

IOWA HIGHWAY RESEARCH BOARD



Research and Development Activities FY 2025



IOWA | DOT

December 2025

Annual Report of the

IOWA HIGHWAY RESEARCH BOARD

RESEARCH AND DEVELOPMENT ACTIVITIES

**FOR THE
FISCAL YEAR ENDING JUNE 30, 2025**

Research and Analytics Bureau
(515) 239-1382
www.iowadot.gov/research
Transportation Development Division
Iowa Department of Transportation
Ames, Iowa 50010

DECEMBER 2025

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**TR-818: Development of
Guidance for Roadway Cross Section
Re-Configuration Decisions**

Research and Development

The Iowa DOT's Research section is dedicated to driving a quality research program that delivers targeted solutions for Iowa's transportation future.

This report, entitled "Iowa Highway Research Board Research and Development Activities FY2025" is submitted in compliance with Sections 310.36 and 312.3A, Code of Iowa, which direct the submission of a report of the Secondary Road Research Fund and the Street Research Fund, respectively. It is a report of the status of research and development projects in progress on June 30, 2025. It is also a report on projects completed during the fiscal year beginning July 1, 2024 and ending June 30, 2025. Detailed information on each of the research and development projects mentioned in this report is available from the Research and Analytics Bureau, Transportation Development Division, Iowa Department of Transportation.

The Iowa Highway Research Board

In developing a progressive, continuing, and coordinated program of research and development, the Iowa DOT is assisted by the Iowa Highway Research Board (IHRB). This is an advisory group established in 1949 by the Iowa State Highway Commission (which later became the Iowa DOT). The IHRB held its first meeting in 1950.

The IHRB consists of 15 regular members: seven Iowa county engineers, four Iowa DOT engineers, one representative from Iowa State University, one from The University of Iowa, and two engineers employed by Iowa municipalities. Each regular member may have an alternate who will serve at the request of the regular member. The regular members and their alternates are appointed for a three-year term. The membership of the Research Board during FY25 is listed in Tables I and II.

The Research Board held several regular meetings during the period from July 1, 2024, through June 30, 2025. Suggestions for research and development were reviewed at these meetings and recommendations were made by the Board. Meeting agenda and minutes can be found at <https://iowadot.gov/research/programs-and-partnerships/iowa-highway-research-board-ihrb/ihrb-meeting-minutes-agendas>

Members of the IHRB are serious about enhancing Iowans' quality of life by providing safe, reliable, and innovative transportation solutions that connect people, businesses, communities, and opportunities. The IHRB's vision is to improve lives through innovative transportation research.



TABLE I

2024 Iowa Highway Research Board

Member	Term Expires	Alternate
James Hauber, P.E., Vice Chair Chief Structural Engineer, Iowa DOT 800 Lincoln Way Ames, IA 50010 (515) 239-1393 james.hauber@iowadot.us	12/31/2024	Michael Nop, P.E. Bridge Project Development Engineer, Iowa DOT 800 Lincoln Way Ames, IA 50010 (515) 239-1233 michael.nop@iowadot.us
Dustin Skogerboe, P.E. Resident Construction Engineer, Iowa DOT 1308 Iowa Avenue West Marshalltown 50158 (641) 752-4657 Dustin.Skoogerboe@iowadot.us	12/31/2024	Ashley Buss, P.E. Pavement Management Leader, Iowa DOT 800 Lincoln Way Ames, IA 50010 (515) 233-7837 Ashley.Buss@iowadot.us
Daniel Harness, P.E. Design Methods Section, Iowa DOT 800 Lincoln Way Ames, IA 50010 (515) 239-1727 Daniel.Harness@iowadot.us	12/31/2025	Allen Karimpour, P.E. District 5 Materials Engineer, Iowa DOT 205 E. 227th Street Fairfield, IA 52556 (641) 469-4040 allen.karimpour@iowadot.us
Jeff De Vries, P.E. Materials Testing Engineer, Iowa DOT 800 Lincoln Way Ames, IA 50010 (515) 239-1237 jeff.devries@iowadot.us	12/31/2026	Jakob Lang, P.E. District 3 Materials Engineer, Iowa DOT 6409 Gordon Drive Sioux City IA 51106 (515) 567-0368 jakob.lang@iowadot.us
Rudy Koester, P.E., Chair Public Works Director, City of Waukee 805 University Avenue Waukee, IA 50263 (515) 978-7388 rkoester@waukee.org	12/31/2026	Matt Cox, P.E. Public Works Director, City of Council Bluffs 209 Pearl Street Council Bluffs, IA 51503-0826 (712) 328-4635 mcox@councilbluffs-ia.gov
Ronald Knoche, P.E. Director of Public Works, Iowa City 410 E. Washington Street Iowa City, IA 52240-1825 (319) 356-5138 rknoche@iowa-city.org	12/31/2024	John Joiner, P.E. Public Works Director, City of Ames 515 Clark Ave Ames, IA (515) 239-5165 john.joiner@cityofames.org
Allen Bradley, P.E. The University of Iowa – Dept. Chair of CEE 4105 Seamans Center Iowa City, IA 52242 (319) 335-6117 allen-bradley@uiowa.edu	—	Paul Hanley The University of Iowa – Dept. of CEE 4105 Seamans Center Iowa City, IA 52242 (319) 335-8137 paul-hanley@uiowa.edu
David Sanders, Ph.D. Iowa State University, Dept. Chair of CCEE 390 Town Engineering Bldg. Ames, IA 50011 (515) 294-8044 sandersd@iastate.edu Member	—	Omar Smadi, Ph.D. Iowa State University, Associate Professor, CCEE 2711 S. Loop Drive, Suite 4700 Ames, Iowa 50010-8664 (515) 294-8103 smadi@iastate.edu

