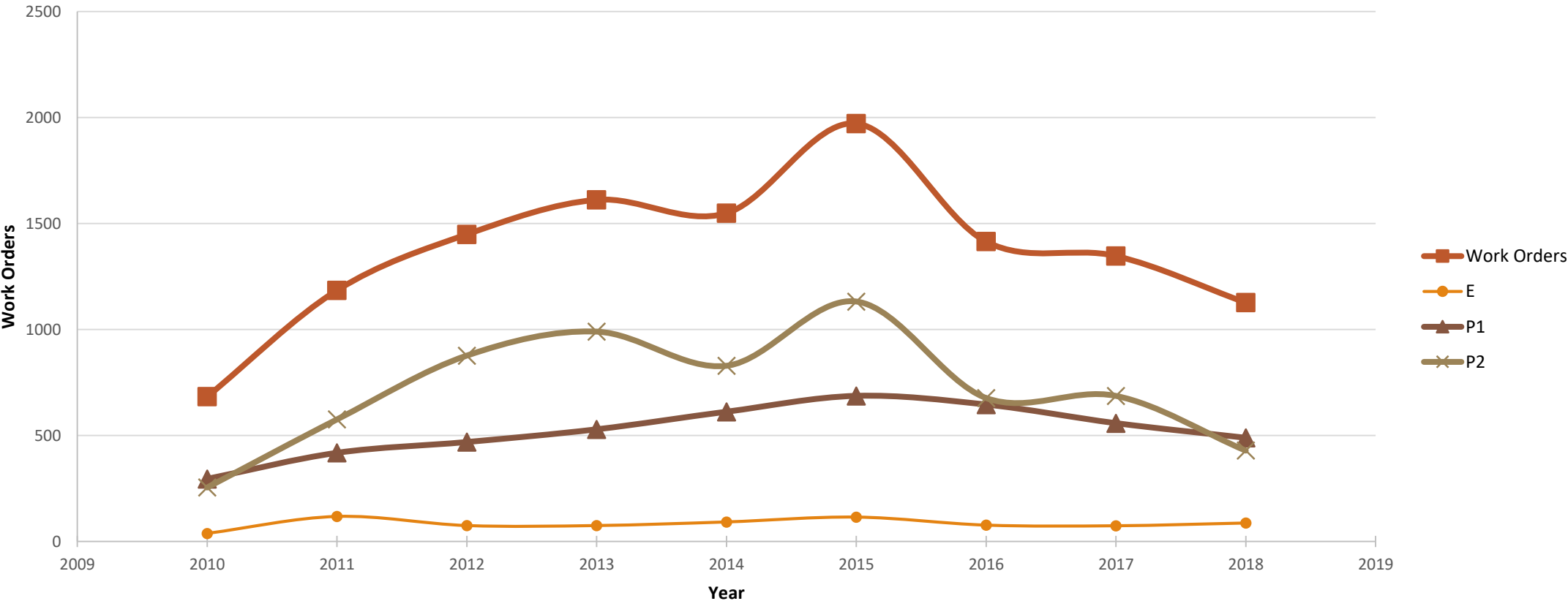
There have been 20,300 work orders

Currently 5,100 open Work Orders

Work Order Status

NJDOT Bridge Work Orders by Year

NJDOT Work Orders by Year & Type



BACK TO THE BRIDGES

WHAT'S NEW?



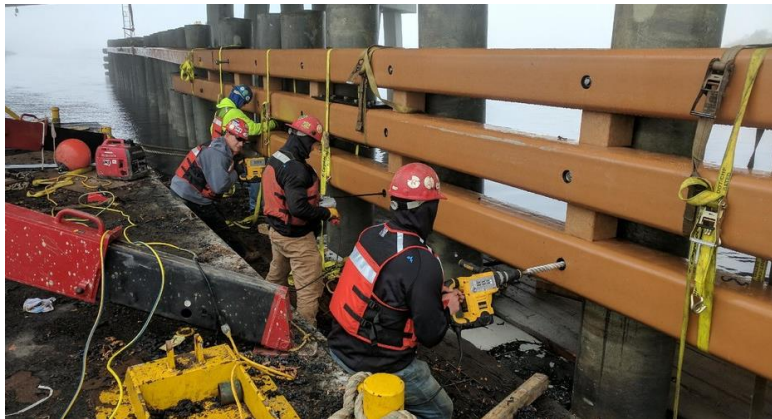
Bolt Degradation

Bimetallic (galvanic) corrosion risks from contact with galvanized steel or aluminum

