



Participant Survey Results

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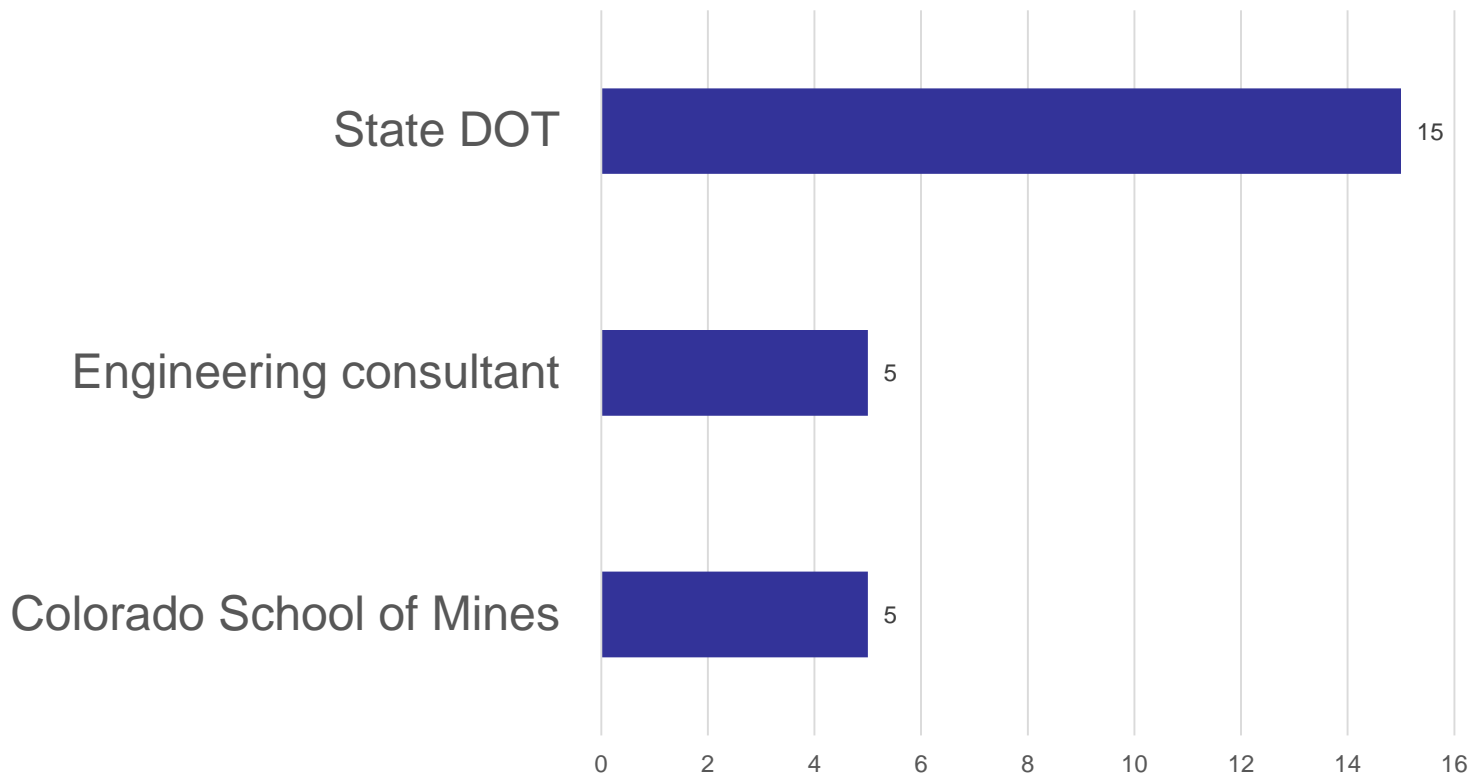


U.S. Department of Transportation
Federal Highway Administration

AMERICAN ASSOCIATION
OF STATE HIGHWAY AND
TRANSPORTATION OFFICIALS

AASHIO

Which organization or agency are you with?



Utilization of NDT

Yes

Arizona

Dye Penetrant, Magnetic Particle, Ultrasonic and Eddy Current

Arkansas

Chain drag, D-meter, UT Device

California

GPR, impact echo, rebar pachometer

Colorado

MT, PT , UT
wall lining
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Kentucky

Magnetic particle testing, dye penetrant, ultra sonic

Minnesota

GPR, IR, UT

New Mexico

Acoustic emission testing, dye penetrant inspection, electromagnetic testing, rebar scanning, and Windsor probe, GPR, ultrasonic testing

Oregon

IR, GPR, Acoustic emission, Gecor 9 corrosion rate meter, impact echo, chain drag, resistograph, etc.

