Iowa DOT User Guide for New or Revised Interchange Access

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IOWA DOT

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Foreword

Purpose of User Guide

This User Guide sets forth the process for preparing change in access documents, and other related documents to gain approval for new or revised interchange access on Interstate and State highways in Iowa. It references Iowa Department of Transportation (DOT) and Federal Highway Administration (FHWA) Policy documents that provide the basis for the process. General access policy for other access types (e.g., at-grade intersections, driveways) is detailed in the Iowa Primary Road Access Management Policy.

The purpose of this User Guide is to equip those involved in preparing access change request documents with details of the process and expectations to efficiently complete an access change request. This User Guide is written for all parties involved in the process, including local agencies, consulting engineers, Iowa DOT staff, and others participating in the access document preparation and approval process. All parties involved should use this Guide from the inception of an access change request through the process of approval.

The purpose of this User Guide is to equip those involved in preparing access change request documents with details of the process and expectations to efficiently complete an access change request.

This User Guide does not present processes or procedures for environmental reviews, typically those completed through a National Environmental Policy Act (NEPA) document, that may be required as part of an access change request. However, it is important that the environmental reviews are conducted in parallel with the IJR/IOR process, as both processes produce information that can impact the results and conclusion of one another. The user should reference the Office of Location and Environment Manual for processes and procedures related to environmental reviews.

The IJR/IOR and environmental review processes are codependent and should be conducted in parallel to streamline project development.

This User Guide is meant to generate consistent processes and documentation between similar requests. To support consistency, a series of templates are provided for producing various types of interchange access related documents. These templates are linked throughout the User Guide to electronic documents available on the Iowa DOT's website.

Background for User Guide

The Iowa DOT policy that governs the access change procedure is Process for New or Revised Interchanges, Policy No. 500.15.

The FHWA policy that provides the requirements of proposed access change is the Interstate Access Policy.

The FHWA document that provides guidance on how and what should be addressed in an access change request for the Interstate System is the Interstate System Access Informational Guide.

This User Guide provides additional explanation to implement these policies in Iowa. The reader should refer to Policy 500.15 and the latest FHWA Policy in conjunction with this User Guide.

User Guide Outline

This User Guide contains the following sections to detail the process and expectations for completing an access change request:

- Quick Start Guide – Flowcharts of the steps to complete an access change request.
- Introduction (Chapter 1) – Application of User Guide and steps to complete an access change request.
- FHWA Policy (Chapter 2) – FHWA access control background and policy.
- Access Change Document Types and Applicability (Chapter 3) – Application of different access change document types and examples.
- Access Change Document Development (Chapter 4) – Organization of access change document materials and supporting documents.
- Analysis Methodology and Supporting Data (Chapter 5) – Analysis methodology to be used when evaluating a change in access.
- Review and Approval Process (Chapter 6) – Review and approval process for IJRs and IORs.
- Resources (Chapter 7) – Summary of resources and references.
- Document Templates (Chapter 8) – Templates for IJRs, IORs and other supporting documents.

Contact Information

Iowa DOT District contact information is available at https://www.iowadot.gov/districts/index.html. For User Guide updates, questions, and examples, contact:

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Distribution

A downloadable version of this guide is available at: https://www.iowadot.gov/ijr

Glossary of Terms and Acronyms

The following are commonly used terms and acronyms, along with a brief description or definition.

Access – For the purpose of this User Guide, an access is any entrance or exit point (including locked gate access, such as maintenance access points) to the highway.

Access Change – New or revised access points to the Interstate or State highway.

American Association of State Highway and Transportation Officials (AASHTO) – A non-profit, nonpartisan association representing State highway and transportation departments which advocates for transportation related policies and provides technical services to support States in their efforts to efficiently and safely move people and goods.

Advisory Group – Iowa DOT and FHWA staff assembled to determine the ability of the Requesting Agency's proposal to satisfy each of the justification requirements.

Calibration – The process by which the analyst selects and models parameters that cause the model to best reproduce field-measured local traffic conditions.

Design Phase – The design phase includes Preliminary Engineering or Final Design efforts

District – Any of the Department's Highway Division districts.

District Engineer – The District Engineer of a given district for which a requested access change is made.

Department – Iowa Department of Transportation.

DOT or Iowa DOT– Iowa Department of Transportation.

ERMS – Electronic Records Management System.

Federal-Aid Project Development Guide for Local Public Agencies – Document produced by the Office of Local Systems that provides a concise summary of information and instructions for those involved in the planning, development and construction of LPA federal-aid transportation projects and guidance for LPAs for the change in access process.

FHWA – Federal Highway Administration.

HCM – Highway Capacity Manual.

Interchange Justification Report (IJR) – Report that provides justification and documentation required for requests for new or revised access.

Interchange Justification Report Amendments – Modifications to the original access document typically required to update outdated information due to interchange construction schedule lapses or other changes in an applicant's proposal that do not require a completely new IJR document.

Interchange Operations Report (IOR) – The document developed to evaluate applicable portions of the FHWA's Interstate access Policy when only minor modifications to an existing Interstate access are proposed. The document can also be utilized by the Iowa DOT for State highways.

Interchange – A facility that provides for the movement of traffic between intersecting roadways by the use of one or more grade separations.

Interstate or Interstate System – A highway that is part of the Dwight D. Eisenhower National System of Interstate and Defense Highways.

Level of Service (LOS) – LOS is a quantitative stratification of a performance measure or measures that represent quality of service. Among factors influencing traveler perceived quality of service are travel speed and travel time, freedom to maneuver, traffic interruptions, and comfort and convenience.

LPA – Local Public Agency.

Long Range Transportation Plan (LRTP) – A document resulting from regional or statewide collaboration and consensus on a region's or state's transportation system, and serving as the defining vision for the region's or state's transportation systems and services. In metropolitan areas, the plan indicates all the transportation improvements scheduled for funding over the next 20 years. Transportation improvements in a metropolitan area LRTP are typically developed by the local Metropolitan Planning Organization.

Methods and Assumptions (M&A) Document – An outline of the analysis area, procedures and criteria to be used on the project.

MPO/RPA – Metropolitan Planning Organization and/or Regional Planning Affiliation.

National Environmental Policy Act (NEPA) – United States environmental law that created a national policy promoting the enhancement of the environment.

OLE – Office of Location and Environment.

Policy 500.15 – Iowa DOT's official policy governing the process for new or revised interchanges.

Requesting Agency – The public road jurisdictional authority (i.e., a City, County or State) requesting a change in access to the Interstate System or State highway.

State Highway – A non-Interstate fully controlled access highway not requiring FHWA approval of access change.

STIP – Statewide Transportation Improvement Program.

TIP – Transportation Improvement Program.

Travel Demand Model – A computer model that forecasts traffic volumes on the major transportation grid. For purposes of an IJR, the travel demand model must be the official model maintained by the MPO or the State, whichever is applicable, and is adopted as part of the LRTP. RPAs typically do not maintain a travel demand model.

TSMO – Transportation Systems Management and Operations.

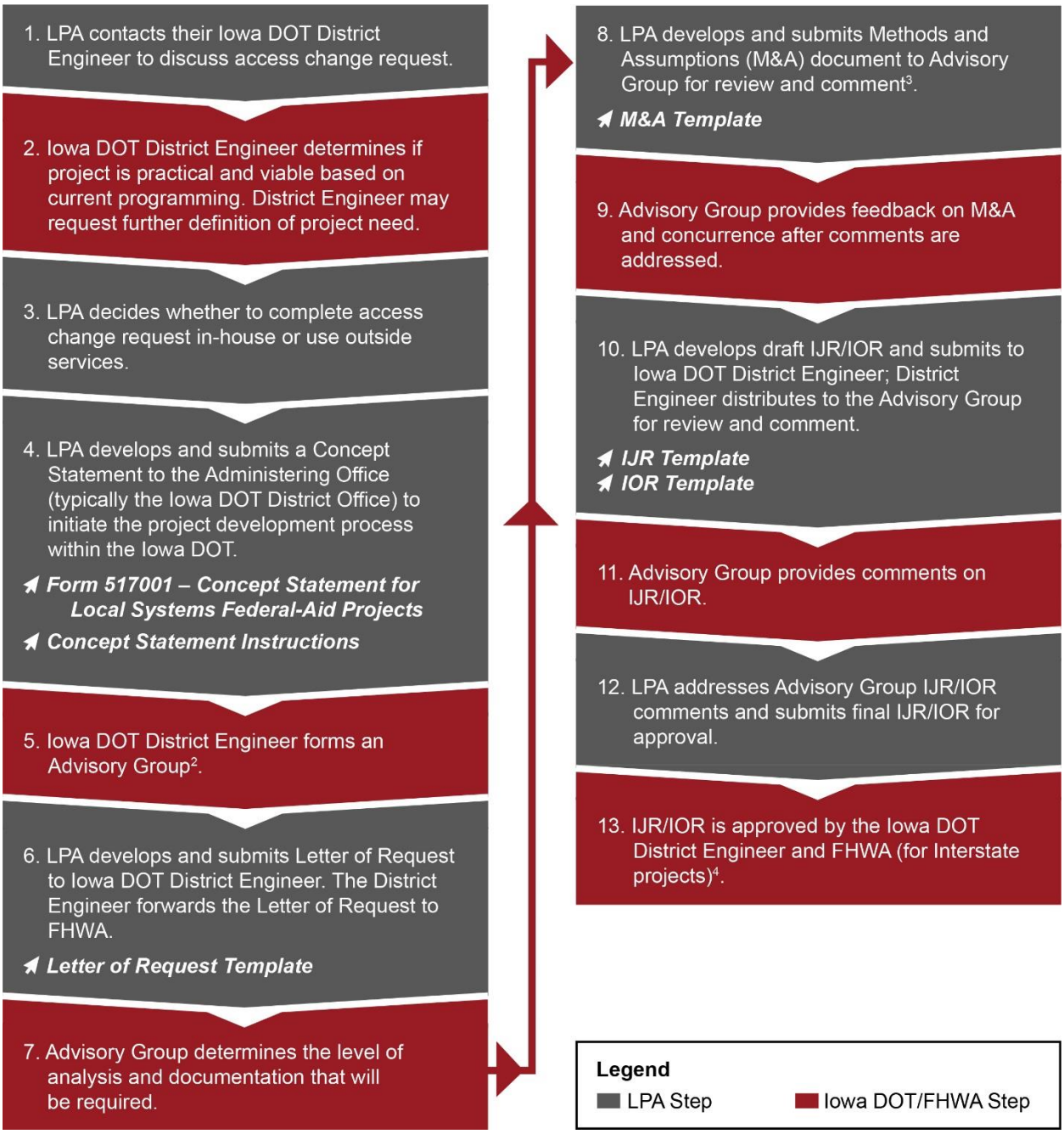
Quick Start Guide

This Quick Start Guide section to this User Guide is intended to provide a concise outline of the steps to complete an access change request. The Quick Start Guide provides an introduction of the process to those that are unfamiliar, and it provides a resource for those that have been through the process with a simple outline of steps as a refresher. Within the outline of these steps are links to documents and templates to support development of materials through the access change request process. More detailed information on completing an access change request is provided throughout the remainder of this User Guide.

Access change requests can be originated or led by a local public agency (LPA) or the Iowa DOT. The lead agency for an access change request is typically the agency that initiates the access change request by contacting others in Iowa DOT to present the need for the change in access. The steps to complete an access change request for Iowa DOT on Interstate and State highways begin with discussions between the requester of the access change and the appropriate District or Office within the Iowa DOT to talk through the need for the access change. Whether the access change originates with an LPA or Iowa DOT, the process begins with these discussions. Following these discussions are several steps to develop access change documents that lead to a decision on the access change request. The steps vary based on the agency that is leading the request (LPA vs. Iowa DOT). The steps to complete an access change request for LPA-led projects are outlined in **Figure QS-1**. The steps to complete an access change request for Iowa DOT-led projects are outlined in **Figure QS-2**. Additional details on these steps are provided in the Steps to Complete an Access Change Request section of this User Guide. A matrix of access change requirements and approvals is also provided in **Table QS-1**.