Route 35 Shark River Bridge in Belmar
New Dover Road over Amtrak



Fiber Reinforced Carbon Wrap



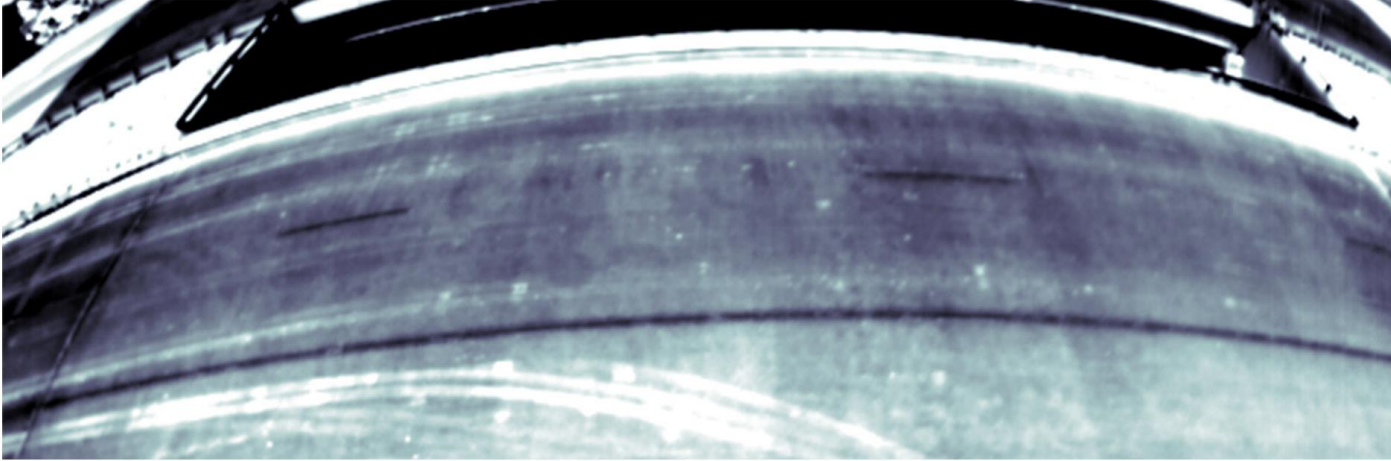
Fender Replacement Contracts

Replacement of Damaged and Degraded Structures

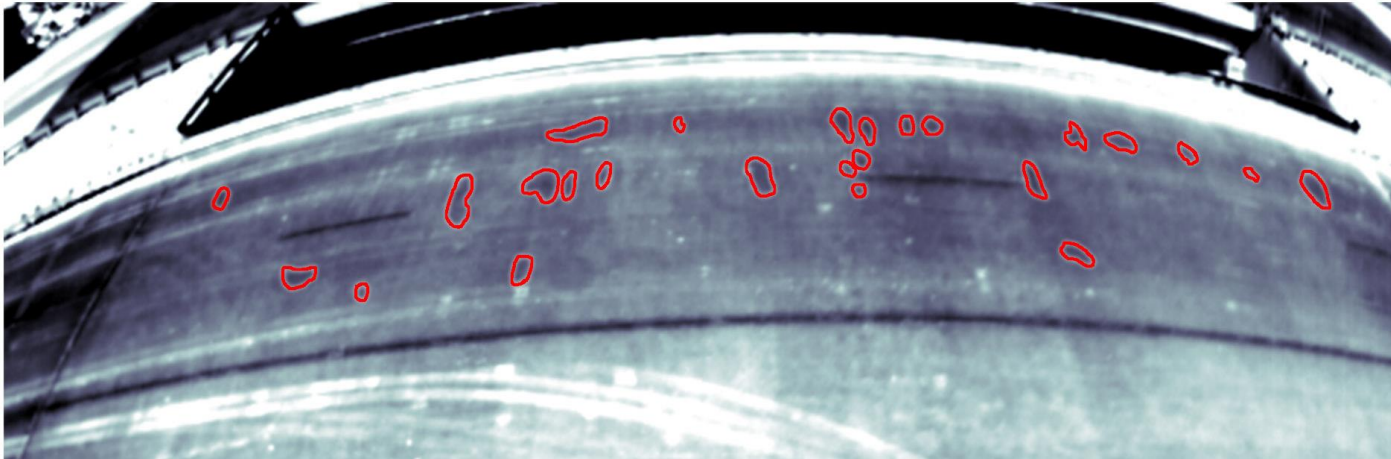
Future Preventive Maintenance



Thermalstare Pilot



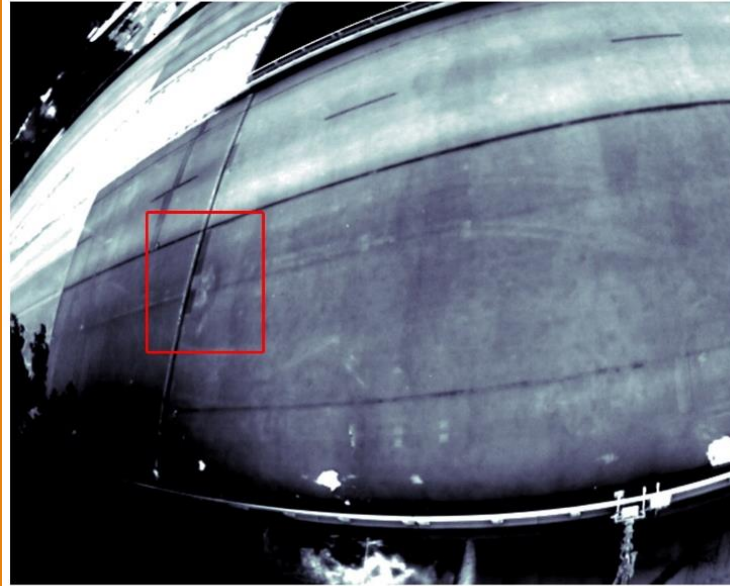
20190905_12_29_50.9



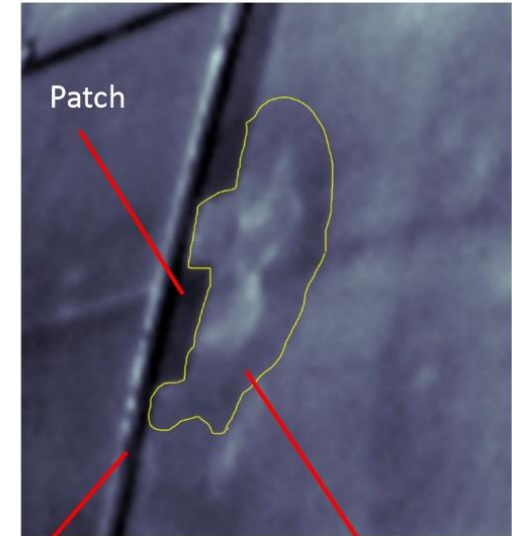
*Rt. 33
over Rt.
79*

Rt. 33 over Rt. 79

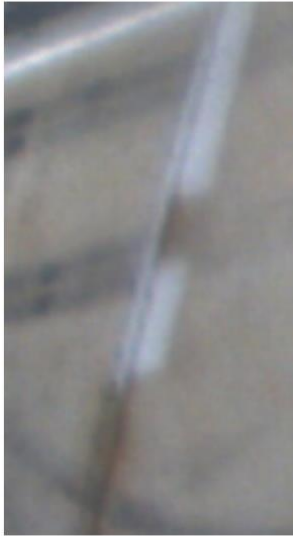
Rt 33 east →



IR-UTD Image

