Impact Statement

THE RMC RESEARCH & EDUCATION FOUNDATION'S WORK DELIVERS RESULTS TO THE INDUSTRY & COMMUNITY

Increased understanding and application of the **energy** and **environmental benefits of concrete** (*MIT Concrete Sustainability Hub Life Cycle Assessment Reports and Briefs; Comparison of Vehicle Fuel Consumption on Rigid v. Flexible Pavements in FL (underway); LEED v4 Material Ingredient Credit Guide; Study on Higher Volume Fly Ash Concrete and companion Guide for the Construction Team; Effect of Pavement Type on Fuel Consumption and Emissions in City Driving; Optimizing Concrete Mixtures for Performance and Sustainability; Study of LED Light Reflectiveness of Concrete Pavement (underway)*)

Savings of approximately **$300 million annually in materials and disposal costs** and better **environmental stewardship** through reuse of crushed concrete as aggregate (*Crushed Concrete Aggregate Study; Chemical Characterization of Leachate Produced From Recycled Concrete Aggregate (underway)*); ***enhanced sustainability*** *of the concrete production process (Sustainable Concrete Plant Guidelines; MIT Concrete Sustainability Hub Concrete Science Reports and Briefs*)

Expanded use and performance of **pervious concrete** as a **sustainable building material** and as a **stormwater management tool** (*Pervious Concrete Research Compilation, revised; studies on maintenance and hydraulic performance; study on long-term field performance in variable climates; Performance Evaluation of In-Service Pervious Concrete Pavements in Cold Weather; study of pervious concrete and porous asphalt; research on wearing course applications; Impact of deicers on pervious concrete and development of a deicer testing method (underway); Green Highways Partnership training for specifiers*)

Reduced permitting fees for transit-mixed plants of **approximately 25%** based on study data adopted into EPA AP-42 (*Air Emissions Studies and Data Analysis*)

Better concrete performance and reduced materials costs through expanded use of performance-based specifications (*MIT Concrete Sustainability Hub Concrete Science Reports and Briefs; P2P Experimental Case Study; Model Language for Performance-Based Specs; and support of ACI Report on Performance Criteria; Performance Alternatives to Durability Provisions of ACI 318; Optimizing Concrete Mixtures for Performance and Sustainability*)

Vision:
The RMC Research & Education Foundation is a lasting resource for increasing quality, professionalism, and sustainability in the ready mixed concrete industry by funding high quality, high value, non-proprietary research and education programs.

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Increased quality and use of **SCC** in cast-in-place applications as lateral pressure exerted on formwork by SCC is better understood (*SCC Formwork Pressure Study*)

Improved quality of concrete and **enhanced credibility** for producers to carry out performance-based specifications through development and implementation of a quality management system (*Guideline for a Quality Management System*)

Overall concrete industry **savings of $63 million** in exemption from OSHA's Hexavalent Chromium rule and assured protection of employees (*Hex Chrome Exposure Study*)

Enhanced **safety** of individuals in communities susceptible to catastrophic weather events and research to support strengthening building codes, including for the increase of fire safety protection (*Hurricane Katrina Study; MIT/NRMCA work on Resilient Construction; FAIL-SAFE: Understanding the Importance of Multiple Layers of Fires Safety in the Built Environment (underway)*)

Enhanced credibility for plant inspections and **increased batching accuracy** (*Guide for Inspection of RMC Production Facilities; Batching Accuracy Study*)

Expanded opportunity to **leverage over $3 million** in government funding for concrete research through **partnering** and meeting industry funding match requirements

Development of **guidelines and tools to optimize design** of concrete pavements (*Guide to Concrete Overlays for Asphalt Parking Lots; Design Methodology for Subgrades and Bases Under Concrete Roads and Parking Lots to Address Erosion Potential*)

Development of **tools** to **better test, predict and model concrete performance** (*Performance Alternatives to Durability Provisions of ACI 318; NIST Virtual Cement & Concrete Testing Lab; Improving Specifications to Resist Frost Damage (underway); Evaluation of Chloride Limits for Reinforced Concrete - Phase I (underway)*)
Strategic plan toward **standardizing building information modeling** (BIM) software platforms to enhance tools for specifiers designing in concrete (*Development of Industry Foundation Classes for Structural Concrete Components (underway)*)

Development of **driver recruitment, hiring and training materials** (*Online Safety Training Lessons with Proof of Training Generation (Using a Spotter, Backing Safety, Lockout/Tagout/Tryout, Working Safely in and Around Mixer Trucks, and Pre-trip Inspection for the Front/Rear Discharge Mixer); Mixer Driver Recruitment/Hiring/Onboarding Resources; Spanish Translation of the Truck Mixer Driver Manual and Concrete Delivery Professional (CDP) Program; CDP Training Videos*)

Support for **Industry Training and Educational Programs** (Concrete Industry Management (CIM) Programs; CP Tech Center Training for State and Local Public Agencies on Cement-Based Paving Products; Green Highways Partnership Training; Concrete Preservation Institute)

Development of courses, instructor materials and certification programs to enhance employee performance and invest in the industry's most important asset: its personnel

Additional Training Materials and Certifications:

- Pervious Concrete Contractor Certification Craftsman Text
- Plant Operator Certification Textbook and Instructor Materials
- Participation in Green Highways Partnership Training for Municipalities and State DOT's on use of stormwater management tools like pervious concrete
- Co-Funding with state DOTs of CP Tech Center National Training Program for State and Local Public Agencies on Cement-Based Paving Products

Course Development:

- The Effective RMC Supervisor Course
- Financial Management Course for Non-Financial Managers
- Ready Mixed Concrete Plant Manager Certification
- Certified Concrete Sales Professional Program and Ready Mixed Concrete Sales Manager Training Course and Certification

Concrete Industry Management (CIM) Program:

- Long-term support committed for the industry's premier undergraduate degree program at Middle Tennessee State University, California State University—Chico, New Jersey Institute of Technology, and Texas State University with almost 400 students currently enrolled as majors and over 900 graduates
- Partner with CIM Universities on research and education programs (*Pervious Concrete Research Compilation; Supervisor Workshop Course development; Evaluation and Examination of ACI 347.3R "Guide to Formed Concrete Surfaces" (underway)*)

Donations to the RMC Research & Education Foundation are tax deductible (Fed Tax ID # 52-1680963).
Our endowment goal will generate at least $1 million in program funding annually, ***forever.***
The Foundation supports practical and applied research and education programs that can be used by associations and individual companies to increase professionalism and quality in the industry.
We carefully review proposals to avoid duplication of effort and maximize opportunities for cooperative research with industry partners and government agencies.
The Foundation does not engage in proprietary research that could undermine private interests.