

Guide and / or I.M. Revision Notice

To: Cities, Counties, and Consultants

Date: October 1, 2013

From: Office of Local Systems

Revision Notice Number: 2013-03

The Federal-aid Project Development Guide (Guide) and / or Instructional Memorandums to Local Public Agencies (I.M.s) have been revised as indicated below. This revision notice identifies all new or revised documents and includes a summary of the significant changes. Where appropriate, it also references the existing Project Development Information Packet (Packet) or County Engineers I.M. documents that have been replaced or superseded.

The Iowa DOT does not provide paper copies of the Guide or I.M.s. Since these documents are updated frequently, we recommend using the on-line version of the [Guide and I.M.s](#) for reference. However, if you prefer using paper copies, all new or revised documents have been included in this file for convenient printing. If you maintain a paper copy of these documents, please remove the old documents and replace them with the new documents. Note: This file is designed for double-sided printing; therefore, all documents with an odd number of pages will be followed by a blank page.

For more information and additional download options, refer to the [Guide and I.M.s](#) web page. If you have any questions concerning these revisions, please contact Donna Buchwald Donna.Buchwald@dot.iowa.gov or 515-239-1051.

***** PLEASE NOTIFY ALL AFFECTED PERSONNEL OF THIS CHANGE *****

Document Title or I.M Number	Summary of Significant Revision(s)
Federal-aid Project Development Guide October 1, 2013	The Guide has been updated. Substantive changes from the previous version include the following: <ul style="list-style-type: none"> • Section 5.3.1, Roadways and Bridges – Clarified that the I.M.s are for non-Interstate and non-Primary road and bridge projects. For Interstate and Primary system road and bridge projects, refer to the Design Manual. • Section 5.4, Design Exceptions – Added a distinction between exceptions that require a formal design exception and those that only require a justification. • Section 5.4.1, Roadways and Bridges – Added information on Design Exception Process and 3R projects. Removed reference to I.M. 3.220, Design Exception Information for Bridges Narrower than Approach Pavement. • Section 5.4.2, Bicycle and Pedestrian Facilities – Clarified that bicycle and pedestrian facilities do not require a formal design exception or benefit-cost analysis.
I.M. Table of Contents October 1, 2013	The I.M. Table of Contents has been revised to reflect new or revised I.M.s, as indicated below.
I.M. 1.080 ADA Requirements October 1, 2013	This I.M. has been updated. Substantive changes from the previous version include the following: <ul style="list-style-type: none"> • Removed examples of maintenance activities. These are listed in the Design Manual Chapter 12A-2. • Added two documents with hyperlinks to the Additional Resources which future explain the definition of “resurfacing”.
I.M. 2.120, Attachment B Intermediate Scour Assessment Flowchart October 1, 2013	This Attachment has been updated. Substantive changes from the previous version include the following: <ul style="list-style-type: none"> • References to other Attachments were deleted.
I.M. 3.210 Rural Design	This I.M. has been updated. Substantive changes from the previous version include the following:

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Guidelines October 1, 2013	<ul style="list-style-type: none"> • Changed values to reflect updates to the 2011 AASHTO's <i>A Policy on Geometric Design of Highways and Streets</i> (2011) (Green Book). • Updated radius values slightly in all tables. • Changed from HS-20 to HL-93 bridge design loading.
I.M. 3.214 3R Guidelines October 1, 2013	<p>This I.M. has been updated. Substantive changes from the previous version include the following:</p> <ul style="list-style-type: none"> • Changed reference from I.M. 3.220, Design Exception Information for Bridges Narrower than Approach Pavement, to I.M. 3.218, Design Exception Process. • Removed discussion on High Risk Rural Roads. This program was eliminated in MAP-21.
I.M. 3.216 Economic Analysis (Benefit-to-Cost Ratio) October 1, 2013	<p>This I.M. has been rewritten. Substantive changes from the previous version include the following:</p> <ul style="list-style-type: none"> • The Crash Reduction Factors are now based on those shown in the Crash Modification Factor Clearinghouse. • Benefit / Cost Ration is now calculated using the same method used for the Traffic Safety Improvement Program (TSIP) projects.
I.M. 3.218 Design Exception Process October 1, 2013	<p>This I.M. has been updated. Substantive changes from the previous version include the following:</p> <ul style="list-style-type: none"> • Added 14 design elements to clarify which design elements will require a formal design exception. • Attachment A replaces Chart No. 4 – Design Exception Process.
I.M. 3.220 Design Exception Information for Bridges Narrower than Approach Pavement OBSOLETE	<p>This I.M. was replaced by I.M. 3.218, Design Exception Process.</p>
I.M. 3.730 Iowa DOT Letting Process October 1, 2013	<p>This I.M. has been updated. Substantive changes from the previous version include the following:</p> <ul style="list-style-type: none"> • The “engineer’s cost estimate” will now be referred to as the “LPA’s cost estimate” and will be a supporting document for the Office of Contracts’ estimate. The Office of Contracts estimate will be used for the Federal-aid obligation. • Time was added to the Administering Offices and LPAs contract period review. • Plans will no longer be printed and mailed. • The Office of Contracts will no longer make an award recommendation. • The rejection threshold was reduced from 120% to 110% of the LPA’s estimate. • The request of subcontractors list will only be accepted electronically. • The letting process flowchart was split into two charts; Attachment A for the pre-letting process and Attachment B for the post-letting process. • The process for subcontract review and authorization is shown in greater detail on Attachment B. The process was also revised to require the contractor to directly and electronically submit the requested subcontractor information to the Office of Contracts. The contractor is also required to provide a copy of this information to the

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	Project Engineer. Also, subcontract authorization by the Iowa DOT is now more formally documented on the Equal Employment Opportunity (EEO) Poster Notice.



Federal-aid Project Development Guide

For Local Public Agencies

October 1, 2013

Iowa Department of Transportation
Office of Local Systems
800 Lincoln Way Ames, IA 50010
http://www.iowadot.gov/local_systems/publications/im/guide.pdf

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1 Introduction

1.1. About the Guide

1.1.1. What is the Guide for?

The Federal-aid Project Development Guide for Local Public Agencies (the Guide) exists to provide information and instructions to Local Public Agency (LPA) staff in order to help them successfully develop their Federal-aid transportation projects.

1.1.2. How should the Guide be used?

For LPAs that are unfamiliar with Federal-aid procedures, the Guide serves as an overview and introduction to the Federal-aid process. For those LPAs that frequently use [Federal-aid funds](#) for their transportation projects, the Guide also serves as a reference tool to quickly locate more detailed information on a specific topic.

The Guide is not intended to include all the details of the Federal-aid process. Instead, where appropriate, the Guide references other documents that provide additional detailed instructions concerning specific parts of the process. In other words, the Guide provides a central location from which all of the information relevant to development of LPA Federal-aid transportation projects may be located.

Most of the detailed information referenced by the Guide is contained in the Instructional Memorandums to Local Public Agencies (I.M.s). To view or print a referenced I.M, simply click on the hyperlink provided, shown with [blue, underlined text](#). The Iowa DOT does not provide printed copies of the I.M.s; however, all I.M.s are available on-line in Adobe Acrobat's Portable Document Format (PDF). For convenient printing, all of the I.M.s that are referenced by the Guide can be downloaded as a single PDF file. Refer to the [Guide and I.M.s web page](#) for additional download options.

Although the Guide is written using an informal style, in some places, it is necessary to use technical terms or phrases. When such terms or phrases are used, they are defined in [Appendix B - Glossary of Terms](#). To jump to the glossary entry for a defined term or phrase, simply click on the [green, dotted-underline text](#).

1.1.3. What does the Guide cover?

The focus of the Guide is project development. However, it also provides some guidance for a wider range of project activities – beginning immediately after funding approval and continuing up through construction and final reimbursement.

The Guide is applicable to any transportation project that is funded in whole or in part with Federal Highway Administration (FHWA) program funds that are passed through the Iowa Department of Transportation (Iowa DOT) to a local government or other government agency. Examples of such programs include traditional highway and bridge programs such as the Surface Transportation Program and Highway Bridge Program; and other transportation-related programs such as Transportation Enhancement, Federal Recreational Trails, Safe Routes to School, and National Scenic Byways programs. The Guide is also applicable to projects funded with Federal-aid [earmark or demonstration](#) funds that are subject to FHWA requirements, as specified in Title 23, United States Code and its associated regulations.

1.2. Working with the Iowa DOT

1.2.1. Roles and Responsibilities

With respect to an LPA Federal-aid transportation project, the Iowa DOT serves as both an advisor and a monitor. With each role, the Iowa DOT has different responsibilities. As an advisor, the Iowa DOT is responsible for providing guidance and assistance to LPAs to help them successfully implement their Federal-aid transportation projects. As a monitor, the Iowa DOT is

responsible to the FHWA for administering and overseeing the various Federal-aid transportation programs that are available to LPAs.

1.2.2. Who do I Contact?

The administration and oversight of these Federal-aid programs is a combined effort of many different divisions and offices within the Iowa DOT. However, the LPA's primary point of contact with the Iowa DOT will be the [Administering Office](#). Unless specified otherwise, all project submittals, correspondence, and questions should be directed to the Administering Office.

For projects funded by any or a combination of the Transportation Alternative Program (TAP), such as Transportation Enhancement, Federal Recreational Trails, Safe Routes to School, and National Scenic Byways programs, the Iowa DOT [Office of Systems Planning](#) is the Administering Office. The Office of Systems Planning is also the Administering Office for [earmark](#) projects involving activities that are eligible under one of the aforementioned programs, and certain projects funded by the Iowa Clean Air Attainment Program. For all other projects, the Administering Office is one of the 6 District Offices, depending on which [Iowa DOT District](#) the LPA is located in.

The Iowa DOT [Office of Local Systems](#) is responsible for providing written guidance, including the Guide, I.M.s, and other information, to both the Administering Office and LPAs. The Office of Local Systems also provides assistance with the interpretation and implementation of that guidance. When policy or procedure questions require the assistance of the FHWA, the Office of Local Systems serves as a liaison between the FHWA and the Administering Office or LPAs.

2 Federal-aid Basics

Before beginning any project activities for which Federal-aid reimbursement will be requested, read this section carefully! This section of the Guide explains several critical activities and their sequence in the Federal-aid process. To have a successful Federal-aid project, it is crucial that the LPA officials working on the project understand and comply with these basic requirements of the Federal-aid process.

2.1. Project Programming

All Federal-aid projects must be included, or "programmed," in the appropriate Regional Planning Affiliation (RPA) or Metropolitan Planning Organization (MPO) Transportation Improvement Program (TIP). All of the RPA and MPO TIPs are then combined, along with Iowa DOT Federal-aid projects, to form the Statewide Transportation Improvement Program (STIP).

As discussed in [Section 2.3](#) below, project activities for which Federal-aid reimbursement will be requested must receive [FHWA Authorization](#) before those activities begin. However, before any project activities can receive FHWA Authorization, the project must be included in the STIP. Therefore, project programming is a critical first step in the Federal-aid process.

The LPA is responsible for working with the applicable RPA or MPO to ensure that their project is included in the TIP / STIP and is programmed with an adequate amount of funds for the correct [Federal Fiscal Year \(FFY\)](#). Funds should be programmed in the FFY(s) in which FHWA Authorization will need to occur; not on the basis of when actual expenditures will occur.

Project programming information for the TIPs is submitted, reviewed, and transmitted to the Iowa DOT for inclusion in the STIP using the [Transportation Project Management System](#) (TPMS). TPMS is web-based tool developed by the [Iowa County Engineers Association Service Bureau](#) (ICEASB) to assist local agencies with project programming and development tracking. While this tool was initially developed for the counties, it is also available for use by cities and consultants. For more information about TPMS or to request access to this system, call the ICEASB at 515-244-0779.

2.2. Funding Agreement

Another important initial step in the Federal-aid process is execution of a funding agreement between the Iowa DOT and the LPA. As soon as funding has been approved, the LPA should submit a copy of the approved funding application, Concept Statement, or other documentation to the [Administering Office](#) as

soon as possible. Other documentation shall include, as a minimum, the name and title of the LPA's contact person, a project description that identifies the limits and basic character of the proposed work, and a current cost estimate. (Note: If the funding application was approved by the Administering Office, as may be the case with the Office of Systems Planning, additional documentation is usually not required.)

Upon receipt of this information, the Administering Office will prepare a funding agreement and send an unsigned copy to the LPA for signature. By signing the funding agreement, the LPA agrees to follow all of the applicable Federal and State laws, regulations and policies pertaining to the specific type(s) of [Federal funds](#) that are involved. Therefore, project development activities should not proceed until a funding agreement has been executed.

In general, the funding agreement spells out the responsibilities of both the LPA and the Iowa DOT. The details of the funding agreement will vary, depending on the type of Federal funds that are involved. The LPA officials responsible for the project should thoroughly review the funding agreement prior to bringing it to the board of supervisors or city council for action. Any questions or concerns should be directed to the Administering Office.

2.3. FHWA Authorization

[FHWA Authorization](#) is the single most important aspect of the entire Federal-aid process. If not done correctly or in a timely manner, it can jeopardize Federal-aid reimbursement for part or all of a project.

2.3.1. When is FHWA Authorization Needed?

[FHWA Authorization](#) must be obtained before beginning any project activity for which Federal-aid reimbursement will be requested. *If the LPA does not have written confirmation from the Iowa DOT that FHWA Authorization has been secured for a specific project activity, work should not begin.* The cost of work occurring prior to FHWA Authorization will not be reimbursed with [Federal funds](#). If there is any doubt about whether FHWA Authorization has been obtained, contact the [Administering Office](#) for assistance.

Depending on the type of [Federal funds](#) and the provisions of the funding agreement, there are several different types of project activities that may be eligible for Federal-aid reimbursement. Some of these may include environmental studies, design, right-of-way acquisition, utility relocations, railroad work, construction, and construction inspection. Refer to the project funding agreement for the specific types of project activities that may be reimbursed with [Federal funds](#).

2.3.2. How is FHWA Authorization Obtained?

The following is a summary of the [FHWA Authorization](#) process. This process has been generalized for the sake of clarity. The actual authorization process will vary depending on the specific type of project activity that is being authorized. Additional details are provided in the sections of the Guide and / or I.M.s that address each type of project activity.

1. The LPA sends a written request for FHWA Authorization to begin a specific type of project work to the [Administering Office](#), including the appropriate documentation for the type of work being requested.
2. The Administering Office reviews the LPA's request and verifies the required clearances and reviews have been completed.
3. If acceptable, the Iowa DOT verifies the availability of [Federal funds](#) and prepares the electronic [Authorization/Agreement](#) or [Amendment/Modification](#) document, using the [Fiscal Management Information System \(FMIS\)](#).
4. The Iowa DOT sends the electronic document to FHWA for review and approval.
5. FHWA reviews the electronic document, and if acceptable, electronically signs the document. If the request is not acceptable, FHWA contacts the Iowa DOT to resolve any questions or issues.
6. After FHWA has signed the electronic document, the Administering Office notifies the LPA that FHWA Authorization has been obtained and the requested work may begin.

2.4. Reimbursement

All of the Federal-aid transportation programs administered by the Iowa DOT operate on a reimbursement basis. That is, the LPA, after completing the necessary steps and receiving the appropriate approvals, pays project expenses up front. In turn, the LPA submits a request for reimbursement to the Iowa DOT. The request should be made using the form or format provided by the [Administering Office](#). To ensure proper accounting of costs, reimbursement requests for costs incurred prior to June 30 shall be submitted to the Administering Office by August 1 if possible, but no later than August 15.

Requests for reimbursement shall be made on a periodic basis after costs have been incurred. To prevent the project obligation from becoming inactive as per 23 CFR 630.106(a)(5), reimbursement shall be requested at least annually but not more than bi-weekly. *If the project becomes inactive, the Iowa DOT will notify the LPA that the unexpended balance of [Federal funds](#) will be de-obligated if the LPA cannot provide documentation within 30 days to support the remaining balance.* Such documentation shall include a revised cost estimate and a date by which a reimbursement request for the remaining Federal funds will be submitted. If a reimbursement request cannot be submitted within 30 days, written justification will be required for retaining the unexpended balance of Federal funds. The justification shall explain why the delay in requesting Federal-aid reimbursement is beyond the control of the LPA. Examples include delays resulting from environmental reviews or permits, right-of-way acquisition, utility relocations, unresolved litigation or contract claims, or compliance with other Federal-aid requirements. Failure to adequately plan for these requirements will not be considered adequate justification. If adequate justification is not provided, the unexpended balance of Federal funds will be de-obligated, and as a result, may no longer be available for reimbursement. For more information about the inactive obligation review requirements and process, refer to [I.M. 2.080](#), Inactive Obligations.

After Iowa DOT review and approval, the LPA will be reimbursed by the Iowa DOT at the agreed upon [Federal share](#) for properly documented, eligible, and authorized project costs. Reimbursements to the LPA are typically made by issuing a State warrant. However, a slightly different process is used for county Federal-aid projects on the Farm-to-Market System. For those projects, payments are typically made by Iowa DOT from the county's Farm-to-Market account. After such payments have been made, the Iowa DOT will request Federal-aid reimbursement, and the Federal share of such costs will be credited to the county's Farm-to-Market account.

2.5. Match Requirements

2.5.1. General Match Requirements

Most Federal-aid transportation programs require some type of cost sharing or match to the [Federal funds](#). In most cases, the match must come from non-Federal-aid sources. Usually, this match is provided in the form of cash; that is, eligible project costs that have been paid for by entities other than the Federal government. Sources of cash may include donations of funds made by a third party, special assessments made for the project, and other non-Federal-aid sources of funds. However, if the total cash received up-front for the project exceeds the required non-Federal share, the [Federal share](#) shall be reduced or the excess cash must be returned. In other words, an LPA may not make money on a Federal-aid project.

2.5.2. In-Kind Contributions

Under certain circumstances, certain non-cash contributions by a third party may be counted towards the required non-Federal-aid match. These non-cash contributions are referred to as an in-kind contribution. A third party is any entity other than the Federal government, the Iowa DOT, or the LPA who is the recipient of the [Federal funds](#). The type of in-kind contribution that may be counted toward the non-Federal-aid match varies, depending on the timing of the contribution and the type of Federal funds that are being matched. Projects funded by the Transportation Alternatives Program (TAP) as one or more of the Small Federal Programs (Transportation Enhancement, Federal Recreational Trails, and National Scenic Byways) may utilize right-of-way, services, materials, or equipment as an in-kind contribution. For all other Federal-aid projects, only right-of-way may be used as an in-kind contribution. For additional guidance, eligibility limitations, and instructions on how to obtain Iowa DOT and FHWA approval of in-kind contributions, refer to [I.M. 3.050](#), In-Kind Contributions.