All access change requests begin with a discussion between the requesting party and the appropriate Iowa DOT District or Office to discuss the need for the access change.

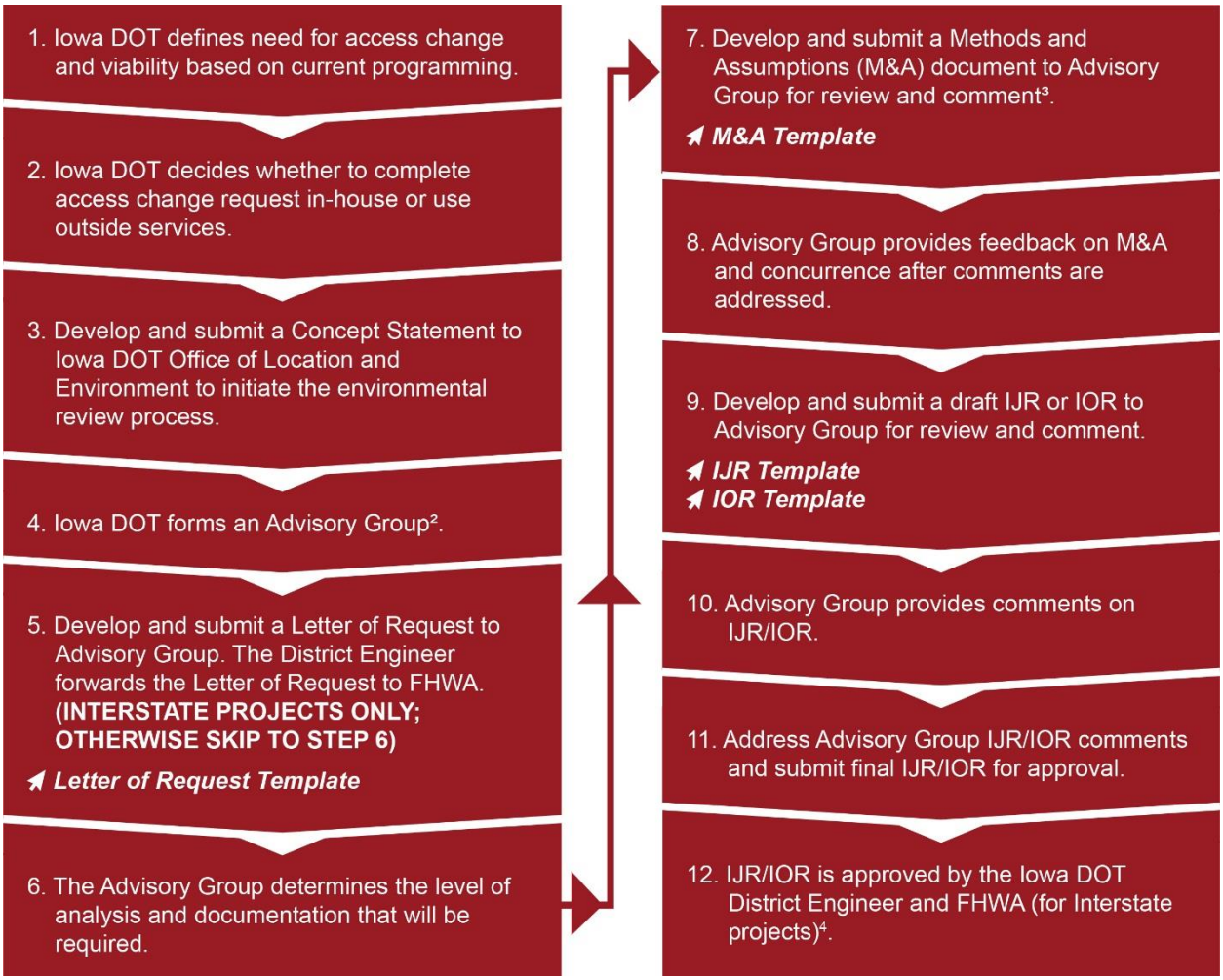
Figure QS-1. Steps for LPA-Led Access Change Requests[1]



1 LPA-Led Access Change Requests are those where the request for a change in access is initiated by an LPA.
2 Advisory group consists of staff from: Iowa DOT (District Office, Office of Design, Office of Systems Planning, Office of Traffic and Safety, Office of Location and Environment (OLE), and other Offices as deemed appropriate) and FHWA Iowa Division (for Interstate projects).
3 Omitted at discretion of Iowa DOT District Engineer with input from Advisory Group.
4 Environmental concurrence is provided separate from the IJR/IOR approval.

Source: Based on the Iowa DOT Policy 500.15, *"Process for New or Revised Interchanges"*.

Figure QS-2. Steps for Iowa DOT-Led Access Change Requests[1]



1 Iowa DOT-Led Access Change Requests are those where the request for a change in access is initiated by the Iowa DOT.

2 Advisory group consists of staff from: Iowa DOT (District Office, Office of Design, Office of Systems Planning, Office of Traffic and Safety, OLE, and other Offices as deemed appropriate) and FHWA Iowa Division (for Interstate projects).

3 Omitted at discretion of Iowa DOT District Engineer with input from Advisory Group.

4 Environmental concurrence is provided separate from the IJR/IOR approval.

Source: Based on the Iowa DOT Policy 500.15, *"Process for New or Revised Interchanges"*.

Table QS-1. Access Change Requirements and Approvals Matrix

Document Type[1]	Project in LRTP and TIP/STIP	Concept Statement	Letter of Request	Methods and Assumptions Document	Environmental Concurrence	Iowa DOT Approval	FHWA Approval
LPA-Led Access Change Requests							
Interstate							
IJR	X[2]	X	X	X[3]	X	X	X
IOR	X[2]	X	X	X[3]	X	X	X
State Highway							
IOR		X	X	X[3]	X	X	
Iowa DOT-Led Access Change Requests							
Interstate							
IJR	X[2]	X	X	X[3]	X	X	X
IOR	X[2]	X	X	X[3]	X	X	X
State Highway							
IOR		X		X[3]	X	X	

1 More information on Document Type is provided in the Access Change Document Types and Applicability chapter (Chapter 3) of this User Guide.
2 Not required for approval of IJR/IOR, but needs to be discussed in the Letter of Request and IJR/IOR, including what steps will be taken to get the project into the LRTP and TIP/STIP. Required for environmental approval.
3 Omitted at discretion of Iowa DOT District Engineer with input from Advisory Group.

1 Introduction

1.1 User Guide Application

This User Guide sets forth the process for preparing Interchange Justification Reports (IJRs), Interchange Operation Reports (IORs), and other related documents to gain approval for new or revised interchange access on Interstate and State highways in Iowa. It references Iowa Department of Transportation (DOT) and Federal Highway Administration (FHWA) Policy documents that provide the basis for the process outlined herein. General access policy for other access types (e.g., at-grade intersections, driveways) is detailed in the Iowa Primary Road Access Management Policy.

The purpose of this User Guide is to equip those involved in preparing access change documents with details of the process and expectations to efficiently complete an access change request. This User Guide is written for all parties involved in the process, including local agencies, consulting engineers, Iowa DOT staff, and others participating in the access document preparation and approval process. All parties involved should use this Guide from the inception of an access change request through the process of approval.

The purpose of this User Guide is to equip those involved in preparing access change request documents with details of the process and expectations for completing an access change request.

This User Guide does not present processes or procedures for environmental reviews, typically those completed through a National Environmental Policy Act (NEPA) document, that may be required as part of an access change request. However, it is important that the environmental reviews are conducted in parallel with the IJR/IOR process, as both processes produce information that can impact the results and conclusion of one another. The user should reference the Office of Location and Environment Manual for processes and procedures related to environmental reviews.

The IJR/IOR and environmental review processes are codependent and should be conducted in parallel to streamline project development.

This User Guide is meant to generate consistent processes and documentation between similar requests. To support consistency, a series of templates are provided for producing various types of interchange access related documents. These templates are linked throughout the User Guide to electronic documents available on the Iowa DOT's website. A consolidated list of templates is also provided in the Document Templates chapter (Chapter 8) of this User Guide.

1.2 Need for Access Change Document

An access change document is required whenever a new or revised interchange is requested along an Interstate or State highway.

Interstate and State highways in Iowa are used by many local, regional and national travelers because of the high level of service provided in terms of safety and mobility. When a high level of safety and mobility is no longer provided along these facilities, or anticipated changes to traffic demands are expected to degrade operations or safety, a change in access may be required. An access change document is required whenever a new or revised interchange is requested along an Interstate or State highway to provide justification of the need for the change and recommendations. The level of documentation (IJR or IOR) required for an access change request varies based on the type of change and facility type. An IJR is generally required for access change requests on the Interstate System that are not considered "minor" (as determined by the Advisory Group). An IOR is used for access change requests that do not require an IJR. The level of documentation for varying types of request is further described in the Access Change Document Types and Applicability chapter (Chapter 3) of this User Guide.

1.3 Iowa DOT Policy

The Iowa DOT Policy 500.15, *"Process for New or Revised Interchanges",* sets out the process to be used to obtain approval to add or revise access points (interchanges) to Interstate and State highways in Iowa. The focus of the Policy is on following the FHWA criteria toward completion of an IJR. It explains relationships among various agencies involved in the process. The policy also provides common practice information for local public agencies (LPAs) to prepare and submit an IJR, based on the specifics provided in Policy 500.15. General access policy for highways that are not fully controlled access is detailed in the Iowa Primary Road Access Management Policy.

This User Guide expands upon Policy 500.15 to include guidance for completing access change documents for requests with varying degrees of change and on State highways. It also provides updated guidance based on the most recent FHWA policies and procedures.

1.4 Steps to Complete an Access Change Request

There are a series of steps to complete an access change request on Interstate and State highways for Iowa DOT. The steps vary slightly based on the requesting agency (LPA vs. Iowa DOT). Flowcharts of the steps to complete an access change request are provided in the Quick Start Guide section near the front of this User Guide. The following sections detail the steps to complete an access change request on Interstate and State highways for Iowa DOT.

1.4.1 Steps for LPA-Led Access Change Requests

Steps for completing a LPA-led access change request are outlined below. The legend below indicates the responsible party for each step.

LEGEND: LPA Step | Iowa DOT/FHWA Step

Step 1 – LPA discusses access change request with their Iowa DOT District Engineer

The first step to complete an access change request on Interstate and State highways for LPA-led requests is for the LPA to have a discussion with their Iowa DOT District Engineer to talk through the need for the access change. During this discussion, the LPA should describe the current or future concerns that present the need for a new or revised interchange (this is typically included with the Concept Statement, see Step 4).

For access change requests on the Interstate, when the LPA contacts their District Engineer they should be prepared to present how a new or revised interchange is consistent with local and regional land use and transportation plans. Note that the proposed access change does not need to be in a local/regional/state planning document before an IJR/IOR is approved. However, before the access change environmental documentation is approved, the new or revised access must be consistent with the local planning agency (Metropolitan Planning Organization (MPO) or Regional Planning Agency (RPA)) Long Range Transportation Plan (LRTP), and must also have at least the design phase of the project programmed in the local planning agency Transportation Improvement Program (TIP) or the Iowa DOT Statewide Transportation Improvement Program (STIP). If the new or revised interchange is not in these planning documents, the LPA should have further discussions with local and Iowa DOT planning agencies to add the requested access change into the next update to these planning documents.

Step 2 – Iowa DOT District Engineer determines whether to advance project

The Iowa DOT District Engineer makes a determination on whether or not the project should advance based on discussions with the LPA. This determination is based on the presented need, practicality and viability. The determination takes into consideration programming of State projects based on prioritization and asset management. The District Engineer may require additional information from the LPA or adoption of the project into planning documents before proceeding.