TABLE I

2024 Iowa Highway Research Board (cont'd)

Member	Term Expires	Alternate
<p>Jacob Thorius, P.E. Washington County Engineers Office 210 W Main St., Ste. 2 Washington, IA, 52353-1723 (319) 653-7731 thorius@co.washington.ia.us</p>	TRB Rep	<p>Andrew McGuire Keokuk County Engineer 1301 East Jackson St Sigourney, IA 52591 (641) 622-2610 amcguire@keokukcounty.iowa.gov</p>
<p>Taylor Roll, P.E. Hardin County Engineer 708 16th Street Eldora, IA 50627 (641) 858-5058 troll@hardincountyia.gov</p>	12/31/2026 District 1	<p>Jamie Johl, P.E. Webster County Engineer 703 Central Ave, Suite 3 Fort Dodge, IA 50501-3895 (515) 576-3281 Jamie.Johl@webstercountyia.gov</p>
<p>Adam Clemons, P.E. Wright County Engineer 416 5th Ave SW Clarion, IA 50525-0269 (515) 532-3597 aclemons@wrightco.iowa.gov</p>	12/31/2025 District 2	<p>Brandon Billings, P.E. Cerro Gordo County Engineer 17274 Lark Ave. Mason City, IA 50401 (641) 424-9058 bbillings@cgcounty.org</p>
<p>Bret Wilkinson, P.E. Buena Vista County Engineer 215 East 5th Street /PO Box 368 Storm Lake, IA 50588-0368 (712) 749-2540 bwilkinson@bvcountyiowa.com</p>	12/31/2027 District 3	<p>Joel Sikkema, P.E. Sioux County Engineer 207 Central Ave SE Orange City, IA 51041-0017 (712) 737-2248 joels@siouxcounty.org</p>
<p>Trent Wolken, P.E. Cass County Engineer 5 W 7th St Atlantic, IA 50022 (712) 243-2442 twolken@casscoia.us</p>	12/31/2026 District 4	<p>Jacob Ferro, P.E. Mills County Engineer 305 Railroad Avenue Glenwood, IA 51534-1967 (712) 527-4873 jferro@millscountyiowa.gov</p>
<p>Brad Skinner, P.E. Appanoose County Engineer 1200 HWY 2 West Centerville, IA 52544 (641) 856-6193 bskinner@appanoosecounty.net</p>	12/31/2025 District 5	<p>Dillon Davenport, P.E. Wayne County Engineer 100 North Lafayette, Suite 201 Corydon, IA 50060 (641) 872-2025 ddavenport@waynecountyia.org</p>
<p>Derek Snead, P.E. Jones County Engineer 19501 Highway 64 East Anamosa, IA 52205-0368 (319) 462-3785 engineer@jonescountyiowa.gov</p>	12/31/2024 District 6	<p>Angela Kersten, P.E. Scott County Engineer 950 E. Blackhawk Trail Rd. Eldridge, IA 52748 (563) 326-8640 Angela.Kersten@scottcountyiowa.gov</p>