3 Getting Started

3.1. Project Development Overview

The Federal-aid project development process is shown graphically in [Appendix A - Project Development Flowchart](#). This flow chart includes references to some of the applicable I.M.s for additional details concerning specific parts of the development process. The remaining sections of the Guide provide a written overview of the project development process.

3.2. Concept Statement

Submittal of the Concept Statement for Local Public Agency Federal-aid Projects ([Form 517001](#)) is a critical first step that typically initiates the project development process. This form provides information about the proposed location and types of work, possible environmental impacts, and proposed design.

Since this information is used by the Iowa DOT to initiate a number of different project reviews and processes, this form should be submitted by the LPA as soon as possible. Otherwise, the required reviews and processes will be delayed, and this may delay the project as a whole.

For additional information and detailed instructions for completing this form, refer to [I.M. 3.105](#), Concept Statement Instructions.

3.3. Project Schedule

The time required to develop a Federal-aid project from funding approval to project letting varies greatly, depending on a number of factors. Some of these factors include: whether or not right-of-way must be acquired, the type and magnitude of environmental or social impacts, and whether or not utility relocations or work on railroad property or facilities is required. Therefore, it is not possible to specify a project schedule that is applicable to all situations. Nevertheless, some typical project schedules are provided in [I.M. 3.002](#), Federal-aid Project Scheduling. These schedules show the relationship between the typical project tasks and the time it usually takes to complete each one, based on certain assumptions.

3.4. Project Submittal Dates

[I.M. 3.005](#), Project Development Submittal Dates and Information, provides specific dates for some of the key project submittals, based on a targeted Iowa DOT letting date. It also provides a summary of what should be included in those submittals.

Please note that [I.M. 3.005](#) is only intended to show the minimum amount of time required for the Iowa DOT to review the project submittals listed. Depending on the circumstances of each project, other submittals or activities may be the controlling factor in determining when a project may be let. These dates do not account for the review times of other Federal or State agencies that may or may not be necessary for a given project. In addition, the dates shown in [I.M. 3.005](#) assume that the project will complete the NEPA process as a Categorical Exclusion (CE); they are not applicable for projects that will require an Environmental Assessment (EA) or Environmental Impact Statement (EIS). For more information about the different levels of environmental classification, refer to [I.M. 3.112](#), FHWA Environmental Concurrence Process.

3.5. Project Tracking

The Iowa DOT requires the LPA(or the consultant acting on its behalf) to use TPMS (as described in [Section 2.1](#)) to record and monitor the programming and development status of their projects that involve construction. Use of TPMS for non-construction projects is optional. Much of the information in TPMS is transferred electronically to the Iowa DOT for use in project programming, development, and letting. Therefore, it is important for LPAs to keep their project information current in TPMS.

3.6. Financial Plan

For major projects (those with an estimated cost of \$100 million or greater) the LPA will be required to prepare a financial plan. For purposes of this requirement, a “project” is defined by the limits used for the

environmental review process described in Section 4 below, unless specifically stated otherwise in the environmental document.

The LPA's project financial plan must be reviewed and approved by the Iowa DOT and FHWA. The estimated cost shall include all elements of work for all segments of the overall project. Elements of work refer to the different categories of work, such as engineering, right-of-way, construction, etc. Segments refer to the portions of the total project which can be defined by physical limits. For example, the design, right-of-way, and construction activities for several projects in the same highway corridor, even though they are separated for purposes of bidding and construction, may be considered one overall project.

If a project may fall into the major project category, the LPA should contact the Iowa DOT [Administering Office](#) for assistance. Additional information is available on FHWA's [Innovative Program Delivery](#) web site.

4 Permits and Environmental Review

This section of the Guide gives a brief summary of the typical permits or environmental reviews that may be required by the applicable Federal or State laws and regulations.

4.1. The NEPA Process

The National Environmental Policy Act (NEPA) and its associated Federal regulations require that certain procedures be followed in developing a Federal-aid project. The purpose of these procedures is to provide consideration of a wide variety of social or environmental impacts that may result from the project.

The amount of time and effort required to comply with the NEPA process varies greatly, depending on the anticipated level of impacts. The effort required by an LPA may be as minimal as completing a few forms; or it may be as involved as preparing extensive environmental documentation and facilitating a significant amount of public involvement, which can be a very costly and time-consuming process.

The Iowa DOT is responsible to review the environmental impacts of all LPA Federal-aid transportation projects and assist the LPA in complying with the NEPA requirements. This review is coordinated and ultimately approved by the FHWA, based on the established policies and procedures.

There are several distinct parts of the NEPA process. Completion of the NEPA process is referred to in the Guide and I.M.s as [FHWA Environmental Concurrence](#). For an overview of the NEPA process as a whole, refer to [I.M. 3.112](#), FHWA Environmental Concurrence Process. For additional guidance concerning the different parts of the NEPA process, refer to the following I.M.s:

- [I.M. 3.105](#), Concept Statement Instructions, provides detailed instructions for completing the Concept Statement for Local Public Agency Federal-aid Projects ([Form 517001](#)). This form is used to begin the FHWA Environmental Concurrence Process.
- [I.M. 3.110](#), Environmental Data Sheet Instructions, provides detailed instructions for completing the Environmental Data Sheet ([Form 517006](#)). In some cases, more detailed information about potential environmental impacts will be required than what is provided on the Concept Statement. The Environmental Data Sheet provides some of this information.
- [I.M. 3.114](#), Cultural Resource Regulations, provides guidance concerning the requirements and procedures for potential impacts to cultural resources, such as archeological sites and historic properties.

4.2. Section 404 Permits

Section 404 of the Clean Water Act and its associated Federal regulations place restrictions on the use of wetlands, streams, rivers, or other aquatic resources. If any project construction will occur in any of these areas, the LPA may be required to notify the U.S. Army Corps of Engineers and obtain the appropriate Section 404 permit. For more information, refer to [I.M. 3.130](#), 404 Permit Process.

4.3. Iowa DNR Floodplain Development Permits

Projects that will involve construction in the flood plain of any river or stream in Iowa may require a Floodplain Development Permit from the Iowa Department of Natural Resources (Iowa DNR). The

threshold for when a permit is required depends on the location, type of construction, and drainage area of the river or stream. For more information, refer to [I.M. 3.410](#), Preliminary Bridge or Culvert Plans.

4.4. Storm Water Permits

The Clean Water Act and its associated Federal and State regulations may also require a National Pollutant Discharge Elimination System (NPDES) permit. If project construction activities will disturb more than 1 acre of ground, the LPA is required to submit a notification and obtain an NPDES permit from the Iowa DNR. Ground is considered disturbed if the soil is exposed to erosive forces, such as wind or water, for any period of time. For more information, refer to [I.M. 3.140](#), Storm Water Permits.

4.5. Farmland Protection Policy Act

The Farmland Protection Policy Act and its associated Federal regulations are designed to minimize the conversion of farmland to non-agricultural purposes by Federal-aid programs. If the project will require less than 5 acres of farmland per mile or per site, no action needs to be taken. However, if the anticipated impacts will exceed these thresholds, the LPA is required to complete a form and submit it to the Natural Resources Conservation Service. For more information, refer to [I.M. 3.120](#), Farmland Protection Policy Act Guidelines.

4.6. Projects in the Vicinity of an Airport or Heliport

If project construction will take place in the vicinity of a public airport or heliport, the LPA may be required to provide notice to the Federal Aviation Administration (FAA) and local airport officials. For more information, refer to [I.M. 3.150](#), Highway Improvements in the Vicinity of Airports or Heliports.

4.7. Hazardous Materials

In order to construct a transportation project, it is possible that hazardous materials may be encountered during the demolition or construction of buildings, bridges, or other structures. In those cases, certain Federal and State laws and regulations may govern how the demolition or construction may proceed.

The Clean Air Act and its associated Federal regulations require certain inspection, testing, notification, and removal procedures to be followed if the project involves removal of any structures or material that may contain asbestos. This includes buildings and bridges. For more information on the required procedures, refer to [I.M. 3.160](#), Asbestos Inspection, Removal, and Notification Requirements.

If contaminated soil or other hazardous wastes are encountered during project construction or on property acquired for the project, the LPA may be responsible for removal or treatment of such materials. If hazardous wastes may be present, the LPA may contact the Iowa DOT [Office of Location and Environment](#), Regulated Materials Section, for assistance.

4.8. Work on Primary or Interstate Highways

If a locally sponsored project involves a Primary or Interstate highway, additional coordination and approvals by the Iowa DOT and / or FHWA are required, as described below.

4.8.1. Permits

If the project will require any work within or abutting the right-of-way of an Interstate or Primary Highway, the LPA must acquire the appropriate permit(s) from the Iowa DOT. Execution of the project funding agreement does not grant any of the Iowa DOT permits that may be required. The type of permits required depends on the type of work being done. For more information, contact the Engineering Operations Technician in the Iowa DOT [District Office](#) in which the project is located.

4.8.2. Interchange Justification Reports

If the project will involve studies, design, or construction associated with a new or revised interchange on an Interstate highway, an Interchange Justification Report (IJR) must be prepared. The purpose of an IJR is to evaluate the need and engineering feasibility of the proposed interchange. The IJR must be reviewed and approved by the Iowa DOT and the

FHWA. For more information, refer to the Iowa DOT's [User Guide – Process for New or Revised Interchange Access](#).

5 Project Design

Unless specified otherwise in the project funding agreement, the LPA is responsible for all project design activities. The project design may be completed by the LPA's own staff, by a consultant, or if provided for by an intergovernmental agreement with another governmental agency, the staff or consultants hired by that agency. In any case, all plans and specifications must be prepared by a professional engineer or architect licensed to practice in the State of Iowa, unless specified otherwise in the project funding agreement.

5.1. Final Design and FHWA Environmental Concurrence

As discussed in [Section 4.1](#) above, the NEPA process requires that certain procedures be followed in the process of selecting the location of a Federal-aid project. The NEPA process also places limits on when certain project activities may begin. One of the activities limited by the NEPA process is final design. Until [FHWA Environmental Concurrence](#) has been obtained, final design activities may not begin.

Environmental and related engineering studies, agency coordination, public involvement activities, and preparation of Preliminary Plans are not considered final design. Therefore, these activities may proceed prior to completing the NEPA process. However, work directly associated with preparation, review, or submittal of Check Plans or Final Plans is considered final design.

5.2. Federal-aid Participation in Design Activities

For most Federal-aid projects, project design activities may be eligible for Federal-aid reimbursement. For purposes of [FHWA Authorization](#), these costs are categorized as one of the following:

- Preliminary Engineering (PE) includes work that is part of the development of the plans, specifications, and estimate (PS&E) for a construction project. This includes environmental studies and documents, preliminary design, and final design up through and including the preparation of bidding documents. PE does not include planning or other activities that are not intended to lead to a construction project. Examples include planning, conceptual, or feasibility studies.
- Construction Engineering (CE) includes materials testing, construction inspection, and other work directly related to the administration of the construction contract (e.g., processing contractor payment requests, or preparing change orders, a final punch list, or project close-out paperwork).

5.2.1. Consultant Services

If the LPA desires Federal-aid reimbursement for the costs of consultant services, certain procedures must be followed in acquiring, preparing, reviewing, approving, and administering the consultant contract. For more information, refer to [I.M. 3.305](#), Federal-aid Participation in Consultant Costs.

5.2.2. In-House Services

If the LPA chooses to perform PE, CE, right-of-way acquisition, or other work directly related to the development of the project with its own staff, these costs may also be reimbursed with [Federal funds](#), if the appropriate procedures are followed. To be approved, the LPA must be able to segregate and provide an accounting of the cost of its in-house services. For more information, refer to [I.M. 3.310](#), Federal-aid Participation In-House Services.

5.3. Design Guidelines

Federal-aid projects should be designed to meet the guidelines provided by the Iowa DOT. Generally speaking, these guidelines correspond to nationally recognized design guidelines, such as those published by the American Association of State Highway Transportation Officials (AASHTO).

5.3.1. Roadways and Bridges

There are several I.M.s that provide design guidelines for LPA Federal-aid road or bridge projects that are not located on the Primary or Interstate system. These are listed and briefly described below:

- For projects involving new construction or complete reconstruction, refer to either [I.M. 3.205](#), Urban Design Guidelines, or [I.M. 3.210](#), Rural Design Guidelines.
- For rehabilitation, restoration, or resurfacing (3R) projects, refer to [I.M. 3.214](#), 3R Guidelines.
- For guidance concerning the use and placement of guard rails and bridge rails, refer to [I.M. 3.213](#), Traffic Barriers (Guardrail and Bridge Rail).
- For guidance in providing a safe recovery area, refer to [I.M. 3.215](#), Clear Zone Guidelines.

For road or bridge projects that are located on the Primary or Interstate System, refer to the Iowa DOT [Design Manual](#).

5.3.2. Bicycle and Pedestrian Facilities

For bicycle facility projects, designs should meet or exceed the minimum recommended values provided in Chapter 12A and 12B of the Iowa DOT [Design Manual](#).

New construction or alterations to pedestrian facilities shall be designed to meet the requirements of the Americans with Disabilities Act (ADA). Refer to [I.M. 1.080](#), ADA Requirements for the applicable design guidelines.

5.4. Design Exceptions

Designs that do not meet the guidelines specified by the applicable I.M.s or documents referenced in Section 5.3 will require a written design exception or justification. The LPA must prepare and submit the design exception or justification and its accompanying documentation to the [Administering Office](#) for review and approval. Design exceptions or justifications should be submitted with the Concept Statement submittal, or as soon as it becomes apparent that an exception or justification will be necessary, but in no case later than the Check Plan Submittal.

5.4.1. Roadways and Bridges

These projects will require a formal design exception, including a cost-benefit analysis, if any of the controlling design elements listed in [I.M. 3.218](#), Design Exception Process do not meet the design guidelines listed in Section 5.3.1. Other design elements that do not meet the minimum design guidelines should still be justified, but do not require a formal design exception and benefit-cost analysis.

Federal regulations also require approval of design exceptions for any new construction, reconstruction or 3R project on the [National Highway System](#) (NHS), regardless of funding source. LPAs should review the design of all such projects and submit design exception requests to the Iowa DOT Administering Office. Routine maintenance activities on NHS routes do not require review or approval by the Iowa DOT.

For more information on the design exception process for road or bridge projects, refer to [I.M. 3.216](#), Economic Analysis (Benefit-to-Cost Ratio) and [I.M. 3.218](#), Design Exception Process.

5.4.2. Bicycle and Pedestrian Facilities

These projects do not require formal design exceptions or a benefit-cost analysis. However, justification for using a design value less than the minimum recommended should be provided to the Administering Office. This justification should be based on sound engineering judgment, describe the proposed mitigation measures, and include any other supporting documentation that is appropriate.

5.5. Plans and Specifications

There are several points during project development at which plans must be submitted to the Iowa DOT. These submittals are a key part of the project review and provide much of the information required by the Iowa DOT. Each submittal shall be accompanied by a transmittal letter / e-mail and other documents as required. The content of each submittal is summarized in [I.M. 3.005](#), Project Development Submittal Dates and Information.

5.5.1. Preliminary Plans

The Preliminary Plans are used by the Iowa DOT to evaluate the proposed project design, right-of-way needs, and possible environmental impacts. For more information, refer to [I.M. 3.405](#), Preliminary Plans. If the project involves a bridge or culvert, refer also to [I.M. 3.410](#), Preliminary Bridge or Culvert Plans.

5.5.2. Check and Final Plans

Most Federal-aid transportation projects must be let by the Iowa DOT. To be successfully let by the Iowa DOT, the plans and specifications must conform to the Iowa DOT letting process. For example, the Iowa DOT [Standard Specifications](#) and the accompanying list of [standard bid items](#) shall be used when appropriate. In addition, use of Iowa DOT [Standard Road Plans](#) and [Road Design Details](#) (includes standard tabulations, notes, details, and typical sections) are also strongly encouraged. Use of these standards promotes consistency and uniformity among all projects let by the Iowa DOT. In turn, plan consistency helps reduce the project cost, because bidder uncertainties associated with different specifications or plan formats are reduced.

The Check Plan submittal serves as a precursor to the Final Plans. Even so, Check Plans should be 100% complete. This allows the [Administering Office](#) to review all the required elements of the plans and provide enough time to make any changes that may be needed. If the Check Plans are not complete, the project letting may be delayed.

For detailed information about the plan requirements for letting at the Iowa DOT, refer to [I.M. 3.505](#), Check and Final Plans, and [I.M. 3.520](#), Electronic Bid Item Information. If the project involves a bridge or culvert, refer also to [I.M. 3.510](#), Check and Final Bridge or Culvert Plans.

6 Right-of-Way, Utilities, and Railroads

6.1. Right-of-Way

For some transportation projects, it is necessary to acquire some type of property rights in order to construct the project. As used in the Guide and the I.M.s, the term, “right-of-way” includes the acquisition of any type of property rights. These property rights may be temporary, such as a temporary construction easement; or they may be permanent, such as a drainage easement or title to a property.

Regardless of what type of property rights are acquired, there are a number of Federal and State laws and regulations that govern how and when this may be accomplished on a Federal-aid project. These laws and regulations are lengthy and complex, and in many cases, will require the use of specially trained staff or consultants to ensure they are followed properly. Nevertheless, there are a few points that everyone should understand:

- The Federal and State right-of-way laws and regulations always apply, even if right-of-way costs will not be reimbursed with [Federal funds](#).
- If Federal-aid is used in the cost of acquiring right-of-way, the acquisition may not begin until after [FHWA Environmental Concurrence](#) has been obtained. One exception to this requirement is when property is acquired because of a hardship on the property owner, or when purchase is necessary to protect a corridor for future transportation use. However, individual parcels to be acquired under the hardship or protective buying provisions still must have prior approval by the Iowa DOT and the FHWA.

- If Federal-aid is not used in the cost of acquiring right-of-way, the acquisition may begin before [FHWA Environmental Concurrence](#) has been obtained.

For more information about right-of-way acquisition resources, procedures, and requesting [FHWA Authorization](#) of right-of-way costs, refer to [I.M. 3.605](#), Right-of-Way Acquisition.

6.2. Utilities

6.2.1. Accommodation and Coordination

Early coordination with utilities that may be impacted by a transportation project is critical. Even though, in many cases, the utility company is obligated to move its facilities if required by a transportation project, failure to communicate by either the LPA or the utility can cause project delays and added expense.

All utility relocations required by a Federal-aid project shall comply with the applicable utility accommodation policy. For projects located on non-primary, [Federal-aid highways](#), refer to the [Policy for Accommodating Utilities on the County and City Non-Primary Federal-aid Road System](#). For projects located on primary highways, refer to [761 Iowa Administrative Code, Chapter 115 Utility Accommodation](#). For more information, refer to [I.M. 3.640](#), Utility Accommodation and Coordination.