Step 3 – LPA decides who will complete access change request

The process to complete an access change request often includes extensive time and expertise to complete evaluations and documentation to satisfy the request. This can be challenging for an LPA to complete without assistance by others. Early on in the access change request process, the LPA should decide whether they will complete the access change request in-house or use outside services.

Step 4 – LPA develops and submits Concept Statement

The LPA develops and submits a Concept Statement to the Administering Office (typically the Iowa DOT District Engineer), as defined in the Federal-aid Project Development Guide, to initiate the project development process within the Iowa DOT. The Concept Statement provides information about the proposed location, types of work, federal aid, possible environmental impacts and project design elements. Since this information is used by the Iowa DOT to initiate a number of project reviews and processes, the Concept Statement should be submitted as soon as possible to avoid project delays. More information on the Concept Statement is provided in the Concept Statement Development section (Section 4.1) of this User Guide.

Note that the Concept Statement includes documentation of known design exceptions. Design exceptions may not be known until later in the project. Design exceptions should be submitted for approval as soon as they are known. More information on design exceptions is provided in the Design Exceptions section (Section 5.7) of this User Guide.

Form 517001 should be used to complete the Concept Statement (see links provided below).

Form 517001 – Concept Statement for Local Systems Federal-Aid Projects

Concept Statement Instructions

Step 5 – Iowa DOT District Engineer forms an Advisory Group

The Iowa DOT District Engineer forms an Advisory Group to provide guidance throughout the project, review access change documents and provide comments in route to request approval. The Advisory Group consists of staff from the Iowa DOT (District Office, Office of Design, Office of Systems Planning, Office of Traffic and Safety, OLE, and other Offices as deemed appropriate) and FHWA (for Interstate projects).

Step 6 – LPA develops and submits Letter of Request

The LPA develops a Letter of Request that describes the characteristics of the requested access change and submits the letter to the Iowa DOT District Engineer. For access change requests on the Interstate, the District Engineer forwards the Letter of Request to the FHWA to inform them of work on the Interstate System. The Letter of Request is used by the Advisory Group (see Step 5) to evaluate the request and provide guidance on the level of effort required to complete the request. More information on the development of the Letter of Request is provided in the Letter of Request Development section (Section 4.2) of this User Guide.

The template for the Letter of Request should be used when preparing the Letter of Request (see link provided below).

Letter of Request Template

Step 7 – Advisory Group determines level of analysis and documentation

The Advisory Group reviews the Letter of Request to determine the level of analysis and documentation required to satisfy the request, or requests additional information.

In some instances, the Letter of Request may be used to complete the approval for the access change, without completing an IOR. These instances generally include small changes to existing interchanges, such as extension of a ramp auxiliary lane or increase to intersection return radii. The ability of the Letter of Request to serve as the documentation for approval of the access change is determined by the FHWA for requests on the Interstate System or by Iowa DOT for requests on State highways.

The outcome of the Advisory Group Letter of Request review will determine:

- Level of engineering and operational documentation (IJR, IOR or Letter of Request).
- Level of NEPA documentation (as determined separately from NEPA Compliance Section).
- Level of operational analysis required (deterministic and/or microsimulation).
- Level of safety analysis (historical and/or predictive).

Step 8 – LPA develops and submits Methods and Assumptions

The LPA develops a Methods and Assumptions (M&A) document to outline the area of influence, data, analysis procedures and design criteria to be used on the project. The LPA submits the M&A to the Advisory Group for review and comment. Depending on the complexities of the project, a meeting between the LPA and Advisory Group may be needed to discuss the M&A. The LPA may need to revise the M&A based on comments from the Advisory Group (see Step 9). The LPA resubmits the M&A for final concurrence by the Advisory Group after addressing any comments. More information on the M&A is provided in the M&A Document Development section (Section 4.3) of this User Guide.

The M&A document may be omitted at the discretion of the Iowa DOT District Engineer with input from the Advisory Group. For projects that do not include development of an M&A, coordination between the LPA and Advisory Group may be needed to address some of the materials that typically go into the M&A document.

The template for the M&A should be used when preparing the M&A (see link provided below).

M&A Template

Step 9 – Advisory Group reviews and concurs with Methods and Assumptions

The Advisory Group reviews the M&A for concurrence with the area of influence, data, analysis procedures and design criteria. The Advisory Group provides any comments on the M&A to the LPA to be addressed. After comments have been addressed, the Advisory Group provides concurrence of the M&A for use on the project.

Step 10 – LPA develops and submits IJR/IOR

The LPA develops an IJR or IOR (depending on the level of documentation determined in Step 6) to document the safety, operational, and engineering processes and conclusions for the project. The LPA submits the IJR or IOR to the Iowa DOT District Engineer, who distributes to the Advisory Group for review and comment. Depending on the complexities of the project, a meeting between the LPA and Advisory Group may be needed to discuss the IJR or IOR.

The template for an IJR or IOR should be used when preparing the IJR or IOR (see links provided below).

IJR Template

IOR Template

Step 11 – Advisory Group provides comments on IJR/IOR

The Advisory Group provides comments on the IJR/IOR to the LPA to be addressed before approval is granted.

Step 12 – LPA addresses Advisory Group comments and submits final IJR/IOR

The LPA addresses comments on the IJR/IOR from the Advisory Group and submits final IJR/IOR for approval. Note that any known design exceptions must be approved prior to submitting the IJR/IOR for approval.

Step 13 – IJR/IOR is approved by the Iowa DOT District Engineer and FHWA

The appropriate Iowa DOT District Engineer and FHWA approve the IJR/IOR. Note, the FHWA does not approve IORs on State highways; these IORs are approved only by the Iowa DOT District Engineer. Environmental concurrence is provided separate from the IJR/IOR approval, and an IJR/IOR may be approved by the Iowa DOT or FHWA before environmental concurrence. Approval of the IJR/IOR and environmental concurrence must be provided before a project moves into the design phase. More information on the approval process is provided in the Approval of IJRs and IORs section (Section 6.2) of this User Guide.

1.4.2 Steps for Iowa DOT-Led Access Change Requests

Steps for completing an Iowa DOT-led access change request are outlined below.

Step 1 – Iowa DOT defines need for access change and viability

The first step to complete an access change request on Interstate and State highways for Iowa DOT-led requests is for the Iowa DOT to define the need for the access change. During this step, the Iowa DOT defines the current or future concerns that present the need for a new or revised interchange (this is typically included with the Concept Statement, see Step 3).

New or revised interchange should be consistent with local and regional land use and transportation plans. Note that the proposed access change does not need to be in a local/regional/state planning document before an IJR/IOR is approved. However, before the access change environmental documentation is approved, the new or revised access must be an official, fiscally constrained project in the local planning agency (MPO or RPA) LRTP, and must also have at least the design phase of the project programmed in the local planning agency TIP or the STIP. If the new or revised interchange is not in these planning documents, further discussions with local and Iowa DOT planning agencies will be needed to add the requested access change into the next update to these planning documents.

Step 2 – Iowa DOT decides who will complete access change request

Early on in the access change request process, the Iowa DOT decides what, if any, elements of the access change request will be completed using outside services. If outside services are used, the Iowa DOT Project Management Office (PMO) contracts with an outside service provider.

Step 3 – Develop and submit a Concept Statement

A Concept Statement is developed and submitted to the OLE to initiate the environmental review process. The Concept Statement provides information about the proposed location, types of work, federal aid, possible environmental impacts and project design elements. Since this information is used by the Iowa DOT to initiate a number of project reviews and processes, the Concept Statement should be submitted as soon as possible to avoid project delays.

Note that the Concept Statement includes documentation of known design exceptions. Design exceptions may not be known until later in the project. Design exceptions should be submitted for approval as soon as they are known. More information on design exceptions is provided in the Design Exceptions section (Section 5.7) of this User Guide.

Step 4 – Iowa DOT forms an Advisory Group

An Advisory Group is formed to provide guidance throughout the project, review access change documents and provide comments in route to request approval. The Advisory

Group consists of staff from the Iowa DOT (District Office, Office of Design, Office of Systems Planning, Office of Traffic and Safety, OLE, and other Offices as deemed appropriate) and FHWA (for Interstate projects).

Step 5 – Develop and submit a Letter of Request

FOR INTERSTATE PROJECTS ONLY; OTHERWISE SKIP TO STEP 5
(State highway access change requests by the Iowa DOT are handled with an IOR and do not need a Letter of Request)

A Letter of Request is developed that describes the characteristics of the requested access change and submitted to the Advisory Group. The Letter of Request is used by the Advisory Group to evaluate the request and provide guidance on the level of effort required to complete the request. More information on the development of the Letter of Request is provided in the Letter of Request Development section (Section 4.2) of this User Guide.

The template for the Letter of Request should be used when preparing the Letter of Request (see link provided below).

Letter of Request Template

Step 6 – The Advisory Group determines level of analysis and documentation

The Advisory Group reviews the Letter of Request to determine the level of analysis and documentation required to satisfy the request, or requests additional information. For access change requests on the Interstate System, the FHWA (who are part of the Advisory Group) provide their requirements for analysis and documentation based on the Letter of Request.

In some instances, the Letter of Request may be used to complete the approval for the access change on the Interstate System, rather than completing an IOR. These instances generally include small changes to existing interchanges, such as extension of a ramp auxiliary lane or increase to intersection return radii. The ability of the Letter of Request to serve as the documentation for approval of the access change is determined by the Advisory Group and confirmed by the FHWA.

The outcome of the Advisory Group Letter of Request review will determine:

- Level of engineering and operational documentation (IJR, IOR or Letter of Request).
- Level of NEPA documentation (as determined separately from NEPA Compliance Section).
- Level of operational analysis required (deterministic and/or microsimulation).
- Level of safety analysis (historical and/or predictive).

Step 7 – Develop and submit Methods and Assumptions

An M&A document is developed to outline the area of influence, data, analysis procedures and design criteria to be used on the project. The M&A is submitted to the Advisory Group for review and comment. Depending on the complexities of the project, a meeting with the Advisory Group may be needed to discuss the M&A. Revisions to the M&A may be needed based on comments from the Advisory Group (see Step 8). The M&A is submitted for final concurrence by the Advisory Group after addressing any comments. More information on the M&A is provided in the M&A Document Development section (Section 4.3) of this User Guide.

The M&A document may be omitted at the discretion of the Iowa DOT District Engineer with input from the Advisory Group. For projects that do not include development of an M&A, coordination with the Advisory Group may be needed to address some of the materials that typically go into the M&A document.

The template for the M&A should be used when preparing the M&A (see link provided below).

M&A Template

Step 8 – Advisory Group reviews and concurs with Methods and Assumptions

The Advisory Group reviews the M&A for concurrence with the area of influence, data, analysis procedures and design criteria. The Advisory Group provides any comments on the M&A to be addressed. After comments have been addressed, the Advisory Group provides concurrence of the M&A for use on the project.

Step 9 – Develop and submit IJR/IOR

An IJR or IOR (depending on the level of documentation determined in Step 6) is developed to document the safety, operational and engineering processes and conclusions for the project. The IJR or IOR is submitted to the Advisory Group for review and comment. Depending on the complexities of the project, a meeting with the Advisory Group may be needed to discuss the IJR or IOR.

The template for an IJR or IOR should be used when preparing the IJR or IOR (see links provided below).

IJR Template

IOR Template

Step 10 – Advisory Group provides comments on IJR/IOR

The Advisory Group provides comments on the IJR/IOR to be addressed before approval will be granted.

Step 11 – Address Advisory Group comments and submit final IJR/IOR

Comments on the IJR/IOR from the Advisory Group are addressed and the final IJR/IOR is submitted for approval. Note that any design exceptions must be approved prior to submitting the IJR/IOR for approval

Step 12 – IJR/IOR is approved by the Iowa DOT District Engineer and FHWA

The appropriate Iowa DOT District Engineer and FHWA approve the IJR/IOR. Note, the FHWA does not approve IORs on State highways; these IORs are approved only by the Iowa DOT District Engineer. Environmental concurrence is provided separate from the IJR/IOR approval, and an IJR/IOR may be approved by the Iowa DOT or FHWA before environmental concurrence. Approval of the IJR/IOR and environmental concurrence must be provided before a project moves into the design phase. More information on the approval process is provided in the Approval of IJRs and IORs section (Section 6.2) of this User Guide.