TABLE II

2025 Iowa Highway Research Board

Member	Term Expires	Alternate
Michael Nop, P.E., Chair Bridge Project Development, Iowa DOT 800 Lincoln Way Ames, IA 50010 (515) 239-1233 Michael.nop@iowadot.us	12/31/2027	James Hauber, P.E. Chief Structural Engineer, Iowa DOT 800 Lincoln Way Ames, IA 50010 (515) 239-1393 james.hauber@iowadot.us
Ashley Buss, P.E. Pavement Management Leader, Iowa DOT 800 Lincoln Way Ames, IA 50010 (515) 233-7837 ashley.buss@iowadot.us	12/31/2027	Bob Younie, P.E. District 5 Engineer, Iowa DOT 205 E 227th St Fairfield, IA 52556 (641) 469-4005 bob.younie@iowadot.us
Daniel Harness, P.E. Design Methods Section , Iowa DOT 800 Lincoln Way Ames, IA 50010 (515) 239-1727 Daniel.Harness@iowadot.us	12/31/2025	Allen Karimpour, P.E. District 5 Materials Engineer, Iowa DOT 205 E. 227th Street Fairfield, IA 52556 (641) 469-4040 allen.karimpour@iowadot.us
Jeff De Vries, P.E. Materials Testing Engineer, Iowa DOT 800 Lincoln Way Ames, IA 50010 (515) 239-1237 jeff.devries@iowadot.us	12/31/2026	Jakob Lang, P.E. District 3 Materials Engineer, Iowa DOT 6409 Gordon Drive Sioux City IA 51106 (515) 567-0368 jakob.lang@iowadot.us
Rudy Koester, P.E., Chair Public Works Director, City of Waukee 805 University Avenue Waukee, IA 50263 (515) 978-7388 rkoester@waukee.org	12/31/2026	Matt Cox, P.E. Public Works Director, City of Council Bluffs 209 Pearl Street Council Bluffs, IA 51503-0826 (712) 328-4635 mcox@councilbluffs-ia.gov
Ronald Knoche, P.E. Director of Public Works, Iowa City 410 E. Washington Street Iowa City, IA 52240-1825 (319) 356-5138 rknoche@iowa-city.org	12/31/2027	Brenna Fall, P.E. Cedar Rapids Public Works Director 500 15th Avenue SW Cedar Rapids, IA 52404 (319) 286-5802 b.fall@cedar-rapids.org
Allen Bradley, P.E. The University of Iowa – Dept. Chair of CEE 4105 Seamans Center Iowa City, IA 52242 (319) 335-6117 allen-bradley@uiowa.edu	—	Paul Hanley The University of Iowa – Dept. of CEE 4105 Seamans Center Iowa City, IA 52242 (319) 335-8137 paul-hanley@uiowa.edu
David Sanders, Ph.D. Iowa State University, Dept. Chair of CCEE 390 Town Engineering Bldg. Ames, IA 50011 (515) 294-8044 sandersd@iastate.edu	—	Omar Smadi, Ph.D. Iowa State University, Associate Professor, CCEE 2711 S. Loop Drive, Suite 4700 Ames, Iowa 50010-8664 (515) 294-8103 smadi@iastate.edu