6.2.2. Federal-aid Participation in Utility Relocations

[Federal funds](#) may or may not participate in the costs, depending on their location, ownership, and which entities have either the obligation or authority to pay for the costs of relocating the utilities. In most cases, utilities located in the public right-of-way must move at their own expense and are not eligible for Federal-aid reimbursement. Utility relocation costs include the costs to relocate utilities that must be moved in order to construct the project. Besides construction, these costs may also include design, and in some cases, the acquisition of a replacement easement.

For more information, refer to [I.M. 3.650](#), Federal-aid Participation in Utility Relocations.

6.3. Railroads

6.3.1. Coordination

When a transportation project requires the use of railroad property, even for minor maintenance-type work of limited duration, advance notification and approval by the railroad will be required. Projects that require access to the railroad right-of-way or modifications to railroad facilities will require an agreement with the railroad.

Therefore, as is the case with utilities, early coordination with the affected railroad(s) is critical. The LPA should contact all railroad companies that have tracks inside or adjacent to the project work area to determine what type of approvals or agreements will be required. The Iowa DOT has developed a process for coordinating with railroads, including specific procedures and specifications that shall be used for all projects let by the Iowa DOT. For more information, refer to [I.M. 3.670](#), Work on Railroad Right-of-Way.

6.3.2. Federal-aid Projects Involving Railroads

All Federal-aid projects that will require access to the railroad right-of-way or modifications to railroad facilities must comply with a number of other specific requirements, including project design, notifications and / or agreements, insurance, and provisions for railroad flaggers.

If required by the transportation project, the costs of work performed by a railroad or the railroad's contractor may be eligible for Federal-aid reimbursement. In other cases, if the proposed improvements have a benefit to the railroad, the railroad may also be required by the Federal regulations to share in the cost of the work. However, the cost of improvements that are for the sole benefit of the railroad are not eligible for Federal-aid participation.

For purposes of [FHWA Authorization](#), railroad work includes the costs of modifications to railroad facilities that are required in order to construct the project. This may include construction, flaggers, right-of-way, and engineering costs. These costs shall be identified as part of the agreement between the LPA and the railroad, and the agreement must be reviewed and approved by the Iowa DOT prior to being executed by the LPA and the railroad. For more information, refer to [I.M. 3.680](#), Federal-aid Projects Involving Railroads.

7 Letting and Contract Award

7.1. Iowa DOT Letting Procedures

Competitive bidding has been a long-standing requirement for the Federal-aid transportation programs, with a few exceptions. As a result, there are many Federal laws and regulations that pertain to the construction contracting process. Because of the complexity of these requirements, the Iowa DOT requires that most Federal-aid projects be let at the Iowa DOT. This enables the Iowa DOT to better ensure compliance with these laws and regulations by conducting and directly monitoring the letting process. The Iowa DOT letting process is described in detail by [I.M. 3.730](#), Iowa DOT Letting Process. However, some important aspects of this process are highlighted in the subsections below:

7.1.1. FHWA Authorization of Construction Costs

As part of the letting process, the Iowa DOT obtains [FHWA Authorization](#) for the costs of the proposed construction contract. FHWA Authorization will be requested based on the plans, specifications, and estimate (PS&E) submitted by the LPA. If the bids come in significantly higher or lower than the estimate, the FHWA Authorization may be adjusted accordingly, provided that sufficient [Federal funds](#) are available for the project. The Iowa DOT requires that the LPA budget sufficient funds and be prepared to award a contract for bids that are up to 110% of the LPA's estimate.

7.1.2. Project Clearances

Before letting may proceed, the project should have all of the necessary clearances. These clearances are documented by the LPA and reviewed by the Iowa DOT using the Project Development Certification ([Form 730002](#)). This form should be submitted with the Final Plans. For more information, refer to [I.M. 3.750](#), Project Development Certification Instructions.

Without the required clearances, projects are normally not allowed to enter the Iowa DOT letting process. However, under special circumstances, a project may begin the letting process without all of the necessary clearances provided the LPA requests and the [Administering Office](#) approves a Public Interest Finding.

The LPA's request must document the reasons why it is in the public's best interest to deviate from the standard procedures. For additional guidance on this process, as well as other conditions that require a Public Interest Finding, refer to [I.M. 3.760](#), Public Interest Findings.

7.1.3. Iowa DOT Concurrence in Award

After bids are opened, the Iowa DOT determines the lowest responsive and responsible bidder and provides the LPA with tabulation of bids received and the unexecuted contract documents. Within 30 days of the letting, the LPA must either accept the low bid or reject all bidders. If the low bid is accepted, the LPA forwards the contract documents to the contractor for signature. After executing the contract, the LPA forwards the executed contract documents to the Iowa DOT [Office of Contracts](#) for review and concurrence in the award. If acceptable, the Iowa DOT indicates its concurrence on the contract documents and returns the contract documents to the LPA and the contractor. *Work shall not begin and the preconstruction meeting shall not be held prior to Iowa DOT concurrence in the award.* If the LPA elects to reject all bids, it shall notify the Iowa DOT Office of Contracts of its decision.

7.2. Local Letting Procedures

While most Federal-aid projects must be let at the Iowa DOT, there are a few non-highway transportation programs for which lettings may be held locally. These include the Transportation Enhancement, Federal

Recreational Trails, National Scenic Byways, and Safe Routes to School programs funded under the Transportation Alternatives Program (TAP).

Even though projects funded by these programs may be let locally, the applicable Federal and State competitive bidding requirements must still be satisfied, as well as several other Federal-aid requirements. To assist in meeting these requirements, the Iowa DOT has developed procedures and standardized bidding documents for use with locally let Federal-aid projects. Before advertising for bids, the LPA must submit the proposed bidding documents for review and approval by the Iowa DOT.

For more information on the types of Federal-aid programs and projects that may be let locally, and the required procedures for conducting a local letting, refer [I.M. 3.720](#), Local Letting Process – Federal-aid.

7.3. Participation by Disadvantaged Business Enterprises

The requirements of the Disadvantaged Business Enterprise (DBE) program apply to all contracts awarded under all of the Federal-aid transportation programs, regardless of how the contract is acquired. These requirements apply to construction contracts let locally or by the Iowa DOT. They also apply to consultant contracts which will be reimbursed with [Federal funds](#).

In summary, a DBE goal is not always required, but DBE firms must always be given consideration for participation in Federal-aid funded contracts. For specific guidance on applying the DBE requirements to construction contracts or consultant contracts, refer to [I.M. 3.710](#), DBE Guidelines.

8 Construction

8.1. Contract Administration and Inspection

Unless specified otherwise in the funding agreement, the LPA will be responsible for all aspects of administration and inspection of the construction contract. This includes providing daily, on-site inspection of the contractor's work activities and processing all of the paper work associated with the construction contract, including any change orders. All change orders shall have approval of the appropriate governing authority, such as the city council or county board of supervisors. Change Orders must also have Iowa DOT concurrence.

If the LPA does not have adequate staff to perform this work, it may hire a consultant or enter into an agreement with another governmental agency to provide these services. If the LPA elects to hire a consultant, the consultant staff shall be competent in construction inspection and perform this work under the direct supervision of a registered professional engineer or architect licensed in the State of Iowa.

However, use of a consultant does not relieve the LPA of ultimate responsibility for the proper administration and inspection of the construction contract. If a consultant is used to provide the inspection services, an LPA employee shall oversee the consultant's work.

For additional information about the construction inspection procedures, including the required forms and paper work, refer to [I.M. 3.805](#), Construction Inspection.

8.2. Iowa DOT and FHWA Reviews

The Iowa DOT and / or the FHWA may also conduct a field review of selected LPA projects during construction. Selected projects will be reviewed by [Administering Office](#), [Office of Local Systems](#), or FHWA staff. If selected, the LPA may be notified when the field review will be conducted, or the review may be conducted unannounced. The purpose of the field review is to spot check the LPA's construction inspection documentation and provide assistance to the LPA if any deficiencies are identified.

8.3. Federal-aid Participation in Construction by LPA Forces

In some cases, construction of part or all of a Federal-aid project may be accomplished by LPA forces. Under very limited circumstances, the costs of such work may be eligible for Federal-aid participation. Federal-aid participation in such work requires prior approval by the Iowa DOT, as outlined in [I.M. 3.760](#), Public Interest Findings. The Public Interest Finding must be based on both the cost effectiveness of such work and on special circumstances that are unlikely to be repeated. For more information on how to

request [FHWA Authorization](#) for work done by LPA forces, refer to [I.M. 3.810](#), Federal-aid Construction by Local Agency Forces.

Regardless of whether Federal-aid participation is requested for this work, it must also comply with State bidding laws that limit the amount of work that can be performed by LPA forces. In general, work associated with construction, reconstruction, or improvements must be obtained either by bids or competitive quotes if the estimated cost of such work exceeds the thresholds specified by the Code of Iowa. These thresholds are summarized on the [Office of Local Systems](#) web page titled, [Bid Thresholds for Iowa Cities and Counties](#).

9 Project Close-out and Audits

9.1. Completion of the Construction Contract

The LPA is responsible for ensuring that all project construction has been completed and providing all of the necessary paperwork as required by the construction contract. This involves conducting a pre-audit of all contract items and associated paperwork. Not more than 30 days after the field work is complete, the LPA's project engineer (or designated representative) shall notify the [Administering Office](#) the project is ready for a field inspection. The notification shall include a completed Pre-Audit Checklist and associated documentation. The Administering Office staff will conduct a field inspection to verify completion of the work. When both the LPA and the Administering Office accept the field work as complete, the LPA's project engineer shall certify that the project was constructed in accordance with the plans and specifications and request a final audit of the construction contract.

9.2. Final Audits

After receipt of the request for a final audit, the [Administering Office](#) may elect to conduct a final audit of the construction contract documentation. This will include a review of the final pay quantities for the construction contract, including material certifications, test results, and other documentation. If Federal-aid participation was requested for the costs of a consultant contract, work by LPA forces, utility relocations, or railroad work, a final audit or review of these costs may also be conducted.

If the final audits or reviews find that the LPA has been over-reimbursed, the LPA shall reimburse the Iowa DOT for the amount identified by the final audit or review. In turn, the Iowa DOT will credit these funds to the FHWA. Otherwise, the Iowa DOT will make the final reimbursement to the LPA, taking into account any adjustments required by the final audit or review.

9.3. Closing the Project and Records Retention

After the final reimbursement to the LPA has been processed, the Iowa DOT will prepare a final [Amendment/Modification](#) to the [FHWA authorization](#) for the project in [FMIS](#), including the final total costs and final amount of Federal-aid reimbursement. After FHWA has approved this request, a copy of this document will be distributed to various Iowa DOT offices, the LPA, and the appropriate RPA or MPO.

The LPA shall maintain all project records for a period of 3 years after FHWA approval of the final Amendment / Modification document. Afterwards, the LPA may discard its project files if desired.

For more detailed information concerning the entire project close-out process, refer to [I.M. 3.910](#), Final Review, Audit, and Close-out Procedures for Federal-aid Projects, and [I.M. 3.930](#), Interest Payment Procedures.

10 Other Federal-aid Requirements

This section of the Guide addresses those Federal-aid requirements that do not correspond to a particular part of the project development process but are nonetheless very important considerations for any LPA using [Federal funds](#).

10.1. Nondiscrimination

10.1.1. Title VI

Title VI of the Civil Rights Act of 1964 (Title VI) is a foundational piece of legislation that forms the basis for a wide array of other laws and regulations that prohibit discrimination on the basis of race, color, national origin, disability, gender, and age. Title VI has a very broad application. It prohibits discrimination in all programs or activities of any LPA that is a recipient of any Federal-aid financial assistance; even those programs or activities that do not directly benefit from such assistance. For additional guidance, refer to [I.M. 1.070](#), Title VI and Nondiscrimination Requirements.

10.1.2. Americans with Disabilities Act

The Americans with Disabilities Act of 1990 (ADA) is another piece of legislation aimed at prohibiting discrimination. Title II of the ADA applies to State and local governments, and its requirements affect the design, construction, and maintenance of all transportation projects, regardless of the funding sources.

The ADA requires that all new construction, reconstruction, and alterations to existing pedestrian facilities be made accessible to persons with disabilities. In addition, for those existing facilities that are not accessible, a transition plan must be prepared and implemented to bring those facilities into compliance.

For more information on ADA requirements related to transportation projects and facilities, refer to [I.M. 1.080](#), ADA Requirements.

10.2. Single Audit Requirements

LPA's that expend more than \$500,000 in [Federal funds](#) of any kind during a [Federal Fiscal Year \(FFY\)](#) are required to prepare and file a Single Audit Report in accordance with the requirements of the Office of Management and Budget (OMB) [Circular A-133](#), Audits of States, Local Governments, and Non-Profit Organizations. If the LPA's Single Audit Report contains findings that relate to [Federal funds](#) passed through the Iowa DOT, the Iowa DOT will investigate those findings and issue a management decision regarding the LPA's response to those findings, as stated in the Single Audit Report. The Iowa DOT's management decision may require additional documentation or changes to the LPA's procedures to prevent similar future audit findings.

10.3. Bridges

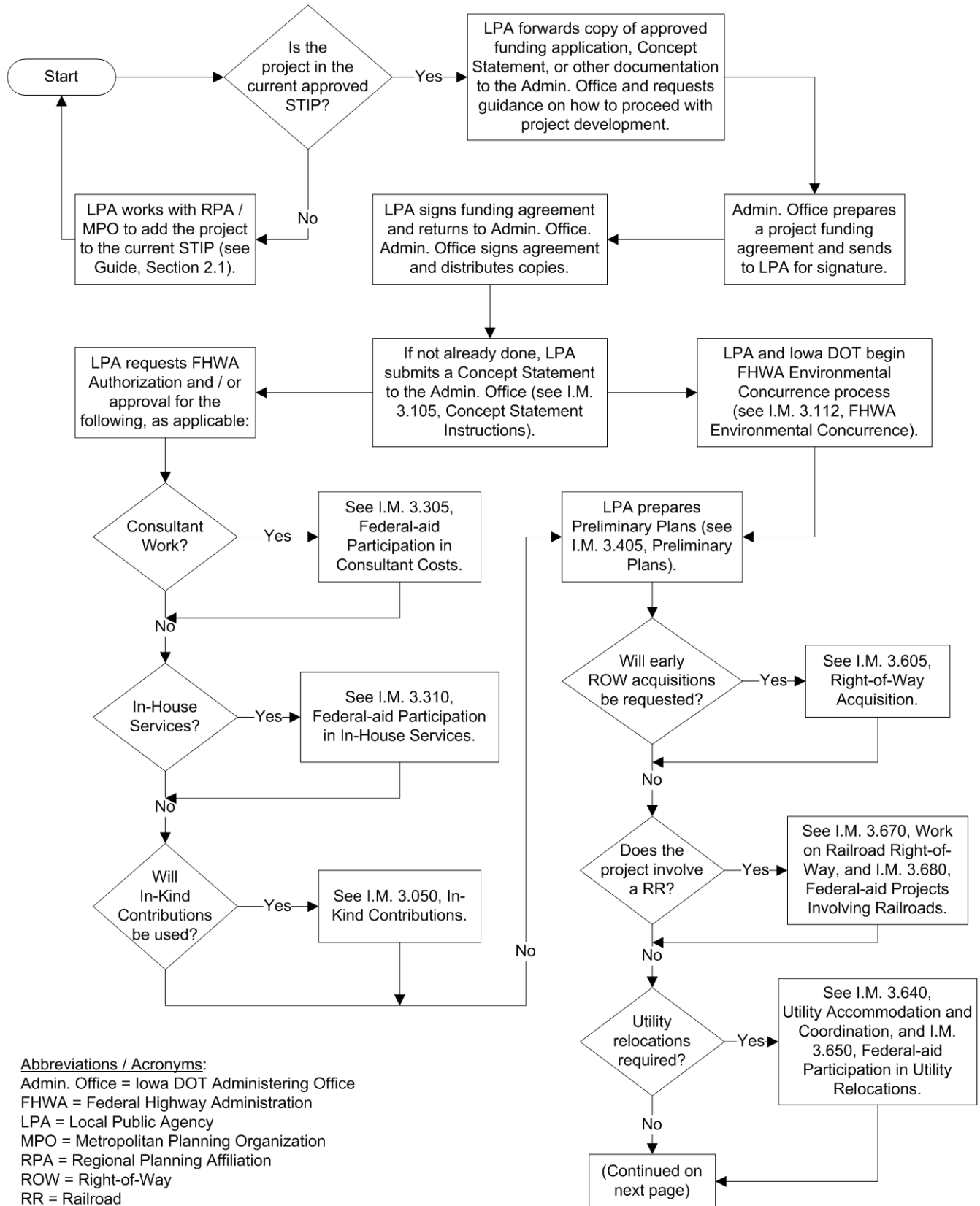
10.3.1. Bridge Inspections

As a condition of receiving any [Federal funds](#), LPA's with highway bridges under their jurisdiction must comply with the National Bridge Inspection Standards (NBIS). The NBIS requires regular inspections, bridge ratings, posting where appropriate, and qualified personnel to perform and supervise inspections. For more information, refer to [I.M. 2.120](#), Bridge Inspections.

10.3.2. Bridge Funding Programs

The Highway Bridge Program (HBP) provides Federal-aid funding for replacement or rehabilitation of highway bridges that meet the eligibility criteria, such as structural condition, roadway and bridge geometrics, and traffic volumes. HBP funds may also be used for bridge inspections. The HBP funds available for the State of Iowa are divided between the Iowa DOT, cities, and counties on a formula basis. Each county receives an annual allocation of funds which may be used on any eligible bridge, subject to certain restrictions. Cities compete for HBP funding based on a priority point system. In addition to the HBP funds, there is a small amount of State funds available annually for city and county bridges under the City and County Bridge Construction funds, respectively. For complete information regarding the bridge programs for both cities and counties, refer to [I.M. 2.020](#), Federal and State Bridge Programs.