2 FHWA Policy

The *FHWA Policy on Access to the Interstate System* identifies the requirements that must be satisfied to gain FHWA approval of engineering and operations of an access change request on the Interstate System. This chapter provides an overview of the FHWA Policy requirements. The guidance presented in this User Guide and in the provided templates has been prepared to meet the FHWA Policy requirements.

2.1 Overview of FHWA Policy

It is in the national interest to preserve and enhance the Interstate System to meet the needs of the 21st Century by assuring that it provides the highest level of service in terms of safety and mobility. Therefore, new or revised access points to the Interstate System will be considered for FHWA approval only if evaluation of the Policy requirements is satisfactorily met.

The *FHWA Policy on Access to the Interstate System* includes the requirements for the justification and documentation necessary to substantiate any access change request on the Interstate System that is submitted to the FHWA for approval. FHWA's decision to approve a request is dependent upon the information developed in support of fulfilling the requirements identified in the Policy. Beyond the Policy requirements, the Policy includes details on application of the Policy.

The guidance presented in this User Guide is based on the current FHWA Policy, which was effective as of May 22, 2017. The FHWA Policy and supplemental FHWA guidance on Interstate System access are found at the links below:

FHWA Policy on Access to the Interstate System

Interstate System Access Information Guide

2.2 FHWA Policy Requirements

There are two requirements in the FHWA Policy on Access to the Interstate System that are used to substantiate an access change on the Interstate System. These requirements focus on the safety, operational and engineering considerations of the access change request. The FHWA's decision to approve a request is dependent on the proposal satisfying and documenting the Policy requirements. The FHWA Policy requirements and how these requirements are to be addressed are outlined below:

1. "An operational and safety analysis has concluded that the proposed change in access does not have a significant adverse impact on the safety and operation of the Interstate facility (which includes mainline lanes, existing, new, or revised ramps, and ramp intersections with crossroad) or on the local street network based on both the current and the planned future traffic projections. The analysis should, particularly in urbanized areas, include at least the first adjacent existing or proposed interchange on either side of the proposed change in access (Title 23, Code of Federal Regulations (CFR), paragraphs 625.2(a), 655.603(d) and 771.111(f)). The

crossroads and the local street network, to at least the first major intersection on either side of the proposed change in access, should be included in this analysis to the extent necessary to fully evaluate the safety and operational impacts that the proposed change in access and other transportation improvements may have on the local street network (23 CFR 625.2(a) and 655.603(d)). Requests for a proposed change in access should include a description and assessment of the impacts and ability of the proposed changes to safely and efficiently collect, distribute, and accommodate traffic on the Interstate facility, ramps, intersection of ramps with crossroad, and local street network (23 CFR 625.2(a) and 655.603(d)). Each request should also include a conceptual plan of the type and location of the signs proposed to support each design alternative (23 U.S.C. 109(d) and 23 CFR 655.603(d)).”

How to address Policy requirement 1

- Perform traffic operational analyses for opening year and design year traffic demands with the proposed access change to demonstrate adequate traffic operations on the Interstate System.
- Perform a safety analysis to demonstrate the proposed access change will not have adverse impacts to safety on the Interstate System.
- Provide a conceptual signing plan for the Interstate System with the proposed access change.

2. The proposed access connects to a public road only and will provide for all traffic movements. Less than "full interchanges" may be considered on a case-by-case basis for applications requiring special access, such as managed lanes (e.g., transit or high occupancy vehicle and high occupancy toll lanes) or park and ride lots. The proposed access will be designed to meet or exceed current standards (23 CFR 625.2(a), 625.4(a)(2), and 655.603(d)). In rare instances where all basic movements are not provided by the proposed design, the report should include a full-interchange option with a comparison of the operational and safety analyses to the partial-interchange option. The report should also include the mitigation proposed to compensate for the missing movements, including wayfinding signage, impacts on local intersections, mitigation of driver expectation leading to wrong-way movements on ramps, etc. The report should describe whether future provision of a full interchange is precluded by the proposed design.

How to address Policy requirement 2

- State if the proposed access change will provide full access to and from each roadway at the interchange (no restricted turning movements) and that the proposed Interstate access is to a public road.
    - For proposed access changes where full access will not be provided, describe any special access facilities where full access may not be an expectation by drivers, such as managed lanes, park and ride lots, or rest areas.
    - For proposed access changes where full access will not be provided (except for those related to special access facilities), provide an option with full

access for comparison to the proposed access, and provide mitigation measures for the missing movements of the proposed access to compensate for missing movements.

- Present the design standards used for the proposed access change to demonstrate that sufficient engineering has been used to prove the geometric viability and constructability of the proposed access change.

2.3 Supplemental FHWA Policy Requirements

The previous FHWA Policy on Access to the Interstate System of August 27, 2009 (2009 FHWA Policy on Access to the Interstate System) included six additional requirements to address considerations of social, economic and environmental impacts. These requirements were removed from the Policy effective May 22, 2017. However, the removal of these requirements from the current policy does not eliminate the need to consider these matters. These matters are intended to be addressed under NEPA or other planning-level studies, such as a Location Study, and other statutes and regulations applicable to the approval process. Depending on the level of documentation required to satisfy NEPA, some of these matters may not be included in the NEPA document, and they may need to be addressed in the IJR. Coordination with the Advisory Group should be used to identify any of the old FHWA Policy requirements related to social, economic or environmental impacts to be included in the IJR.

2009 FHWA Policy requirements pertaining to social, economic and environmental impacts may need to be included in an IJR depending on the information provided in the NEPA document. Inclusion of these matters is determined by the Advisory Group.

The 2009 FHWA Policy requirements and how these requirements are to be addressed are outlined below:

1. The need being addressed by the request cannot be adequately satisfied by existing interchanges to the Interstate, and/or local roads and streets in the corridor can neither provide the desired access, nor can they be reasonably improved (such as access control along surface streets, improving traffic control, modifying ramp terminals and intersections, adding turn bays or lengthening storage) to satisfactorily accommodate the design year traffic demands (23 CFR 625.2(a)).

How to address 2009 Policy requirement 1

- Perform traffic operational analyses of existing conditions and design year No-Build conditions to demonstrate the inability of the existing geometry to adequately serve traffic demands.
- Perform a safety evaluation to demonstrate any safety concerns related to the existing geometry.
- Review the local roadway system for potential improvements to address operational/safety deficiencies on the Interstate System, and demonstrate that

local roadway improvements will not address the need for the proposed access change.

2. The need being addressed by the request cannot be adequately satisfied by reasonable transportation system management (such as ramp metering, mass transit, and HOV facilities), geometric design, and alternative improvements to the Interstate without the proposed change(s) in access (23 CFR 625.2(a)).

   How to address 2009 Policy requirement 2

   - Summarize all reasonable and feasible alternatives considered to address the need, including access location, interchange configuration, geometric design options and transportation system management strategies.
   - Describe why alternative solutions to the proposed access change do not address the need or are impractical for consideration.

3. *2009 FHWA Policy requirement 3 is now Policy requirement 1 in the current FHWA Policy; Refer to the FHWA Policy Requirements section above for details on this requirement.*

4. *2009 FHWA Policy requirement 4 is now Policy requirement 2 in the current FHWA Policy; Refer to the FHWA Policy Requirements section above for details on this requirement.*

5. The proposal considers and is consistent with local and regional land use and transportation plans. Prior to receiving final approval, all requests for new or revised access must be included in an adopted Metropolitan Transportation Plan, in the adopted Statewide or Metropolitan Transportation Improvement Program (STIP or TIP), and the Congestion Management Process within transportation management areas, as appropriate, and as specified in 23 CFR part 450, and the transportation conformity requirements of 40 CFR parts 51 and 93.

   How to address 2009 Policy requirement 5

   - List the local and regional planning documents that include the proposed access change. The proposed access change must be included in an MPO or RPA LRTP, and in the local planning agency TIP or the STIP.
   - List any other planned improvements on the Interstate or crossroad within the proposed access change and describe how the proposed change is consistent with those planned improvements.

6. In corridors where the potential exists for future multiple interchange additions, a comprehensive corridor or network study must accompany all requests for new or revised access with recommendations that address all of the proposed and desired access changes within the context of a longer-range system or network plan (23 U.S.C. 109(d), 23 CFR 625.2(a), 655.603(d), and 771.111).

How to address 2009 Policy requirement 6

- Describe any other access changes that are planned within the local and regional Interstate System, and state any impacts that the proposed and other planned access changes are expected to have on each other and the Interstate System.
- For planned access changes in close proximity to the proposed access change, where they are likely to impact each other, summarize how the adjacent planned access changes were incorporated into the evaluation of the proposed access change.

7. When a new or revised access point is due to a new, expanded, or substantial change in current or planned future development or land use, requests must demonstrate appropriate coordination has occurred between the development and any proposed transportation system improvements (23 CFR 625.2(a) and 655.603(d)). The request must describe the commitments agreed upon to assure adequate collection and dispersion of the traffic resulting from the development with the adjoining local street network and Interstate access point (23 CFR 625.2(a) and 655.603(d)).

How to address 2009 Policy requirement 7

- Describe any local system improvements that are necessary to accommodate the proposed access change and ensure traffic can be delivered to and from the proposed access.
- Describe the coordination with public or private entities to identify fiscal responsibilities and gain commitment for constructing local improvements needed to accommodate the proposed access change.

8. The proposal can be expected to be included as an alternative in the required environmental evaluation, review and processing. The proposal should include supporting information and current status of the environmental processing (23 CFR 771.111).

How to address 2009 Policy requirement 8

- Present the status of the NEPA process and key dates, including anticipated completion of NEPA and public involvement.
- Present any known social or environmental issues identified through the NEPA process.

3 Access Change Document Types and Applicability

There are two types of documents that are used to summarize the operational/safety evaluations and conclusions of an access change request on Interstate and State highways. The document types are IJR and IOR. The selection of the appropriate document type for an access change request is determined by the FHWA and other members of the Advisory Group assembled by the Iowa DOT District Engineer during the request process (the FHWA makes determinations for projects on the Interstate System). **Table 3-1** provides the general applicability of the types of documents for different facility types.

The FHWA and Advisory Group determine the appropriate document type to summarize evaluations and conclusions for an access change request.

Table 3-1. Applicability of Access Change Documents

Facility Type	IJR	IOR
Interstate	New access or major modifications to an existing interchange	Minor modifications to an existing access
State Highway	Not Applicable (IJRs are not required for access change requests on State highways)	New interchange or major modifications to an existing interchange

An overview of IJRs and IORs are provided in the following sections. The IJR and IOR are meant to only summarize the operational/safety evaluations and conclusions of the access change request; they are not to provide duplicative information that is included in the NEPA document. The user should reference the Office of Location and Environment Manual for processes and procedures related to NEPA document. Details on the information included and organization of an IJR and IOR are provided in the Access Change Document Development chapter (Chapter 4) of this User Guide.

3.1 IJR Overview

An IJR is used to document the operational and safety evaluations, and conclusions of a request for new access or major modifications to an existing access on the Interstate System. Examples of access change on the Interstate System when an IJR is used to summarize the evaluations and conclusions are provided in **Table 3-2**.

Table 3-2. Access Change Examples Triggering IJRs on the Interstate System

New freeway-to-freeway interchange (system interchange).
New freeway-to-local road interchange (service interchange).
Major modification of freeway-to-freeway interchange configuration (e.g., abandoning/removing ramp(s), modifying ramp type or completing basic movements).
New partial interchange or new ramps to/from continuous frontage roads that create a partial interchange.
Major modification of existing configuration (e.g., adding a loop ramp to diamond interchange).
Completion of basic movements at an existing partial interchange.
Abandonment of ramps or an interchange.
Locked gate access.
Relocation of a terminal or ramp to a different local road.

