

**National Cooperative Highway Research
Program (NCHRP)
Research on the Maintenance of Highway
Infrastructure**

AASHTO Committee on Maintenance

July 22-26, 2018

Charlotte, North Carolina

(NCHRP Liaison: Amir N. Hanna)



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NCHRP- National Cooperative Highway Research Program

- **What is NCHRP**
- **Examples of NCHRP Maintenance-Related Projects**
- **Dissemination/Implementation of Project Findings**
- **NCHRP FY 2019 and 2020 Programs**



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NCHRP- National Cooperative Highway Research Program

- **Part of the Transportation Research Board (TRB)**
- **Part of The National Academies of Sciences, Engineering, and Medicine**
- **Private, non-profit institution**
- **Independent, non-partisan, objective**



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NCHRP- National Cooperative Highway Research Program

- **An AASHTO program sponsored by state DOTs**
- **Started in 1962**
- **Covers all aspects of highways.**
- **Considers problem statements ONLY from AASHTO member departments (individually or through AASHTO committees) and FHWA**
- **Annual funding ~ \$40 million/year**



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NCHRP: Goal-Oriented Research

- **Responds to state DOT needs:** DOTs and AASHTO committees propose research topics; AASHTO R&I Committee selects projects.
- **Ensures applicability of the results:** Practitioners from State DOTs and other sectors of the highway industry participate in monitoring the research.
- **Produces practical, ready-to-use results:** Research products are prepared as guides, manuals, specifications, test methods, tools, etc. for use by state DOTs and other organizations, and adoption by AASHTO.



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Examples of NCHRP Projects-1

(Completed or near completion)

General:

- **NCHRP Project 20-07(380): *Proposed AASHTO Manual for the Maintenance of Roadways and Bridges***

Pavements:

- **NCHRP Project 14-37: *Guide Specifications for the Construction of Chip Seals, Microsurfacing, and Fog seals***
- **NCHRP Project 14-38: *Timing of Asphalt-Surfaced Pavement Preservation***



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Examples of NCHRP Projects-2

(Completed or near completion)

Bridges and Structures:

- **NCHRP Project 14-36: *Proposed AASHTO Guide for Bridge Preservation Actions***
- **NCHRP Project 20-07(399): *Bridge Maintenance and Preservation Activities which Minimize Environmental Impact***

Operations:

- **NCHRP Project 14-34: *Guide for Performance Measures in Snow and Ice Control***



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Examples of NCHRP Projects-3

(Completed or near completion)

Equipment:

- **NCHRP Project 13-04: *Guide for Optimal Replacement Cycles of Highway Operations Equipment* (NCHRP Report 879)**
- **NCHRP Project 13-05: *Guide for Utilization Measurement and Management of Fleet Equipment***



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Examples of NCHRP Projects-1

(In progress or anticipated)

General:

- **NCHRP Project 14-42: *Determining State DOT Maintenance Program Implications of Connected and Automated Vehicles***

Operations:

- **NCHRP Project 06-18: *Update the AASHTO Guide for Snow and Ice Control***

Roadside:

- **NCHRP Project 14-41: *Permanent Vegetation Control Treatments for Roadsides***



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Examples of NCHRP Projects-2

(In progress or anticipated)

Equipment:

- **NCHRP Project 05-24: *Guidelines for the Selection and Application of Vehicle and Equipment Warning Light Configurations, Colors, and Markings***
- **NCHRP Project 13-07: *Guidelines to Calculate Total Cost of Ownership for Fleet Operations***
- **NCHRP Project 13-08: *Guidelines for Decision Making for Repair vs. Replacement of Highway Maintenance Equipment***



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NCHRP Products – Implementation-1

(Features of NCHRP Projects/Products)

- **Many of NCHRP projects related to maintenance have been proposed by MAC.**
- **Products are the result of research by experts in the field.**
- **Project oversight is provided by practitioners and experts.**
- **MAC members participate in panels and project oversight.**
- **Projects produce practical, ready-to-use results.**
- **Findings are presented as manuals, guides, guidelines, procedures, and tools suitable for adoption and publication by AASHTO.**



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NCHRP Products – Implementation-2

(Examples of Earlier Products)