Pennsylvania

GPR, Lidar, Thermal,

Pennsylvania

GPR

Texas

GPR, infrared thermography

Washington

different methods

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GPR, Infrared, ultrasonic, d-meters,

Targets – Methods

Targets for Assessment

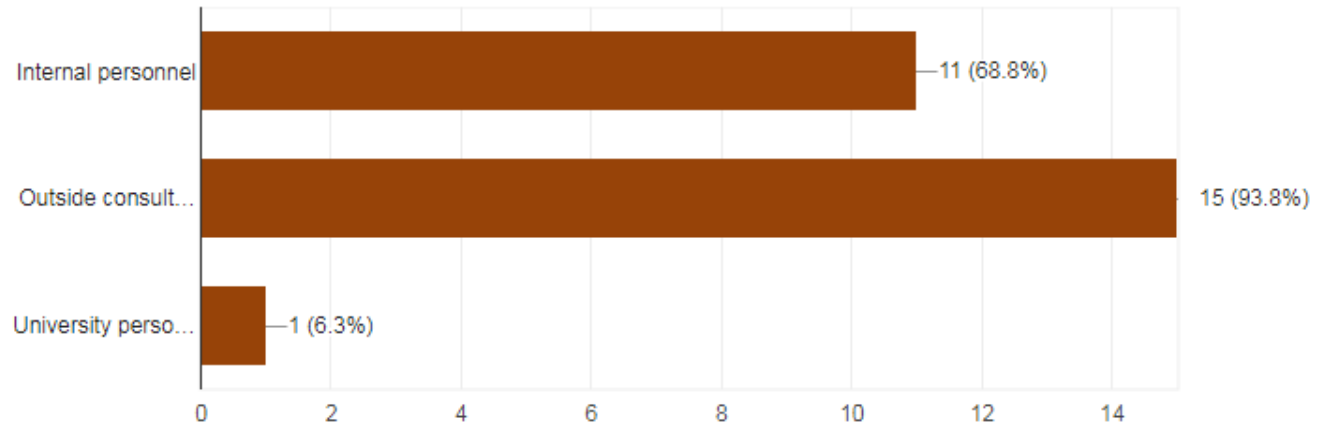
- Concrete decks, substructures, pavement
- Steel structural members
 - Girders, pins
 - Corrosion
 - Fatigue cracking
- Water penetration and leaking
- Scale
- Tunnel linings

Methods in Use

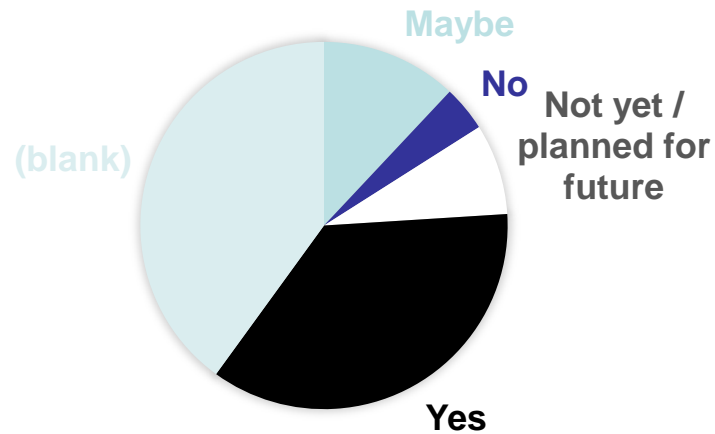
- GPR
- IR
- IE
- Soundings
- Magnetic Particle Testing
- Dye penetration
- Ultrasonic
- Chain dragging
- LIDAR
- Eddy current
- Corrosion meters

Who carries out NDT testing in your state?

16 responses



Did NDT Results feed into repair plans?





Positive Experiences

- Good for quick assessment
- No damage to structure
- Less costly
- Effective to locate structural elements

Negative Experiences

- Time consuming
 - Requires lane closures to work
- Lack of baseline
- Expensive
- Accuracy dependent on inspector's experience level
- Knowledge transfer within organization
- Indicative results, not specific enough
- Time/weather sensitive (particularly IR)
- Results can mismatch by time

Which Aspects of Interest?	
Development of improved NDE technologies	17
Integrating NDE with Asset Management and repair planning	17
Development of benchmark specimens for assessing and validating NDE technology performance	9
Evaluation and documentation of the reliability and cost of various NDE technologies to support application selection, design, and implementation	15
Development of standards and guidelines for the application of NDE to assess highway infrastructure assets	11

Which of the issues/challenges listed below have you faced or do you anticipate might impede the use of NDT in your State?	
Too costly (inclusive of time, access requirements, traffic or service interruptions, personnel, etc.)	9
Uncertainty in how to relate collected NDE data with “real world” repair decisions	11
Lack of clear and effective guidelines regarding NDE technology selection and best practice approaches	9
Lack of trained personnel (both within the state and within the consulting engineering population)	13
Concern over lack of options for competitive bid with some NDE technologies	5
Negative experience with past NDE applications	5
A lot of time required in post-processing data	1
NDT Results can be misleading	1

Which Applications?

Identification and characterization of concrete delamination	19
Identification and characterization of surface braking cracks and voids in concrete	14
Estimation of concrete material properties (modulus, strength, porosity)	8
Measurement of concrete cover	15
Locating and sizing of reinforcement	19
Estimation of chloride penetration within concrete	12
Identification and characterization of corrosion within embedded steel elements	14
Identification and characterization of breakage within embedded steel elements	7
Identification and characterization of corrosion and breakage of external post-tensioning and stay cables	7
Assessment of grouting conditions in post-tensioning ducts	11
Identification and characterization of steel corrosion under protective coatings	10
Detection and characterization of cracks in steel elements	13
Measurement of protective coating thickness	8