A change in the interchange configuration is generally considered a change in access even though the number of access points may not change. For example, replacing one of the direct ramps of a diamond interchange with a loop, or changing a cloverleaf interchange into a fully directional interchange would be considered revised access for the purpose of applying the FHWA Policy.

A change in the interchange configuration is generally considered a change in access even though the number of access points may not change.

The underlying factor in the IJR process is determining what the change in access does to operations and safety on the Interstate System. The following are some reasons and philosophies behind the IJR process:

- Adding a new access point to the Interstate **will** affect operations and/or safety (positively or negatively). The key is to quantify the impact of the new access and determine if mitigation is needed and attainable. The operational integrity of the Interstate System must be maintained.
- When the location or the geometry of an access point connection to the Interstate System is changed, there is the possibility to affect operations of the mainline facility.
- Before access changes are made, appropriate use of the Interstate System compared to the local/regional highway systems needs to be evaluated.
- Local land use planning and transportation planning must be coordinated and integrated.
- An access need must be established and supported by demonstrated travel demand that **cannot** be satisfactorily accommodated by the local roadway network.
- Optimizing the location, design, safety and operation of ramps and the overall system is the objective, not minimizing access points.

Details on the development of an IJR, including the layout of the document, are provided in the IJR Development section (Section 4.4) of this User Guide.

3.1.1 IJR Amendment Overview

An IJR Amendment is used for situations when an IJR is approved, time passes, and the project is not constructed. These situations may necessitate an update to the previously approved IJR, depending on the amount of time that has passed since the previous approval of the IJR and conditions that may have changed. FHWA Policy states, "*An affirmative determination by FHWA of safety, operational, and engineering acceptability for proposals for new or revised access points to the Interstate System should be reevaluated whenever a significant change in conditions occurs (e.g., land use, traffic volumes, roadway configuration or design, or environmental commitments). Proposals may be reevaluated if the project has not progressed to construction within 3 years of receiving an affirmative determination of engineering and operational acceptability.*" FHWA provides direction on whether or not an update to an IJR is required. When an update to an IJR is required, an IJR Amendment is used to gain new approval of the access change request.

Proposal reevaluation may be required if the project has not progressed to construction within 3 years of receiving an affirmative determination of engineering and operational acceptability.

An IJR Amendment updates the analysis completed in a previously approved IJR and is used to reaffirm the recommendations from the previous IJR or provide updated recommendations. In most cases, the changed condition needs to consider only evaluation against the approved interchange configuration. It is often the case that the original need for the proposed access modifications does not change, but there is a change in traffic forecasts, adjacent land use, a change in the surrounding Interstate System, a change to the local roadway network that could affect the approved interchange configuration, or a change to the methodology used to evaluate the proposed access change. The new information is analyzed against the approved interchange configuration and the policy requirements to determine the impacts to the approved interchange configuration and identify modifications to mitigate any impacts. The conceptual signing plan from the original IJR should also be reviewed and updated as needed in the IJR Amendment to account for any changes from the original IJR. This document is generally concise and does not require a formal report like an IJR; a memorandum is the appropriate document scale for an IJR Amendment.

When an IJR Amendment is required, the requesting agency (LPA or Iowa DOT District) is encouraged to prepare an outline of the materials to be updated in the IJR Amendment for discussion with the Advisory Group. The Advisory Group will then provide guidance on items to be updated in the IJR Amendment.

When an IJR requires an amendment, the NEPA document will also likely require review to determine if a reevaluation is necessary.

Details on the development of an IJR Amendment, including the layout of the document, are provided in the IJR Amendment Development section (Section 4.4.1) of this User Guide.

3.2 IOR Overview

An IOR is used to summarize the operational/safety evaluations and conclusions of a request for minor modifications to an existing access on the Interstate System, or new access or major modifications to an existing access on a State highway. An IOR provides a summary of the operational and safety analysis without providing the level of detail and background that is included in an IJR. The scale of access change included in an IOR and the approval process for an IOR varies by facility type. The following sections provide examples of situations when an IOR is appropriate on the Interstate System or a State highway.

An IOR provides a summary of the operational and safety analysis without providing the level of detail and background that is included in an IJR.

3.2.1 IOR on the Interstate System

An IOR is used for an access change request on the Interstate System to summarize the operational/safety evaluations and conclusions for minor modifications to an existing access. Minor modifications to an existing access on the Interstate System are those that do not alter the number or location of access points at an existing access. On a case-by-case basis, minor modifications to existing access on the Interstate System need to be reviewed with the Iowa DOT District Engineer and FHWA to determine if an IOR is appropriate for documenting the operational/safety evaluations and conclusions. The FHWA determines if an IOR is the appropriate document to summarize the evaluations and conclusions for the access change request on the Interstate System. Additionally, some access change requests are minor enough that they may be able to be approved via the Letter of Request without needing to complete an IOR. FHWA determines if approval of access change via the Letter of Request is appropriate.

Examples of access change on the Interstate System when an IOR is used to summarize the operational/safety evaluations and conclusions are provided in **Table 3-3**. **Table 3-3** also identifies access change examples that may be able to be approved via the Letter of Request without needing to complete an IOR.

Table 3-3. Access Change Examples Triggering IORs on the Interstate System

Access Change Example	Letter of Request may be allowed for Approval[1]
Addition of lanes to a ramp. An IJR might be triggered, should FHWA have a concern about safety or operations with the adjacent interchanges.	No
Implementation of ramp metering or other active control of vehicles entering the Interstate System.	No
Installation of traffic control devices at ramp termini.	No
Addition of single auxiliary lane between two adjacent interchange ramp where the single auxiliary lane does not function as a mainline travel lane.	No
Addition of turn lanes or modification of intersection approach lane configuration at a ramp terminal intersection.	Yes
Replacement or modification of an interchange "in-kind" to accommodate an Interstate widening project, restore the structural integrity of the infrastructure, or update the interchange geometry to current standards, as long as the interaction with adjacent interchanges is not affected.	Yes
Modification of the length of acceleration of deceleration lanes of any ramp.	Yes

[1] FHWA determines if approval of access change via the Letter of Request is appropriate.

Details on the development of an IOR, including the layout of the document, are provided in the IOR Development section (Section 4.5) of this User Guide.

3.2.2 IOR on a State Highway

An IOR is used for an access change request on a State highway to summarize the operational/safety evaluations and conclusions for a new access or major modifications to an existing access. Minor modifications to an existing access on a State highway, when requested by an LPA, are approved via the Letter of Request without needing to complete an IOR. For LPA-led projects, the Iowa DOT District Engineer provides concurrence for approval of access change via the Letter of Request, if deemed appropriate. For DOT-led projects, a Letter of Request is not a requirement for access change requests on a State highway (the decision to make these minor improvements are handled within the Iowa DOT District Office and OLE).

Examples of access change on a State highway when an IOR is used to summarize the operational/safety evaluations and conclusions are provided in **Table 3-4**.

Table 3-4. Access Change Examples Triggering IORs on State Highways

New by-pass of a rural community or realignment of mainline.
New interchange.
Major modification to an existing interchange, such as changing the interchange configuration type, ramp geometry or reconstruction of structures.
Completion of basic movements at an existing partial interchange.[1]
Abandonment of ramps or an interchange.[1]
Relocation of a terminal or ramp to a different local road.[1]
Addition of lanes to a ramp.[1]
Addition of single auxiliary lane between two adjacent interchange ramp where the single auxiliary lane does not function as a mainline travel lane.[1]

[1] Need for IOR determined by District Engineer with coordination of Iowa DOT IJR Committee.

There are also situations when an IOR may be required for an access change request on a State highway that does not have full access control. For these situations, the primary area of evaluation is focused on integration with adjacent at-grade access points. Adding an interchange, which is a high-speed type facility, adjacent to or near at-grade access points such as a signalized intersection or cross-road stop-controlled intersection, may cause an operational or safety situation that is not desirable. Traffic circulation patterns around the proposed interchange location and the potential need to close adjacent highway access locations to integrate with the interchange operations requires close examination. General access policy is detailed in the Iowa Primary Road Access Management Policy. The LPA making the access change request will need to work closely with the Iowa DOT District to evaluate acceptability of a new interchange proposal and determine if an IOR is the appropriate document for the situation.

Details on the development of an IOR, including the layout of the document, are provided in the IOR Development section (Section 4.5) of this User Guide.

4 Access Change Document Development

Access change requests are completed through the steps outlined in the Steps to Complete an Access Change Request section (Section 1.4) of this User Guide. Throughout the steps to complete the access change request, multiple documents may need to be developed. These include:

- Concept Statement
- Letter of Request
- M&A Document
- IJR
  - IJR Amendment
- IOR

The information contained in these documents and organization of materials within these documents is summarized in the following sections. Links to template documents that provide outlines and additional details to support document development are also provided in the following sections.

4.1 Concept Statement Development

A Concept Statement is prepared for all access change requests to initiate project development processes within the Iowa DOT, unless completed through NEPA.

The Concept Statement contains information on the project location, type of work, federal aid, potential environmental impacts, and project design elements. It is used by Iowa DOT to initiate the project development process (including NEPA) within the DOT. A Concept Statement is prepared for all access change requests, unless previously completed through NEPA. The Concept Statement is developed through use of Form 517001 – Concept Statement for Local Systems Federal-Aid Projects. Instructions on the development and submittal procedures for a Concept Statement are located at https://iowadot.gov/local_systems/publications/im/3110.pdf.

4.2 Letter of Request Development

The Letter of Request is used by the Advisory Group to determine the level of analysis and documentation to satisfy an access change request.

The Letter of Request provides information on the intent of the requested access change, including a definition of the problem and concepts being considered. The Letter of Request is used by the Advisory Group to understand the proposed access change, identify potential issues and give direction on the level of analysis and documentation required to satisfy the access change request. It is also used

to inform the FHWA of work on the Interstate System. The Letter of Request is created for all LPA-led requests (Interstate and State highways) and Iowa DOT-led requests on the Interstate System. The Letter of Request contains the following sections:

1. **Introduction** – States the proposed access change.
2. **Location** – Describes the location of the project and surrounding transportation/land use characteristics.
3. **Problem Definition** – Define the problem being addressed by the proposed access change and state specific goals and objectives to be achieved.
4. **Project Limits** – Describe the limits of the physical improvements and analysis area.
5. **Build Alternatives** – Presents concepts being considered and how they meet the project goals and objectives.
6. **Project Development Schedule** – States the desired schedule to complete the project and notes any schedule dates that have not yet been identified.
7. **Funding Strategy** – Provides a planning-level estimate of construction costs and a breakdown of potential funding sources. Notes funding documented in local, regional and statewide planning documents. Notes if funding sources have not yet been identified.
8. **Compatibility with Roadway Network** – Describe the compatibility of the proposed access change with adjacent roadways.
9. **Local Agency Support** – Summarize coordination with local agencies regarding proposed access change and level of support.

For LPA-led projects, the LPA submits the Letter of Request to the Iowa DOT District Engineer to be reviewed by the Advisory Group. The Advisory Group then determines the level of analysis and documentation required to satisfy the request. For Iowa DOT-led projects, the District Engineer submits the Letter of Request to the FHWA. The FHWA then determines the level of analysis and documentation required to satisfy the request.

In some instances, the Letter of Request may be used to complete the approval for the access change, without completing an IOR. These instances generally include small changes to existing interchanges, such as extension of a ramp auxiliary lane or increase to intersection return radii. The ability of the Letter of Request to serve as the documentation for approval of the access change is determined by the FHWA for requests on the Interstate System or by Iowa DOT for requests on State highways.

The Letter of Request Template provides an outline and additional details to support development of the document.

4.3 M&A Document Development

The M&A document outlines the area of influence, data, analysis procedures and design criteria to be used on the project. The M&A document is used by the LPA and Advisory Group to confirm the data, analysis methods/processes and design criteria to be used on the project. It is created for all IJRs and select IORs at the discretion of the Iowa DOT District Engineer and other Advisory Group members. The M&A document is most critical for projects in urban areas or with complex features. For projects that do not include development of an M&A document, coordination between the LPA and Advisory Group may be needed to address some of the materials that typically go into the M&A document. The M&A document contains the following sections:

The M&A document is most critical for projects in urban areas or with complex features.

