

# Appendix F: Highway Interchange Request Criteria and Review Procedure

## Background

The evaluation criteria and review procedures for highway interchange requests have been established by the Metropolitan Council to meet the objectives of Access to Destinations Strategy 11: Regional transportation partners will manage access to Principal and A-minor arterials to preserve and enhance their capacity and safety.

The Council will work with MnDOT to review interchange requests for the principal arterial system using the procedures outlined in this Appendix.

These criteria and procedures are based on work originally done in 1979 by a joint committee of the Transportation Advisory Board and the Metropolitan Council. They have been revised and simplified over time to reflect policy changes, revised state and federal laws and regulations and experience with applying the criteria. The most recent changes reflect the differing circumstances of adding/modifying an interchange on an access controlled freeway, or adding an interchange to a highway where other access is provided through at grade intersections.

## Procedures

An applicant has the responsibility to prove that new interchange or additional interchange capacity is required. Typically this will require a detailed analysis of existing and forecasted highway access needs. Therefore, informal discussion of interchange requests with MnDOT and Council staff is encouraged before the applicant initiates a potentially expensive and time-consuming study.

The following steps should be taken to obtain Council approval to add or expand a principal arterial system interchange:

- A request for an interchange addition or expansion is made to the joint MnDOT/Council Interchange Planning Review Committee. If the committee determines that the interchange requires review, the applicant must respond to each of the criteria shown below. The committee will review the proposal's consistency with the criteria in this section and provide a letter with findings.
- If the interchange is on an interstate freeway, the applicant, in coordination with MnDOT and following MnDOT's policies, should submit an interstate Access Request to Federal Highway Administration (FHWA).
- A comprehensive plan amendment should be submitted to the Council including the requested interchange and supportive surrounding land uses and street network. Council staff will evaluate response to all qualifying and technical criteria and the consistency of the proposed interchange with regional and local plans.

- In addition, prior to acquiring land for or constructing the proposed interchange, the applicant should submit a request to the Council for approval of controlled access highway construction pursuant to MN. Stat. 473.166.

## Types of Interchange Requests

Two types of interchange requests are commonly seen on the principal arterial system:

Type A: New or modified interchanges on existing freeways. These are distinguished by requesting new access to the system where none had previously been provided, or modifying interchanges to provide new movements or wider ramps. When these are evaluated, they are further divided into three types which receive differing levels of review: a new interchange or new access at an existing interchange, major geometric revisions at an existing interchange, and minor geometric changes at an existing interchange.

Type B: New interchanges on a multi-lane highway with traffic signals. These requests are conversions of existing at-grade intersections to interchanges. These interchanges will often be part of a staged conversion of the multi-line highway with traffic signals to a freeway design, with the elimination of minor access points between the new interchanges resulting in more restricted access to a principal arterial, as opposed to providing access where none previously existed.

Qualifying Criteria: Type A (New or Modified Interchange on Existing Freeway)

### **1. Additional interchange capacity should be considered only when it supports Thrive MSP 2040 and the Transportation Policy Plan, and local comprehensive plans approved by the Metropolitan Council.**

Discussion: This is a critical objective. In addition to solving highway capacity deficiencies, new interchanges or major interchange modifications should be consistent with regional plans and regionally approved local plans, and should support land uses shown in these local plans. In most cases, a new interchange should be in the Metropolitan Urban Service Area or a rural center.

### **2. Need for additional capacity or safety improvements must be demonstrated and documented before a new interchange, new ramps or expanded ramp capacity are considered.**

Discussion: Subjective arguments alone should not be used to justify interchange design revisions. Volume forecasts and capacity calculations are required to document the need for a design revision. Volume and capacity figures should be consistent with Council-approved land use plans and with the transportation element of those local plans.

### **3. Freeway interchanges should only connect to other principal arterials or to an A-minor arterial as defined in the functional classification system adopted by the Transportation Advisory Board and approved by the Metropolitan Council.**

### **4. New or expanded interchanges are not to be provided if the need for additional**

**capacity is justified only as a convenience for short trips; to compensate for lack of an adequate complementary minor arterial or collector system; to compensate for deficient minor arterial or frontage road capacity; or to correct collector or minor arterial capacity deficiencies caused by poor design or excessive access to adjacent parcels.**

Discussion: The purpose of the principal arterial system is to serve regional trips, not to substitute for inadequate local access and circulation capacity.

**5. When an interchange is to be constructed or expanded, the operational integrity of the mainline and associated weaving sections must be maintained. The new or expanded interchange must be acceptable in terms of route design and standards as specified by the MnDOT, conforming to such factors as basic number of lanes, lane continuity, lane balance, lane drops, continuity of mainline levels of service and other general design criteria.**

Discussion: Highway design standards should be maintained to the greatest extent possible. Operational integrity is measured by the forecasted level of service and safety considerations, including freedom or ease of lane changing and vehicle spacing on the through lanes of a freeway or arterial.