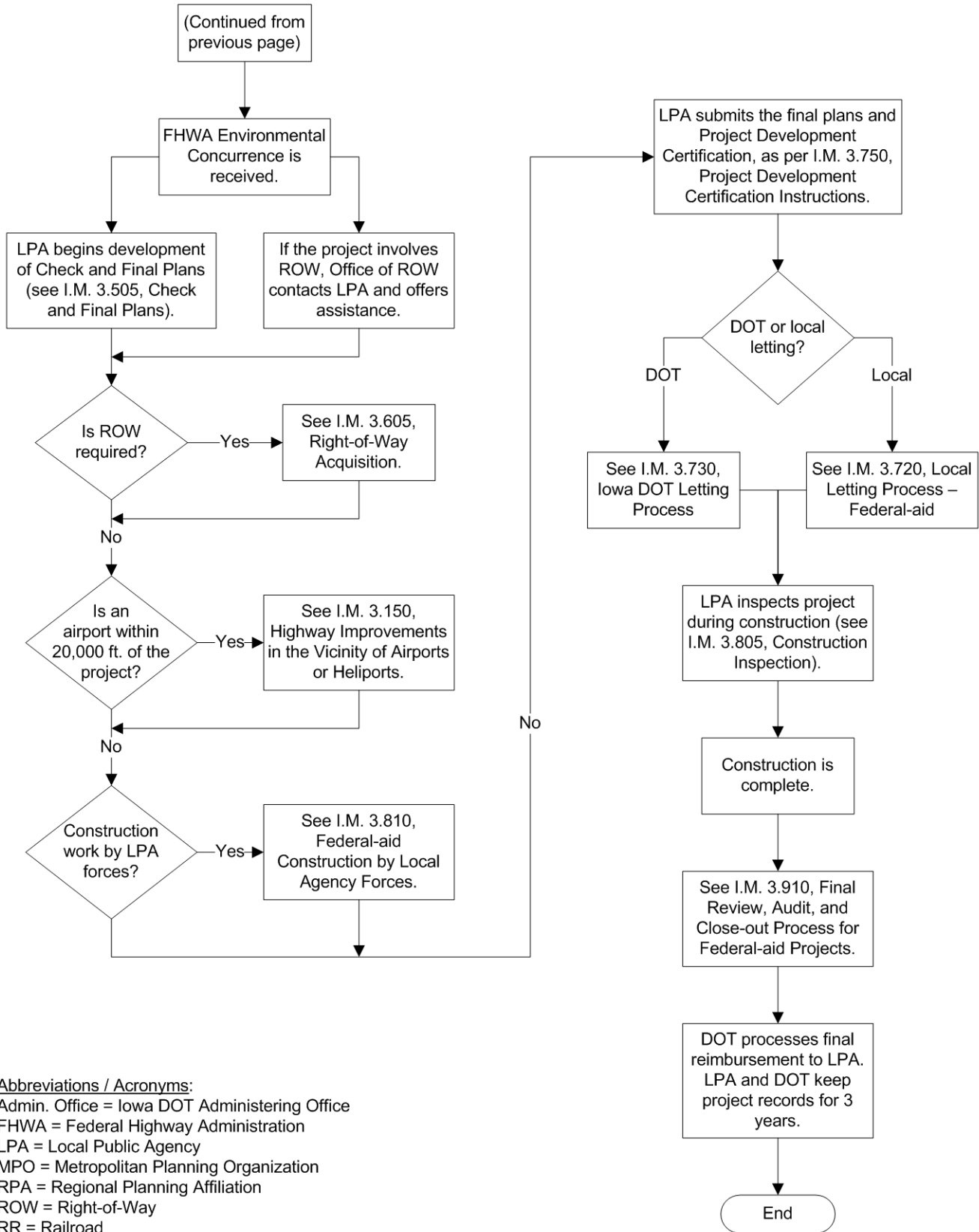
Appendix A – Project Development Flow Chart



Abbreviations / Acronyms:

- Admin. Office = Iowa DOT Administering Office
- FHWA = Federal Highway Administration
- LPA = Local Public Agency
- MPO = Metropolitan Planning Organization
- RPA = Regional Planning Affiliation
- ROW = Right-of-Way
- RR = Railroad
- STIP = Statewide Transportation Improvement Program
- Note: Project submittals shall be as per I.M. 3.005, Project Development Submittal Dates and Information.

Appendix A – Project Development Flow Chart (continued)



Abbreviations / Acronyms:

- Admin. Office = Iowa DOT Administering Office
- FHWA = Federal Highway Administration
- LPA = Local Public Agency
- MPO = Metropolitan Planning Organization
- RPA = Regional Planning Affiliation
- ROW = Right-of-Way
- RR = Railroad
- STIP = Statewide Transportation Improvement Program
- Note: Project submittals shall be as per I.M. 3.005, Project Development Submittal Dates and Information.

Appendix B – Glossary of Terms

Below is an alphabetical listing of terms and phrases used in the Guide. Following each term or phrase is a brief definition.

Administering Office: For projects funded by any or a combination of the Transportation Alternatives Program (TAP), such as Transportation Enhancement, Federal Recreational Trails, Safe Routes to School, National Scenic Byways, and certain Iowa Clean Air Attainment Program projects, and certain [earmark](#) projects, the [Office of Systems Planning](#) is the Administering Office. For all other projects, the Administering Office is one of the 6 District Offices, depending on which [Iowa DOT District](#) the LPA is located in.

Authorization/Agreement: A document that the Iowa DOT and FHWA electronically sign in [FMIS](#) that obligates [Federal funds](#) for the project. This document also establishes the [Effective Authorization Date](#).

Amendment/Modification: A document that amends a previously executed Authorization/Agreement or a prior Amendment/Modification. In instances when a Federal-aid funded project needs to be amended for any reason (cost overrun, additional phase of work, supplemental agreement, etc.), an Amendment/Modification is signed by the Iowa DOT and FHWA to electronically approve the modification. This process is also completed through [FMIS](#).

Earmark or demonstration funds: Federal-aid funding that is directed to specific projects in legislation enacted by the United States Congress. Earmark funding may be included either in a multi-year transportation bill such as the Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU), or as part of an annual appropriations bill. *Even though these projects receive their funding in a different way, earmark projects must still follow the same project development procedures as all other Federal-aid projects.*

Effective Authorization Date: This is the date after which work that is to be reimbursed with [Federal funds](#) may begin. Any costs [incurred](#) prior to this date are not eligible for Federal-aid reimbursement. This date is shown on the [Authorization/Agreement](#) and [Amendment/Modification](#) documents.

Federal-aid highways: All roads except those with a [Federal Functional Classification](#) of Rural Minor Collector or Local.

Federal Fiscal Year (FFY): Begins on October 1 and ends September 30 of each calendar year. For example, October 1, 2008 is the beginning of the Federal Fiscal Year 2009.

Federal funds: Federal funds reflect the amount of Federal funding available for a project. The total amount of Federal funds received is subject to either the Federal-aid limit shown in the Statewide Transportation Improvement Program (STIP) or the limit established by the project funding agreement.

Federal share: The percentage of eligible and authorized project costs paid by the Federal government. With a few exceptions, the Federal government does not pay for the entire cost of the project. In most cases, [Federal funds](#) must be matched with funds from non-Federal-aid sources. For most FHWA transportation programs, the Federal share of project costs is 80%. Refer to the funding agreement for the applicable pro-rata Federal share and matching requirements of the specific type of [Federal funds](#) involved.

FHWA Authorization: The action taken by FHWA when signing the [Authorization/Agreement](#) document or the [Amendment/Modification](#) document in [FMIS](#). Except in the case of Advance Construction, this action results in an [obligation](#) of [Federal funds](#) at the specified [Federal share](#) for the specific type of project costs identified on the Authorization/Agreement or Amendment/Modification.

FHWA Environmental Concurrence: This milestone in project development is marked by different events for different types of projects, depending on the anticipated level of environmental impacts. The event that marks the completion of the NEPA process depends on the type of NEPA document that is required for the project:

- For projects that are classified as a Categorical Exclusion (CE), the NEPA process is complete as of the effective date of FHWA Environmental Concurrence. This date is specified in the written notice the LPA will receive from the Iowa DOT Office of Location and Environment.
- For projects that require an Environmental Assessment (EA) or Environmental Impact Statement (EIS) document, the NEPA process is considered complete as of the date that the FHWA signs the Finding of No Significant Impact (FONSI) or Record of Decision (ROD) document, respectively.

Appendix B – Glossary of Terms (continued)

For more information about the different types of environmental documentation, refer to [I.M. 3.112](#), FHWA Environmental Concurrence Process.

Fiscal Management Information System (FMIS): FMIS is the FHWA’s electronic financial tracking system for Federal-aid transportation projects. Iowa DOT personnel use this system to request [FHWA Authorization](#) or obtain project information and funding reports.

Incurred Costs: Costs are considered to be incurred when the work associated with those costs begins. Example: Costs have been incurred once a consultant, whose services are to be reimbursed with [Federal funds](#), begins work, even if the LPA has not received a bill or made any payments to the consultant.

Obligation: An obligation is a commitment – the Federal government’s promise to pay the [Federal share](#) of a project’s eligible cost. This commitment occurs when the project is authorized by FHWA and the [Authorization/Agreement](#) or the [Amendment/Modification](#) is executed through [FMIS](#). Obligation is a key step in financing. Obligated funds are considered “used,” or set aside for that particular project, even before any cash is transferred.

Instructional Memorandums to Local Public Agencies

Table of Contents



Some I.M.s are written either to counties or cities; others are written to both counties and cities. The intended audience is indicated in the "To:" field of the I.M. as well as the Table of Contents below. Many of the I.M.s are referenced by the Federal-aid Project Development Guide (Guide). These I.M.s are marked with an asterisk (*). For more information about the relationship between the Guide and I.M.s, refer to the [Guide and I.M.s web page](#).

Note: The I.M.s are currently in the process of being transitioned into a new format and numbering system. New or updated I.M.s will use the new format. Existing I.M.s will remain in the old format until they are revised or updated. Some of the I.M.s are not yet complete, as shown in light grey text. Some incomplete I.M.s will be based on an existing Project Development Information Packet document, some will be based on an existing County Engineers I.M. that will be renumbered, and some will include entirely new content. Where applicable, a reference and link to the existing Packet document or County Engineers I.M. is provided.

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INSTRUCTIONAL MEMORANDUMS

To Local Public Agencies



To: Counties and Cities	Date: October 1, 2013
From: Office of Local Systems	I.M. No. 1.080
Subject: ADA Requirements	

Contents: This Instructional Memorandum (I.M.) provides guidance for a Local Public Agency (LPA) to understand and comply with the requirements of [Americans with Disabilities Act of 1990](#) (ADA), [Section 504 of the Rehabilitation Act of 1973](#) (Section 504), and the regulations associated with these laws, as they apply to pedestrian facilities. This I.M. also includes the following attachment:

[Attachment A](#) – Sample Pedestrian Access Route Transition Plan ([Microsoft Word](#))

Introduction

The accessibility requirements of the ADA and Section 504 apply to many different aspects of an LPA's programs, services, and facilities. However, because the I.M.s are written for transportation-related projects, this I.M. will focus on how these requirements apply to pedestrian facilities in the public right-of-way and pedestrian facilities that are constructed or altered as part of a transportation project. Examples of such pedestrian facilities include streets, sidewalks, walkways, and shared use paths (i.e., facilities designed for both bicycles and pedestrians). For accessibility guidance related to other programs, services, or facilities refer to the Additional Resources section at the end of this I.M.

Applicable Laws and Regulations

Title II of the ADA and its associated regulations ([28 CFR 35](#)) prohibit discrimination on the basis of disability in State and local government services, programs, and activities, regardless of whether the agency is a recipient of Federal-aid or not. Providing streets, sidewalks, and shared use paths are considered a program; therefore, all LPA projects involving these facilities are subject to the requirements of the ADA.

Section 504 (now codified at [29 U.S.C. 794](#)) and its associated regulations ([49 CFR 27](#)) also prohibit discrimination on the basis of disability. However, Section 504 applies specifically to those programs, projects, and activities that receive Federal Financial assistance. This means LPAs that receive Federal-aid through the Iowa Department of Transportation (Iowa DOT) must comply with the Section 504 requirements.

Accessibility Standards and Guidelines

Under the ADA regulations ([28 CFR 35.190](#)) the United States Department of Transportation (US DOT) has been designated by the United States Department of Justice (DOJ) as the Federal agency responsible for overseeing and implementing ADA compliance for services, programs, and activities relating to transportation, including highways and public transportation. The FHWA, an agency within the US DOT, is responsible for the implementation of pedestrian access requirements from the ADA and the Rehabilitation Act.

The standards used to determine whether facilities comply with the ADA and the Section 504 regulations are based on guidelines developed by the [United States Access Board](#) (Access Board). After these guidelines are developed, they are usually adopted by means of the Federal rule-making process, either in whole or in part, by the DOJ and the US DOT. After the Access Board guidelines are adopted, they become the legally enforceable accessibility standard. The US DOT adopted the [2010 ADA Standards for Accessible Design](#) (ADAAG) as the standard for ADA compliance.

However, ADAAG does not address many of the design considerations associated with construction or alterations to pedestrian facilities in the public right-of-way. In response, the Access Board developed the [2011 Proposed Guidelines for Pedestrian Facilities in the Public Right-of-Way](#) (PROWAG). These guidelines have not yet been adopted by the US DOT as the legally enforceable standard. However, they are recommended for use by FHWA as the current best practice of accessible design, and in the future, they will likely become the accessibility standard for pedestrian facilities in the public right-of-way. Therefore, SUDAS and the Iowa DOT jointly developed Chapter 12A of the Iowa DOT [Design Manual](#) based on the [2011 PROWAG](#). Chapter 12A was also developed in accordance with Federal regulations ([23 CFR 652](#) and [28 CFR 35](#)) and is the standard for use by all

governmental entities in the State of Iowa. A local jurisdiction may elect to produce their own standards; however, these will require review and approval by FHWA and/or the DOJ.

Accessibility Requirements

New Construction and Alterations

All new construction and alteration projects shall follow the requirements set forth in Chapter 12A for sidewalks and Chapter 12B for Bicycle Facilities of the Iowa DOT [Design Manual](#).

Accessibility improvements that are outside the scope of the alteration project may be deferred to a later date. For more information, refer to the discussion of transition plans below.

Maintenance Activities

Routine maintenance activities are not considered an alteration, and therefore do not require simultaneous accessibility improvements to pedestrian facilities. Maintenance activities are actions that are intended to preserve the system, retard future deterioration, and maintain the functional condition of the facility.

Maintenance of Pedestrian Facilities

Where pedestrian facilities are provided, they must be maintained so that they are readily accessible and useable by persons with disabilities. Therefore, the LPA should adopt policies that ensure sidewalks and other pedestrian facilities will be properly maintained and free of obstructions. Examples of obstructions include: street furniture, utility poles, tree roots, potted plants, snow or ice, debris, or inoperable elevators and lifts. Temporary obstructions and isolated instances of failures would not necessarily be considered a violation of the ADA or Section 504; however, if these situations are prolonged, they may become a violation.

Documenting Exceptions

If an LPA receives any type of funding assistance from the Iowa DOT or the project is let through the Iowa DOT; and if an LPA determines that a pedestrian facility cannot be made fully compliant because the accessibility improvements are structurally impracticable, technically infeasible, or there are safety issues, as defined in Section 12A-2 of the Design Manual, it shall provide the Iowa DOT Administering Office with an Accessibility Exceptions Certification ([Form 517118](#)). The certification shall include supporting documentation that identifies the specific locations and lists the specific reasons why full compliance cannot be achieved. The certification shall be prepared and signed by a registered Professional Engineer or Landscape Architect licensed in the State of Iowa. Whenever alterations are made to the pedestrian circulation path, the pedestrian access route shall be made accessible to the maximum extent feasible within the scope of the project. If full compliance with Chapter 12 of the Iowa DOT [Design Manual](#), is technically infeasible, compliance is required to the extent that is not technically infeasible.

For all other projects, the same type of documentation should be prepared and retained by the LPA.

Transition Plans

LPAs are required to operate their services, programs, or activities so that they are readily accessible to and usable by individuals with disabilities. The ADA regulations ([28 CFR 35.150\(d\)](#)) require LPAs with 50 or more employees to prepare a formal transition plan, if structural changes are required in order to make its programs, services, or activities accessible. Section 504 ([49 CFR 27](#)) requires LPAs, regardless of the number of employees, which receive Federal-aid through the Iowa DOT to prepare a formal transition plan, if structural changes are required in order to make its services, programs, or activities accessible. The ADA regulations ([28 CFR 35.150\(c\)](#)) required all structural changes to have been made by January 26, 1995, or as expeditiously as possible.

When required, the transition plan must address all services, programs, and activities owned or operated by the LPA. Because the scope of this I.M. is limited to transportation facilities, the following guidance has been tailored to specifically address curb ramps in the public right-of-way. If facilities other than curb ramps are found not to be in compliance, those facilities should also be included in the LPA's transition plan.

The ADA regulations ([28 CFR 35.150\(d\)](#)), require the transition plan to address each of the numbered items below. The bullet points underneath each numbered item provide guidance in complying with the requirements.

1. Identify physical obstacles in the public entity's facilities that limit the accessibility of its services, programs, or activities to individuals with disabilities. Also identify the specific standards used to determine technical compliance with regard to the inventory/survey of curb ramps, sidewalks, and other facilities.
 - This should include an inventory of all locations where structural changes are needed to make facilities accessible. The inventory should also identify the types of improvements required to provide accessibility for curb ramps, intersections, and sidewalks.
 - The inventory of facilities to be modified shall be prioritized in the following order:
 - a) State and local government offices and facilities (e.g., city hall, schools, etc.)
 - b) Places where government services and transit facilities are provided (e.g., bus stops, train stations, etc.)
 - c) Places where the public is accommodated (e.g., employers, shops, etc.)
 - d) All other areas (e.g., residential or other)
2. Describe in detail the methods that will be used to make the facilities accessible.
 - This should include a description of the funding sources and amounts that will be annually budgeted for making the improvements associated with the transition plan.
 - This should also describe how accessibility improvements will be incorporated as a part of other projects involving construction or alterations to pedestrian facilities.
3. Specify the schedule for taking the steps necessary to achieve compliance and, if the time period of the transition plan is longer than one year, identify steps that will be taken during each year of the transition period.
 - The schedule should include milestones that can be used to evaluate progress towards completion. For curb ramps, this should include the number of ramps that will be constructed each year, and the total number of years required to complete the plan.
4. Indicate the official responsible for implementation of the plan.
 - This should include the name, title, office address, phone number, and e-mail address of the LPA official responsible for the coordination, development, and implementation of the transition plan.
5. The ADA regulations also require the LPA to provide an opportunity for interested persons, individuals with disabilities, or organizations representing individuals with disabilities, to actively participate in the development of the transition plan by submitting comments. LPA shall conduct and document outreach to solicit comment concerning its self-evaluation and transition plan. This should include a description of how the public was involved in reviewing and / or developing the transition plan. This should include the names of advisory committees, task forces, or other groups representing persons with disabilities that were provided an opportunity to comment.

In addition, a copy of the transition plan shall be made available for public inspection.

The Iowa DOT has observed that many LPAs have a transition plan, but sometimes their transition plans do not address the accessibility improvements required in the public right-of-way; specifically, curb ramps. In order to provide assistance to LPAs that need to modify or update their transition plan to include curb ramps, the Iowa DOT has developed a Sample Pedestrian Access Route Transition Plan*, as shown in [Attachment A](#) (also available in [Microsoft Word](#) format). If used, the LPA should complete the information indicated by the yellow, bracketed text and make other modifications as appropriate.