1. **Introduction** – States the proposed access change, and provides the problem definition.
2. **Area of Influence** – Describes and/or depicts the operational and safety analysis areas.
3. **Analysis Years/Scenarios and Periods** – Identifies the years/scenarios and times of day to be evaluated for traffic operations and safety.
4. **Data Collection Sources and Methodologies** – Provides a list of data to be collected, sources for that data and methodologies for collecting data.
5. **Traffic Forecasting Methodologies** – Presents the sources and methodologies to be used in development of traffic forecasts for all study years and scenarios.
6. **Operational Analysis Methodologies** – Describes the operational analysis tools to be used, input assumptions, methodologies and reporting of results.
7. **Safety Analysis Methodologies** – Describes the types of safety analysis to be performed (i.e., historical or predictive), safety analysis tools to be used, input assumptions, methodologies and reporting of results.
8. **Geometric Design Criteria** – Provides geometric design criteria for all facility types affected by the project.
9. **Anticipated Design Exceptions** – Lists any known exceptions to Iowa DOT, American Association of State Highway and Transportation Officials (AASHTO) or FHWA rules, policies, standards, criteria or procedures for the design of the access change.

The LPA submits the M&A to the Advisory Group for review and comment. Depending on the complexities of the project, a meeting between the LPA and Advisory Group may be needed to discuss the M&A.

Note for projects using outside services: The development of the M&A is typically part of the same contract for an outside service provider to develop an IJR or IOR. Since the development of the M&A occurs after a project is scoped and under contract, the area of influence, data requirements and analysis procedures documented in the M&A may differ

from the project scope of services. This may require the LPA or Iowa DOT to update their contract with an outside service provider.

The M&A Template provides an outline and additional details to support development of the document.

4.4 IJR Development

An IJR documents the analysis methodology, alternatives, analysis results and conclusions for a request for new access or major modification to an existing access on the Interstate System. An IJR contains the following sections:

1. **Executive Summary** – Provides a summary of how the FHWA Policy has been satisfied and how the assessment of the Policy provides the basis for the recommended change in access. Includes a summary of the analysis results.
2. **Introduction** – Provides an introduction to the project that summarizes the background of the project, purpose for the project and project location.
3. **Methodology** – Presents data sources, methodology for evaluating traffic operations and safety, and design criteria.
4. **Existing Conditions** – Describes the project base year (existing) conditions surrounding the study area; including: roadway network and interchanges, alternative travel modes, traffic volumes, operations and safety.
5. **Future Year No-Build Conditions** – Describes the project future (design) year No-Build conditions surrounding the study area; including: programmed and planned changes to the roadway network (including nearby interchanges), forecasted changes to traffic volumes and traffic operations.
6. **Problem Definition** – Define the problem being addressed by the proposed access change and state specific goals and objectives to be achieved.
7. **Alternatives** – Presents the alternatives considered to address the project goals and objectives. Includes a description of reasonable and feasible alternatives to the Build alternatives considered. Reasonable and feasible alternatives to the Build alternatives may include capacity improvements to a local road parallel to the Interstate to better deliver traffic to and from an existing interchange that is underutilized, or improving alternative modal solutions to reduce traffic demand. Typically, reasonable and feasible alternatives to the Build alternatives considered are evaluated as part of a separate study completed prior to the IJR.
8. **Alternatives Analysis** – Presents expected changes to forecasted traffic volumes resulting from the Build alternatives. Presents the operational and safety evaluation results for each Build alternative for the project design year, identifies the preferred alternative, and presents any interim year analysis results for interim conditions of the preferred alternative.
9. **Social, Economic and Environmental Reviews** – Presents summaries of the following items if not already addressed in a NEPA document or other approved planning study, such as a Location Study, for the proposed access change: land use

and transportation plan consistency with the proposed access change; coordination for local system improvements to accommodate the proposed access change.

10. **Conclusions and Recommendations** – Summarizes the evaluation results, how the FHWA Policy has been satisfied and provides a recommendation for change in access.
11. **Appendix** – Includes supporting documentation and analysis files.

The LPA submits the IJR to the Advisory Group for review and comment. Depending on the complexities of the project, a meeting between the LPA and Advisory Group may be needed to discuss the IJR. The Advisory Group provides comments on the IJR, as needed. The review and approval process for an IJR is further discussed in the Review and Approval Process chapter (Chapter 6) of this User Guide.

The IJR Template provides an outline and additional details to support development of the document.

4.4.1 IJR Amendment Development

An IJR Amendment updates the analysis completed in a previously approved IJR and is used to reaffirm the recommendations from the previous IJR or provide updated recommendations. An IJR Amendment documents the changed conditions that have occurred since the approval of the original IJR, provides any updated analysis and gives recommendations. This document is generally concise and does not require a formal report like an IJR; a memorandum is the appropriate document scale for an IJR Amendment. Although the scale of an IJR Amendment is smaller than an IJR, the organization of materials is similar to an IJR. An IJR Amendment contains the following sections:

1. **Executive Summary** – Provides a summary of how the FHWA Policy has been satisfied and how the assessment of the Policy provides the basis for the recommended change in access. Includes a summary of the analysis results.
2. **Introduction** – Provides an overview of the previous IJR approval, the changes since approval of the previous IJR and the study area for the updated evaluations.
3. **Methodology** – Summarizes any updates to the evaluation methodology from the previously approved IJR.
4. **Existing Conditions** – Presents any updates to existing conditions operational and safety analysis from the previously approved IJR.
5. **Future Year No-Build Conditions** – Presents any updates to future year No-Build conditions operational and safety analysis from the previously approved IJR.
6. **Problem Definition** – Present any updates to the problem definition from the previously approved IJR.
7. **Alternatives** – Presents any updates to alternatives considered to address the need.
8. **Alternatives Analysis** – Provides updated operational and safety evaluations for the Build alternatives considered in the amendment for the project design year and any

interim years. Alternatives analysis for an IJR Amendment is typically limited to the preferred alternative identified in the previously approved IJR or preferred alternative with design changes made since previous approval. The project design year may be different than that used in the previously approved IJR. Provides an updated conceptual signing plan if changed from the original IJR.

9. **Social, Economic and Environmental Reviews** – Presents any updates to summaries of the following items if not already addressed in a NEPA document or other approved planning study, such as a Location Study, for the proposed access change: land use and transportation plan consistency with the proposed access change; coordination for local system improvements to accommodated the proposed access change; and NEPA status for the proposed access change.
10. **Conclusions and Recommendations** – Summarizes the evaluation results, how the FHWA Policy has been satisfied and provides a recommendation for change in access.
11. **Appendix** – Includes supporting documentation and analysis files.

The LPA submits the IJR Amendment to the Advisory Group for review and comment. The Advisory Group provides comments on the IJR Amendment, as needed. The review and approval process for an IJR Amendment is further discussed in the Review and Approval Process chapter (Chapter 6) of this User Guide.

The IJR Amendment Template provides an outline and additional details to support development of the document.

4.5 IOR Development

An IOR documents the analysis methodology, results and conclusions of a request for minor modification to an existing access on the Interstate System or new/major modification of access to a State highway. The scale of access change documented in an IOR varies by facility type (Interstate vs. State highway); however, the outline of content presented in an IOR is the same, regardless of facility type. An IOR contains the following sections:

1. **Introduction** – Provides an introduction to the project that summarizes the proposed access change and purpose for the project.
2. **Project Background** – Describes the location of the proposed change, past improvements at the location and the proposed improvements.
3. **Traffic Operations** – Provides details of the operational analysis methodologies and results.
4. **Safety** – Provides details of the safety analysis methodologies and results.
5. **Conclusions and Recommendations** – Presents the major findings from the study evaluations and gives recommendations.
6. **Appendix** – Includes supporting documentation and analysis files.

The LPA submits the IOR to the Advisory Group for review and comment. The Advisory Group provides comments on the IOR, as needed. The review and approval process for an IOR is further discussed in the Review and Approval Process chapter (Chapter 6) of this User Guide.

The IOR Template provides an outline and additional details to support development of the document.

5 Analysis Methodology and Supporting Data

Operational and safety analysis are a primary component of an IJR or IOR. The analysis is often used to help justify the need for the project and it is used to make informed recommendations for new or revised interchange access. To properly evaluate alternatives, the analysis needs to include an appropriately-sized area that is evaluated, consider future-year conditions, and use appropriate analysis tools and procedures. This chapter outlines analysis methodologies to be used when conducting operational and safety analysis for an IJR or IOR. An overview of design exceptions is also presented in this chapter as a supporting element of an access change request.

5.1 Area of Influence

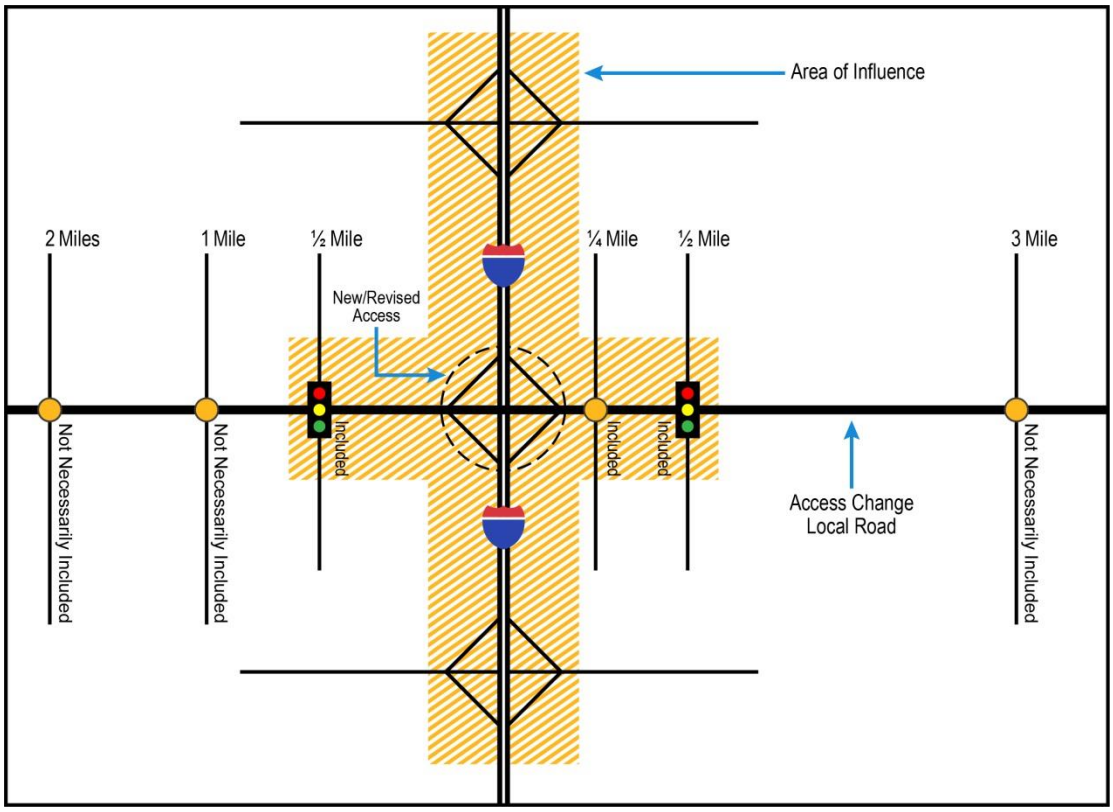
The area of influence is the area that the proposed access change is likely to have a direct influence on operations and safety. The area of influence sets the boundaries for the operational and safety analysis of an IJR or IOR. The size of the area of influence is typically larger for IJRs than it is for IORs. At a minimum, the area of influence for IJRs and IORs should include:

The area of influence sets the boundaries for the operational and safety analysis of an IJR or IOR.