**6. Interchanges on the principal arterial system should be spaced at a minimum of one mile (center to center). If it is determined appropriate to locate an interchange at less than one mile apart or modify an existing interchange, the safe operation of the main roadway must be maintained.**

Discussion: Experience has shown that interchanges spaced less than one mile apart have inadequate weaving distance and require special design features such as auxiliary lanes to maintain safety. Outside of urban center, urban, and suburban areas, other principal arterials or A-minor arterials are typically not needed closer than 2 miles due to the lack of intense development.

## Qualifying Criteria: Type B (Multi-lane Highway with Traffic Signals to Freeway)

**1. Additional interchange capacity should be considered only when it supports Thrive MSP 2040 and the Transportation Policy Plan, and local comprehensive plans approved by the Metropolitan Council.**

Discussion: In addition to solving highway capacity or safety deficiencies, new interchanges should be consistent with regional plans and regionally approved local plans, and should support development in desirable locations. New interchanges should be built in sequence as part of a conversion. If the eventual vision of the highway is not a freeway, alternative designs to an interchange should be considered.

**2. Need for additional capacity or safety improvements must be demonstrated and documented before a new interchange, new ramps or expanded ramp capacity are considered.**

Discussion: Subjective arguments alone should not be used to justify interchange design revisions. Volume forecasts and capacity calculations are required to document the need for a design revision. Volume and capacity figures should be consistent with Council-approved land use plans and with the transportation element of those local plans. New interchanges should be adjacent to an existing interchange unless the intermediate access can be modified or managed to address safety concerns.

**3. Principal arterial system interchanges should only connect principal arterials to other principal arterials or to an A-minor arterial as defined in the functional classification system adopted by the Transportation Advisory Board and approved by the Metropolitan Council.**

**4. When a new interchange is planned, an adequate complementary minor arterial or collector system and frontage system should be planned to serve local trips and access currently served by the highway.**

Discussion: The purpose of the principal arterial system is to serve regional trips, not to substitute for inadequate local access and circulation capacity.

**5. When an interchange is to be constructed or expanded, the operational integrity of the mainline and associated weaving sections must be maintained. The new interchange or related system change must be acceptable in terms of route design and standards as specified by the MnDOT or the implementing agency, conforming to such factors as basic number of lanes, lane continuity, lane balance, lane drops, continuity of mainline levels of service and other general design criteria.**

Discussion: Highway design standards should be maintained to the greatest extent possible. Operational integrity is measured by the forecasted level of service and safety considerations, including freedom or ease of lane changing and vehicle spacing on the through lanes of a freeway or arterial.

**6. Interchanges on the principal arterial system should be spaced at a minimum of 1 mile (center to center). If it is determined appropriate to locate an interchange at less than 1 mile apart or modify an existing interchange, the safe operation of the main roadway must be maintained.**

Discussion: Experience has shown that interchanges spaced less than one mile apart have inadequate weaving distance and require special design features such as auxiliary lanes to maintain safety. Outside of urban center, urban, and suburban areas, other principal arterials or A-minor arterials are typically not needed closer than 2 miles due to the lack of intense development.

### Technical Criteria: Development

An interchange may be warranted when access to new urban development cannot be adequately or safely served by existing or new minor arterials or by existing ramps at an adjacent interchange. New local urban development must be provided with good local arterial access before principal arterial system access is considered. Local comprehensive plans should establish the level of development expected (land use element) and the local arterial system (transportation element) proposed to serve the expected development pattern.

Interchange additions or revisions to support new development must be subordinate to current, adopted corridor plans for the route. Regional travel demand for the principal arterial system will take precedence over local or land parcel development and related access needs. Access needs should be evaluated as part of an overall corridor plan.

The proposed ramp configuration may not serve a single development exclusively. Legal and policy requirements dictate that a public highway facility may not be designated for the sole benefit of a property owner.

Public benefits, as well as estimated costs of the interchange, should be evaluated.

Local governments and the owners and developers of properties that would benefit from an additional interchange should share the cost of additional construction or right-of-way to the extent that they receive tangible benefits.

### Technical Criteria: Design

Interchange ramp configuration and design should be based on traffic forecasts developed and adopted by the Metropolitan Council and the MnDOT. Regional traffic forecasts are based on socioeconomic data developed for the entire region. Local units of government may submit revised forecasts based on more detailed land development plans, but such forecasts must be analyzed and accepted by MnDOT and the Council before they are used to evaluate design changes.

Traffic backups resulting from interchange ramp designs must occur on cross streets and frontage roads rather than on the principal arterial. If traffic backups at an interchange are

unavoidable for short periods, the design should ensure that they occur on the slower-speed, lower-function roadways.

A-minor arterial roadways connecting with the proposed interchange must be adequate for the anticipated volumes on the interchange. An interchange justification must demonstrate that the connecting and other supporting roadways critical to its safe and adequate operation are or will be available at the time the interchange is open to traffic.

Ramp configurations must be capable of being signed for safe and expeditious movement.

Interchange ramp configuration and design should provide for preferential treatment of transit and rideshare vehicles.

If local cross-street improvements or functional classification changes are needed in conjunction with the interchange, their construction must be coordinated with construction of the interchange. Local cross-street improvements necessary for safe and adequate operations should be part of the initial interchange design.