*Disclaimer: Even though the Sample Curb Ramp Transition Plan has been reviewed by the Iowa DOT and the FHWA Iowa Division, neither the Iowa DOT nor the FHWA can guarantee this sample will be sufficient for every situation. This document is provided as a guide only and additional modifications may be necessary.

Other requirements recommended to be included in the Transition Plan

Self-Evaluation

All LPAs must perform a self-evaluation. An LPA self-evaluation should include a comprehensive review of its policies, services, communications, and practices, as well as an analysis of how they affect persons with disabilities. The purpose of the self-evaluation is to identify any policies and practices that do not comply with the ADA and Section 504 requirements and modify those policies and practices to bring them into compliance. The ADA regulations also require the LPA to provide an opportunity for interested persons, individuals with disabilities, or organizations representing individuals with disabilities, to participate in the development of the self-evaluation and comments received during the development. LPAs that are recipients of Federal-aid from the Iowa DOT are required to maintain the self-evaluation on file and make it available for public inspection. Establish a system for periodically reviewing and updating the self-evaluation.

Complaint Procedures

All LPAs with 50 or more employees and all LPAs with 15 or more employees that receive Federal-aid through the Iowa DOT must develop, adopt, and publish grievance or complaint procedures. These procedures should provide for a prompt and equitable resolution of complaints that allege violation of the ADA and Section 504 regulations. LPAs should make all possible efforts to resolve complaints on the local level. The LPA must maintain a database of its ADA and Section 504 complaints. Complaint records must be retained for 5 years after the complaint is resolved. The database should denote the following: Complainant, Respondent, allegations, issue, date the complaint was received, date the complaint was resolved, and how the complaint was resolved.

ADA and Section 504 Coordinator

All LPAs with 50 or more employees and all LPAs, regardless of the number of employees, which receive Federal-aid through the Iowa DOT, are required to designate at least one employee as the ADA and Section 504 Coordinator to coordinate compliance with ADA and Section 504 regulations. The LPA shall make available to all interested parties the name, title, office address, phone number, and e-mail address of the ADA and Section 504 Coordinator.

Public Notice

The ADA and Section 504 regulations also require the LPA to disseminate sufficient information to applicants, participants, beneficiaries, and other interested persons to inform them of their rights and protections under these regulations. The LPA should have a Notice of Non-Discrimination, which informs the public that the LPA will not discriminate on the basis of disability in its services, programs, and activities with ADA and Section 504.

There are a number of other requirements associated with the ADA and Section 504. This I.M. has only addressed a few of them. For more comprehensive guidance, refer to the Additional Resources listed below. To assist LPAs, the Iowa DOT has developed checklists, and sample documents for use by the LPA. To access these documents, refer to the Iowa DOT [Civil Rights Subrecipients](#) webpage or the [ADA Transition Plan](#) webpage.

Additional Resources

[U.S. Access Board](#) Homepage of the Access Board. Provides a variety of guidelines and resources related to accessible design.

[Public Rights-of-Way Homepage](#) An Access Board web page that provides information focused to their public rights-of-way guidelines, including the rule making history, current public rights-of-way guidelines, and other resources.

[FHWA Office of Civil Rights](#) Home page for the FHWA Office of Civil Rights. Provides a variety of information related nondiscrimination laws and regulations, including Title II of the ADA and Section 504.

[Questions and Answers About ADA/Section 504](#) FHWA Office of Civil Rights' guidance concerning implementation of the ADA and Section 504 requirements.

[U.S. DOJ ADA](#) Homepage of the U.S. DOJ. Provides Information and Technical Assistance on ADA. There are guides for State and local governments.

[US DOT FHWA Accessibility Resource Library](#)

[Department of Justice/Department of Transportation Joint Technical Assistance¹ on the Title II of the Americans with Disabilities Act Requirements to Provide Curb Ramps when Streets, Roads, or Highways are Altered through Resurfacing](#)

[Glossary of Terms for DOJ/FHWA Joint Technical Assistance on the ADA Title II Requirements to Provide Curb Ramps When Streets Roads or Highways are Altered Through Resurfacing](#)

INSTRUCTIONAL MEMORANDUMS

To Local Public Agencies



To: Counties

Date: October 1, 2013

From: Office of Local Systems

I.M. No. 3.210

Subject: Rural Design Guidelines

Contents: This Instructional Memorandum (I.M.) provides design guidelines for new construction or complete reconstruction of road or bridge projects on rural collectors and rural local roads. It includes general design considerations, background on the development and application of the design guidelines, and several design tables. These guidelines are most applicable to counties; however they may be used on projects within the corporate limits that have a rural cross section (e.g., shoulders with open ditches, no curbs). Please note the following:

1. These guidelines will be used by the Iowa Department of Transportation (Iowa DOT) to review the proposed design values of Federal-aid road or bridge projects.
2. The Iowa County Engineers Association (ICEA), by action of the Association's Design Guide and Supervisor Engineer Committee, and Executive Board, has adopted the AASHTO Guidelines Tables contained in this I.M. for use on County projects funded with Farm-to-Market (FM) or local funds only. For such projects, the Iowa DOT will not provide any review of the proposed design values, unless specifically requested by the County.
3. These guidelines are not applicable for projects on arterial roadways. For arterials roadways on the Primary or Interstate systems, refer to the Iowa DOT [Road Design Manual](#). For minor arterials that are not on either the Primary or Interstate systems, refer to the American Association of State Highway and Transportation Officials (AASHTO) publications: *A Policy on Geometric Design of Highways and Streets* (2011), commonly referred to as the "Green Book".

Design Considerations

The objective of the engineering design of any public facility is to satisfy the demands for service in the safest and most economical manner while maintaining the integrity of the environment. On new or complete reconstruction projects, the selected design speed should be consistent with the proposed or existing operating speed limit. Any individual curves below this design speed may require mitigation by placement of warning signs and/or markings such as: curve or turn signs, advisory speed plaques, chevrons, no passing lines, edgelines, or reduced speed zones.

Development and Application of the Design Tables

The guidelines in this I.M. are applicable to rural collectors and rural local roads, as classified on the [Federal Functional Classification Maps](#). For each of these road classifications, two design tables are provided: the Design Aids tables and the AASHTO Guidelines tables. These tables were developed using two AASHTO publications: Green Book and the *Guidelines for Geometric Design of Very Low-Volume Local Roads (ADT \leq 400)* (2001). The proper application and use of each kind of table is described below.

The values in the Design Aids tables are based on the upper range of recommended values provided by the Green Book, using design speeds adopted by the ICEA. These tables should be used in the initial stages of project development. Values approaching or exceeding the upper limits of the ranges in the Design Aids tables should be used as the basis for design wherever the conditions permit. However, values within the ranges are acceptable. For Federal-aid projects, the County Engineer shall identify any design values that do not meet or exceed the Design Aids tables, and explain the reasons for not meeting these values. This documentation should be included with the Concept Statement submittal.

The values in the AASHTO Guidelines tables typically represent the minimum recommended values given in the Green Book. For local roads with design traffic volumes less than or equal to 400 ADT, some of the values are based on the *Guidelines for Geometric Design of Very Low-Volume Local Roads*. The AASHTO Guidelines tables are furnished to provide alternate values for design criteria if problems with excessive costs or adverse impacts to adjacent property occur when using the Design Aids values. Any proposed Federal-aid project that does not meet the values in the AASHTO Guidelines tables will require a design exception. The design exception request will need to be in the form of safety and service (crash experience, function of road, etc.) benefits versus the economics and environment (right of way and construction costs, farmsteads affected, parks, etc.), as described in I.M. [I.M. 3.218](#), Design Exception Process.

Design Aids For Rural Collectors

These “Aids” are presented to help in the design of new or complete reconstruction projects on rural collector roads. Each design element of each project should reflect the most practicable and economically justified value. For Federal-aid projects, design values below those shown in this table will be considered on a project-by-project basis, provided that an explanation is provided to the Iowa DOT Administering Office.

Design Elements	Paved Roadway						Non-Paved Roadway			
	Over 1500		1500 – 400		Under 400		400 – 50		Under 50	
Terrain (1)	Level	Rolling	Level	Rolling	Level	Rolling	Level	Rolling	Level	Rolling
Design Speed (mph)	60	50	55	50	55	45	55	45	50	40
Stopping Sight Distance (ft)	570	425	495	425	495	360	495	360	425	305
Minimum Radius (ft) (2)	1200	758	960	758	960	587	960	587	758	444
Maximum Gradient (%) (3)	5	6	6	7	6	8	6	8	7	8
Traveled Way (ft) (4)	24	24	22	22	22	22	20	20	20	20
Shoulder Width (ft)	8	8	6	6	6	6	4	4	2	2
Roadway Top Width (ft)	40	40	34	34	34	34	28	28	24	24
New Bridge Roadway Width (ft) (5)	40	40	30	30	30	30	24	24	24	24
Existing Bridge Roadway Width (ft) (6)	24	24	22	22	22	22	22	22	22	22
Foreslope	4:1	4:1	3:1	3:1	3:1	3:1	3:1	3:1	3:1	3:1
Cross Slopes	8:1	8:1	6:1	6:1	6:1	6:1	3:1	3:1	3:1	3:1
Clear Zone Distance (ft)	See note (7)									

NOTES:

- (1) Prevailing (over 50%) slopes of natural ground are: Level-less than 3%, Rolling-3% or more.
- (2) a. Based on a maximum superelevation (e) of 0.08.
b. Horizontal curves should have a minimum length of 500 feet.
- (3) Short lengths of grade (less than 500 feet) and grades on low-volume collectors (<400 vpd) may be steepened by 2%.
- (4) Traveled Way is the pavement or surfacing width.
- (5) a. For bridges over 100 feet long, the width may be the traveled way plus 6 feet (Note: This only applies for Design Volumes of 1500 ADT or greater).
b. Bridges should have a design loading of HL-93.
- (6) a. For bridges less than 100 feet in length. Bridges over 100 ft. will be analyzed individually.
b. If the Design Volume is over 2000 ADT, use 28 feet.
c. Design loading should be HS-15.
d. Existing Bridge Roadway Width should be greater than or equal to the Traveled Way width, unless a design exception has been approved.
- (7) The recommended clear zone distance is a function of Design Speed, Design Volume, horizontal curvature, and roadside geometry. To determine the recommended clear zone distance, refer to [I.M. 3.215](#), Clear Zone Guidelines.

AASHTO Guidelines For Rural Collectors

These "Guidelines" are a composite of the recommendations from Chapter 6 of the AASHTO Green Book (2011). These guidelines are presented to help in the design of new or complete reconstruction projects on rural collectors. For Federal-aid projects, design values below those shown in this table may be used on a project-by-project basis, provided that a design exception or justification is approved by the Iowa DOT Administering Office, as per [I.M. 3.218](#), Design Exception Process.

Design Elements	All Collector Roads							
	Over 2000		2000 – 1500		1500 – 400		Under 400	
Terrain (1)	Level	Rolling	Level	Rolling	Level	Rolling	Level	Rolling
Design Speed (mph)	60	50	50	40	50	40	40	30
Stopping Sight Distance (ft)	570	425	425	305	425	305	305	200
Minimum Radius (ft) (2)	1200	758	758	444	758	444	444	214
Maximum Gradient (%) (3)	5	7	6	8	6	8	7	9
Traveled Way (ft) (4)	24	24	22	22	22	22	20	20
Shoulder Width (ft)	8	8	6	6	5	5	2	2
Roadway Top Width (ft)	40	40	34	34	32	32	24	24
New Bridge Roadway Width (ft) (5)	40	40	30	30	28	28	24	24
Existing Bridge Roadway Width (ft) (6)	28	28	24	24	22	22	22	22
Foreslope	3:1	3:1	3:1	3:1	3:1	3:1	3:1	3:1
Clear Zone Distance (ft)	See note (7)							

- NOTES:
- (1) AASHTO "Mountainous" terrain design guides may be used on Federal-aid projects only with Iowa DOT concurrence. Note (1) in the Design Aids Table provides definitions for Level and Rolling.
 - (2) Based on a maximum superelevation (e) of 0.08.
 - (3) Short lengths of grade (less than 500 feet) and grades on low-volume collectors (<400 vpd) may be steepened by 2%.
 - (4) Traveled Way is the pavement or surfacing width.
 - (5) a. Bridges over 100 feet long, the width may be the traveled way plus 6 feet (Note: This only applies for Design Volumes of 1500 ADT or greater).
b. Design loading should be HL-93.
 - (6) a. For bridges less than 100 feet in length. Bridges over 100 feet will be analyzed individually.
b. Design Loading should be HS-15.
c. Existing Bridge Roadway Width should be greater than or equal to the Traveled Way width, unless a design exception has been approved.
 - (7) The recommended clear zone distance is a function of Design Speed, Design Volume, horizontal curvature, and roadside geometry. To determine the recommended clear zone distance, refer to [I.M. 3.215](#), Clear Zone Guidelines.

Design Aids For Rural Local Roads

These "Aids" are presented to help in the design of new or complete reconstruction projects on rural local roads. Each design element of each project should reflect the most practicable and economically justified value. For Federal-aid projects, design values below those shown in this table will be considered on a project-by-project basis, provided that an explanation is provided to the Iowa DOT Administering Office.

Design Elements	All Local Roads									
	Over 1500		1500 – 400		400 – 250		250 – 50		Under 50	
Design Volume (ADT)	Level	Rolling	Level	Rolling	Level	Rolling	Level	Rolling	Level	Rolling
Terrain (1)										
Design Speed (mph)	55	50	55	45	50	45	50	40	40	35
Stopping Sight Distance (ft)	495	425	495	360	425	360	425	305	305	250
Minimum Radius (ft) (2)	960	758	960	587	758	587	758	444	444	314
Maximum Gradient (%) (3)	6	8	6	9	6	9	6	10	7	10
Traveled Way (ft) (4)	24	24	22	22	22	22	20	20	20	20
Shoulder Width (ft)	8	8	6	6	4	4	3	3	2	2
Roadway Top Width (ft)	40	40	34	34	30	30	26	26	24	24
New Bridge Roadway Width (ft) (5)	40	40	30	30	30	30	24	24	24	24
Existing Bridge Roadway Width (ft) (6)	24	24	22	22	22	22	20	20	20	20
Foreslope (7)	4:1	4:1	3:1	3:1	2:1*	2:1*	2:1*	2:1*	2:1*	2:1*
Clear Zone Distance (ft)	See note (8)									

NOTES:

- (1) Prevailing (over 50%) slopes of natural ground are: Level – less than 3%, Rolling - 3% or more.
- (2) a. Based on a maximum superelevation (e) of 0.08.
b. Horizontal curves should have a minimum length of 500 feet.
- (3) Maximum gradient may be steepened by 2% for a short distance (less than 500 feet).
- (4) Traveled Way is the pavement or surfacing width
- (5) a. Where the approach roadway width is surfaced, that surface width should be carried across structure.
b. For bridges over 100 feet long, the width may be the traveled way plus 6 feet (Note: This only applies for Design Volumes of 2000 ADT or greater).
c. Bridges should have a design loading of HL-93.
- (6) a. For bridges less than 100 feet in length. Bridges over 100 feet will be analyzed individually.
b. If the Design Volume is over 2000 ADT, use 28 feet.
c. Design loading should be HS-15.
d. Existing Bridge Roadway Width should be greater than or equal to the Traveled Way width, unless a design exception has been approved.
- (7) * If slopes steeper than 3:1 are used within the recommended clear zone distance, they should be reviewed for shielding with a traffic barrier, as per [I.M. 3.215](#), Clear Zone Guidelines.
- (8) The recommended clear zone distance is a function of Design Speed, Design Volume, horizontal curvature, and roadside geometry. To determine the recommended clear zone distance, refer to [I.M. 3.215](#), Clear Zone Guidelines.

AASHTO Guidelines For Rural Local Roads

These "Guidelines" are a composite of the AASHTO recommendations from Chapter 5 of the Green Book (2011) and the Guidelines for Geometric Design of Very Low-Volume Local Roads (2001). The values in the first four columns are based on the Green Book. The values in the last column (Agricultural Access) are based on the Guidelines for Geometric Design of Very Low-Volume Local Roads. These guidelines are presented to help in the design of new or complete reconstruction projects on rural local roads. For Federal-aid projects, design values below those shown in this table may be used on a project-by-project basis, provided that a design exception or justification is approved by the Iowa DOT Administering Office, as per [I.M. 3.218](#), Design Exception Process.

Design Elements	All Local Roads									
	Over 2000		2000 – 1500		1500 – 400		Under 400		Under 400 Agricultural Access (9)	
Design Volume (ADT)										
Terrain (1)	Level	Rolling	Level	Rolling	Level	Rolling	Level	Rolling	Level	Rolling
Design Speed (mph)	50	40	50	40	50	40	40	30	30	20
Stopping Sight Distance (ft)	425	305	425	305	425	305	305	200	165	95
Minimum Radius (ft) (2)	758	444	758	444	758	444	444	214	170	105
Maximum Gradient (%) (3)	6	10	6	10	6	10	7	10	UAC	UAC
Traveled Way (ft) (4) (10)	24	24	22	22	22	20	18	18	--	--
Shoulder Width (ft) (10)	8	8	6	6	5	5	2	2	--	--
Roadway Top Width (ft)	40	40	34	34	32	30	22	22	24	24
New Bridge Roadway Width (ft) (5)	40	40	28	28	28	26	22	22	22	22
Existing Bridge Roadway Width (ft) (6)	28	28	24	24	22	22	22	22	UAC	UAC
Foreslope (7)	2:1*	2:1*	2:1*	2:1*	2:1*	2:1*	2:1*	2:1*	UAC*	UAC*
Clear Zone Distance (ft)	See note (8)									

- NOTES:
- (1) AASHTO "Mountainous" terrain design guides may be used on Federal-aid projects only with Iowa DOT concurrence. Note (1) in the Design Aids Table provides definitions for Level and Rolling.
 - (2) Based on a maximum superelevation (e) of 0.08.
 - (3) Maximum gradient may be steepened by 2% for short distance (less than 500 feet).
 - (4) Traveled Way is the pavement or surfacing width.
 - (5) a. For bridges over 100 feet long, the width may be the traveled way plus 6 feet (Note: This only applies for Design Volumes of 2000 ADT or greater)
b. Design Loading should be HL-93.
 - (6) a. For bridges less than 100 feet in length. Bridges over 100 feet will be analyzed individually.
b. Design loading should be HS-15.
c. 20 foot minimum clear roadway width is acceptable for Design Volumes from 0 – 250 ADT
d. Existing Bridge Roadway Width should be greater than or equal to the Traveled Way width, unless a design exception has been approved.
 - (7) * If slopes steeper than 3:1 are used within the recommended clear zone distance, they should be reviewed for shielding with a traffic barrier, as per [I.M. 3.215](#), Clear Zone Guidelines.
 - (8) The recommended clear zone distance is a function of Design Speed, Design Volume, horizontal curvature, and roadside geometry. To determine the recommended clear zone distance, refer to [I.M. 3.215](#), Clear Zone Guidelines.
 - (9) Agricultural Access roads are used regularly or seasonally to provide access to fields and farming operations for agricultural equipment that is wider than a typical truck.
 - (10) No values are shown in the Agricultural Access column because there are no criteria for surfacing width or shoulder width in the Very Low-Volume Local Roads Design Guide.

