

**INTERSTATE SYSTEM ACCESS
INFORMATIONAL GUIDE**

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Many State DOTs also provide their own standards for geometric design, standard drawings, and standard specifications that should be consulted. These State standards must meet or exceed the FHWA's adopted standards for projects on the interstate. The intent of this Guide is not to replicate or replace established standards, but to highlight some of the key features to assist in the planning, design, and review of Interstate System Access Change Requests.

In addition to this Guide and these established standards, there are other sources of information on good practices in the design of interstates and interchanges. Among these is the Institute of Transportation Engineers' publication *Freeway and Interchange Geometric Design Handbook*, which provides more in-depth discussion of design issues for freeway interchanges.

As designers begin to undertake the design of a new or modified interchange, the following should be kept in mind:

- Application of the concepts of route continuity and lane balance warrant thoughtful analysis and careful consideration, particularly where there are multiple diverging or converging lanes. Related issues include choosing a "preferred" or priority route when dealing with functionally equal facilities, using option versus dedicated lanes at a major fork (diverging roads), introduction and termination of auxiliary lanes through an interchange, and how to avoid the design of a branch connection (converging roads) that may violate driver expectation (i.e., an abrupt inside merge). Remember that the goal is an operationally balanced, self-explaining design.
- Satisfying the need for access between the Interstate System and the local highway and street network becomes more complicated when attempted within the vicinity of a system interchange. To every extent possible, system movements should be preserved as separate and independent of service movements to avoid mixed speed environments and to keep related signing clear and simple. When this is not possible, other solutions, such as the use of collector-distributor roadways, may help to overcome some challenges, but designers should be careful to avoid introducing movements that are counterintuitive or confusing to a motorist.
- Selection of interchange type and location for the access should be considered in the overall context of the corridor so that drivers can anticipate actions and choices they will need to make as they travel the corridor. As stated in the Green Book, "An inconsistent arrangement of exits between successive interchanges caused driver confusion, resulting in drivers slowing down on high-speed lanes." Interchanges should be located on tangent sections rather than curves and where there are good sight lines on the approach to the interchange. Curved sections are problematic locations for interchanges as they may limit sight-distance and drivers' perspective of lane assignments depicted on signs will change as they advance around the curve.

6.2.1 Freeway Segments

Chapters 8 and 10 of the Green Book provide a discussion of the design standards and concepts that should be met as part of any change in Interstate access.

6.2.2 Interchange Configuration and Spacing

Interchanges, when spaced too closely along an Interstate corridor, negatively affect the traffic operations and safety performance of the Interstate. When evaluating the interval at which interchanges will be located, factors such as spacing between ramps, auxiliary lanes, weaving areas, and signing between interchanges need to be scrutinized. The minimum spacing for urban interchanges specified in the AASHTO Interstate Access Guide is 1 mile (3 miles in rural areas). However, longer intervals between points of access may be needed to preserve operations and performance of the system. In particular, system interchanges (which may have higher traffic volumes, multi-lane ramps, and longer ramps) will need more distance to the next interchange. To mitigate the effects of closely-spaced interchanges, designers may need to employ braided ramps, collector-distributor roads, or frontage roads.