TABLE II

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Jacob Thorius, P.E., Vice Chair Washington County Engineers Office 210 W Main St., Ste. 2 Washington, IA, 52353-1723 (319) 653-7731 thorius@co.washington.ia.us	TRB Rep	Andrew McGuire Keokuk County Engineer 1301 East Jackson St Sigourney, IA 52591 (641) 622-2610 amcguire@keokukcounty.iowa.gov
Taylor Roll, P.E. Hardin County Engineer 708 16th Street Eldora, IA 50627 (641) 858-5058 troll@hardincountyia.gov	12/31/2026 District 1	Jamie Johl, P.E. Webster County Engineer 703 Central Ave, Suite 3 Fort Dodge, IA 50501-3895 (515) 576-3281 Jamie.Johl@webstercountyia.gov
Adam Clemons, P.E. Wright County Engineer 416 5th Ave SW Clarion, IA 50525-0269 (515) 532-3597 aclemons@wrightco.iowa.gov	12/31/2025 District 2	Brandon Billings, P.E. Cerro Gordo County Engineer 17274 Lark Ave. Mason City, IA 50401 (641) 424-9058 bbillings@cgcounty.org
Bret Wilkinson, P.E. Buena Vista County Engineer 215 East 5th Street /PO Box 368 Storm Lake, IA 50588-0368 (712) 749-2540 bwilkinson@bvcountyiowa.com	12/31/2027 District 3	Joel Sikkema, P.E. Sioux County Engineer 207 Central Ave SE Orange City, IA 51041-0017 (712) 737-2248 joels@siouxcounty.org
Trent Wolken, P.E. Cass County Engineer 5 W 7th St Atlantic, IA 50022 (712) 243-2442 twolken@casscoia.us	12/31/2026 District 4	Jacob Ferro, P.E. Mills County Engineer 305 Railroad Avenue Glenwood, IA 51534-1967 (712) 527-4873 jferro@millscountyiowa.gov
Brad Skinner, P.E. Appanoose County Engineer 1200 HWY 2 West Centerville, IA 52544 (641) 856-6193 bskinner@appanoosecounty.net	12/31/2025 District 5	Dillon Davenport, P.E. Wayne County Engineer 100 North Lafayette, Suite 201 Corydon, IA 50060 (641) 872-2025 ddavenport@waynecountyia.org
Angela Kersten, P.E. Scott County Engineer 950 E. Blackhawk Trail Rd. Eldridge, IA 52748 (563) 326-8640 Angela.Kersten@scottcountyiowa.gov	12/31/2027 District 6	Todd Kinney, P.E. Clinton County Engineer 1900 N 3rd Street Clinton, IA 52733-2957 (563) 244-0564 tkinney@clintoncounty-ia.gov

Research and Development Projects

Proposals for research, development, innovation, implementation, and engineering studies are reviewed by the Iowa Highway Research Board. Expenditure of funds are then authorized on an individual project basis.

These expenditures may be charged to the Primary Road Research Fund, Secondary Road Research Fund or the Street Research Fund, or a combination and the costs are shared.

Table III is a record of expenditures for IHRB Projects made during the fiscal year ending June 30, 2025. Total expenditure was \$4,461,211.97.

TABLE III Financial Summary of Research and Development Project Expenditures

Project #	Project Title	Primary Road Research Fund Expenditures	Secondary Road Research Fund Expenditures	Street Research Fund Expenditures	Total Expenditures
HR-140Q	Collection and Analysis of Streamflow Data	\$176,785.00	\$173,819.99		\$350,604.99
HR-1027	Iowa Secondary Road Research Support		\$172,924.47		\$172,924.47
LTAP 2024	LTAP 2024	\$80,725.47	\$58,979.18	\$11,795.85	\$151,500.50
LTAP 2025	LTAP 2025		\$41,927.64	\$8,385.52	\$50,313.16
TR-712	Evaluate, Modify and Adapt the Concrete Works Software for Iowa's Use		\$3,601.47	\$24,420.14	\$28,021.61
TR-745	Development of Operations Management System for Iowa		\$31,601.27		\$31,601.27
TR-766	Evaluation of Galvanized and Painted - Galvanized Steel Piling		\$323.23		\$323.23
TR-771	Performance Evaluation of Very Early Strength Latex Modified Concrete - Phase III		\$4,816.16		\$4,816.16
TR-772	Performance Evaluation of Polyester Polymer Concrete Overlays Continuation - Phase II		\$38,041.00		\$38,041.00
TR-781	Development of Approaches to Quantify Superloads and Their Impacts on the Iowa Road Infrastructure System			\$14,737.98	\$14,737.98
TR-783	Improving the Performance of Granular Roadways with Organosilanes		\$13,232.32	\$20,069.08	\$33,301.40
TR-784	Iowa's Pavement Preservation Guide	\$51,112.80	\$53,738.33		\$104,851.13
TR-789	Accelerated Bridge Construction (ABC) Methodology for Integral Abutments		\$43,055.68		\$43,055.68
TR-791	Bridges Designed for Minimum Maintenance		\$167,000.00		\$167,000.00
TR-792	Assessing the Flood Reduction Benefits of On-Road Structures		\$19,892.20		\$19,892.20
TR-794	Iowa Public Works Service Bureau Phase II	\$117,124.45			\$117,124.45
TR-796	Iowa Granular Road Structural Design Tool		\$33,146.73		\$33,146.73
TR-797	Feasibility of Granular Road and Shoulder Recycling Phase II		\$85,923.29	\$16,674.78	\$102,598.07
TR-799	Base Stabilization of Iowa Granular Roads Using Recycled Plastics	\$1.00	\$114,871.33	\$22,917.33	\$137,789.66

