Monitoring Bridge Foundations on an Active Slide
US 231 near Lacey’s Spring, Morgan County, AL

Robert Thompson, P.E. – Senior Principal Engineer/CFO

• Large landslide occurred on US-231 near Lacey’s Springs in February 2020

- Replaced THIS
- With THIS!!
  (in 7 months!)

• No need for alarm
• Yes – we built a bridge on a land slide
• Yes – we knew the slopes would move again

- The monitoring is working
- ALDOT has an action plan in place

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Instrumentation

How We Did It

Replaced THIS
With THIS!!
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VWP Data
Bent 2

VWP Data
Bent 7

NB Bent 5 Data

Spring/Summer 2021

Displacement profiles: “Snapshots in Time” – 2D rendition of 3D data. Not as easy to make sense of very small displacements.

Sometimes the locations we pick miss it! (Confidence Check)

SI-5 (behind the bulge)
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Observations:

- This remote and wireless stuff is awesome!
- SAAVs and VWPs with wireless data collectors connected to “the cloud” offer the ability for ALDOT to more efficiently monitor multiple sites around the state (including hard to get to sites).
- Resiliency of the instruments: NSA-4 and NP-3 performance at large displacements. Inclinometers unreadable at lower displacement.
- Accuracy of measurements is high.
- Program effectively providing data of conditions for evaluation and making decisions (bridge safety).
- Exciting possibilities of compiling with survey, LIDAR, boring data, etc. (Future use of 3D visualization).
Thanks For Listening!!!

Thanks to ALDOT for calling 2 years ago!

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Today's 5 year olds can watch on laptops and open their favorite apps.

Me? When I was 5, I ate mud.

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