INSTRUCTIONAL MEMORANDUMS

To Local Public Agencies



To: Counties and Cities

Date: October 1, 2013

From: Office of Local Systems

I.M. No. 3.214

Subject: 3R Guidelines

Contents: This Instructional Memorandum (I.M.) provides guidelines for design of Local Public Agency (LPA) Federal-aid Resurfacing, Restoration, or Rehabilitation (3R) projects on both urban and rural roads.

Introduction

It is apparent that available funding is insufficient to improve existing roads to the geometric requirements desirable for new construction. Roads constructed to previous design criteria are still capable of performing a useful transportation service; and in many cases, minor improvements will make such roads serviceable for many more years.

Definitions

Resurfacing – These projects include resurfacing or overlays that result in less than an additional nominal 4 inches to the pavement structure. Other types of work such as pavement patching or short areas of reconstruction, joint replacement or repair, and shouldering may be included. Usually no additional right-of-way is required.

Restoration – These projects are primarily for the major resurfacing or overlays which add a considerable amount of structure to the existing pavement. Usually resurfacings or overlays that result in an additional nominal 4 inches or more to the pavement structure are included. In addition, some pavement widening, short sections of pavement reconstruction, shoulder widening, flattening foreslopes on high fills, and intersection reconstruction may be involved. Consideration may be given to improving isolated grades, curves, or sight distance by construction or traffic control measures. In some cases minor right-of-way acquisitions or easements may be required.

Rehabilitation – For these projects, the traffic service improvement and safety needs may be of equal importance to the need to improve the riding quality. Projects may involve intersection reconstruction; pavement widening; pavement replacement; shoulder widening; flattening foreslopes; drainage improvement; and in the context of such improvements, improvement of isolated grades, curves, or sight distance by reconstruction. Some additional right-of-way may be necessary.

Safety Considerations

In addition to extending the service life of an existing street or highway, Federal-aid 3R projects shall also include consideration of safety improvements. To satisfy this requirement, a description of how each of the following safety considerations have been addressed, including supporting documentation, shall be included with the Concept Statement submittal, as per [I.M. 3.105](#), Concept Statement Instructions.

1. All bridges and culverts within the recommended clear zone distance, as per [I.M. 3.215](#), Clear Zone Guidelines, which are not presently shielded should be reviewed according to [I.M. 3.213](#), Traffic Barriers (Guardrail and Bridge Rail). If culverts need to be extended for reasons other than safety (e.g., lane widening), consideration should be given to extending them outside the recommended clear zone distance or made safely traversable. Document this consideration by describing how bridges and culverts will be addressed.
2. All signing and marking should be in conformance with the Manual on Uniform Traffic Control Devices (MUTCD). Document this consideration by stating the signs and markings were reviewed. If any signing or marking is found not to be in conformance with the MUTCD, identify what improvements or upgrades will be made.
3. The last 5-year crash history should be analyzed with respect to number, rate, location, type, and severity in order to identify areas that offer the greatest potential for safety enhancements. Document this consideration by providing a summary of the crash history analysis, including a copy of the crash data printout. Crash data and analysis tools are available on the Iowa DOT Office of Traffic and Safety [Crash Analysis Resources](#) web page.

4. If the project is located on a rural roadway, "Use as constructed" (U.A.C.) of bridges narrower than the approach pavement width will require a design exception. Additional guidance for this type of design exception is provided in [I.M. 3.218](#), Design Exception Process. If approved, the guardrail should be erected, delineated with reflectors, and an edge line extending 300 feet from all 4 corners should be painted. This is in addition to the narrow bridge signs. Document this consideration by stating whether existing bridges comply with this requirement. If any bridges do not comply with this requirement, reference the prior design exception approval or include the design exception request information, as outlined by I.M. 3.218. Also state the proposed mitigation, as indicated above.
5. Bridge rails and guardrails on existing bridges should be reviewed for structural adequacy. If found to be structurally inadequate and functionally obsolete such that it cannot adequately contain and redirect vehicles without snagging, penetrating, or vaulting, it should be considered for upgrading. For additional guidance, refer to [I.M. 3.213](#), Traffic Barriers (Guardrail and Bridge Rail). Document this consideration by stating whether the existing bridge rails and approach guard rails will be left in place, delineated, retrofitted, or replaced.
6. All horizontal curves with recommended speeds less than the speed limit should be signed with curve or turn signs and advisory speed plates. Intersections or narrow bridges, which exist within the stopping sight distance of a crest vertical curve, should be signed accordingly. Document this consideration by indicating if advisory speed plates or other warning signs will be installed, and if so, the type of signs and general locations where they will be installed.
7. Obstacles within the recommended clear zone distance, as per [I.M. 3.215](#), Clear Zone Guidelines, except for bridges and culverts, should be reviewed for both rural and urban projects, as indicated below. Bridges and culverts should be addressed as per Safety Considerations 1, 4, and 5 above.

Rural Projects: A clear zone review shall be conducted as follows:

- a) Determine the recommended clear zone distance.
- b) Review the crash data and site conditions to determine if there are crashes related to inadequate clear zone distance. Generally speaking, these would include crashes associated with an obstacle located within or near the recommended clear zone distance. If such a review indicates there are no crashes related to clear zone distance, document this finding and the clear zone review is complete. If the review finds there are some crashes related to clear zone distance, proceed to the next step.
- c) Review the possible treatment options, as per [I.M. 3.215](#), and determine which treatment would be most appropriate for the situation. If a treatment option other than delineation is proposed, document which option will be used and the clear zone review is complete. If delineation is proposed, proceed to the next step.
- d) For the least expensive treatment option considered (other than delineation), perform a benefit-cost calculation, as per [I.M. 3.216](#), Economic Analysis (Benefit-to-Cost Ratio). If the least expensive treatment option is cost effective, include this work in the project. If it is not cost effective, delineate the obstacle. Document the decision by providing a copy of the benefit-cost calculation and indicating which treatment option will be used.

If a LPA is interested in making safety improvements as part of the project, the project may be eligible for the [Traffic Safety Improvement Program \(TSIP\)](#).

Urban Projects: If the project is located on an urban roadway, fixed objects (utility poles, traffic signal supports, etc.) within the recommended clear zone distance should be reviewed. Fixed objects that must be installed or relocated within the recommended clear zone distance should be fitted with breakaway devices if possible. Otherwise, they should be installed or relocated outside the recommended clear zone distance or at the right-of-way line, whichever is less. Fixed objects that do not have to be relocated because of the project should also be considered for removal, relocation, or use of a breakaway device, in those locations where identifiable safety problems associated with inadequate clear zone distance exist.

Document this consideration by indicating the proposed set back for newly installed or relocated fixed objects. If any safety problems associated with existing fixed objects exist, identify what types of improvements will be made or explain why it is not practical to provide the recommended clear zone distance.

3R Table For Rural Collectors

This table contains acceptable design values for Federal-aid resurfacing, restoration, or rehabilitation (3R) projects on rural collector roads. Each project must be considered individually to determine what improvements are feasible to extend the useful service life and enhance safety. Design values below those shown on this table may be used on a project-by-project basis, provided that a design exception or justification is approved by the Iowa DOT Administering Office, as per [I.M. 3.218](#), Design Exception Process.

Design Elements	Resurfacing			Restoration			Rehabilitation		
	> 2000	2000-750	< 750	> 2000	2000-750	< 750	> 2000	2000-750	< 750
Design Volume (ADT)	> 2000	2000-750	< 750	> 2000	2000-750	< 750	> 2000	2000-750	< 750
Design Speed (mph)	Existing	Existing	Existing	40	40	40	40	40	40
Stopping Sight Distance (ft)	250	Existing	Existing	305	305	305	305	305	305
Minimum Radius (ft) (1)	465	465	Existing	465	465	465	465	465	465
Maximum Gradient (%)	Existing	Existing	Existing	Existing	Existing	Existing	7	8	9
Pavement Width (ft)	22	22	20	22	22	20	24	22	22
Shoulder Width (ft)	6	3	2	6	3	2	6	3	2
Roadway Top Width (ft)	34	28	24	34	28	24	36	28	26
Existing Bridge Roadway Width (ft) (2)	22	22	20	26	24	22	28	24	22
Foreslope (ft)	Existing	Existing	Existing	3:1	3:1	2:1	3:1	3:1	3:1
Clear Zone Distance (ft)	Existing (except as required by Safety Consideration No. 7 in this I.M.)								

Notes:

- (1) a. Based on maximum superelevation (e) of 0.08.
b. Curves more than 15 mph below the posted speed should be delineated.
- (2) Existing Bridge Roadway Width should be greater than or equal to the Traveled Way width, unless a design exception has been approved.

3R Table

For Urban Arterials and Collectors

This table contains acceptable design values for Federal-aid resurfacing, restoration, or rehabilitation (3R) projects on urban arterials and collector streets. Each project must be considered individually to determine what improvements are feasible to extend the useful service life and enhance safety. Design values below those shown on this table may be used on a project-by-project basis, provided that a design exception is approved by the Iowa DOT Administering Office, as per [I.M. 3.218](#), Design Exception Process.

Design Elements	Arterial (1)				Collector (1)			
	Commercial or Industrial		Fringe or Residential		Commercial or Industrial		Fringe or Residential	
Traffic Lanes (number) (2)	4	2	4	2	4	2	4	2
Design Speed (mph) (3)	Existing							
Stopping Sight Distance (ft.) (4)	(Based on Design Speed)							
Horizontal Curve Radius (ft.) (5)	(Based on Design Speed)							
Maximum Gradient (percent)	Existing							
Travel Lane Width (ft.)	11	11	10	10	11	11	10	10
Parking Lane Width (ft.) (6)	9	9	8	8	8	8	7	7
Curb & Gutter Width (ft.)	(no separate gutter width required)							
Raised Median Width (ft.)	2	NA	2	NA	2	NA	2	NA
Raised Median Width with Lt. Turn (ft.)	12	NA	12	NA	10	NA	10	NA
Two Way Left Turn Lane Width (ft.)	10	NA	10	NA	10	NA	10	NA
Border Area Width (ft.)	Existing							
Vertical Clearance (ft.)	13.5	13.5	13.5	13.5	13.5	13.5	13.5	13.5
Object Setback (ft.) (7)	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
Clear Zone Distance (ft.)	Existing (except as required by Safety Consideration No. 7 in this I.M.)							
Existing Bridge Roadway Width (ft.) (8)	44	22	40	20	44	22	40	20

Notes:

- (1) Use the roadway classification corresponding to the existing Federal Functional Classification.
- (2) Actual number of lanes equal to existing.
- (3) Design Speed should be equal to or greater than posted speed.
- (4) Distance required by the driver traveling at the design speed to bring a vehicle to a stop after an object on the road becomes visible (eye height = 3.5 feet and object height = 2 feet).
- (5) Minimum radius should be compatible with the design speed.
- (6) Gutter width may be included as part of the parking lane width.
- (7) Measured from the face of curb. This area should be free of all fixed objects in order to provide a minimum operational clearance to permit curbside parking or to avoid negative impacts on traffic flow.
- (8) a. Existing Bridge Roadway Width should be greater than or equal to the Traveled Way width, unless a design exception has been approved.
b. Design loading should be at least HS-15.

INSTRUCTIONAL MEMORANDUMS

To Local Public Agencies



To: Counties and Cities	Date: October 1, 2013
From: Office of Local Systems	I.M. No. 3.216
Subject: Economic Analysis (Benefit-to-Cost Ratio)	

Contents: This Instructional Memorandum (I.M.) includes guidelines and procedures for a Local Public Agency (LPA) to help determine the feasibility of an improvement or analyze various alternatives or countermeasures. Various methods (Cost-Effectiveness, Benefit / Cost Ratio, Rate-of-Return, Time of Return and Net Annual Benefit) are available to determine the economic feasibility of an improvement. This I.M. will present only one method, the Benefit / Cost Ratio.

Benefit / Cost Calculations

The Benefit / Cost Ratio is the ratio of the expected benefits (accrued from a crash reduction factors based on an improvement), to the costs of the improvement (construction, right of way, engineering, etc.). When considering a design exception, the cost of the improvement is only the additional cost to meet the recommended design value as compared to the proposed design. When considering a safety improvement, the cost of the improvement is only the cost of the proposed safety treatments or countermeasures.

In either case, use the [Benefit / Cost Spreadsheet](#) provided by the Iowa Department of Transportation (Iowa DOT) Office of Traffic and Safety. This spreadsheet includes separate tabs for evaluating linear improvements along a road segment as well as intersection or spot improvements. The spreadsheet also includes instructions, which are supplemented by the information provided below.

To use the spreadsheet, the following information will be required:

1. Crash Data.

1. This information can be obtained through the [Crash Mapping Analysis Tool](#) (CMAT) computer software that is available through the Iowa DOT Office of Traffic and Safety. For most roads, with no major improvements within the time frame, the crash data should go back 5 years. The crash data on the CMAT printout should be transferred to the appropriate blanks on the spreadsheet, keeping in mind that the number of fatalities or injuries may not be the same number of these types of crashes (two injury crashes could involve five injuries). The actual property damage of all crashes should be totaled and entered in the appropriate blank. The assumed cost per crash is \$2,700, if no damage figure is recorded. All crashes within the project termini or at the spot location should be included, regardless of type. If the Crash Modification Factor (CMF) chosen is for all crashes, the Crash Reduction Factor (CRF) is for all crashes. Caution: Sometimes the CMF is just for a specific type of crash on a specific type of road and the CRF would not be appropriate for all crashes.

2. Improvement Information.

The improvement described and the cost estimate should only be for the work for which the Benefit/Cost Ratio is being determined.

For example, if as part of a resurfacing project the county is considering widening the shoulders and flattening the foreslopes, the description should be similar to: Widen shoulders from 2' to 6' and flatten slopes from 2:1 to 3:1. The cost estimate might include:

- Class 10 Excavation, including borrow
- Culvert Extensions
- Surfacing or Finishing the Shoulders
- Seeding and Fertilizing
- Right of Way (if necessary), including any damages to fences, buildings, etc.
- Additional Engineering or Surveying
- Driveway Culverts (remove and relay or replace)

3. Crash Reduction Factors (CRF).

The spreadsheet provides a link to the [Crash Modification Factor Clearinghouse](#). CRF are usually provided for a single countermeasure. However, where multiple countermeasures are being proposed, the CRF will be a combination of the individual CRFs. Since it is not feasible to reduce crashes by more than 100 percent, the formula in the spreadsheet is used to develop an overall CRF for multiple improvements at a location or along a route.

An excerpt from the Clearinghouse website better explains the CMF and CRF:

A crash modification factor (CMF) is a multiplicative factor used to compute the expected number of crashes after implementing a given countermeasure at a specific site.

For example, an intersection is experiencing 100 angle crashes and 500 rear-end crashes per year. If you apply a countermeasure that has a CMF of 0.80 for angle crashes, then you can expect to see 80 angle crashes per year following the implementation of the countermeasure ($100 \times 0.80 = 80$). If the same countermeasure also has a CMF of 1.10 for rear-end crashes, then you would also expect to also see 550 rear-end crashes per year following the countermeasure ($500 \times 1.10 = 550$).

The CMF Clearinghouse presents both CMFs and CRFs, or Crash Reduction Factors. The main difference between CRF and CMF is that CRF provides an estimate of the percentage reduction in crashes, while CMF is a multiplicative factor used to compute the expected number of crashes after implementing a given improvement. Both terms are presented in the Clearinghouse because both are widely used in the field of traffic safety.

Mathematically stated, $CMF = 1 - (CRF/100)$. For example, if a particular countermeasure is expected to reduce the number of crashes by 23% (i.e., the CRF is 23), the CMF will be $1 - (23/100) = 0.77$. On the other hand, if the treatment is expected to increase the number of crashes by 23% (i.e., the CRF is -23), the CMF will be $1 - (-23/100) = 1.23$.

It is important to note that a CMF represents the long-term expected reduction in crashes and this estimate is based on the crash experience at a limited number of study sites; the actual reduction may vary.

4. Service Life

Tables are provided in the spreadsheet as a guide for approximate service life of typical improvements along roadway segments and at spot locations. However, the service life used for the calculations may be different, based on previous experience and engineering judgment.

Benefit / Cost Evaluation

Most studies indicate that an improvement with a Benefit / Cost Ratio 1.0 or greater is considered beneficial and less than 1.0 is not. However, since the estimated costs and expected benefits cannot be known with precision, use the following guidelines to evaluate the results of the Benefit / Cost calculations:

B/C Ratio less than 0.80: Improvement probably not cost-effective at this time.

B/C Ratio = 0.80 to 1.20: Improvement may be cost effective; however, the following factors should also be considered:

1. Crash rate. The crash rate determined in the forms should be reviewed against the statewide average for all roads of a similar type. Statewide average crash rates for different roadway types are available on the Office of Traffic and Safety [Crash Comparables](#) web site. Use of average crash rates over a 5 to 10 year time frame is recommended.
2. Types of crashes. Type of crashes should be reviewed against the type of improvement. If the majority of the crashes within the project termini occurred at intersections, then flattening foreslopes may not have much of an effect, although flattening foreslopes is a systemic improvement that may be worthwhile.

3. Severity of crashes. The severity of the crashes should be reviewed with respect to location. If most of the crashes along the route were Property Damage Only (PDO's) and one location had a number of injury or fatality crashes then a review of that particular "spot" location may be in order.
4. Cost of the improvement. The cost of the improvement being considered should be compared with the project cost without the improvement. If a proposed resurfacing project is estimated to cost \$200,000 and the estimated cost to widen shoulders or flatten foreslopes is \$500,000, it may be desirable to program the improvement at some future time. If the project is estimated at \$750,000 and the improvement at \$50,000, it may be wise to include the improvement.
5. Environmental and social impacts. The environmental or social effects of the improvement should always be considered. These might include: farmland being taken out of production; relocation of families; adverse effect on wetlands or parks; and disturbance of historical or archaeological areas.
6. Other alternatives. In some cases, other alternatives are available that may result in a similar benefit, or lower cost partial improvements may be used to mitigate the existing condition, if a total improvement is not cost effective or feasible. For example, if the reconstruction of a horizontal curve requires taking a farmstead or relocating a bridge, and is not economically feasible, installing chevrons and advisory speed plates may be used to help mitigate the situation.

