NDT/NDE OF BRIDGE DECKS  LADOTD
Louisiana has approximately 13,000 bridges; 8,000 are State Owned.

Louisiana has 175,000,000 square foot of deck area (3rd most in the Country).

155,000,000 square foot of deck area is State Owned.
LOUISIANA HAS 18 OF THE 20 LONGEST BRIDGES IN THE U.S.

- Lake Ponchartrain Causeway
- 23.83 miles
- Southbound and Northbound
- 47.66 total miles
SOUTHBOUND YEAR BUILT 1956
NORTHBOUND YEAR BUILT 1965
I-55 OVER MANCHAC SWAMP
23.09 MILES
46.18 TOTAL MILES
YEAR BUILT 1975-1979
I-10 OVER THE ATCHAFALAYA BASIN
17.39 MILES
34.78 MILES
YEAR BUILT 1972
I10 OVER LAKE PONCHARTRAIN
5.53 MILES
11.06 TOTAL MILES
YEAR BUILT 2011
I-10 OVER BONNET CARRE SPILLWAY
11.84 MILES
23.68 TOTAL MILES
YEAR BUILT 1972
$153 million Port Fourchon to Leeville Elevated Highway opened in December.

LA 1 LEEVILLE TO PORT FOURCHON
8.18 MILES
YEAR BUILT 2009
I-10 OVER THE MISSISSIPPI RIVER
101300 ADT
35455 ADTT
GPR PERFORMED ON THE I-10 BASIN BRIDGE WESTBOUND AS PART OF THE SHRP2 R06A NDT FOR CONCRETE BRIDGE DECKS
GPR-

DEPT OF
COVER
RESULTS

<table>
<thead>
<tr>
<th>DESCRIPTION</th>
<th>QUANTITY (SQFT)</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>TOTAL AREA</td>
<td>24685</td>
<td></td>
</tr>
<tr>
<td>AREA NOT INSPECTED</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>TOTAL AREA INSPECTED</td>
<td>24685</td>
<td></td>
</tr>
</tbody>
</table>

NOTE: DESIGN DEPTH OF COVER OVER TOP REINFORCING STEEL IS 4.5 INCHES.
GPR DATA COLLECTION VAN
The data was collected over a 4 night period. The van was able to travel at 35-40 mph.

The Baton Rouge and Lafayette District set up mobile lane closures that are used for street sweeping operations.

All lanes and shoulders had a pass for data collection.

Westbound and Eastbound had data collected, due to budget constraints only the Westbound results were analyzed. LADOTD owns the data for the Eastbound.

69.56 lane miles total
LA 1 OVER PORT ALLEN CANAL
BUILT 1960
MAJOR TRUCK ROUTE FOR
PETRO CHEMICAL INDUSTRY
DOTD HAD GPR AND INFRARED PERFORMED ON THIS BRIDGE TO ASSESS THE DECK CONDITION.
INFRARED RESULTS

INFRARED DECK INSPECTION RESULTS

FIELD OBSERVATIONS SUMMARY

<table>
<thead>
<tr>
<th>ITEM</th>
<th>UNIT</th>
<th>QUANT.</th>
<th>%</th>
<th>LEGEND</th>
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</thead>
<tbody>
<tr>
<td>TOTAL AREA</td>
<td>ft²</td>
<td>69124</td>
<td></td>
<td>DELAMINATION</td>
</tr>
<tr>
<td>SHADE/DEBRIS</td>
<td>ft²</td>
<td>0</td>
<td></td>
<td>SPALL</td>
</tr>
<tr>
<td>DELAMINATION</td>
<td>ft²</td>
<td>162</td>
<td>0.2</td>
<td>SCALING</td>
</tr>
<tr>
<td>SPALL</td>
<td>ft²</td>
<td>172</td>
<td>0.2</td>
<td>PATCH-CONCRETE</td>
</tr>
<tr>
<td>SCALING</td>
<td>ft²</td>
<td>582</td>
<td>0.8</td>
<td>PATCH-OTHER</td>
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<tr>
<td>PATCH-CONCRETE</td>
<td>ft²</td>
<td>35</td>
<td>&lt;0.1</td>
<td>JOINT REPAIR AREA</td>
</tr>
<tr>
<td>PATCH-OTHER</td>
<td>ft²</td>
<td>576</td>
<td>0.8</td>
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</table>

LA ROUTE 1 NORTHBOUND
OVER PORT ALLEN CANAL
### GPR Results

#### Depth of Cover Over Top Reinforcing Steel

<table>
<thead>
<tr>
<th>Description</th>
<th>Quantity (sq. ft.)</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Area</td>
<td>69124</td>
<td></td>
</tr>
<tr>
<td>Area Not Inspected</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>Total Area Inspected</td>
<td>69124</td>
<td></td>
</tr>
<tr>
<td>1.0' - 1.5'</td>
<td>3669</td>
<td>5.3</td>
</tr>
<tr>
<td>1.5' - 2.0'</td>
<td>26573</td>
<td>38.4</td>
</tr>
<tr>
<td>2.0' - 2.5'</td>
<td>25055</td>
<td>36.3</td>
</tr>
<tr>
<td>2.5' - 3.0'</td>
<td>1694</td>
<td>24.9</td>
</tr>
<tr>
<td>3.0' - 3.5'</td>
<td>2133</td>
<td>3.1</td>
</tr>
</tbody>
</table>

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**Plan View**

- Ground Penetrating Radar Survey Results
- Depth of Cover Over Top Reinforcing Steel

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**Surface Type:** Concrete - No Overlay
**GPR Survey Dates:** 11/5/15 & 12/4/15
Recently LADOTD has awarded two NDE consultant contracts. The contract scopes focus on NDE of Concrete Bridge Decks and Tunnel Liners (Yes, Louisiana has Tunnels (3)).

Due to the number of miles of bridge deck it is not feasible to inspect these longer bridges using traditional methods. LADOTD will implement a mobile NDE program using consultants to provide condition data to the program managers.

This data will help to plan for deck replacements/partial replacements before visual signs of deck deterioration occurs.

LADOTD awarded projects to repair the decks mainly at joint locations for the 1-10 Basin Bridges and the LA 1 Port Allen Canal Bridges. The data presented to the bridge programing section helped facilitate these preventative maintenance projects.
QUESTIONS?