- For IJRs:
  - The interchange for proposed access change.
    - All mainline segments within and immediately adjacent to the interchange for proposed access change.
    - All ramp junctions and ramp terminal intersections of the interchange for proposed access change.
  - The adjacent intersections on the proposed access change local roadway within a half mile of the Interstate.
  - The next adjacent interchange on each side of the proposed access change.
    - Mainline segments within the adjacent interchanges and between the adjacent interchange and proposed access change.
    - All ramp junctions and ramp terminal intersections of the adjacent interchanges.
- For IORs:
  - The interchange for proposed access change.
    - All mainline segments within and immediately adjacent to the interchange for proposed access change.
    - All ramp junctions and ramp terminal intersections of the interchange for proposed access change.

The minimum area of influence for an IJR is illustrated in **Figure 5-1**.

Figure 5-1. Minimum Area of Influence for an IJR



The area of influence may extend beyond the limits listed above depending on complexities of the proposed access change or characteristics surrounding the proposed access change. Situations that may create a need to extend the area of influence beyond the limits listed above include (but are not limited to):

- Adjacent signals that are part of a coordinated system.
- Closely spaced adjacent intersections that may impact the operations and safety at the interchange for proposed access change.
- Closely spaced interchanges that may impact the operations and safety at the interchange for proposed access change.
- Adjacent collector-distributor roadways and associated ramps that may impact the operations and safety at the interchange for proposed access change.
- Adjacent interchanges that are anticipated to have significant changes to travel patterns resulting from the proposed access change (as determined through assessment with a travel demand model or through an investigation of anticipated travel patterns via traffic counts, observation or GPS-base origin-destination data sources).

The LPA preparing the IJR/IOR coordinates with the Advisory Group to establish the area of influence for the project. For projects that include an M&A document, the area of influence is defined in the M&A document and refined or agreed upon by the Advisory Group.

5.2 Analysis Years/Scenarios and Periods

IJRs and IORs must include evaluations of current (base) year, opening year, and design year operations. Evaluations for an interim year may also be required depending on the phasing for constructing the proposed access change. Typical analysis years and scenarios are described below. The analysis years and scenarios required for an IJR/IOR should be coordinated with NEPA efforts to support traffic data and results necessary for NEPA documentation.

- **Existing (base) year** – This represents existing conditions. The existing year traffic count and safety data should reflect current network attributes in the study area.
- **Opening year Build conditions** – This represents conditions during the anticipated first year of the project being open. The roadway network and traffic forecasts associated with the Build condition should be reflected in this scenario. For projects that are phased, the opening year reflects the first year of the first phase being open.
- **Design year** – The design year reflects a year typically at least 20 years after the anticipated opening year of the project. A design year based on a minimum of 20 years following the approval of the plans, specifications, and engineering for a project is required by 23 U.S.C. Section 109(b). The design year can often be the plan year (or horizon year) of the local travel demand model, as long as that plan horizon is at least 20 years after opening year.
    - **Design year No-Build conditions** – This represents conditions in the design year if the project were not built. The design year No-Build conditions analysis should include other transportation projects that are part of locally-adopted Transportation Plans that might influence the study area, including the Metropolitan Transportation Plan in urbanized areas. Incorporating these planned projects will meet guidance to be “consistent with local and regional land use and transportation plans”.
    - **Design year Build conditions** – This represents conditions in the design year with the project built. Similar to the design year No-Build conditions, the design year Build conditions should also include other transportation projects that are part of locally-adopted Transportation Plans that might influence the study area, including the Metropolitan Transportation Plan in urbanized areas.
- **Interim year Build conditions** – This represents a year that falls between the opening year and design year. Evaluation of conditions during an interim year is typically only required for a phased project, where the interchange is planned to operate for a period of time beyond the original phase’s opening year before additional phases of the project are constructed. Interim year analyses can also be requested in special circumstances to coincide with adjacent, regionally-significant

projects opening or to get a more detailed picture of traffic operations on an interchange that is projected to have failing traffic operations by the design year.

Each study scenario is evaluated for traffic demands during study periods (times of the day), typically during peak traffic demand conditions. The times of day and duration for peak traffic demands vary by location. For projects in Iowa, study periods are commonly a single peak hour during the morning and a single peak hour during the afternoon of a weekday. Available speed data or observations of existing conditions should be used to support determination of study periods and their duration during project scoping. Additional documentation on determining the duration of study periods can be found in the Iowa DOT Microsimulation Modeling Guidance.

The LPA preparing the IJR/IOR coordinates with the Advisory Group to establish the analysis years/scenarios and periods for the project. For projects that include an M&A document, the analysis years/scenarios and periods are defined in the M&A document and refined or agreed upon by the Advisory Group.

5.3 Traffic Data and Forecasts

Traffic data and volume forecasts that coincide with the analysis years and scenarios are used for the operational and safety analysis of an IJR/IOR. These data and forecasts are obtained from the Iowa DOT Office of Systems Planning, or are field-collected by the LPA. Typical traffic data used in the operational and safety analysis and sources to obtain that data are shown in **Table 5-1**.

The LPA preparing the IJR/IOR coordinates with the Advisory Group to summarize the traffic data and sources used for the project. For projects that include an M&A document, the traffic data and sources are defined in the M&A document and refined or agreed upon by the Advisory Group.

Additional guidance on data collection and development of traffic forecast are provided in the following sections. For projects that include microsimulation analysis or safety analysis, additional guidance on data needs is provided in the Iowa DOT Microsimulation Modeling Guidance and Iowa DOT Data Driven Safety Analysis Guidance documents.

Table 5-1. Traffic Data and Sources for IJR/IOR Operational and Safety Analysis

Data Element[1]	Source
Geometry	
Basic lanes/layout	Publicly available online imagery; field observation
Lane and shoulder widths	As-built plans from constructing agency; field measurement
Acceleration/deceleration/ turn-lane storage lengths	Publicly available online imagery; as-built plans from constructing agency
Alternative geometry	Conceptual layouts from party developing alternative concepts
Traffic Control	
Control type	Publicly available online imagery; field observation
Signal phasing/timing	Local jurisdiction (City or County)
Signal detection	As-built plans from constructing agency; field observation
Traffic Volumes	
Intersection turn movement and pedestrian crossing counts	Iowa DOT Office of Systems Planning (https://iowadot.gov/maps/digital-maps/traffic/turn) / Office of Systems Planning Traffic Processing/Analyst Coordinator ; local jurisdiction (City or County); project-specific field counts
Automatic Traffic Recorder (ATR) counts	Iowa DOT Office of Systems Planning (https://iowadot.gov/maps/data/automatic-traffic-recorder-reports) / Forecasting and Modeling Team
Origin-destination data	Iowa DOT Office of Systems Planning (https://iowadot.gov/systems_planning/modeling-forecasting-and-telemetrics) / Forecasting and Modeling Team; local MPO/RPA; other third party (e.g., StreetLight Data)
Classification/fleet composition	ATR data (Iowa DOT Office of Systems Planning); project-specific field counts; Iowa Motor Vehicle Division (https://iowadot.gov/mvd/factsandstats#vehiclestats)
Future-year traffic forecasts	Iowa DOT Office of Systems Planning; local MPO/RPA
Transit data	Local transit agency
Railway crossing details	At-grade rail crossing owner (railroad); Federal Railroad Administration (FRA) (https://safetydata.fra.dot.gov/officeofsafety/publicsite/crossing/crossing.aspx)
Travel Speeds	
Freeway mainline speed	INRIX data (via access from Iowa DOT Office of Traffic Operations ITS Administrator); ATR speed data (via Iowa DOT Office of Systems Planning); field measured (spot speed data)
Ramp speed	Posted advisory speed; design speed from plans; field measured (spot speed data; pilot car)
Arterial	Posted speed
Crash Data	
Historical crash data	Iowa DOT web-SAVER (https://saver.iowadot.gov/)
Iowa comparable crash rates	Iowa DOT Office of Traffic and Safety – Crash analysis resources (https://www.iowadot.gov/crashanalysis/comparablesprofilesmain.aspx)

[1] Data element is for existing conditions unless otherwise noted.

5.3.1 Requests for Traffic Data and Forecasts

The Iowa DOT routinely collects traffic data across the state and has the capability to collect specific data for a project upon request. The LPA should coordinate with the Iowa DOT Office of Systems Planning to determine the available data within the area of influence and any additional data that the Iowa DOT could collect to support the project.

To the extent possible, data requested from the Iowa DOT for a project should be made with a single request to avoid any overlap in requests or duplication of effort. When requesting data, the following information shall be included:

Project data requested from the Iowa DOT should be made with a single request to avoid any overlap in requests or duplication of effort.

- Official project description
- Full project number
- Area of influence limits
- Traffic data request (e.g., 15-minute traffic counts, truck percentage (%), traffic forecasts, etc.)
- Facility identifiers and mileposts specific to each type of data requested
- Dates, as appropriate, whether past (for archived data) or future (for counts or traffic projections)
- Analysis team contact (where to send results)

When requesting that new field counts be conducted by the Iowa DOT, the requester should indicate if field observations are planned to coincide with collection of count data. If the Iowa DOT is unable to collect data for the specified dates, additional coordination will be needed so that field observations are conducted at the same time as count data collection.

5.3.2 Traffic Counts

For most IJRs/IORs, evaluations should represent “typical” conditions. Therefore, traffic counts should represent “typical” peak period conditions. “Typical” conditions are those that are void of impacts by events, weather or incidents. For many projects (specifically, those not including a reliability analysis to evaluate varying roadway conditions), “typical” conditions often include the following:

- Local schools, institutions, and businesses are operating normally.
- No construction projects that restrict capacity or alter traffic demand are underway in the project area or on adjacent routes.
- Weather does not affect operations or individuals’ travel choices.
- Crashes do not occur that affect operations or individuals’ travel choices.
- Local events do not affect demand, operations or individuals’ travel choices.

The time of year and specific days for data collection should be based on the specific project goals. In Iowa, seasonal traffic variability for the conditions listed above is generally lowest in March through May and September through November. Even during these months, it is important that disruptions to normal traffic demand and routing patterns be avoided to the maximum extent possible when selecting data collection dates.

Additionally, traffic demands vary from day-to-day, and some level of variation is expected for locations with data collected on different days. Some smoothing of traffic volumes between adjacent intersections may be desired to develop traffic volumes for the base year conditions. The Iowa DOT Office of Systems Planning staff can provide guidance to the LPA on this topic.

For projects that consider conditions that are atypical (accounting for variability of traffic demands when conducting a reliability analysis), the LPA coordinates with the Advisory Group to define the range of data to be captured and used in project evaluations.

5.3.3 Traffic Forecasting Development

The LPA coordinates with the Iowa DOT Office of Systems Planning on the development of traffic forecasts. Traffic forecasting must be completed to support the required traffic operational and safety analysis for an IJR or IOR. The traffic forecasting process looks at the overall system impacts of the scenarios outlined in the Analysis Years/Scenarios and Periods section of this User Guide. The general process is summarized in this section.

In most cases, a travel demand model will be used to support development of traffic forecasts. In metropolitan areas served by one of Iowa's nine Metropolitan Planning Organizations (MPOs), the region's travel demand model can be used to support development of project-level travel demand forecasts. Areas outside of the metropolitan areas, traffic forecasts can be developed with Iowa's Statewide Traffic Analysis Model (iTRAM).

The forecasting process is an opportunity for the LPA and the Iowa DOT Office of Systems Planning, along with the Advisory Group, to discuss the input assumptions for the scenario modeling. This includes review of the roadway network assumptions for each scenario, and the relevance of adjacent traffic analysis zones' (TAZ) existing and future socio-economic model inputs. For projects that include an M&A document, the forecasting assumptions are documented in the M&A document for the Advisory Group to adjust or approve.

The Iowa DOT Office of Systems Planning staff determines the approach for development of traffic forecasts. The general traffic forecasting process is completed through the following steps:

The Iowa DOT Office of Systems Planning staff determines the approach for development of traffic forecasts.

