



U.S. Department of Transportation

**Human Factors Coordinating Committee**

*Better Transportation through Human Factors*

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## **STRATEGIC PLAN**

### **Purpose**

The Department of Transportation (DOT) Human Factors Coordinating Committee (HFCC) serves as a multi-modal team with government-wide liaisons to promote human factors and to address crosscutting human factors issues in transportation. Since its inception, HFCC has influenced the implementation of human factors projects within and between modal administrations, provided a mechanism for exchange of human factors and related technical information among modal administrations, and provided synergy and continuity in implementing transportation human factors research. This Strategic Plan describes the role of the HFCC within the DOT, the functions it serves, and its strategic goals.

### **Introduction**

The Secretary of Transportation established the HFCC in 1991 to become the focal point for human factors and cross-modal issues within the DOT. The Committee is composed of representatives from each of the DOT administrations that have modal human factors programs. The HFCC members have been designated as the human factors points of contact for their agency. In addition to the modal representatives, the HFCC maintains a network of affiliates which represents the Office of the Secretary of Transportation (OST); the Volpe National Transportation Systems Center (Volpe Center); the National Transportation Safety Board; the National Aeronautics and Space Administration; the National Institute for Occupational Safety and Health; the US Coast Guard; and the Department of Defense. The Volpe Center serves as Executive Agent to facilitate the work of the HFCC. The list of current HFCC federal representatives and affiliates is provided in Appendix A.

In this document, we describe the HFCC's mission and provide a model that captures the Committee's functions within the DOT.

## HFCC Vision

Better transportation through human factors.

## HFCC Mission

Enhance awareness, understanding, application, and evaluation of human factors in transportation.

## HFCC Goals

1. Coordinate cross-modal human factors activities.
2. Provide human factors information and support to DOT senior level policy and decision makers.
3. Promote human factors research and applications in transportation.
4. Serve as DOT human factors liaisons with the international transportation research and development community.

As a result of DOT HFCC activities, we anticipate the following:

- Improved transportation safety through rulemaking;
- Human factors' requirements for procurement;
- Research and development products and technical support; and
- Technology transfer and utilization.

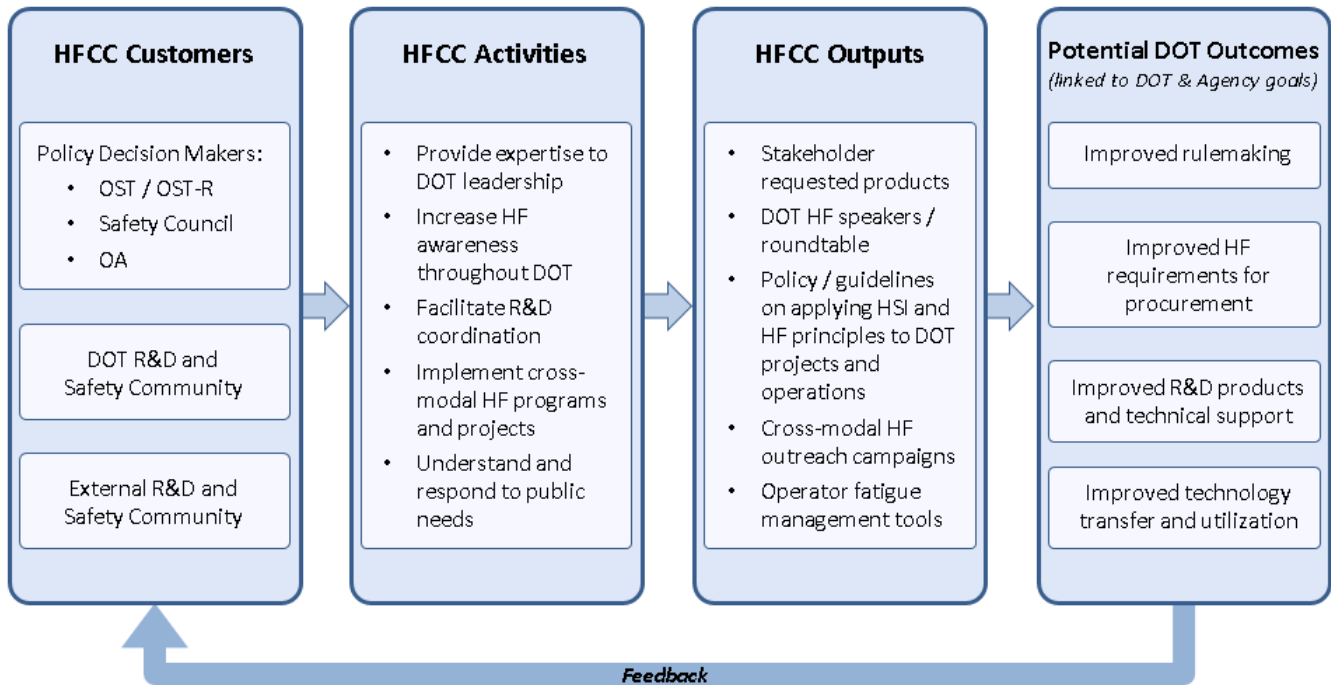
In the next section, we present a model that captures how the HFCC achieves its mission. Included in the model are past and current activities of the committee and future goals.

## HFCC Model of Operations

The HFCC provides a mechanism to enhance planning, implementation, and education related to human factors research within the transportation community. The model below captures the functions and relationships that HFCC has established within the DOT. Four components are highlighted in the model: *HFCC Customers*, *HFCC Activities*, *HFCC Outputs*, and *Potential DOT Outcomes*.