TABLE III

Financial Summary of Research and Development Project Expenditures (cont'd)

Project #	Project Title	Primary Road Research Fund Expenditures	Secondary Road Research Fund Expenditures	Street Research Fund Expenditures	Total Expenditures
TR-802	Beam End Repair for Prestressed Concrete Beams – Phase II	\$14,608.29	\$17,593.39		\$32,201.68
TR-803	Accelerated Bridge Construction (ABC) Methodology for Integral Abutments	\$35,221.99			\$35,221.99
TR-805	Design of Self-Cleaning Solutions for Mitigating Sedimentation at Twin and Single Box Culverts	\$91,291.75			\$91,291.75
TR-806	Ultra High-Performance Concrete Repair of Steel Bridge Girder Ends	\$24,121.47			\$24,121.47
TR-807	Beneficial Use of Iowa Waste Ashes in Concrete through Carbon Sequestration		\$14,143.47	\$5,599.08	\$19,742.55
TR-808	A Sustainable Air-entraining and Internal Curing Agent	\$10,334.13	\$30,000.00	\$5,802.69	\$46,136.82
TR-809	Introducing Smart Materials in Granular Roadway and Pavement Foundation Systems for Mitigating Freeze-Thaw Damage	\$25,118.13			\$25,118.13
TR-810	Use of Iowa Eggshell Waste as Bio-Cement Materials in Pavement and Gravel Road Geo-Material Stabilization		\$6,961.88		\$6,961.88
TR-813	An Economical and Sustainable Dust Suppressant for Gravel Roads	\$819.00			\$819.00
TR-814	Concentration Preserving Deicing Solutions for Higher Ice Melting	\$26,584.68	\$3,728.03		\$30,312.71
TR-815	Advancing the Design of Flexible Ancillary Structures	\$27,034.49			\$27,034.49
TR-816	Field Performance of Fiber-Reinforced Concrete Overlays		\$56,906.41		\$56,906.41
TR-817	Central Iowa Expo Pavement Project: Performance Assessment		\$148,598.30		\$148,598.30
TR-818	Development of Guidance for Roadway Cross Section Re-Configuration Decisions		\$16,315.25	\$4,512.55	\$20,827.80
TR-819	New and Updated Statewide Historic Bridge Survey		\$48,346.10		\$48,346.10
TR-820	ISU - Performance Monitoring of Two-Course Bridge Deck Utilizing Ultra High-Performance Concrete	\$3,276.47	\$43,129.50		\$46,405.97
TR-821	County Bridge Standards for Single Span Concrete Slabs - Final Design (Phase II)		\$111,752.92		\$111,752.92
TR-822	WJE - Performance Monitoring of Two-Course Bridge Deck Utilizing Ultra High-Performance Concrete	\$9,118.93			\$9,118.93
TR-823	Effectiveness and Guidance of Aggressive Rehab of Gravel Roads		\$45,938.27		\$45,938.27
TR-824	Develop and Field Test Non-Proprietary Ultra High-Performance Concrete for New Bridge Decks	\$76,381.30			\$76,381.30
TR-825	Iowa Highway Research Board 75 Year Anniversary History	\$40,036.43	\$61,268.00	\$8,772.5	\$110,076.93

TABLE III

Financial Summary of Research and Development Project Expenditures (cont'd)

Project #	Project Title	Primary Road Research Fund Expenditures	Secondary Road Research Fund Expenditures	Street Research Fund Expenditures	Total Expenditures
TR-826	Development of Quality Standards for Inclusion of High Recycled Asphalt Pavement Content in Asphalt Mixtures - Phase V	\$22,603.20	\$32,356.75		\$54,959.95
TR-827	Effect of Vibration on Concrete Mixtures	\$53,965.70			\$53,965.70
TR-828	Low-Cost Safety Strategies for Unpaved Rural Roads	\$57,115.26			\$57,115.26
TR-829	Use of Roller Compacted Concrete for Paved Shoulders	\$72,421.90			\$72,421.90
TR-830	Best Practices for Joint Sawing	\$25,453.99			\$25,453.99
TR-831	Qualitative Relationship between Increased Legal Loads and Reduced Bridge Service Life	\$71,039.02			\$71,039.02
TR-832	Implementation of AASHTOWare BrR program for Rating Iowa Bridges	\$698,225.09	\$169,616.29		\$867,841.38
TR-834	Stabilization of Gravel Roads by Wicking and Non-Wicking Geosynthetics	\$39,231.32			\$39,231.32
TR-837	Best Practices for One-Way to Two-Way Urban Street Conversions	\$12,474.13			\$12,474.13
TOTAL		\$2,444,319.30	\$1,873,205.17	\$143,687.50	\$4,461,211.97