1. Use of travel demand models to identify traffic volume changes forecasted for the future scenario years. For those IJR/IOR scenarios that do not coincide with the same year as the travel model horizon forecasting years, scenario volumes can be interpolated or extrapolated.
2. Develop scenario daily traffic forecasts by applying model-forecasted changes in volumes to current year traffic volumes. This step identifies the general growth levels anticipated by segment in the area of influence for each scenario.
3. Develop peak period traffic forecasts by applying the current traffic characteristics (k-factor, truck percentage, directional percentage), and any changes in the peak period travel model output between the base year and the forecast year. For adjacent intersections, some smoothing of peak period traffic volumes may be required.

5.4 Operational Analysis

Operational analysis is completed for each scenario identified for the project. The operational analysis is completed using methodologies from the most current edition of Highway Capacity Manual (HCM). Deterministic software tools that use HCM methodologies are appropriate for evaluating operations of the study scenarios. For projects with complex features, supplemental analysis with more sophisticated tools such as microsimulation may be required. For projects that include microsimulation analysis, the Iowa DOT Microsimulation Modeling Guidance document should be used to support the development and calibration of microsimulation models used for the analysis.

Deterministic software tools that use HCM methodologies are appropriate for evaluating operations. Supplemental analysis with more sophisticated tools such as microsimulation may be required for projects with complex features.

For most IJRs and IORs, the primary performance measure that is reported from the operational analysis is level of service (LOS). Some projects may require reporting of other performance measures such as delay, queuing, speed, travel time, etc. The targets for performance measures can vary; however, the typical LOS target is LOS B or better for Interstates located in rural areas and LOS C or better for Interstates in urban areas.

The LPA preparing the IJR/IOR coordinates with the Advisory Group to define the operational analysis approach and performance measures used for the project. For projects that include an M&A document, the operational analysis approach and performance measures are defined in the M&A document and refined or agreed upon by the Advisory Group.

5.5 Safety Analysis

Analysis of historical crash data is typically conducted for IJRs and IORs to identify current crash issues in the area of influence. This analysis should include at least five years of the most recent available crash data. At a minimum, the historical crash analysis should identify:

- Number of crashes
- Crash Rate
- Crash Type
- Crash Severity

The reviews of historical crashes are compared to statewide averages to identify locations with relatively high crash rates or severity.

The safety analysis should also identify how the proposed access change is expected to improve safety. The approach to predicting project impacts to safety should be based on the Highway Safety Manual (HSM). This may include a predictive crash analysis using crash modification factors (CMFs) or advanced crash prediction tools, such as the Interchange Safety Analysis Tool Enhanced (ISATe). Additional details on conducting a safety analysis are provided in the Iowa DOT Data Driven Safety Analysis Guidance document.

The LPA preparing the IJR/IOR coordinates with the Advisory Group to define the safety analysis approach used for the project. For projects that include an M&A document, the safety analysis approach is defined in the M&A document and refined or agreed upon by the Advisory Group.

5.6 Transportation System Management and Operations

Evaluation of Transportation System Management and Operations (TSMO) may also be required to properly evaluate project alternatives in an IJR/IOR. The Iowa DOT has taken steps to make TSMO a core business practice. TSMO optimizes the existing infrastructure through the implementation of multimodal, cross-jurisdictional systems, services, and projects designed to preserve capacity and improve the security, safety, and reliability of the transportation system. The Iowa DOT has developed a TSMO Plan and guidance for TSMO evaluations. TSMO plan documents are available on the Iowa DOT website at https://iowadot.gov/tsmo. The need to include TSMO should be discussed during project scoping with the Iowa DOT and project stakeholders.

5.7 Design Exceptions

A design exception is required for an IJR or IOR when the preferred alternative design is unable to meet the appropriate design standards. The design of the proposed access change is first and foremost based on the Iowa DOT's Design Manual. The appropriate design criteria are available in Section 1C-1 of the Iowa DOT Office of Design, Design Manual. Other sources of design guidelines include AASHTO standards listed in *A Policy*

on Geometric Design of Highways and Streets and *A Policy on Design Standards – Interstate System*. For National Highway System (NHS) roadways, design standards are established by federal law in the Code of Federal Regulations (CFR 23, Part 625).

Design exceptions should be submitted as soon as it becomes apparent that an exception will be required.

Design exceptions identified during the access change request process should be submitted as soon as it becomes apparent that an exception will be required, as approval of the exception will be included with the final approved IJR/IOR. The design exception process for access change requests from an LPA are outlined in the *Iowa DOT Local Systems, Federal-Aid Project Development Guide for Local Public Agencies*, Chapter 5. For Iowa DOT-lead projects, the design exception process is outlined in Section 1C-8 of the Iowa DOT Office of Design, Design Manual. Further information on approval of design exceptions is provided in the Approval of Design Exceptions section (Section 6.2.1) of this User Guide.

For IJR/IOR projects, it is sometimes the case that design exceptions are driven by issues identified during the NEPA process such as right of way constraints, parks, rivers or other factors. This demonstrates one benefit of conducting the NEPA work in parallel with the IJR/IOR work.

6 Review and Approval Process

6.1 Review of IJRs and IORs

IJRs and IORs are submitted to the Iowa DOT District Engineer for distribution to the Advisory Group. All Advisory Group members review the IJR/IOR and provide any comments to be discussed or addressed. For IJRs and IORs on the Interstate System, the Advisory Group includes representation by the FHWA Iowa Division Office and they are included in the review of those documents. The FHWA Washington DC Office is also involved in reviewing IJRs on the Interstate System that include:

- A new freeway-to-freeway interchange.
- Modification of a freeway-to-freeway interchange.
- A new partial interchange or new ramps to/from continuous frontage roads that create a partial interchange.

The FHWA Iowa Division Office may also elect to forward other IJRs to the FHWA Washington DC Office for review as deemed appropriate.

6.1.1 Review Schedules

The review schedule for an IJR is typically one to three months, including time for the Iowa DOT and FHWA to review the document and provide comments, and time for the LPA to respond to comments and issue a final version of the document. For IJRs that are only reviewed by the Iowa DOT and FHWA Iowa Division Office, review time is generally four to six weeks. For IJRs that are also reviewed by the FHWA Washington DC Office, the review time can take up to three months.

The review schedule for an IOR is typically one month, including time for the Iowa DOT and FHWA to review the document and provide comments, and time for the LPA to respond to comments and issue a final version of the document.

The review schedule for an IJR is typically one to three months. The review schedule for an IOR is typically one month.

6.1.2 Review Process

After the LPA submits the draft IJR/IOR to the Iowa DOT District Engineer, the draft document is distributed to others included in the Advisory Group for review and comment.

After the comments are provided to the LPA, it may be beneficial to have a conference call or in-person meeting to discuss the comments and plan for comment resolution with the Advisory Group. A matrix or table to summarize comments and responses can be useful when there are a number of comments for review with the Advisory Group.

It may be beneficial to have a conference call or in-person meeting to discuss the comments and plan for comment resolution with the Advisory Group.

6.2 Approval of IJRs and IORs

Once all comments have been addressed to the satisfaction of the Advisory Group, and any design exceptions have been approved, the LPA submits a final version of the IJR/IOR to the Iowa DOT District Engineer for the District Engineer's approval and for the FHWA's approval for projects on the Interstate System.

Once all comments have been addressed to the satisfaction of the Advisory Group, and any design exceptions have been approved, the LPA submits the final version of the IJR/IOR to the Iowa DOT District Engineer for approval.

The Iowa DOT District Engineer provides approval for all IJRs and IORs. For projects on the Interstate System, the District Engineer forwards the IJR/IOR to the FHWA for approval after providing Iowa DOT approval. The FHWA Office approving the access change is based on the type of access change requested. The FHWA Washington DC Office approves IJRs on the Interstate System that include:

- A new freeway-to-freeway interchange.
- Modification of a freeway-to-freeway interchange.
- A new partial interchange or new ramps to/from continuous frontage roads that create a partial interchange.

The FHWA Iowa Division Office approves all other IJRs and IORs on the Interstate System (those IJRs and IORs that do not include the types of access change listed above), unless the FHWA Iowa Division Office forwards an IJR to the FHWA Washington DC Office for review and approval.

An IJR/IOR may be approved by the Iowa DOT or FHWA before environmental concurrence. Approval of the IJR/IOR and environmental concurrence must be provided before a project moves into the design phase.

An IJR/IOR may be approved before environmental concurrence. Approval of the IJR/IOR and environmental concurrence must be provided before a project moves into the design phase.

The official approval of the IJR/IOR by FHWA is in the form of a separate memorandum that is included with the final IJR/IOR. For access change requests on the Interstate System, the approval memorandum from the FHWA is bound onto the final record copies of the access change document that are supplied to the Iowa DOT District Office, Iowa

DOT OLE and FHWA. For access change requests on State highways, final record copies are supplied to the Iowa DOT District Office and Iowa DOT OLE. The District Engineer places a final copy of the approved document in the Electronic Records Management System (ERMS).

6.2.1 Approval of Design Exceptions

If design exceptions are requested as part of an access change request, the approval of the design exception is separate from the IJR/IOR approval. The Iowa DOT District Engineer and Director of Office of Design provide approvals for all design exceptions. For access change requests on the Interstate System, the FHWA provides final approval of design exceptions. The official approval of the design exception by Iowa DOT and FHWA is in the form of a separate memorandum that is included with the final IJR/IOR.

7 Resources

A number of resources are listed throughout this User Guide with context pertaining to those resources. Below is a consolidated list of resources with links provided for those available on-line:

- AASHTO – A Policy on Design Standards – Interstate System, 6th Edition, 2016
- AASHTO – A Policy on Geometric Design of Highways and Streets, 2005
- FHWA Interstate Access Policy – https://www.fhwa.dot.gov/programadmin/fraccess.cfm
- FHWA Interstate System Access Informational Guide – https://www.fhwa.dot.gov/design/Interstate/pubs/access/access.pdf
- Iowa DOT Concept Statement for Local Systems Federal-Aid Projects (Form 517001) – https://forms.iowadot.gov/FormsMgt/External/517001.pdf
- Iowa DOT Concept Statement Instructions – https://iowadot.gov/local_systems/publications/im/3110.pdf
- Iowa DOT Data Driven Safety Analysis Guidance – https://www.iowadot.gov/ijr
- Iowa DOT District Information – https://iowadot.gov/districts/districts-home
- Iowa DOT Federal-aid Project Development Guide – https://www.iowadot.gov/local_systems/publications/im/guide.pdf
- Iowa DOT IOR Template – https://www.iowadot.gov/ijr
- Iowa DOT Iowa Primary Highway Access Management Policy – https://www.iowadot.gov/traffic/pdfs/AccessPolicy.pdf
- Iowa DOT IJR Template – https://www.iowadot.gov/ijr
- Iowa DOT IJR Amendment Template – https://www.iowadot.gov/ijr
- Iowa DOT Letter of Request Template – https://www.iowadot.gov/ijr
- Iowa DOT M&A Document Template – https://www.iowadot.gov/ijr
- Iowa DOT Microsimulation Modeling Guidance – https://www.iowadot.gov/ijr
- Iowa DOT Office of Design, Design Manual – https://iowadot.gov/design/design-manual
- Iowa DOT Office of Location and Environment Manual – https://iowadot.gov/ole/manual/Iowa_DOT_OLE_Manual_090821.pdf
- Iowa DOT Office of Traffic and Safety – Crash analysis resources – https://www.iowadot.gov/crashanalysis/comparablesprofilesmain.aspx
- Iowa DOT Process for New or Revised Interchanges, Policy No. 500.15 – https://www.iowadot.gov/systems_planning/pr_guide/Interchange%20Justification/New%20or%20revised%20interchanges%20PPM.pdf

- Iowa DOT web-Saver – https://saver.iowadot.gov/

8 Document Templates

Electronic document templates are available for:

- Letter of Request
- M&A Document
- IJR
- IJR Amendment
- IOR