- **Maintenance Manual for Roadways and Bridges – 2007**
- **Manual for Emulsion-Based Chip Seals for Pavement Preservation – 2012**
- **Guide for Snow and Ice Control – 1999**
- **Guidelines for the Selection and Application of Warning Lights on Roadway Operations Equipment – 2009**
- **Decision Making for Outsourcing and Privatization of Vehicle and Equipment Fleet Maintenance – 2012**
- **Guidelines for Vegetation Management - 2011**



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NCHRP Products – Implementation-3

(Facilitating Implementation)

MAC can facilitate dissemination/implementation of research findings/products:

- **Identify products useful to maintenance personnel.**
- **Recommend publication as AASHTO Guide, Manual, Guidelines, etc.**
- **Encourage dissemination/use through workshops, webinars, and other forums.**

Resources Available for:

- **Assistance with the publication process.**
- **Webinars, demos, workshops, etc.**
- **Training**
- **Briefing materials**



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NCHRP Products – Implementation-4

(Examples of Candidate Projects)

Recently completed projects are candidates for dissemination/ implementation through AASHTO:

- **NCHRP Project 20-07(380): *Proposed AASHTO Manual for the Maintenance of Roadways and Bridges***
- **NCHRP Project 13-04: *Guide for Optimal Replacement Cycles of Highway Operations Equipment***
- **NCHRP Project 14-34: *Guide for Performance Measures in Snow and Ice Control***



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NCHRP FY 2019 - Summary

- **11 Continuation projects (\$10.320 million)**
 - 6 Special projects (\$7.430 million)
 - 5 Continuation projects (\$2.890 million)
- **47 New projects (\$24.109 million)**

Total 58 projects (\$34.429 million) in about 20 problem areas (bridges, maintenance, materials, pavements, traffic, security, safety, etc.)



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NCHRP Special Projects

- **20-05 Synthesis Program (\$1,830,000)**
- **20-06 Legal Studies (\$350,000)**
- **20-24 Administration of State DOTs (\$1,250,000)**
- **20-30 NCHRP-IDEA (\$1,400,000)**
- **20-44 Accelerating the Application of NCHRP Research Results (\$2,000,000)**
- **20-68 US Domestic Scan Program (\$600,000)**



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NCHRP Special Projects

(Sunset of four committee support projects)

Funds will no longer be provided annually to four AASHTO committees to address the specific support and research needs of the committees:

- **Environment (NCHRP Project 25-25)**
- **Highways (NCHRP Project 20-07)**
- **Planning (NCHRP Project 08-36)**
- **Public Transportation (NCHRP Project 20-65)**

NCHRP Project 20-123 (Support for AASHTO Committees) will make funding available to any AASHTO committee or council that requires support for advancing and implementing the vision, mission, and strategic goals of the committee or council. These funds are not for the conduct of research.



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NCHRP FY 2019 Program

	<u>Submitted</u>	<u>Programmed</u>
• Continuations	16 (\$13.370)	11 (\$10.320)
• New Projects	95 (\$41.339)	48 (\$24.109)
• TOTAL	111 (\$54,709)	59 (\$34.429)
• FY 2018	124 (\$60.046)	64 (\$35.327)



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NCHRP FY 2019 New Projects

	<u>Submitted</u>	<u>Programmed</u>
• Member Dept.	39 (\$16.100)	10 (\$24.039)
• AASHTO Com.	54 (\$24.039)	38 (\$19.459)
• FHWA	2 (\$1.200)	0
• TOTAL	95 (\$41.339)	48 (\$24.109)
• MAC	5	3



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NCHRP FY 2019 Program

- **March 27-28, 2018: FY 2019 projects selected**
- **May 8, 2018: Program announcement**
- **May 8, 2018: Solicit panel nominees (closed June 15, 2018)**
- **July-August 2018: Panel formation**
- **September-December 2018: 1st and 2nd panel meetings (develop RFPs and select agencies)**
- **February-March 2019: Contracting**



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NCHRP FY 2020 Program

- **July 3, 2018: Solicitation of FY 2019 problem statements**
- **Nov. 1, 2018: End date for problem statements**
 - **NCHRP & FHWA review**
 - **Review to submitter/submitter comment**
 - **Problem statements to R&I Committee and RAC for comment and ratings**
 - **Summary report with R&I/RAC comments and rating, and overall rankings to R&I.**
- **April 9, 2019: R&I Committee meeting/project selection**



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More Information

NCHRP: Advancing transportation and meeting states' needs for more than half a century

- <http://www.trb.org> **NCHRP**
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