TR-798: Impact of Legalized 25-Kip Axle Loads for Self-Propelled Implements of Husbandry on Iowa Bridges



Secondary Road Research Fund

Section 310.34 of the Iowa Code authorizes the Iowa Department of Transportation to set aside each year an amount not to exceed 1½% of the receipts to the Farm-to-Market Fund in a fund to be known as the Secondary Road Research Fund. This authorization was first made in 1949; it was repealed in 1963 and reinstated in 1965. When the fund was reinstated, the fund was designated to finance engineering studies and research projects. The Iowa Department of Transportation accounting procedure for the Secondary Road Research Fund is based on obligations for expenditures on research projects.

The fiscal year 2025 financial summary is:

Beginning Balance 7-1-24		\$5,110,862.16
Receipts		
State Road Use Tax Fund (1½% of receipts)	\$1,940,137.12	
Federal Aid Secondary (1½% of receipts)	\$0.00	
Research Income	\$0.00	
Sub-Total	\$1,940,137.12	
Total Funds Available		\$1,940,137.12
Obligation for Expenditures		
Contract Research	(\$1,749,958.57)	
Non-Contract Engineering Studies	\$0.00	
Total in Obligations		(\$1,749,958.57)
Ending Balance 6-30-25		\$5,301,040.71

Street Research Fund

The Street Research Fund was established in 1989 under Section 312.3A of the Iowa Code. Each year \$200,000 is set aside from the street construction fund for the sole purpose of financing engineering studies and research projects. The objective of these projects is more efficient use of funds and materials available for construction and maintenance of city streets. The Iowa Department of Transportation accounting procedure for the Street Research Fund is based on obligations for expenditures on research projects.

The fiscal year 2025 financial summary is:

Beginning Balance 7-1-24		\$88,553.93
Receipts		
FY25 Street Research Funding	<u>\$200,000.00</u>	
Sub-Total	\$200,000.00	
Total Funds Available for Street Research		\$288,553.93
Obligation for Expenditures		
Obligated for Contract Research	(\$107,015.07)	
Reclaimed Contract Research		
Funds and changes in obligation	<u>\$117,205.52</u>	
Sub-Total		\$10,190.45
Ending Balance 6-30-25		\$298,744.38

Primary Road Research Fund

The Primary Road Research Fund is sourced from nonobligated funds of the Primary Road Fund. These funds can only be expended on projects for which the funds were reserved, such as contracted research and project-specific research supplies or research equipment. An estimate of Primary Road Research Fund obligations is made prior to the beginning of each fiscal year. The Primary Road Research Fund is split between the State Research Fund program and the Iowa Highway Research Board (IHRB) Program. The amount expended for IHRB contract research from the Primary Road Research Fund for FY25 was \$2,444,319.30 and the estimate for obligations for FY26 is \$2,000,000.

TABLE IV

Projects Approved At IHRB Meetings

The following projects were approved during IHRB Meetings:

Project #	Project Title
TR-833	Update to the Iowa Transportation Law Manual
TR-834	Stabilization of Gravel Roads by Wicking and Non-Wicking Geosynthetics
TR-835	Alternative Fiber Choices for Ultra High-Performance Concrete
TR-836	Bridge Deck Strategy: Materials & Reinforcement
TR-837	Best Practices for One-Way to Two-Way Urban Street Conversions
TR-838	Methodology to Estimate Wind Loads on Poles and Vertical Structures in Transportation Infrastructure
TR-839	Application of Geocell Reinforced Layer for Granular-Surfaced Low-Volume Roads – Granular Road Research Partnership.
TR-840	Laboratory Testing to Understand Roadway Performance in Drawdown Structures
TR-841	Dyed Fuel Vehicle and Equipment Use on Secondary Roads: Possible Revenue and Implementation Strategies
TR-842	Development of Iowa Pavement Analysis Techniques (IPAT) - Phase II

TABLE V

Projects Completed During FY 2025

The following projects were presented to the Iowa Highway Research board during FY 2025 and project Final Reports were approved.

