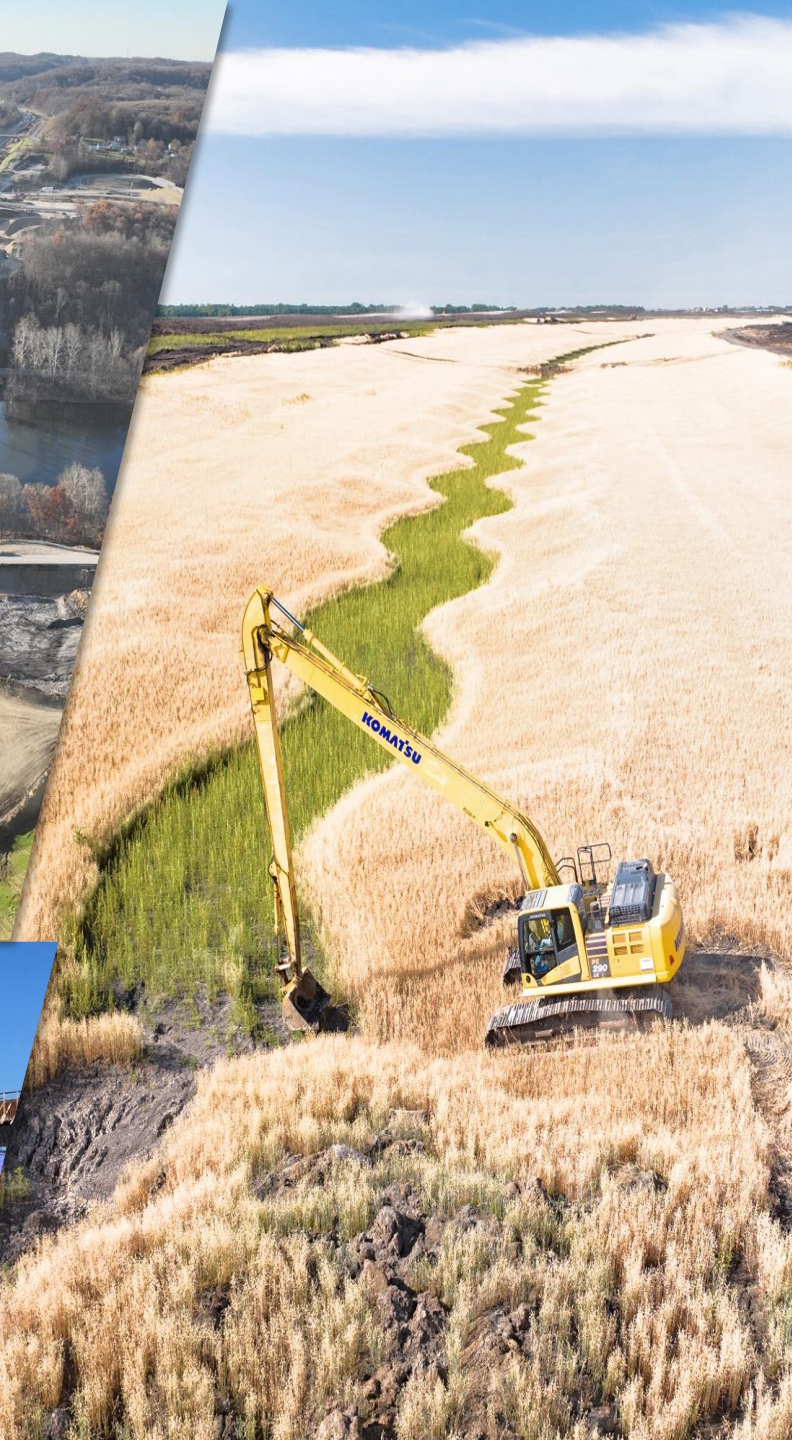
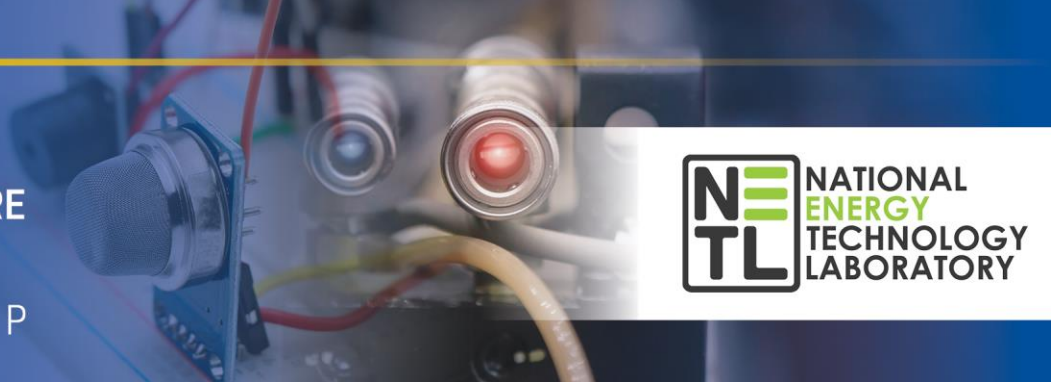




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Carbon impact of materials and Sensing Technologies





Sensing Needs

- Carbon Reduction = Cost Reduction
- Fleets, Fuels, Materials, Means & Methods, Workflow and Operations & Maintenance

Operational Opportunities

- Procurement Design
- Alternative Delivery
- Public Private Partnerships Yield Innovation (P3s)

Collaboration Example

- Infra-lab Partnership



Context Case Study:

Carbon impact of materials

- The United States has committed to reduce net GHG emissions 50-52% below 2005 levels in 2030 and Net Zero by 2050
- **World Green Building Council:** the building sector is 39% of annual global GHG emissions, split into 28% from building operations (i.e., operational carbon) and 11% from materials and construction processes (i.e., embodied carbon).
- ***“Public procurement accounts for 25-40% of the demand for steel and cement, for which emissions must drastically reduce (by more than 90%) by 2050 to reach climate change goals”***
- The new **Federal Buy Clean Task Force** is focused on construction materials and products with the highest embodied carbon concerns—such as steel, cement/concrete, asphalt and flat glass
- Additional incentives and regulations are expected in this specific area, over and above data disclosures and carbon reporting



Sample Technologies

- Vehicle and Equipment Sensing
- Drone Utilization
- Visual Inspection
- Structural Health Data
- Historical Data / Cost Controls
- Multi-Sensor Collaboration and Sharing
- Accessible and Visible Asset Data
- Asset Management Systems
- Standards Compliance



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Thank You



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