

Center for Advancing Research in Transportation Emissions, Energy, and Health Strategic Plan

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**Center for Advancing Research
in Transportation Emissions, Energy, and Health**
A USDOT University Transportation Center



BACKGROUND

The Center for Advancing Research in Transportation Emissions, Energy, and Health (CARTEEH) is funded by the U.S. Department of Transportation's Office of the Secretary for Research and Technology (OST-R) under the University Transportation Centers (UTC) program. CARTEEH is a Tier-1 UTC with a research focus on the impact of transportation emissions on human health. The Texas A&M Transportation Institute (TTI) leads the CARTEEH consortium, which includes four other universities: Johns Hopkins University (JHU), Georgia Institute of Technology (GT), The University of Texas at El Paso (UTEP), and the University of California, Riverside (UCR). CARTEEH brings together experts from two disciplines that have not traditionally worked together — transportation and public health. Members of the CARTEEH consortium advance research on transportation emissions in a more comprehensive manner, covering the holistic tailpipe-to-lungs spectrum from transportation energy consumption and emissions to exposure and human-health impacts. This document outlines CARTEEH's Strategic Plan and contains our vision, mission, and goals. These form the blueprint for the center's strategies, actions, and activities that center personnel will observe to ensure CARTEEH's continued success.



VISION

CARTEEH is a premier UTC where transportation and public health experts work together to address the impact of transportation emissions on human health.

MISSION

CARTEEH will accomplish its vision by advancing transportation research, education, and technology transfer (T2) and by promoting interdisciplinary collaboration and communication.

GOALS

CARTEEH's goals are aligned with the emphasis areas of research, education, and technology transfer, as described below.

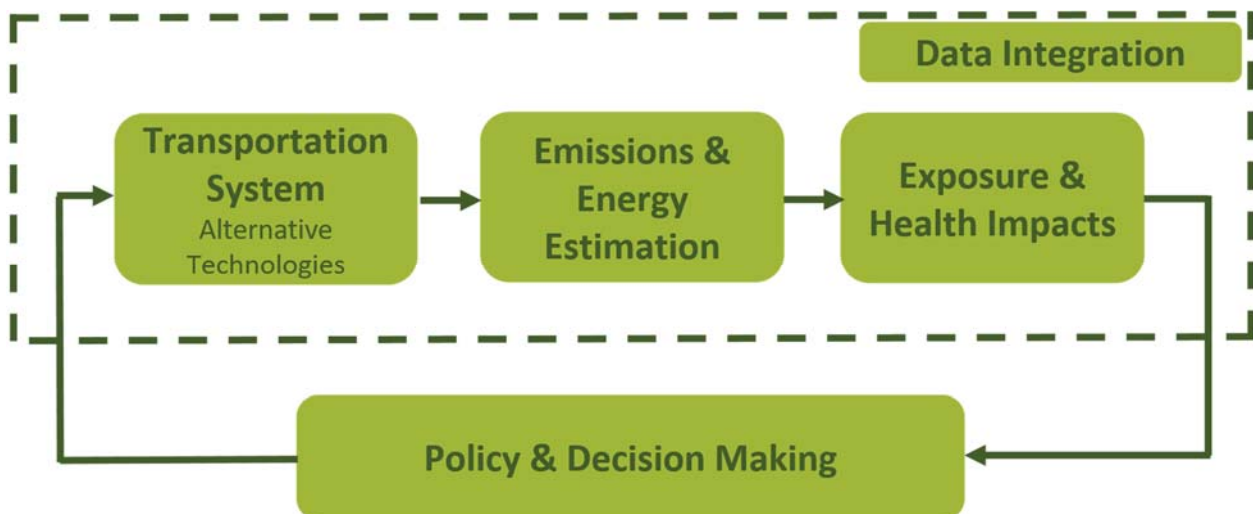
Goal 1: Conduct Impactful Research

CARTEEH researchers conduct impactful, high-quality, credible research to provide results that positively impact policy and practice. We address the "full-chain" or "tailpipe to lungs" spectrum,

between transportation emissions and human health, as shown below. Further, we look into how technological advancements may affect each of the full-chain's elements.



The diagram below shows our research focus areas. They cover this spectrum, from the transportation system (with a focus on alternative and emerging technologies) to transportation emissions and energy estimation to better understanding air pollution exposures and associated health impacts. The next focus area deals with integration of data between these three areas. Finally, an overarching focus area addresses policy implications and informs decision-making. Strategic research projects are being undertaken by center researchers to address these focus areas.



Goal 2: Support Higher Education and Workforce Development

CARTEEH supports higher education by involving students in our activities (including research projects) and by training students for the transportation workforce through professional development opportunities and hands-on learning experiences. Further, CARTEEH also aims to support education and training opportunities for practitioners and other transportation professionals via continuing education initiatives. Programs supporting CARTEEH's education goal include development of curricula and courses, internship programs, student-focused

seminars and professional development programs, and engaging students (including K–12 level students) through science camps and events.

Goal 3: Promote Meaningful Technology Transfer

CARTEEH will promote technology transfer to facilitate applying research, provide targeted communication and outreach, and leverage opportunities to take research further via collaborations with stakeholders. Several center educational initiatives will overlap with T2 activities as our students move into the transportation workforce, taking their knowledge and training with them. Other efforts related to technology transfer include seminars / webinars, symposia and meetings, and outreach through the CARTEEH website and social media. Initiatives such as CARTEEH’s data hub and literature library will similarly support our T2 goals, by making existing knowledge and information widely available through accessible resources for practitioners and researchers.

IMPLEMENTATION

CARTEEH has identified and implemented several strategies and actions to ensure advancement of the research, education, and T2 goals identified in this Strategic Plan. These include maintaining a robust portfolio of research projects, engaging the higher-education sector and transportation workforce, and working with stakeholders to ensure practical applicability of our research. The table below summarizes some key actions and initiatives undertaken by CARTEEH, and the strategic goals supported by these initiatives. More information on specific strategies and actions, along with progress towards meeting these goals, can be found in CARTEEH’s Technology Transfer Plan, as well as in our progress reports such as the Annual Performance Indicator Reports and semi-annual Research Reports (formerly Program Progress Performance Reports).

| Key Initiative | Goals Supported |
|---|-----------------|
| Strategic Research Projects | 1, 2, 3 |
| Curricula and Course Development | 2, 3 |
| Seminars / Webinars and Symposia | 2, 3 |
| Website, Social Media, and Stakeholder Engagement | 3 |
| Data Hub | 1, 3 |
| Student Internships and Assistantships | 2 |
| K–12 Student Engagement | 2, 3 |
| Literature Library | 2, 3 |

SUMMARY

This Strategic Plan outlines the vision, mission, and goals of CARTEEH, and describes broad strategies and actions being undertaken in support of the same. This Strategic Plan is a living document that will be updated periodically to reflect changes that may impact CARTEEH’s strategy and activity in the coming years.