At a high level, the model highlights how HFCC coordinates with its various customers to identify and direct committee activities, which in turn offer contributions to regulations, research, and development. For example, the model shows that the HFCC works with DOT policy decision makers and provides expertise as requested to develop and execute programs and projects that address human factors and cross-modal issues. This activity may result in improved policy and guidelines for applying human systems integration (HSI) and human factors principles to DOT projects and operations, thereby contributing to improved rulemaking. This example describes

only one path through the model; the model illustrates multiple paths that describe HFCC's operations and contributions. Additionally, a key part of the model is the feedback loop, in which internal and external outcomes are examined by the Committee and used to drive future activities. Each of these components is described below.



**HFCC Model of Operations**

## HFCC Customers

To serve as a technical consultative body and a national information resource for transportation human factors issues, the HFCC provides expertise to three different communities:

1. DOT senior policy decision makers, such as the Office of the Secretary of Transportation (OST), the US DOT Safety Council, and Operating Administrations (OA);
2. The DOT Research and Development and Safety community, which includes researchers within DOT as well as those funded by the DOT; and
3. The external Research and Development and Safety community. The HFCC also has in place a mechanism for referral and networking within the transportation community through regular contact with agencies and organizations concerned with transportation human factors issues/research.

## HFCC Activities

The Committee serves as advisor and clearinghouse on transportation human factors research and development projects. Additionally, the HFCC facilitates and coordinates human factors

research, sponsoring and enabling large research efforts that modes cannot support individually, to address multi-modal transportation issues and to advocate for timely human factors research in transportation system solutions.

For example, recognizing that fatigue management requires major changes in both organizational culture and operator behavior, the HFCC formed an Operator Fatigue Management initiative (OFM). The OFM developed several tools (described under HFCC Outputs, below) to help manage operator fatigue by leveraging expertise from other government agencies, industry, and labor, and over \$1 million in multi-modal funding. The HFCC identifies research needs, technology and knowledge gaps in transportation human factors to successfully coordinate and lead these and similar cross-modal activities, in support of national transportation goals.

The Committee meets monthly to discuss modal human factors projects. Ongoing Committee activities include but are not limited to the following:

- Providing expertise to DOT leadership. This expertise may be provided on a project-by-project basis or on an ongoing basis as a general human factors consultant.
- Increasing human factors awareness throughout the DOT, such as through symposia, communications, etc.
- Facilitation of research and development coordination. The HFCC also coordinates with other topical groups such as the DOT Safety Council, Federal Fatigue Management and Research Working Group, and the Department of Defense Human Factors Engineering Technical Advisory Group.
- Implementing cross-modal human factors programs and projects.
- Understanding and responding to public needs.

## **HFCC Outputs**

Through various activities, the HFCC has accomplished (and continues to improve) the following:

- Identifying cross-modal research needs
- Developing stakeholder requested products
- Coordinating DOT HF speakers/roundtable
- Developing policy and guidelines on applying HSI and human factors principles to DOT projects and operations, upon request
- Conducting cross-modal human factors outreach campaigns (on topics such as Operator Performance, Distraction, Fatigue, Aging, Human Systems Integration, Safety Culture, System Design, Training, Human Error, etc.)
- Developing OFM tools: As mentioned earlier, the HFCC identified the impact of fatigue on safety-critical operator performance as an issue in all modes of transportation, and created the multi-modal OFM program. This collaboration led to the development of five OFM Tools to manage human fatigue in transportation. These tools can be tailored by each agency for their particular needs:

- Work Schedule Representation and Analysis Software
- Fatigue Management Reference Guide
- Business Case Development Tool Suite
- Fatigue Model Validation Procedure
- Strategic Roadmap
- Promoting awareness of OFM issues. In 2009, the HFCC sponsored the International Conference on Fatigue Management in Transportation Operations: A Framework for Progress. The HFCC also helped to plan and execute the US DOT Safety Council’s Hours of Service/Fatigue Action Team’s initiatives:
  - Development of the next generation of fatigue modeling tools in transportation
  - Operator fatigue communications campaign
  - Cross-modal incident analysis framework for commercial operators
  - Cross-modal strategic roadmap for transportation fatigue management
  - Contextual framework of hours of service rules and rulemaking process across DOT

## Potential DOT Outcomes

In support of DOT’s strategic goals, the HFCC aims to apply human factors to improve the following outcomes:

1. Rulemaking (more effective rules)
2. Human factors requirements for procurement
3. Research and development products and technical support
4. Technology transfer and utilization

## Conclusion

This Strategic Plan serves to incorporate HFCC’s mission and vision and to define what HFCC will accomplish strategically within DOT in the future. To meet the DOT’s and the nation’s transportation needs, the HFCC focuses on issues that go beyond the interests of any single transportation mode and then pools departmental talents and resources to produce solutions and benefits that extend throughout the transportation communities and across all modes of transportation. With the DOT’s support, the HFCC will continue to provide a mechanism to enhance planning, implementation, and education related to human factors research within the transportation community.

HFCC Website: <http://hfcc.dot.gov/>

## Appendix A – List of HFCC Federal Representatives and Affiliates

<b>HFCC Chair</b>	Nazy Sobhi, Ph.D. Federal Transit Administration (202) 366-1432   <a href="mailto:Nazy.Sobhi@dot.gov">Nazy.Sobhi@dot.gov</a>
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Federal Transit Administration (FTA)	Nazy Sobhi, Ph.D. (202) 366-1432   <a href="mailto:Nazy.Sobhi@dot.gov">Nazy.Sobhi@dot.gov</a>
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