B/C Ratio greater than 1.20: Improvement is probably cost effective and should be accomplished as part of project or the work programmed in the near future.

The Benefit/Cost spreadsheet is a tool in deciding whether an improvement is economically feasible. If a design exception is desired, the Benefit/Cost Ratio should not be the only basis. Other reasons that were considered in the decision-making process should be detailed in the design exception justification, as described in [I.M. 3.218](#), Design Exception Process.

INSTRUCTIONAL MEMORANDUMS

To Local Public Agencies



To: Counties and Cities	Date: October 1, 2013
From: Office of Local Systems	I.M. No. 3.218
Subject: Design Exception Process	

Contents: This Instructional Memorandum (I.M.) provides guidelines and procedures for a Local Public Agency (LPA) to prepare and request a design exception from the Iowa Department of Transportation (Iowa DOT). This process is required for Federal-aid and State-aid projects. This process may also be used as a guide for projects funded with local or Farm-to-Market funds only, but submittal to and approval by the Iowa DOT is not required. This I.M. also includes the following attachments:

[Attachment A](#) – Design Exception Process Flowchart

Step 1 – Determine the type of improvement.

Many factors are considered either directly or indirectly when determining the type of improvement. Some of those factors are:

1. *Pavement Condition* - The existing pavement condition and the scope of needed pavement improvements dictate, to a large extent, what improvements are practical. More significant geometric upgrading might be appropriate if the pavement improvements are substantial, but may not be appropriate or economical if the needed pavement improvements are relatively minor.
2. *Physical Characteristics* - The physical characteristics of a highway and its general location often determine what improvements are desirable, practical or cost-effective. Topography, adjacent development, existing alignment (horizontal and vertical) and cross-section (pavement width, shoulder width, side slopes, etc.) need to be considered in determining the scope of geometric or safety improvements.
3. *Traffic Volumes* - Traffic data (volume, percent trucks) are an important consideration both in the determination of the appropriate level of improvement (i.e., reconstruction vs. 3R) and in the selection of actual values for the various geometric elements.
4. *Functional Classification* - Drivers associate and expect certain geometric features and levels of design with each functional class.
5. *Traffic Control and Regulations* - Judicious use of special traffic regulations, positive guidance techniques (signs, markings) and traffic operational improvements can often forestall expensive reconstruction by minimizing or eliminating possible adverse safety and operational features of existing highways.
6. *Safety Enhancement* - Safety enhancement is an essential consideration for all proposed projects. Federal-aid 3R projects should be developed in a manner which considers appropriate safety improvements.
7. *Crash Records* - Evaluation of crash records may reveal problems requiring special attention and is an integral part of the project development process.
8. *Economics* - Economic considerations are a major factor in determining the priority and scope of work. This is especially true for 3R projects which, by definition, are to prolong and preserve the service life of existing highways and enhance highway safety, in order to protect the investment in and derive the maximum economic benefit from the existing highway system.
9. *Environmental and Social Impacts* - Projects are influenced by potential impacts on the surrounding land and development. Social, environmental, and economic impacts may limit the scope of projects. This is especially true for 3R projects where the existing right of way is narrow and there is adjacent development.
10. *Others* - Maximum benefit for the dollar invested, compatibility with adjacent sections of unimproved roadway, the probable time before reconstruction, and other items could be considered.

Step 2 – Determine if the proposed improvement meets current design guides.

For projects located on Primary or Interstate highways, and for projects located on the NHS, refer to the Iowa DOT [Road Design Manual](#). For projects not located on Primary or Interstate highways, and for projects not located on the National Highway System (NHS), compare the proposed design with the design guidelines in [I.M. 3.210](#), Rural Design Guidelines; [I.M. 3.205](#), Urban Design Guidelines; and [I.M. 3.214](#), 3R Guidelines, as applicable.

For the following design elements, if the proposed design does not meet the minimum recommended values in the design guides listed above, a formal design exception, including a benefit-cost analysis, will be required:

1. Design speed
2. Grade
3. Lane width
4. Stopping sight distance
5. Shoulder width
6. Cross slope
7. Bridge width
8. Superelevation
9. Structural capacity
10. Vertical clearance
11. Horizontal alignment
12. Vertical alignment
13. Horizontal clearance
14. Clear zone (only for rural cross sections with design speeds 40 mph or greater)

Other design elements that do not meet the minimum design guidelines should still be justified, but do not require a formal design exception or benefit-cost analysis. Such justifications should be based on sound engineering judgment, describe any proposed mitigation measures, and include any other supporting documentation that is appropriate.

Federal regulations also require approval of design exceptions for any new construction, reconstruction, or 3R project on the National Highway System (NHS), regardless of funding source. LPAs should review the design of all such projects and submit design exception requests to the Iowa DOT Administering Office. Routine maintenance activities on NHS routes do not require review or approval by the Iowa DOT.

If the proposed improvement does not meet the design guides and the LPA wishes to pursue a design exception, continue to Step 3. Otherwise, revise the project design to meet the design guides.

Step 3 – Analyze the crash data.

Crash data can be analyzed using the [Crash Mapping and Analysis Tool](#) (CMAT) software, which is available from the Iowa DOT Office of Traffic and Safety. The crash data for at least the past 5 years should be reviewed. Review the crashes with respect to location, type, severity, contributing circumstances, environmental conditions, and the time period. It is often helpful to plot the crashes on a map of the roadway by location, severity, and possible type.

Roadway/environment contributing circumstances should receive special attention, but those crashes with driver/vehicle contributing circumstances should not be ignored. Even if a crash is the driver's fault (drunk, speeding, ran stop sign, etc.) you should look at possibly how the roadway environment (flatter slopes, stop ahead signs, etc.) may have lessened the severity of the crash.

It is also a good idea to get a copy of the actual crash report on the fatality crashes and the crashes involving a number of injuries or those classified as major injuries. These will provide you with additional information. You may want to review these with local law enforcement to their perspective. It could be beneficial to field check the locations of these high severity crashes and any locations which appear to have a high number of crashes or a high crash rate.

Step 4 – Prepare a cost estimate to bring deficiencies up to current guidelines.

This estimate should be based on upgrading the deficiency to the preferred design values; not to just the minimum design values. For bridge width design exceptions, assume a design loading no less than that of the bridge's original design.

This estimate does not need to be precise such as a complete redesign with exact quantities being determined. It can be based on the "average" conditions as in average cross section, average right of way needed, average number of culverts extensions per mile, average cubic yards of dirt per mile and the average price of homes, buildings, wells, etc.

Step 5 – Calculate the Benefit / Cost Ratio

Use the procedure outlined in [I.M. 3.216](#), Economic Analysis (Benefit-to-Cost Ratio).

1. If the B/C is less than 0.80, then all that is needed is the B/C worksheet, crash data, and written justification stating the reasons for the exception, including a statement of whether there are any high crash locations and the proposed mitigation.
2. If the B/C is from 0.80 to 1.20, then the 6 additional items listed in [I.M. 3.216](#) need to be addressed in addition to the material listed previously.
3. If the B/C is over 1.20, then the exception may not be granted unless there are extenuating circumstances. An extenuating circumstance may be that the severe crashes occurred at a certain location(s) and the LPA proposes an improvement(s) at this location(s) and without these crashes the B/C is below 0.80. Another extenuating circumstance may be that the LPA doesn't have sufficient funds to do the improvement in conjunction with the project but will program it in the near future.

Step 6 – Prepare a written design exception request.

Include the justification (reasons) and describe any proposed mitigation for the exception, as described below.

Justification: Consider addressing the following items, as applicable:

1. Pavement Condition

Example: The LPA has 100 miles of Hot Mix Asphalt (HMA) pavement which requires resurfacing every 10 years to 15 years in order to maintain it. It is not feasible with present funding to reconstruct the roadway each time a resurfacing is needed. When the pavement requires more than a resurfacing, upgrading will be considered.

2. Physical Characteristics (extent of deficiency)

Example: Although the foreslopes are 2:1, the ditch depths are less than 6 feet except for two locations. One of these locations will be treated with guardrail and the other is a short distance with no hazards located on the slope or in the ditch area.

3. Traffic Volumes

Example: Although the traffic volume is over 750 vpd along this 5 mile stretch, the north 3 miles is less than 750 and the south 2 miles near town is in a built up area with houses close to the road. Since it would be cost prohibitive to purchase or damage these homes, the LPA will conduct a speed study in this area.

4. Functional Classification

Example: This route carries, for the most part, local traffic between two communities and is not a through route in the county.

5. Traffic Control And Regulations

Example: The County had installed chevrons at the two horizontal curves three years ago. The half mile north of the city is posted under a 45 mph speed zone.

6. Safety Enhancement (Seven Items in I.M. 3.214)

Example: The bridge had guardrail installed and the bridge rail will be delineated according to the factor system in I.M. [3.213](#). All signs and markings will be in conformance with the current Manual on Uniform Traffic Control Devices ([MUTCD](#)). In checking the clear zone there is one culvert which will be protected with guardrail, and although the power poles between Stations 100+00 and 120+00 are within the clear zone, they are located as close to the right of way line as is practical.

7. Crash Records

Example: There are no areas with a concentration of crashes and the crash rate is below the statewide average. The one fatality crash that occurred on this route was a head-on collision near Station 110+50 which is a flat stretch and the vehicles remained on the roadway after the crash. Therefore, the vertical curves and the 2:1 slopes did not enter into this crash and if this crash is not considered in the B/C calculations, the B/C ratio is less than 0.80.

8. Economics

Example: To reconstruct the 15 degree horizontal curve will require either the purchase of a \$120,000 house or the reconstruction and relocation of a 24' X 120' bridge. We plan to reconstruct the curve at the time the bridge is replaced in 5 to 10 years. Until then, curve sign with advisory speed plates and chevrons, will be installed along with the painting of edgelines.

9. Environmental or Social Impacts

The environmental or social effects of the improvement should always be considered. These might include: farmland being taken out of production; relocation of families; adverse effect on wetlands or parks; and disturbance of historical or archaeological areas.

Example: The crest vertical curve in question has a cemetery on one side and a church on the other side of the road. There have been no crashes at this location. The cemetery entrance is located at the top of the crest with plenty of sight distance and the church entrance will be relocated directly across from the cemetery entrance. The "no passing zone" markings and signs will be installed according to the [MUTCD](#).

Proposed mitigation: Describe any proposed mitigation for the design exception. Examples of typical mitigation measures for various substandard design elements are shown below.

1. Horizontal curves

- curve signs or turn signs
- advisory speed plates
- chevrons
- edgelines

2. Vertical curves

- no passing zone pennants
- no passing lines at height of eye per MUTCD
- edgelines
- relocate entrances or advance crossing signs (W11 series)
- relocated road intersections with limited sight distance or place crossroad sign (W2-1) or side road sign (W2-2), possible with advisory speed plates
- animal signs (W11-3 & 4) with a history of animal crashes

3. Shoulders
 - edgelines
4. Slopes
 - edgelines
 - flatten slopes with ditch depths over 6' or a traffic barrier (w-beam or cable guardrail)
 - flatten driveway slopes
5. Grades
 - hill signs (W7-1), if needed, as determined by percent of grade and length
6. Narrow bridges*
 - guardrail
 - bridge rail upgrading
 - narrow bridge signs (W5-2, as per [MUTCD guidance](#))
 - delineation
 - edgelines (for hard surfaced roads, these should extend at least 300 feet from all 4 corners of the bridge)
 - object markers

* Narrow bridges are those with a roadway clearance less than the minimum design guidelines or less than the approach roadway width. Refer also to I.M. 3.213, Traffic Barriers (Guardrail and Bridge Rail), for guidance on whether guardrail or bridge rail should be added or upgraded.

7. Clear Zone
 - remove hazards
 - traffic barriers
 - relocate utilities as close to right of way line as possible
8. Combinations
 - speed study if a high crash rate
 - traffic barriers
 - spot reconstruction

Step 7 – Document the design exception in the project file.

For Federal-aid or State-aid projects, send the following to the Iowa DOT Administering Office:

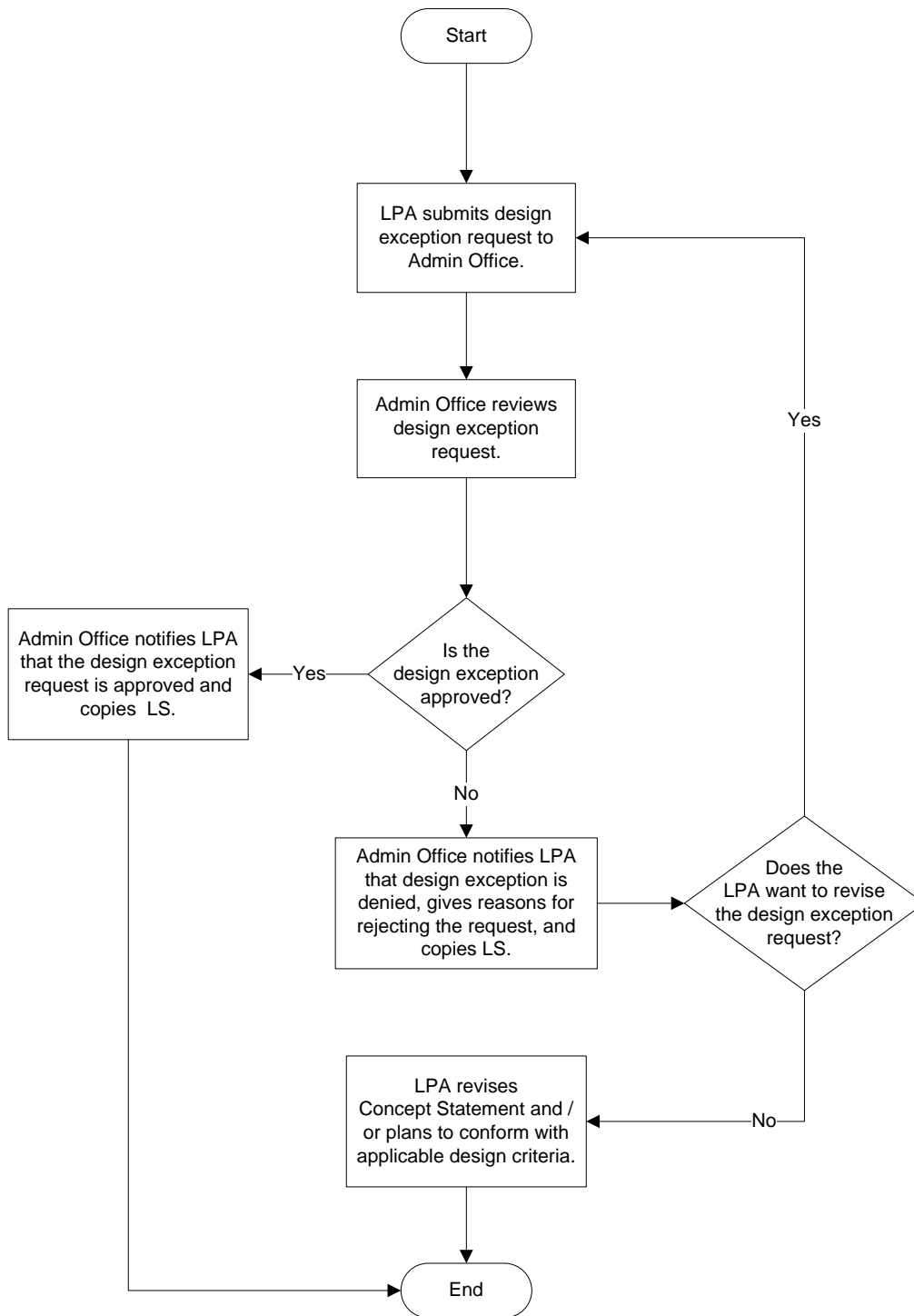
1. Cover letter stating the exception(s)
2. Analysis of the crash history
3. B/C ratio
4. Reason(s) for the exception(s)
5. Proposed mitigation(s)
6. Copies of all documentation and supporting calculations (crash data, B/C worksheet, bridge rail sheet, etc.)

Step 8 – Review by the Iowa DOT.

For Federal-aid and State-aid projects, the Iowa DOT Administering Office will review the design exception request and notify the LPA whether the requested approved or disapproved. If disapproved, reasons will be provided.

Design Exception Process Flowchart

Attachment A to I.M. 3.218
October 1, 2013



Abbreviations:

Admin. Office = Iowa DOT Administering Office
LPA = Local Public Agency
LS = Iowa DOT Office of Local Systems

INSTRUCTIONAL MEMORANDUMS

To Local Public Agencies



To: Counties and Cities	Date: October 1, 2013
From: Office of Local Systems	I.M. No. 3.730
Subject: Iowa DOT Letting Process	

Contents: This Instructional Memorandum (I.M.) provides guidance, instructions, and information for Local Public Agency (LPA) projects that are let through the Iowa DOT letting process. It includes descriptions of the procedures, beginning with turning a project in for letting and continuing through obtaining an executed contract between the LPA and the responsible bidder who has submitted the lowest responsive bid.

[Attachment A](#) - Iowa DOT Pre-Letting Process flowchart
[Attachment B](#) – Iowa DOT Post-Letting Process flowchart

Introduction

There are many State and Federal rules, policies, or procedures that apply to construction contract lettings conducted by the Iowa DOT. The Iowa DOT's process for advertising, letting, and awarding Federal-aid highway construction contracts must comply with [23 CFR 635](#). For LPA Federal-aid projects, the Iowa DOT is responsible for monitoring the LPA's compliance with these rules, policies, and procedures. The Iowa DOT requires all LPA Federal-aid projects, except those listed in [I.M. 3.720](#), Local Letting Process - Federal-aid, be advertised, let, and awarded through its Office of Contracts.

The Iowa DOT letting procedures cover all Federal requirements for Buy America, Non-collusion Affidavit, Non-discrimination Affidavit, Lobbying Certification, Certification of Non-segregate Facilities, exclusion of debarred contractors, Equal Employment Opportunity and Affirmative Action compliance reviews, and DBE program administration.

Preparation

1st Tuesday of the month 2 months before letting

After completion of the requirements for [I.M. 3.505](#), Check and Final Plans, the Iowa DOT's letting process begins on the first Tuesday of the month 2 months before the anticipated letting date. The Administering Office shall submit the plans, Special Provisions, the LPA's cost estimate, and other required documents to the Iowa DOT's Office of Contracts in accordance with [I.M. 3.005](#), Project Development Submittal Dates and Information.