Project #	Project Title
TR-712	Evaluate, Modify and Adapt the ConcreteWorks Software https://publications.iowa.gov/53642/
TR-763	Design of Drilled Shafts in Iowa https://publications.iowa.gov/51201/
TR-769	Coarse Aggregate Deterioration in Granular Surfaces https://publications.iowa.gov/53643/
TR-771	Performance Evaluation of Very Early Strength Latex-Modified Concrete as a Bridge Overlay https://publications.iowa.gov/52565/
TR-781	Development of Approaches to Quantify Superloads https://publications.iowa.gov/53151/
TR-791	Bridges Designed for Minimum Maintenance https://publications.iowa.gov/54187/
TR-792	Assessing the Flood Reduction Benefits of On-Road Structures https://publications.iowa.gov/51204/
TR-793	Superabsorbent Polymers in Concrete to Improve Durability https://publications.iowa.gov/52607/
TR-798	Handbook on Iowa Bridges https://publications.iowa.gov/51205/

TABLE V

Projects Completed During FY 2025 (cont'd)

Project #	Project Title
TR-807	Beneficial Use of Iowa Waste Ashes in Concrete Through Carbon Sequestration https://publications.iowa.gov/52205/
TR-808	A sustainable Air-entraining and Internal Curing Agent https://publications.iowa.gov/54376/
TR-810	Use of Iowa Eggshell Waste as Bio-Cement Materials in Pavement and Gravel Roads https://publications.iowa.gov/51206/
TR-816	Field Performance of Fiber-Reinforced Concrete Overlays https://publications.iowa.gov/52897/
TR-818	Development of Guidance for Roadway Cross section Re-Configuration Decisions https://publications.iowa.gov/51207/
TR-821	County Bridge Standards for Single Span Concrete Slabs – Final Design (Phase II) https://publications.iowa.gov/54400/

TABLE VI

Ongoing and Supplemental Projects

The following projects received one-time and annual funding:

Project #	Project Title
HR-140Q	Continuation of Collection and Analysis of Streamflow Data 2023-2025
HR-296	Iowa Local Technical Assistance Program 2023 - 2025
HR-1027	Secondary Road Research Engineer
HR-375	Transportation Research Board Education for IHRB City and County Board Members
TR-821	Add'l Funding – County Bridge Standards for Single Span Concrete Slabs – Final Design (Phase II)
TR-802	Add'l Funding – Beam End Repair for Prestressed Concrete Beams – Phase II
TR-824	Add'l Funding – Develop and Field Test Non-Proprietary Ultra High-Performance Concrete for New Bridge Decks
TR-797	Add'l Funding – Feasibility of Granular Road and Shoulder Recycling
TR-825	Add'l Funding – Iowa Highway Research Board 75 Year Anniversary
ST-021	Add'l Funding – Collection of unpaved road strength modulus values using validated intelligent compaction (VIC) technology

State Transportation Innovation Council

Since 2015, the Iowa Highway Research Board serves as the State Transportation Innovation Council for the State of Iowa. The Federal Highway Administration (FHWA)



State Transportation Innovation Council (STIC) Incentive program provides resources to help STICs foster a culture for innovation and make innovations standard practice. Through the program, funding up to \$125,000 of STIC Incentive Federal Funding is awarded to the State per Federal fiscal year. The IHRB provides the required 20% State Match. This funding is available to support or offset the costs of standardizing innovative practices for Iowa's transportation agencies. STIC Incentive funding may be used to conduct internal assessments; build capacity; develop guidance, standards, and specifications; implement system process changes; organize peer exchanges; offset implementation costs; or conduct other activities the STIC identifies to address innovation implementation goals and to foster a culture for innovation or to make an innovation a standard practice in the state. The requirements for eligibility of a project or activity are:

- The project must have a statewide impact in fostering a culture for innovation or in making an innovation a standard practice.
- The project/activity for which incentive funding is requested must align with innovation goals.
- The project/activity must be eligible for Federal-aid assistance and adhere to applicable federal requirements.