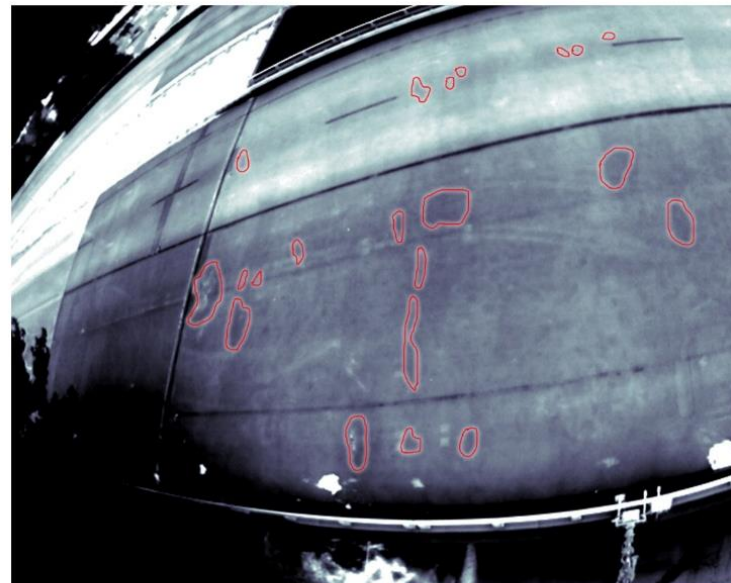


Visual Image



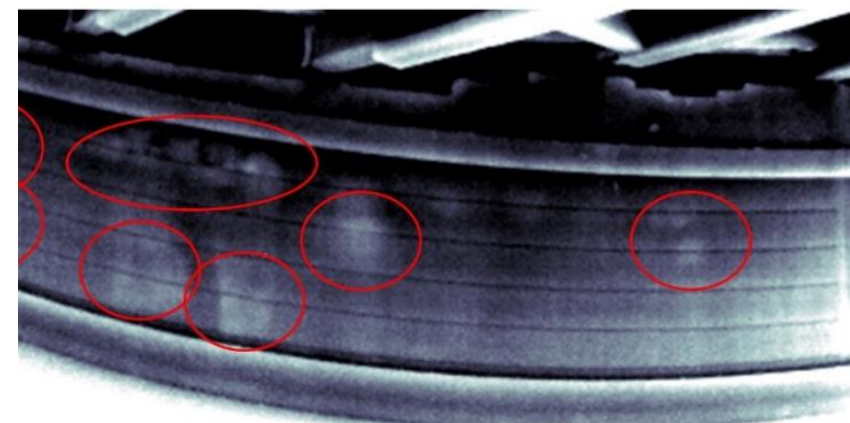
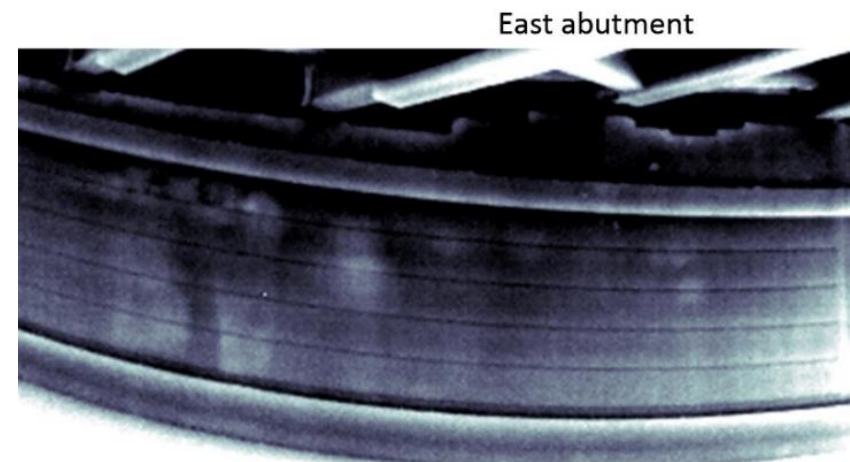
Joint

Defect Indication



IR-UTD



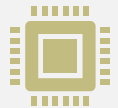


Abutment Wall Imaging

Bridge Management Systems



Asset Management & Coordination with NJDOT Structural Evaluation



AASHTOWARE BrM Playbook



Using Deterioration Modeling to Program BPMC

Signature Bridge Preventive Maintenance Contracts

Named, Multi Span Bridges

Fender System Preventive Maintenance

Bridge Preservation Painting

Long Term Cyclical Treatments – 3 Year Length

Preservation of Navigation Aids See later
presentation



Our Commitment to Communities

All this is possible with...

Close relationship with FHWA

Coast Guard Cooperation

Other State Agencies DEP, SHPO, DRPA, ACE, PANYNJ

Inter agency groups, Structural Evaluation etc.



U.S. Department of Transportation
Federal Highway Administration



Thank You!

Gerald Oliveto, P.E. - Gerald.Oliveto@dot.nj.gov

Asim Frank Zaman – Asim.Zaman@dot.nj.gov