2022 World of Asphalt – Education Sessions

How to Use Intelligent Compaction Effectively

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- Lecture Details
  - *Use of Intelligent Compaction is growing. The emphasis is now on using GPS on rollers to ensure consistent rolling patterns. This session will focus on the background for IC, where and how the systems can be utilized, and what advances are being made in the technology.*
  - *Learn how the IC equipment works and what an operator can expect*
  - *Understand the importance of training personnel.*
  - *Understand where and how a contractor can use IC to achieve good and consistent AC.*
  - *Understand how states are analyzing IC data, what they are learning from the data, and potential impact on pavement life.*
- Ultimate goal is consistency.
- Intelligent Compaction (IC) recommended requirements are:
  - Stiffness value, which varies by manufacturer
  - GPS documentation
  - Color Display
  - Data downloaded to a Veta database
- Some states are wondering whether they should focus on IC for recording number of passes by rollers or by percent coverage of the mat.
- MN, CA, TX – Leaders of IC. Total 33 states involved so far to some capacity.
- There currently is a pooled fund research on deciding Veta information that is important to know when using IC. A total of 13 states have bought in so far.
- International Society of Intelligent Construction (https://www.is-ic.org/)
- State Summary Highlights
  - Training is extremely important
  - Roller coverage based on number of passes is what is sought after most
  - Data Management
    - Download and upload data into Veta
    - What is the data telling us?
      - Can get confusing if we try to collect too much data and understand it all. Start small.
- Additional website for more resources: https://www.intelligentconstruction.com/
- Lessons Learned from Illinois' IC implementation in 2010s
  - Expectations when first implementing were way to high. Tried comparing stiffness to density
  - Learned that getting a first pass coverage sooner is better than a faster coverage.
  - Technology met with resistance from field.
  - Recognized that risk moved to contractors once moving from QC/QA to IC
  - Benefits a less experienced paving crew because it provides more performance spec exposure.
  - Benefits for alerting field when changes in temperature, stiffness, speed occur.
  - Benefits of IC used as a training tool.
  - 90% benefit is with onboard computer
    - Mapping feature
    - Temperature data
  - Biggest changes with use of IC
    - Rolling to the screed with 7 passes in a box has been replaced.

- Every forward pass goes to screed. Rollers only go back to where they need to.

➢ Is it worth it?
- Depends on contractor situation
- IC for us has:
  - Increased pay factors
  - Decreased amount of unacceptable materials
  - Made operators better rollers