

## Access Management Curriculum for University Planning and Engineering Programs

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### BACKGROUND AND OBJECTIVES

Extensive research has been conducted on the topic of roadway access management and smart growth planning, documenting the benefits of these integrated practices to safety, congestion reduction, and livability. Additionally, there is a growing understanding of the need for context-sensitive plans and projects that serve all roadway users. Consequently, many agencies across the U.S. and abroad have instituted multimodal plans with access management policies and strategies to advance vision zero, complete streets, and congestion management goals. The more recent emergence of equity as an important transportation priority has further elevated understanding of the need to improve roadway safety and access to opportunity for underserved populations.

Despite its proven importance to the transportation system, few Universities educate planning and engineering students on the theory, practice, and benefits of roadway access management. As a result, emerging professionals are entering practice with little or no knowledge of the topic and its critical importance to the transportation system. This project fills that gap by providing a research-based curriculum with instructional resources and real-world applications that can be readily adapted into a variety of planning and engineering course offerings.

### METHODOLOGY

Development of the curriculum began with the identification and review of key literature and guidance documents relevant to access management. These included manuals, research reports, training materials and guidance documents available from the Transportation Research Board, National Cooperative Highway Research Program, Institute of Transportation Engineers, National Highway Institute, the Federal Highway Administration, and state transportation agencies. Selected syllabi and lecture materials from university transportation planning and engineering courses were also consulted. Finally, the project team relied on their extensive previous research and course materials on related topics such as land development and access, corridor planning, complete streets, public involvement, transportation engineering, roadway and site access design, state highway access management program administration, sustainable transportation, and multimodal transportation planning.

Elements of the curriculum structure include items such as the learning objectives, learning outcomes, competencies, evaluations/assessments, and related activities. These elements were modeled based on guidance from various pedagogical resources, including active learning techniques of university Centers for Teaching Excellence (or similar resources) and learning outcomes of the Planning Accreditation Board (PAB) and the Accreditation Board for Engineering and Technology (ABET).

## RESEARCH OUTCOMES

The curriculum is divided into nine modules that follow a standard outline. The nine modules are:

- Module 1: Introduction to Roadway Access Management
- Module 2: Effects of Access Management
- Module 3: Land Development and Access
- Module 4: Access Location and Spacing
- Module 5: Access Design
- Module 6: Access Management Policy and Process
- Module 7: Corridor Access Management Plans
- Module 8: Legal Considerations in Access Management
- Module 9: Public Involvement in Access Management

The outlines for each module are provided in the Access Management Curriculum Guidance Document and include a brief description of the module, applicability to various planning and engineering disciplines, subtopics addressed, learning objectives, readings, and other resources (e.g., videos, fact sheets, tools), assignments and activities, learning outcomes, and suggestion evaluation methods. Each module outline is accompanied by suggested in-class activities, such as interactive discussions or tool applications, as well as PowerPoint slides with lecture notes that address the suggested content. The PowerPoint slides are provided as separate downloadable files.

Although the modules focus on access management generally, given the multidisciplinary nature of roadway access management, they include materials applicable to a variety of subjects. These include courses on land use planning, safety, transportation governance, geometric design, traffic engineering, transportation planning, complete streets, sustainable transportation, transportation and land use law, and public involvement. As such, instructors will find materials of benefit to a variety of course types and learning objectives.

## PRACTICE RECOMMENDATIONS

The materials developed for this curriculum are designed to be integrated into the planning and engineering programs of universities in the US and abroad, thereby resulting in professionals in transportation and related fields who are trained to effectively integrate roadway access management principles and practices into public and private sector plans, policies, programs, and projects. Although intended for university courses, the exercises and materials will also benefit transportation agencies and local governments seeking to train their workforce.

The modules in this guidance document address various multidisciplinary topics of particular importance to urban and regional planning and engineering with a targeted focus on access management. The modules are designed to be used in two ways: (1) plug-and-play, to supplement existing classes, and/or (2) as a full transportation course on access management. Generally, the curriculum will enable students to:

- Understand the concept of access management and its importance to the safety and operation of the multimodal transportation system, as well as related concepts of access, mobility, and accessibility.
- Identify and/or measure the effects of access management on transportation safety, operations, livability, equity, and the economy in different contexts.
- Communicate how lack of access management contributes to congestion, crashes, and other adverse conditions and advocate for appropriate programs, policies, and practices to address these conditions in a proactive and legally defensible manner.
- Recognize various planning, policy, physical design, and administrative techniques for managing multimodal access in a transportation network and corridor planning context.
- Apply what they have learned to different situations and scenarios so that they are equipped to develop an access management plan that incorporates smart land use and complete streets design.

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