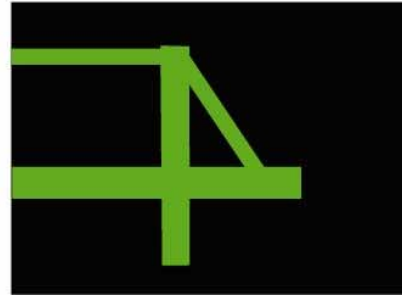
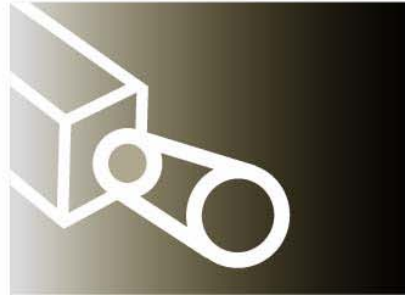
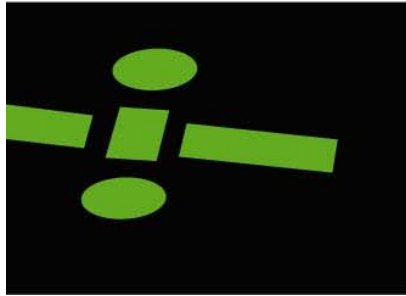


EXPLORATORY ADVANCED **RESEARCH**



Sensors for the Highway Transportation System Today and in the Future

Passive Wireless Sensor Technology Workshop

May 4, 2015



U.S. Department of Transportation
Federal Highway Administration

Outline

- About Highway Transportation
- FHWA EAR Program Investments in Sensor Systems
- Interest in Passive Wireless Sensors for Highways



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Highway Transportation

- Highway Infrastructure
 - Interconnected
 - Open access
 - Legacy elements
- Highway System Management
 - Multiple owners
 - Public & private responsibilities
 - Inspection routines
 - Maintenance routines



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FHWA EAR Program

- Focus on high-risk, high payoff research
- Merit review is used to enhance the quality of research processes and results
- Research stakeholders are involved throughout
- Commitment to successful project handoff



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Focus Areas

Breakthrough concepts in material science

Technology for assessing performance

Human behavior and travel choices

Connected highway system concepts

New technology and advanced policies for energy and resource conservation



Program Status

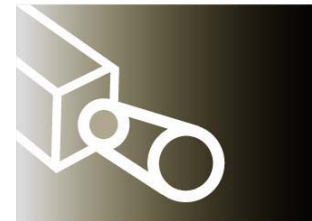
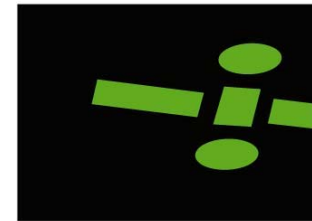
- 200+ Initial stage investigations
- Seven solicitations resulting in
 - 75 projects awarded; 36 ongoing
 - \$72M federal, \$26M match
- 8th closed April 2014
 - Topics: Structures NDE, Safety data, Freight data, Freight modeling
- 9th planned, not scheduled



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Funded Research

- Very Low, Self-Powered Wireless Sensor Systems
 - Steel structures
 - Bridge bearings
 - Pavements
 - Water runoff quality



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Future Systems

- From Asset Management to Resilient Systems
 - Construction, system management
 - Structures, pavements, geotechnical, hydrological, environment elements



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Future Systems

- Highway Safety & Operations
 - Safety hardware
 - Geolocation
 - Infrastructure-vehicle communications



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Thank You

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