The LPA's estimate will be used as a supporting document by the Office of Contracts when preparing the Iowa DOT's estimate for Federal-aid projects. The Iowa DOT's estimate will be used as the basis for obligation of Federal funds. The LPA will use its estimate to analyze the bids and making the award decision. If there is a significant difference between the Iowa DOT's estimate and the LPA's estimate, the Office of Contracts will contact the LPA to determine why. The Office of Contracts may revise the Iowa DOT's estimate as a result. Both estimates are considered confidential information as per Iowa Code 22.7; therefore, the Office of Contracts will not release either estimate before or after the letting.

The LPA must request any special considerations for the project at this time. Examples include contract period requests and innovative contracting.

If any project clearances have not been obtained, or there are other conditions that require a Public Interest Finding (PIF), a PIF must be submitted by the LPA and approved by the Administering Office prior to this date. Otherwise, the project may not enter the letting process. For more information, refer to [I.M. 3.760](#), Public Interest Findings.

During the next 2 weeks, the Office of Contracts will review the plans and specifications to see if they are biddable. If the Office of Contracts determines that they are not biddable, they will notify the person listed as the "Designer Contact" in the [Transportation Program Management System](#) (TPMS) and on the Local Project Plan Turn-in Checklist of the required changes and copy the Administering Office. The Designer Contact must make the requested changes and supply revised plan sheets within the time frame specified by the

Office of Contracts. The Designer Contact shall also provide a copy of any revised plans to the Administering Office. For more information on the Office of Contracts' plan requirements, refer to the Office of Contract's [Letting Guidelines](#).

3rd Tuesday of the month 2 months before letting

This is the last day the Designer Contact may request changes to the plans and Special Provisions. During the next 2 weeks, the Office of Contracts begins to finalize the bidding proposal, and determine contract periods. The Office of Contracts will also review the projects to determine if projects should be packaged together. For more information on the contract periods and packaging of projects, refer to the Office of Contract's [Letting Guidelines](#).

Last Tuesday of the month 2 months before letting

The Office of Contracts sends the proposed contract periods to the Administering Offices for their distribution to LPAs for review. If LPAs have any concerns regarding the proposed contract period for their projects, they contact the Office of Contracts and copy the Administering Office. Only minor adjustments to the contract periods will be considered.

1st Tuesday of the month 1 month before letting

This is the day the contract documents must be complete. If a PIF was submitted for a project clearance, the project clearance must be obtained by this date, except those submitted for Right-of-way parcels scheduled for condemnation. Otherwise, the Office of Contracts will withdraw the project from the letting.

The Office of Contracts submits all projects to the Federal Highway Administration (FHWA) for their review; and requests authorization. If the project has full oversight by FHWA, this submittal also includes the plans, specifications, and Iowa DOT cost estimate. During the next 2 weeks, FHWA reviews the projects submitted.

If FHWA determines that they cannot authorize a project for letting, they notify the Office of Contracts of the issue(s). The Office of Contracts then notifies the Administering Office of FHWA's issue(s). If the issues cannot be resolved and FHWA authorization obtained by the 3rd Tuesday of the month 1 month prior to letting, the Office of Contracts will withdraw the project from the letting. The Administering Office will contact the LPA to address the issue(s) and determine a new letting date. The LPA shall revise the plans and specifications as required and update the project information in TPMS.

The Office of Contracts holds their Disadvantaged Business Enterprises (DBE) Goal Setting Meeting and sets DBE goals for contracts as appropriate so the DOT can achieve their annual DBE Goal.

3rd Tuesday of the month 1 month before letting

The Office of Contracts is notified by the FHWA of the projects they have authorized for letting.

The Office of Contracts sends a Notice to Advertise to the Des Moines Register and posts a [Notice to Bidders](#) on its web site and the Bid Express ([BIDX](#)) web site.

The contract documents are made available at no cost in electronic format on the Office of Contracts [Current Letting Information](#) web site. All questions about any of the contract documents must be directed to the Office of Contracts. LPAs are encouraged to review the documents promptly.

After this day, all changes to the contract documents must be made by addendum. If the LPA believes an addendum is needed, the LPA shall send a request to the Office of Contracts, including the proposed text of the addendum, and copy the Administering Office. The Office of Contracts reviews the request and determines if an addendum will be prepared. If an addendum is deemed necessary, the Office of Contracts prepares and distributes the addendum to the prime contractors who have requested bidding documents. For more information on the criteria used to determine if an addendum is justified, refer to the Office of Contract's [Letting Guidelines](#).

1st Tuesday of the month of letting

All condemnation hearings for previously unacquired right-of-way parcels must have been held so the project is cleared for letting. Otherwise, the project will be withdrawn from the letting.

All addendum requests should be submitted. Addendum requests submitted after this date may not be approved. If the Office of Contracts has not received confirmation of receipt of the addendum from all the prime contractors who have requested bidding documents prior to the letting, the project will be withdrawn from the letting.

Letting

The lettings are held the 3rd Tuesday of each month; except in January, when it is held the Wednesday after the 3rd Tuesday. Bids are due at 10:00 AM. The Office of Contracts opens the bids at 800 Lincoln Way, Ames, Iowa, and reads all bids starting at 10:30 AM, with the as-read-bid-totals available on [BIDX](#) shortly after the reading. Any bid received after 10:00 AM is returned unopened to the bidder. Any bid deemed non-responsive will not be read or posted.

Contract Award or Rejection

All LPA projects let by the Iowa DOT will be awarded on the basis of the responsible bidder submitting the lowest responsive bid ("low bidder"). The Office of Contracts ensures all bidders are responsible by only allowing pre-qualified contractors to bid. The Office of Contracts determines the low bidder and prepares the bid tabulations. The LPA makes the award determination after performing the bid analysis described below.

After bids are opened, the Office of Contracts sends the LPA the following:

- a letter instructing the LPA to take action to either award a contract to the low bidder or reject all bids within 30 days of the letting date (if over 30 days, the low bidder is allowed to withdraw their bid and their proposal guarantee will be returned to them with no penalty)
- a tabulation of bids
- 2 unsigned original contracts (for Federal-aid projects, a copy of [Form FHWA-1273](#), Required Contract Provisions, Federal-aid Construction Contracts, will be physically attached)
- a copy of the letter informing the low bidder of the contracts for which they are the low bidder

Note: There should be no discussions between the LPA and the low bidder until after the contract is executed.

Bid Analysis

The LPA is responsible for reviewing the bid tabulations and documenting the basis for its decision to either award a contract or reject all bids. Factors to consider in the bid analysis should include the following:

1. Number of bids submitted on the project(s).
2. Distribution and range of bids received.
3. Urgency of the project(s).
4. Any unbalancing of unit bid items that may be detrimental to the contracting authority.
5. Current market conditions and workloads within the contracting industry.
6. Potential savings if the project(s) were re-advertised for another contract letting.
7. Potential changes to the project(s) or contract period that could affect the bid price.
8. Comparison of the low bidder to the bid prices of the other bidders on the project(s).
9. Comparison of bid prices with similar projects in the contract letting.
10. Justification for significant bid price differences.

Bids that exceed the LPA's estimate shall not be awarded, unless one of the following conditions is met:

1. There is adequate competition. Adequate competition shall be determined based on the number of bids received and the percentage of the low bid in comparison to the LPA's estimate, as shown below:

Number of bids received	Low bid percentage of the LPA's estimate does not exceed:
5 or more	120%
4	115%
3	110%
2	105%
1	100%

2. The project is essential and deferral would be contrary to the public interest. Examples of such projects include, but are not limited to the following:
 - a. Safety projects where an extremely hazardous condition exists.
 - b. Projects that close a gap in a corridor.
 - c. Projects that are critical to other staged projects in a corridor.
3. Re-advertising the project without any change to the contract requirements would not likely result in a lower bid.
4. An error was made in the LPA's estimate, and the error, if corrected, would result in a bid below the LPA's estimate.

As a condition of letting the project, the LPA should have adequate financial resources to award a contract if competitive bids are received. Therefore, the LPA should not reject a competitive bid, as define above, for financial reasons unless the low bid is more than 110% of the LPA's estimate.

Awarding a Contract

If the LPA elects to award a contract to the low bidder, the LPA should schedule the proposed contract for action at the next Board of Supervisors or City Council meeting. After the Board of Supervisors or City Council passes a resolution to award the proposed contract, the LPA sends 2 originals of the unsigned contract to the low bidder.

The low bidder then signs both originals of the contract and returns them to the LPA's Project Engineer along with their performance bond on the DOT's form; a Certificate of Insurance; and the electronic file listing the requested subcontractors (or a printed copy of the electronic file) from the free [SiteXchange software](#) furnished by the Iowa DOT. To view the electronic file, the LPA must download and install the SiteXchange software. The low bidder must also e-mail the electronic SiteXchange file listing the requested subcontractors to the Office of Contracts at dot.contracts@dot.iowa.gov for review and authorization.

If approved, the LPA signs both originals of the contract and sends them, along with the performance bond, and Certificate of Insurance to the Office of Contracts for their review.

The Office of Contracts determines if the subcontractors and submitted documents are acceptable, and if so, signs both original contracts to indicate the Iowa DOT's concurrence in the contract award. **The Iowa DOT's Concurrence signature does not make the Iowa DOT a party to the contract; however, it is required before any work on the contract may begin in which Federal-aid reimbursement will be requested.** The Office of Contracts sends 1 copy of the executed contract to the LPA and 1 to the contractor.

Rejecting all Bids

If the LPA does not award a contract to the low bidder, the LPA shall notify the low bidder. The LPA shall also notify the Office of Contracts and the Administering Office explaining why all bids were rejected, and state its future plans for the project; i.e., whether it will be revised and re-let or if the project will be cancelled. If the project will be re-let, some type of change to the plans, specifications, or contract period should be made in order to obtain lower bids. Depending on when the contract will be re-let, Federal funding may need to be de-obligated. If the contract is not going to be re-let, the Federal funding shall be de-obligated. For additional information, refer to [I.M. 2.080](#), Inactive Obligations.

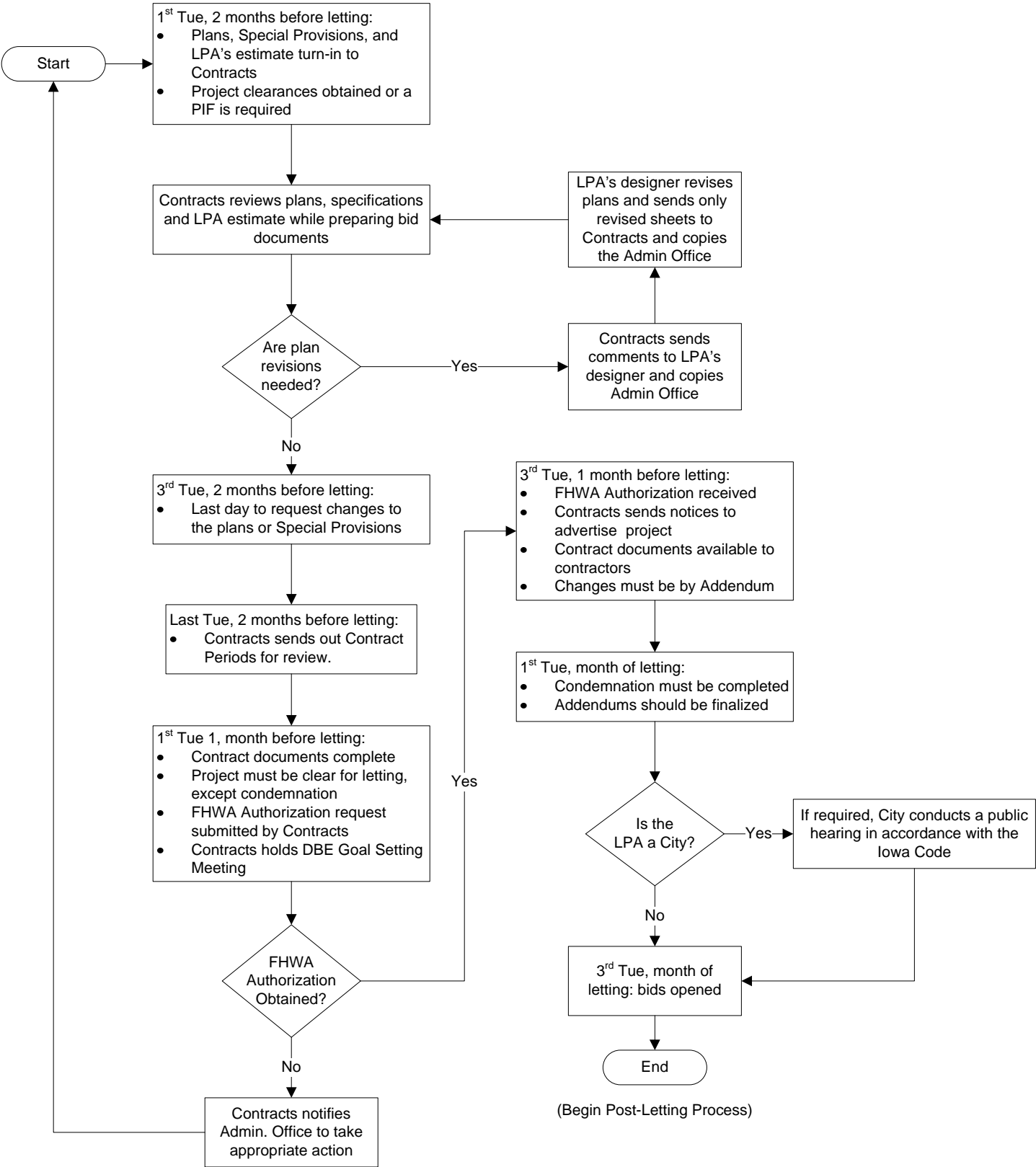
Beginning Work

After receipt of written notification of Iowa DOT concurrence of the contract from the Iowa DOT or the signed contract from the Office of Contracts, the contractor may begin work. The contractor should not be allowed to begin work prior to the Iowa DOT concurrence of the contract in case there are any problems with the required performance bonds, Certificate of Insurance, or subcontracts that would preclude Federal-aid reimbursement. For the same reason, the LPA should not hold a pre-construction meeting before receiving written notification of Iowa DOT concurrence or the signed contract from the Office of Contracts.

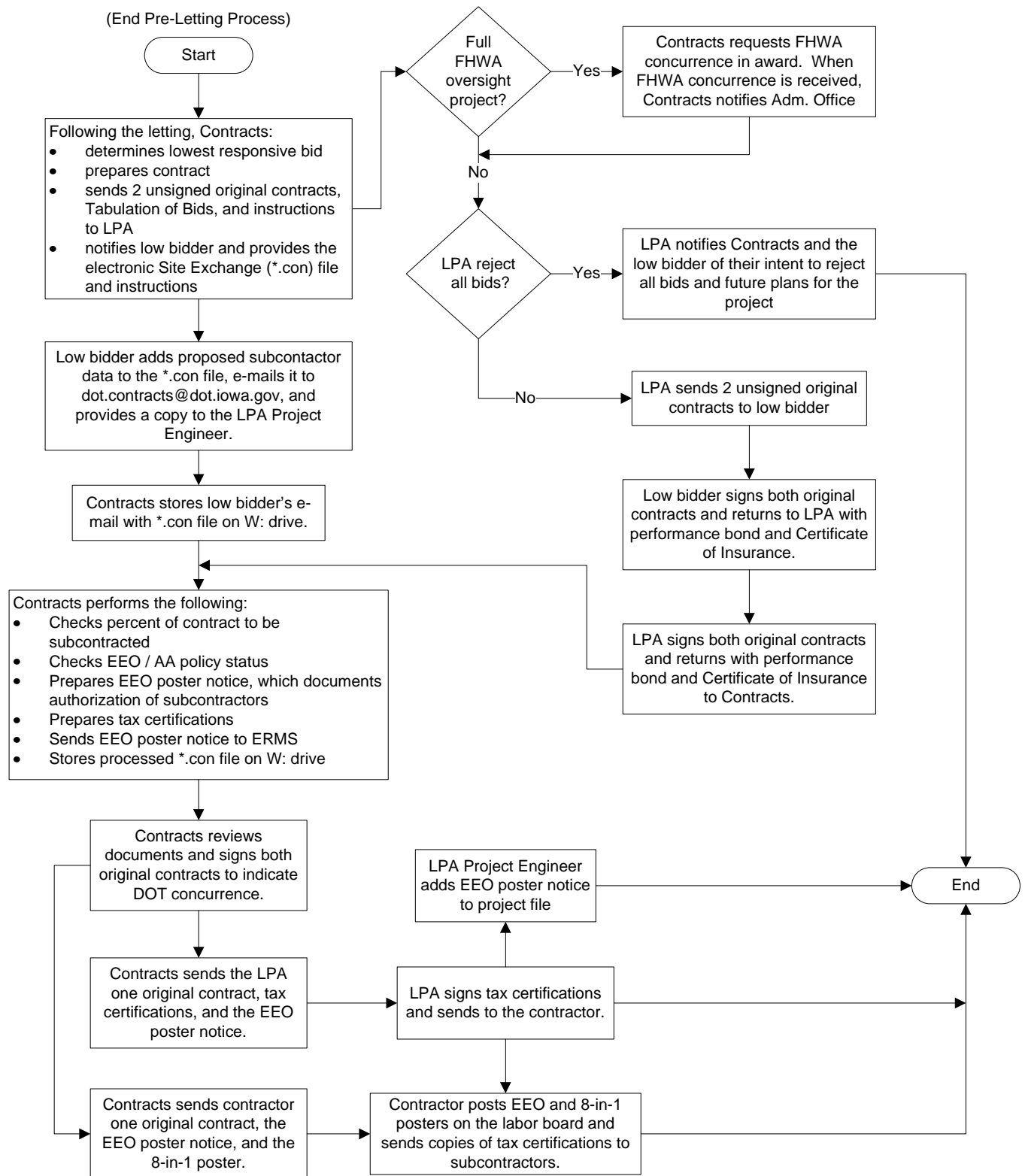
The LPA should not delete substantial portions of the contract after the contract has been executed in order to bring the project within budget as this could impact the bidding process.

For information regarding the procedures for construction contract administration, refer to [I.M. 3.805](#), Construction Inspection.

Iowa DOT Pre-Letting Process



Abbreviations:
 Admin. Office = Iowa DOT Administrating Office
 FHWA = Federal Highway Administration
 LPA = Local Public Agency
 Contracts = Office of Contracts, Iowa DOT
 PIF = Public Interest Finding



Abbreviations:

- Admin. Office = Iowa DOT Administrating Office
- Contracts = Office of Contracts, Iowa DOT
- EEO / AA = Equal Employment Opportunity / Affirmative Action
- ERMS = Electronic Records Management System
- FHWA = Federal Highway Administration
- LPA = Local Public Agency