TABLE VII STIC Incentive Fund Projects

The following projects have been initiated through the STIC Incentive Fund program for the State of Iowa. Links to final reports are available for completed projects:

Award Year	Project #	Project Title
2014	TR-673	Design and Performance Verification of a Bridge Column/Footing/Pile System for Accelerated Bridge Construction https://publications.iowa.gov/32763/
2014	STP-000-S(786)-2C-00	Develop an Implementation Plan for Using 3D Tools for Structural Detailing
2015	ST-001	Technical Guidance and Training on the Implementation of a Self-Cleaning Culvert Technology https://publications.iowa.gov/27298/
2015	STP-000-S(851)-2C-00	Expand the Use of Mobile Devices for E-Construction in Field Inspection Applications
2016	STP-000-S(914)-2C-00	Expand the use of mobile devices for e-Construction in field inspection applications

TABLE VII

STIC Incentive Fund Projects (cont'd)

Award Year	Project #	STIC Project Title
2016	ST-002	Innovations in Transportation Conference
2016	HR-3009	Deployment of Iowa DOT Traffic Operations Open Data Service https://publications.iowa.gov/27382/
2017	ST-003	In Situ Modulus Measurement Using Automated Plate Load Testing (APLT) to Support the Implementation of Pavement Mechanistic-Empirical (ME) Design https://publications.iowa.gov/30754/
2018	ST-004	Integrating NEPA and Permitting Workshop: Red Book Training
2018	ST-005	Virtual Reality Implementation for Public Engagement https://publications.iowa.gov/49568/
2018	ST-006	VR Implementation for Public Engagement - Work Zone Safety
2018	ST-007	VR Interactive Display #2 Seat Belt Demo
2019	ST-011	Updating Statewide Design Guidance with Complete Streets Considerations https://publications.iowa.gov/42528/
2020	ST-013	Evaluating Electrical Resistivity as a Procedure to Aid in Characterizing Subsurface Conditions https://publications.iowa.gov/53223/
2021	ST-012	Development of Digital As-Built: Incorporating As-Built Information into the I-80/I-380 Building Information Model (BIM) for Use in Future Asset Management Applications https://publications.iowa.gov/41870/
2021	ST-014	eTicketing: Implementation in Rural Areas
2021	ST-015	Guidebook for Application of Polymer-modified Asphalt Overlays: from Decision-Making to Implementation https://publications.iowa.gov/49863/
2021	ST-016	UHPC Preservation and Repair: Peer Exchange with Iowa DOT
2022	ST-017	Peer Exchange for Bridge Digital Delivery
2022	ST-018	Pilot Hyperflow in the City of Dubuque for Signal Performance Assessment
2023	ST-019	Advance Rating Software for LPA's
2024	ST-022	Implementing a Reliable Concrete Testing Method for Concrete
2024	ST-023	Digital As-Built for Asset Management and Load Rating Reference
2025	ST-024	Web-Based Application for the Implementation of Stiffness Modulus for Unpaved Roads

Accelerated Innovation Deployment (AID)

This [federal program](#) helps states and local agencies put innovative strategies into practice by providing up to



\$1 million toward any phase of a highway transportation project for State Departments of Transportation and up to \$1 million for local agency sub-recipients. Among other eligibility requirements, a project must include a proven innovation and be ready to start within six months of the state's receipt of the award. So far, AID Demonstration funds have been granted to Iowa DOT for six projects, allowing the state to pilot state-of-the-art technologies, gain valuable hands-on experience, and develop specifications for further deployment in the future.

TABLE VIII AID Program Projects

The following projects were initiated through the AID program for the State of Iowa. Links to final reports are available for completed projects:

Award Year	Project #	Project Title
2014	BRF-092-1(64)-38-78	Iowa 92 Bridge over Little Silver Creek https://iowadot.gov/consultants-contractors/bridges-structures/featured-bridges/little-silver-creek-bridge
2018	ST-010	Implementation of Bridge Building (Innovative Contracting Method) to Accelerated Replacement of County Bridges
2019	ST-008 & ST-009	Increasing Pavement Performance through Pavement Foundation Design Modulus Verification and Construction Quality Monitoring using Validated Intelligent Compaction and Automated Plate Load Testing. https://publications.iowa.gov/41395/
2020	EDP-2100(699)-7Y-31	City of Dubuque: Smart Traffic Routing With Efficient and Effective Traffic Signals (STREETS) Project
2020	HDP-C023(124)-6B-23	Clinton County: Pilot Demonstration of Cape Seals for Pavement Preservation
2023	ST-020	Advancing Transportation Life-Cycle Digital Delivery
2023	ST-021	Asset Management Tool for Iowa County Engineers-Unpaved Granular Road Modulus